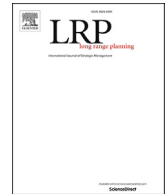




Contents lists available at ScienceDirect

Long Range Planning

journal homepage: <http://www.elsevier.com/locate/lrp>

How rival partners compete based on cooperation?

Tzu-Ju Ann Peng^{a, b, *}, Meng-Hsien Yen^a, Mike Bourne^b^a Department of Business Administration, National Cheng-Chi University, 64, Sec. 2, Zhinan Rd., Wenshan District, Taipei 116, Taiwan, ROC^b Centre for Business Performance, School of Management, Cranfield University, Cranfield, Bedford MK43 0AL, United Kingdom

ARTICLE INFO

Article history:
Available online xxxKeywords:
Coopetition
Competitive dynamics
Cooperation-based competition
Bicycle industry

ABSTRACT

Prior studies of coopetition have explained the *what*, *how* and *why* of firms cooperating with competitors. Among these, examining the *how* question as to the stream of coopetition dynamics is the most challenging theme. Previous research has focused much more on the cooperation side. Less attention has been paid to the competition side to reveal what happens to competition after the competitors have collaborated. This study sheds light on the issue of cooperation-based competition by answering the question: while cooperating with competitors, how do rival partners compete based on cooperation? Linking the competitive dynamics perspective to coopetition, we conducted a single-case study to analyse the competition between two leading competitors in the Taiwanese bicycle industry. We collected the reported issues pertaining to the competition in the European market and supported by in-depth interviews. The analysis leads us to develop three propositions and a conceptual framework for illustrating the cooperation-based competition and addressing how cooperation may influence competition in a coopetition relationship. This study provides new insights into a theoretical issue of cooperation-based competition. The case also provides management implications while taking a coopetition strategy.

© 2017 Elsevier Ltd. All rights reserved.

Introduction

The rise of coopetition in the past two decades has flourished in both management research and business practice. Cooperation with competitors, also denoted as *coopetition*, has recently attracted academic study (Bengtsson and Kock, 2000; Burgers et al., 1993; Gnyawali and Park, 2009; Peng et al., 2012). Prior studies of coopetition present a variety of facets to examine coopetition, which involves a high degree of different terminologies, theoretical lenses, topics, and explanatory heterogeneity (Peng et al., 2012; Bengtsson and Kock, 2014; Dorn et al., 2016; Ritala et al., 2016). Despite the differences, some scholars (Peng et al., 2012; Bengtsson and Kock, 2014; Dorn et al., 2016; Ritala et al., 2016) have reviewed the literature and conclude similar research streams in coopetition, which can be roughly classified into three flows-*why* (antecedents, motives, likelihood), *how* (initiation, interaction, process, tensions, value creation and value appropriation, managing and shaping,

* Corresponding author. Department of Business Administration, National Cheng-Chi University, 64, Sec. 2, Zhinan Rd., Wenshan District, Taipei 116, Taiwan, ROC.

E-mail addresses: t.a.peng@nccu.edu.tw, a.peng@cranfield.ac.uk (T.-J. Ann Peng), 101355503@nccu.edu.tw (M.-H. Yen), m.bourne@cranfield.ac.uk (M. Bourne).

<https://doi.org/10.1016/j.lrp.2017.10.003>

0024-6301/© 2017 Elsevier Ltd. All rights reserved.

dynamics, and embeddedness), and *what* (evaluation, outcome, cause-and-effect). Among these, examining the *how* question as to the stream of *process, interaction and dynamics* is probably the most challenging theme.

Based on the literature review in the stream of *coopetition dynamics*, we delineated a theoretical framework of coopetition dynamics, arguing that the coexistence of competition and cooperation causes paradoxes and tensions in the interaction process. The strategies of managing paradoxical tension and balancing between competition and cooperation become crucial, determining the way rival partners can compete and cooperate simultaneously. Prior studies in coopetition have focused much more on the cooperation side, including the antecedents, formation process, and outcome of collaborating with competitors. Less attention has been paid to what is happening to competition after the competitors have collaborated. To understand coopetition dynamics, it is important to look not only at the cooperation side but also at the competition side. Therefore, we focus on the competition side to explore the competitive actions between rival partners while they have collaborated.

Although the studies of competitive dynamics have offered significant analyses of various competitive situations, few studies have paid attention to the competitive dynamics in coopetition. For example, [Chi et al. \(2007\)](#) examine whether a firm's network structure and the use of interorganizational systems may affect competitive action. [Andrevski, Brass, and Ferrier \(2016\)](#) investigate how firms' collaborative activities affect their competitive activities. In the former study, the actors in competition may be direct competitors but without collaboration; whereas in the latter study, the coopetition does not refer to the cooperation between direct competitors. [Garraffo and Rocco \(2009\)](#) turn the analysis to the formation of cooperation between direct competitors, focusing on the pre-agreement rival's assessment process. However, they emphasize cooperation between direct competitors rather than competition after cooperation.

In the context of cooperation with competitors, competition is an endogenous factor, which should not be ignored while studying coopetition. In order to address the theoretical gaps in both coopetition and competitive dynamics literature, this study examines the competition in coopetition, aiming at answering the two questions: (1) while cooperating with competitors, how will rival partners compete based on cooperation? (2) How may cooperation influence rival partners' actions in competition?

We conducted a case study and selected a coopetition alliance formed by the two largest competing firms in the Taiwanese bicycle industry, Giant and Merida. They have significant positions in the global market. This study illustrates and explores the competition between two rival partners and reveals how they act and how the cooperation may influence the way they act. The case is unique because, firstly, Taiwan has long been the leading bicycle exporting country since the late 1970s. Encountering fierce competition caused by the Chinese bicycle manufacturers, Taiwan was losing its leading exporting position in the global OEM-supply market. The coopetition alliance is considered a turning point that has changed the fate of the Taiwanese bicycle industry. Together they have created what many believed to be an impossible combination of cooperation with competitors. Secondly, the coopetition alliance was not just the first example, but also a successful one, and has become a benchmark to the other industries in Taiwan. The context of the coopetition alliance and the competition between two competitors provides us with a unique opportunity to investigate how two leading rival partners compete based on cooperation. We collected press reported issues pertaining to the competition in the European market during the period of 2006–2016. By using the analysis of reported issues supplemented with in-depth interviews, we developed three propositions and a conceptual framework for illustrating the cooperation-based competition and addressing how cooperation may influence rival partners' competitive actions.

The rest of this paper is structured as follows. The next section illustrates the theoretical perspectives in coopetition and reviews the research theme in coopetition dynamics. We also discuss some studies related to competitive dynamics in coopetition. Following this section, we describe our methodology by introducing the research approach, research setting, data collection, coding and analysis. We then present our results, introduce the cooperation between two rival partners, and then analyse their competitive actions in the European market. This is followed with discussion and proposition development. The conclusion addresses the management implications, limitations, and suggestions for future research.

Theoretical background

Coopetition

While coopetition has become a prominent research stream in management literature, the definition of coopetition remains unclear ([Ketchen et al., 2004](#); [Bengtsson and Kock, 2014](#); [Dorn et al., 2016](#)). Scholars present a variety of facets to examine coopetition, which involves a high degree of different terminologies, theoretical lenses, topics, and explanatory heterogeneity ([Dorn et al., 2016](#)).

As [Bengtsson and Kock \(2014\)](#) indicate, the ambiguous conceptualization blurs the research field in coopetition. The same concept is employed for totally different phenomena, leading to different directions. They found that differences in coopetition research still exist regarding the scope of the definition and the perceived nature of the phenomenon. Coopetition is either broadly defined as a value-net, which encompassed suppliers, customers, competitors, and complementors' interests when competition and cooperation are simultaneously executed ([Brandenburger and Nalebuff, 1996](#); [Afuah, 2004](#); [Rusko, 2011](#)), or narrowed down to cooperation between two directly competing firms ([Bengtsson and Kock, 2000](#); [Gnyawali and Madhavan, 2001](#); [Luo, 2005](#); [Peng et al., 2012](#)).

Bengtsson and Kock (2014) define coopetition as a paradoxical relationship between two or more actors simultaneously involved in cooperative and competitive interactions, regardless of whether their relationship is horizontal or vertical. Dahl (2014) defines coopetition as a process based upon simultaneous and mutual cooperative and competitive interactions between two or more companies engaged in the same line of business. Bouncken, et al. (2015) define coopetition as a strategic and dynamic process in which economic actors jointly create value through cooperative interaction while they simultaneously compete to capture part of that value. Coopetition is intriguing as it combines two ways of interaction that usually involve strong opposing logics (Dorn et al., 2016). However, coopetition is about the harmony but not dialectic (Peng and Bourne, 2009), in which collaboration and competition are not mutually exclusive, but actually coexist and can even create benefits from their joint dynamics (Ritala et al., 2016).

According to Bengtsson and Kock (2014) and Dorn et al. (2016), coopetition has been studied across multiple levels of analysis including individual level (Poulsen, 2001; Hutter et al., 2011), intra-firm level (Tsai, 2002; Luo, 2005, 2007; Ritala, 2012; Cassiman et al., 2009; Enberg, 2012), project level (Fernandez et al., 2014; Le Roy and Fernandez, 2015), inter-firm level (Bengtsson and Kock, 2000; Gnyawali and Park, 2009; Ritala and Tidström, 2014; Dahl, 2014), triad (Madhavan et al., 2004), and network or supply chain level (Gnyawali et al., 2006; Peng and Bourne, 2009; Tidström, 2014; Pathak et al., 2014; Song and Lee, 2012).

Bengtsson and Kock (2014) indicate that researchers employ various theoretical lenses. Game theory perceives competition as a win-win relationship. As Brandenburger and Nalebuff (1996) noted, competition is regarded as a game where different players increase the business “pie” (markets) by cooperation in making markets and then competition in dividing up markets. Some scholars apply the resource-based view and resource dependency theory to competition, indicating the benefits of mutually leveraging resources, sharing knowledge, and developing technology (Gnyawali and Park, 2011; Li et al., 2011; Ghobadi and D'Ambra, 2012; Song and Lee, 2012). Some researchers adopt the network approach, exploring the roles of network characteristics, position, governance structure, and network dynamics in competition (Gnyawali and Madhavan, 2001; Madhavan et al., 2004; Gnyawali et al., 2006; Peng and Bourne, 2009; Pathak et al., 2014). In addition, the transaction cost economics perspective points out topics including asset specificity, opportunism (Dowling et al., 1996), contracting, intellectual property protection, value creation and value appropriation, particularly when exploring the role of competition in innovation (Ritala et al., 2016).

Despite the differences, some scholars have reviewed the literature and conclude similar research streams in competition. For example, a literature review carried out by Peng et al. (2012) indicates three streams of competition: *antecedents*, *dynamics*, and *outcome*. Bengtsson and Kock (2014) reviewed competition literature between 1994 and 2012, revealing that research on competition has focused on the *motives*, *likelihood*, *interaction*, *process*, and *outcome*. Dorn et al. (2016) conducted a systematic literature review by an in-depth screening of competition-related articles from 1994 to 2014. They found that competition is investigated along a phase model including *antecedents*, *initiation*, *managing and shaping*, and *evaluation* phases. Ritala et al. (2016) identified four broad discourses in the intersection of competition and innovation literature, including *cause-and-effect* (consequences for innovation outcome), *process and practices* (tensions, dynamics, and interaction), *strategy* (value creation and value appropriation), and *embeddedness* (innovation in networks and ecosystems).

According to these literature reviews, research streams in competition can be roughly classified into three flows-*why* (antecedents, motives, likelihood), *how* (initiation, interaction, process, tensions, value creation and value appropriation, managing and shaping, dynamics, and embeddedness), and *what* (evaluation, outcome, cause-and-effect). Among these, examining the *how* question as to the stream of *process*, *interaction and dynamics* is probably the most challenging theme, which deserves more research attention. As Ritala et al. (2016) pinpoint, in the context of innovation, the examination of competition dynamics, tensions, and interaction poses an interesting and relevant research opportunity. This also echoes Bengtsson and Kock's (2014) suggestion that five challenges can be derived from the overview of the competition literature that call for further research. Four out of the five challenges are related to the stream of *process*, *interaction and dynamics*, including to understand the balancing of cooperation and competition, to understand the competition paradox and engendered competition tension, to understand the dynamics of competitive interaction, and to understand competition's impact on the business model and strategy. In order to address the theoretical gap in competition research, we review the literature related to the stream of *competition dynamics* and the *competitive dynamics in competition* (as shown in Appendix A) as addressed in the following sections.

Coopetition dynamics

The *coopetition dynamics* stream elucidates the topics of paradox and managing tensions (Tidström, 2009; Fernandez et al., 2014; Raza-Ullah et al., 2014; Gnyawali et al., 2016), typology (Lado et al., 1997; Luo, 2004, 2007; Chen, 2008; Czakon and Rogalski, 2014), balancing (Chen, 2008; Peng and Bourne, 2009; Bengtsson and Johansson, 2012; Tidström and Hagberg-Andersson, 2012; Park et al., 2014), interaction process (Dahl, 2014), shaping actions (Chi et al., 2007; Ritala and Tidström, 2014; Minà and Dagnino, 2016), dynamics (Gnyawali and Madhavan, 2001; Peng et al., 2012), and governance structural design (Das and Teng, 1997; Tsai, 2002; Bouncken and Fredrich, 2012; Le Roy and Fernandez, 2015). Aggregately, scholars conceptualized competition dynamics as the process in which paradox and tension originated from the co-existence of two forces, thus managing paradoxical tension and transparadox become the key to balancing competition and cooperation. We further detail the perspectives of paradox, tension, managing tension, transparadox and balancing in competition dynamics.

Paradox and tension in coopetition

Paradox lies at the very heart of business management (Chen, 2008). Quinn and Cameron (1988) first differentiate the notion of paradox from related concepts such as dilemma, inconsistency, or conflict. Poole and Van de Ven (1989) propose using paradox to build management theory. They claim that paradox is one key to understanding how to work with theoretical contradictions and opposing positions embedded in complex traditions. Bengtsson and Kock (2014) redefine coopetition as a paradoxical relationship between two or more actors simultaneously involved in cooperative and competitive interactions, regardless of whether their relationship is horizontal or vertical.

Coopetition is paradoxical because it combines two types of interaction with strongly opposing logics: cooperation and competition (Park and Ungson, 2001; Le Roy and Fernandez, 2015; Raza-Ullah et al., 2014; Tidström, 2014; Dorn et al., 2016). These different logics lead to paradoxical interactions between firms and thus affect the nature and duration of the partnership.

Tension may occur when two different interaction logics, competition and cooperation, are in place (Bouncken et al., 2015). Tidström (2014) defines tension as “a situation of incompatible behaviour, goals, or activities between at least two parties occurring in coopetitive relationships.” The incompatible logics make firms sink into a status called “emotional ambivalence,” which means “the cognitive appraisal of the coopetition paradox results in conflicting emotions, positive and negative, while holding both at the same time” (Raza-Ullah et al., 2014).

Tension between firms may not only result from the presence of contradictions but also from the attempts to resolve such contradictions (Das and Teng, 2000). Scholars have explained how paradox leads to tension. For example, in the alliance literature, Hamel et al. (1989) argue that the most important motive for firms to cooperate is to gain a better position in the market and thus to retain a strategic advantage over competitors. Tension arises from the paradox between cooperation for better market position and competition for better strategic advantage. Khanna, Gulati, and Nohria (1998) introduce the concept of “private” and “common” benefits within cooperative relationships. The different ratio of private to common benefits may bring about different propensities or departures from collaboration, triggering tension in the partnership.

In the coopetition literature, Cassiman et al. (2009) further argue that the competitive force assumes firms interact based on a divergent interest structure, while the cooperative paradigm refers to firms interacting based on a convergent interest structure. Such a paradox in coopetition was also evidenced by the literature on the theme of value appropriation versus value creation (Gnyawali and Park, 2009; Ritala and Hurmelinna-Laukkanen, 2009; Rai, 2013; Ritala et al., 2014; Yami and Nemeh, 2014). Value creation refers to the processes by which competitors jointly create ideas, inventions, improvements, and innovations; whereas value appropriation refers to the processes where competitors compete for their share of the value (Ritala et al., 2016). While a firm chooses to cooperate with its competitors, it runs into the paradox between competition and cooperation, value appropriation and value creation, and the trade-off between investing in itself or in the whole alliance.

These literature argue that the paradox between collaborating for collective interests and competing for individual benefits may lead to tension in coopetition when two contrary forces are twisted inside the relationship. Since tension is developed as a consequence of the coopetition paradox, the tension must be managed to enable a balance between contradictory logics of interaction (Gnyawali et al., 2016).

Managing paradoxical tension

Chen (2008) points out that competition versus cooperation has historically occupied a central position when referring to organizational paradox in strategic management research. Paradox, emerging from the competition-cooperation dichotomy, is regarded as a perceptual tension that is cognitively or socially constructed, with polarities that mask the simultaneity of conflicting truths (Lewis, 2000). Therefore, a systematic examination of how to manage the organizational dilemma is important (Chen, 2008). Stadler and Van Wassenhove (2016: 657) also indicate that despite prior studies introducing a paradox perspective on coopetition to explain the occurrence of paradoxical tensions, more studies focused on how to manage paradox in coopetition are needed.

From the aspect of managing paradox, Poole and Van de Ven (1989) propose four methods for managing paradoxes with two opposing forces A and B: (1) *opposition*: to keep A and B separate, accepting the paradox and using it constructively; (2) *spatial separation*: to situate A and B at different levels or locations; (3) *temporal separation*: to separate A and B temporally in the same location, taking time into consideration; (4) *synthesis*: to find some new way to eliminate the opposition between A and B.

On the other hand, the aspect of managing coopetition builds on the concept of managing paradox proposed by Poole and Van de Ven (1989). For example, Dowling et al. (1996) suggests strategies to manage dilemmas in multifaceted relationships under coopetition. There are two basic choices: *avoidance* and *adaptation*. Avoidance can be operated by either acquisition or divestiture. If firms cannot avoid the multifaceted relationships, they can use adaptation strategy. Firms can adapt by decentralizing relationship management in noncore competence areas through divisionalization or departmentalization. They can also adapt by centralizing relationship management in core competence areas through relationship managers, committees, or even by establishing inter-organizational structures to share information.

Scholars have proposed either *separation* strategy (Eisenhardt and Martin, 2000; Gilbert, 2005; Smith and Lewis, 2011) or *resolution* strategy (Tse, 2013) to manage paradoxical tension within coopetition. Separation strategy addresses that the management of competition and the management of cooperation should be split to manage tension within coopetition (Dowling et al., 1996; Bengtsson and Kock, 2000; Herzog, 2010). However, the logic based on either/or thinking is incapable of comprehending the intricacies of paradox (Chen, 2008). Some argue that the separation principle appears to be inefficient

because it creates new internal tensions within the organization and integration issues for individuals (Le Roy and Fernandez, 2015). Thus, a strategy based on a combination of acceptance and resolution is recommended to positively benefit from the management of tensions within coopetition (Jarzabkowski et al., 2008; Smith and Lewis, 2011; Le Roy and Fernandez, 2015).

For example, Tidström (2014) investigates how tensions are managed in cooperative business relationships. He categorizes tensions as domain-related, delivery-related, and cooperation-related, and concludes that the same type of tension may produce different outcomes depending on how it is managed. Competition and avoidance are the most common ways of managing tensions in cooperative business relationships.

Fernandez et al. (2014) develop a multi-level conceptual framework that helps to understand key drivers of tension in competition and key approaches for managing tension. They indicate that cooperative tensions can be viewed at multiple levels, including inter-organizational, intra-organizational, and inter-individual. Tensions can be managed by the separation principle, the integration principle, or both. Further, Le Roy and Fernandez (2015) provide insights into the management of cooperative tensions at the working-group level. They conclude that firms are combining the separation principle at the organizational level, the co-management principle at the working-group level and the integration principle at the individual level.

Balancing in coopetition dynamics

When one firm is either too cooperative or too competitive, imbalances occur that lead to the emergence of tension within competition relationships (Fang et al., 2011). Instead of reducing competition or cooperation, firms would rather maintain them in a balance (Clarke-Hill et al., 2003; Chen et al., 2007; Chen, 2008; Le Roy and Fernandez, 2015). Thus, managing paradoxes within competition requires finding a balance between the two seemingly contradictory forces.

The notion of balance refers to equilibrium between conflicting tendencies (Lavie and Rosenkopf, 2006). Stadtler and Van Wassenhove (2016) indicate that balancing is a dynamic process that firms chase by trying to induce the positive feedback loop of the two seemingly conflicting tendencies. To define balancing concretely, Li (2016: 52) proposed three core tenets. First, holistic content with spatial balancing reflects the complex interdependence and interpenetration between opposite elements. Second, a dynamic process with temporal balancing reflects the interaction and inter-transformation between opposite elements. Third, duality balance with mental opposites reflects opposites-in-unity.

Poole and Van de Ven's (1989) *synthesis* strategy is full of the spirit of balance. The *synthesis* strategy refers to introducing new terms to resolve paradoxes. They indicate that different types of relationship may exist among contrary forces. For example, one side may create the conditions necessary for the existence of the other; there may be mutual influence over time, with swings between one side and the other. In order to maintain a balance in competition, the interfirm dynamics are multifaceted, in which we can see not only simultaneous competition and cooperation, but also competition within cooperation and cooperation within competition (Peng et al., 2012). As Li (2016) has noted, balancing frames the trade-off and synergy between opposite elements as endogenous and insists the opposites-in-unity are both partially conflicting and partially complementary.

Deephouse (1999) proposed the strategic balance perspective, considering the concept of balance in terms of a cost-benefit evaluation between different strategic settings. He argues that firms will achieve maximum performance at the balance point. To achieve a balance, firms will evaluate the cost and benefit during the evolution dynamics between competition and cooperation at every moment. On one side, for competitors, a moderate level of cooperation between firms may bring about abnormal profit by the agglomeration of market power. However, the excessive cooperation can be a detriment to each firm's core competence, which harms a firm's profitability. On the other side, for cooperators, a moderate level of competition can help to create the atmosphere of "a learning race" (Hamel, 1991), which drives firms within the relationship to perform better. On the contrary, excessive competition may result in opportunism within cooperation, which lessens the exchange and interaction between firms, leading to an erosion of cooperative performance. Failure to balance between the two logics may lead to intense competitive rivalry or overconfidence which may undermine the rarity and inimitability of a firm's resources (Stadtler and Van Wassenhove, 2016). Therefore, the challenge for managers is to manage collaboration and competition simultaneously to maintain the cost-benefit optimization of competition (Luo, 2007).

In addition, the paradoxical, either/or relationship may limit the understandings of real relationships between firms (Chen, 2008). Scholars argue that collaboration and competition are not mutually exclusive, but often coexist and can even create benefits from their joint dynamics (Lado et al., 1997; Luo, 2004; Chen, 2008; Czakon and Rogalski, 2014; Ritala et al., 2016). Lewis (2000) encourages researchers to "transcend" rather than just avoid or even confront paradox. A new transparadox perspective may enable researchers to stress the interplay and balancing between the two opposing concepts. To extend Lewis (2000) viewpoint, Chen (2008) proposes a transparadox framework based on the Chinese "middle way" perspective, in which three competition-cooperation relationships were identified: *independent opposite*, *interrelated opposites*, and *all-inclusive interdependent opposites*. The third conception captures all possible situations of interfirm dynamics, in which competition and cooperation together form the union of two opposites. According to the middle way perspective, opposites can be viewed as interdependent entities. The emphasis is on pursuing dynamic balance and integrating the opposites.

Collaborative dynamics in competition

The literature on collaborative dynamics in competition argue that firms form cooperative partnerships to achieve cooperative performance by acquiring resources, getting close to the customers, and connecting to key partners occupying

advantageous positions (Bengtsson and Kock, 2000; Gnyawali et al., 2006; Chin et al., 2008; Peng et al., 2012). However, in cooptation, the collaborative benefits are not always fully aligned with individual and firm-specific strategic objectives (Dyer et al., 2008; Khanna et al., 1998; Ritala and Tidström, 2014). For example, Cassiman et al. (2009) point out that the choice of exchanging the firm's resources assures some gains through accessing complementary knowledge sources, but at the same time exposes the firm to the risk of opportunistic behaviour from external partners. Collaboration is thus not a static status at a specific time, but will evolve dynamically in accordance with the interactions between partners. Doz (1996) systematically unfolds the issue as to how the cooperation process has an impact on cooperation itself. He examines how firms adjust their level, mode, and commitment to cooperation over time. Firms within the collaboration will monitor each other for equity and adaptability and conduct periodic reevaluations to make adjustments to their collaborative actions.

To portray the collaboration dynamics, Todeva (2006) indicates that the uncertainty resulting from insufficient information about the behaviour of the partner will bring about relational evolution between firms. The behavioural uncertainty of the partner will send alarm signals and will increase the psychological distance between partners. Eriksson and Marquardt (2001) also propose that the collaborative dynamics constitute a dyadic relationship of feedback loops between understanding, experience and coordination between partners. Here, a firm's understanding refers to making sense of the interaction experience and this may influence the following collaborative actions. While a firm perceives that its partners have taken actions detrimental to its own interest, the firm may adjust the attitude and behaviour toward the partners, thus changing the collaborative relationship.

In the context of cooperation with competitors, it is not only the cooperative process, but also the competition outside the partnership, that will affect the cooperation itself. As Galvagno and Garraffo (2010) suggest, the cooperative agreement between rivals will tend to involve different technologies and/or markets from the existing ones while forming collaboration. Despite rival partners benefitting from sharing investments and increasing the chances of accessing new market or technology, to avoid negative effects on the margins of future performance, they will separate their arena for competition and cooperation. This suggests that firms' competitive activities may affect their cooperative activities.

In addition, Chiambaretto et al. (2016) investigate the benefits and risks of co-branding strategies with competitors, demonstrating that the more similar the resources shared in the collaboration agreement, the stronger the positive impact on the outcome. However, it also brings about the higher long-term risk of appropriation and learning by its rival partner. The danger of resource appropriation, unbalanced value capture and opportunistic behaviour may trigger tensions within the collaboration. While the risks of collaboration are much higher than the benefits, rival partners may adjust their commitments to the relationship. As Chiambaretto et al. (2016) point out, the evaluation of the benefits and risks of collaboration with competitors evolves over time. When the competitive positioning of the partner changes, the evolution of the collaboration takes place. The dynamic nature of collaboration implies that firms need to monitor and manage the changes within the relationships at all times.

Competitive dynamics in cooptation

The competitive dynamics perspective is a useful theoretical lens to reveal the dynamic nature of competition (Hoskisson et al., 1999). A series of studies carried out by Ming-Jer Chen and his colleagues (e.g., Chen and MacMillan, 1992; Chen and Miller, 1994; Chen, 1996; Chen et al., 2007) have yielded significant insights for understanding the dynamics of competitive analysis and inter-firm rivalry. Competitive actions are defined as externally oriented, specific, observable competitive moves that a firm takes to enhance its performance over a given period of time (Smith et al., 2001). The actions have the potential to disrupt the competitive status quo, causing disequilibrium in the product-market space (Ferrier et al., 1999). Thus, in inter-firm rivalry, competitive interaction consists of a very complex and dynamic process in which actions trigger strings of responses and counter-responses (Chen, 1996).

Although the studies of competitive dynamics have offered significant analyses of various competitive situations, only a few studies have examined the competitive dynamics in cooptation. For example, Chi et al. (2007) apply competitive dynamics and network structure to the context of electronic networks, which are distributed computing systems that support processes shared by collaborators and even competitors. They examine whether firms' network structure and the use of interorganizational systems may affect firms' competitive actions, in terms of action pattern similarity, action volume, complexity of action repertoire, and action heterogeneity. Despite their significant work in linking competitive dynamics and cooptation, they indicate that in the electronic networks, competing firms may or may not have collaborative relationships with each other (Chi et al., 2007: 11). That is, the actors in cooptation may be direct competitors but without linking by cooperative relationships.

Recently, Andrevski et al. (2016) investigate how firms' collaborative activities affect their competitive activities in a sample of the global automobile industry. Their study found alliance portfolio configuration in three attributes-structural holes, R&D alliance scope, and equity alliances will positively interact in explaining competitive action frequency. They conclude that firms with mixed alliance portfolio attributes that maximize opportunity recognition, opportunity development, and action execution capacities are better able to frequently introduce competitive actions. In the global automobile industry, automakers must collaborate closely with hundreds of component providers to hasten their manufacturing processes (Andrevski et al., 2016). A stable network with reliable alliance partners enables the automakers to compete in the product markets. In Andrevski et al.'s (2016) study, the alliance partners may not be competitors but the component suppliers

Chen and Miller (2011: 13) proposed the relational perspective as a business mindset to further differentiate that from the conventional view of competitive dynamics. The conventional view focuses on combative competition, which emphasizes head-on competition, value appropriation, and short-term interaction; whereas the relational view focuses more on sustainable relationships, mutual benefits, value creation, indirect competition, and long-term interaction. The relational perspective of competitive dynamics addresses how firms can transcend paradoxical tensions and balance in coopetition. As noted by Chen and Miller (2015), a move toward a relational variety of competition-cooperation dynamics requires greater attention. Therefore, in making contributions to linking competitive dynamics and coopetition, this study aims to reveal the competitive actions, particularly when competitors have collaborated. We intend to show in such coopetition relationships how rival partners compete based on cooperation.

This study aims to explore the competition aspect in the theoretical framework of coopetition dynamics. Prior coopetition research focuses much more on collaboration, including the antecedents, formation process, and outcome of collaborating with competitors. Less attention has been paid to what is happening to competition after the competitors have collaborated. To understand coopetition dynamics, we should look not only at the cooperation side but also at the competition side. As [Dorn et al. \(2016\)](#) suggest, a future research as to how competitive dynamics can advance our understanding of the effect of coopetition is worth exploring. Therefore, we focus on the competition in coopetition dynamics, answering the question: how do rival partners compete based on cooperation?



Methodology

Research setting

Given the unexplored and complex nature of cooperation-based competition, this study is conducted by the in-depth single-case study. We selected a coopetition alliance formed by competitors and suppliers in the Taiwanese bicycle industry as our research setting to observe the competition between two leading competitors. The coopetition alliance was jointly formed and led by two competing bicycle makers, Giant and Merida. Giant is the largest bicycle maker in Taiwan and Merida is the second largest. They both started as original equipment manufacturing (OEM) suppliers in the late 1970s and then gradually transformed into brand-owned manufacturers in the late 1990s. To cope with the fierce competition caused by the Chinese bicycle makers, they together coordinated the parts suppliers to form the alliance in 2003, which was originally composed of 13 firms (Lee, 2013). Since this was the first coopetition alliance formed by competitors in Taiwan, the alliance was given the name “A-Team”.¹ Almost all of the A-Team members have founders or presidents who own their companies. Until 2016, the members of A-Team included two bicycle makers and 18 parts suppliers, as shown in Table 1.

Table 1

The backgrounds of A-team members.

Company (Brand name)	Year of establishment	Number of employees	Year in A-team	Main products
Giant (Giant, Momentum, Liv)	1972	1500	2003	Bikes
Merida (Merida)	1972	1000	2003	Bikes
Alexrims (Alexrims)	1992	450	2003	Wheels
Formula Engineering (Formula, Xero)	1994	117	2003	Wheels, hubs
Joy Industrial (Novatec)	1981	195	2004	Wheels, hubs
Tektro (Tektro)	1986	250	2003	Brakes
Lee Chi (Promax)	1973	480	2005	Brakes, handlebars
Hayes (Hayes)	2004	50	2009	Brakes
Sram (Sram)	1991	1700	2003	Shifters, derailleurs
Tien Hsin Industrial (FSA)	1970	470	2003	Headsets, cranksets, handlebars
Kenda (Kenda)	1962	1700	2004	Tires
Cheng-Hsin (Maxxis)	1967	3571	2004	Tires
KMC Industrial (KMC)	1977	200	2003	Chains
VP Components (VP)	1980	280	2003	Pedals
SR Suntour (SR Suntour)	1987	300	2003	Forks, rear shock
Velo (Velo)	1979	200	2003	Saddles
HL (Satori)	1976	81	2004	Seat posts and clamps, forks, brakes
JD Components (TranzX)	1986	160	2009	Seat posts and clamps, forks
Chia Cherne (Jag Wire)	1986	290	2004	Cables, brakes
TransArt (TransArt)	1973	185	2005	Screen print, mud guard

Source: Wheel Giant Inc. website: <http://www.wheelgiant.com.tw/index.html>.

Prior empirical studies in coopetition have been predominantly focused on high-tech industry, assuming that complex products, rapid technological change and intensive competition will induce coopetition (Ritala, 2012; Czakon and Rogalski, 2014). The high-tech industry is a popular research setting, particularly from the point of view of linking innovation with coopetition (e.g., Gnyawali et al., 2006; Cassiman et al., 2009; Le Roy and Fernandez, 2015; Gast et al., 2015; Bouncken et al., 2015). However, Czakon and Rogalski's (2014) study provides evidence of wide-spread coopetition in traditional industries. They argued that coopetition is not a phenomenon derived only from complex products or innovative industries where coopetition is simply a must for firms. They encouraged the development of coopetition studies in more traditional industries.

In this study, the choice of the coopetition alliance in the Taiwanese bicycle industry as the research setting was determined not just by industrial attributes. The case is unique because, firstly, Taiwan has long been the leading bicycle exporting country since late 1970s. Faced with the fierce competition caused by a proliferation of local Chinese bicycle manufacturers, Taiwan was losing its leading exporting position in the global OEM-supply market. The cooperation between two major competitors is considered a turning point that has changed the fate of the Taiwanese bicycle industry. Together they have created what many believed to be an impossible combination of cooperation with competitors. They not only enhanced members' capabilities but also created benefits for the whole industry. For example, Taiwanese bicycle export volumes (see Appendix B) keep steady between 2003 and 2015. The average export unit price increases rapidly from US\$ 150.14 in 2003 to US\$ 473.98 in 2015, indicative of the production of high quality and high value-added bikes in Taiwan. Secondly, the coopetition of “A-Team” in the bicycle industry was the first example, and also a successful one, and has become a benchmark of cooperation between competitors to the other industries in Taiwan.

¹ According to an interview with Giant's spokesman, the idea of the name as “A-Team” was originated from a movie entitled “A-Team”, declaring their determination to work together as the best team even when partners are competitors.

Research approach

As previous research suggested, a case study approach is useful for examining competition-cooperation dynamics systematically and deeply (Ketchen et al., 2004; Dussauge et al., 2000; Gnyawali and Park, 2009). Yin (2009) indicated that three important conditions to distinguish the different research methods. Firstly, researchers have to clarify the form of research questions. While the research questions mainly deal with operational links needing to be traced over time, which therefore involve “how” and “why” questions, case studies would be one of the most appropriate research methods. In this study, we explore *how* rival partners compete based on cooperation and *how* cooperation may influence competition. Therefore, a case study is considered the most appropriate method that enables us to unfold the complex and contextual questions. Secondly, the extent of control over behavioural events also determines the research method. While the research question, over which the investigator has little or no control, is being asked the case study helps to examine the practical events by dealing with multiple sources of evidence. To conduct this study, we selected a practical event which involves competition and cooperation that we cannot manipulate directly. We traced the process of the practice and extracted implications from analyzing a series of competitive actions between two rival partners. Thirdly, the case study is preferred in examining contemporary events which can be conducted by direct observation and interviews of the persons involved in the events. To triangulate our findings, this study interviewed key informants from Giant, A-Team, and other third-party institutions that were deeply involved in the competition alliance.

As to the type of case study, for the purpose of capturing the circumstances and conditions of a representative/typical situation, this study is conducted in an inductive way with a single-case approach (Yin, 2009). In contrast to the multiple-case study which emphasizes replication logic by searching for cross-case patterns (Eisenhardt, 1989; Eisenhardt and Graebner, 2007), a single-case study is featured in the deep understanding of a particular social setting and targeting at telling good stories rather than just creating good constructs (Dyer and Wilkins, 1991). Also, Yin (2009: 49) suggests that a longitudinal case specifies how certain conditions change over time, and the desired time intervals would presumably reflect the anticipated stages at which the changes should reveal themselves. This study explores the interaction between two competitors when they have formed a long lasting cooperative relationship, thus a single-case study is appropriate for understanding such phenomena.

The “A-Team” is an inter-firm alliance formed by competitors and their suppliers, in which the company members collaborate to learn and to improve their manufacturing capabilities. Outside the alliance, Giant and Merida compete in the local and global product-markets. This context makes the two bicycle makers simultaneously compete in the worldwide markets and also cooperate in the “A-Team” alliance. Thus, the context of competition between Giant and Merida, but also collaboration with the “A-Team”, makes a prominent example of cooperation.

Following the studies conducted by Chi et al. (2007) and Andrewski et al. (2016), who investigated the competitive dynamics in cooperation, we take the unit of analysis here at the dyadic firm-level analysis since this study aims at revealing the competition between two rival partners. The firm-specific, pair-wise analysis of competitors mirrors the fine-grained examination of interfirm rivalry (Chen and MacMillan, 1992). In addition, Zaheer et al. (2010: 66) also suggested that the inter-firm analysis at the dyadic level helps to understand the nature of the relational characteristics and how these relational characteristics affect the likelihood of the relationship's continuation or other outcomes. Therefore, this study takes the dyadic firm-level analysis to explore how Giant and Merida compete in the market based on their cooperation in “A-Team”.

It is necessary to clarify that the unit of analysis is at the firm-level but not project-level, in spite of the name of “A-Team” possibly confusing the level of analysis. In this study, the analysis at the firm-level between two rival partners, Giant and Merida, is different from the studies at the project level in high-tech industry. For example, Fernandez et al. (2014) and Le Roy and Fernandez (2015) carried out their studies in the space industry for manufacturing of telecommunications satellites, in which the innovation task is divided into different programmes conducted jointly by competitors at the working-group level. As indicated by Cassiman et al. (2009), the R&D project of innovation is a complicated task, which requires new knowledge integration, task management, particular governance structure, and the design of a project manager's role to align different elements at the project level.

In this study, the cooperation in the Taiwanese bicycle industry at the firm-level is different from that in the space industry at the project-level. The two major competitors together with their suppliers collaborate to learn and to improve their capabilities individually but not to jointly complete a specific programme as in the space industry or other high-tech industry. For example, the A-Team members collaborated for the adoption of JIT, TPS (Toyota Production System), TQM and TPM systems to improve the manufacturing capabilities for each member firm. They also learned with each other to improve their R&D and marketing capabilities. Such improvements learned from inter-firm cooperation enhance each member firm's competitive advantages to compete in the global market. More detail of A-Team cooperation is presented in the results section.

We have taken an “event history approach” emulating the study carried out by Yu and Cannella (2007) and following the “structured content analysis” that was commonly adopted in the competitive dynamics research (Chen and MacMillan, 1992; Ferrier et al., 1999; Ferrier, 2001). Jauch, Osborn, and Martin (1980: 518) argued that case analyses can provide data from multiple sources over several periods and can be used to explore dynamic changes over time. As recommended by previous research, we gathered historical data of competitive actions from public sources such as industrial journals and newspapers. The data collection is described next.

Data collection

Public-source data

The European market has an iconic meaning for firms in the bicycle industry. For example, bicycling accounts for 30% of all trips in Netherlands cities (Pucher, 1997). Other countries, such as Denmark, Germany, Switzerland and Sweden, also rely on the bicycle for about 10–20% of urban trips. According to the statistics of Taiwan bicycle exports, the European market accounts for 57.54% of all exports by quantity from Taiwan in 2016 (the second largest market, North America, accounts for 20.58%).²

For Giant and Merida, the European market is absolutely the main and critical battlefield in the global market. The competition interactions on the European market have reflections on their strategic intentions. We collected reported issues from *TBEA Newsletter* and supplemented this with data from *udn.com* (website: <http://udndata.com/>) between 2006 and 2016. By searching for the key words such as “Europe”, “Netherland”, “German”, “Norway” and “bike” etc., the searching process led us to identify 87 issues related to their competitive actions in the European market.

There are two reasons why we chose the timeframe in the period of 2006–2016. Firstly, since this study focuses on the post-cooperation competition, considering the coopetition strategy may have an effect on the subsequent period rather than in the very beginning, we chose three years after the alliance was formed in 2003. In addition, three years is also the end of the first stage in the common plan of A-Team (see Table 3). This would be better for us to observe how the cooperation may influence competition in the subsequent period. Secondly, we do not collect the data before the formation of A-Team, not just because we focus on post-cooperation competition, but also because both competitors started as OEM-suppliers and then gradually transformed into brand-owned manufacturers around the late 1990s. The competition before the alliance was mainly in the OEM-supply market, only with a minor portion in the brand market. After they improved their competitiveness while collaborating in the alliance, they started to compete globally in the brand market. The competition in the OEM-supply market is different from that in the brand market. Therefore, we do not compare the competition before and after cooperation.

In-depth interview

We also collected primary data by conducting in-depth interviews with key informants from Giant, A-Team, and other third-party institutions that were deeply involved in the A-Team. Table 2 shows the informant backgrounds. They have been in their positions for a considerable time and during the key period before and after the A-Team formation, having significant roles in making decisions and taking actions. Although we did not interview the informant in Merida, we have important secondary data from an article published in *Harvard Business Review (Chinese edition)*³ recording an interview with the CEO, Michael Tseng. In addition, we also collected a special issue published by *Cycle Press (2008)*,⁴ which delineates the evolutionary history of A-Team. The list of quotations from interviews is shown in Appendix C.

Table 2

The backgrounds of interviewees.

Institution	Informant	Informant position	Industry experiences
A-Team	A Giant	The former Executive Secretary of A-Team (2003–2008)	17 years
	B Giant	Head of Giant International Corporate Headquarters Manager of General Affairs Department, Corporate Headquarters (The former Corporate Spokesman and Special Assistant of Chairman)	30 years
	C Cycling and Health Tech Industry R&D Centre (CHC) ^a	The current Executive Secretary of A-Team (since 2014) Secretary of General Manager's Office/Manager of Planning and Promotion Section	14 years
The third-party	D Taiwan Aisin Elite	Director/Vice General Manager	32 years
	E Taiwan Bicycle Association (TBA)	TPS and TQM Consultant of A-Team (2006–2011) Secretary General (Journalist of Economic Daily News from 1978 to 2008)	34 years

^a CHC joined A-team as the ninth sponsor member in 2014. The A-Team bureau is now located in CHC as Merida passed down the chairmanship to KMC Chain Industrial Co. at the end of 2014.

Competitive actions coding process and data analysis

Prior studies examining competitive dynamics in the automobile industry have classified competitive actions into several categories. For example, Chi et al. (2007) classified competitive actions of sports car makers into six categories: production, product development (product enhancement, new models and variants, R&D initiatives), production (production process, capacity increase, capacity decrease), logistics, marketing and sales, and service. Andrevski et al. (2016) classified competitive actions of global automakers into five categories: pricing (pricing cuts and sale incentives), marketing (new advertising and promotional campaigns), new products (new brand model, new generation of an existing model), product improvements, and market expansion (entry into new international markets, building new manufacturing facilities, adding new dealership). The value chain of a bicycle maker is similar but simpler than that of an automaker. Considering the categories of these two studies and the value activities (e.g., sport sponsorship) in the bicycle industry, our coding process yielded 6 categories:

² Data source: Taiwan Bicycle Association. www.tba-cycling.org.

³ Lee, Y.-Y. (2013). 'Coopetition of the ants: the revelation of A-Team'. *Harvard Business Review (Chinese edition)*. pp. 132–143.

⁴ Cycle Press. (2008). 'Tracing the A-Team Evolution'. Tokyo: Cycle Press.

production, R&D/product (new product development, pricing, launch product), channel strategy, branding strategy, sponsoring, marketing (promotion, design competition, exhibition). When one issue refers to at least two actions, we coded the issue as two action codes. In total, the 87 issues were coded into 119 competitive actions, including 51 in Giant and 68 in Merida. [Appendix D](#) provides an example of our coding with the competitive actions.

The data was analysed as follows. First, two authors read the reported issues from which they independently created a list of competitive actions categorized by action code. Second, we crosschecked the consistency and inconsistency of the interpretation of the coding between two authors. We reviewed the coding and discussed the results until we reached consistency across all the action coding. Third, we analysed the competitive actions between two rival partners. The analysis is supported by the in-depth interviews to validate our analysis and to inform our interpretation of these issues.

Given a qualitative approach, the validity and reliability of a measure is of prime concern ([Kinner and Taylor, 1979](#): 291). To increase trustworthiness, [Lincoln and Guba \(1985\)](#) suggest four criteria which help to evaluate the validity and reliability of a qualitative research. Firstly, *credibility* denotes that the researchers have represented the findings and interpretations adequately to the original multiple realities. This study attains credibility by triangulation, which refers to the use of multiple and different sources, methods, and investigators to verify our findings and interpretations ([Denzin, 1978](#); [Lincoln and Guba, 1985](#)). We conducted this study mainly based on public reports gathered from newspapers, magazines, and official documents. According to [Jauch et al. \(1980: 519\)](#), published issues are often written for readers that may be familiar with the actions of a particular firm or industry. The relevant information and published materials collected in this study were published by official industrial institutions, increasing credibility in this study. We also triangulated between secondary data sources and primary face-to-face interviews to validate data collection. All interviews were recorded and transcribed within two days. The contents of transcriptions were sent to be reviewed and confirmed by the informants. To further increase reliability, we triangulated our interviews across informants, incorporating both insider informants from the two competing firms and A-Team members, as well as outsider informants from the third-party organizations. Such triangulation provides more accurate information and improves the robustness of the results ([Anand et al., 2007](#); [Martin and Eisenhardt, 2010](#)).

Secondly, *transferability* refers to the generalization that the findings and interpretations will apply to similar contexts. As noted by [Lincoln and Guba \(1985\)](#), transferability can only be achieved by providing thick description about the observed phenomenon. The thick description helps to build the realities of the research setting and make it possible for potential applicators to transfer the interpretations that were found to hold in some other contexts. This study strives to provide detailed and holistic information about the observed events by not only looking at published issues but also the description narrated by key informants who were involved in the events.

Thirdly and fourthly, corresponding to reliability in quantitative research, *dependability* and *confirmability* are attained while the process of inquiry is examined and the inquiry is verified to meet acceptability. According to [Guba \(1981\)](#), an inquiry audit called in to authenticate the process and the product of inquiry, which ensure the dependability and confirmability of the research. We attain dependability by crosschecking our process of inquiry between authors and checking the confirmability by ensuring the interpretations are in line with the perspectives from key informants.

Results

The results section first describes the cooperation operated by the A-Team. This is followed by the result analysis of competition between Giant and Merida in the European market. We then discuss how cooperation may affect competition and develop our propositions.

Cooperation between competitors

The change of industrial environment fostered the formation of the A-Team. The Taiwanese bicycle manufacturers started as original equipment manufacturing (OEM) suppliers in the late 1970s. To expand production and to lower manufacturing costs, those OEM suppliers began to set up their manufacturing bases in mainland China. However, a fierce competition caused by a proliferation of local Chinese bicycle manufacturers resulted in a huge drop in Taiwanese bicycle export volumes between 1998 and 2002 (as shown in [Appendix A](#)). Taiwan was no longer the leading bicycle exporting country. There was a perception that “this trend must be changed.” In 2002, the two major assemblers, Giant and Merida, called for the strong willingness of cooperation. They, together with some major suppliers, formed “A-Team” in 2003. The Giant President, Tony Lo, also the former chairman of A-Team stated:

“The background to the original purpose of the A-Team and the selection of member firms to begin the project was the terrible difficulties facing Taiwan's industry at that time: it was reaching the limit of the mass production of mainly low-priced bikes in mainland China and there was market chaos because of worldwide oversupply. We were at a point there was no choice: something has to be done about the situation.”

([Cycle Press, 2008](#): 75)

The A-Team set up an affairs bureau for coordination and communication among the members. They instituted a chairman and a deputy chairman with an agreement that Giant President would take the A-Team chairmanship for the first two three-year terms (2003–2005 and 2006–2008), whereas Merida General Manager Michael Tseng would take the following two three-year terms (2009–2011 and 2012–2014). In 2015, they passed on the chairmanship to one of the suppliers, KMC Chain Industrial Co. (KMC).

A-Team has set rules for partner selection. By deliberately selecting partners, the A-Team members share the same vision as “Taiwan, to become the global innovation and supply hub of best quality cycling products and services with best value.” They also highlighted three missions: the power of partnership, the future of cycling, and the passion for cycling.

“A-Team is a public platform, in which member firms observe and learn from each other. However, while each member firm has attained identical levels in some specific value activities, we adjust our paces of cooperation respectively. For example, the A-Team may focus more on the mutual learning in manufacturing while leaving product innovation and sponsoring as the other activities that need to be stood on each member's feet.” (Informant A)

Common plans in every three-year period from 2003 to 2014 were identified as shown in Table 3. The first three-year term focused on improvement in manufacturing, R&D, and marketing. In 2003, all the A-Team members generated significant advances in the production systems and work site renovations based on the TPS with guidance provided by coaches and leaders (Cycle Press, 2008: 42). Collaborative research and development were the central themes in 2004. The A-Team set up a platform for joint development, working together with suppliers to design and develop the new product for Giant and Merida. Since 2004, the A-Team has visited the Toyota group companies in Japan for on-site training. The learning mechanism in A-Team involves two-groups, each led by either Giant or Merida. Between 2006 and 2009, the A-Team introduced TQM and TPM. They have also integrated the supply chain network through co-managing, co-R&D, and co-marketing.

Table 3

The common plans of A-Team by 3-year stage.

Year	Plan
2003–2005	<p>A three-step plan in the first stage:</p> <p>2003: <i>Manufacturing improvement</i></p> <ul style="list-style-type: none"> - Enhance all members' manufacturing and operation toward Just-in-Time (JIT) and onwards. <p>2004: <i>R&D improvement</i></p> <ul style="list-style-type: none"> - Enhance all members' capability, tools, system of new product development, and onwards. - Team projects to develop new trend collaborate. <p>2005: <i>Marketing improvement</i></p> <ul style="list-style-type: none"> - Collaborate with SBRs (Specialty Bicycle Retailers) worldwide, endeavour to develop innovative added-value, high quality products, at reasonable price and margin. - Through seamless, efficient supply/service chain operation, enable the specialty retailers to have a unique competitive advantage over other channel.
2006–2008	<p>Three breakthrough points in coming 3 years:</p> <ol style="list-style-type: none"> 1. JIT 2. Best quality 3. Value innovation.
2009–2011	<p>Three breakthrough points in coming 3 years:</p> <ol style="list-style-type: none"> 1. Capability strength 2. Co-marketing 3. Cycling island
2012–2014	<p>Three breakthrough points in coming 3 years:</p> <ol style="list-style-type: none"> 1. Strength: TPS, TQM, TPM in daily management. To execute VA/VE for value upgrade. 2. Image: Good quality, short delivery, leading fashion, and reducing the carbon footprint. 3. Cycling LoHas: To construct Taiwan as a bicycle paradise. To expand the home market of the bicycle ride culture.

Source: The A-team website: <http://www.a-team.tw/>.

“They introduced the TPS to lower inventories, reduce wastes, and improve the production process at the first three-year stage. It has strengthened the foundation for upgrading the whole industry. In the second next three-year term, they focused more on improving the quality of their products. It has built the competitive advantages not only for the two makers but also for the whole Taiwan bicycle industry to compete in the global market.” (Informant D)

The A-Team was led by strong commitment. The founder of Giant, King Liu, threw himself into the effort to provide training, study exchanges, and performance reporting. Giant even opened up its plants for inspecting and learning to the competitor Merida (Lee, 2013:133). As King Liu and the informants said:

“By sharing information and technology, we can achieve mutual improvements. It's no good having a factory we can't show to the other companies in the industry.”

–King Liu (Cycle Press, 2008: 79)

“It is doubtless that joining A-Team would have benefits to its members. Due to the mutual learning in A-Team, each member company could detect many problems and come up with solutions to improve their operations respectively. For example, A-Team invited experts to share the concept of aesthetics to its members. It benefits to them in many aspects.” (Informant E)

“We did co-marketing by participating in many exhibitions like Europe and Japan in the name of the A-Team. We highlighted that we are all MIT (made in Taiwan) and it helped to build the image for all the members in the A-Team.” (Informant A)

We can observe the intensive cooperation between and among the A-Team members. Our interest here is “under such cooperation, how do the two leading competitors, but also partners, compete?” In the next section, we present the competition between Giant and Merida in the European market.

Competition in the European market

Taiwanese bicycle makers entered the European market in 1983. Giant set up a branch in the Netherlands in 1986. This was followed by branches in Germany and France in 1987 and 1988. Merida targeted Europe in 1986 in Norway and later in Germany in 1988. We analysed their competitive actions in the European market during 2006–2016 across six categories: production, R&D/product (new product development, pricing, launch product), channel strategy, branding strategy, sponsoring, marketing (promotion, design competition, exhibition). Table 4 provides the list of action volume, contents, and dates of issues in Giant (51 actions) and Merida (68 actions) in each category. Table 5 summarizes the number of action in each category by year.

Table 4

The number of competitive actions and contents in each category.

Category	Giant		Merida	
	Number of actions	Action content (MM/YY)	Number of actions	Action content (MM/YY)
Production	5	Expand capacity for e-bikes (08/2008) New bikes production ahead of schedule (07/2010) Fund the chain-manufacturer KMC (05/2014) Build e-production system (07/2014) Prepay for materials in euro (01/2015)	12	Introducing JIT production system with European clients (12/2006) New bikes production ahead of schedule (06/2007) Full capacity of OEM orders form Specialized (06/2007) Orders exceed capacity (09/2007) Coordinate design and production with OEM clients (02/2009) Increase OEM orders from Specialized (03/2009) New bikes production ahead of schedule (03/2010) Increase human resource for production (07/2010) Fund the chain-manufacturer KMC (05/2014) Expand e-bikes production (06/2014) OEM orders production ahead of schedule (08/2014) Completion of the production line of e-bikes (11/2015)
R&D	5	Redesign power system for e-bikes (07/2006) Hydroforming in lightweight of frame (12/2006) R&D for city bikes and folding bikes (12/2006) Co-develop new bikes and equipment with sponsoring team (03/2014) Build R&D headquarters in Taiwan for 10 billion (08/2014)	7	Co-develop new bikes with European clients (12/2006) R&D for carbon-fibre racing bikes, ladies-bikes, and all-terrain bikes (03/2007) New design for all-terrain bikes (08/2007) R&D for carbon-fibre racing bikes (07/2010) Co-develop e-bikes modules with Bosch (09/2011) R&D for road racing bikes in Stuttgart (08/2014) Design new racing bikes in Germany (08/2015)
Pricing	6	Raising price by decreasing volume of production (03/2006) Pricing 1700 euro for e-bikes (06/2008) Raising new bikes' prices (07/2010) Pricing 1750 euro for road bikes (08/2014) Raising new bikes' price (08/2015) Raising the average prices of all products (03/2016)	5	Pricing 9000 euro for limited Olympics racing bikes (05/2008) Pricing 7000 euro for new carbon-fibre racing bikes (07/2010) Raising new bikes' prices and promoting for old bikes (07/2010) Pricing 10,000 euro for the champion bikes in Tour de France (03/2014) Pricing 3750–4000 euro for high-level bikes (03/2016)
Product launching	9	Providing full product line for sales representatives (07/2006) Launching e-bikes in Netherlands (07/2006) Launching mountain bike XtC SE (12/2006) Launching all-terrain bikes (08/2007) Launching revision of road bikes (08/2014) Launching commemorative bikes for tour de France (03/2015) Launching commemorative bikes and	14	Launching high-value bikes (01/2007) Launching mountain bike Carbon Mission for 5000 euro in Europe (03/2007) Launching all-terrain bikes (08/2007) Launching Olympics mountain bikes (05/2008) Launching lightweight mountain bikes (11/2008) Launching new bikes with Stians Sport AS in Sweden (11/2009) Launching racing bikes (07/2010) Launching 2500 euro e-bikes (09/2011) Launching bikes similar to the champion in tour de France (03/2014)

(continued on next page)

Table 4 (continued)

Category	Giant		Merida	
	Number of actions	Action content (MM/YY)	Number of actions	Action content (MM/YY)
Channel	8	peripherals (04/2015) Launching new bikes for 2016 (09/2015) Launching new e-bikes (02/2016)	4	Launching road bikes, triathlon bikes, and full suspension bikes (08/2014) Launching ladies-bike Juliet (08/2014) Strengthen the production line of high-value road bikes (08/2014) Launching top-tier road racing bikes (03/2015) Launching new e-bikes (02/2016)
		Execute new retailing system (GRP plan) by building specialty stores (07/2006) Improve the operational system of sales representatives by IT (07/2006) Expand the scale of specialty stores (05/2007) Expand the scale of company-owned stores (05/2007) Contact with local representatives in new markets (09/2007) Expand branded channels (11/2008) Establishing Liv/Giant specialty stores (01/2010) Establishing Liv/Giant specialty stores in France, UK, Germany, Netherland, Poland, and Denmark (01/2010) Focus on single brand (10/2006)		Joint venture with sales representatives in Spain (03/2007) 60% products in Europe sold via SBC (05/2009) Take over the selling in Sweden and Norway from Stains Sports AS (11/2009) Operating the subsidiary in Sweden (11/2009)
Branding	3	Enhancing the sales of own brand and improving the brand image (05/2007) Keep the ODM and own brand business (02/2015)	2	Multi-brand strategy (10/2006) cooperating with Specialized (12/2006)
Sponsoring	5	Continually sponsoring racing teams in Germany (10/2006) Win champion by Netherland road racing racers in Olympics (08/2012) Win awards by Netherland racers in road racing (10/2013) Win awards by titled-sponsoring racing teams (03/2014) Win awards by Germany racers in Europe (04/2015)	12	Sponsoring racing teams (07/2006) Sponsoring racing teams in Spain and Italy (07/2006) Win awards in mountain racing (09/2006) Designated as the racing bikes by European racers in Olympics (11/2008) Sponsoring mountain racers in Olympics (02/2009) win Awards by Norway racers (08/2012) Titled-sponsoring racers in Italy road racing (03/2013) Titled-sponsoring the racing bikes of the champion racer in tour de France (03/2014) Win awards by Portugal racers in Sweden (07/2014) Sponsoring Taiwanese racers in tour de France (11/2014) win awards by Norway female racers in mountain racing (07/2015) Continually sponsoring the Taiwanese racers in tour de France (12/2015)
Marketing/ promotion	10	Participating in exhibitions (04/2006) Participating in exhibitions in Czech (04/2006) Win awards by city bikes in IF exhibitions in Germany (09/2008) Visit the cycling infrastructure in Netherlands by King Liu (03/2010) Promoting brands in Netherlands (03/2010) Promoting the champion bike TCR in Paralympics (08/2012) Participating in the exhibition in Spain (11/2013) Participating in exhibitions in Taipei Cycle Show (03/2015) Promoting for the pre-order of commemorative bikes and peripherals (04/2015) Announce that Giant will not participate in EUROBIKE since 2017 (10/2016)	12	Win awards by mountain bikes in Germany (09/2008) Hold product launch in Spain (02/2009) Promoting for outmodes bikes (07/2010) Participating in exhibitions in Munich, Germany (09/2011) Win awards by mountain bikes in Germany (08/2012) Promoting mountain bikes in Paralympics (08/2012) Participating in the exhibition in Spain (11/2013) Hold 2015 new product launch (08/2014) participating in EUROBIKE (09/2014) Participating in exhibitions in Belgium (01/2015) Participating in exhibitions in Taipei Cycle Show (03/2015) Narrow down the scale of participating in EUROBIKE in 2017 (10/2016)

Table 5

The number of competitive actions-by year.

Counts	Production		R&D/Pricing/ Product		Channel		Branding		Sponsoring		Marketing	
Year	Giant	Merida	Giant	Merida	Giant	Merida	Giant	Merida	Giant	Merida	Giant	Merida
2006		1	7	1	2		1	2	1	3	2	
2007		3	1	5	3	1	1					
2008	1		1	3	1					1	1	1
2009		2		1		3				1		1
2010	1	2	1	4	2						2	1
2011				2								1
2012									1	1	1	2
2013									1	1	1	1
2014	2	3	4	6					1	3		2
2015	1	1	4	2			1		1	2	2	2
2016			2	2							1	1
Subtotal	5	12	20	26	8	4	3	2	5	12	10	12
Total	17		46		12		5		17		22	

Giant (G) = 51; Merida (M) = 68; G + M = 119.

From Table 4, the comparison of action volume in each category from Table 5 shows the ratio of Giant to Merida as 5:12 in production, 5:7 in R&D, 6:5 in pricing, 9:14 in launch product, 8:4 in channel, 3:2 in branding, 5:12 in sponsoring, and 10:12 in marketing/promotion. From Table 5, we observed that both companies initiated more actions in upstream activities related to R&D and innovation during 2006–2010. However, during 2012–2016, more actions were executed in downstream activities in both companies.

According to Chi et al. (2007), competitive dynamics research has identified several constructs as the characteristics of competitive actions, such as action volume (Chen and MacMillan, 1992; Ferrier et al., 1999; Young et al., 1996), action pattern similarity, and complexity of action repertoire (Miller and Chen, 1996). In this study, we compare the similarity in competitive action pattern and the heterogeneity in action repertoire between two rival partners and then discuss how cooperation may affect competition. The following section demonstrates the competition in the upstream category (production, R&D, and innovation) and the downstream category (branding, channel, sponsoring, and marketing/promotion). In each action category, we address the competitive actions around timeline to depict the dynamics between rival partners.

Competition in production, R&D, and innovation

As to their competitive actions in production, R&D, new product development and launch product, we found that they both emphasized a high-value product strategy by developing high-tech bikes and launching high-priced bikes into the European market. For example, Giant initiated 25 actions (49% of total action volume) and Merida allocated 38 actions (56%) related to the innovation and product categories, of which Giant and Merida respectively took 20 and 26 actions in R&D, high-value pricing and launching new products. In addition, both companies initiated more actions in R&D and innovation during 2006–2010 rather than in the later period of 2012–2016.

Despite their competitive action similarity in the emphasis on innovation and high-value product, they created heterogeneity in competitive action repertoire. First, they differentiated by innovating and launching different types of bikes. For example, in 2006, Giant launched e-bikes in the Netherlands by redesigning the battery for professional users. Giant also launched the city-bike. Merida developed high-level mountain-bikes. In 2007, Giant was excellent at racing-bikes whereas Merida was remarkable for the mountain-bike. In 2008, Giant's e-bike and Merida's mountain-bike were excellent and sold at high unit prices. During 2009 and 2010, the high-value product strategy in both companies was strengthened by highlighting the above-average unit price and increasing the price on each new product launch. As the informants noted:

"I guess they (Giant and Merida) have different strategies. Giant promotes its brand name "Giant" with full-range of product lines, whereas Merida selected mountain-bike as the first priority ..." (Informant E)

"Giant seems to be equally developing all types of bicycle Giant has wider product lines whereas Merida focused on narrower product lines." (Informant C)

Second, they launched new products into dispersed geographical market segmentation. For example, in 2007, although they both launched all-terrain bikes into the market, Merida targeted the markets in Germany, Austria, and Switzerland, avoiding the Netherlands where Giant was the market leader. Third, they launched the same type of bike at different time. For example, in 2011, five years after Giant's success in e-bike, Merida cooperated with Bosch to develop a brand new e-bike, "E-Spresso". Fourth, they located their R&D centers in different geographic sites. While Giant spent ten billion to set up its R&D office in Taiwan and developed new racing bikes with its racing team in 2014, Merida developed racing bikes in Stuttgart, Germany, during 2014–2015. It seems that Giant centralizes its R&D resources in the home country for targeting its global racers; whereas Merida deployed its R&D resources in Germany to develop European-focused racing bikes for supporting its sponsoring racers.

Differentiation in product innovation, entering into different geographic markets, launching new products at different times, and locating R&D centers in different geographic sites have demonstrated their heterogeneity in competitive action repertoire.

Competition in branding, channel, sponsoring, and marketing/promotion

As to their competitive actions in downstream activities, Table 4 shows their action volume of Giant to Merida as 3:2 in branding strategy, 8:4 in channel strategy, 5:12 in sponsoring, and 10:12 in marketing. As we can see that they took equivalent actions into these categories, except that Giant focused a bit more on channel strategy whereas Merida focused much more on sponsoring strategy. In addition, Table 5 shows that both companies initiated more actions in downstream activities during 2012–2016 than during the earlier period.

First, we review *branding* strategy. Giant focused on a single brand but Merida has multiple brands. In 2006, Merida operated two brand names: “Merida” and “Specialized”. In 2009, Merida added its third brand name, “Centurion”, which emphasizes a German design style for targeting the high-priced market. Moreover, while Merida took marketing actions by aiming at a specific product or market, Giant strove for building its global brand identification. For example, the founder of Giant, King Liu, who is now 82 years old, promotes his brand around the world by cycling in the Netherlands, Japan, China and other countries. Until 2015, the brand-owned business has accounted for over 70% of Giant's total sales. As the informants mentioned:

“Giant and Merida have different channel and brand strategies. Giant prefers to 100%-owned sales subsidiaries because fully-owned strategy is better to control. ... Merida chooses share-equity strategy. ...In their joint equity with Specialized, Merida sells its products under the brand name of *Specialized*.” (Informant B)

“Giant started its global strategy earlier than Merida. People might reckon that Merida seems to be more conservative. However, Merida moved fast in recent years.” ... “I think Merida's investment in Specialized is a critical step. Merida has not only secured its OEM-supply orders but also benefited from Specialized's profits.” (Informant E)

Second, we look at the *channel* strategy. There are more issues indicating Giant's actions in channel strategy (8 for Giant vs. 4 for Merida). Giant started channel strategy earlier. The GRP (Giant Retailing Partner) plan, aiming at improving the retailing systems and opening more retailing stores, was launched in 2006 starting with the European market. Moreover, the GSI (Giant Store Inside) plan was initiated in 2007, launched to create 400 stores by 2007 and 2000 stores by 2010. In 2010, Giant initiated a “global channel plan” in 13 nations to open specialty chain stores named “*Liv/giant*” for ladies-bikes.

On the other hand, Merida did not take actions regarding channel plans, except for one issue regarding Merida's cooperation with a Spanish dealer in 2007 and another issue indicating Merida's JV company in Norway and subsidiary in Sweden in 2009. As the informants noted:

“We've (Giant) got more steps ahead of Merida in channel system. In Europe and the USA, we opened many chain stores but Merida did not. We insist on having our own channel system. Merida may just find a local dealer but does not invest in their own stores.” (Informant A)

“Giant is the first one to propose brand for ladies-users in the world. Last year in the European exhibition, we announced our specialty store channel “*Liv/Giant*”, demonstrating our commitment to ladies-bike. We provide total solution from bicycles to peripheral accessories.” (Informant A)

“Merida collaborates with local dealers but Giant opens its wholly-owned stores.” ... “Merida is moving via “partnership” while Giant is moving via “employer-employee relationship”, which is better to control.” (Informant C)

Third, we examine the *sponsoring* strategy. By sponsoring the teams and racers in many prominent contests, both companies are able to win greater exposure. In 2006, Giant renewed a four-year sponsorship for the German T-Mobile team in the Tour de France, whereas Merida sponsored racers and teams from Italy, Spain, and Norway. During 2008–2009, Merida made a particular effort to sponsor teams in mountain-bike marathons. From 2012 to 2013, racers sponsored by Giant and Merida have won many awards. During 2014–2016, both Giant and Merida strengthened their sponsoring strategy by “title sponsoring,” which has the benefit of exposing their brand name in many prominent contests. For example, Merida title-sponsored the racing bike of the champion in the Tour de France in 2014. The title-sponsored racing team of Giant also won awards in 2014. Merida allocated sponsoring resources to racers and teams in various countries like Spain, Italy, Germany, Norway, and Portugal from 2006 to 2015. Giant, on the other hand, dedicated its sponsoring strategy to fewer countries in the Netherlands and Germany during 2006–2015.

To execute a sponsoring strategy, both companies have invested not only monetary capitals but also R&D resources in developing high-tech bikes. We found that they differed in sponsoring strategy. Giant showed its excellence in racing-bikes whereas Merida focused on mountain-bikes. In addition, they sponsored racers and teams from different nations. As the Giant's informant A noted:

“The reason why Giant is the leader is because we are always “the first”. Whether this is “the best”? It depends. Merida adopted “follower strategy”. They would not be “the first”. Since we started to go for own-brand very early, we entered into international market very early, particularly in Europe. Giant started to sponsor sport teams in Europe. Merida

noticed the effectiveness of sponsoring and then followed. In recent years, Merida has been having a stronger brand power. They changed the sponsoring strategy to become more aggressive ... This is not the issue of “who learns from whom”. Merida has been doing these at the right timing.”

Lastly, we reviewed the *marketing/promotion* strategy. Both companies are actively involved in promotion campaigns. Giant started earlier, in 2006, for the Sport Life exhibition in the Czech Republic, expecting to reach the Central European market. In 2008, Giant received a Gold medal in the design competition IF EUROBIKE, whereas Merida was nominated as the *Milestone 2008* by the Germany magazine *BIKE*. In 2009, Merida chose Mallorca in Spain for its “2010 new bike global demonstration”. In 2010, Giant’s Founder and Chairman King Liu invited chain suppliers and Taiwanese government officers to visit the cycling infrastructure in the Netherlands. During the 2012 London Olympics, they both took part in the exhibition held by the Taiwan External Trade Development Council. During 2011–2016, Merida actively participated in exhibitions around the world, including Germany, England, Belgium and EUROBIKE in Germany. On the other hand, Giant hosted the Taipei Cycle Show to promote the market power of Taiwan’s bicycle industry. In the meantime, Giant announced that they will not participate in EUROBIKE from 2017, showing their marketing resources deployment has been moving back to promoting Taiwan as a bicycle fashion centre of the world.

The competition between two rival partners in downstream categories also echoes that in upstream categories. Despite the two rival partners being similar in their competitive action patterns, they competed with distinct action contents, demonstrating heterogeneity in competitive action repertoire. They allocated efforts to non-overlapping product lines to show their innovative specialties in different types of bike. They targeted dispersed geographical markets with different channel systems where they have respectively occupied different market positions in those European countries. As the informant B indicated:

“We focus much more on the West-European market such as Netherlands, France, and British, where were considered the early-developed base markets of bicycle industry. In contrast, Merida has better market position in the North-Europe such as Norway and Denmark.”

The President of Merida also highlighted the importance of competitive heterogeneity (Lee, 2013):

“Even though you have known something which is critical and confidential to a specific member firm within the A-Team, you cannot follow its steps or just copy it. If you do so, you will be despised by the others.”

Discussion

Propositions and conceptual framework

From our results, we found that two competitors have competitive action similarities, emphasizing innovation and high-value products, particularly during the period of 2006–2010. They also took more actions into downstream activities such as branding, sponsoring, and marketing categories, especially from 2012 to 2016. However, they moved to create heterogeneity in their competitive action repertoire by differing in product innovation and targeting different geographic markets. We discuss how cooperation may influence the similarity and heterogeneity in competition and develop propositions to illuminate the cooperation-based competition.

As to the competitive actions in the upstream-activity categories, their similarity in action pattern pertaining to innovation and the launch of high-price products may be driven by the cooperation in A-Team. First, under their cooperation, they share the same vision to make Taiwan “the global innovation and supply hub of best quality cycling products and services with best value.” Such vision has been leading both companies to actively initiate innovation. Second, to become superior in innovation, they cooperate to improve their capabilities in manufacturing and R&D by a co-learning and co-evolutionary process. As we can see in A-Team, they together have common plans in every three-year stage (Table 3). The first three-year term (2003–2005) focuses on improvement in manufacturing and R&D. The second term (2006–2008) emphasizes on JIT, best quality, and value innovation. They have designed various workshops and activities to learn and to improve together. The co-learning process guided by four three-year-stage tasks has made each member firm’s resource advantage more prominent, particularly in the upstream activities. Such resource advantages have transformed into their competitive actions in innovation and launched new products in the subsequent years. As we can see from Table 5, during 2006–2010 they both initiated many more actions in R&D/pricing/product categories with 10 actions in Giant and 14 actions in Merida.

The co-learning mechanism not only affects their competition in upstream activities but also influences how they move in downstream activities. From Table 5 we can see that during 2012–2016 they started to initiate more actions in sponsoring and marketing activities with 9 actions in Giant and 15 actions in Merida. These actions in marketing-related activities may be influenced by their cooperation with three-year-stage tasks, in which “co-marketing” and “image” were highlighted in the third term (2009–2011) and the fourth term (2012–2014). In addition, the competitive actions initiated by one party may be inspired by learning these actions from the other party. As mentioned earlier in the result section, the informant A indicated that Giant started to sponsor sport teams in Europe. Merida learned from Giant and noticed the effectiveness of sponsoring and then followed. Except for the sponsoring strategy, they both took actions in participating in many exhibitions and design award competitions.

Competition is a process involving the development, accumulation, combination, and protection of unique skills and capabilities (Teece et al., 1997). To strengthen competitiveness, skill discrepancies have been recognized as a motivator for inter-organizational collaboration (Hamel, 1991), which provides an avenue for firms to acquire “non-redundant knowledge” from other firms (Kogut and Zander, 1992; Ritala, Välimäki, Blomqvist, Henttonen, 2009; Tsai, 2001) and is the process that lead to a reapportionment of skills between the partners (Hamel, 1991). Firms may form partnerships to explore and exploit organizational learning. The process of inter-partner learning helps firms to acquire, apply, and verify the skills that they did or did not use to operate in the marketplace (Lavie and Rosenkopf, 2006). Cassiman et al. (2009) also acknowledge that no single firm can be endowed with all the internal capabilities and resources needed for operation. As a result, firms involved in inter-organizational relationships learn what they need for success.

Inter-partner learning is an important issue not only in the strategic alliances literature but also in coopetition research. Prior studies have proved that the co-learning in the context of coopetition may contribute to achieving benefits of innovation (Bouncken et al., 2015; Gnyawali and Park, 2009, 2011; Le Roy and Fernandez, 2015; Ribeiro-Soriano et al., 2016; Ritala et al., 2016). Ribeiro-Soriano et al. (2016) also echo that firms can boost their innovation if they cooperate with competitors. Cooperating firms enjoy a greater degree of innovation than that of non-coopeting firms.

Mariani (2009) investigates coopetition in opera, demonstrating that the cooperation between competitors elicits strategic learning. Competitors foster collaboration for producing and programming purposes and the sharing of best managerial practices. Dahl (2014) argues that inter-organizational learning is a key mechanism that changes the interaction between cooperation and competition. Competitors mutually learnt from experiences as they cooperate and compete. As Hamel (1991) indicates, in competitive collaboration inter-partner learning may change the relative competitive position and advantage between partners outside the alliance. Our results echo these viewpoints. The collaboration in A-Team fosters a learning process, in which competitors learn with each other for the purposes of improving capabilities in value activities and sharing the best practices. Such improvement through learning in cooperation has changed the competitive advantages and strategic actions between partners in the international market. We therefore develop the following Proposition 1.

Proposition 1. Cooperation facilitates a co-learning process, lifting the extent of similarity in competitive action pattern between rival partners.

Despite the two rival partners having a similar competitive action pattern, they compete with distinct action contents by product differentiation and dispersed geographical market segmentation, or launching the same type of product at different times. Their heterogeneity in the competitive action repertoire may be influenced by cooperation as well. In A-Team, guided by the common plans in the four three-year terms, the member companies have designed the repeated interactions at both individual and organizational levels. The CEOs and top managers in all the member companies have long been interacting frequently not only to discuss the common vision/mission and plans but also to check out the progress and achievements of improvement in each firm. Akpinar and Vincze (2016) argue that common stakes such as shared economic interests, a common threat, a shared vision, or a common culture builds cumulatively over time to contribute to the gradual development of trust. Trust may further help to avoid opportunistic behaviours. From the process point of view, the interactions facilitate trust among member firms, encouraging them to fulfil their commitments in cooperation and also to consider not provoking fierce battles with a short-term mindset in competition.

According to Ring and Van de Ven (1992), trust may be based on norms of equity which define the degree to which one party judges that another party will fulfil its commitments and that the relationship is equitable. Sako and Helper (1998) define trust as an expectation held by an agent that its trading partner will behave in a mutually acceptable manner including an expectation that neither party will exploit the other's vulnerabilities. Sako (1991, 1992) proposes three types of trust and distinguished between them: contractual trust (will the other party carry out its contractual agreement?), competence trust (is the other party capable of doing what it says it will do?), and goodwill trust (will the other party make an open-ended commitment to take initiatives for mutual benefit while refraining from unfair advantage taking?) (Sako and Helper, 1998: 388).

Other than the formal contractual agreement, the element of “informal psychological contract” (Ring and Van de Ven, 1992, 1994) or “goodwill trust” (Sako, 1991, 1992; Sako and Helper, 1998) also plays a key role. As Ring and Van de Ven (1994: 105) point out, informal psychological contracts increasingly compensate or substitute for formal contractual safeguards as reliance on trust among parties increases over time. Inside a cooperative relationship, repeated personal interactions at the individual level encourage courtesy and consideration, minimizing individual opportunism. At the organizational level, repeated inter-partner interactions discourage attempts to seek a narrow, short-term advantage. Such repeated interactions foster trust, generating the informal psychological contract, from which informal norms and understandings of acceptable behaviour derived among parties (Ring and Van de Ven, 1994).

Outside the cooperative relationship, trust is also more likely to be extended to an organization when that organization earns a reputation in the marketplace (Ring and Van de Ven, 1992). The consideration of winning a good reputation in the marketplace makes competitors' behaviours comply with the informal psychological contract, as indicated by Ring and Van de Ven (1994), or show their goodwill trust, as distinguished by Sako (1991, 1992).

In the context of coopetition, given trust, competitors might be more inclined to mutually evaluate and reformulate their prevailing goals for interaction in relation to the accumulation of inter-organizational experiences (Dahl, 2014: 277). The “informal psychological contract” or “goodwill trust” as mutual evaluation and goal-reformulation may be transformed into competitors' actions not only in cooperation but also in competition. On the cooperation side, the rival partners act to fulfil

their commitment to achieve the common goals. On the competition side, the rival partners compete by avoiding fierce and head-on competition. The heterogeneity in the competitive action repertoire without vicious competition may create win-win benefits in the following ways: First, the heterogeneity stimulates the rival partners to individually develop unique capabilities and competitive advantages in product innovation and other value activities. Second, it secures the informal psychological contract and goodwill trust that they will behave in a mutually acceptable manner in the marketplace including an expectation that neither party will attack the other's key survival territories or take unfair advantage of partners. Third, it allows both rival partners to win a good reputation not only in the product marketplace but also in the coopetition alliance, strengthening the willingness of the other supplier members to maintain partnerships. Based on the above discussion, we develop the following [Proposition 2](#).

Proposition 2. Cooperation facilitates trust, increasing the extent of heterogeneity in competitive action repertoire by product differentiation and dispersed geographical market segmentation between rival partners.

According to [Dahl \(2014: 277\)](#), the change process of interactions between competition and cooperation is more likely to occur in relations characterized by strong competitive tensions caused by similarities between the competitors and the high level of perceived hostility ([Bengtsson et al., 2010: 206](#)). From our results, the co-learning process in cooperation may lead to higher similarity in competitive action pattern between Giant and Merida. When they act similarly in their action patterns, along with the upstream and downstream activities, such similarities may cause higher competitive tension as to whether this will jeopardize the cooperative relationship. As [Bengtsson et al. \(2010: 206\)](#) argue, competitive tension and low levels of trust limit the likelihood of any advancement of cooperative activities as the relationship unfolds over time. However, [Dahl \(2014\)](#) also argues that a coopetitive relation characterized by a strong level of cooperation can run the risk of losing its edge when developing new opportunities to enhance the company's competitiveness. Therefore, in cooperation-based competition, when similarity in competitive action pattern is getting higher, the paradoxical tension emerges as "to win competitiveness in the product-market and the risk of breaking the cooperative partnership", like the viewpoint noted by ([Gnyawali and Park, 2011: 652](#)), in coopetition, competitors face a dilemma concerning "the existence of attractive opportunities and risks of misappropriation by the partners". Consequently, the existence of formally agreed or tacitly shared perceptions on "proper behaviour" ([March 1999: 24](#)) regarding direct competitive actions toward each other can be perceived as fundamental for the establishment of a competitive relation and its maintenance over time ([Dahl, 2014: 274](#)).

In coopetition dynamics, cooperative interactions are based on norms for cooperation in terms of formal agreement and/or trust between competitors, whereas competitive interactions have been argued to depend on enforced rules for acting that exist on the market ([Bengtsson and Kock, 1999; Dahl, 2014](#)). In this study, we found that co-learning in cooperation inevitably facilitated higher similarities in competitive action pattern. Such a co-learning process may lead to opportunistic behaviour of value appropriation ([Gnyawali and Park, 2009; Ritala and Hurmelinna-Laukkanen, 2009; Rai, 2013; Ritala et al., 2014; Yami and Nemeh, 2014](#)). In addition, with higher similarity, the rival partners may have better and similar competitive advantages to pursue private benefit ([Khanna et al., 1998](#)) and divergent interests ([Cassiman et al., 2009](#)), resulting in higher tension in the coopetitive relationship ([Gnyawali et al., 2016; Raza-Ullah et al., 2014; Tidström, 2014; Le Roy and Fernandez, 2015; Bouncken et al., 2015; Dorn et al., 2016](#)).

Thus, to mitigate the tension, two rival partners are more inclined to increase the heterogeneity in the competitive action repertoire, creating different spaces where they could not only gain individual competitiveness without fighting intensively but also avoid jeopardizing the cooperative relationship. By creating higher levels of heterogeneity, the rival partners may promote value creation ([Ritala et al., 2016](#)) and strengthen their market positions ([Hamel et al., 1989](#)) to pursue common benefit ([Khanna et al., 1998](#)) and convergent interests ([Cassiman et al., 2009](#)). Despite the paradoxical nature causing tensions where incompatible behaviour or activities may occur ([Tidström, 2014](#)), they manage to mitigate such paradox and tensions to maintain a balance between similarity and heterogeneity.

[Tidström \(2014\)](#) indicates that managing tension may be different where tension is occurring in different settings. [Das and Teng \(2000\)](#) identify three types of tension, including behavioural tension (cooperation versus competition), structural tension (rigidity versus flexibility), and psychological tension (long-term orientation versus short-term orientation). From the analysis in this study, we observed that the two rival partners not only act in a manner that suggests "proper behaviours" but also hold the "proper attitude" to manage not only behavioural tension but also psychological tension, therefore enabling them to balance competition and cooperation ([Clarke-Hill et al., 2003; Chen et al., 2007; Chen, 2008; Peng et al., 2012; Czakon and Rogalski, 2014; Le Roy and Fernandez, 2015; Ritala et al., 2016](#)). As the informant A mentioned: "We will always care about the competitor who is the closest to us. However, our attitude is that, we all compete in the market that is open to everyone, like the saying 'two brothers climb the mountain together but individually strive for reaching the top.' If we are successful, it is positive for the whole Taiwan bicycle industry. If our rival partner has any better creation, we will have to run faster to create a bigger gap of product differentiation."

According to the above argument, we develop the following [Proposition 3](#).

Proposition 3. Since higher similarity in competitive action causes tension, rival partners will mitigate the tension by increasing heterogeneity in competitive action repertoire for balancing in coopetition dynamics.

Based on the above results and discussion, we develop a conceptual framework to depict the cooperation-based competition as shown in [Fig. 2](#). In the framework, cooperation between competitors facilitates a co-learning process, lifting the extent of similarity in competitive action patterns between rival partners (P1). Cooperation facilitates trust, increasing

the extent of heterogeneity in competitive action repertoire by product differentiation and dispersed geographical market segmentation between rival partners (P2). Since higher similarity in competitive action causes tension, rival partners will mitigate the tension by increasing heterogeneity in competitive action repertoire for balancing in coopetition dynamics (P3).

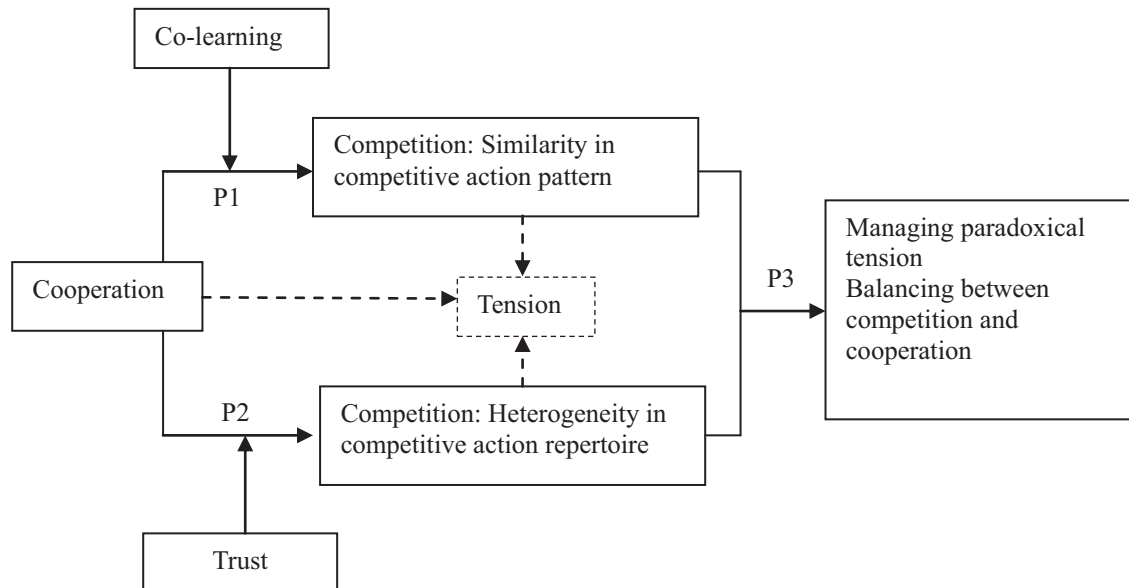


Fig. 2. A conceptual framework of cooperation-based competition.

This framework reflects the competition side of the theoretical framework in coopetition dynamics (in Fig. 1). As mentioned, this study particularly focuses on the competition side to explore how rival partners compete based on cooperation. In the context of cooperation with competitors, the interaction between cooperation and competition will gradually change depending on a learning process (Hamel, 1991; Mariani, 2007, 2009; Dahl, 2014), and accumulation of trust (Ring and Van de Ven, 1994; Sako and Helper, 1998; Castaldo and Dagnino, 2009; Dahl, 2014) in cooperation, which influences the competitive similarity and heterogeneity in competition. However, cooperation facilitates higher similarity but also higher heterogeneity, resulting in paradoxical tension (Poole and Van de Ven, 1989; Park and Ungson, 2001; Le Roy and Fernandez, 2015; Bengtsson and Kock, 2014; Raza-Ullah et al., 2014; Tidström, 2014; Dorn et al., 2016). Therefore, while competing based on cooperation, rival partners will act to manage the paradoxical tension between similarity and heterogeneity in competition, as the *avoidance* strategy (Dowling et al., 1996), *spatial separation*, *temporal separation*, and *synthesis* methods (Poole and Van de Ven, 1989), or the combination of acceptance and resolution (Jarzabkowski et al., 2008; Smith and Lewis, 2011; Le Roy and Fernandez, 2015) for balancing between competition and cooperation.

We can take a look at their performance to see whether they have done better through coopetition strategy. From the point of view of the whole industry, the average export unit price increases rapidly from US\$ 150.14 in 2003 to US\$ 473.98 in 2015 (see Appendix B), demonstrating their achievements in innovation and the production of high-quality and high-value bicycles. From the point of view of each member firm, both companies have achieved excellent performance between 2006 and 2015 (see Appendix E), particularly in their growth in the European market (see Appendix F). They both benefited from coopetition strategy, demonstrating how they can manage the paradoxical tension between competitive similarity and heterogeneity to maintain the long-term cooperation yet to compete simultaneously. The analysis of cooperation-based competition indicates that two rival partners compete toward the way of “transparadox” (Chen, 2008) or “relational perspective of competition” (Chen and Miller, 2015), with the emphasis on sustainable relationships, mutually benefits, value creation, indirect competition, and long-term interaction.

Contributions to the literature

This study contributes to the research fields in coopetition and competitive dynamics. Regarding the contributions to coopetition literature, firstly, to unfold the process of coopetition dynamics is probably the most challenging issue. This study conducted a literature review on coopetition dynamics, from which we derived a theoretical framework, detailing how the co-existence of competition and cooperation forms a paradoxical relationship that leads to tensions. Managing paradox and tension is critical to maintaining a balance in coopetition. Any competitive action or collaborative action may shape different competitive dynamics and collaborative dynamics, which further evolve as changes occur in paradox, tension, managing

strategies, and balancing status in coopetition dynamics. The theoretical framework derived from this study contributes to the coopetition literature because it depicts a clear picture of the key constructs and their relationship in coopetition dynamics.

Secondly, prior research in coopetition has emphasized much more on cooperation while less attention has been paid to competition after the competitors have collaborated. In coopetition dynamics, competition side is as important as cooperation side. This study highlights the competition in coopetition, revealing how rival partners compete based on cooperation. According to the case analysis, we have developed three propositions and a conceptual framework of cooperation-based competition, detailing how rival partners compete based on cooperation and how the cooperation may influence the competitive actions. The proposed conceptual framework contributes to the coopetition literature because it highlights the competition side in coopetition and shows how cooperation influences the competitive dynamics and how the rival partners can act to create balance in a coopetition relationship.

Thirdly, as to the interaction between competition and cooperation, prior studies argued that competition and cooperation are mutually rooted in and promoted by each other. Cooperation increases the relative scale of market power, resulting in higher intensive competition. Conversely, intensive competition fosters more cooperation between rivals (Peng et al., 2012). This raises the issue as to whether cooperation decreases or increases competition. By further looking into the competition with two dimensions, similarity in competitive action pattern and heterogeneity in competitive action repertoire, we argue that co-learning and trust in cooperation play different roles, resulting in different extents of similarity in competitive action pattern and heterogeneity in competitive action repertoire. Co-learning in cooperation increases competition in terms of pattern similarity, whereas trust plays a role decreasing competition in terms of repertoire heterogeneity. This is how the rival partners should compete in ways that balance between competition and cooperation as stated in the coopetition literature (e.g., Jorde and Teece, 1989; Park et al., 2014; Peng and Bourne, 2009).

Regarding the contributions to competitive dynamics literature, few studies have paid attention to the competitive dynamics in coopetition. Some of them (Chi et al., 2007; Andrevski et al., 2016) have examined how firms' collaborative activities affect their competitive activities, but they did not directly look at the cooperation between competitors. Garraffo and Rocco (2009) focused on the cooperation between direct competitors and emphasized the pre-cooperation rather than post-cooperation process. This study focuses on the competition after the competitors have collaborated. By examining competition in two dimensions, similarity in competitive action pattern and heterogeneity in competitive action repertoire, we explore how cooperation may influence the competitive actions between rival partners.

Managerial implications

Our propositions and the developed conceptual framework of cooperation-based competition provide managerial implications as well. We suggest that once collaborating with competitors, managers should act in a different way rather than act in the conventional competition. The consideration as to how to initiate competitive actions to manage paradoxical tension and to balance between competition and cooperation becomes even more critical than predicting the possibility of move and counter move as argued in the conventional competition. In cooperation-based competition, it is inevitable that co-learning and co-evolution increase the similarity of competitive advantages and competitive action pattern between competitors. On the other hand, the repeated interactions and common stakes facilitate trust so that managers should compete in a way to avoid head-on competition by creating heterogeneity in competitive action repertoire. Therefore, we suggest that managers adopting coopetition strategy should follow an Ancient Chinese saying: "To search for homogeneity in heterogeneity, to search for heterogeneity in homogeneity", dancing in a way that they can balance between competition and cooperation. As our case demonstrated, on one side the common plan of stage-by-stage cooperation in A-Team drives rival partners to search for homogeneity in heterogeneity, resulting in stronger competitive advantages for both companies. On the other side, the way they compete to avoid head-on competition demonstrates their searching for heterogeneity in homogeneity, resulting in their better positions in the market. It reflects the win-win scenarios in which a firm strives to gain more by not necessarily taking market share from its rival partners but by creating a bigger market (Luo and Rui, 2009: 55). In addition, managers should also watch the evolutionary process of coopetition dynamics (Bengtsson and Kock, 2014; Akpınar and Vincze, 2016), by monitoring the changes in co-learning process and the level of trust, since these elements may further change the level of tension between similarity and heterogeneity in competition, and also affect the balance between competition and cooperation.

Conclusion

The issue of cooperation-based competition has been less noticed in the coopetition research. This study links the competitive dynamics perspective to explore the setting of cooperation with competitors. We have developed three propositions for understanding how rival partners compete based on cooperation and how the cooperation may influence the competitive actions. We propose that while collaborating with competitors, cooperation facilitates a co-learning process, lifting the extent of similarity in competitive action patterns between rival partners. In addition, cooperation facilitates trust, increasing the extent of heterogeneity in competitive action repertoire by product differentiation and dispersed geographical market segmentation between rival partners. Since higher similarity in competitive action causes tension, rival partners will mitigate the tension by increasing heterogeneity in competitive action repertoire for balancing in coopetition dynamics.

Although we believe that our propositions are noteworthy, the research is exploratory so there are limitations and many issues for future research. Firstly, we collected data pertaining to the competition in the post-cooperation period without incorporating the data before the formation of the coopetition alliance. This is because our interest in this study particularly focuses on the competitive actions after competitors have collaborated and also because the competition in the OEM-supply battle before cooperation and the competition in the brand market after cooperation is different. We intend to discover how rival partners compete based on cooperation rather than how they compete without cooperation. However, in the other research context, to explore what happens before and after a coopetition strategy, and to compare the difference in behaviours between before-coopetition and after-coopetition, may add more significant perspectives in the coopetition research.

Secondly, the purpose of this study is not to generalize our findings from our case approach, but to demonstrate how such phenomena can occur. Given that we have only studied the bicycle industry, it is possible that behaviours of rival partners may vary across industries. The bicycle industry is not as oligopolistic as in the other industries, such as the smartphone industry, where the global market is shared by a small number of big brands. The relatively non-concentrated industrial structure with many more brand names in the bicycle industry allows the players to compete and still find niches to survive well even when the competitors cooperate. Therefore, we suggest replicating this study in other industries.

Thirdly, this study shows *how* rival partners compete based on cooperation. Further questions as to “*when* will be the better circumstances for rival partners to compete” deserve investigation. The exogenous and endogenous factors may influence how rival partners compete based on cooperation. In this study, the global bicycle market was growing. The results could be different if the markets were contracting, placing different pressures on the competing firms. Further, as time goes by, when the market reaches saturation, the overlap of markets may force two rival partners to compete head-on. This may totally change the way they compete compared with when the market was still growing with opportunities.

Fourthly, the “*who*” question also deserves further attention. Coopetition can refer to both vertical and horizontal relationships. This study examines the horizontal coopetition between direct competitors but not the vertical coopetition. For example, when the OEM-suppliers move downstream into the brand market, triggering competition in the OEM-contract relationship, the behaviours, reasoning, and results between horizontal coopetition and vertical coopetition may be different. Future research could further explore why different types of coopetition were initiated by horizontal or vertical competitors.

Lastly, this study explores the cooperation-based competition, but the competition may rebound to influence the cooperation between competitors. As time passes, what will be the evolutionary interplays between competition and cooperation? Any action or relationship may contain the seeds of its opposite (Chen, 2008; Peng et al., 2012). There is an old saying “Things merge if they have split long enough. Things split if they have merged long enough”, which mirrors an array of competition–cooperation interplays (Chen, 2008). In this study, the A-Team members have been together experiencing co-evolution for 14 years. As their competitive actions in the global market have impinged on each other and the resource configurations have become much more homogeneous, what will be the effect on the cooperation in the A-Team? As Peng and Bourne (2009) argue, there is always a new equilibrium point where coopetition will work, at least for a period, until the dynamics are disrupted again. As coopetition dynamics evolves, could coopetition lead to other types of relationships, such as coexistence, merger, pure competition, or pure cooperation? Future research should investigate the forces that change the equilibrium interplay and the evolutionary consequences of competition and cooperation.

Moreover, it is controversial to ask: to what degree can the right balance be defined, reached, or maintained in coopetition dynamics? Is the perfect 50-50 between competition and cooperation the right balance? As Deephouse (1999) indicates, it is noteworthy that the balance point can also be a relational zone in line with the notion that the two forces benefit each other. Therefore, a balance is not a static status, but a dynamic process which drives firms to position and reposition their relationships with their competitors or cooperators. In addition, Li (2016: 50) and Jing and Van de Ven (2016: 560) indicate that the “being” ontology that refers to “a fixed, certain, and complete status or form of an existence before acquiring its relationships with other entities” cannot reflect the reality of dynamic beings of paradox. On the other hand, the “becoming” ontology, which refers to “an interdependent and interactive process with other entities before and after any entity acquires its status or form,” highlights the truth that the reality of paradox is continuously going on and evolving. Therefore, how to define the right balance, how to reach the right balance, and how to maintain it over time could be the important issues in coopetition dynamics for the future research.

This study provides new insights into a theoretical issue of cooperation-based competition. The case of cooperation and competition between Giant and Merida provides implications in managerial practices that also enrich the research in coopetition. We hope that from a both theoretical and practical perspective, our propositions and conceptual framework will inspire more research in cooperation-based competition and help managers think about alternative ways of competing and cooperating while using coopetition strategies.

Acknowledgements

The authors would like to thank all the informants for their information in this study. We also thank Mr. Ben Hamilton for his proof-reading. The manuscript also benefited from valuable comments received during the 2014 Annual International Conference of the Strategic Management Society. The financial support from the Ministry of Science and Technology in Taiwan (MOST103-2410-H-004-197, MOST 105-2410-H-004-198) is also gratefully acknowledged.

Appendix A

Theoretical review of literature in coopetition, paradox and tension, and coopetition dynamics.

Author(s)	Main concept	Research approach	Research setting	Theoretical focus	Unit of analysis	Findings
<i>Theme: Coopetition</i>						
Dowling et al. (1996)	Examine the form of inter-organizational “multifaceted relationship” under coopetition, where a buyer, supplier, and/or partner is also a competitor.	Conceptual	Coopetition among buyer-supplier and between partners	Resource dependence Transaction costs	Interfirm	Multifaceted relationships are more likely to be found among larger firms in concentrated industries, industries facing less munificent environments, regulated industries, and global industries. Firms can deal with the relationships by avoidance or adaption.
Peng and Bourne (2009)	To examine the simultaneous competition and cooperation between networks.	Empirical/ Qualitative (case study)	Coopetition between two healthcare networks	Network approach RBV	Inter-networks	<ul style="list-style-type: none"> Two organizations will compete and cooperate simultaneously when each organization has complementary but distinctly different sets of resources and when the field of competition is distinctly separate from the field of cooperation. Two networks will find it easier to balance competition and cooperation when each network has compatible but distinctly different structures.
Peng et al. (2012)	Present a scrutinized review of previous research on coopetition and examine the relationships among resource similarity, market commonality, the competition-cooperation dynamics, and performance.	Empirical/ Qualitative (in-depth case study)	A supermarket company and its cooperative network in a specific geographic area	Coopetition	Firm	<ul style="list-style-type: none"> Competition and cooperation are reciprocally rooted in and mutually promoted by each other. Cooperation with competitors did lead to better performance at least over a period of time.
Bengtsson and Kock (2014)	Redefine coopetition as a paradoxical relationship between two or more actors simultaneously involved in cooperative and competitive interactions, regardless of whether their relationships are horizontal or vertical.	Conceptual	Synthesis	Coopetition	Multilevel	Highlight five directions for future research which includes understand the balancing of cooperation and competition, understand the coopetition paradox and tension, apply a multilevel perspective on coopetition, understand the dynamics of cooperative interaction, and understand how coopetition impacts business models and strategy.
Dahl (2014)	Conceptualize coopetition as a process and examine how and why cooperative interactions change as competitors acquire new experiences from mutual cooperation and their external environment changes.	Conceptual	Two or more companies engaged in the same line of business	Organizational learning Coopetition	Interfirm	Inter-organizational learning, intra-organizational learning, and the development of the external environment are three mechanisms which drive changes within cooperative interactions.
Czakon and Rogalski (2014)	Propose typology of coopetition based on passive/active behaviours	Empirical/ Qualitative	Network coopetition in electricity market	Coopetition	Firm/Industry	Mandated coopetition displays moderate or weak levels of coopetition, while resource-driven coopetition is active
Bouncken et al. (2015)	<ul style="list-style-type: none"> Present a systematic literature review and a focus on a general overview of research on coopetition Review two main research topics on coopetition: coopetition as a strategy and the management of coopetition 	Conceptual/ Literature review	Synthesis	N/A	N/A	<ul style="list-style-type: none"> The integrative definition of coopetition is <i>a strategic and dynamic process in which economic actors jointly create value through cooperative interaction, while they simultaneously compete to capture part of that value</i> Possible dimensions in future coopetition research can be classified into: roles, content, process, levels, and theoretical perspectives

(continued on next page)

(continued)

Author(s)	Main concept	Research approach	Research setting	Theoretical focus	Unit of analysis	Findings
Dorn et al. (2016)	Synthesize a conceptual map that highlights coopetition into five multilevel research areas	Conceptual/ Literature review	Synthesis	N/A	N/A	Demonstrated that the nature, governance, output, actor characteristics and environmental characteristics are five themes in coopetition research.
Minà and Dagnino (2016)	Explore the various definitions of coopetition and would like to develop a sense of collective identity	Conceptual/ Scholarly survey and literature review	N/A	N/A	N/A	<ul style="list-style-type: none"> The implicit consensus shows that coopetition research is still tackling a crucial definition problem The explicit consensus demonstrate that coopetition has been recognized as a strategy on its own that differs from cooperation and competition
Ritala et al. (2016)	Identify and elaborate four core discourses in coopetition and innovation	Introductory article	Collaboration between competing firms	N/A	N/A	The four core discourses in coopetition and innovation are <i>cause-and-effect</i> (consequences for innovation outcome), <i>process and practices</i> (tensions, dynamics, and interaction), <i>strategy</i> (value creation and value appropriation), and <i>embeddedness</i> (innovation in networks and ecosystems).
<i>Theme: Paradox and tension in coopetition</i>						
Poole and Van de Ven (1989)	Propose using paradox (tensions, oppositions, and contradictions among explanations of the same phenomenon) to build management theories.	Conceptual	N/A	N/A	N/A	Four different modes of using paradox to build theory are <i>opposition</i> (accept the paradox and use it constructively), <i>spatial separation</i> (clarify levels of analysis), <i>temporal separation</i> (take time into account), and <i>synthesis</i> (introduce new terms to resolve the paradox).
Das and Teng (2000)	Propose a comprehensive framework for adequately understanding alliance instabilities based on the notion of internal tensions.	Conceptual	Strategic alliances	Tension-based view		Internal tensions perspective of strategic alliances comprises three pairs of competing forces—namely, <i>behavioral</i> (cooperation versus competition), <i>structural</i> (rigidity versus flexibility), and <i>psychological</i> (short-term versus long-term orientations).
Lewis (2000)	Develop a framework that clarifies the nature of paradoxical tensions, reinforcing cycles, and their management.	Conceptual	N/A	Paradox perspective	N/A	Identifying (narrative, psychodynamic, and multiparadigm approaches) and representing (conceptualizing, mapping, and theorizing) are two exploration strategies to transcend paradox.
Chen (2008)	Provide a transparadox framework for transcending the competition-cooperation paradox by converging the Western and Eastern thoughts.	Conceptual	N/A	Transparadox perspective	Synthesis	<ul style="list-style-type: none"> Competition-cooperation relationships can be depicted as three generic conceptions: independent opposites, interrelated opposites, and all-inclusive interdependent opposites. “Interdependent opposites” (dual) encompasses all possible situations of inter-firm dynamic, in which competition and cooperation together form the union of the two, implying inseparable interdependent element that together form a whole.

- Firms' R&D activities is an organizational process in which firms are subject to, combine and synthesize both co-operative and competitive actions.
 - The capability to match project knowledge attributes, form of governance, and characteristics of potential partners explains the success of the innovation process of firms.
- Relationship quality is positively associated with relationship function and the influence of relationship quality on relationship function is strengthened or weakened when three relationship tensions (namely, behavioural, structural, and psychological tension) are balanced or imbalanced.
- Tensions can be viewed in multilevel which includes inter-organizational cooperative tensions, intra-organizational cooperative tensions, and inter-individual cooperative tensions.
 - Tensions can be managed by the separation principle, the integration principle, or the both.
 - The cooperation context that forces or motivates rival firms to cooperate or partner firms to compete, creates external and internal boundaries to materialize a cooperation paradox.
 - The strength of the external boundary and the size between the internal boundaries are likely to affect each other and also the relative size of the two dualities in the cooperation paradox.
 - Tensions can be categorized into domain-related, delivery-related, and cooperation-related.
 - Competition and avoidance are the most common ways of managing tensions in cooperative business relationships.
 - The same type of tension may produce different outcomes depending on how it is managed.
- Firms are combining the separation principle at the organizational level, the co-management principle at the working-group level and the integration principle at the individual level.

(continued on next page)

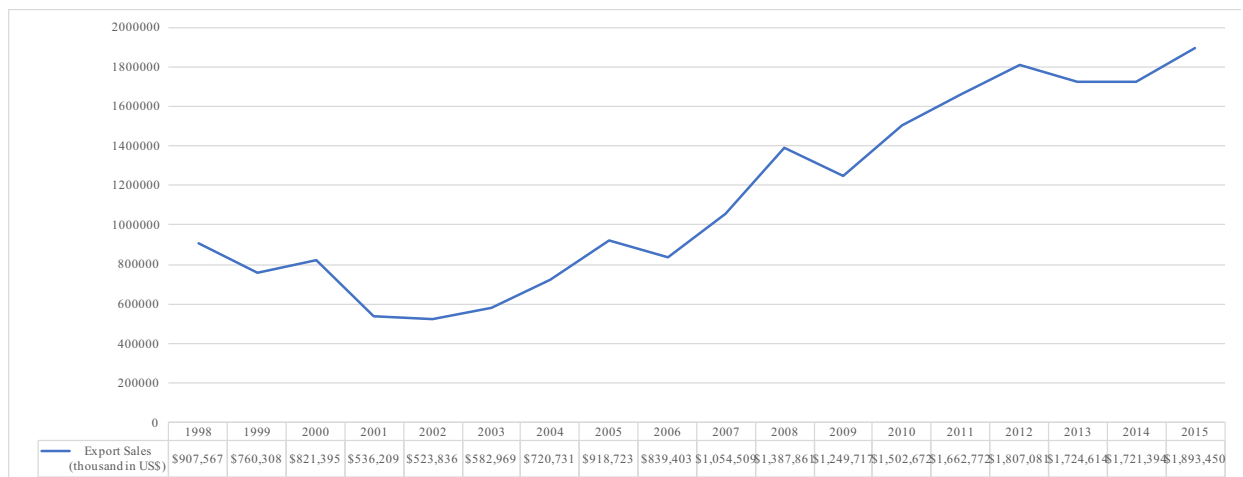
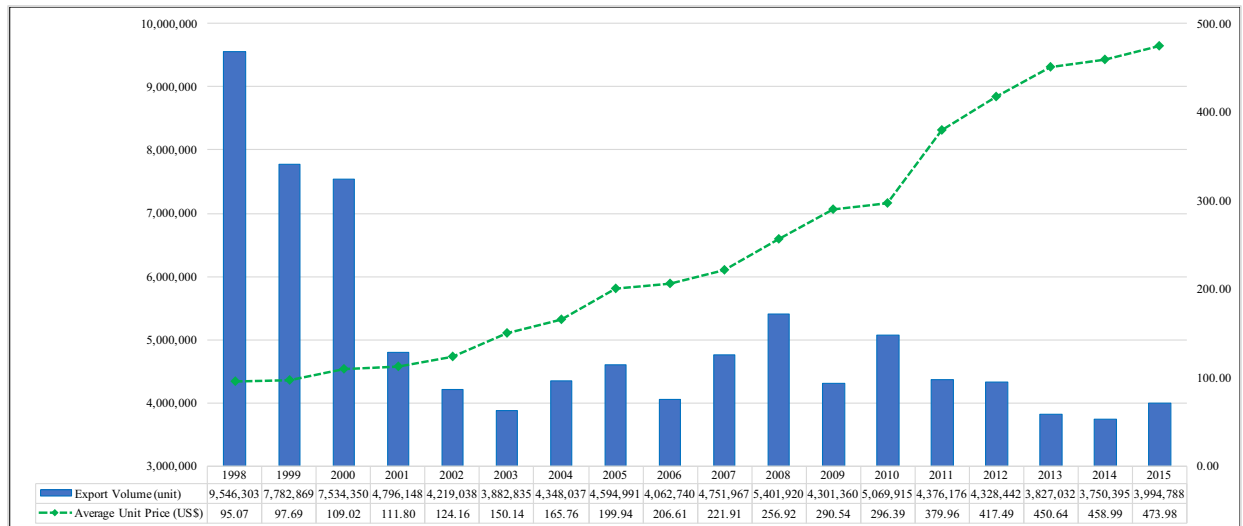
Cassiman et al. (2009)	To explain when and how a firm decides to establish inter-organizational agreements in R&D projects and disentangled the intricate interactions by exploring the relationship between project knowledge attributes, form of governance and characteristics of potential partners.	Empirical/ Quantitative case study	52 R&D projects started between 1998 and 2003 of the largest firm in the semiconductor industry	Coopetition (value creation versus value appropriation perspective)	Project
Fang et al. (2011)	Present a conceptual model explaining how tensions within coopetition can moderate the positive relationship between relationship quality and relationship function.	Empirical/ Quantitative	136 manufacturing firms in Taiwan	Tension-based view	Firm
Fernandez et al. (2014)	Developing a multi-level conceptual framework that helps to understand key drivers of tension in coopetition and key approaches for managing tension.	Empirical/ Qualitative (in-depth case study)	Coopetition in space aircraft industry (between competing firms)	Coopetition	Firm
Raza-Ullah et al. (2014)	Explores how paradox within coopetition elicits both positive and negative emotions and how it materializes by creating external boundaries and internal boundaries.	Conceptual	Synthesis	Paradox lens on coopetition Tension-based view on coopetition	Synthesis
Tidström (2014)	To investigate how tensions are managed in cooperative business relationships and examine the potential outcomes of the management of such tensions.	Empirical/ Qualitative (comparative case study)	Four steel companies involve in voluntary coopetition and ten natural products companies involve in forced coopetition.	Coopetition Tension-based view on coopetition	Firm
Le Roy and Fernandez (2015)	Provide insights into the management of cooperative tensions at working-group level.	Empirical/ Qualitative	Cooperative project team between two competing firms in space industry.	Coopetition	Project team

(continued)

Author(s)	Main concept	Research approach	Research setting	Theoretical focus	Unit of analysis	Findings
Gnyawali et al. (2016)	Develop a conceptual framework that explicates key paradoxical conditions, paradoxical tension, and performance implications of tension in coopetition relationships.	Conceptual	Strategic alliances and buyer-supplier transactions	Paradox view on coopetition	Inter-firm	<ul style="list-style-type: none"> The intensity of the dualities has a positive relationship to the level of felt tension experienced by firms primarily through the development of strain. The level of contradictions in coopetition has a positive relationship to the level of felt tension experienced by firms primarily through the development of manifest conflict. An inverted U-shaped relationship exists between felt tension and coopetition performance.
<i>Theme: Competitive dynamics in coopetition</i>						
Chi et al. (2007)	Examine whether the firms' network structure and the use of inter-organizational systems may affect their competitive actions.	Empirical/ Quantitative	9 major sports car makers' collaborative relationships, IOS use, and competitive actions in 2003	Competitive dynamics Social network Coopetition	Firm	<ul style="list-style-type: none"> Firms with high complexity in their competitive action repertoires will have high IOS reach and range values. Firms with high heterogeneity in competitive actions will have high diversity of IOS use. Firms with high degree centrality will have high action complexity.
Garraffo and Rocco (2009)	Propose a two-step model for assessing the level of interest and commitment of a rival in a coopetition venture.	Conceptual	N/A	Competitive dynamics Coopetition	Inter-firm	<ul style="list-style-type: none"> The higher the rival's perceived benefits the higher its interest in the focal firm's coopetitive proposal. The lower the rival's perceived risks according to the assessment of market commonality with the focal firm, the higher the expected rival's initial commitment in coopetitive agreements.
Chen and Miller (2015)	Propose a framework that prove useful for contrasting the rivalrous, competitive-cooperative, and relational competition approaches.	Conceptual	Synthesis	Competitive dynamics		The choice between relational and rivalrous competition will be driven contingently by actors' awareness, motivations, and capabilities of the opportunities and threats surrounding these respective modes.
Andreuski et al. (2016)	Investigate how firms' alliance portfolio configuration affect their ability to develop and introduce new competitive actions.	Empirical/ Quantitative (structural content analysis)	Horizontal coopetition among 12 global automakers	Competitive dynamics Social network Alliance portfolio	Firm	Firms with mixed alliance portfolio attributes (structural holes, R&D alliance scope, and equity alliances) that maximize opportunity recognition, opportunity development, and action execution capacities are better able to frequently introduce competitive actions.

Appendix B

Taiwanese bicycles export volumes average unit price, and export sales (1998–2015).



Source: Taiwan Bicycle Association (TBA)

Appendix C

Quotations from informants.

Quote	Interviewee (Institution)	Implication
The background to the original purpose of the A-Team and the selection of member firms to begin the project was the terrible difficulties facing Taiwan's industry at that time: it was reaching the limit of the mass production of mainly low-priced bikes in mainland China and there was market chaos because of worldwide oversupply. We were at a point there was no choice: something has to be done about the situation.	The former chairman of the A-Team and the president of Giant (Cycle Press, 2008: 75)	The key premise of cooperation between competitors is facing the common threats from the change of industrial environment.
By sharing information and technology, we can achieve mutual improvements. It's no good having a factory we cannot show to the other companies in the industry.	The founder of Giant (Cycle Press, 2008: 79)	The key factor which drives competing firms to cooperate is sharing information liberally .
I guess they (Giant and Merida) have different strategies. Giant promotes its brand name "Giant" with full-range of product lines. Whereas Merida selected mountain-bike as the first priority ...	Informant E (the third party)	While cooperating with competitors, firms will differentiate their competitive actions on product line strategies toward each other.
Giant seems to be equally developing all types of bicycle Giant has wider product lines whereas Merida focused on narrower product lines.	Informant C (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions on product line strategies toward each other.
Giant and Merida have different channel and brand strategies. Giant prefer to have 100%-owned sales companies because fully-owned strategy is better to control. ... Merida chooses share-equity strategy. ... In their joint equity with Specialized, Merida sells its products under the brand name of <i>Specialized</i> .	Informant B (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions on channeling and branding strategies toward each other.
Giant started its global strategy earlier than Merida. People might reckon that Merida seems to be more conservative. However, Merida moved fast in recent years ... "I think Merida's investment in Specialized is a critical step. Merida has not only secured its orders but also benefited from Specialized's profits.	Informant E (the third party)	While cooperating with competitors, firms will differentiate their competitive actions on channeling and branding strategies toward each other.
We've (Giant) got more steps ahead of Merida in channel system. In Europe and the USA, we opened many chain stores but Merida did not. We insist on having our own channel system. Merida may just find a local dealer but does not invest their own stores.	Informant A (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions on channeling strategies toward each other.
Giant is the first one to propose brand for female users in the world. Last year in the European exhibition, we announced our specialty store channel "Liv/Giant", demonstrating our commitment to ladies-bike. We provide total solution from bicycles to peripheral accessories.	Informant A (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions on channeling and branding strategies toward each other.
Merida collaborates with local dealers but Giant opens its wholly-owned stores ... "Merida is moving via "partnership" while Giant is moving via "employer-employee relationship", which is better to control.	Informant C (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions on channeling strategies toward each other.
The reason why Giant is the leader is because we are always "the first". Whether this is "the best"? It depends. Merida adopted "follower strategy". They would not be "the first". Since we started to go for own-brand very early, we entered into international market very early, particularly in Europe. Giant started to sponsor sport teams in Europe. Merida noticed the effectiveness of sponsoring and then followed. In recent years, Merida has been having a stronger brand power. They changed the sponsoring strategy to become more aggressive This is not the issue of "who learns from whom". Merida has been doing these at the right timing.	Informant A (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions on sponsoring strategies toward each other.
We focus much more on the West-European market such as Netherlands, France, and British, where were considered the early-developed base markets of bicycle industry. In contrast, Merida has better market position in the North-Europe such as Norway and Denmark	Informant B (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions by targeting at different geographic market segments toward each other.

(continued)

Quote	Interviewee (Institution)	Implication
We did co-marketing by participating in many exhibitions like Europe and Japan in the name of the A-Team. We highlighted that we are all MIT (made in Taiwan) and it helped to build the image for all the members in the A-Team.	Informant A (A-Team)	The cooperation between competitors facilitates to firms' improvements by co-learning process .
It is definite that joining in the A-Team would have benefits to its members. Due to the mutual learning mechanisms in the A-Team, each member could detect many problems and conceived solutions to improve their operations respectively. For example, A-Team had invited experts to share the concept of aesthetics to its members. It benefits to them in many aspects.	Informant E (the third party)	The cooperation between competitors facilitates to firms' improvements by co-learning process .
A-Team is a public platform. Members within it observing and learning from each other. However, while each member has attained identical levels in specific value activities, we adjust our paces of cooperation respectively. For example, the A-Team may focus more on the mutual learning on manufacturing while leaves product innovation and sponsoring as the activities which need to be stood on each member's feet.	Informant A (A-Team)	Based on the trust cultivating in cooperation, cooperated rivals will differentiate their competitive actions toward each other.
Even though you had known something which is critical and confidential to a specific member within the A-Team, you cannot follow its steps or just copy it. If you do so, you will be despised by the others.	The former chairman of the A-Team and the president of Merida (Lee, 2013)	Based on the trust cultivating in cooperation, cooperated rivals will differentiate their competitive actions toward each other.
We will always care about the competitor who is the closest to us. However, our attitude is that, we all compete in the market that is open to everyone, like the saying "two brothers climb the mountain together but individually strive for reaching the top". If Merida is successful, it is positive for the whole Taiwan bicycle industry. If Merida has any better creation, we will have to run faster to create a bigger gap of product differentiation.	Informant A (A-Team)	To balance the paradoxical tension between competition and cooperation, rival partners are more likely to increase heterogeneity in competitive actions .

Appendix D

An example of action coding.

Issue date	Giant	Coding	Issue date	Merida	Coding
2006.03.13	Giant Focuses on "increase value but decrease quantity" strategy. European market will maintain as usual and North American market is expected to grow.	R&D/product	2006.07.18	To target on racing bike market by developing more high-level racing bikes in Europe and sponsoring Italian and Spanish racing teams.	R&D/product Sponsoring
2006.07.04	Giant launches channel innovation, starting from European market to improve the retailing system by the GRP (Giant Retailing Partner) plan.	Channel	2006.10.02	The brand strategy is to promote two brands, "Merida" and "Specialized" in Europe and single brand "Specialized" in USA market.	Branding
2006.07.11	Announce to launch new e-bike in September in Netherlands. Redesign and upgrade the battery of e-bike for European and North American markets	R&D/product	2007.02.12	With the glory of Championship in Athens 2004 Olympic, Merida has enjoyed the fast growth in the Europe. Merida's mountain bike "Carbon Mission" reached to the price at € 5000 per unit. To increase the average unit price, Merida will expand the production in high-price bikes that are above US\$ 1500 unit price and will also invest more R&D in high-price products including carbon fiber bikes, professional racing bikes, all terrain bikes, and ladies bikes.	Production R&D/product
2006.10.02	Sponsoring teams and racers is the key branding strategy. Renew a four-year agreement to sponsor the German T-Mobile team in 2007–2010. The team has won the Championship for the past three consecutive years in the Le Tour France.	Sponsoring	2007.03.05	Merida announced the cooperation with a Spanish dealer Macario Llorente. They will joint venture to have "Merida Bikes SWE" for targeting the markets in Spain, Portugal, France, and Andorra. Until today, Merida has established JV-dealers in Norway, Netherlands, Britain, Poland, Czech, Slovakia, German, and Austria. The one in Spain is the 9 th JV. Now, more than 30% of Merida's total sales came from European market.	Channel
2007.02.12	With the glory of Championship in Le Tour France, Giant enjoyed the fast growth in Europe. The launch of its new racing bike "Dura Ace" has been sold at the unit price of US\$ 7100.	R&D/product	2008.09.11	Merida's "Ninety Six" has been nominated by the Germany magazine <i>BIKE</i> as the award of Milestone 2008	Marketing
2007.06.26	Giant has been long-term emphasizing on brand-owned strategy. This year, 70% of the total sales revenue came from its own brand products with 10200 stores worldwide. Its GRP plan and GSI (Giant Store Inside) plan are expected to push to run 400 stores in end-2007 and 2000 stores in 2010.	Branding Channel	2009.02.24	Merida focused on three brands: Merida, Specialized, and Centurion, of which Centurion emphasized on Germany-design style, targeting on high-price market. By cooperating with its partners in production and design stages, Merida is able to shorten the production and delivery time.	Branding Production
2008.09.09	Giant's "City Speed" has been awarded a Gold in 2008 IF EUROBIKE	Marketing	2009.2.27	Two Germany racers have joined the team sponsored by Merida. Merida has invested a lot of budget to sponsor large-scale mountain bike marathons to solid its leading brand in mountain bikes. Merida chose Mallorca in Spain for its "2010 new bike global presentation".	Sponsoring Marketing

Appendix E

Financial performance of Giant and Merida (1998–2015).

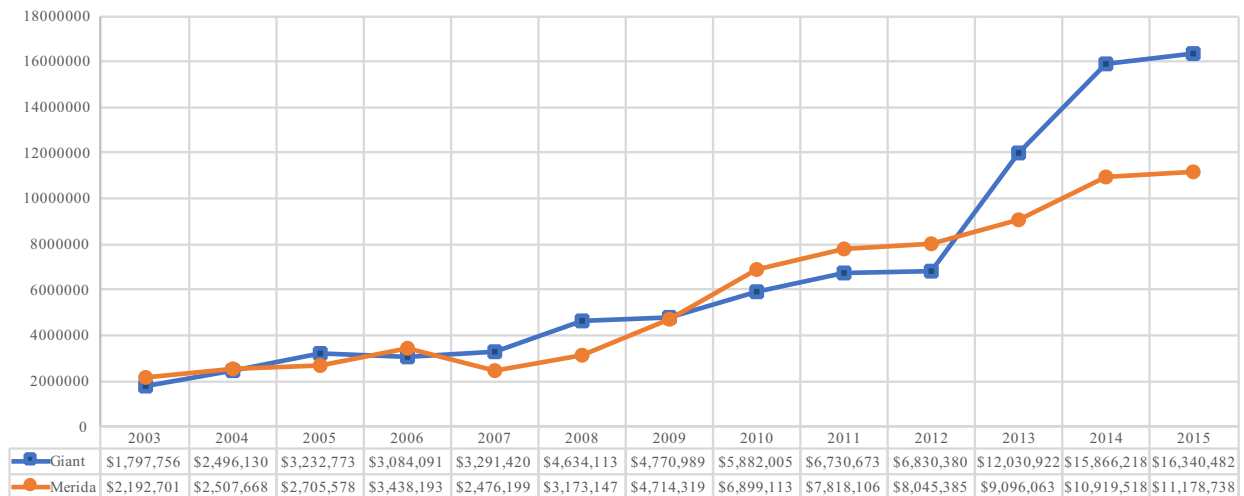
	1998	1999	2000	2001	2002	2003	2004	2005	2006
Giant: stock price (NT\$)*	63.50	32.70	44.50	33.50	45.90	41.20	54.50	63.50	53.50
EPS (NT\$)	3.28	2.57	3.48	2.08	2.66	4.04	4.07	4.10	3.61
Net income (thousands of NT\$)	981,185	679,802	810,228	807,594	943,408	1,214,106	1,308,571	1,658,295	1,494,159
ROA (%)	13.01	10.27	14.67	8.85	10.64	14.27	12.78	12.11	10.34
Merida: stock price (NT\$)*	33.80	17.70	14.30	8.80	16.70	15.10	21.40	22.35	36.20
EPS (NT\$)	N/A	N/A	1.10	(1.10)	0.46	0.90	2.00	2.80	3.40
Net income (thousands of NT\$)	N/A	N/A	253,661	(125,517)	270,077	194,040	295,250	387,603	512,587
ROA (%)	N/A	N/A	5.20	(3.10)	2.90	4.00	7.60	10.50	11.26
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Giant: stock price (NT\$)*	72.60	72.90	89.60	119.00	117.00	166.50	205.00	281.00	219.00
EPS (NT\$)	6.47	8.30	6.71	7.17	8.04	8.02	9.34	10.96	10.25
Net income (thousands of NT\$)	2,302,716	3,313,403	3,048,551	4,084,854	3,592,058	3,954,658	3,443,352	4,106,331	3,859,586
ROA (%)	15.72	16.55	14.25	13.85	13.76	12.29	9.09	9.82	8.67
Merida: stock price (NT\$)*	59.80	40.75	52.00	52.60	63.20	130.00	216.50	214.50	177.00
EPS (NT\$)	6.18	5.52	4.55	5.04	7.33	8.17	10.21	11.20	10.17
Net income (thousands of NT\$)	1,079,488	1,199,363	745,333	828,739	1,434,870	2,223,601	2,918,841	3,389,752	3,044,990
ROA (%)	16.88	12.56	10.88	11.68	15.53	16.91	16.66	16.81	13.88

*Stock price on the latest business day in each year.

Sources: Taiwan Stock Exchange Inc.

Appendix F

Sales in European market, 2003–2015 (NT\$ in thousand).



Source: Annual report of Giant and Merida

References

- Afuah, A., 2004. Does a focal firm's technology entry timing depend on the impact of the technology on co-opetitors? *Res. Policy* 33 (8), 1231–1246.
- Akpınar, M., Vincze, Z., 2016. The dynamics of coopetition: a stakeholder view of the German automotive industry. *Ind. Mark. Manag.* 57, 53–63.
- Anand, N., Gardner, H.K., Morris, T., 2007. Knowledge-based innovation: emergence and embedding of new practice areas in management consulting firms. *Acad. Manag. J.* 50 (2), 406–428.
- Andreuski, G., Brass, D.J., Ferrier, W.J., 2016. Alliance portfolio configurations and competitive action frequency. *J. Manag.* 42 (4), 811–837.
- Bengtsson, M., Eriksson, J., Wincent, J., 2010. Co-opetition dynamics—an outline for further inquiry. *Compet. Rev. Int. Bus. J.* 20 (2), 194–214.
- Bengtsson, M., Johansson, M., 2012. Managing coopetition to create opportunities for small firms. *Int. Small Bus. J.* 32 (4), 401–427.
- Bengtsson, M., Kock, S., 1999. Cooperation and competition in relationships between competitors in business networks. *J. Bus. Ind. Mark.* 14 (3), 178–194.
- Bengtsson, M., Kock, S., 2000. “Coopetition” in business networks—to cooperate and compete simultaneously. *Ind. Mark. Manag.* 29 (5), 411–426.
- Bengtsson, M., Kock, S., 2014. Coopetition—quo vadis? Past accomplishments and future challenges. *Ind. Mark. Manag.* 43 (2), 180–188.
- Bouncken, R.B., Fredrich, V., 2012. Coopetition: performance implications and management antecedents. *Int. J. Innovat. Manag.* 16 (5), 1250028.

- Bouncken, R.B., Gast, J., Kraus, S., Bogers, M., 2015. Coopetition: a systematic review, synthesis, and future research directions. *Rev. Manag. Sci.* 9 (3), 577–601.
- Brandenburger, A.M., Nalebuff, B.J., 1996. *Co-opetition*. Doubleday, New York.
- Burgers, W.P., Hill, C.W., Kim, W.C., 1993. A theory of global strategic alliances: the case of the global auto industry. *Strateg. Manag. J.* 14 (6), 419–432.
- Cassiman, B., Di Guardo, M.C., Valentini, G., 2009. Organising R&D projects to profit from innovation: insights from co-opetition. *Long Range Plan.* 42 (2), 216–233.
- Castaldo, S., Dagnino, G.B., 2009. Trust and coopetition: the strategic role of trust in interfirm coopetitive dynamics. In: Dagnino, G.B., Rocco, E. (Eds.), *Coopetition Strategy: Theory, Experiments and Cases*. Routledge, Oxon, UK, pp. 74–100.
- Chen, M.J., 1996. Competitor analysis and interfirm rivalry: toward a theoretical integration. *Acad. Manag. Rev.* 21 (1), 100–134.
- Chen, M.J., 2008. Reconceptualizing the competition-cooperation relationship: a transparadox perspective. *J. Manag. Inq.* 17 (4), 288–304.
- Chen, M.J., MacMillan, I.C., 1992. Nonresponse and delayed response to competitive moves: the roles of competitor dependence and action irreversibility. *Acad. Manag. J.* 35 (3), 539–570.
- Chen, M.J., Miller, D., 1994. Competitive attack, retaliation and performance: an expectancy-valence framework. *Strateg. Manag. J.* 15 (2), 85–102.
- Chen, M.J., Miller, D., 2011. The relational perspective as a business mindset: managerial implications for East and West. *Acad. Manag. Perspect.* 25 (3), 6–18.
- Chen, M.J., Miller, D., 2015. Reconceptualizing competitive dynamics: a multidimensional framework. *Strateg. Manag. J.* 36 (5), 758–775.
- Chen, M.J., Su, K.H., Tsai, W., 2007. Competitive tension: the awareness-motivation-capability perspective. *Acad. Manag. J.* 50 (1), 101–118.
- Chi, L., Holsapple, C.W., Srinivasan, C., 2007. The linkage between IOS use and competitive action: a competitive dynamics perspective. *Inf. Syst. E-Bus. Manag.* 5 (4), 319–356.
- Chiambaretto, P., Gurau, C., Le Roy, F., 2016. Coopetitive branding: definition, typology, benefits and risks. *Ind. Mark. Manag.* 57, 86–96.
- Chin, K.S., Chan, B.L., Lam, P.K., 2008. Identifying and prioritizing critical success factors for coopetition strategy. *Ind. Manag. Data Syst.* 108 (4), 437–454.
- Clarke-Hill, C., Li, H., Davies, B., 2003. The paradox of co-operation and competition in strategic alliances: towards a multi-paradigm approach. *Manag. Res. News* 26 (1), 1–20.
- Cycle Press, 2008. *Tracing the A-Team Evolution*. Cycle Press, Tokyo.
- Czaron, W., Rogalski, M., 2014. Coopetition typology revisited—a behavioural approach. *Int. J. Bus. Environ.* 6 (1), 28–46.
- Dahl, J., 2014. Conceptualizing coopetition as a process: an outline of change in cooperative and competitive interactions. *Ind. Mark. Manag.* 43 (2), 272–279.
- Das, T.K., Teng, B.S., 1997. Sustaining strategic alliances: options and guidelines. *J. Gen. Manag.* 22, 49–64.
- Das, T.K., Teng, B.S., 2000. Instabilities of strategic alliances: an internal tension perspective. *Organ. Sci.* 11 (1), 77–101.
- Deephouse, D.L., 1999. To be different, or to be the same? It's a question (and theory) of strategic balance. *Strateg. Manag. J.* 20 (2), 147–166.
- Denzin, N.K., 1978. *The Research Act: A Theoretical Introduction to Research Methods*. Aldine Transaction, New Brunswick, NJ.
- Dorn, S., Schweiger, B., Albers, S., 2016. Levels, phases and themes of coopetition: a systematic literature review and research agenda. *Eur. Manag. J.* 34 (5), 484–500.
- Dowling, M.J., Roering, W.D., Carlin, B.A., Wisniewski, J., 1996. Multifaceted relationships under coopetition description and theory. *J. Manag. Inq.* 5 (2), 155–167.
- Doz, Y.L., 1996. The evolution of cooperation in strategic alliances: initial conditions or learning processes? *Strateg. Manag. J.* 17 (S1), 55–83.
- Dussauge, P., Garrette, B., Mitchell, W., 2000. Learning from competing partners: outcomes and durations of scale and link alliances in Europe, North America and Asia. *Strateg. Manag. J.* 21 (2), 99–126.
- Dyer, J.H., Singh, H., Kale, P., 2008. Splitting the pie: rent distribution in alliances and networks. *Manag. Decis. Econ.* 29 (2–3), 137–148.
- Dyer, W.G., Wilkins, A.L., 1991. Better stories, not better constructs, to generate better theory: a rejoinder to Eisenhardt. *Acad. Manag. Rev.* 16 (3), 613–619.
- Eisenhardt, K.M., 1989. Building theories from case study research. *Acad. Manag. Rev.* 14 (4), 532–550.
- Eisenhardt, K.M., Graebner, M.E., 2007. Theory building from cases: opportunities and challenges. *Acad. Manag. J.* 50 (1), 25–32.
- Eisenhardt, K.M., Martin, J.A., 2000. Dynamic capabilities: what are they? *Strateg. Manag. J.* 21 (10–11), 1105–1121.
- Enberg, C., 2012. Enabling knowledge integration in cooperative R&D projects—the management of conflicting logics. *Int. J. Proj. Manag.* 30 (7), 771–780.
- Eriksson, K., Marquardt, R., 2001. Is relationship theory applicable to internet bank relationships? In: *International Marketing and Purchasing Group Annual Conference*, Oslo, Norway.
- Fang, S.R., Chang, Y.S., Peng, Y.C., 2011. Dark side of relationships: a tension-based view. *Ind. Mark. Manag.* 40 (5), 774–784.
- Fernandez, A.S., Le Roy, F., Gnyawali, D.R., 2014. Sources and management of tension in co-opetition case evidence from telecommunications satellites manufacturing in Europe. *Ind. Mark. Manag.* 43 (2), 222–235.
- Ferrier, W.J., 2001. Navigating the competitive landscape: the drivers and consequences of competitive aggressiveness. *Acad. Manag. J.* 44 (4), 858–877.
- Ferrier, W.J., Smith, K.G., Grimm, C.M., 1999. The role of competitive action in market share erosion and industry dethronement: a study of industry leaders and challengers. *Acad. Manag. J.* 42 (4), 372–388.
- Galvagno, M., Garraffo, F., 2010. The promise of coopetition as a new theoretical perspective in strategic management. In: Yami, S., Castaldo, S., Dagnino, G.B., Le Roy, F. (Eds.), *Coopetition: Winning Strategies for the 21st Century*. Cheltenham, UK, pp. 40–57.
- Garraffo, F., Rocco, E., 2009. Competitor analysis and interfirm coopetition. In: Dagnino, G.B., Rocco, E. (Eds.), *Coopetition Strategy: Theory, Experiments, and Cases*. Routledge, Oxon, UK, pp. 44–63.
- Gast, J., Filser, M., Gundolf, K., Kraus, S., 2015. Coopetition research: towards a better understanding of past trends and future directions. *Int. Entrepreneursh. Small Bus.* 24 (4), 492–521.
- Ghobadi, S., D'Ambra, J., 2012. Knowledge sharing in cross-functional teams: a cooperative model. *J. Knowl. Manag.* 16 (2), 285–301.
- Gilbert, C.G., 2005. Unbundling the structure of inertia: resource versus routine rigidity. *Acad. Manag. J.* 48 (5), 741–763.
- Gnyawali, D.R., He, J., Madhavan, R., 2006. Impact of co-opetition on firm competitive behavior: an empirical examination. *J. Manag.* 32 (4), 507–530.
- Gnyawali, D.R., Madhavan, R., 2001. Cooperative networks and competitive dynamics: a structural embeddedness perspective. *Acad. Manag. Rev.* 26 (3), 431–445.
- Gnyawali, D.R., Madhavan, R., He, J., Bengtsson, M., 2016. The competition-cooperation paradox in inter-firm relationships: a conceptual framework. *Ind. Mark. Manag.* 53, 7–18.
- Gnyawali, D.R., Park, B.J.R., 2009. Co-opetition and technological innovation in small and medium-sized enterprises: a multilevel conceptual model. *J. Small Bus. Manag.* 47 (3), 308–330.
- Gnyawali, D.R., Park, B.J.R., 2011. Co-opetition between giants: collaboration with competitors for technological innovation. *Res. Policy* 40 (5), 650–663.
- Guba, E.G., 1981. Criteria for assessing the trustworthiness of naturalistic inquiries. *Educ. Commun. Technol. J.* 29 (2), 75–92.
- Hamel, G., 1991. Competition for competence and interpartner learning within international strategic alliances. *Strateg. Manag. J.* 12 (S1), 83–103.
- Hamel, G., Doz, Y.L., Prahalad, C.K., 1989. Collaborate with your competitors and win. *Harv. Bus. Rev.* 67 (1), 133–139.
- Herzog, T., 2010. Strategic management of cooperative relationships in CoPS-related industries. In: Yami, S., Castaldo, S., Dagnino, G.B., Le Roy, F. (Eds.), *Coopetition: Winning Strategies for the 21st Century*. Cheltenham, UK, pp. 200–215.
- Hoskisson, R.E., Hitt, M.A., Wan, W.P., Yiu, D., 1999. Theory and research in strategic management: swings of a pendulum. *J. Manag.* 25 (3), 417–456.
- Hutter, K., Hautz, J., Füller, J., Mueller, J., Matzler, K., 2011. Communitition: the tension between competition and collaboration in community-based design contests. *Creat. Innovat. Manag.* 20 (1), 3–21.
- Jarzabkowski, P., Matthiesen, J.K., Van de Ven, A.H., 2008. A process model of coping with dialectical tensions in organizations. In: *Annual Meeting of the Academy of Management*, Anaheim, CA.
- Jauch, L.R., Osborn, R.N., Martin, T.N., 1980. Structured content analysis of cases: a complementary method for organizational research. *Acad. Manag. Rev.* 5 (4), 517–525.

- Jing, R., Van de Ven, A.H., 2016. Being versus becoming ontology of paradox management. *Cross Cult. Strateg. Manag.* 23 (4), 558–562.
- Jorde, T.M., Teece, D.J., 1989. Competition and cooperation: striking the right balance. *Calif. Manag. Rev.* 31 (3), 25–37.
- Ketchen, D.J., Snow, C.C., Hoover, V.L., 2004. Research on competitive dynamics: recent accomplishments and future challenges. *J. Manag.* 30 (6), 779–804.
- Khanna, T., Gulati, R., Nohria, N., 1998. The dynamics of learning alliances: competition, cooperation, and relative scope. *Strateg. Manag. J.* 19 (3), 193–210.
- Kinner, T.C., Taylor, J.R., 1979. *Marketing Research: an Applied Approach*. McGraw-Hill, New York.
- Kogut, B., Zander, U., 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. *Organ. Sci.* 3 (3), 383–397.
- Lado, A.A., Boyd, N.G., Hanlon, S.C., 1997. Competition, cooperation, and the search for economic rents: a syncretic model. *Acad. Manag. Rev.* 22 (1), 110–141.
- Lavie, D., Rosenkopf, L., 2006. Balancing exploration and exploitation in alliance formation. *Acad. Manag. J.* 49 (4), 797–818.
- Le Roy, F., Fernandez, A.S., 2015. Managing cooperative tensions at the working-group level: the rise of the cooperative project team. *Br. J. Manag.* 26 (4), 671–688.
- Lee, Y.Y., 2013. Coopetition of the Ants: the Revelation of A-team. *Harvard Business Review (Chinese Edition)* Jun, pp. 132–143.
- Lewis, M.W., 2000. Exploring paradox: toward a more comprehensive guide. *Acad. Manag. Rev.* 25 (4), 760–776.
- Li, P.P., 2016. Global implications of the indigenous epistemological system from the East: how to apply Yin-Yang balancing to paradox management. *Cross Cult. Strateg. Manag.* 23 (1), 42–77.
- Li, Y., Liu, Y., Liu, H., 2011. Co-opetition, distributor's entrepreneurial orientation and manufacturer's knowledge acquisition: evidence from China. *J. Oper. Manag.* 29 (1), 128–142.
- Lincoln, Y.S., Guba, E.G., 1985. *Naturalistic Inquiry*. Sage, London, UK.
- Luo, Y., 2004. *Coopetition in International Business*. Copenhagen Business School Press, Denmark.
- Luo, Y., 2005. Toward coopetition within a multinational enterprise: a perspective from foreign subsidiaries. *J. World Bus.* 40 (1), 71–90.
- Luo, Y., 2007. From foreign investors to strategic insiders: shifting parameters, prescriptions and paradigms for MNCs in China. *J. World Bus.* 42 (1), 14–34.
- Luo, Y., Rui, H., 2009. An ambidexterity perspective toward multinational enterprises from emerging economies. *Acad. Manag. Perspect.* 23 (4), 49–70.
- Madhavan, R., Gnyawali, D.R., He, J., 2004. Two's company, three's a crowd? Triads in cooperative-competitive networks. *Acad. Manag. J.* 47 (6), 918–927.
- March, J.G., 1999. *The Pursuit of Organizational Intelligence*. Blackwell, Oxford.
- Mariani, M.M., 2007. Coopetition as an emergent strategy: empirical evidence from an Italian consortium of opera houses. *Int. Stud. Manag. Organ.* 37 (2), 97–126.
- Mariani, M.M., 2009. Emergent cooperative and cooperative strategies in interorganizational relationships: empirical evidence from Australian and Italian operas. In: Dagnino, G.B., Rocco, E. (Eds.), *Coopetition Strategy: Theory, Experiments, and Cases*. Routledge, Oxon, UK, pp. 166–190.
- Martin, J.A., Eisenhardt, K.M., 2010. Rewiring: cross-business-unit collaborations in multibusiness organizations. *Acad. Manag. J.* 53 (2), 265–301.
- Miller, D., Chen, M.J., 1996. Nonconformity in competitive repertoires: a sociological view of markets. *Soc. Forces* 74 (4), 1209–1234.
- Minà, A., Dagnino, G.B., 2016. In search of coopetition consensus: shaping the collective identity of a relevant strategic management community. *Int. J. Technol. Manag.* 71 (1–2), 123–154.
- Park, B.J.R., Srivastava, M.K., Gnyawali, D.R., 2014. Walking the tight rope of coopetition: impact of competition and cooperation intensities and balance on firm innovation performance. *Ind. Mark. Manag.* 43 (2), 210–221.
- Park, S.H., Ungson, G.R., 2001. Interfirm rivalry and managerial complexity: a conceptual framework of alliance failure. *Organ. Sci.* 12 (1), 37–53.
- Pathak, S.D., Wu, Z., Johnston, D., 2014. Toward a structural view of co-opetition in supply networks. *J. Oper. Manag.* 32 (5), 254–267.
- Peng, T.J.A., Bourne, M., 2009. The coexistence of competition and cooperation between networks: implications from two Taiwanese healthcare networks. *Br. J. Manag.* 20 (3), 377–400.
- Peng, T.J.A., Pike, S., Yang, J.C., Roos, G., 2012. Is cooperation with competitors a good idea? An example in practice. *Br. J. Manag.* 23 (4), 532–560.
- Poole, M.S., Van de Ven, A.H., 1989. Using paradox to build management and organization theories. *Acad. Manag. Rev.* 14 (4), 562–578.
- Poulsen, M.B.J., 2001. Competition and cooperation: what roles in scientific dynamics? *Int. J. Technol. Manag.* 22 (7–8), 782–793.
- Pucher, J., 1997. Bicycling boom in Germany: a revival engineered by public policy. *Transp. Q.* 51 (4), 31–46.
- Quinn, R.E., Cameron, K.S., 1988. *Paradox and Transformation: toward a Theory of Change in Organization and Management*. Ballinger, Cambridge, MA.
- Rai, R.K., 2013. A co-opetition-based approach to value creation in interfirm alliances: construction of a measure and examination of its psychometric properties. *J. Manag.* 30, 1–20.
- Raza-Ullah, T., Bengtsson, M., Kock, S., 2014. The coopetition paradox and tension in coopetition at multiple levels. *Ind. Mark. Manag.* 43 (2), 189–198.
- Ribeiro-Soriano, D.E., Roig-Tierno, N., Mas-Tur, A., 2016. Governance models of coopetition and innovation: the case of Spanish firms. *Int. J. Technol. Manag.* 71 (1–2), 38–57.
- Ring, P.S., Van de Ven, A.H., 1992. Structuring cooperative relationships between organizations. *Strateg. Manag. J.* 13 (7), 483–498.
- Ring, P.S., Van de Ven, A.H., 1994. Developmental processes of cooperative interorganizational relationships. *Acad. Manag. Rev.* 19 (1), 90–118.
- Ritala, P., 2012. Coopetition strategy—when is it successful? Empirical evidence on innovation and market performance. *Br. J. Manag.* 23 (3), 307–324.
- Ritala, P., Golnam, A., Wegmann, A., 2014. Coopetition-based business models: the case of Amazon.com. *Ind. Mark. Manag.* 43 (2), 236–249.
- Ritala, P., Hurmelinna-Laakkonen, P., 2009. What's in it for me? Creating and appropriating value in innovation-related coopetition. *Technovation* 29 (12), 819–828.
- Ritala, P., Kraus, S., Bouncken, R.B., 2016. Introduction to coopetition and innovation: contemporary topics and future research opportunities. *Int. J. Technol. Manag.* 71 (1/2), 1–9.
- Ritala, P., Tidström, A., 2014. Untangling the value-creation and value-appropriation elements of coopetition strategy: a longitudinal analysis on the firm and relational levels. *Scand. J. Manag.* 30 (4), 498–515.
- Ritala, P., Välimäki, K., Blomqvist, K., Henttonen, K., 2009. Intrafirm coopetition, knowledge creation and innovativeness. In: Dagnino, G.B., Rocco, E. (Eds.), *Coopetition Strategy: Theory, Experiments, and Cases*. Routledge, Oxon, UK, pp. 64–73.
- Rusko, R., 2011. Exploring the concept of coopetition: a typology for the strategic moves of the Finnish forest industry. *Ind. Mark. Manag.* 40 (2), 311–320.
- Sako, M., 1991. The role of trust in Japanese buyer-supplier relationships. *Ric. Econ.* 45 (2–3), 449–474.
- Sako, M., 1992. *Price, Quality and Trust: Inter-firm Relations in Britain and Japan*. Cambridge University Press, UK.
- Sako, M., Helper, S., 1998. Determinants of trust in supplier relations: evidence from the automotive industry in Japan and the United States. *J. Econ. Behav. Organ.* 34 (3), 387–417.
- Smith, K.G., Ferrier, W.J., Ndofo, H., 2001. Competitive dynamics research: critique and future directions. In: Hitt, M.A., Freeman, R.E., Harrison, J.S. (Eds.), *Handbook of Strategic Management*. Blackwell, Malden, MA, pp. 315–361.
- Smith, W.K., Lewis, M.W., 2011. Toward a theory of paradox: a dynamic equilibrium model of organizing. *Acad. Manag. Rev.* 36 (2), 381–403.
- Song, D.W., Lee, E.S., 2012. Cooperative networks, knowledge acquisition and maritime logistics value. *Int. J. Logist. Res. Appl.* 15 (1), 15–35.
- Stadtler, L., Van Wassenhove, L.N., 2016. Coopetition as a paradox: integrative approaches in a multi-company, cross-sector partnership. *Organ. Stud.* 37 (5), 655–685.
- Teece, D.J., Pisano, G., Shuen, A., 1997. Dynamic capabilities and strategic management. *Strateg. Manag. J.* 18 (7), 509–533.
- Tidström, A., 2009. Causes of conflict in intercompetitor cooperation. *J. Bus. Ind. Mark.* 24 (7), 506–518.
- Tidström, A., 2014. Managing tensions in coopetition. *Ind. Mark. Manag.* 43 (2), 261–271.
- Tidström, A., Hagberg-Andersson, A., 2012. Critical events in time and space when cooperation turns into competition in business relationships. *Ind. Mark. Manag.* 41 (2), 333–343.
- Todeva, E., 2006. *Business Networks: Strategy and Structure*. Routledge, Oxon, UK.
- Tsai, W., 2001. Knowledge transfer in intraorganizational networks: effects of network position and absorptive capacity on business unit innovation and performance. *Acad. Manag. J.* 44 (5), 996–1004.

- Tsai, W., 2002. Social structure of “coopetition” within a multiunit organization: coordination, competition, and intraorganizational knowledge sharing. *Organ. Sci.* 13 (2), 179–190.
- Tse, T., 2013. Paradox resolution: a means to achieve strategic innovation. *Eur. Manag. J.* 31 (6), 682–696.
- Yami, S., Nemeh, A., 2014. Organizing coopetition for innovation: the case of wireless telecommunication sector in Europe. *Ind. Mark. Manag.* 43 (2), 250–260.
- Yin, R.K., 2009. *Case Study Research: Design and Methods*, fourth ed. Sage, Newbury Park, CA.
- Young, G., Smith, K.G., Grimm, C.M., 1996. “Austrian” and industrial organization perspectives on firm-level competitive activity and performance. *Organ. Sci.* 7 (3), 243–254.
- Yu, T., Cannella, A.A., 2007. Rivalry between multinational enterprises: an event history approach. *Acad. Manag. J.* 50 (3), 665–686.
- Zaheer, A., Gözübüyük, R., Milanov, H., 2010. It's the connections: the network perspective in interorganizational research. *Acad. Manag. Perspect.* 24 (1), 62–77.