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**LEVELS, PHASES AND THEMES OF COOPETITION:
A SYSTEMATIC LITERATURE REVIEW AND RESEARCH AGENDA**

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LEVELS, PHASES AND THEMES OF COOPETITION: A SYSTEMATIC LITERATURE REVIEW AND RESEARCH AGENDA

ABSTRACT

There is increasing interest among management scholars in “coopetition”, which is simultaneous cooperation and competition between at least two actors. The research interest in coopetition has grown remarkably in the past few years on a variety of levels of analysis, including the intra-firm level, the inter-firm level, and the network level. However, this research has emerged along tracks that are often disconnected in terms of the different levels of analysis, and involves different terminologies, theoretical lenses, and topics. Accordingly, scholars have called for consolidation and synthesis that makes it possible to develop a coherent understanding of the coopetition concept and that reconciles its inherent heterogeneity. In this study, the authors address this issue by means of a systematic literature review that gathers, analyzes, and synthesizes coopetition research. Current knowledge on coopetition is consolidated and presented across multiple levels of analysis along a phase model of coopetition. On the basis of this in-depth review, the authors synthesize a conceptual map that highlights five multilevel research areas: (1) the nature of the relationship, (2) governance and management, (3) the output of the relationship, (4) actor characteristics, and (5) environmental characteristics. The major research themes are identified for each of these areas, enabling the authors to suggest future research avenues.

Keywords: Coopetition; simultaneous cooperation and competition; systematic literature review

1. INTRODUCTION

The management literature increasingly refers to the phenomenon of simultaneous cooperation and competition as “coopetition” (Bengtsson & Kock, 1999, 2000; Bonel & Rocco, 2007; Brandenburger & Nalebuff, 1996; Eriksson, 2008a; Ghobadi & D’Ambra, 2012; Gnyawali, He, & Madhavan, 2006; Lado, Boyd, & Hanlon, 1997). The rise of coopetition reflects an increasing awareness of the complexity of relations between economic agents. The combination of the seemingly contradictory “operating modes” of competitive and cooperative relations (Bunge, 1979) has inspired its analysis at the inter-firm level (e.g., Gnyawali & Park, 2009; Kylänen & Rusko, 2011), the intra-firm level (e.g., Luo, Slotegraaf, & Pan, 2006; Luo, 2005), and the network level (e.g., Gnyawali et al., 2006; Peng & Bourne, 2009).

Coopetition scholars have focused on developing its ontological foundations (e.g., Chen, 2008; Luo, 2004; Yami, Castaldo, Dagnino, Le Roy, & Czakon, 2010), the conditions for its formation (e.g., Brandes, Brege, Brehmer, & Lilliecreutz, 2007; Mariani, 2007), its underlying processes (e.g., Bengtsson & Kock, 1999; de Rond & Bouchikhi, 2004), and its outcomes (e.g., Luo, Rindfleisch, & Tse, 2007; Luo et al., 2006). They have done so by using a variety of research methodologies. On the one hand, many studies have been conceptual or exploratory in nature and have often examined single cases in order to provide an initial conceptual basis (e.g., Cassiman, Di Guardo, & Valentini, 2009; Mariani, 2007). On the other hand, quantitative studies have begun to investigate correlations between distinct coopetitive relationship variables, including, for example, the effects of partner characteristics on efficiency (Li, Liu, & Liu, 2011), the effects of cross-functionality on firm performance (Luo et al., 2006), the influence of tensions on outcomes (Bello, Katsikeas, & Robson, 2010), and value creation (Kumar, 2010).

However, while extant contributions offer valuable accounts and facets of coopetition, they are characterized by a high degree of terminological, conceptual, and explanatory heterogeneity, which hinders research progress. Scholars have already called for a coherent, synthesizing conceptualization of this multidimensional construct (e.g., Bengtsson, Eriksson, & Wincent, 2010; Gnyawali et al., 2006; Gnyawali & Park, 2011; Ketchen, Snow, & Hoover, 2004; Zeng, 2003).

Only few efforts have been undertaken to answer this call (Bengtsson & Kock, 2014; Chin, Chan, & Lam, 2008; Stein, 2010; Walley, 2007). While these studies offer valuable overviews and research suggestions, they also leave substantial opportunities to further consolidate and extend our knowledge and understanding of coopetition and its research potentials. On the one hand, this is due to their publication date a few years back as coopetition research has been burgeoning and is remarkably productive. On the other hand, these reviews are not (and do not claim to be) comprehensive as they follow a traditional review approach which is often described as less transparent (i.e. risk of being biased) since the article selection is strongly dependent on the perspective of the author(s) (Davies, 2000; Torgerson, 2003; Tranfield, Denyer, & Smart, 2003). This approach can pose challenges for future research efforts, especially in such fields where a widely acknowledged theory base and terminology is still not settled. We therefore suggest that a systematic review approach is valuable for coopetition research as it is more transparent in literature selection, allows accommodating the field’s inherent heterogeneity and is conducive for deriving a well-grounded research agenda for the coopetition field.

The aim of this review is therefore to systematically gather, analyze, and synthesize coopetition contributions in the management literature in a way that facilitates further research and supports management practice. We build a phase model of the existing

literature that will enable us to structure coopetition research in terms of its antecedents, and the following three coopetition phases: initiation, managing and shaping, and evaluation phase. On the basis of this in-depth review we develop a comprehensive synthesis (Petticrew & Roberts, 2006; Torgerson, 2003) in the form of a conceptual map that highlights five multilevel research areas: (1) nature of the relationship, (2) governance and management, (3) output of the relationship, (4) actor characteristics, and (5) environmental characteristics. For each of these areas the major research themes are identified, allowing the authors to suggest future research avenues.

2. COOPETITION – DEFINITION AND SCOPE

The concept of coopetition attained popularity in game theory and was subsequently championed in strategic management by Brandenburger and Nalebuff (1996). Their book “Co-opetition” suggested that managers overcome traditional competitive thinking by cooperating with competitors in order to create value.

Coopetition is intriguing as it combines two ways of interaction that usually involve strongly opposing logics. Scientific philosopher Mario Bunge, for example, pinpointed the conceptual similarity but fundamental difference of cooperation and competition based on a definition that contains the three elements: actors, activity, and mode. Whereas cooperation is the performance of an activity in a way that the actions undertaken by one actor deliberately facilitate the actions undertaken by the other (that is, Cooperation=<Actors, Activity, Mode>, with Mode=“facilitating”), competition operates when the actions undertaken by one partner hinder the actions by the other (that is, Competition=<Actors, Activity, Mode>, with Mode=“hindering”) (Bunge, 1989, p. 344). In this sense, it is “only” the mode (or the logic) that differentiates cooperation from competition, but does so in a very profound way.

The risks inherent in applying cooperation and competition simultaneously have been widely acknowledged. For instance, in the alliance literature cooperation and competition were traditionally seen as “opposing forces” within cooperative arrangements (Das & Teng, 2000b, p. 85) so that competitive facets in a cooperative business relationship are often regarded as potentially harmful and need to be reduced (Child, Faulkner, & Tallman, 2005; Das & Teng, 1997, 2000b; Dyer & Singh, 1998; Hennart, 2006; Pearce, 2001). By contrast, the emerging coopetition perspective tries to integrate the two paradoxical logics into a common construct (e.g. Bengtsson et al., 2010; Chen, 2008). The emerging perspective is to depict cooperation and competition on two separate continua allowing to distinguish between different forms of coopetition with varying combinations of low to high cooperation and competition respectively (Lado et al., 1997; Luo, 2007; Park, Srivastava, & Gnyawali, 2014a; Raza-Ullah, Bengtsson, & Kock, 2014). This understanding is also reflected in one of the most popular definitions of coopetition, offered by Bengtsson and Kock, who described it as, “a relationship simultaneously containing elements of both cooperation and competition” (1999, p. 178).

Concrete, distinct coopetition forms that go beyond such foundational accounts are reflected in the strategic management literature. The concept found substantial resonance on all levels of analysis (individual, intra-firm, inter-firm and network) within organizational and management research. Simultaneous cooperation and competition on the *individual level* can facilitate innovation and creativity within teams as several studies show (e.g., Baruch & Lin, 2012; Hutter, Hautz, Füller, Mueller, & Matzler, 2011). Most of these studies address complex psychological processes or mechanisms which are starting when individuals are expected to cooperate with their team members while simultaneously each member is

incentivized to increase individual performance (e.g., Lin, Wang, Tsai, & Hsu, 2010; Mooradian, Renzl, & Matzler, 2006). At the *intra-firm level*, scholars have studied, for example, the effect of competition for “parent resources, corporate support, power delegation, market expansion, and global position” (Luo, 2005, p. 73) and the simultaneous need for cooperation between the subunits (e.g., Ritala, Välimäki, Blomqvist, & Henttonen, 2009; Rossi & Warglien, 2009). At the *inter-firm level*, some contributions have dealt with firms that cooperate despite being on the same value chain level and in the same industry (i.e. direct competitors) (e.g., Bengtsson & Kock, 1999, 2000a; Burgers, Cromartie, & Ronnie, 1998; Daidj & Jung, 2011; Krajewska, Kopfer, Laporte, Ropke, & Zaccour, 2008; Kumar, 2010; Luo et al., 2007; Lydeka & Adomavičius, 2007), while others have studied partners within a supply chain (Bakshi & Kleindorfer, 2009; Eriksson, 2008a; Lacoste, 2012; Pellegrin-Boucher, Le Roy, & Gurău, 2013; Zerbini & Castaldo, 2007). *Network-level* studies have tried to explain competitive behavior within a cooperative network structure (intra-network) (Gnyawali et al., 2006) as well as competition and cooperation between networks (inter-network) (Peng & Bourne, 2009).

Overall, coopetition is broad enough a concept to carry meaning across the salient organizational and strategy levels of analysis and therefore is a highly popular and prominent research topic. However, despite the similarity in the underlying phenomenon, terminology, definitions and findings from studies on one level of analysis have rarely found their way into coopetition studies on another level of analysis hindering to develop, or build upon a coherent understanding, or even theory. Also, for those interested in the current knowledge on coopetition, a search that focuses merely on studies that use the term coopetition would underestimate the current state of knowledge due to the substantial heterogeneity in terminologies employed. A literature review across multiple levels with a broad terminological approach is conducive to create an integrated picture of coopetition research.

3. REVIEW APPROACH

We conducted a systematic literature review on coopetition starting with a broad based search to ensure that we include a wide spectrum of potentially relevant literature that we then systematically assessed (see Figure 1).

 Insert Figure 1 about here

Our review procedure follows the suggestions of Davies (2000), Torgerson (2003), and Tranfield et al. (2003). One advantage of a systematic review consists in its enhanced rigor: The method allows to answer a specific research question (for example through data extraction forms where specific information is documented during the review process) with independent assessors discussing the single steps of inclusion and exclusion as well as the overall systematization to minimize bias (Tranfield et al., 2003). Moreover, transparency is created through the provision of single steps that can be potentially replicated by any other researcher (Tranfield et al., 2003).

We searched for publications in three widely used academic databases (*ABI/INFORM*, *EBSCO*, *SSCI/Web of Science*). We chose a timeframe of 23 years (1992–2014): Brandenburger and Nalebuff’s path breaking contribution was published in 1996 and we included four edge years. We looked for articles with titles, abstracts, or subjects containing the term “*co(-)opet**”; In order to account for the terminological heterogeneity in the field,

i.e. to also include those studies that do not use the term but implicitly deal with the concept, we also looked for combinations of the terms “*co(-)oper**” and “*compet**”. The search was complemented with a separate query on the websites of the top ten management journals (for example, *Academy of Management Review*, *Journal of Management Studies*, or *Organization Science*) as ranked by the *Web of Science (2014 JCR Social Science Edition)* within the categories of business and management.

The more than 2,500 results were assessed in four consecutive steps. First, we eliminated duplicates and database artifacts that did not constitute research articles, such as notifications of journal special issues or brochures; this step left 1,931 articles for further review. In the second step, we screened the journal titles and removed those that were not relevant for our purpose (e.g., technical and engineering journals, such as *Computer Security*, or such journals with a medical, physics or biology focus like *Solar Physics*, *Journal of Forest Research* or *Health Affairs*); this reduced the article pool to 1,575. The third step involved analyzing the article titles and abstracts and eliminating those that did not fit the focus. For instance, the search captured many articles that referred to public policies and tax competition between countries, which were excluded. Additionally, the management perspective meant that many of the studies related to physical and infrastructure research areas such as telecommunications policy, and computer science, were excluded from further investigation. For example, the terms cooperation and competition frequently appeared in the context of legal analyses concerning competition law - a perspective that we considered not relevant for our focus. We then read the full texts of the remaining 452 articles and analyzed them with regard to their research question, study design, and findings. Upon reading the full texts and considering especially their research question and study approach, we still eliminated several articles that could not be usefully related to our organization-centered coopetition understanding. For example, we excluded papers that examine supply chain partners aiming to improve their competitive position through intensified cooperation because of the missing competitive facets within these relationships. Other articles had a primary psychological focus in analyzing competition between team members (for instance with regard to the impact of different facial expressions), even though these teams were studied in an organizational context. This in-depth screening left 148 relevant articles.

The articles in the final pool were systematically captured in a table according to the following criteria: problem and research question(s) of the article, terminology (coopetition or synonyms), theoretical perspective(s), level of analysis (inter-firm, intra-firm, or network level), antecedents of coopetition, and coopetition phases (initiation, managing and shaping, evaluation), methodology, industry, findings, and recommendations for future research. Screening all of the article references led to adding relevant books to the literature pool (Wassmer, 2010). To reduce bias, the selection was always carried out by researchers in pairs, with regular reviews and discussions among the full author team (see e.g., Petticrew & Roberts, 2006). The final set of 169 identified contributions consisted of 148 articles published in 98 journals, one entire book, and 20 book chapters.

The literature search found more empirical articles (59 percent) than conceptual articles (36 percent). Two-thirds of the empirical studies were qualitative studies that mostly employed case study research, while only the remaining one-third employed quantitative methods (see Figure 2). Most of the quantitative articles were published within the last decade. The remainder was a few essays on coopetition, which are—inter alia—important to integrate the practitioners’ perspectives into our synthesis. Only four literature reviews were found, none of which claimed to be comprehensive or systematic.

 Insert Figure 2 about here

The distribution of the articles over time shows that interest increased rapidly since the early 1990s (see Figure 3). In the decade between 1993 and 2003, 28 articles were published, compared to 137 between 2004 and 2014. The vast majority of studies addressed the inter-firm level (80 percent), followed by the network level (12 percent) and the intra-firm level (5 percent). Out of the studies that take a network level perspective, 70% have been published in the past few years (i.e. 2012-2014).

 Insert Figure 3 about here

4. THE COOPETITION LITERATURE ALONG A PHASE MODEL

We organize our results along a cooperative relations phase model. There were three reasons for doing this. First, in analogy to many other organizational phenomena such as alliances, research attention tends to follow a lifecycle pattern of the phenomena under investigation. According to the articles we identified, cooperation is no exception in this respect. Second, it has frequently been emphasized that the interdependencies between cooperation stages should be further investigated (Bello et al., 2010; Bengtsson et al., 2010; Das & Teng, 1997). Third, a phase model does not compromise to integrate different levels of analysis (see Table 1). All of these levels and dimensions can be seamlessly integrated into the subsequent framework. Therefore, as displayed in Table 1, the study has differentiated (1) antecedents for cooperation, and the following three cooperation phases: (2) initiation, (3) managing and shaping, and (4) evaluation phase. As most of the studies deal with the inter-firm level, our research overview begins there.

 Insert Table 1 about here

4.1. Inter-firm Level

4.1.1. Antecedents of Cooperation

The antecedents reflect the specific conditions under which cooperation is likely to emerge, that is, the specific industry setting, the degree of competition, or the lifecycle stage of the relevant market. Studies from our pool explored manifold settings under which cooperative relationships arise.

Inter-firm cooperation antecedents can be differentiated into (a) market conditions, including external circumstances such as environmental aspects, regulatory bodies, and laws; (b) dyadic aspects comprising relationship-specific factors between the competing entities; and (c) individual aspects that encompass factors specific to one of the involved entities and determine their willingness, likelihood, or capability to enter cooperation.

Market conditions. The study settings subsumed under market conditions comprise industry properties and industry dynamics (e.g., Chetty & Michailova, 2011; Harfield, 1999; Kotzab & Teller, 2003; Lai, Su, Weng, & Chen, 2007; Luo et al., 2006; Padula & Dagnino, 2007). Dowling, Roering, Carlin, and Wisniewski (1996) proposed a wide set of circumstances under which cooperation (they used the term “multifaceted relationships”) is likely to occur,

including consolidated industries, global industries, regulated industries, and munificent environments. Various theoretical perspectives are used to explain the role of market conditions as antecedents for coopetition. The general idea of the industrial organization approach (Burgers et al., 1998) is used to explain the strategic motivation to form alliances between competitors. Moreover, the transaction cost paradigm is frequently used to explain why firms use hybrid forms for their transactions (see e.g., Dowling et al., 1996). Another research perspective underpinning the market conditions is the game theoretic approach (e.g. Brandenburger & Nalebuff, 1996; Gnyawali & Park, 2011, 2009) explaining the most efficient ways of interacting between competing parties.

In addition to this comprehensive view, the studies in our pool research different typical industry settings that exert influence on the emergence of coopetition. For instance, high-technology environments are characterized by relatively high R&D expenses, short product lifecycles, and the combination of different technologies, which puts pressure on firms to react and adapt quickly and flexibly with high investments. Many firms that are confronted with such pressures are driven to partner with even their fiercest competitors (e.g., Bouncken & Fredrich, 2012; Gnyawali & Park, 2011, 2009). Other studies have examined more general contexts and showed the crucial nature of the degrees to which rapid change and competitiveness are present. For instance, coopetition is investigated in highly dynamic and competitive markets (e.g., Padula & Dagnino, 2007).

Another relevant antecedent for inter-firm coopetition is presented by the lifecycle stage of the market. It is reported that in mature industries which are generally characterized by a high need to reduce costs, to achieve economies of scale, and to penetrate existing distribution channels coopetition is likely to emerge (e.g., Bengtsson et al., 2010; Bonel & Rocco, 2007; Gnyawali et al., 2006; Lechner & Dowling, 2003; Zhang, Shu, Jiang, & Malter, 2010). Instead of trying to eliminate competitors, firms have tended to cooperate with them to avoid jeopardizing the continuance of the market (Harfield, 1999).

Interestingly, coopetition is also likely to occur in an early market lifecycle stage; for example, if there is a need for rapid standard-setting (Gnyawali & Park, 2011; Oshri & Weeber, 2006). Therefore, coopetition seems more likely to occur in industries that are at a very early or mature stage of the market lifecycle.

Regulatory bodies or laws present another coopetition antecedent. Their external influence could either hinder or favor the formation of cooperative relationships between firms (e.g., Dowling et al., 1996; Givoni & Banister, 2006; Kylänen & Rusko, 2011; Mariani, 2007). In some cases, governmental bodies have “forced” competitors to work together, e.g. to create purchasing efficiencies and to ensure efficient resource use when it implies an increase of economic welfare (Mariani, 2007). On the contrary, laws can hinder competitors to cooperate for example, in terms of anti-trust (Burgers et al., 1998). Thus, the domestic setting of a firm plays a major role.

Dyadic factors. Other studies have focused on properties of the relationship between firms that are crucial for coopetition to emerge (Barretta, 2008; Cheng, Yeh, & Tu, 2008; Ngowi & Pienaar, 2005; Osarenkhoe, 2010; von Friedrichs Grängsjö & Gummeson, 2006); such aspects are known as dyadic factors (see also: Gnyawali & Park, 2009; Gulati, 1998). One prominent factor is the resource endowment among competitors, which induces coopetition if it is similar (e.g., Gnyawali & Park, 2009). Several contributions explaining the motivation for entering cooperative relationships refer to resource dependence theory and the resource based view (e.g., Luo, 2004). Mutual trust building activities between the parties (Ngowi & Pienaar, 2005; White, 2005) show the commitment to the partnership and counterbalance the inherent risk of opportunistic behavior (e.g., Das & Teng, 2000b). The power ratio between

firms is also considered relevant as a dyadic factor for entering coopetition. Da Costa, Bottura, Boaventura, & Fischmann (2009) elaborate different scenarios of balanced and unbalanced power relations which depend on the individual actors' competitive posture (e.g., either strong or either weak self-perception). Based on this, they propose different types of economic games which can be played and calculated. Dyadic factors are closely linked to the aforementioned market conditions; as Gnyawali & Park (2011) noted, extant cooperative ties between competitors tend to increase the number of coopetitive relationships among other firms in the industry. The establishment of a cooperative agreement between competitors is forcing other rivals to respond in order to secure their competitive position in the market.

Individual factors. Apart from the market conditions and factors on the dyadic level, other contributions highlight individual aspects of the entity under study (e.g., Eriksson, 2008b; Gnyawali & Park, 2009; Lydeka & Adomavičius, 2007; Schiavone & Simoni, 2011). Gnyawali & Park (2009) for example, examined firm-specific factors that determine coopetition in the SME context, including resource endowment, goal characteristics, the capabilities, strategy formulation, and the perceived vulnerability of a single firm. They state that firms aim at gaining bargaining power through cooperating with competitors for example because it might enhance their knowledge base. Schiavone and Simoni (2011) suggested that the firms' prior experience with cooperation is a crucial factor that influences whether it will enter a relationship and how the relationship will be set up.

4.1.2. Initiation phase

The studies we attributed to the initiation phase contain aspects that deal with the creation of conditions that enable the functioning of coopetition and reduce the potential for problems inherent in coopetition. The initiation phase comprises studies that investigate the structural and instrumental options for forming coopetition. On an inter-firm level, three major aspects regarding the initiation of coopetition can be identified: (a) The form of the "coopetition agreement" that is chosen by the partners, (b) the establishment of a "structural coopetition design", and (c) the relational mechanisms and routines that are installed.

Agreement form. Coopetition combines cooperation and competition and it often does so on the basis of an agreement. Yet, it is usually only the cooperation side that is covered in a formal agreement; with competition rather a residual. This is why Bengtsson and Kock (1999), state that coopetition can only be formalized to a certain extent, because cooperation mostly follows fixed formal rules, whereas competition follows norms or social contracts. Hence, "coopetition agreements" can be based on formal agreements with regard to the cooperative aspects of the relationship and informal norms concerning the competitive aspects (Bengtsson & Kock, 1999, 2000; Ganguli, 2007). Formal agreements are recommended when a firm has a weaker position (for example, with respect to its resource endowment) than the competitor with whom it intends to cooperate (Ganguli, 2007). The comparatively high risks in coopetitive relationships make formal agreements or contracts attractive. A broad-based study within a high-tech environment by Hung and Chang (2012) supports the importance of formal safeguarding by highlighting that contractual agreements appeared to be the most appropriate governance form for a technology coopetition relationship, as they have been chosen by the firms over Joint Ventures. The reason for this might be, that a contract provides certainty and protection, but leaves room for adaptation. Tighter relationships as presented by Joint Ventures might have been avoided to prevent the competitive risks. In sum, in the context of coopetition, studies have underpinned that formal agreements such as contracts (as opposed to informal arrangements) are crucial in order to prevent opportunistic behavior (e.g., Bonel & Rocco, 2007; Luo, 2007; Lydeka & Adomavičius, 2007; Wang & Krakover, 2008) but at the same time, for certain situations,

firms would tend to avoid very strong ties as presented by Joint Ventures. In this sense, coopetition studies emphasize the cooperation side and are hence, close to and consistent with the broader 'pure' cooperation literature.

Structural design. It has been argued that the setup of a formal organizational structure is needed for a stable coopetition relationship (e.g., Das & Teng, 1997; Dowling et al., 1996; Luo & Rui, 2009; Zeng, 2003). First, a structural setup is necessary in order to provide a basis for cooperative relationships to work. Second, an organizational structure should mitigate inter-partner competition (Faems, Janssens, & Van Looy, 2010), which presents a risk due to potential learning races between partners that might be motivated to outperform each other (Hamel, 1991; Khanna, Gulati, & Nohria, 1998), or when the firms compete in terms of their products or market share (Das & Teng, 2000a). Faems et al. (2010) offered managerial solutions for these issues in the context of R&D alliances by recommending that partner-specific domains be assigned in terms of tasks, knowledge, and commercial aspects. According to that study, the appropriate contractually defined structural setup mitigates the risk of competition and facilitates collaboration (Faems et al., 2010). Another structural perspective refers to the allocation of functions that are involved in coopetition, presenting two basic options. The interactions between the competitors can either be centralized, possibly via a dedicated function, to optimize information processing and sharing, or structurally separated in order to prevent knowledge transfer to the competitor (Bengtsson & Kock, 2000; Yong, Wei, Yin, & Bo, 2014; Zeng, 2003). Regarding the former, the presence of a dedicated alliance function and an internally communicated alliance strategy of a firm in a cooperative relationship tends to increase the outcome of coopetition, as measured in terms of innovativeness and overall success (Bouncken & Fredrich, 2012). Regarding the latter, a strict separation of competing (involving e.g. strategic learning activities) and cooperating (e.g. operational areas) organizational parts within an alliance is suggested (Das & Teng, 1997). The separation of competitive and cooperative activities can also follow the proximity of each activity to the customer. Thus, for downstream activities stronger separation is suggested, whereas upstream activities are said to require a closer integration of competitive and cooperative activities (Bengtsson & Kock, 2000; Lim, Chesbrough, & Ruan, 2010). However, the literature still lacks clear recommendations for managers regarding the choice of one of these options. From a supply chain perspective, the setup of different control mechanisms, such as output, processes, and social control mechanisms specific to a cooperative relationship between a buyer and his client (Eriksson, 2008b), is crucial.

Relational mechanisms and routines. Besides the structural features, it is frequently reported that routines and mechanisms should be introduced by the partnering competitors to handle the complexity of the relationship (e.g., Eriksson, 2010; Tsai, 2002; Zeng, 2003). Faems et al. (2010) state that such relational mechanisms are important in order to facilitate cooperative actions among the partners. Concrete recommendations are given by Eriksson (2010), who proposed a wide set of activities, such as regular workshops, teambuilding events, and incentives. However, this study is confined to the construction industry. Studies that deal with inter-firm coopetition in a supply chain examine the effect that incentive policies have on relationships between suppliers and buyers (e.g., Gurnani, Erkoc, & Luo, 2007).

4.1.3. Managing and shaping phase

When a relationship has been established, it must be managed and potentially reshaped. Scholars have investigated the behavioral and relational dynamics that occur, and also deliberate approaches to balance competition and cooperation. Three main aspects of the literature were attributed to this stage: (a) the establishment and maintenance of a balance

between competition and cooperation, (b) the dynamics that occur during a coopetitive relationship and (c) the ways of managing tension and conflict.

Balancing competition and cooperation. It is often argued that an optimal combination of competitive and cooperative forces exist in a relationship. If that state is reached, the relationship is called balanced (Barretta, 2008; Bengtsson & Kock, 2000; Cassiman et al., 2009; Das & Teng, 2000b, 1997; Osarenkhoe, 2010; Peng & Bourne, 2009; Quintana-García & Benavides-Velasco, 2004; Song & Lee, 2012; van Wegberg, 2004). As the two logics of cooperation and competition are conflicting, the conflict is even aggravated when either cooperation or competition are dominating within a relationship (Park et al., 2014). However, little has been said about how the optimal balance is defined and how such a balance can be achieved. Park et al. (2014) develop a coopetition typology with varying levels of cooperation and competition from weak to strong. They find that “balanced-strong coopetition” (i.e. strong cooperation and strong competition) enhances firms’ innovative coopetition performance. Strong competition urges firms to innovate while strong cooperation stimulates knowledge sharing which is necessary to innovate. Park, Srivastava, & Gnyawali (2014b) report that an optimal coopetition balance to create innovation might consist in moderately high competition and high cooperation. They recommend that managers should be aware of the competitive and cooperative forces in order to keep them balanced. Barretta (2008) examined coopetition in the healthcare sector and concluded that governmental bodies should intervene and achieve a necessary balance. Cassiman et al. (2009) proposed three aspects conducive to a balance in R&D, namely, the distinct project content, its governance structure, and partner selection. Nonetheless, the extant literature provides few insights into how managers can achieve and maintain an appropriate balance over time, although the importance of this aspect is often acknowledged (see e.g., Bell, den Ouden, & Ziggers, 2006). For instance, Faems et al. (2010) observed that firms tend to pay close attention to adjusting structural and relational governance mechanisms in the execution phase in order to maintain a cooperation and competition balance. To answer the prevalent critique to static approaches in the alliance literature de Rond and Bouchikhi (2004) introduce a temporal component and examine the sequences of cooperation and competition and how competitive phases can be overcome by setting mutual goals. They refer to dialectical process theory (see also Van de Ven & Poole, 1995) detecting dialectical tensions that affect the degree to which cooperation can be increased but at the same time the risk of competition can be mitigated. In a similar vein, Lechner, Dowling, and Welp (2006) apply social network theory and the structural embeddedness perspective to investigate firms’ relational mix (by which they mean the role a single firm can play within different networks) and its implications. Another relatively recent perspective is looking at coopetitive alliance-portfolio management capabilities. For example, in the SME context, Bengtsson and Johansson (2012) developed a model showing that SME in fast-paced industries working together with large competitors have to balance cooperation and competition by maintaining their flexibility in order to stay independent.

Dynamics over time. Recent studies have addressed the issue of how coopetitive relations change over time. Dahl (2014) acknowledges that a coopetitive relationship has been built in a distinctive way as a result of former expectations of the involved parties. Operating the relationship over time changes these expectations, since learning takes place and firms might make contrary experiences. The study thus conceptually builds a framework illustrating that existing goals and rules of coopetition can be reformulated through external changes influencing the parties and/or experiences made in (other) inter-organizational relations. Additionally, it was shown that dynamics are caused by the interplay of competitive and cooperative parts of relationships. As for example cooperation might increase the relative

market power of one firm this in turn intensifies competition (Peng, Pike, Yang, & Roos, 2012). Ritala and Tidström (2014) examine coopetition within a multilateral alliance and show how firms' behaviors can change over time. Their findings suggest that firms can change their behavior from rather cooperative to rather competitive while others loose interest and lower their input towards the relationship. The study concludes that managers should therefore pay close attention to the single firms' intentions within a multipartner coopetitive relationship.

Managing tension and conflict. There is great potential for tensions and conflict inherent in coopetition due to the conflicting logics of competition (that is, hindering the other; each firm wishing to maximize its own outcome) and cooperation (that is, helping the other; maximizing the joint outcome) (Bello et al., 2010; Bunge, 1989; Das & Teng, 2000b). Therefore, a prominent aspect of the studies we identified is presented by managing tensions and conflicts (Bello et al., 2010; Lacomba, Lagos, & Neugebauer, 2011; Lydeka & Adomavičius, 2007; Tidström, 2009). Both issues can endanger the relationship's success and influence activities and processes within coopetition (Chen, 2008; Czakon, 2009, 2010; Ding, Huang, & Liu, 2012; Khanna et al., 1998). First of all, studies have examined different sources of conflict in coopetition. Tidström (2009) presents an overview of the potential sources of such conflicts, including a history among rivals, or different strategic goals. Moreover, researchers have pointed out that competition and cooperation are paradoxical forces causing ambivalent emotions within organizations (Raza-Ullah et al., 2014). Fernandez, Le Roy, and Gnyawali (2014) identify two additional sources of conflict on the inter-firm level, namely the dilemma of common value creation and individual value appropriation and the risk of knowledge leakage.

Studies in our pool have then also addressed ways of conflict avoidance or conflict resolution. A possible way is related to certain managerial abilities or attitudes; for example, managers should be aware of differences between the partners and accept them by adopting a long-term perspective and employing a direct communication style (de Rond & Bouchikhi, 2004; Tidström, 2009). Another way of overcoming conflict and tension is related to dyadic or relational issues. Ding et al. (2012) proposed that, especially in cooperation among competitors, it is crucial to develop trust due to knowledge protection issues (see also Chin et al., 2008; Nielsen & Nielsen, 2009). They further advocated open learning to strengthen trust in the firms' competences. Additionally, a prominent aspect in the literature is the question of either integration or separation of cooperative and competitive tasks (e.g., Bengtsson & Kock, 2000a). Kylänen and Rusko (2011) suggested that action separation at the operational and strategic levels is crucial for coopetition (see also Brandes et al., 2007). Fernandez et al. (2014) suggest that a mixed approach of integration (with regard to balancing inter-organizational tensions occurring through coopetition) and separation (with regard to a dedicated team built up by the partners). This principle might help to ensure that teams can focus on coopetition while the company is enabled to draw the attention on competition at the same time. Lacoste (2012) investigated how the tensions could be managed on a vertical level by analyzing key account managers' behavior.

Overall, most of the research in this phase has focused on coopetition as a complex construct or as the source of tension in strategic alliances between competitors (e.g., Das & Teng, 2000b; Dussauge & Garrette, 1997; Khanna et al., 1998). Only a few studies have concentrated explicitly on how rivals can efficiently manage this relationship (e.g., Bengtsson & Kock, 2000a; Dowling et al., 1996; Gnyawali & Madhavan, 2001).

4.1.4. Evaluation phase

Contributions that we attributed to the evaluation phase are concerned with assessing the outcome of coopetition; for example, the financial outcome for the entities created through coopetition, or the value created for the consumer (e.g., Bonel & Rocco, 2007; Bourreau & Doğan, 2010; Dussauge & Garrette, 1997; Kumar, 2010; Okura, 2007; Ritala, 2012).

Research into inter-firm coopetition outcomes emphasizes two different dimensions: (a) the firm characteristics, which cover the involved parties, and (b) the industry characteristics; that is, the extent to which value for the entire industry can be created and its structure influenced (e.g., Bakshi & Kleindorfer, 2009; Barnett, 2006; Lacomba et al., 2011).

Firm characteristics. Regarding the firm level, researchers found that coopetition can change the internal processes and structures of a firm (e.g., Bonel & Rocco, 2007). Peng et al. (2012) find that coopetition can increase the performance and that it allows companies to attain their goals faster. Also, a firm's internal processes and structures could change as a result of coopetition (Mariani, 2007). The reason for this is that firms emphasize becoming complementary to the competitors with which they cooperate, and adapt certain structures and processes accordingly. For instance, Bonel and Rocco (2007) described changes encompassing product development activities, production, and distribution adopting the perspective of creating complementarities and synergies. These changes can also address the firms' capabilities. Another impact of coopetition on firm characteristics is presented in innovation capabilities. Several studies have investigated the positive effect of coopetition on firms' capacities to innovate (see e.g., Bouncken & Fredrich, 2012; Quintana-García & Benavides-Velasco, 2004). However, in order to achieve innovation firms need to exhibit high absorptive capacities and appropriability regimes to protect their internal knowledge (Ritala & Hurmelinna-Laukkanen, 2013).

Furthermore, entering alliances with competitors could have a positive financial outcome (e.g., Brandenburger & Nalebuff, 1996; Kumar, 2010; Luo et al., 2007, 2006). However, the financial outcome for firms involved in coopetition has only been studied in specific situations, which means that a general assessment cannot be given and more in-depth, cross-industry studies should be conducted (Ritala, 2012).

Also on a vertical level coopetition seems to positively impact the outcome for the firms as it allows diminishing the drawbacks of competition among channel members (Kim, Kim, Pae, & Yip, 2013). In other words, the benefits (e.g., exploiting complementary resources, sharing common knowledge) tend to outweigh the occurring cost (e.g., relation-specific transaction cost) of coopetition within a supply chain relationships (Liu, Luo, Yang, & Maksimov, 2014). However, research on supply chain level coopetition, e.g. in the form of buyer-supplier relationships, has emerged recently and more studies in the same direction are needed.

Industry characteristics. A commonly noted advantage of coopetition is increased consumer value (Brandenburger & Nalebuff, 1996; Kotzab & Teller, 2003). Moreover, coopetition itself can exert an influence on the market structure. For example, when competitors start combining their capabilities and resources, this can place pressure on other actors to also cooperate to strengthen their positions (Walley, 2007). Ritala, Golnam, and Wegmann (2014) found in their study on Amazon that employing a coopetition strategy improves a firm's competitive position which in this individual case has influenced competitive behavior within the entire industry. There is also statistical support for alliances between rival firms tending to increase an industry's competitive intensity (Dussauge & Garrette, 1997).

The impact of coopetition on innovation within industries has been a major research theme. These findings, however, are not consistent throughout. It is shown that coopetition can increase incremental and radical innovation (Bouncken & Fredrich, 2012). However, in another context, coopetition is only beneficial to incremental instead of radical technological innovation which is explained by the similar resource endowments of competitors; Radical business-model innovation, though, seems to be encouraged by coopetition, because firms might seek differentiation from their competitors (Ritala & Sainio, 2014). With regard to revolutionary innovation, coopetition has not shown to be an appropriate strategy to implement groundbreaking innovation as the inherent risks (e.g. of opportunism) might prevent firms from investing the necessary high degree of their resources (Bouncken & Kraus, 2013). Interestingly, there is also evidence that coopetition negatively influences innovation since “excessive” forms of cooperation can be hampering to innovation due to the danger of opportunism (Wu, 2014).

4.2. Intra-firm Level

Whereas the pure cooperative perspective on the intra-firm level (e.g., Shortell & Zajac, 1988; Zajac, Golden, & Shortell, 1991) has lost some of its steam, and the pure competitive perspective on the intra-firm level has become an emerging, but still under-researched topic (e.g., Birkinshaw & Lingblad, 2005; Ziss, 2007), the specificities of cooperating and competing simultaneously on the intra-firm level have attracted even less attention (e.g., Ritala et al., 2009; Rossi & Warglien, 2009).

Antecedents of coopetition. In contrast to the inter-firm level, where the initial situation is characterized by competition, the starting point at the intra-firm level is mostly a situation in which subunits, teams, or groups within organizations need to cooperate. The antecedent for coopetition is rooted in the competition between these actors for the parent resources that are necessary to fulfill their tasks (Luo, 2005). However, the contextual circumstances under which coopetition emerges at the intra-firm level have not yet been investigated.

Initiation phase. There is only a limited number of studies that are concerned with the initiation of intra-firm coopetition. These investigate structures and mechanisms enabling knowledge sharing. Tsai (2002) examined the intra-firm knowledge-sharing mechanisms that must be set up to control coopetition knowledge flows. Luo (2005) focused on structural conditions for coopetition on an intra-firm level offering an overview of different mechanisms that can help headquarters initiate and coordinate cooperation between competing units, such as expatriate rotation and technology transfer. As with the inter-firm literature, it has been said that coopetition can be effectively managed when the cooperative and competitive domains are allocated to distinct activities (Ritala, 2009). Cooperative activities between units strengthen knowledge creation and competitive initiatives enhance knowledge utilization.

Managing and shaping phase. The few studies dealing with this topic suggest management measures, such as enforcing joint objectives, communication means, workshops, and conflict resolution techniques (Eriksson, 2010). Other authors have investigated how relationship control and adjustment occurs (e.g., Bengtsson & Kock, 2000a; Ding et al., 2012). However, managing these contradictory activities has not yet been examined and contributions have not gone far beyond claiming to enhance managers' awareness regarding simultaneous competition and cooperation between units (Ritala et al., 2009; Rossi & Warglien, 2009).

Evaluation phase. Of the few aspects of intra-firm level coopetition that has spurred researchers' interest is the relation of internal coopetition and firm performance. It is shown that coopetition influences performance-enhancing factors such as the abilities and willingness to share knowledge, task orientation, and inter-personal relationships (Ghobadi & D'Ambra, 2012). In a similar vein, an application of the social embeddedness framework including the notion of the influence of weaker and stronger ties (Granovetter, 1985; Uzzi, 1997), it is examined that cross-functional coopetition comprising an optimal balance or combination of weak and strong ties between units could enhance a firm's performance (Luo et al., 2006). Ritala et al. (2009) developed a theoretical framework detailing the influence that intra-firm coopetition has on firms' ability to innovate.

4.3. Network Level

Studies on a network level have noted that in many industries – for instance in e-commerce, automotive or smartphones – competition and cooperation tend to move from the inter-firm level towards coopetition within and between networks, ecosystems, supply chains and platforms (Parzy & Bogucka, 2014; Ritala et al., 2014). Although, the emergence and increasing importance of this coopetition stream is acknowledged among coopetition scholars, network and alliance researchers' contributions on the network level remain scarce.

Antecedents of coopetition. Only a few of the studies in the article pool are concerned with the network-level coopetition antecedents. According to Peng and Bourne (2009) three features constitute coopetition between inter-organizational networks: complementary resources, compatible network structures, and a balance of competition and cooperation. By contrast, other studies examine the coopetition within networks. Gnyawali et al. (2006) employ a competitive dynamics perspective exploring the roots for network-level coopetition and found that the firms' position within a network – such as whether it is more autonomous or central – influences its competitive action frequency and variety. Using a game theoretic approach Mantena and Saha (2012) aim to understand when cooperation between competing platforms occurs and which the role of technology plays in this setting. By developing a game theoretic model the authors show that platforms cooperate when their technological capabilities are substantially different. On the other hand cooperation is very unlikely when the platforms have nearly identical technological resources.

Initiation phase. To benefit from a cooperative relationship on a network level, it is crucial for firms to know in which form of coopetition is most efficient to engage. This, however, depends on the motives of the partners. If partners seek for industry-wide innovations a multiple coopetition setting with several partners can create more value for the participants instead of dyadic coopetition (Yami & Nemeh, 2014). A structural separation of competitive and cooperative fields between networks is also important when coopetition is initiated (Peng & Bourne, 2009). Similarly, Gnyawali & Madhavan (2001) stated that competitive and cooperative domains tend to be separated within networks.

Managing and shaping phase. Most coopetition studies on the network level are investigating aspects that referred to the management and shaping of cooperative relationships. For instance, competitive actions initiated within a network influence how cooperative networks are shaped over time (Gnyawali et al., 2006; Gnyawali & Madhavan, 2001). Different, but compatible structures of networks engaging in coopetition can facilitate the balance between competitive and cooperative forces among these networks (Peng & Bourne, 2009). Also within business networks tensions need to be balanced. By applying a

longitudinal comparative case study design Tidström (2014) analyzed how tensions in coopetitive business networks can be managed. As a result, different types of tensions in coopetitive business networks have been explored. These tensions need to be managed differently from tensions “in purely cooperative business relationships” (Tidström, 2014, p. 270). Furthermore, the findings revealed that the two main management strategies to cope with coopetitive tensions are competition and avoidance. In a similar vein, Salvendy and Géraudel (2012) pointed to the role of a third party mediating the coopetitive relationships in a business network. In their qualitative study of the aeronautical and aerospace engineering sector they describe two types of third-actors: decision-makers and go-betweens. Decision-makers are acting as the manager of the relationship whereas go-betweens take the role of a mediator between the involved parties. In addition, studies regarding coopetition in supply chain network and supplier networks increased in recent years. Based on a configuration approach Pathak, Wu, and Johnston (2014) examined how coopetitive dynamics can change supply chain networks over time. The authors identify four supply network archetypes and characterize them by firm level tasks, ties, network level objectives and governance. Then, they analyze micro-processes, such as management decisions and their impact on network evolution. It is highlighted that individual decisions can facilitate the change from one archetype to another. Taking the case of a supply chain network in the German dairy industry, Schulze-Ehlers, Steffen, Busch, and Spiller (2014) found that despite the willingness to implement supply chain collaboration tools and measures competition is revealed among the supply chain participants. In order to cooperate effectively in a supply chain network a minimum of common goal understanding is necessary. However, “conflicting goals in terms of value distribution may remain salient” (Schulze-Ehlers et al., 2014, p. 405). Moreover, two studies in this area have explored how a focal firm can use effective coopetitive strategies to gain advantages from their supplier networks. In an embedded qualitative case study Hong and Snell (2013) investigate how a subsidiary of a multinational corporation can use its local supplier network to develop new organizational capabilities. To employ and facilitate new organizational capability development together with its suppliers the subsidiary seeks to balance competition and cooperation in its supplier network. Similarly, the role of coopetition for knowledge co-creation in the Toyota supplier network is examined (Wilhelm & Kohlbacher, 2011). Results show a positive effect of a coopetitive strategy on knowledge creation in the context of multi-technology innovation. However, it is acknowledged that the right balance between competitive and cooperative practices is difficult to discover. The authors mention the need for a high degree of network governance as a solution for this issue.

Evaluation phase. Little research has been conducted on the influence that coopetition has on network outcomes. Burgers et al. (1998) adopted a rather structural perspective by examining how competition within cooperative networks tends to favor the formation of sub-networks, thereby influencing the structure of the market or the network, respectively. Concerning firms operating a network in form of an ecosystem, such as Amazon, it has been found that coopetition strategy substantially contributes to value creation (Ritala et al., 2014). In their literature review Petter, Resende, Andrade Júnior, and Horst (2014) identified 18 critical success factors and their influencing factors which determine the coopetitive performance in horizontal business networks. The results indicate that a good inter-relationship described by trust and commitment accounts for coopetition success. Despite these first efforts our knowledge of the evaluation of coopetition on the network level still remains limited.

5. A SYNTHESIZING FRAMEWORK FOR FUTURE RESEARCH ON COOPETITION

The phases that emerge from the analysis of the extant coopetition literature make it possible to provide a structured overview of the field. In a second step, we analyze these phases for central themes and concepts leading to a conceptual map for future research on coopetition (see, e.g., Wassmer, 2010); this will enable us to integrate all phases and levels into a synthesizing framework and to suggest avenues for future research. The five central research areas that emerge are illustrated in Figure 4: (1) The nature of the relationship, (2) governance and management, (3) the output of the relationship, (4) actor characteristics, and (5) environmental characteristics. We will present each area and its central themes, highlight concepts in which we see potential for further investigations, and suggest concrete ways to address the gaps.

 Insert Figure 4 about here

5.1. Nature of the relationship

Basic relationship goals. This theme is dedicated to the actors' motivation to enter a cooperative relationship, since this could impact all further conditions of the relationship. Our review found that the resource-based view, transaction cost theory, and game theory are the most commonly used methods for explaining actors' motivations. These theoretical scaffolds build important bases for investigating competitors' incentives to work together. However, they all share the underlying assumption that competitors are intrinsically motivated to collaborate. Extant studies have demonstrated that coopetition can also be triggered externally, for example in the case of Mariani's (2007) study of opera houses. We suggest that future research should further investigate the differences between emerging and deliberate coopetition, since the characteristics of the relationship regarding structure, governance, and mechanisms might differ from coopetition as planned action (Mintzberg & Waters, 1985). We also find that studies on the inter-firm level differ fundamentally with regard to whether the relationship goal is explorative or exploitative. Explorative activities are characterized by improvisation, loosely coupled systems, flexibility and creativity, while exploitative activities tend to involve highly coupled systems, routinization and control (Turner, Swart, & Maylor, 2013). These activities, when carried out within the scope of a cooperative relationship, could have a strong impact on all further relationship conditions. Whereas coopetition studies are increasingly investigating explorative relationships, for example with the goal to innovate (Bouncken & Kraus, 2013; Ritala & Sainio, 2014), exploitative relationships are less frequently in focus. Although exploitative coopetition is perceived as having less potential for value creation, and therefore seeming less attractive for competitors to engage in (Yami & Nemeh, 2014), it can be frequently observed in practice (for example, in the industry of logistics service providers (Schmoltzi & Wallenburg, 2011)). Therefore, we recommend closing this gap and expanding our knowledge on the specific determinants of exploitative cooperative relationships on all levels of analysis. In doing so, we suggest that a first step should be to create a conceptual framework for exploitative coopetition, elaborating on its specific characteristics and potentials and risks.

Actor similarities. In order to efficiently work together and realize the expected gains of relationship, it has been argued that actors exhibit similar characteristics with regard to their cultures, structures, or administrative processes (Saxton, 1997). As cooperative relationships bear comparatively high risks and complexities, the similarity of actors might be even more

crucial to prevent clashes and establish an effective working atmosphere. Prior research has also shown that organizational similarity is an antecedent of trust among actors (Bierly & Gallagher, 2007), and this trust serves as an important pillar when working together with a competitor (Baruch & Lin, 2012; Gnyawali et al., 2006; Lui & Ngo, 2005; Lydeka & Adomavičius, 2007). However, only some of the contributions in our review deal explicitly with the similarity of actors in the context of coopetition by claiming that a cultural similarity of the actors is advantageous (Zeng, 2003) and that structural similarity is an important determinant for coopetition (Dussauge, Garrette, & Mitchell, 2000). Since failure of cooperative arrangements is often highlighted in the extant literature, future studies should focus on the effect that different constellations of actors have on coopetition. Hence, we recommend that researchers address more specifically the role of actor similarity for coopetition outcome, as has been done, for example, in the alliance literature (Saxton, 1997).

Number of actors. A fundamental aspect of all further conditions of a relationship is whether two or multiple actors engage in coopetition. Multipartner arrangements involve specific problems, such as coalition building possibilities, higher structural complexity, and partner dynamics (Albers, Schweiger, & Gibb, 2015; Heidl & Phelps, 2010; Lavie, Lechner, & Singh, 2007). The coopetition literature provides only limited knowledge on the impact of multiactor settings, such as in multipartner alliances (Zeng, 2003). This is also reflected in the limited number of contributions we detected for the network level (see chapter 4.3). Considering the increasing relevance of multiactor arrangements, we detect an urgent need to bridge this gap; for example, scholars should look at the specific management requirements for coopetition between multiple actors.

Tensions and conflicts. Tensions and conflicts can arise if actors are involved in conflicting roles or if they have to perform competitive and cooperative activities at the same time; in the current research, tensions are perceived as a natural consequence of competitive relationships that need to be balanced (Tidström, 2009, 2014). However, there is still a lack of research regarding situations in which competitive tensions turn into conflict and how this process can be prevented. Thus, we detect that the coopetition literature is still in an early stage with regard to tensions and conflicts. The few contributions that are dedicated to this topic are mostly concerned with the sources and types of tensions and still lack strategies of tension and conflict resolution specific for coopetition (Fernandez et al., 2014; Raza-Ullah et al., 2014; Tidström, 2014). Thus, in particular, the managing and shaping phase lacks concrete implications. Therefore, we propose that coopetition scholars advance this field and examine how actors try to cope with such issues. One possible way to shed light on this issue could be to investigate successful cases of coopetition, as insights of actual firm practices can present a first step to understanding the potential instruments for mitigating tension and conflict. Additionally, tensions and conflicts may occur across all actor levels, including teams, business units, firms, and networks. Since tensions manifest in individuals, knowledge gained on well-explored levels could be transferred to the uncharted levels.

(Im)balance of cooperation and competition. A balance between competitive and cooperative forces is frequently encouraged in the literature. However, questions of what the optimal balance actually is, and how to achieve and maintain it, remain unanswered. The forces that shape coopetition are manifold since the relationship depends on various factors, such as industry dynamics or competitive interactions over time (Bengtsson et al., 2010). Therefore, it is crucial to first examine the appropriate levels of cooperation and competition. Then, the factors that influence the balance of cooperation and competition, at both the individual and industry level, must be explored in order to create a more comprehensive picture of coopetition dynamics (such as development patterns; see, e.g., Lui & Ngo, 2005).

However, studies that deal with such dynamics often adopt a social network perspective, which means that change and dynamics are described mostly from outside the firm, depicting how coopetition shapes relationships and affects structures in networks (Lechner et al., 2006). Therefore, future research should aim to shed more light on the impact of cooperative dynamics on the focal firm and elaborate on concrete ways of managing coopetition.

Furthermore, from a methodological point of view, our understanding of this issue in coopetition research would be expanded by in-depth longitudinal case studies that examine approaches to balancing the competitive and cooperative forces and, further, how firms deal with the inherent tensions (see also: Zeng & Chen, 2003).

The coopetition literature could also be expanded with extant knowledge from other research fields that have explored how to manage other bipolar constructs. For example, organizational ambidexterity describes how firms can simultaneously pursue exploration and exploitation, which are activities that usually compete in terms of the parents' resources (O'Reilly & Tushman, 2013). Organizational ambidexterity provides structural and motivational implications that could be transferred to the management of coopetition as well, thereby helping to draw new managerial implications (Luo & Rui, 2009; O'Reilly & Tushman, 2013).

On the network level, the dynamics of coopetition are still lacking theoretical foundations under which they could be researched more thoroughly (Schiavone & Simoni, 2011). Some initial contributions have been made in this direction by applying the competitive dynamics approach and social network analysis (e.g., Chi, Holsapple, & Srinivasan, 2007).

Direction of the relationship. Both, vertical and horizontal inter-organizational relationships can be cooperative (Bengtsson & Kock, 2014). The sparse literature on vertical coopetition mainly investigates relationships among buyers and suppliers (Eriksson, 2008a; Liu et al., 2014) or among the members of a supply chain (Wilhelm & Kohlbacher, 2011). In these contributions, coopetition among vertically associated actors is likely to occur when customers may want to fuel competition among suppliers (Lacoste, 2012), or when members of a supply chain compete for the distribution of costs, and the value which is created (Gurnani et al., 2007). Approaches of managing vertical coopetition have only been discussed to a limited extent. Control mechanisms are suggested in this context, involving smart pricing schemes, special contractual provisions (Eriksson, 2008b) or more general incentive structure designs (Gurnani et al., 2007). The literature on vertical coopetition remains comparably narrow with regard to the competitive facet within the relationship: The fundamental conflicts regarding the interests of the involved actors, such as price setting on the different supply chain levels (Gurnani et al., 2007), are so far in the spotlight. This leaves the broader array of the defining 'hindering' actions (Bunge, 1989), through which actors try to leverage their opportunities still to be explored.

5.2. Governance and management

Design parameters. Such parameters for coopetition can consist in agreement forms, structural designs, and sets of relational mechanisms and routines that impact a cooperative relationship (e.g., Faems et al., 2010; Hung & Chang, 2012; Zeng, 2003). The coopetition literature recommends that, with regard to formal arrangements, flexibility seems to be an important parameter for firms (Hung & Chang, 2012; Luo, 2007). However, more light needs to be shed on such formal arrangements' parameters and their implications for the

inter-organizational relationship, since there is a lack of recommendations for managers regarding the different contextual circumstances (Albers, Wohlgezogen, & Zajac, 2013). This will depend on such parameters as the content, the intended duration, and the scope of the relationship. Existing research provides implications of the contextual circumstances that influence the above parameters. Various cooperative arrangements have already been studied by the alliance literature, with scholars finding a variety of contingencies that influence the choice of a distinct cooperative form (e.g., Osborn & Baughn, 1990; Sampson, 2004). Future inter-firm-level research should build on these findings and adapt them to the specific coopetition context. Moreover, contingency and configuration theory might be applied in order to identify possible and effective structural arrangements that accommodate cooperation and competition simultaneously (Albers, 2010; Kale & Singh, 2009).

Additionally, scholars are still divided over the question of whether to integrate or separate competitive and cooperative activities in the scope of a coopetitive relationship, or if combinations of the two principles are preferable (Bengtsson & Kock, 2000; Fernandez et al., 2014; Sun & Anderson, 2010). Therefore, we propose that future research should assess both options; for example, by juxtaposing contrasting cases of firms that deploy integration and separation, respectively.

Coordination of actions. The way actors coordinate different actions in their coopetitive relationship is a key factor in the effectiveness and the relationship outcome. Crucial aspects concerning the coordination of actions are presented in partner-specific task assignment (Bello et al., 2010; Chi et al., 2007), as well as the specialization and formalization of interactions among the actors involved in coopetition (Czakon, 2009; Kylänen & Rusko, 2011; Peng & Bourne, 2009; Tsai, 2002). However, with regard to the day-to-day execution within coopetitive relationships, most extant research seems to focus primarily on the strategic level of coopetition (that is, the establishment of formal rules, guidelines, and structures), thereby ignoring the operational area (e.g., Bonel & Rocco, 2007; Padula & Dagnino, 2007). The dynamic capabilities approach (DCA) (Ambrosini & Bowman, 2009; Teece, Pisano, & Shuen, 1997; Teece, 2007; Vogel & Güttel, 2013) could help to advance our understanding on the management of coopetition. Rooted in the resource-based view, the DCA assumes that “(d)ynamic capabilities are the subset of the competences/capabilities which allow the firm to create new products and processes, and respond to changing market circumstances” (Teece & Pisano, 1994, p. 541). Due to its explicit incorporation of dynamics and change, the DCA could serve as a vehicle to fill the knowledge gap of concrete management measures for coopetition (dynamics). Researchers could explore capabilities that allow actors to simultaneously maintain competitive and cooperative ties to other actors and, furthermore, if and how capabilities need to be reconfigured over time. Some conceptual findings in the alliance management capabilities literature could serve as a starting point (e.g., Kale & Singh, 2009; Schilke & Goerzen, 2010).

Moreover, we see room to bridge intra-firm coopetition research with established concepts on coordination. For instance, economic approaches such as the tournament theory (Rosen, 1986) or the inducement-contribution approach (see, e.g., Coyle-Shapiro & Shore, 2007; March & Simon, 1993) should be linked to coopetition, since the collaboration between units is strongly dependent on individual employees’ contribution, which in turn tends to be dependent on incentives, among other things.

Trust and relational mechanisms. The coopetition literature acknowledges that trust plays an essential role when actors are in a coopetitive relationship with each other (Baruch & Lin, 2012; Dyer & Chu, 2003; Lydeka & Adomavičius, 2007; Nielsen & Nielsen, 2009). However, the conditions under which trust can evolve in coopetition have not yet been

explored in detail. A direct communication style and trusted managers are advocated as means to breed trust (Czakon, 2009; Gulati, 1998). Still, many open “how” questions remain unanswered. An example is the issue of how an environment within which open communication is “lived” can be established. Future research should seek to more thoroughly address the antecedents, dynamics and consequences of trust within cooperative relationships on all levels of analysis. In-depth insights of cooperation cases can serve as helpful vehicles in order to increase our knowledge on this topic. In order to do so, cooperation research should build on the literature on trust that exists at the organizational and inter-organizational levels. These contributions have focused primarily on the antecedents of trust (Poppo, Zhou, & Ryu, 2008; Poppo & Zenger, 2002) and its impact on performance (Krishnan, Martin, & Noorderhaven, 2006; Poppo, Zhou, & Zenger, 2008; Zaheer, McEvily, & Perrone, 1998).

In addition, the distribution of trust among the actors is crucial, but not yet well-explored. If one actor trusts more than the other, the former might be an easy target for exploitation (Zeng & Chen, 2003). Therefore, future empirical studies should closely look at relationships with unbalanced trust and its impact on other parameters of cooperation relationships.

5.3. Output of the relationship

Output for the actor. The output for an actor engaging in cooperation can include an enhanced financial outcome and enhanced structures and processes through learning. Regarding the different levels of analysis, the outcomes for each involved actor (firms, networks, or units within firms) have not yet been entirely explored. Instead, most contributions have focused on the advantages of cooperation due to reduced transaction costs, compatible resources, or enhanced innovative capabilities, and only a few studies have recently started to examine cooperative arrangements with regard to actual innovativeness or financial outcome (Bouncken & Fredrich, 2012; Bouncken & Kraus, 2013; Luo et al., 2007). It is notable that these output measures are investigated in isolation and that research remains uni-directional by focusing on the benefits of cooperation. In order to create a differentiated picture on cooperation outcomes, it is necessary to investigate cooperation output in terms of benefits and costs, depending on distinct contextual circumstances. To date, the literature has provided important starting points, but these have been derived from different contexts by examining isolated parameters. Future studies on the inter-firm and network level should inspect the extent to which and the form in which cooperation yields enhanced outputs to fulfill the tasks that are demanded when units cooperate and compete simultaneously.

Effect on the context. Cooperation research across all levels of analysis is also considered with the influence that the relationships may exert on the context within which the actor is embedded. This context, or environment, can be comprised of a team or group, a firm, an industry, or a supply chain. For example, our review has shown that cooperation between firms can influence the structure of the network in which these firms are embedded (Burgers et al., 1998). Thus, it is vital for managers to know how entering a cooperative arrangement could affect not only their own firm, but also their context. Concepts related to competitive dynamics theory (Chen & Miller, 2012; Smith, Ferrier, & Ndofor, 2001) could help to enhance our understanding of dynamics and implications of complex networks of cooperative relationships. There have already been some advances in this direction. For instance, Ketchen et al. (2004) suggested relating cooperation and multimarket competition. Instead of looking only at a single cooperative relationship in one market, we support the view that, on

the inter-firm level, the multimarket contact perspective could help to investigate firms' behavior in coopetitive relationships depending on the multiple relationships they might employ. This is especially relevant to further illuminate the mutual forbearance hypothesis (Gimeno & Woo, 1999).

Effect on value creation. Coopetition research is also concerned with the extent to which coopetitive relationship can create an additional value; for example, in terms of improved processes, enhanced services for consumers, and reduced use of resources. Concerning evaluation, future research offers the opportunity to refine our understanding of industry-level and individual-level outcomes. It has often been noted that firms engaging in coopetition are not only able to enhance their own performance, but also increase output for customers (Brandenburger & Nalebuff, 1996). Since coopetition is often a delicate issue from a competition policy point of view, it is vital that future studies assess the extent to which it enhances products and creates innovation within an industry. The lack of consensus concerning the actual value created through coopetition means that quantitative studies are essential in order to assess outcomes within different industries, as was the case, for example, in Bouncken and Fredrich's (2012) study of the German IT industry.

5.4. Actor characteristics

Resources and capabilities. An important theme across all levels of analysis is the interplay between coopetition and the actors' characteristics. These distinct characteristics influence how the actor behaves in a coopetitive relationship and how the relationship will be designed and shaped.¹ One of the most commonly mentioned actor characteristic is the actors' endowment with resources and capabilities (Fernandez et al., 2014; Kale & Singh, 2009; Wu, 2014). Studies often adopt the resource-based view, thereby contributing to the understanding of the actors' motivation for entering coopetitive relationships, but less to the understanding the dynamics of coopetition relationships. We suggest that the role of resources and capabilities needs to be further analyzed with regard to their impact on coopetitive relationships. In particular, the role of absorptive capacity (see e.g., Sun & Anderson, 2010) in coopetition needs further investigation. To date, the literature has pointed out its positive aspects: Absorptive capacity is required for actors in a coopetitive relationship to innovate efficiently (Ritala & Hurmelinna-Laukkanen, 2013). However, the typically high absorptive capacity of competitors not only promises efficient and effective innovation, but it also carries the major risk of easy knowledge appropriation. Therefore, we suggest that it is vital to investigate the concept of absorptive capacity for specific coopetitive relationships to provide a basis for understanding.

Moreover, we still know very little about the influence of resources or capabilities on coopetition at the intra-firm and network level, despite studies that have highlighted the importance of this topic. In an emerging vein on the intra-firm coopetition level, studies are beginning to research individuals' capabilities (Fernandez et al., 2014), but knowledge in this area remains scarce. Therefore, we propose that future research should place a stronger emphasis on how individuals, teams, or groups engaging in coopetitive relationships are endowed with resources and capabilities and how this affects the relationship. At the network level, we propose to investigate the resources and capabilities of the network, or its

¹ Vice versa, a coopetitive relationship can also form the actors' characteristics. We elaborate on the latter issue in more detail in section 5.3, but within this section we highlight gaps in extant research on actor-level characteristics and propose ways to address them.

dedicated managing function, with regard to coopetition by means of in-depth qualitative analyses, given that this issue remains an untapped area.

Actor experience. Past relationships create experiences within actors and have an impact on future ties (e.g., Kale & Singh, 2009; Schiavone & Simoni, 2011). In the context of coopetition, the impact of past experiences and actors' histories on present relationships has not yet been explicitly investigated. This is a relevant gap in the extant research, since history and experiences often remain unobservable and unconscious drivers of actions within a relationship. However, knowing about a partner's experience and ways to cope with them would ease coopetition and provide an explanation for actors' behaviors. Moreover, past experiences can provide an explanatory basis for the form of coopetition that actors might prefer (Schiavone & Simoni, 2011). Therefore, we suggest that it is crucial to raise the awareness of practitioners as well as coopetition researchers for these issues and spur research in this direction.

Strategic goals and expectations. If actors' goals and expectations are inconsistent, this may give rise to problems and low economic rents (Hamel, 1991; Lydeka & Adomavičius, 2007; Prahalad & Hamel, 1990). Within the antecedents phase we have depicted the main drivers and motives of actors to engage in coopetition (for example, the need for knowledge and resources, improving a firm's position, regulation) and show that the inter-firm level seems to be relatively well-explored in this regard. On the other hand, very little is known about this topic at the intra-firm and network levels. On the intra-firm level it is crucial to understand the individuals', teams' or groups' expectations and goals in order to control the actors and predict their behavior (March & Simon, 1993). On the network level it is important to investigate expectations and goals of all actors involved. It is expected that the goal congruence in dense and less centralized governed networks is higher than in other networks (Provan & Kenis, 2008). Hence, certain structural network characteristics are a good starting point for examining their effect on a cooperative relationship. More studies are needed in order to detect the impact of incongruent goals and expectations among actors and minimize potential risks.

5.5. Environmental characteristics

Context characteristics. In the studies we identified, cooperative relationships are embedded within a context that can consist, for example, of teams or groups, a firm, a network, an industry, or a supply chain. These contexts can exhibit different characteristics that influence on coopetition; this is because many factors, such as the influence of external institutions or the degree of managerial flexibility, vary in different contexts (e.g., Mariani, 2007). A large portion of coopetition research is based on data derived from case studies. As a result, studies have focused on different yet isolated industry and country contexts. With regard to industries, we find that most studies have focused on manufacturing-led industries, such as mechanical engineering and construction, with less knowledge derived from service industries, such as the health care sector, transportation, or tourism. Therefore, we propose that future research should consider contexts that complement the extant studies with respect to the industry under investigation.

External institutions. Coopetition relationships may be influenced or even initiated by external institutions, such as governments, customers, or industry associations. This could imply different management requirements, since the motivation of actors involved tends to be different from such situations where actors initiated coopetition with an intrinsic intent (e.g., Mariani, 2007). Despite the importance of these external influences, their role has still

only been researched to a minimal extent. External institutions can stoke conflicts; for example, governments can urge competing firms to cooperate (Tidström, 2009). In other cases, external institutions can even serve as arbitrators for conflicts (Fernandez et al., 2014). Until now, the role of external institutions has not been in the spotlight; we feel that it is necessary to examine the different roles and effects that these institutions might have on the several levels of analysis. Therefore, future research should address this gap and provide guidance to managers as well as the external institutions.

Table 2 provides a summary of the research questions that we believe should be addressed.

 Insert Table 2 about here

6. CONCLUSION

Our review has provided a comprehensive overview of coopetition over the last two decades. Complementing and extending other articles in the field, this study has collected and analyzed the literature and theoretical lenses on the topic coopetition through the systematic review approach. We have organized the identified studies along a phase model that provides a clear overview of coopetition research. The framework makes it possible to map extant research efforts along coopetition antecedents and the three main phases: the initiation phase, the managing and shaping phase, and the evaluation phase. This approach has made it possible to incorporate multiple levels (intra-firm, inter-firm, and network level), integrating the “emergent” perspective on coopetition (“phenomenon”) (e.g., Mariani, 2007), and considering it as a deliberate strategy (e.g., Quintana-García & Benavides-Velasco, 2004). Based on this systematization, we have been able to provide a conceptual map of coopetition research with central themes along the five major research areas: (1) the nature of the relationship, (2) governance and management, (3) the output of the relationship, (4) actor characteristics, and (5) environmental characteristics. In all of these areas, we have suggested challenging yet promising and important avenues for future research. Overall, we are confident that our study offers a valuable systematization and consolidation of extant research and will serve as a platform for future research efforts in this area.

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TABLES AND FIGURES

Figure 1. Systematic review process

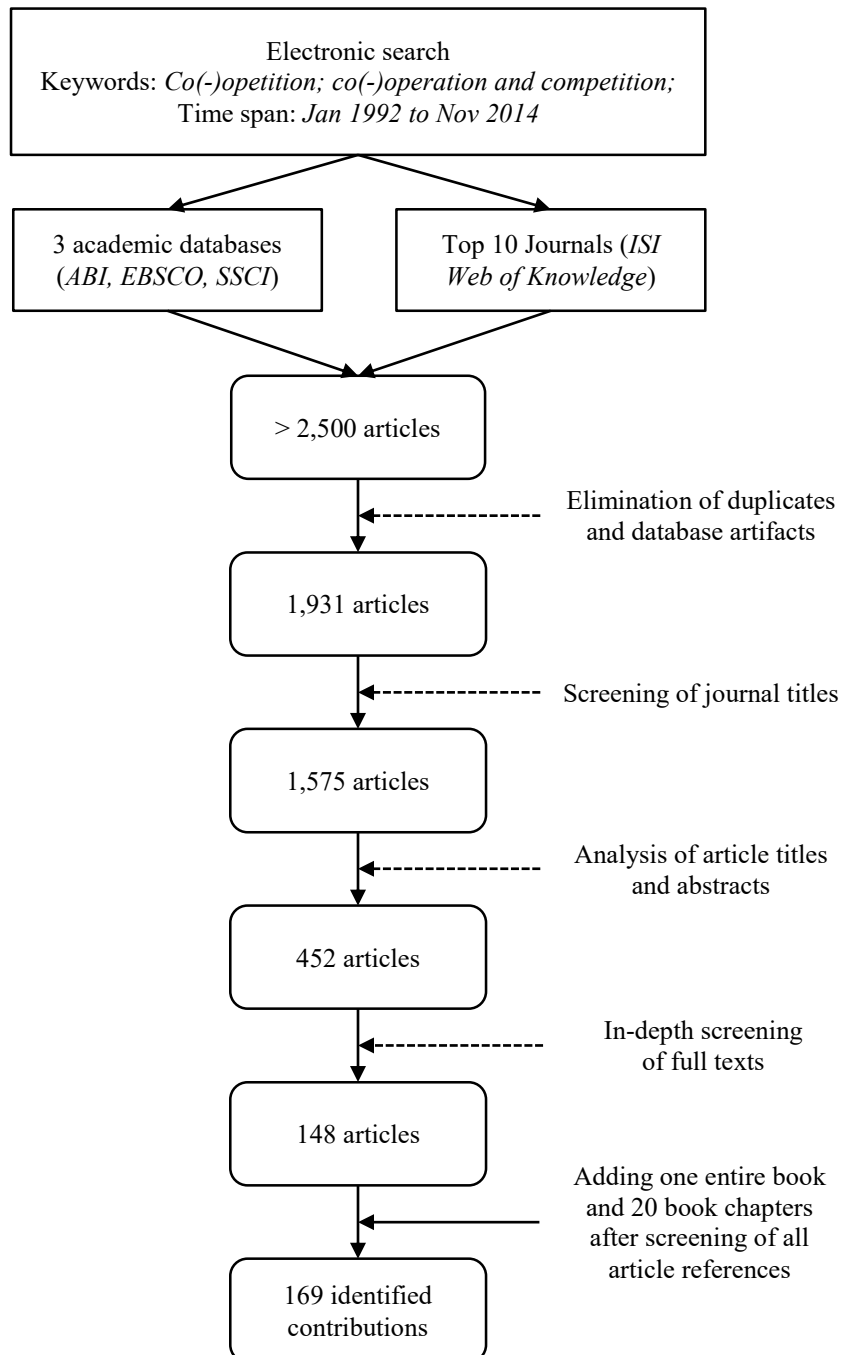


Figure 2. Breakdown of the article pool by paper type/research design

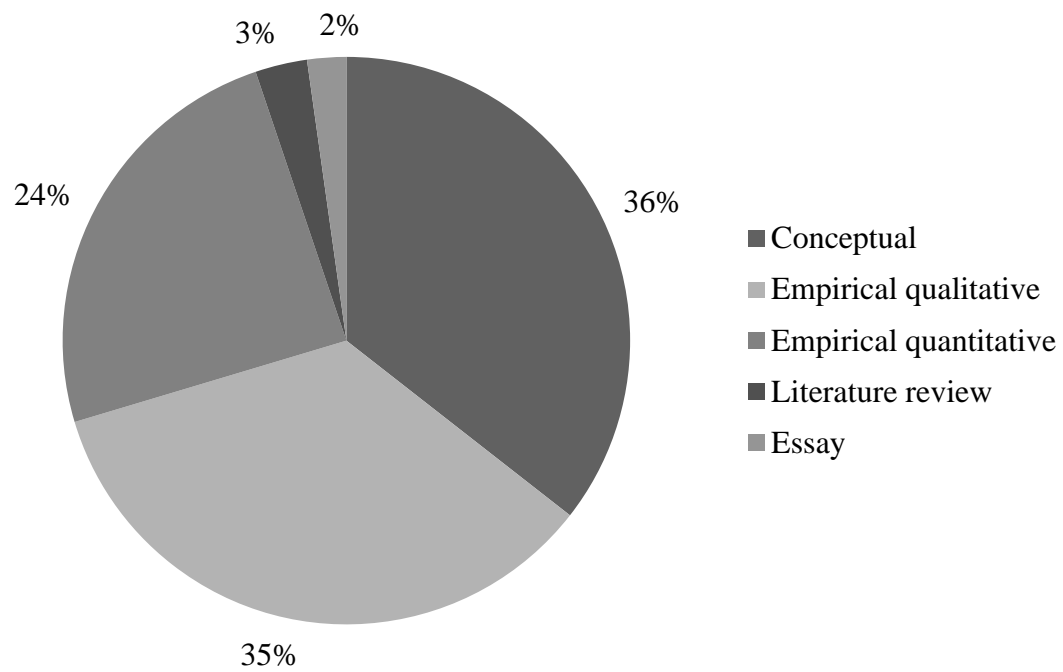


Figure 3. Coopetition articles per year of publication

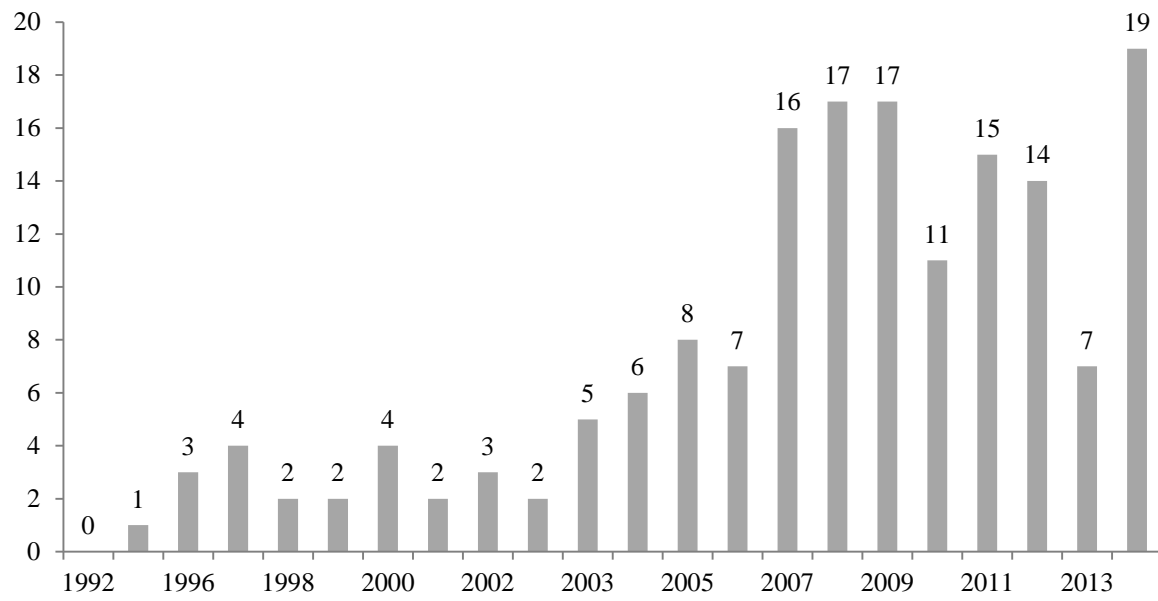


Figure 4. Conceptual map for future research on coopetition

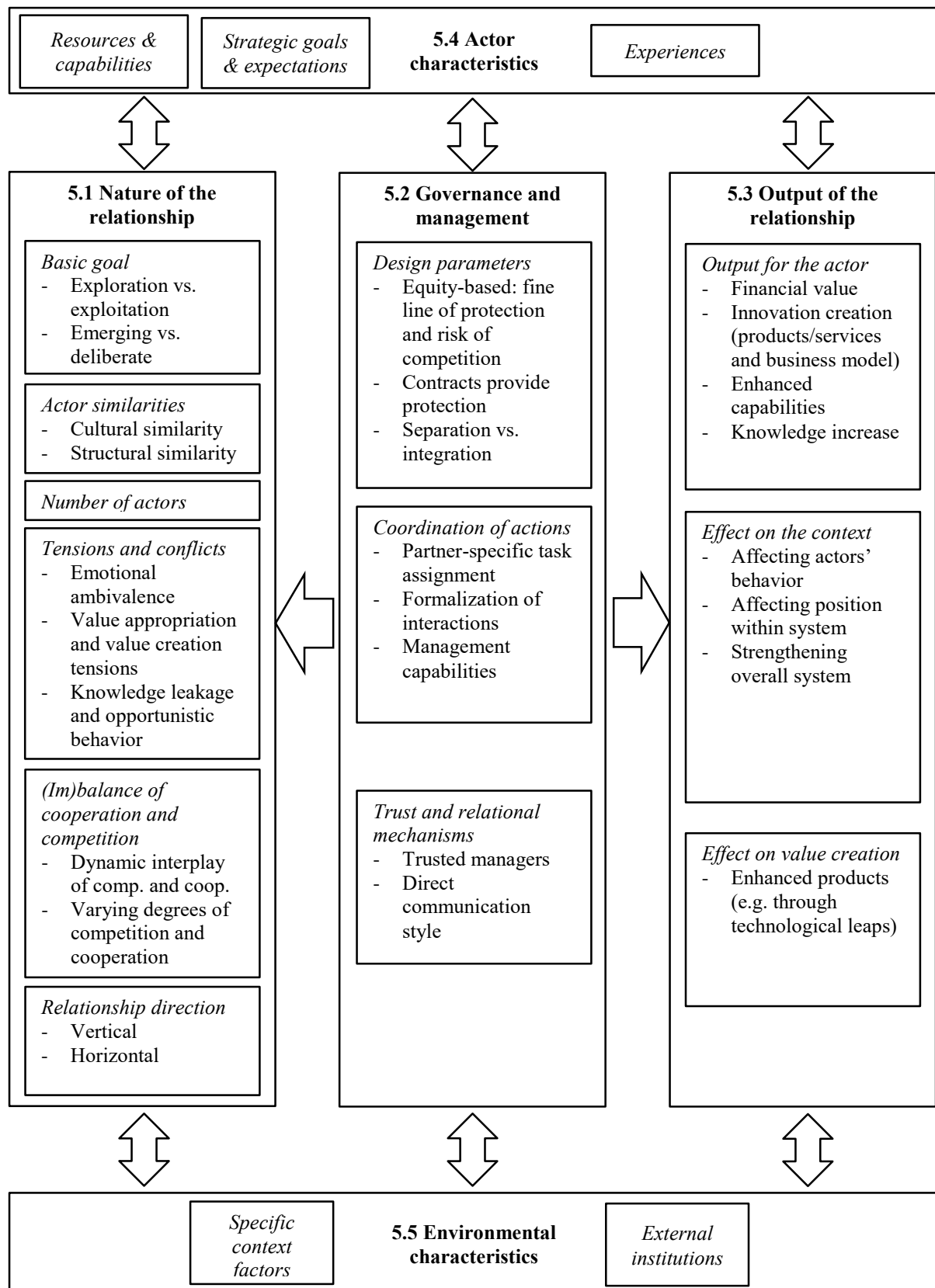


Table 1. Phase model of coopetition research

ANTECEDENTS	INITIATION PHASE	MANAGING & SHAPING PHASE	EVALUATION PHASE
Inter-firm Level			
<p>Market conditions</p> <ul style="list-style-type: none"> – Specific industry settings (for example, high-tech) – High degree of change and competition – Early or late industry lifecycle stages – Regulatory bodies enforcing/prohibiting coopetition <p><i>e.g., Bouncken and Fredrich, 2012; 1999; Kotzab and Teller 2003; Lai et al. 2007; Luo et al. 2006; Padula and Dagnino 2007</i></p> <p>Dyadic factors between potential partner firms</p> <ul style="list-style-type: none"> – Compatible resource endowment – Presence of trust – Extant ties of potential partner firms <p><i>e.g., Barretta 2008; Cheng et al. 2008; Ngowi and Pienaar 2005; Osarenkhoe 2010; von Friedrichs Grängsjö and Gummesson 2006</i></p> <p>Individual factors of firms</p> <ul style="list-style-type: none"> – Need for knowledge and resource acquisition – Self-perception of the firm (for example, regarding vulnerability, position, strategy) <p><i>e.g., Eriksson 2008b; Gnyawali and Park 2009; Lydeka and Adomavičius 2007; Schiavone and Simoni 2011</i></p>	<p>Agreement form</p> <ul style="list-style-type: none"> – Formal agreements – Informal agreements <p><i>e.g., Bengtsson and Kock 1999, 2000; Bonel and Rocco 2007; Ganguli 2007; Hung and Chang 2012; Lydeka and Adomavičius 2007; Wang and Krakover 2008</i></p> <p>Structural design</p> <ul style="list-style-type: none"> – Assignment of partner-specific tasks – Structural separation vs. integration of competitive and cooperative aspects <p><i>e.g., Bouncken and Fredrich, 2012; Das and Teng 1997; Faems et al. 2010; Luo and Rui 2009; Zeng 2003</i></p> <p>Setup of relational mechanisms and routines</p> <ul style="list-style-type: none"> – Workshops and events – Incentive policies <p><i>e.g., Eriksson 2010; Gurnani et al. 2007; Tsai 2002; Zeng 2003</i></p>	<p>Balancing cooperation and competition</p> <ul style="list-style-type: none"> – Typologies of coopetition relationships with varying degrees of competition and cooperation – Balancing cooperation and competition within alliance portfolios – External parties establishing a balance <p><i>e.g., Barretta 2008; Bengtsson and Johansson 2012; Bengtsson and Kock 2000; Park et al. 2014a, 2014b</i></p> <p>Dynamics over time</p> <ul style="list-style-type: none"> – Changes in market power and competitive behavior of firms – Continuous adjustment of mechanisms and structures due to changing expectations <p><i>e.g., Dahl 2014; Peng et al. 2012; Ritala and Tidström 2014</i></p> <p>Managing tension and conflict</p> <ul style="list-style-type: none"> – Sources of conflict – Managerial attitudes toward coopetition; Establishing a strong partnership attitude among the firms <p><i>e.g., Raza-Ullah et al. 2014; Chin et al 2008; Fernandez et al. 2014; Tidström 2009</i></p>	<p>Firm characteristics</p> <ul style="list-style-type: none"> – Influence of coopetition on the firms' structure – Influence on firms' abilities (for example, to innovate) – Technological innovation: beneficial to incremental innovation – Business-model innovation: beneficial to radical innovation – Positive outcome with regard to financials and value creation <p><i>e.g., Bouncken and Kraus 2013; Kumar 2011; Mariani 2007; Okura 2007; Ritala and Hurmelinna-Laukkanen 2013</i></p> <p>Industry characteristics</p> <ul style="list-style-type: none"> – Increased value for consumers through enhanced products and innovation – Influence on the industry characteristics (competitive intensity and cooperation) <p><i>e.g., Brandenburger and Nalebuff 1996; Bourreau and Doğan 2010; Bouncken and Kraus 2013; Kotzab and Teller 2003; Wu 2014</i></p>

Table 1. Continued

ANTECEDENTS	INITIATION PHASE	MANAGING & SHAPING PHASE	EVALUATION PHASE
Intra-firm Level			
Interdependence of units and simultaneous competition between them for the parents' resources <i>e.g., Luo 2005</i>	Setup of coopetition mechanisms to ensure control and knowledge flows <i>e.g., Luo 2005; Tsai 2002</i> Allocation of cooperative and competitive activities to different separate areas <i>e.g., Ritala 2009</i>	Enforce communication among the units, for example, through workshops <i>e.g., Bengtsson and Kock 2000; Eriksson 2010; Ding et al. 2012</i>	Influence on firm performance <ul style="list-style-type: none"> – Knowledge-sharing – Improved customer orientation – Enhanced ability to innovate <i>e.g., Ghobadi and D'Ambra 2012; Luo et al. 2006; Ritala 2009</i>
Network Level			
Firms' position within a network influences coopetition <i>Gnyawali et al. 2006</i>	Coopetitive settings with multiple partners to increase value creation <i>Yami and Nemeh 2014</i>	Network dynamics: shaping through coopetitive action <i>Gnyawali et al. 2006; Gnyawali and Madhavan 2001; Pathak et al. 2014</i>	Coopetition within networks might lead to the formation of sub networks <i>Burgers et al. 1998</i>
Compatibility of characteristics of firms within a network <i>Mantena and Saha 2012; Peng and Bourne 2009</i>	Setting up a network governance structure <i>Wilhelm and Kohlbacher 2011</i> Separation of competitive and cooperative actions within a network <i>Gnyawali and Madhavan 2001; Peng and Bourne 2009</i>	A balance between cooperation and competition between networks is facilitated through compatible network structures <i>Peng and Bourne 2009</i> Managing Managing tension and conflict <ul style="list-style-type: none"> – through competition or avoidance <i>Tidström 2014</i> – Through mediating external parties <i>Salvetat and Géraudel 2012</i> 	Positive effect on value creation <i>Petter et al. 2014; Ritala et al. 2014</i>

Table 2. *Questions for future coopetition research to address*

Coopetition research theme	Proposed research questions
5.1 <i>Nature of the partnership</i>	<p>What are the specific relationships characteristics and requirements for emerging and deliberate coopetition?</p> <p>What are the specific determinants and management requirements for coopetition within exploitative activities?</p> <p>What effect does the similarity of actors involved in coopetition have on the outcome of the relationship?</p> <p>What are the specific managerial requirements for multiactor coopetition relationships?</p> <p>What strategies can actors employ to prevent and mitigate tensions and conflicts in coopetition?</p> <p>What forces shape the balance of cooperation and competition?</p> <p>How can an optimal balance of cooperation and competition be defined and designed?</p> <p>What can we learn from organizational ambidexterity in terms of managing tensions and balancing contradictory forces?</p>
5.2 <i>Coopetition governance</i>	<p>What contingencies affect the design of competitive relationships?</p> <p>What different configurations can competitive relationships adopt and what are their effects on the outcome?</p> <p>What are the advantages and disadvantages of the principles of structural integration and separation for coopetition?</p> <p>What capabilities do actors develop and deploy in order to effectively coordinate their interactions?</p> <p>How do actors reconfigure their capabilities over time?</p> <p>How does trust evolve among cooperating competitors?</p> <p>What effects does a competitive relationship with unbalanced trust among the actors involved have?</p>

Table 2. Continued

<i>5.3 Output of the partnership</i>	<p>How can coopetitive outcomes be measured?</p> <p>How can competitive dynamics theory advance our understanding of the effect of coopetition on the context in which actors are embedded?</p> <p>Taking a multimarket contact perspective, how do coopetitive relationships affect potential multiple contacts among the actors?</p> <p>What costs can coopetition cause?</p> <p>Does coopetition tend to create extended value for consumers?</p>
<i>5.4 Actor characteristics</i>	<p>How does absorptive capacity impact a coopetitive relationship?</p> <p>What capabilities do actors deploy to cope with the paradoxical forces of cooperation and competition?</p> <p>What is the impact of actors' experiences with regard to past coopetitive ties on future relationships?</p> <p>What does the relationship between actors' goals and expectations and the design, coordination and outcome of the relationship look like?</p> <p>How do actors deal with situations of incongruent goals and expectations?</p>
<i>5.5 Environmental Characteristics</i>	<p>What are the specific determinants and management requirements for coopetition in service industries?</p> <p>What is the specific role of external institutions in coopetitive relationships in terms of the emergence of conflicts and tensions?</p> <p>How and in what situations can external institutions serve as arbitrators for conflicts and tensions?</p>