Coopetition For The Greater Good. Exploratory study of coopetition management mechanisms in the pharmaceutical industry

Alshareef, Leena and Dietlmeier, Simon Frederic and Florian, Urmetzer

5 April 2024

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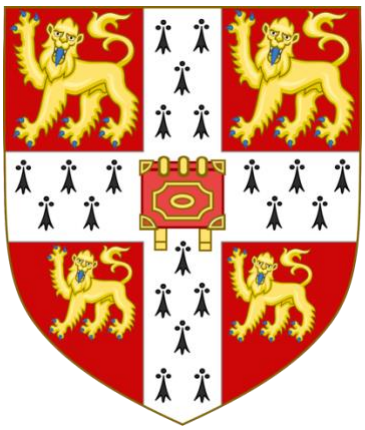

Leena Alshareef

Department of Engineering
Institute for Manufacturing
University of Cambridge

This dissertation is submitted for the degree of
Master of Philosophy

Corpus Christi College

August 2023

Abstract

The pharmaceutical industry has experienced a remarkable surge in "coopetition," wherein rival companies join forces to pursue shared objectives, leading to a dynamic business environment fraught with tensions resulting from the coexistence of strong, contradictory forces of competition and cooperation. Despite its growing importance, research examining coopetition implementation and management, especially considering contextual influences shaping its dynamics, remains limited.

This study aims to fill this gap by exploring the mechanisms of coopetition implementation and management in the pharmaceutical industry, focusing on the interrelation of different elements of coopetition execution and the contextual environment. Adopting an interpretivist philosophy and a qualitative, exploratory approach, this research engaged with industry insiders to explore how large, global pharmaceutical companies effectively manage dyadic coopetition.

Key findings highlight the significance of the formation stage in mitigating tensions throughout the coopetition lifecycle. The operationalization stage emphasizes emotional and analytical capabilities across organizational levels, in addition to the balancing capability manifested through various coopetition management principles identified in the literature: separation, integration, arbitration, and a novel variant of co-management principles, alongside a unique approach - unilateral control, all complemented by supportive organizational adaptations. Moreover, diplomacy and learning capabilities were identified as crucial components of coopetition capabilities. The termination stage brings persisting tensions due to legal pressures and competitive vigilance. The research also brings to light the complex interplay between legal and regulatory institutional pressures and coopetition dualities.

The research complements and contributes to coopetition management literature by proposing a multi-level, multi-stage view of tensions. It offers a nuanced understanding of how these tensions are navigated throughout the drug development cycle and highlights the importance of addressing the often-overlooked termination stage of coopetition. Furthermore, it highlights the complex relationship between institutional pressures and dualities.

Overall, the study provides valuable insights into the nuanced mechanisms employed by large pharmaceutical companies to holistically manage and maintain balanced coopetition.

Keywords: coopetition, pharmaceutical, management, execution, coopetition capability, regulated industries, legal pressures, coopetition lifecycle

Acknowledgements

I would like to express my sincere gratitude to everyone who has supported me throughout the completion of this MPhil dissertation.

First and foremost, I sincerely thank my supervisor, Dr Florian Urmetzer, and colleagues in the Ecosystem, Platforms, and Strategy research team for their guidance and support.

I would also like to acknowledge the faculty members and staff of the Institute for Manufacturing for creating such an enriching academic environment.

My heartfelt thanks to my family, husband, and friends for their love and encouragement.

Lastly, I extend my appreciation to the study participants for their valuable contributions.

Statement of original authorship

This dissertation is submitted for the degree of Master of Philosophy in Industrial Systems, Manufacturing and Management.

I hereby certify that this dissertation is entirely my own work, written by myself, and any work referenced to the work of others is clearly indicated in the text.

I also confirm that content of this dissertation does not exceed 15,000 words.

word count: 14,796.

Leena Alshareef

Cambridge, United Kingdom

August 2023

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1. Introduction

The pharmaceutical industry has long been recognized as a highly competitive landscape, with companies vying for market share and intellectual property rights. However, amidst the backdrop of fierce competition and increasingly turbulent business environments, a unique phenomenon known as "coopetition" has emerged, wherein competing firms collaborate to jointly pursue mutual objectives (Brandenburger and Nalebuff, 1996; Bouncken *et al.*, 2015). Coopetition's significance in this industry was exemplified by the unprecedented speed of developing COVID-19 vaccines and other medical breakthroughs (Crick and Crick, 2020; BCG Global, 2022). Collaborative approaches to drug discovery and marketing became essential to the survival of pharmaceutical companies (Havenaar and Hiscocks, 2012), leading to a transformation in recent years as companies adapted and the boundaries between them have become increasingly blurred (Lee *et al.*, 2019). By mapping out a network diagram illustrating the collaborations between large players, the scale and complexity of this phenomenon become evident (Figure 1).

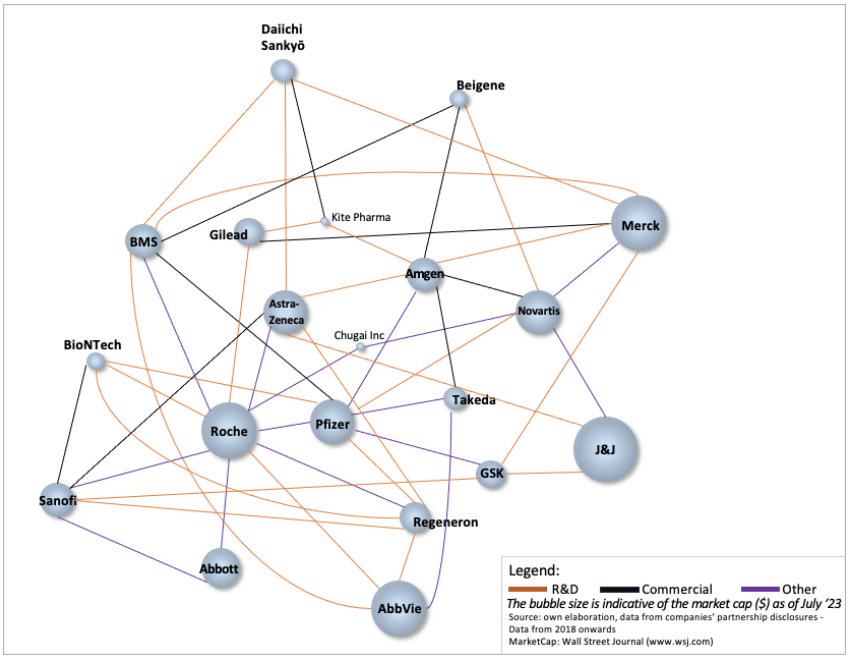

Figure 1: Network of collaborations formed between 2018-2023 (Source: own elaboration)

Amid these intricate collaborations, questions arise about how these relationships are effectively implemented and managed. The coopetition literature emphasizes the criticality of maintaining a balanced coopetition intensity (i.e., moderate competition and collaboration intensity) (Bengtsson, Eriksson and Wincent, 2010), and provides valuable insights on how to effectively

manage and maintain the balance. For instance, companies could separate competitive and collaborative activities in different locations and departments or isolate them over time, maintain a level of integration, and co-manage joint activities (Bengtsson and Kock, 2000; Fernandez, 2014; Le Roy and Fernandez, 2015). Coopetition capabilities were also highlighted, as managers must adeptly handle positive and negative emotions (Raza-Ullah, 2020) and think paradoxically (Gnyawali *et al.*, 2016).

However, there is a gap in the literature, flagged by (Gernsheimer, Kanbach and Gast, 2021), pertaining to the interrelations between different execution elements, such as navigating dualities (e.g., value creation and appropriation), governance models, integration practices, management principles, and coopetition capabilities. Another pitfall of prior literature is the limited understanding of how individual and organizational factors interact with higher-level contextual influences (Bengtsson and Raza-Ullah, 2016). Therefore, this research aims to address these gaps and explore the interrelations of coopetition management and execution elements at different levels.

There is limited research in the coopetition literature that examined the phenomenon within the context of the pharmaceutical industry, despite being the most commonly adopted open innovation strategy by pharmaceutical companies (Lee *et al.*, 2019). The industry also features high levels of competition and collaboration activities (Miotti and Sachwald, 2003; Luo, 2007), making it a salient context to provide valuable insights into *How companies effectively implement and manage coopetition? And what are the factors that influence their approach?*

To answer these questions, the study was carried out starting with a literature review of coopetition concept, its relevance in the pharmaceutical industry, and management strategies, underpinning the development of the theoretical framework (chapter 2). Chapter 3 outlines the overall research paradigm, design, and embodied methodology. The empirical findings are presented and analyzed (chapter 04) and then discussed in the context of existing literature (chapter 5). Finally, the conclusion (chapter 6) brings together the key takeaways and includes a reflection on the limitations of the study and outlines potential directions for future research.

2. Literature Review

2.1. Coopetition concept

Coined by Brandenburger and Nalebuff in 1996, "coopetition" refers to the simultaneous pursuit of collaboration and competition to achieve mutual benefits (Brandenburger and Nalebuff, 1996). Despite numerous studies investigating this concept, a lack of consensus on its precise definition remains, hindering the ability to compare and contrast research findings (Walley, 2007; Bengtsson, Eriksson and Wincent, 2010; Bouncken *et al.*, 2015). Scholars debate the nature of simultaneity itself; some perceive it as a single continuum, where competition and cooperation trade off (Padula and Dagnino, 2007), while others perceive it as a two-continua, viewing it as a paradox where competition and cooperation are distinct constructs capable of varying independently in response to internal and external environments (Figure 2) (Walley, 2007; Bouncken *et al.*, 2015).

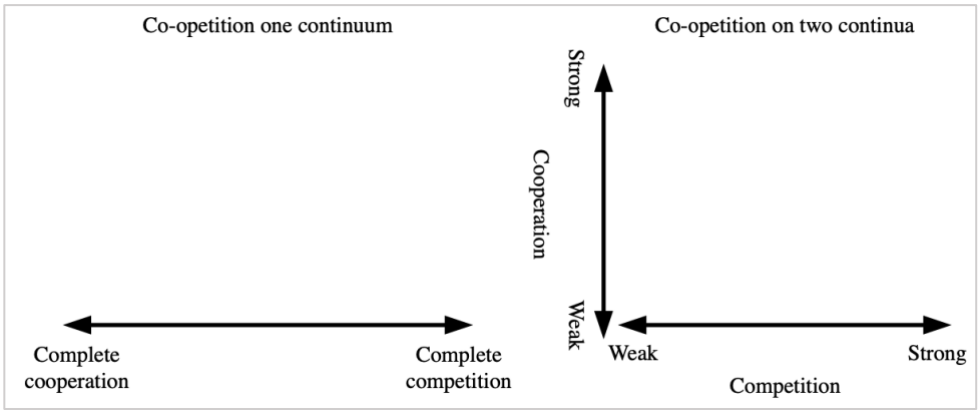

Figure 2: Coopetition occurring in one continuum vs. two-continua (Bengtsson et al., 2010)

In that vein, scholars employing this perspective highlighted the significance of achieving *balanced* coopetition to realize its benefits (Luo, 2007; Bengtsson, Eriksson and Wincent, 2010; Raza-Ullah, Bengtsson and Kock, 2014; Gnyawali and Ryan Charleton, 2018) as imbalanced coopetition prompts coopetitors to act according to the prevailing element: hostility and opportunism when competition dominates, and over-embeddedness and lack of the tensions needed for innovation when cooperation dominates (Bengtsson, Eriksson and Wincent, 2010; Park, Srivastava and Gnyawali, 2014b). Balanced coopetition at the extremes of the matrix could lead to static relationships (i.e., weak cooperation-weak competition), or destructive outcomes

(i.e., strong cooperation-strong competition) where actors reach a competitive deadlock and exploit each other excessively. (Figure 3) (Bengtsson, Eriksson and Wincent, 2010; Raza-Ullah, Bengtsson and Kock, 2014). Therefore, navigating simultaneity and sustaining balanced coopetition is vital to maximize benefits and avoid adverse outcomes, requireing managers to be aware of coopetition's contradicting demands to effectively balance them (Bengtsson, Eriksson and Wincent, 2010; Park, Srivastava and Gnyawali, 2014b).

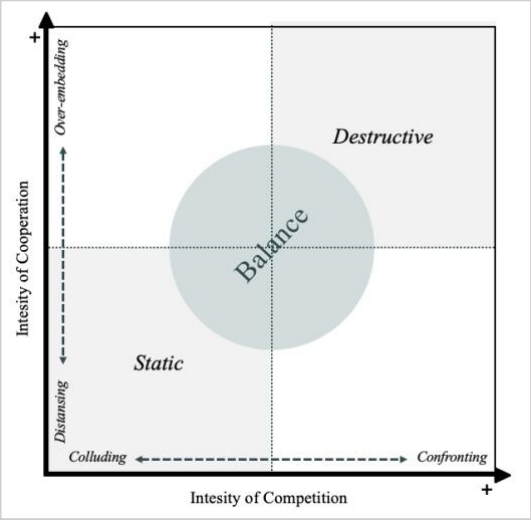

Figure 3: Coopetition Intensity (Bengtsson et al., 2010)

Organizations adopt coopetition for various reasons, including, amongst others, pursuing economies of scale (Bonel and Rocco, 2007), costs and risk sharing (Gnyawali and Park, 2011), achieving innovation gains (Bouncken and Kraus, 2013; Yami and Nemeh, 2014), and responding to market turbulences (Chiambaretto and Fernandez, 2016; Crick and Crick, 2020). High technology industries, in particular, including the pharmaceutical industry, host high degrees of resource and capability asymmetry, along with requirements for substantial investments in research and development (R&D), shorter innovation cycles, and the need to build resilient supply chains (Luo, 2007; Gnyawali and Park, 2011). Coopetition is acknowledged as a strategic response to the unique challenges inherent in these contexts. However, it is challenging to manage and carries significant risks due to its conflicting logics (Chen, 2008; Gnyawali *et al.*, 2016), leading to tensions within and between involved organizations revolving around roles, power, knowledge, and opportunism, which may jeopardize the relationship (S.R., Chang and Peng, 2011; Peng *et al.*, 2012; Raza-Ullah,

Bengtsson and Kock, 2014; Tidström, 2014). Albeit coopetition's risky dynamics and the criticality of balancing its contradicting forces, the literature shows significant gaps in understanding the establishment and management of coopetition, particularly in exploring the interrelation of different elements of coopetition execution, such as management routines, processes, and organizational design (Gernsheimer, Kanbach and Gast, 2021). Therefore, exploring the coopetition's intricate implementation and management aspects in the pharmaceutical industry is imperative.

Coopetition is conceptualized based on The Actor or The Activity schools of thought (Bengtsson and Raza-Ullah, 2016). The former defines coopetition within a broader Value Net (Figure 4), highlighting the interdependencies within an organization's network (Brandenburger and Nalebuff, 1996; Afuah, 2000). However, this broad approach overlooks the simultaneity of coopetitive interactions and fails to address their dynamics and management micro-foundations (Bengtsson and Raza-Ullah, 2016).

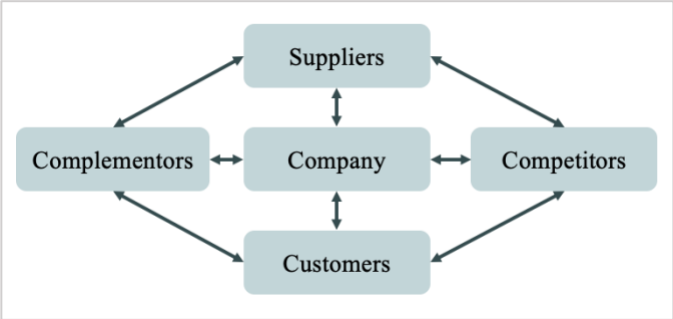

Figure 4: Value Net Model (Brandenburger and Nalebuff, 1996)

Conversely, The Activity school defines coopetition more narrowly, focusing on the direct simultaneous competitive and collaborative interactions between organizations (Bengtsson and Kock, 2000; Gnyawali and Park, 2011; Bouncken *et al.*, 2015). This approach draws on the two continua perspective and resonates with "processual coopetition," which views coopetition as a dynamic and evolving process (Bengtsson, Eriksson and Wincent, 2010). It explores coopetition's lifecycle stages and varying intensity levels and recognizes the paradoxical nature of coopetitive relationships occurring at intra-organizational (Tsai, 2002), inter-organizational (Bengtsson and Kock, 2000), and individual levels (Raza-Ullah, Bengtsson and Kock, 2014), as well as during different coopetition stages, the formation stage (Hung and Chang, 2012; Efrat *et al.*, 2022), operationalization (Tidström, 2009; Bengtsson, Raza-Ullah and Vanyushyn, 2016), while, to our knowledge, the termination stage remains unstudied.

This research adopts The Activity school of thought, which offers a better understanding of coopetition's paradox and the resultant tensions (S.R., Chang and Peng, 2011; Fernandez, 2014; Raza-Ullah, Bengtsson and Kock, 2014) and enables an in-depth exploration of how companies manage and maintain balanced, simultaneous existence of two contradictory logics (Bengtsson and Kock, 1999; Gnyawali and Park, 2011).

2.2. Coopetition in The Pharmaceutical Industry

The phenomenon of coopetition within the pharmaceutical industry has been studied from various perspectives. One study investigated the role of coopetition intensity on value creation, Santos (2021) adopted a two continua approach and presented empirical support that imbalanced coopetition leads to negative outcomes, stressing the need to balance coopetition for joint value creation, with active involvement of well-informed top managers identified as vital (Santos, 2021).

The literature also investigated the interplay of coopetition and firm characteristics. Bagherzadeh et al. (2022) studied coopetition's impact on innovation in petroleum, chemical, and pharmaceutical companies. They found that coopetition positively impacts innovation in financially-constrained small companies through access to complementary resources, but exhibited a non-linear negative pattern in large financially-capable companies (Bagherzadeh, Ghaderi and Fernandez, 2022), emphasizing the criticality of balancing coopetition for optimal outcomes in larger companies. Another aspect explored is the impact of technological, geographic, and product market overlaps on inventive performance in R&D alliances. Runge et al. (2022) conducted an empirical analysis revealing that technological overlap benefits learning and collaboration, while geographic overlap had an insignificant effect due to the prevalence of virtual communication. Contrarywise, product market overlap introduced a competitive dynamic, impeding optimal invention performance (Runge, Schwens and Schulz, 2022). They call for further research to focus on the role of product market overlap in influencing competitive tensions, rather than solely market overlap.

Furthermore, Lee et al. (2019) examined project expertise, complexity, and the choice between open and closed innovation in pharmaceutical drug development projects. Their findings indicate that complexity weakens the negative relationship between project expertise and the choice of open innovation, and that in situations where the focal company lacks project expertise,

coopetition emerges as the prevailing form of open innovation, allowing them to learn from their rivals (Lee *et al.*, 2019). Suggesting that leveraging coopetition becomes valuable in complex drug development projects to acess rival's knowledge and reduce capability asymmetry.

Another line of research focused on knowledge protection and governance. In coopetition, commonly adopted governance mechanisms are transactional governance (e.g., contractual agreements) or relational governance (e.g., trust, commitment), or both (Poppo and Zenger, 2002; Cao and Lumineau, 2015). Woolley (2023) highlighted the limitations of these traditional mechanisms in pharmaceutical R&D consortia, and proposed leveraging artificial intelligence (AI) and blockchain technologies to address these concerns. These technologies were found to reduce risks of opportunism and knowledge leakage, and diminish the influence of power differentials, thereby increasing engagement and benefits derived from coopetition (Woolley, 2023). Moreover, research on the impact of intellectual property (IP) regimes on coopetition between emerging-country pharmaceutical companies and global pharmaceutical companies emphasized the significance of IP law interpretation and enforcement in rebalancing power dynamics and fostering successful interactions (Pitelis, Desyllas and Panagopoulos, 2018).
The influence of external forces on coopetition dynamics was briefly addressed in the literature. In response to the COVID-19 pandemic, Crick and Crick (2020) demonstrated how large, rival pharmaceutical companies implemented coopetition strategies to expedite vaccine development and other medical supplies (Crick and Crick, 2020). Furthermore, Li et al. (2022) employed evolutionary game analysis to examine coopetition mechanisms in drug distribution. They further asserted the importance of balancing coopetition, highlighting that a fair, agreed-upon income distribution ratio fosters a healthy coopetitve environment (Li *et al.*, 2022).
In conclusion, the limited body of research on coopetition within the pharmaceutical industry has highlighted its multi-dimensional and context-driven nature. Coopetitive interactions are largely influenced by firm characteristics, capabilities, project complexity, external factors, as well as governance mechanisms and intellectual property regimes. While these insights are valuable, further research is needed to advance coopetition theory and its practical applications in the fast-evolving pharmaceutical industry.

2.3. Management of coopetition

Coopetition management has been coupled with managing the tensions stemming from its paradoxical nature (Fernandez, 2014; Raza-Ullah, Bengtsson and Kock, 2014; Bengtsson, Raza-Ullah and Vanyushyn, 2016). In organizational dynamics, paradoxes cannot be fully resolved but can only be acknowledged and managed, potentially fostering "creative novelty" and organizational effectiveness (Quinn and Cameron, 1988; Stacey, 2007). Literature discussed the varying intensities of coopetition paradox (see section 2.1), influenced by internal and external factors, which in turn affect tensions within and between organizations. Higher intensities result in elevated tension levels that are challenging to manage and adversely impact coopetition outcomes (Park, Srivastava and Gnyawali, 2014b; Raza-Ullah, Bengtsson and Kock, 2014; Gnyawali *et al.*, 2016). It is argued that these tensions arise from coopetition's dualities mainly faced by involved individuals (Gnyawali *et al.*, 2016). These dualities are competing forces such as knowledge exchange vis-à-vis knowledge protection (Yang *et al.*, 2014) and value creation vis-à-vis value appropriation (Yami and Nemeh, 2014), placing managers under psycho-cognitive strain that emerges and accumulates at individual, group, and organizational and inter-organizational levels (Gnyawali *et al.*, 2016; Raza-Ullah, 2020). This psycho-cognitive stress has been linked to what is referred to as "emotional ambivalence", which is considered the core of tensions in coopetition (Ashforth *et al.*, 2014; Raza-Ullah, Bengtsson and Kock, 2014). Unmanaged tensions resulting from these dualities threaten to companies and relationships, as they can adversely affect coopetition effectiveness (Gnyawali *et al.*, 2016) and significantly contribute to the instability of competitive alliances (Park and Russo, 1996). Thus, managing coopetition tension and understanding its underlying factors become crucial (Bengtsson and Kock, 2000; Gnyawali and Ryan Charleton, 2018).

Calls for future research to adopt a holistic view encompassing external, relational, and internal factors have emphasized the importance of exploring how individual-level and organizational-level factors interact with higher-level contextual influences (Bengtsson and Raza-Ullah, 2016). Consequently, this research proposes a theoretical framework to understand the underlying contextual factors that influence coopetition tensions and their management at multiple levels.

2.3.1. Influential factors

Coopetition tensions have been studied from various angles. One line of research has examined inter-organizational tensions by assessing the combined effect of cooperation intensity (e.g., repeated ties) and competition intensity (e.g., market commonality, overlapping products) on performance (Bengtsson et al., 2016; Park et al., 2014b). This perspective highlights the role of coopetition *relational attributes* (i.e., context of the relationship) and *contradictions* (i.e., contradicting firm-specific characteristics) in coopetition management. In addition to *institutional pressures* from external forces that influence organizations' behavior (e.g., legal pressures) (Tidström, 2014). These dimensions are detailed in the following subsections.

2.3.1.1. Relational attributes

Gnyawali and Ryan Charleton (2018) offered valuable insights into how the interplay of competitive and cooperative elements, and coopetition's underlying *motives* of value creation, are manifests through four coopetition mechanisms: mutual pursuits, resource leverage, safeguarded resources, and relevant commitments. These mechanisms can result in positive or negative outcomes, contingent upon effective management of balanced simultaneity and value creation intent (Gnyawali and Ryan Charleton, 2018). This perspective finds support in the work of Tidström et al. (2018), who highlighted the influence of coopetition goals on the choice of management style (Tidström, Ritala and Lainema, 2018).

Studies also revealed the significance of the *state of the relationship*, such as interpersonal relationships, trust and commitment (Bengtsson, Eriksson and Wincent, 2010; Cao and Lumineau, 2015; Tidström, Ritala and Lainema, 2018), where repeated ties further strengthen and solidify the cooperative aspect of the relationship, helping in balancing the competitive intensity (Bengtsson et al., 2016; Park et al., 2014b). Another contributor to tensions is the *power dynamics* between coopetitors, where one party's advantage in resources, capabilities, or emotional influence may lead to the exploitation of the other (Osarenkhoe, 2010).

2.3.1.2. Contradictions

Contradictions that arise in coopetition originate from the distinct identities, goals, and motives of participating organizations, and manifest in various aspects such as strategic and economic goals, organizational cultures, processes, products, and customer preferences, potentially leading

to tensions and conflicts (Tidström, 2014; Gnyawali *et al.*, 2016). Contradictions also emerge when one company prioritizes short-term gains while the other focuses on long-term goals, or when one organization adopts a flexible approach in contrast to the other's rigidity (Das and Teng, 2000).

2.3.1.3. Institutional pressures

Coopetition has been distinguished on the basis that it lies between strategic alliances and collusions/cartels, where collusion always involves stronger competitive elements, unlike a strategic alliance where cooperation is the primary focus (Figure 5) (Rusko, 2011).

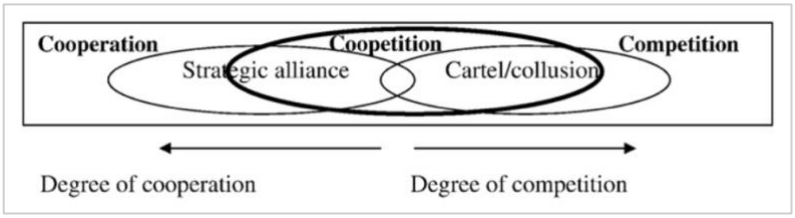

Figure 5: Relationships between the strategic alliance, coopetition and collusion (Rusko, 2011).

Suggesting that unbalanced coopetition could bear a resemblance to unlawful agreements or cartels, which is not a rare scenario in the pharmaceutical industry (UK Competition and Markets Authority, 2022). Oliver (1991) proposes that if institutional pressures are tied to legal frameworks, organizations are less likely to resist those pressures; thus, the institutional context significantly shapes coopetition dynamics. Another form of institutional pressures arises from external forces and market dynamics that shape the business environment, impacting how parties act in and perceive coopetitive relationships (Ritala, 2011).

2.3.2. Management capabilities

Scholars proposed several coopetition management principles and capabilities to handle the paradox and the resultant tensions. Broadly, the literature has put forth four principles of coopetition management: (1) separation of competitive and cooperative activities at the organizational level, whether it is spatial, temporal, or functional separation (Bengtsson and Kock, 2000; Fernandez, 2014), (2) the individual's integration of coopetition paradox (Chen, 2008; Gnyawali, He and Madhavan, 2008; Gnyawali and Park, 2011), (3) co-management of a joint collaborative team (Le Roy and Fernandez, 2015), and (4) senior management arbitration to control tensions and resolve conflicts (Pellegrin-Boucher, Le Roy and Gurău', 2018). Scholars

also emphasized differentiating tensions at various organizational levels to develop a deeper understanding of the complexity and dynamics involved (Figure 6), thereby effectively managing them (Fernandez, 2014).

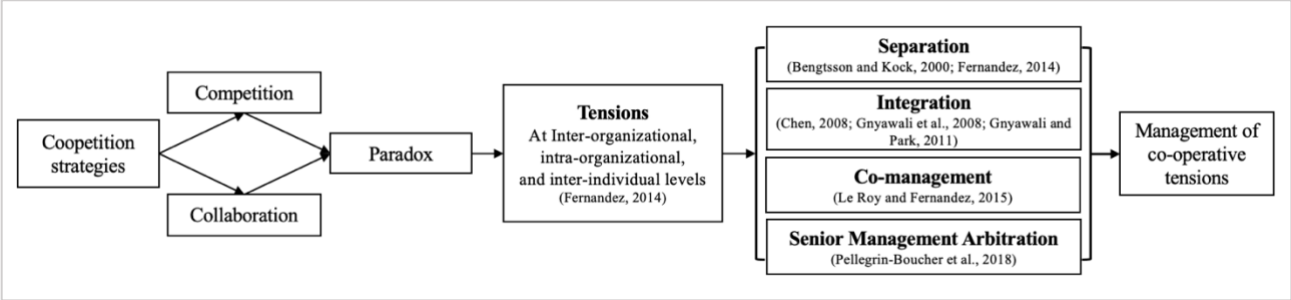

Figure 6: Coopetition Management Principles

Fernandez (2014) concluded that successful co-opetition management involves achieving a balance by simultaneously implementing integration and separation, rather than making an either-or choice. Further, Tidström et al. (2018) argue that the choice between separation and integration depends on the specific context and the level of tension involved; when tension is high and causing a state of deadlock, a separation logic is recommended (Tidström, Ritala and Lainema, 2018). On the other hand, (Le Roy and Fernandez, 2015) described the co-management principle which combines organizational-level separation and individual-level integration. This principle involves a dedicated joint coopetitive team separated from the coopeting companies, with a bicephalous governance structure (Le Roy and Fernandez, 2015).

An emerging research area focuses on the concept of *coopetition capability*, which involves the firm's capacity to "sense, seize, and adapt to the dualities" (Park, Srivastava and Gnyawali, 2014a) as well as the ability to think paradoxically, acknowledging coopetition tensions, and proactively initiating processes to balance tension levels (Bengtsson, Raza-Ullah and Vanyushyn, 2016). Building on these definitions, Gnyawali et al. (2016) proposed *analytical* and *executional* capabilities to manage coopetition. Analytical capability involves understanding coopetition's conflicting logics and their negative and positive implications, while executional capability entails developing and implementing routines that seamlessly integrate cooperation and competition. (Gnyawali *et al.*, 2016). Additionally, recent research proposed *emotional* and *balancing* capabilities (Raza-Ullah, 2020). Emotional capability involves organizational norms and practices that facilitate the acceptance of emotional ambivalence, and the skill of regulating these emotions. While the balancing capability pertains to managing the opposing forces of

cooperation and competition in a way that embraces both forces without letting either dominate (Hannah and Eisenhardt, 2018; Raza-Ullah, 2020), achieved through the effective implementation of dual structures (separation), integration routines of these dual structures, along with creating a supportive organizational context. (Raza-Ullah, 2020). Figure 7 below illustrates the frameworks conceptualizing these capabilities in relation to tension management.

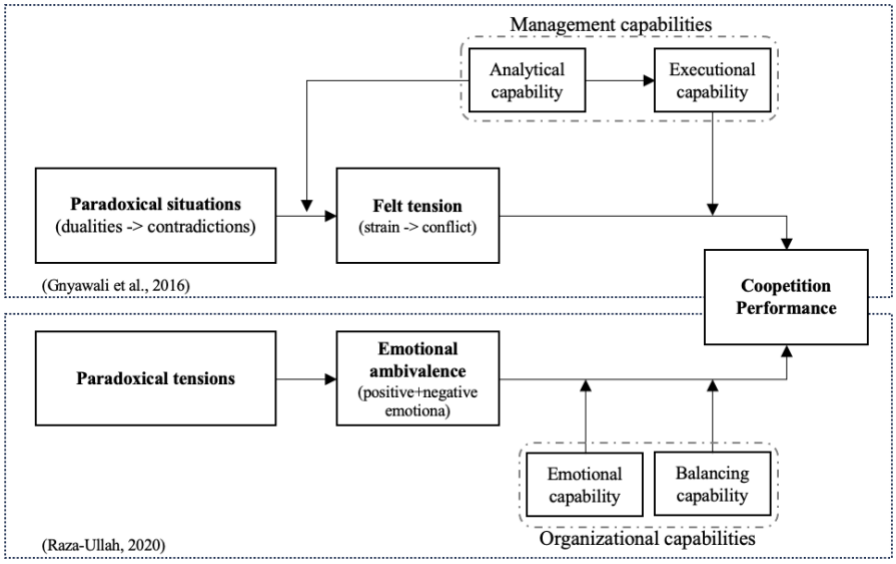

Figure 7: Coopetition management capabilities (Gnyawali et al.*, 2016; Raza-Ullah, 2020)*

The described capabilities play crucial roles as moderators of coopetition. Executional and balancing capabilities focus on operational aspects, involving establishing efficient processes, routines, strategies, and supportive contexts (e.g., governance structure). On the other hand, analytical and emotional capabilities are cognitive and behavioral in nature, pertaining to the comprehension and navigation of coopetition paradox, tolerating and regulating emotional ambivalence, and leveraging them to make informed decisions.

2.4. Research gap and theoretical framework

The research in the field of coopetition management calls for more in-depth empirical exploration into the interrelation of coopetition implementation and management elements (Gernsheimer, Kanbach and Gast, 2021), in addition to exploring the interaction between factors at the individual and organizational levels with higher-level contextual influences (Bengtsson and Raza-Ullah, 2016). Furthermore, as the pharmaceutical industry presents a salient context to

advance coopetition management theory and address the industry's unique dynamics. The research question is, therefore:

> *What are the approaches and mechanisms pharmaceutical companies use to implement and manage coopetition, and the factors that influence their chosen approach?*

In summary, effective management of coopetition and its tensions relies on contextual understanding and the coopetition capabilities organizations possess. The theoretical framework (Figure 8) draws upon this literature review and will guide the exploration of how coopetition is implemented and managed in the pharmaceutical industry, taking into account contextual factors influencing their approach. Notably, this research consolidates executional capability and balancing capability into a single capability referred to as "balancing capability," given their significant overlap in constituent elements and functions.

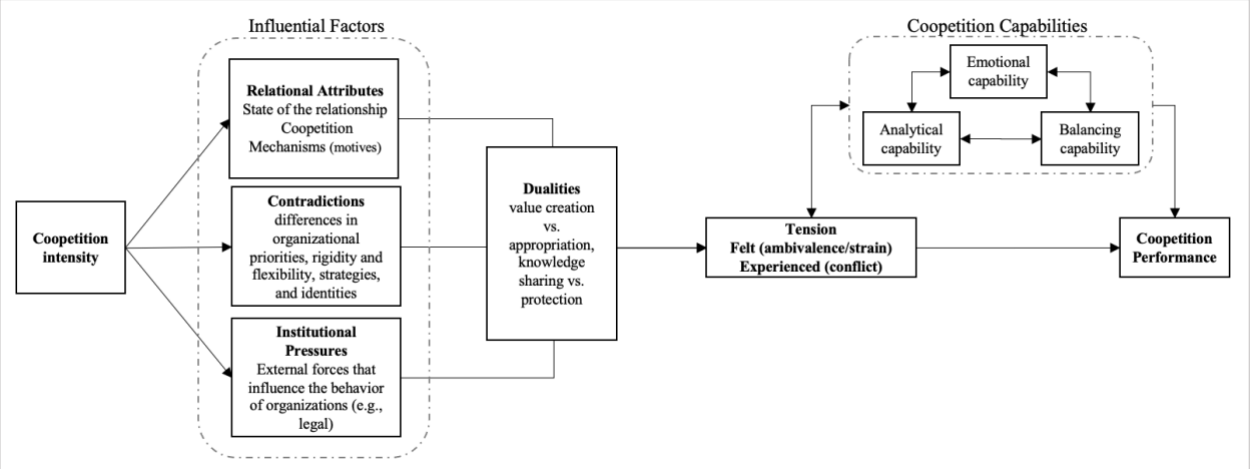

Figure 8: Theoretical framework

3. Research Methodology and Design

3.1. Research aims and scope

As outlined in section 2.4, the primary objective of this study is to explore the mechanisms of coopetition implementation and management in the pharmaceutical industry, focusing on the interrelation of different elements of coopetition execution while considering the contextual situation. The research follows The Activity school of thought (Bengtsson and Raza-Ullah, 2016); therefore, its scope is limited to dyadic competitive alliances formed between large, global pharmaceutical companies (Big Pharma), defined as the largest pharmaceutical companies in terms of market capitalization. By limiting the scope to such alliances, the study aims to eliminate the firm size and financial capability variables (Bagherzadeh, Ghaderi and Fernandez, 2022) as well as the impact of varying emerging-countries' IP regimes (Pitelis, Desyllas and Panagopoulos, 2018), thereby accurately capturing the intricacies of coopetition management in an environment that exhibits high degrees of competition and collaboration (Miotti and Sachwald, 2003; Luo, 2007).

3.1. Philosophy and approach

This research is underpinned by the interpretivist philosophy, perceiving reality as socially constructed through interactions within broader social systems (Guba and Lincoln, 1994; Easterby-Smith *et al.*, 2018). Scholars view paradox as a socially constructed phenomenon created and shaped by actors' cognitions and rhetoric (Putnam, Fairhurst and Banghart, 2016). Therefore, interpretivism aligns with the research's aim to explore the mechanisms of managing coopetition in a specific industry by perceiving coopetition as a socially constructed and contextually embedded phenomenon. Thereby, this research is qualitative as it aims to gain insights into the intrinsic subjectivity of a social phenomenon by engaging with industry informants and interpreting their perspectives (Denzin and Lincoln, 2005). Qualitative techniques are prevalent in business and management research, offering detailed insights that explain underlying mechanisms and processes (Saunders and Lewis, 2018; Bouncken *et al.*, 2021). Since the extant literature on coopetition management, in general, is emerging while in the context of the pharmaceutical industry, in particular, is relatively nascent, an exploratory abductive approach is chosen to integrate both the theoretical framework and the empirical findings (Edmondson and Mcmanus, 2007; Arbnor and Bjerke, 2009; Saunders and Lewis, 2018).

3.2. Research design

This research was carried out in three stages (Figure 9). The initial phase involved a comprehensive literature review to identify gaps and establish the theoretical framework. Subsequently, data collection was undertaken, and in the final stage, data analysis was conducted to refine the framework and develop tentative conclusions.

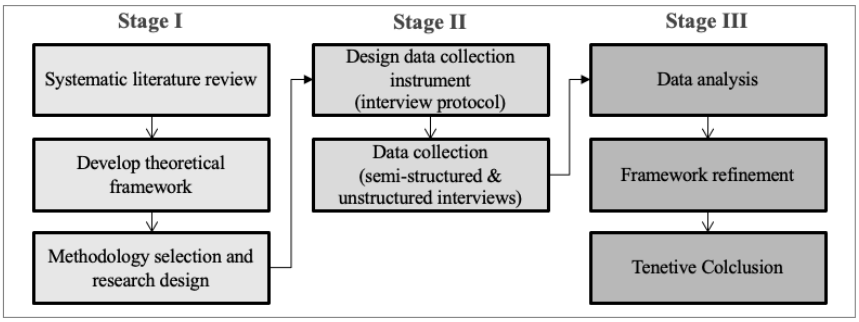

Figure 9: Research design

3.2.1. Literature review and theoretical framework

The literature review followed a protocol-based, i.e. systematic approach to identify, select, and assess relevant literature on coopetition within the pharmaceutical industry context (Tranfield, Denyer and Smart, 2003). Forward and backward snowballing techniques were employed to ensure comprehensiveness in reviewing relevant complex and heterogeneous evidence, namely the conceptualization and the management of coopetition (Greenhalgh and Peacock, 2005). The aim was to understand the current body of literature, identify the gaps, establish a theoretical framework, and develop the methodology.

The literature review strategy included accessible English books and peer-reviewed articles obtained from accredited scholarly databases (Web of Science, PubMed, and Scopus), using coopetition (or competitive alliance) and pharmaceuticals as keywords[1] with no timespan restriction.

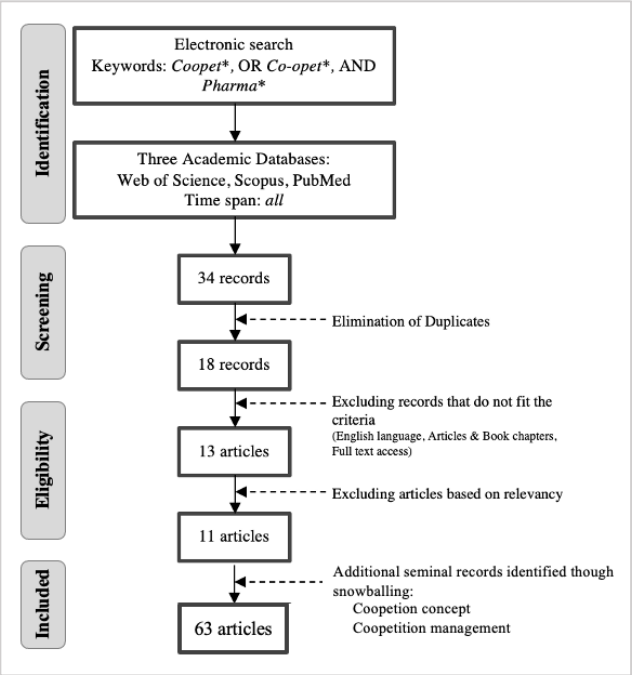

Figure 10: Systematic literature review approach

3.2.2. Data collection

Given this research's qualitative, exploratory nature, the data were collected via in-depth semi-structured and unstructured interviews, depending on the participant's role within the subject matter (Edmondson and Mcmanus, 2007). The interview questionnaire included 16 open-ended questions, 12 of which were key questions that included probes to encourage individuals to expand upon (see Appendix A). Key questions were based on the theoretical framework (Figure 8) and focused on the lifecycle of coopetition, managerial complexities compared to non-coopetition situations, adaptive strategies and routines, decision-making structures, general and industry-specific external pressures, and the role of leadership.

Purposive sampling was used to select participants (Robinson, 2014). Informants were recruited via emails and LinkedIn screening, with a response rate of 13%. The selection criterion was

[1] Search string: Coopet* OR Co-opet* OR “competitive alliance” AND Pharma*.

based on relevant professional experience within the industry and aimed to capture diverse views and experiences to comprehensively cover managerial perspectives, including R&D, operational, commercial, legal, and strategic perspectives (Figure 11). Participants' privacy was protected by assigning pseudonyms and removing identifying information.

Code	Interviewee's Role within the industry	Type of interview	Duration (min)
A	Pharma Company Business Planning & Operations	Semi-structured	74
B	Strategy Professor & Advisor with a Focus on Pharma	Semi-structured	85
C	CEO of a MedTech Company	Semi-structured	70
D	Ex-CEO of a Pharma Company & Current Regulatory Advisor	Unstructured	42
E	Competition Law Advisor	Unstructured	69
F	Pharma Company Country Manager	Semi-structured	51
G	Pharma Company Marketing & Sales Executive	Semi-structured	64
H	VC Operating Partner & former research director	Semi-structured	54
I	C-suit Executive	Unstructured	55
		Total	**564**
		Average	**63**

Figure 11: Interviews overview

A total number of 9 informants participated in online in-depth interviews, which lasted between 42-85 minutes with an average of 63 minutes. Prior to the interviews, participants provided verbal or written consent to participate and record the interview, the records were later transcribed for analysis (see addendum A for raw data).

3.2.3. Data analysis

Thematic analysis of the transcribed interview data was conducted via atlas.ti software, following the template analysis approach. Template analysis combines deductive and inductive approaches, where initial codes are derived from existing theory and predefined as *a priori* codes (i.e., template), and new codes and themes that emerge during data analysis are inductively incorporated into the template (King, 2004). This approach allows for flexibility and adaptability in exploring an organizational phenomenon from different perspectives while acknowledging the theoretical grounding and the reflexive influence of the researcher's interpretations (King, 2004), thus, aligning with the exploratory nature and interpretive philosophical stance of this research. King (2004) indicates that the extent to which the codes are predetermined should align with the researcher's philosophical position. Therefore, a template was developed *a priori* with loosely defined themes and codes based on the dimensions of the theoretical framework to enable comprehensive exploration (Figure 8). However, these themes and codes were tentative and revised after the analysis (Figure 12).

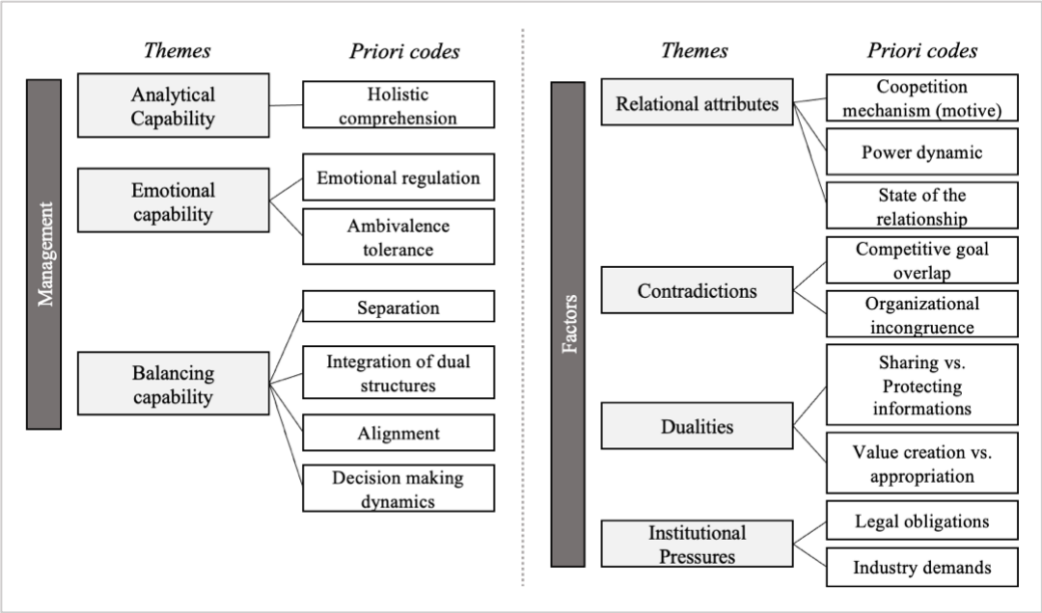

Figure 12: A-priori coding template

Open inductive coding was then used to identify new codes not covered by the template (Boyatzis, 1998). These additional codes captured emergent themes or expanded upon and added depth to a theme from the template, guiding the refinement of the theoretical framework. The analysis involved multiple iterations of interactions between transcripts, codes, and themes before the analysis proceeded to an interpretive phase in which the units (i.e., segments of text) were connected to thematic hierarchies, which were visually represented as coding trees per theme (Figure 13).

4. Findings & Analysis

The initial theoretical framework was refined through an analysis of 9 in-depth interviews, where an additional capability was identified and integrated into the framework. The final list of codes and themes is presented in Figure 13, while the supporting quotes are listed in addendum B.

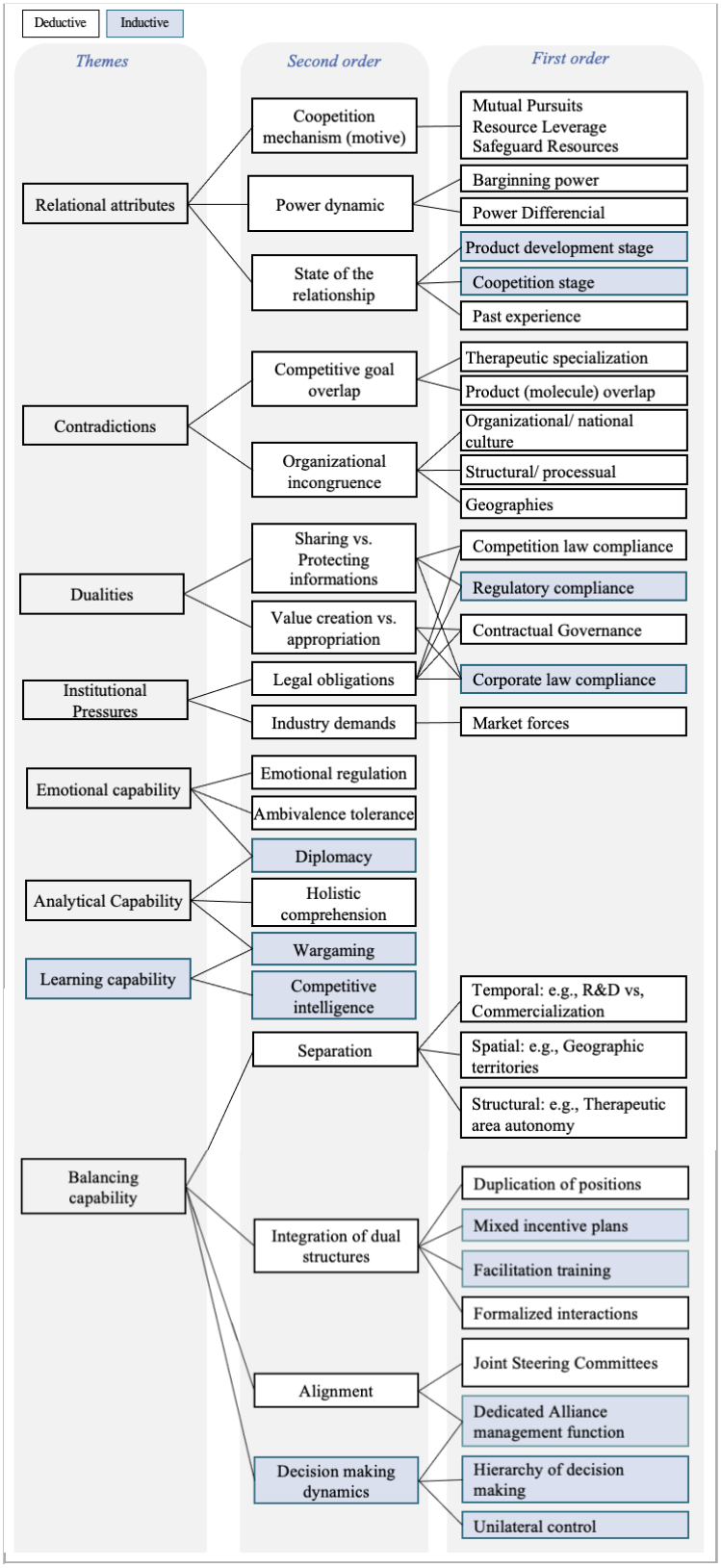

Figure 13: Final list of codes & themes

4.1. Coopetition Influential Factors

The data analysis delved into the factors shaping coopetition intensity and resultant tensions, drawing upon the theoretical framework comprising Relational Attributes, Contradictions, Institutional Pressures, and the resultant Dualities. Each dimension is analyzed below.

4.1.1. Relational attributes

The analysis uncovered key insights into the role of relational attributes on coopetition management, encompassing coopetition motives, stage of drug development, stage of coopetition, history of coopetitive interactions, in addition to the complex power dynamics influencing the interactions between coopetitors.

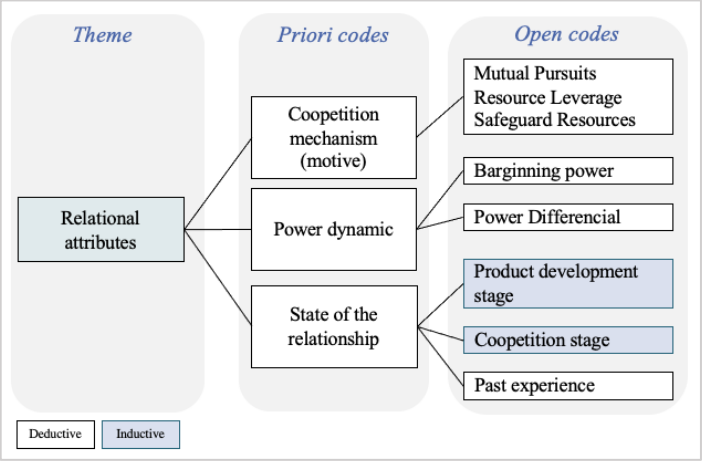

Figure 14: Relational Attributes coding tree

Informants emphasized the motivating forces behind coopetition when discussing factors influencing its management. Informant C stated that *"having a very clear gained out understanding of what the motivators on both sides actually are"* is crucial to managing successful coopetition. Generally, the data highlighted the synergistic benefits and the "*strategic fit*" (I) of such relationships in areas where competition would be counterproductive, stressing the importance of viewing the relationship as strategic rather than "*a stage where we just want to get the maximum and leave*" (F). Specifically, informants mentioned various motives, such as resource or capability asymmetry, where actors would bring in complementary capabilities, as stated by informant A, "*an alliance doesn't start without there being some kind of asymmetry*". Informant B described the relationship as a "*holobiont*[2]" to emphasize the interdependencies and

[2] A term used in evolutionary biology describing a host organism and its associated microbial communities functioning together as a single unit.

complementary nature of coopetition endeavors in the industry. Nevertheless, informants highlighted that risk and cost sharing, particularly for research and development activities and running clinical trials, are key drivers of decision-making during the operationalization stage. Several informants highlighted the importance of understanding the evolving nature of coopetition relationships and the associated tensions at different stages, particularly regarding the stage of the coopetition relationship itself and the specific stage of drug development relevant to the coopetition, as "*at different points* [of coopetition relationships] *there are different pressures and tensions that the players will face*" (E). Informant F elaborated on these tensions, particularly when transitioning to the commercialization stage of drug development cycle, stating, "*as you descend down and get into marketing details, the more friction happens, and the more that would trigger the competition mindset between salespeople in the field*" (F), emphasizing that coopetition tensions are not uniform across organizational levels, and successful management demands tailored approaches throughout different phases of coopetition and across various organizational levels.

Additionally, the analysis revealed that repetitive coopetition influences the management and perception of the relationship. Informants highlighted that over time, coopetitive interactions evolve due to accumulated trust and familiarity with each other's ways of work. As stated by informant C, "*when you have cooperated first, you are on the friend side, and you have a better engagement".*

Lastly, data also revealed the intricate interplay of power dynamics, especially when companies "*have no status or hierarchical differences between the partners"* (C). Power is influenced by various factors beyond the deal split, such as circumstantial shifts and the perceived value of contribution, as informant H explained that *"even a 50-50 business deal won't be a 50-50 control deal"* underscoring that equal split or partnership does not necessarily translate to equal decision-making power.

4.1.2. Contradictions

The data emphasized understanding the extent of contradictions as they hold significance in understanding the dynamics at play. These contradictions include the overlap of competitive goals pertaining to therapeutic area specialization or molecule specificity, and organizational cultural, processual, and geographical incongruence.

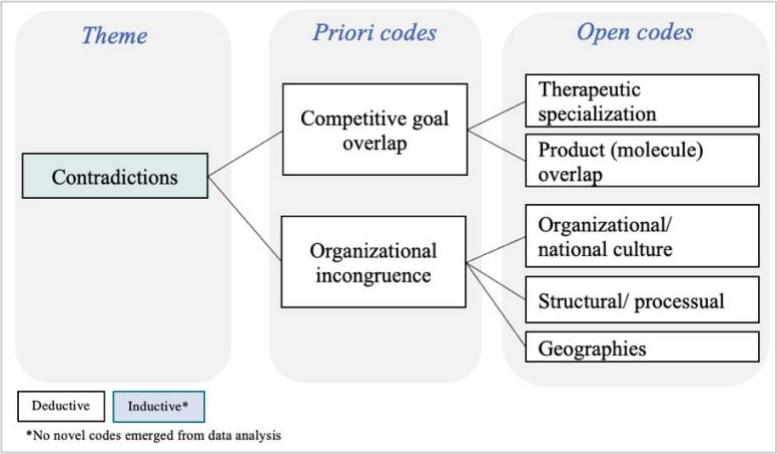

Figure 15: Contradictions coding tree

Therapeutic specialization and product specificity emerged as critical factors. Informants noted that Big Pharma exhibit a tendency to avoid coopetition projects that are too adjacent to their strategic market or product specificity. Companies often seek coopetition in areas where there is no "*conflicting center of masses*" (A), such as different therapeutic focus or limited product (molecule) similarity. Informant I stated, "*the key driver is really the therapeutic area strategy*", implying that the therapeutic area focus plays a central role in determining the nature and extent of coopetition between pharmaceutical companies. For example, informant H highlighted that overlapping therapeutic specializations could trigger competitive worries and defensive strategies like "*ring-fencing*"(H) to protect each company's interests. The notion of doing the same thing for the same people evokes a win-or-lose scenario and manifests in a "*very visceral experience*" (C), further underscoring the impact of therapeutic overlap on the dynamics of coopetition.

The common practice of complementarity-based coopetition reinforces that competition is defined at a granular level rather than market level. A direct competitor could be defined as a key player in a similar therapeutic area, or as those "*following exactly the same mode of action against the same target and against the same indications*" (I). This context-specific definition of competition in the industry makes the boundary between cooperation and competition dynamic and situational, dependent on the specifics of the drugs or technologies being developed. Additionally, informants highlighted that organizational incongruence adds to the complexity of managing coopetition. This issue must be considered in the formation stage as the coopetition scope is being defined, as informant G stressed, "*people who define these deals need to have*

their feet in the ground and understand the tactical executional implications of what they are negotiating". At the operational level, informant A emphasized the importance that managers understand and align with the cultural and operational norms of the coopetitor, stating, *"you have to hold in your head simultaneously another company's or another culture's way of doing things*". Informant B added that cultural nuances and business practices influence coopetition dynamics, further emphasizing cross-cultural understanding and adaptability. Geographic location can also impact the interactions between companies, as different time zones and logistical challenges may complicate coordination and communication, adding to the stress of managing such relationships; as informant A stated, "*It becomes quite hard to respond to things because you're only sharing a certain amount of the clock together"*.

Informants also described the role of structural and processual contradictions, stressing that aligning internal systems and processes is crucial for successful coopetition. Informant A illustrated the challenges of different processual norms, stating, "*company B's budget cycle and company A's budget cycle will be different budget cycles,"* which then impacts resources and project planning. Different organizational structures were also noted, where "*Your direct opposite might not be your direct opposite"* (A), leading to stress and incoherence at the operational level. Informants G and H further added that process flows in Big Pharma are "*very rigid, much more process-driven*" (H). This complexity could be further compounded if coopeting companies have differing decision-making approaches. For example, a collaboration between a company with a top-down management style and a company with a decentralized style was described by informant G as "*terrible because the top guy could take all decisions and we had then the decisions with 30 country managers*".

4.1.3. Dualities

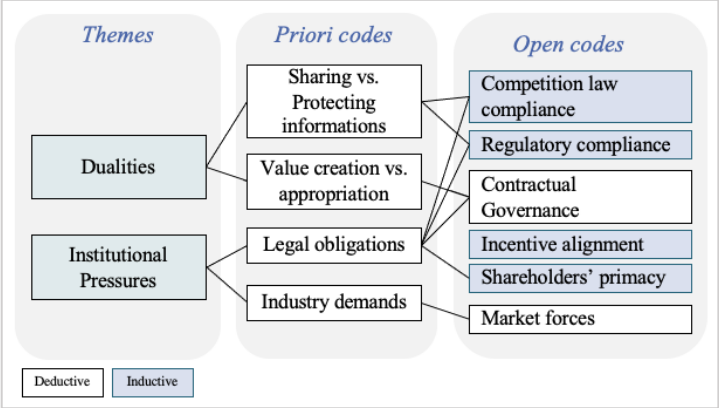

Figure 16: Dualities and Institutional Pressures coding tree

Informants highlighted the duality of sharing and protecting information to be influenced by various factors; some were addressed in the previous theme, 'Relational Attributes'. These factors include the stage of product development relevant to the coopetition, and the level of trust established between coopetitors. Informant C termed it "*competitive transparency*", explaining it as "*a way to be very transparent while preserving the position you're in*" (C). However, it was noted that Big Pharma often avoid this tension altogether by refraining from collaborating with each other until after the patent is filed. Informant A stated that "*In really early discovery, I think it's more of a worry protecting your IP* […] *these alliances between big companies tend to happen after a molecule's already been made and after the patents have been filed*". This view was supported by informant H, who added that "*in terms of being worried about competitive information being released, you don't want that to be the case on a molecule basis until you're well into the clinic".* Informant A further exemplified that if a company has unprotected IP (e.g., Trade Secrets), collaborations in close proximity to that area will not even be considered. These insights revealed that Big Pharma companies mitigate the tension of this duality by choosing the timing of coopetition after valuable knowledge is protected. However, the duality of sharing and protecting information still involves consideration of other multifaceted factors. The analysis highlights the significant role of institutional pressures, including compliance with competition law, drug regulatory policies, corporate law especially for publicly traded companies, as well as the terms outlined in the contractual agreement between the coopeting companies (further discussed in subsection 4.1.4).

The duality of value creation and appropriation also interwinds with Relational Attributes, particularly the power dynamic regarding the perceived value of contribution and the negotiated deal split. This duality was often addressed in conjunction with the risk and reward equilibrium where "*the biggest reward goes to who has taken the most risk*" (A). On an organizational level, this tension is almost entirely dictated by "*the contractual terms, which is to do with the division of risk and the division of returns"* (B). However, at the operational level, the individuals' experience of this duality becomes more pronounced, influenced by human nature. Informant C explained that employees' competitive behavior becomes more prevalent due to the capitalistic nature of business objectives and the pressure to secure their jobs, stating, "*humans are intrinsically more competitive than they are collaborative when it comes to* […] *business.* […] *wanting to secure their job, which is what they only do by making sure that their own company grows or gets better*". This sentiment was also echoed by informant G who stated that the created value "*might be good for the overarching shareholder, but not for the local teams who depend on the sales and who depend on the bonuses*".

4.1.4. Institutional Pressures

The data highlighted the significant role of legal institutional pressures in the management of coopetition relationships within the pharmaceutical industry. Informant C asserted that "*making sure that there's sufficient people thinking about what legal challenges can be*" is essential for successful management of coopetition, especially since the contractual terms will dictate how the relationship is governed and act as a key mitigant to the tensions associated with coopetition dualities (further discussed in subsection 4.1.3). Thus, balancing the relationship becomes crucial, as expressed by informant E "*there's a real tension between trying to optimize for learning from each other, cutting costs, but then also not breaching competition law* […] *you don't want to be trying to be engaging in a cartel*". Informant H also underscored the challenge of navigating corporate law requirements of disclosing information in a manner that strategically benefits the company's competitive position, as they stated that *"The more public companies are, the harder that becomes because you have to reveal things within 24 hours of knowing the material change".* This aspect also influences the balancing of shareholders' interest and the competitor's interest when a win-win outcome is aspired.

Transparency and sharing of information emerged as key legal concerns. Informant E emphasized that "*transparency is really what the competition authorities would frown upon"* as it may lead to anti-competitive cartel conduct. The frequency and nature of information sharing also impact these concerns, with high-frequency sharing seen as more likely to be anti-competitive. To address these legal issues, informant E mentioned that competition authorities implement "*information barriers that they use so they can demand that only particular people working within these pharmaceutical companies can actually have access to the information",* such as signing Non-Disclosure Agreements by individuals who have access to sensitive information.

The analysis showed legal pressures' impact on coopetition tension across the stages of the contractual coopetition lifecycle (formation, operationalization, and termination). As depicted in Figure 17, the highest tension is observed at the beginning and the end of coopetition. During the formation stage, parties negotiate the scope, division of returns, and the contract terms, and establish the governance framework. While the termination stage presents another critical point where information spillover may occur, primarily due to the interpersonal relationships developed throughout coopetition. These leaks have the potential to attract scrutiny from competition authorities, necessitating careful management.

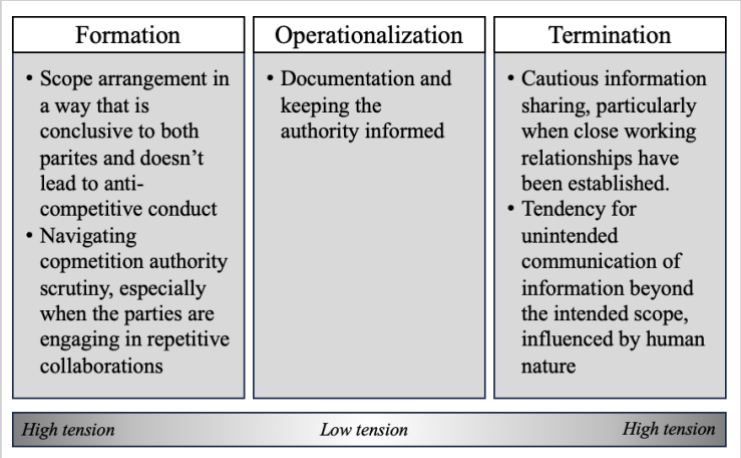

Figure 17: Tensions due to legal pressures[3]

Additionally, a notable challenge arises from regulatory requirements, specifically in coopetition involving clinical trials. Specifically, when a company shares its medicine with the coopeting partner but has yet to reveal the identity of the active molecule, either for strategic reasons or

[3] The illustration of legal challenges and corresponding tension levels was validated by informant E

pending patent approval. Regulatory bodies mandate comprehensive reporting of clinical trial data, including all-encompassing information about the molecule being tested. This creates concerns regarding the data that can be generated by the coopeting partner, which is required to be reported to the regulatory authority. Informant H described this situation, stating, *"That's a problem for you because regulatory data is all-encompassing, you have to report any information that's material on your molecule, whether you made it or not".* Highlighting this as a significant factor influencing the duality of sharing and protecting information, where companies face challenges in balancing regulatory compliance with safeguarding sensitive information.

The impact of market forces on the dynamics of coopetition and how it is managed was also highlighted. As market circumstances change, companies may need to adapt their priorities and resource allocation in response. Informant F refers to this shift as a "*priority deviation*", indicating that the need to reprioritize resources in response to market forces could lead to de-prioritization and eventual breakdown of coopetitive relationships. This aligns with Informant I's description of the "*fashion effect*", where therapeutic areas and drug discovery platforms experience fluctuations in popularity, leading to corresponding shifts in resource allocation and corporate priorities. These insights highlight the uncertainty of pharmaceutical market dynamics, requiring coopeting companies to be agile and anticipate dealing with such uncertainty. Informant A also noted that *"sometimes when the interest dips, you get more collaborations, and when the interests die high, you get more collaborations, and it's less so in the middle",* indicating that collaborations tend to increase during periods of low or high interest, reflecting companies' desire to capitalize on complementarity and synergies or to avoid falling behind when a therapeutic area or platform is trending.

4.1.5. Influential Factors: Multilevel View

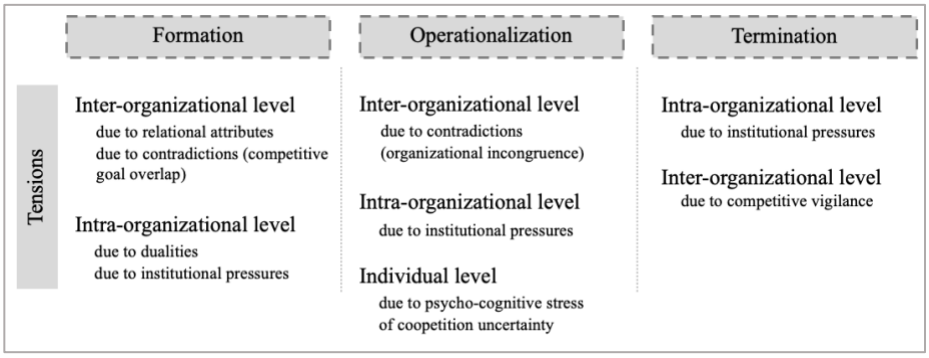

Figure 18: Multilevel view of coopetition management influential factors

Examining the tensions arising from different organizational levels is crucial for effectively managing the paradox (Fernandez, 2014). During the coopetition formation or design phase, the primary tension is observed at the inter-organizational level, stemming from relational attributes and competitive goal contradictions between coopeting companies. Navigating these challenges is vital for defining the scope of coopetition effectively. Simultaneously, tension is also experienced at the intra-organizational level, as companies must navigate dualities and legal pressures associated with coopetition.

At the operationalization level, tension is predominantly felt and experienced within the company due to regulatory pressures concerning data sharing and documentation. Additionally, inter-organizational tension arises from organizational incongruence, as managers must steer cultural, processual, and geographic differences. At the individual level, psycho-cognitive stress emerges due to the uncertainty associated with coopetition and concerns about job security.

Lastly, in the termination phase, tensions arise and *persist* within the company due to legal pressures in handling the termination process and ceasing all related collaborative activities beyond the contract's scope, in addition to inter-organizational level due to heightened need for continuous competitive vigilance as ex-coopetitors gain a deeper understanding of each other.

4.2. Coopetition Management Capabilities

The data analysis explored coopetition capabilities employing the theoretical framework, comprising Emotional, Analytical, and Balancing capabilities. An additional dimension, the Learning Capability, was identified through inductive analysis and incorporated into the framework. Each dimension is analyzed below.

4.2.1. Emotional Capability

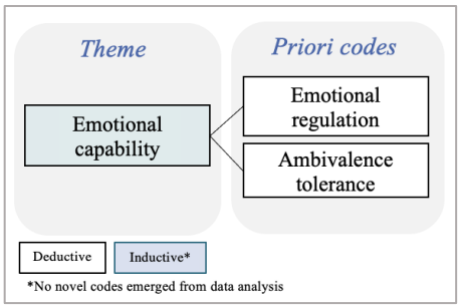

Figure 19: Emotional Capability coding tree

Informants frequently discussed psycho-cognitive stress in coopetition experienced at different organizational levels, primarily stemming from the uncertainty inherent in such relationships. Participant A expressed the constant worry and uncertainty associated with coopetitive relationships, stating, *"you'd worry, you're worried all the time. Are they acting in good faith or not?"* indicating the presence of stress due to trust and distrust paradox. They further explained that an unsuccessful coopetition is one with an overly negative atmosphere filled with "*contention and bitterness*" (A), highlighting the need for effective regulation. Regulating emotions becomes crucial with increased collaboration since it carries intense trust and distrust paradox, as informant H mentioned, *"the more collaborative you become, you then have to worry about unexpected or unanticipated outcomes"*.

Emotional stress also cascades to operational-level employees and impacts performance, as explained by informant C, and supported by informant G, who acknowledged uncertainty as a source of discomfort, as "*a lot of people don't like uncertainty*" (C), stressing that the manager's primary responsibility is to create a psychologically safe environment that enables effective engagement in coopetition.

Additionally, effectively navigating psycho-cognitive stress requires tolerance for emotional ambivalence, which proves to be a challenging task as informant C stated, "*I've seen people*

trying to integrate the same sort of narrative into what they say at the same time, but never really successfully", and the art of managing it involves "swinging" (C) between the poles. They further highlighted that integrating personal and professional perspectives creates tensions, especially with established interpersonal relationships, stating, *"on a personal level* […] *they've been disappointed* […] *Professionally they completely understand it. But integrating the two of them when you actually have a decent human relationship with these other individuals* […] *It can create a certain element of tension"* (C). They described the relatively, but not ideally comfortable "*steady state*" of accepted and regulated emotional ambivalence; saying, *"sort of steady-state position where everyone just about feels comfortable with it, I would say just about"* (C). The effectiveness of the emotional capability in managing psycho-cognitive stress is influenced by how emotions are perceived and analyzed, as emotional and analytical capabilities are closely intertwined.

4.2.2. Analytical Capability

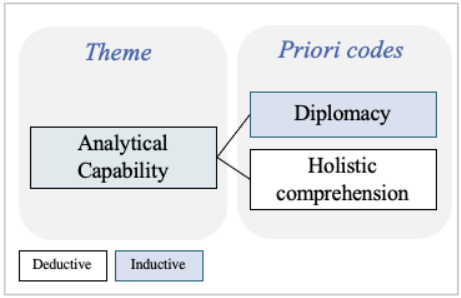

Figure 20: Analytical Capability coding tree

The analytical capability involves accurately understanding coopetition's paradoxical nature and its consequences. Informant H expressed that coopetition may "*sort of make sense, but it sounds a bit weird",* highlighting the inherent sense of contradiction. They used the Yin and Yang philosophy to stress the importance of comprehending coopetition's duality and interconnectedness to make sense of ambiguous situations, reflecting an awareness of coopetition's paradoxical nature. Furthermore, situational awareness and understanding contextual dynamics are also crucial, as Informant C emphasized "*being able to read situations, reading other people, seeing what message lands best,"* which requires understanding human behavior, social dynamics, and communication subtleties. This reveals that the analytical capability extends beyond cognitive analysis to incorporate navigating interpersonal dynamics with diplomacy.

The emergence of diplomacy as an intersection between analytical and emotional capabilities highlights their interconnectedness. Informant C, for instance, described that balanced coopetition requires careful, strategic maneuvering, stating, *"it has become a tiptoe now, it's not really a stalemate"* (C). Moreover, informant A stressed the importance of considering others' sensitivities and maintaining a respectful approach in coopetitive interactions. They exemplified this by a cost-saving proposal situation that could undermine the counterpart's due diligence; therefore, diplomatic maneuvering is needed; Informant A stated, "*Yeah* [you must have courtesy]*, while still driving your own point home*". Furthermore, informant C provided more insight into diplomacy's role in managing coopetition, especially during conflict. They highlighted that one party could play a mediating role which will require "*a lot of careful tactical positioning of building a narrative".* Building upon this notion, they further emphasized building inclusive narratives that enable all parties involved, stating, "*you have to find ways of building narratives that enable your own company but also the other company to fit into"* (C).

4.2.3. Learning Capability

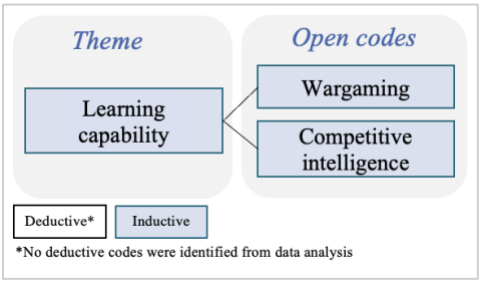

Figure 21: Learning Capability coding tree

Our analysis brings forward the learning capability of a firm, involving wargaming exercises and acquiring competitive intelligence to proactively manage coopetition.

Informant A and C described wargaming as simulating coopetitor's perspectives and "*try and think in their heads"* (A) to anticipate costs, strategies, and vulnerabilities; supported by informant G who stated, "you have to try as good as possible to predict any circumstances". This proactive and anticipatory stance enables informed decision-making and effective counterstrategies to manage coopetition.

Additionally, gathering competitive intelligence and fostering absorptive capacity emerged as pivotal. Informant B discussed the inevitable learning through close collaboration, which would encompass procedural knowledge and a deeper understanding of market dynamics, stating, "*If*

two companies work together closely, they will inevitably learn something from each other. It's relatively easy to learn […] *declarative knowledge,* […]*, causal knowledge about how the market works, or procedural knowledge"*. Informant A emphasized the opportunity for benchmarking and gaining competitive intelligence, mentioning, "*that might be about finance, it might be about safety, it might be about trial design",* which, if applied effectively, would enable learning best practices, thus improving operations and competitiveness. Moreover, informant H discussed the value of collaborative strategic decision-making which transpires through empathy and learning about the coopetitor's ways of thinking, stating "*you'll be thinking, 'oh, they think like that, oh, their senior management think that is important'".* This capability empowers firms to not only enhance their competitiveness, but also improve alignment and facilitate effective coopetition.

4.2.4. Balancing capability

The analysis of the balancing capability delved into four key dimensions: separation, integration of dual structures, organizational alignment, and decision-making dynamics, shedding light on the approaches adopted by pharmaceutical companies to balance coopetition.

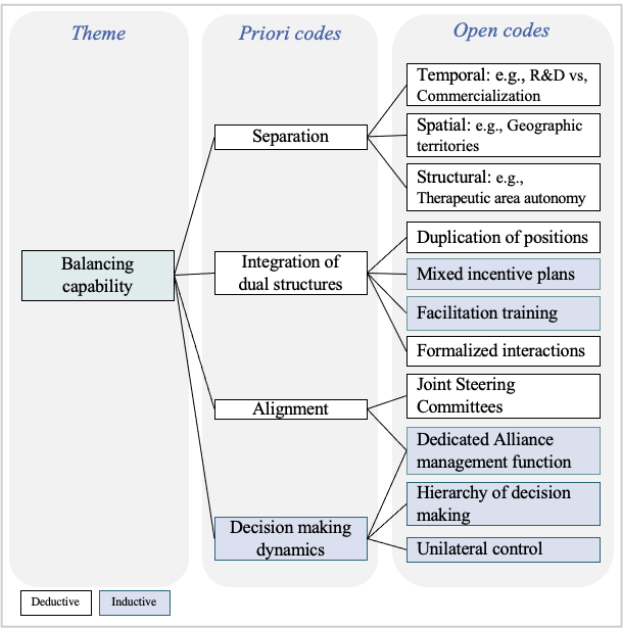

Figure 22: Balancing Capability coding tree

4.2.4.1. Separation (dual structures)

Separation approaches of competition and collaboration activities appeared to mirror the drug's lifecycle and the different tensions emerging at each stage. Figure 23 below illustrates the common separation approaches across the drug development cycle and its corresponding tension.

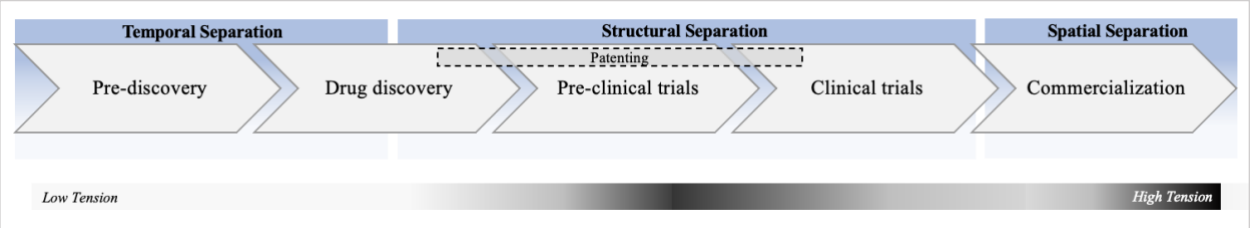

Figure 23: Separation approaches throughout drug development[4]

The overall picture shows temporal separation commonly adopted when companies collaborate in the early drug discovery phase, resembling a "pre-competitive" nature, such as R&D consortiums that pool resources and provide a starting point for drug development. Informant H explained, "*people who are going to compete with each other in the end have realized that actually we can't do this on our own and also it's so early stage* […] *Therefore, we can almost treat it as non-competitive*" (H). As the drug discovery process advances and a patent is filed, competitive tensions intensify, prompting a shift in the relationship's nature. Once competitive tensions arise, companies often implement structural (functional) separation between R&D and commercialization activities, as described by informant A, *"one company will make the drug, one company will sell the drug".*

Structural separation is also adopted during the clinical and commercial phases, where the tension is highest, as Informant D noted that Big Pharma streamlined their business focus into therapeutic areas to alleviate competitive tensions, stating, "*this is actually taking them out of the competition*" (D). Such separation based on therapeutic focus, or even sub-indications within a therapeutics area[5], enables complementarity-based coopetition, as companies with non-conflicting therapeutic focus engage in coopetition and leverage resources, while fiercely competing in other areas; as informant H highlighted, *"the R&D downwards right after approval, it's very therapeutic area focused".* This structural therapeutic separation could also extend to sub-indication, broadening the definition of a 'direct competitor' which reduces the competitive forces, thus creating potential coopetition opportunities. As informant I asserted, "*I*

[4] The illustration of the common separation practices and their corresponding tension levels were validated by informant A, H, and G

[5] Example: therapeutic focus is Oncology, but strategic focus is colon cancer

wouldn't have any issue to make a deal with a company that is in the oncology arena as long as it is complementary […] because it depends on the sub-indication within oncology".
Spatial separation is ordinarily adopted during the commercial phase, informants B, D, and H highlighted the frequent practice of segmenting market territories and demarcating geographic boundaries adopted by Big Pharma to manage coopetition tensions.

4.2.4.2. Integration of dual structures

As pharmaceutical companies implement spatial, structural, and temporal separation, effective integration of these dual structures becomes crucial. Four main dimensions of effective integration were highlighted by informants, including the duplication of positions in coopetition teams, formalized interactions, facilitation training, and mixed incentive plans.
Informants revealed that companies interact via formalized channels and "*establish clear communication protocols*" (A). Companies hold alliance meetings, which serve as a platform for decision-making and negotiation with regards to operational matters. The sequence of decision-making involves operational teams independently analyze and decide, then negotiate in the alliance meeting. Informant B described this process, "*they do their separate plans and then sort of talk to each other about their separate plans".*
The alliance meetings are attended by joint project teams with duplicated managerial positions, as highlighted by the informants A and E. This duplication "*would allow the companies to keep some level of integration*" (E) and ensures an equal voice in decision-making and negotiation on operational matters.
Companies conduct facilitation training to equip employees with skills for mediating coopetition tensions. For antitrust compliance, key management undergoes mandatory training to understand legal boundaries and implications; informant G stated, "*we are so heavily trained on antitrust issues and what happens because of it, there is mandatory training per quarter*". In addition to cross-cultural training, which facilitates effective integration and communication between companies; Informant A highlighted its advantage, stating, "*the fact that we're a global company helps a lot with the time zone issues and with cross cultural things because we already have those trainings in place".*
Some companies implement joint salesforce training when engaging in commercial coopetition. Informant G emphasized its impact, stating, "*we had the whole sales forces of my company and*

their company together being trained and that people see the good relationship between the leaders and that disseminates to them and to all levels as well". These collaborative sessions foster a positive atmosphere, instilling unity and collaboration among the sales teams, which balances the competitive intensity at the operational level.

Informant G added that a mixed incentive plan combining individual and joint performance criteria is crucial to balance the competitive intensity and effectively manage coopetition at the operational level. Stating, "*you shouldn't have only your individual incentive plan, but also not entirely joint, neither is good. You need to be aligned; you align your infrastructure"* (G).

4.2.4.3. Organizational Alignment

Separation and integration at the operational level is complemented by higher level joint steering committees and a dedicated alliance management function, ensuring alignment, and overseeing coopetitive projects. These functions provide a forum that facilitates collaboration, reduces biased decision-making risk, ensures accountability, and fosters trust. Informant H emphasized the role of joint steering committees in effective decision-making, where the company that has control uses an odd-numbered representation in that committee, stating, "*you'll have typically five people on that* [joint steering committee] *to make sure you have a three and a two, so you always have a vote rather than a blockade".*

The alliance management function further supports alignment by *"understanding what the viable coopetition space is and reviewing that regularly"* (C). this function has become a key capability by itself for Big Pharma. Informant I highlighted its significant role, stating, *"If the deal includes a collaborative component, then the alliance management function is really key".* These functions add a layer of stability and reliability to coopetitive relationships.

4.2.4.4. Decision making dynamics

Pharmaceutical companies employ distinct decision-making dynamics to balance the competing demands of coopetition. Informant D's insights emphasized the complex structure of decision-making within Big Pharma, described as "*going through an arcade* [metaphorizes a maze] *of governance*" (D). Nevertheless, informant A highlighted that for coopetition, these companies adopt a unique hierarchy of decision-making to ensure agility, with shorter links to senior management who are actively involved compared to internal projects; stating "*senior*

management time is dedicated to it [coopetition], […] *tends to pull in much more senior people to have those cross-company conversations*" reflecting the importance of their input to efficiently align and mitigate conflicts.

Big Pharma also adapted a decision-making structure that limits tensions' impact on strategic decision-making, which involves establishing a centralized R&D senior committee responsible for overseeing all research and development activities, irrespective of origin whether internal or external (e.g., coopetition). Informant H stated, *"that function will be reporting to the CEO, the CEO will be reporting to the board and the shareholders.* […] *So often decisions will be made by people we're not speaking to because it needs to be strategic".* This approach avoids conflicts of interest in navigating the duality of value creation and appropriation and ensures that decisions prioritize shareholders' best interests.

Furthermore, unilateral control plays a significant role in these arrangements where one company becomes a central authority. Informants stressed this kind of power control as the industry norm. Coopetitive projects are often "*Run by one of the two parties, basically, and [the other party] provides cash and oversight" (A),* Even in joint steering committees, joint decision-making is not truly joint, as stated by informant H, "*it's joint because there's two parties, but it's not because it's joint decision making".* Informant H further added "*there has to be someone who has overall control, because they'll have overall responsibility*", highlighting that a clear hierarchy and ultimate accountability within coopetitive arrangements is essential.

5. Discussion

The empirical exploration highlighted the interrelation of coopetition influential factors and management capabilities, defined in section 2.3, at different phases of coopetition lifecycle. In addition, it revealed emergent findings related to management capabilities and the interactions between influential factors and navigating dualities. The theoretical framework was subsequently refined, as follows[6]:

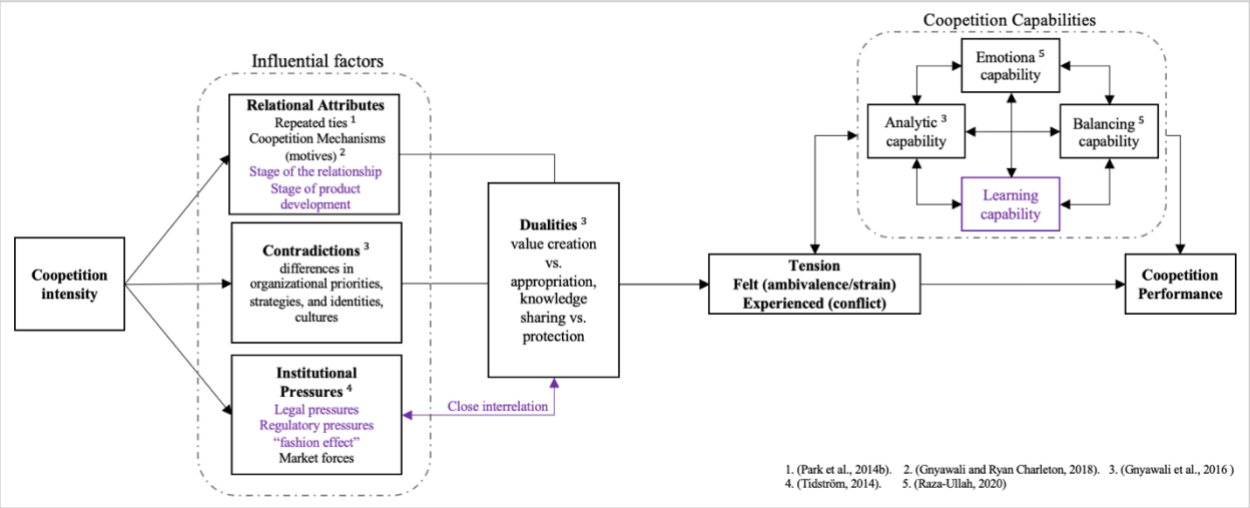

Figure 24: Refined theoretical framework

5.1. Interrelation of influential factors and management capabilities: multi-phase view

5.1.1. Formation stage

While prior research argues that the origin of coopetition influences its nature and management (Gnyawali and Ryan Charleton, 2018; Tidström, Ritala and Lainema, 2018), our findings suggest that it is primarily critical at the early stages of the relationship, particularly during defining the scope of coopetition where actors agree on the direction and goals of the relationship, division of tasks, and division of rewards. However, as the collaboration progresses to the operationalization stage, the focus shifts to risk and cost sharing, regardless of the underlying unifying motives. The criticality of the early formation stage and its impact on the development of tensions has recently been scrutinized (Efrat *et al.*, 2022), highlighting the tension-mitigating potential of successful coopetition formation, which is supported by our findings that asserts the critical role of ***detailed contractual terms*** that will dictate the management of the relationship.

[6] Changes highlighted in purple

In that vein, this study reveals that pharmaceutical companies at the formation stage often designate one of the coopetition parties as a ***central authority*** entrusted with making key decisions and resolving potential conflicts that may arise to ensure the relationship's stability, highlighting the role of the formation phase in mitigating tensions stemming from shifting power dynamics, especially for R&D coopetition, where the value of the contribution cannot be pre-defined.

Although literature on coopetition partner selection suggests that repeated ties would relieve tensions due to accumulated trust and familiarity (Park, Srivastava and Gnyawali, 2014a; Dorn, Schweiger and Albers, 2016), our findings indicate that despite these benefits, companies must navigate tensions arising from legal scrutiny by competition authorities suspecting cartel activity to avoid legal repercussions and reputational damage. This aspect was briefly addressed in the literature merely as a risk (Rusko, 2011); however, this study expands on the practices employed by pharmaceutical companies to address and manage this tension, as these companies enroll key management into mandatory ***periodic awareness training on antitrust and anti-competitive conduct***, as well as implement ***robust governance structures*** (e.g., steering committees, centralized R&D committees, alliance management function) to ensure fair and ethical coopetitive practices and compliance to competition laws.

5.1.2. Operationalization phase

As the relationship transitions to the operationalization stage, tensions heighten at the individual level due to the paradox itself and uncertainty, concurring with previous literature on psycho-cognitive tensions experienced by involved managers (Raza-Ullah, Bengtsson and Kock, 2014; Gnyawali *et al.*, 2016). Especially that pharmaceutical companies employ the principle of ***senior management arbitration*** (Pellegrin-Boucher, Le Roy and Gurău', 2018) and establish shorter links to senior management to ensure agility when managing coopetition. Therefore, our findings suggest that the success of senior management arbitration principle in Big Pharma is supported by the ***emotional and analytical capabilities*** put forth by scholars (Gnyawali *et al.*, 2016; Raza-Ullah, 2020). Additionally, these companies employ ***governance structures*** that limit decision-makers' exposure to the psycho-cognitive tensions arising at the operational level through establishing impartial dual committees and dedicated alliance management functions with clearly

outlined corporate objectives, emphasizing the interrelations of coopetition capabilities and organizational context.

These findings underscore the significance of bicephalous governance and dual committees in managing coopetition tensions, aligning with the ***co-management principle*** introduced by Le Roy and Fernandez (2015), which fully integrates the operational level through a dedicated joint team with duplicated managerial positions. However, our study reveals a novel approach observed in the pharmaceutical industry, where joint teams do have duplicated managerial positions, but they are not dedicated exclusively to the coopetition project nor fully integrated. Instead, a level of separation is maintained, enabling independent analysis and decision-making within each operational business unit, and interactions between these business units are largely formalized (e.g., via alliance meetings).

Additionally, this psycho-cognitive tension arises among operational-level employees due to coopetition inherent uncertainty, which translates to job security concerns and triggers a competitive mindset that may inhibit coopetition performance, further backing the importance of the ***emotional capability*** (Raza-Ullah, 2020).

Another source of psycho-cognitive stress is the operational challenges stemming from organizational incongruence, which resonates the literature on cultural and processual contradictions (Tidström, 2014; Gnyawali *et al.*, 2016). To overcome these challenges, pharmaceutical companies employ ***facilitation training*** as a ***balancing strategy***, such as cross-cultural training and, in case of commercial coopetition, joint marketing training for the salesforces of coopeting companies, which balances the competitive mindset by fostering a sense of unity and collaboration. In addition, aligning the incentive plans between coopetitors encourages employees to work together while maintaining a healthy level of competition. Interestingly, these practices, which have proven effective in the pharmaceutical industry, were only mentioned in previous literature examining the partnering implementation within the construction industry and in vertical coopetition (i.e., supply chain coopetition) (Gurnani, Erkoc and Luo, 2007; Eriksson, 2010).

This study also expands on the ***analytical capability*** proposed by (Gnyawali *et al.*, 2016), suggesting that it goes beyond holistic comprehension of coopetition paradox to include an understanding of interpersonal dynamics and the skill to navigate these dynamics with ***diplomacy***. To the best of our knowledge, this aspect remains unexplored in the coopetition

literature, presenting an area for further research to comprehensively understand its impact on managing coopetition tensions.

In addition, this study introduces the ***learning capability***, which builds on the established concepts of absorptive capacity and interorganizational learning in strategy literature. The former refers to the organization's ability to recognize, assimilate, and apply knowledge for commercial purposes (Cohen and Levinthal, 1990), while the latter refers to the mutual knowledge exchange and the creation of new knowledge through such exchanges (Rupčić, 2021). Along with these definitions, the learning capability encompasses the organization's ability to uncover and foster internal capabilities to balance coopetition intensity proactively. This involves acquiring competitive intelligence to get acquainted with the coopetitor and benchmark for improvement, in addition to engaging in wargaming exercises to anticipate challenges, adapt, strategize, and develop internal capabilities to address potential threats that may disrupt coopetition dynamics. Future research could further unpack this capability, how it is developed, and investigate its specific mechanisms in influencing coopetition paradox management.

Regarding the intensity of coopetition tensions throughout the drug development cycle, the literature indicates that competition tensions intensify closer to the customer (Bengtsson and Kock, 2000; Walley, 2007). Our research aligns partially with this notion, as we found that tensions indeed intensify towards the end of the cycle, where companies eventually compete over market share; however, tensions also intensify at earlier stages of drug development cycle. Our study highlights the crucial influence of intellectual property (IP) regimes and drug regulatory policies on tensions intensity throughout the drug development cycle, making them essential considerations in coopetition management as companies face uncertainty regarding eventual outcomes and susceptibility to opportunism. These tensions are further intensified by the extent of contradictions between the coopetitors, particularly regarding their therapeutic focus and product specificity; the more pronounced the commonalities in these aspects, the greater the potential for conflicts.

This study elucidates how pharmaceutical companies navigate these tensions across the drug development cycle through the ***separation principle***, expanding the literature (Bengtsson and Kock, 2000; Fernandez, 2014), either temporal by establishing “pre-competitive” alliances, spatial during commercialization by segmenting market territories, and functional through adapting the organizational structure by dividing the company into autonomous therapeutic

areas, some of which considered strategic or "opportunity" areas while others are less strategic. This structural separation approach enables complementary-based coopetition and allows better utilization of resources and capabilities, building on the findings of (Runge, Schwens and Schulz, 2022), who highlighted the negative effect of product market overlap on coopetition invention performance.

This study concurs the proposition that a company's ***balancing capability*** involves efficiently blending separation and integration principles (Fernandez, 2014; Raza-Ullah, 2020). However, it also highlights observed practices in the pharmaceutical industry of blending and adjusting other management principles, such as co-management and senior management arbitration, along with a supportive organizational context in terms of governance, structure, and capabilities, and other measures highlighted in this chapter.

5.1.3. Termination stage

The termination stage is often overlooked in coopetition literature. Our study reveals that tensions arise and *persist* due to (1) legal pressures related to knowledge spillover potentially leading to anti-competitive conduct, and (2) heightened competitive vigilance as companies retain strategic information about the capabilities and operations of their ex-coopetitors, giving rise to concerns of fair competition after the collaboration. Further research is needed to understand these challenges and aid companies in devising effective strategies for navigating the post-coopetition landscape.

5.2. Dualities and institutional pressures

The dualities of coopetition paradox have been extensively studied in the literature (Brandenburger and Nalebuff, 1996; Yami and Nemeh, 2014; Gnyawali *et al.*, 2016), and adapting to these dualities is recognized as an essential aspect of coopetition capability (Park, Srivastava and Gnyawali, 2014a). This study highlights that the role of legal institutional pressures on coopetition management extends beyond collusion and cartel concerns to include compliance with corporate law, drug regulatory policies, and the contractual terms of coopetition. These intersections have not been addressed in the literature, and this study sheds light on how these legal pressures shape the navigation of dualities in the pharmaceutical industry.

The duality of sharing and protecting information is influenced by corporate law, as companies must strategically time information sharing with coopetitors while complying with mandatory public disclosures within tight deadlines (Clark, 2015). Additionally, drug regulators demand comprehensive data sharing, especially during the drug development and approval process, which governs the duality in R&D coopetition. While antitrust law demands the establishment of "information barriers" to prevent information exchange that could lead to anticompetitive practices (Clark, 2015).

The duality of value creation and appropriation is observed from two perspectives. From the organizational perspective, during the formation stage, companies establish contractual agreements and governance infrastructure to ensure shareholders' primacy and mitigate tensions, guiding strategic and unbiased decision-making. Meanwhile, from the individual perspective, human survival instincts may trigger a competitive mindset that encourages value appropriation rather than creation; this challenge is addressed by implementing incentive plans based on joint performance. These findings present novel research avenues to understand the moderating role of legal pressures and organizational adaptations on coopetition management and performance, and vice versa, within and beyond the pharmaceutical industry to provide valuable insights for both academics and companies operating in highly regulated environments.

6. Conclusion

The research question was: *What are the approaches and mechanisms used by pharmaceutical companies to implement and manage coopetition, and what factors influence their chosen approach?* To answer this question, we developed a theoretical framework drawing upon previous literature on coopetition management and explored the interrelations of the framework's dimensions across different coopetition phases: formation, operationalization, and termination.

6.1. Key findings

The results highlighted that the formation stage is crucial is mitigating tensions that could arise in subsequent stages, as pharmaceutical companies skillfully navigate the contradictions and dualities through establishing detailed contractual terms and designating a central authority to stabilize the relationship.

At the operationalization stage, successful management of coopetition relies on emotional and analytical capabilities of senior management and operational level employees, as well as the balancing capability manifested through simultaneously adopting various coopetition management principles, including (1) different separation strategies, depending on the stage of the drug development cycle and the associated tensions, and (2) integration through formalized interactions. In addition to (3) a novel variation of co-management principle, (4) senior management arbitration, as well as (5) agreed upon unilateral control, all supported by facilitation training, mixed incentive plans, and adapting the governance structure to ensure compliance to corporate and competition laws.

This study complements previous research on coopetition capabilities (Park, Srivastava and Gnyawali, 2014a; Bengtsson, Raza-Ullah and Vanyushyn, 2016; Gnyawali *et al.*, 2016; Raza-Ullah, 2020), and suggests expanding the analytical capability to include understanding interpersonal dynamics and navigating them with diplomacy, and introducing the learning capability to proactively balance coopetition intensity.

In the termination stage, although overlooked in the literature, this study highlighted persistent tensions due to heightened competitive vigilance and legal pressures related to knowledge spillover.

6.2. Contribution to literature & practice

Our study makes six original contributions to coopetition management literature. First, we extend the existing literature by proposing a multi-level view of tensions that arise throughout the coopetition lifecycle, in addition to mapping management principles and corresponding tensions of the drug development lifecycle. Second, we posit that efficient balancing capability hinges on the dynamic combination of all the four principles already identified in the literature, separation, integration, arbitration, and a novel variation of the co-management principle that features limited integration and formalized interactions, alongside a new principle identified in this study – unilateral control. Third, empirical findings highlighted several organizational adaptations that support the balancing capability, such as bicephalous governance, dedicated alliance management functions, mixed incentive plans, and facilitation training. Fourth, we introduce a new coopetition capability -the learning capability, and suggest that coopetition capabilities closely interrelate, with diplomacy emerging as a potential key capability at the intersection of analytical and emotional capabilities. Fifth, we explored the complex interplay between institutional pressures and dualities, where legal and regulatory institutional pressures shape the navigation of dualities. Sixth, we shed light on the often-overlooked termination stage of coopetition, uncovering persisting tensions due to competitive vigilance and legal pressures. Overall, The findings highlight the nuanced strategies employed by Big Pharma to maintain a delicate balance between cooperation and competition forces. We allude that these companies adapted their infrastructure to ensure successful management of coopetition tensions at different levels - individual, organizational, and inter-organizational, emphasizing the importance of implementing a holistic management approach rather than merely focusing on singular aspects. This holistic management approach employed by Big Pharma serves as a valuable model to learn from, especially for companies in other regulated industries seeking to engage in coopetition.

6.3. Limitations and future research

We acknowledge that this study has limitations to be addressed by future research, mainly due to the complexity of the topic and the exploratory approach. First, the results' transferability is limited due to the research approach, the use of non-probability sampling, and the scope focusing on dyadic coopetition between Big Pharma companies. In addition to the potential bias introduced by the qualitative and interpretive nature of the research. Therefore, this study does

not aim to present an exhaustive list of principles or managerial procedures applicable to all coopetitive situations. Instead, we posit that the effectiveness of paradox management strategies depends on the unique structure and context of each coopetitive partnership.

Second, exploratory research lacks the ability to establish causal relationships, therefore, conducting longitudinal research and in-depth case-studies would be valuable to examine the evolution of coopetition adaptation strategies throughout its lifecycle, and the moderating role of diplomacy and learning capability on coopetition paradox management.

Third, building on the previous point, the termination stage of coopetition lifecycle presents a promising area of research, future research could examine the management of tensions at this stage and explore the post-coopetition landscape.

Fourth, another valuable research area would be to explore the differential effects of legal pressures on coopetition management and performance, particularly in regulated industries.

Finally, while our study sheds light on the significance of emotional, learning, and analytical capabilities in managing coopetition, the specific mechanisms through which these capabilities are developed and measured remain to be understood, possibly through mixed method research design.

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8. Appendices

8.1. Appendix A

A. Script prior to interview:

I'd like to thank you once again for your participation in this interview.
As I have mentioned to you before, my study seeks to understand the mechanisms and strategies in which large pharmaceutical companies navigate the complex relationship between working together (cooperation) and competing with each other (competition). The study also seeks to identify the key factors that shape the decision-making process of pharmaceutical companies when managing coopetition. I am interested in understanding the internal and external factors that influence their approach, the challenges they face, and the strategies they employ to effectively balance cooperation and competition.

Before we proceed, I want to assure you that your participation is completely voluntary, and your responses will be treated with confidentiality and anonymity. The data collected from this interview will be used solely for research purposes, and any identifying information will be kept strictly confidential.

To facilitate my note-taking, I would like to audio tape our conversations today, only me as the researcher will be privy to the tapes which will be eventually destroyed after they are transcribed. The transcripts will be shared to be revised by you,
So I would like to have your permission to record our discussion

If yes*: Thank you. Please let me know if at any point you want me to turn off the recorder or keep something you said off the record.*
If no*: Thank you for letting me know. I will only take notes of our conversation.*

With that being said, let's begin the interview. I will ask a series of questions related to your experiences and perspectives on coopetition within the pharmaceutical industry. Please provide as much detail as possible, as your insights will greatly contribute to the success of this study. Are you ready to proceed?

Interview Q	Transitionary/ closing	Influencing factors	Management practices
1	χ		
2	χ		
3		χ	
4		χ	
5			χ
6		χ	χ
7		χ	χ
8			χ
9			χ
10		χ	χ
11			χ
12		χ	
13		χ	χ
14		χ	χ
15	χ		
16	χ		

B. Introductory questions:

1. Could you please provide a brief overview of your professional background and current role within the pharmaceutical industry?
   a. Probe:
      i. Could you describe any significant milestones or key experiences in your professional journey that have shaped your expertise in the industry?
2. How familiar are you with the concept of coopetition within the pharmaceutical industry?
   a. Probe:
      i. How would you **define** coopetition based on your understanding of the concept within the context of the pharmaceutical industry?
      ii. Can you provide **examples** where you have observed or heard about large pharmaceutical companies engaging in coopetition?
      iii. Can you provide some **examples** of projects or initiatives you have worked on that are relevant to our discussion?

C. Key Questions

3. How does the lifecycle of coopetition typically unfold from your experience? (e.g., design, formation, exploitation, termination)
   a. Probe:
      i. Can you provide an example of a coopetition initiative that has progressed through different stages of the lifecycle?
4. What do you perceive as the main challenges and opportunities associated with coopetition?
   a. Probe:
      i. In your view, what are the potential risks or drawbacks of engaging in coopetition?
      ii. How do these challenges impact decision making within the organization?
5. What do you perceive as a successful coopetition strategy?
   a. Probe:
      i. How can companies accomplish a successful coopetition strategy?
      ii. How do the objectives and metrics for evaluating success differ when engaging in coopetition compared to normal circumstances? (i.e., Firm performance vs network/dyad performance?)
6. From your experience, how does the management of such situations differ from normal circumstances?
   a. Probe:
      i. Could you expand on what makes it different? (tensions?)
      ii. Can you elaborate on any specific challenges or conflicts that arise from managing coopetition, which are not typically encountered in normal circumstances?
      iii. What are some specific considerations that need to be taken into account when managing situations that involve both cooperation and competition?
7. Contingent to Q3: we discussed earlier the lifecycle of coopetition, let's dive a bit deeper into that:
   a. Can you discuss any challenges or tensions that typically arise during each stage of the coopetition lifecycle, and how they are addressed from a managerial standpoint?

8. How companies adapt to ensure the success of coopetition initiatives?
   a. Probe:
      i. In your experience, what are some common techniques or strategies that companies employ?
      ii. Can you think of a situation where the techniques adopted backfired? Why?
9. What capabilities do managers develop and deploy in order to effectively coordinate their interactions?
10. How does the complexity of balancing cooperation and competition impact resource allocation and strategic planning?
11. Are there any unique governance or decision-making structures that are implemented to effectively handle situations involving coopetition?
    a. Probe:
       i. Can you provide examples of instances where the implementation of specific decision-making structures has contributed to the successful management of coopetition?
       ii. What measures being used to protect a company from being exploited?
12. What is the role of external forces in shaping the way companies manage coopetition?
    a. Probe:
       i. Could you provide examples of any particular industry-specific or market factors that further complicate the management of coopetition?
       ii. How do regulatory and legal frameworks influence how companies navigate coopetitive relationships?
13. How does the management of coopetition influence the internal dynamics and culture?
    a. Probe:
       i. Can you provide examples of how organizational culture has evolved or adapted to accommodate the dynamics of coopetition?
14. What is the role of leadership in coopetition?
    a. Probe:
       i. How do leaders balance the interests and needs of multiple stakeholders when making decisions related to coopetition?
       ii. Can you share examples of how leadership has influenced the successful integration of cooperation and competition?

D. Closing questions

15. From your perspective, what are the key lessons learned or best practices that have emerged from managing coopetition?
16. Is there any additional information or insights you would like to share that you believe is relevant?