

## How do rival partners compete based on cooperation?

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### Abstract

Prior studies of cooptation have explained the *what*, *how* and *why* of firms cooperating with competitors. Among these, examining the *how* question as to the stream of cooptation 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 cooptation, 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 cooptation relationship. This study provides new insights into a theoretical issue of cooperation-based competition. The case also provides management implications while taking a cooptation strategy.

**Keywords:** cooptation, competitive dynamics, cooperation-based competition, bicycle industry

## 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, Hill, and Kim, 1993; Gnyawali and Park, 2009; Peng, Pike, Yang, and Roos, 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, Schweiger, and Albers, 2016; Ritala, Kraus, and Bouncken, 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 literatures 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, 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, Holsapple, and Srinivasan, (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 coopetition 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 literatures, 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 cooperation 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 cooperation 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 cooperation 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 cooperation and reviews the research theme in cooperation dynamics. We also discuss some studies related to competitive dynamics in cooperation. 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**

### *Cooperation*

While cooperation has become a prominent research stream in management literature, the definition of cooperation remains unclear (Ketchen, Snow, and Hoover, 2004; Bengtsson and Kock, 2014; Dorn *et al.*, 2016). Scholars present a variety of facets to examine cooperation, 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 cooperation. The same concept is employed for totally different phenomena, leading to different directions. They found that differences in cooperation research still exist regarding the scope of the definition and the perceived nature of the phenomenon. Cooperation 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 cooperation 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 cooptation 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, Gast, Kraus, and Bogers (2015) define cooptation 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. Cooptation is intriguing as it combines two ways of interaction that usually involve strong opposing logics (Dorn *et al.*, 2016). However, cooptation 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), cooptation has been studied across multiple levels of analysis including individual level (Poulsen, 2001; Hutter, Hautz, Fuller, Mueller, and Matzler, 2011), intra-firm level (Tsai, 2002; Luo, 2005, 2007; Ritala, 2012; Cassiman, Di Guardo, and Valentini, 2009; Enberg, 2012), project level (Fernandez, Le Roy, and Gnyawali, 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, Gnyawali, and He, 2004), and network or supply chain level (Gnyawali, He, and Madhavan, 2006; Peng and Bourne, 2009; Tidström, 2014; Pathak, Wu, and Johnston, 2014; Song and Lee, 2012;).

Bengtsson and Kock (2014) indicate that researchers employ various theoretical lenses. Game theory perceives cooptation as a win-win relationship. As Brandenburger and Nalebuff (1996) noted, cooptation 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 cooptation, indicating the benefits of mutually leveraging resources, sharing knowledge, and developing technology (Gnyawali and Park, 2011; Li, Liu, and Liu, 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 cooptation (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, Roering, Carlin, and Wisnieski, 1996), contracting, intellectual property protection, value creation and value appropriation, particularly when exploring the role of cooptation in innovation (Ritala *et al.*, 2016).

Despite the differences, some scholars have reviewed the literatures and conclude similar research streams in cooptation. For example, a literature review carried out by Peng *et al.* (2012) indicates three streams of cooptation: *antecedents*, *dynamics*, and *outcome*. Bengtsson and Kock (2014) reviewed cooptation literature between 1994 and 2012, revealing that research on cooptation 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 cooptation-related articles from 1994 to 2014. They found that cooptation 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 cooptation 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 cooptation 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 coopetition 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 coopetition literatures 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 coopetition paradox and engendered coopetition tension, to understand the dynamics of competitive interaction, and to understand coopetition's impact on the business model and strategy. In order to address the theoretical gap in coopetition research, we review the literatures related to the stream of *coopetition dynamics* and the *competitive dynamics in coopetition* (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, Bengtsson, and Kock, 2014; Gnyawali, Madhavan, He, and Bengtsson, 2016), typology (Lado, Boyd, and Hanlon, 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, Srivastava, and Gnyawali, 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 coopetition 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 coopetition 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 cooperative relationships.” The incompatible logics make firms sink into a status called “emotional ambivalence,” which means “the cognitive appraisal of the cooperation 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, Doz, and Prahalad (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 cooperation 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 cooperation was also evidenced by the literatures on the theme of value appropriation versus value creation (Gnyawali and Park, 2009; Ritala and Hurmelinna-Laukkanen, 2009; Rai, 2013; Ritala, Golnam, and Wegmann, 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 literatures argue that the paradox between collaborating for collective interests and competing for individual benefits may lead to tension in cooperation when two contrary forces are twisted inside the relationship. Since tension is developed as a consequence of the cooperation 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 cooperation to

explain the occurrence of paradoxical tensions, more studies focused on how to manage paradox in cooptition 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 cooptition 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 cooptition. 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 cooptition. Separation strategy addresses that the management of competition and the management of cooperation should be split to manage tension within cooptition (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 cooptition (Jarzabkowski, Matthiesen, and Van de Ven, 2008; Smith and Lewis, 2011; Le Roy and Fernandez, 2015).

For example, Tidström (2014) investigates how tensions are managed in cooptitive 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 cooptitive business relationships.

Fernandez *et al.* (2014) develop a multi-level conceptual framework that helps to understand key drivers of tension in cooptition and key approaches for managing tension. They indicate that cooptitive 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 cooptitive 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 cooptition dynamics*

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

The notion of balance refers to equilibrium between conflicting tendencies (Lavie & 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.

Pool 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 cooperation, 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 cooperation (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 cooptition*

The literatures on collaborative dynamics in cooptition argue that firms form cooptitive 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, Chan, and Lam, 2008; Peng *et al.*, 2012). However, in cooptition, the collaborative benefits are not always fully aligned with individual and firm-specific strategic objectives (Dyer, Singh and Kale, 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 Maquardt (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, Gurău and Le Roy (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, Hitt, Wan, and Yiu, 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, Ferrier, and Ndofor, 2001). The actions have the potential to disrupt the competitive status quo, causing disequilibrium in the product-market space (Ferrier, Smith, and Grimm, 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 and partners for other value activities. That is, the cooperation and competition does not refer to the cooperation between direct competitors.

Garraffo and Rocco (2009) turn the analysis to the formation of cooperative relationships between direct competitors, i.e. firms with similar markets and similar customers. They focus on the pre-agreement rival's assessment process by proposing a two-step model for assessing a potential partner's level of interest and initial commitment in a cooperative venture. They conclude that the higher the rival's perceived benefits, the higher its interest in cooperation proposals. Moreover, 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 cooperative agreements that are distant to the current market position. Their two-step model has made significant contributions to competitor analysis and cooperation research. However, their focus on the pre-agreement rival's assessment process emphasizes how direct competitors cooperate rather than how direct competitors compete after cooperation. We therefore expect to contribute to the research theme of competitor analysis and cooperation by revealing the post-cooperation competition between direct competitors.

In the scenario of cooperation-based competition, the competitive interactions between rival firms are much more complex, since the line between competition and cooperation is obscured (Chen, 2008). As the paradoxes and tensions between competition and cooperation emerge, the relationship between competition and cooperation may become interdependence rather than independence (Chen, 2008), thus, the behaviours and motives of rival partners in such cooperation-based competition could be different.

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 cooperation. 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 cooperation, this study aims to reveal the competitive actions, particularly when competitors have collaborated. We intend to show in such cooperation relationships how rival partners compete based on cooperation.

### *A theoretical framework of cooperation dynamics*

Derived from the above literatures review, a theoretical framework of *cooperation dynamics* is delineated as shown in Figure 1. The coexistence and the interaction between competition and cooperation lead to paradox in cooperation. The paradoxical nature causes tensions where a situation of incompatible behaviour, goals, or activities may occur (Tidström, 2014). Such tensions may arise from the paradox between cooperation and competition. On one side, the partners collaborate for value

co-creation, common benefit, convergent interests, and better market position. On the other side, they compete for value appropriation, private benefit, divergent interests, and a better competitive advantage. Managing paradox and tensions is critical to balance contradictory logics of competition and cooperation. Further, the strategies of managing paradox and tension determine the competitive and collaborative actions. Therefore, competitive dynamics as well as collaborative dynamics evolve as changes occur in paradox, tension, managing strategies, and balancing status in co-competition dynamics.

This study aims to explore the competition aspect in the theoretical framework of co-competition dynamics. Prior co-competition 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 co-competition 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 co-competition is worth exploring. Therefore, we focus on the competition in co-competition dynamics, answering the question: how do rival partners compete based on cooperation?

- Insert Figure 1 here -

## **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 co-competition alliance formed by competitors and suppliers in the Taiwanese bicycle industry as our research setting to observe the competition between two leading competitors. The co-competition 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 co-competition alliance formed by competitors in Taiwan, the alliance was given the name “A-Team”<sup>1</sup>. 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.

- Insert Table 1 here -

Prior empirical studies in co-competition have been predominantly focused on high-tech industry, assuming that complex products, rapid technological change and intensive competition will induce co-competition (Ritala, 2012; Czakon and Rogalski, 2014). The high-tech industry is a popular research setting, particularly from the point

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<sup>1</sup> 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.

of view of linking innovation with cooperation (e.g., Gynawali *et al.*, 2006; Cassiman *et al.*, 2009; Le Roy and Fernandez, 2015; Gast, Filser, Gundolf, and Kraus, 2015; Bouncken *et al.*, 2015). However, Czakon and Rogalski's (2014) study provides evidence of wide-spread cooperation in traditional industries. They argued that cooperation is not a phenomenon derived only from complex products or innovative industries where cooperation is simply a must for firms. They encouraged the development of cooperation studies in more traditional industries.

In this study, the choice of the cooperation 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 cooperation 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.

### *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, Garrette, and Mitchell, 2000; Gynawali 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 cooperation 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 cooptation.

Following the studies conducted by Chi *et al.* (2007) and Andrevski *et al.* (2016), who investigated the competitive dynamics in cooptation, 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, Gözübüyük, and Milanov (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 cooptation 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%)<sup>2</sup>.

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”, “Netherlands”, “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 cooperation 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.

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<sup>2</sup> Data source: Taiwan Bicycle Association. [www.tba-cycling.org](http://www.tba-cycling.org)

Although we did not interview the informant in Merida, we have important secondary data from an article published in *Harvard Business Review (Chinese edition)*<sup>3</sup> recording an interview with the CEO, Michael Tseng. In addition, we also collected a special issue published by *Cycle Press*<sup>4</sup>, which delineates the evolutionary history of A-Team. The list of quotations from interviews is shown in Appendix C.

### *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. Andreovski *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: 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 categorised 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

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

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



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, Gardner, and Morris, 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 appliers 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.

“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)

- Insert Table 3 here -

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.

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.

- Insert Table 4 and Table 5 here -

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, Smith and Grimm, 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 to 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 centres 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, Pisano, and Shuen, 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, and 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 literatures but also in cooptation research. Prior studies have proved that the co-learning in the context of cooptation may contribute to achieving benefits of innovation (Bouncken *et al.*, 2015; Gnyawali and Park, 2009, 2011; Le Roy and Fernandez, 2015; Ribeiro-Soriano, Roig-Tierno, and Mas-Tur, 2016; Ritala *et al.*, 2016). Ribeiro-Soriano *et al.* (2016) also echo that firms can boost their innovation if they cooperate with competitors. Coopting firms enjoy a greater degree of innovation than that of non-coopting firms.

Mariani (2009) investigates cooptation 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. Akpınar 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 coepetition, 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 coepetition 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, Eriksson, and Wincent, 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 cooperative 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 cooperation, 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 cooperation 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 cooperative 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 cooperation dynamics.*

Based on the above results and discussion, we develop a conceptual framework to depict the cooperation-based competition as shown in Figure 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 cooperation dynamics (P3).

- Insert Figure 2 here -

This framework reflects the competition side of the theoretical framework in cooperation dynamics (in Figure 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 co-competition 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 co-competition 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 co-competition and competitive dynamics. Regarding the contributions to co-competition literature, firstly, to unfold the process of co-competition dynamics is probably the most challenging issue. This study conducted a literature review on co-competition 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 co-competition. 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 co-competition dynamics. The theoretical framework derived from this study contributes to the co-competition literature because it depicts a clear picture of the key constructs and their relationship in co-competition dynamics.

Secondly, prior research in co-competition has emphasized much more on cooperation while less attention has been paid to competition after the competitors have collaborated. In co-competition dynamics, competition side is as important as cooperation side. This study highlights the competition in co-competition, 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 co-competition literature because it highlights the competition side in co-competition and shows how cooperation influences the competitive dynamics and how the rival partners can act to create balance in a co-competition 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 cooperation literatures (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 cooperation. 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 cooperation 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 cooperation 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 cooperation and vertical cooperation may be different. Future research could further explore why different types of cooperation 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 cooperation will work, at least for a period, until the dynamics are disrupted again. As cooperation dynamics evolves, could cooperation 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 cooperation 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 cooperation 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 cooperation. 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 cooperation strategies.

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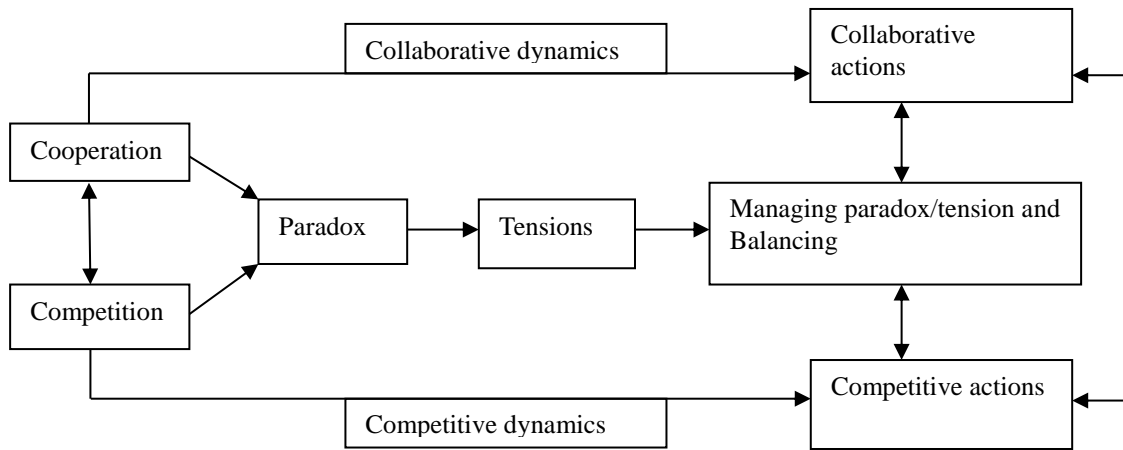


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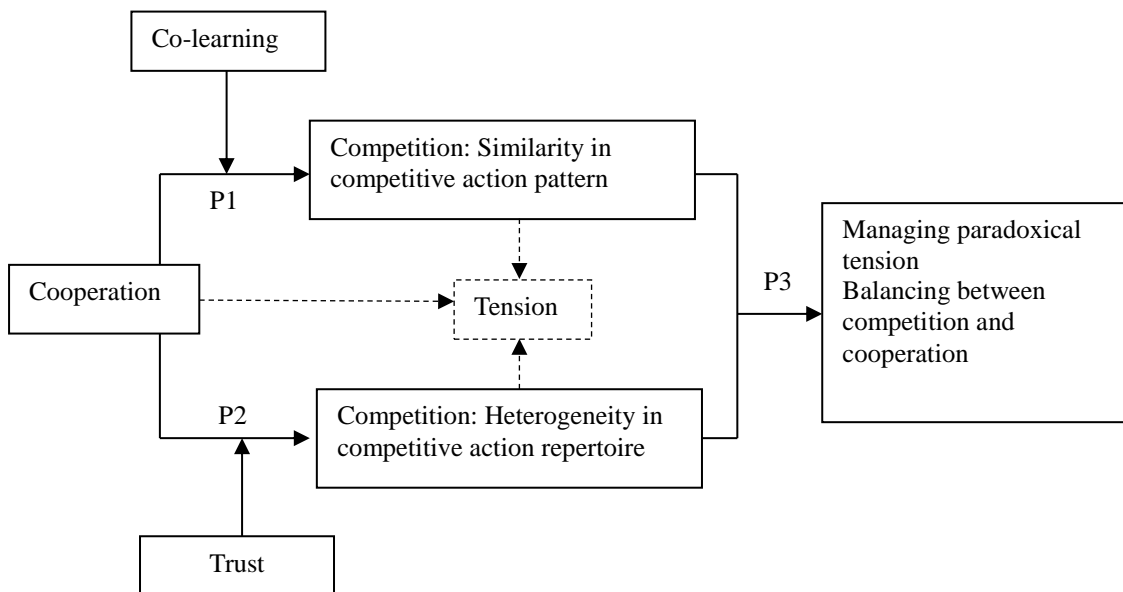
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**Figure 1.** A theoretical framework of competition dynamics



**Figure 2.** A conceptual framework of cooperation-based competition

**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>

**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) Head of Giant International Corporate Headquarters	17 years
	B Giant	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 Center (CHC)*	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 TPS and TQM Consultant of A-Team (2006~2011)	32 years
	E Taiwan Bicycle Association (TBA)	Secretary General (Journalist of Economic Daily News from 1978 to 2008)	34 years

\* 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.

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

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

**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)
				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)



pricing	6		<p>raising price by decreasing volume of production (03/2006)</p> <p>pricing 1,700 euro for e-bikes (06/2008)</p> <p>raising new bikes' prices (07/2010)</p> <p>pricing 1,750 euro for road bikes (08/2014)</p> <p>raising new bikes' price (08/2015)</p> <p>raising the average prices of all products (03/2016)</p>
product launching	9	14	<p>pricing 9,000 euro for limited Olympics racing bikes (05/2008)</p> <p>pricing 7,000 euro for new carbon-fibre racing bikes (07/2010)</p> <p>raising new bikes' prices and promoting for old bikes (07/2010)</p> <p>pricing 10,000 euro for the champion bikes in Tour de France (03/2014)</p> <p>pricing 3,750-4,000 euro for high-level bikes (03/2016)</p> <p>providing full product line for sales representatives (07/2006)</p> <p>launching e-bikes in Netherlands (07/2006)</p> <p>launching mountain bike XtC SE (12/2006)</p> <p>launching all-terrain bikes (08/2007)</p> <p>launching revision of road bikes (08/2014)</p> <p>launching commemorative bikes for tour de France (03/2015)</p> <p>launching commemorative bikes and peripherals (04/2015)</p> <p>launching new bikes for 2016 (09/2015)</p> <p>launching new e-bikes (02/2016)</p> <p>launching high-value bikes (01/2007)</p> <p>launching mountain bike Carbon Mission for 5,000 euro in Europe (03/2007)</p> <p>launching all-terrain bikes (08/2007)</p> <p>launching Olympics mountain bikes (05/2008)</p> <p>launching lightweight mountain bikes (11/2008)</p> <p>launching new bikes with Stians Sport AS in Sweden (11/2009)</p> <p>launching racing bikes (07/2010)</p> <p>launching 2,500 euro e-bikes (09/2011)</p> <p>launching bikes similar to the champion in tour de France (03/2014)</p> <p>launching road bikes, triathlon bikes, and full suspension bikes (08/2014)</p> <p>launching ladies-bike Juliet (08/2014)</p> <p>strengthen the production line of high-value road bikes (08/2014)</p> <p>launching top-tier road racing bikes (03/2015)</p> <p>launching new e-bikes (02/2016)</p>

channel	8	<p>execute new retailing system (GRP plan) by building specialty stores (07/2006)</p> <p>improve the operational system of sales representatives by IT (07/2006)</p> <p>expand the scale of specialty stores (05/2007)</p> <p>expand the scale of company-owned stores (05/2007)</p> <p>contact with local representatives in new markets (09/2007)</p> <p>expand branded channels (11/2008)</p> <p>establishing Liv/Giant specialty stores (01/2010)</p> <p>establishing Liv/Giant specialty stores in France, UK, Germany, Netherland, Poland, and Denmark (01/2010)</p>	4	<p>joint venture with sales representatives in Spain (03/2007)</p> <p>60% products in Europe sold via SBC (05/2009)</p> <p>take over the selling in Sweden and Norway from Stains Sports AS (11/2009)</p> <p>operating the subsidiary in Sweden (11/2009)</p>
branding	3	<p>focus on single brand (10/2006)</p> <p>enhancing the sales of own brand and improving the brand image (05/2007)</p> <p>keep the ODM and own brand business (02/2015)</p>	2	<p>multi-brand strategy (10/2006)</p> <p>cooperating with Specialized (12/2006)</p>
sponsoring	5	<p>continually sponsoring racing teams in Germany (10/2006)</p> <p>win champion by Netherland road racing racers in Olympics (08/2012)</p> <p>win awards by Netherland racers in road racing (10/2013)</p> <p>win awards by titled-sponsoring racing teams (03/2014)</p> <p>win awards by Germany racers in Europe (04/2015)</p>	12	<p>sponsoring racing teams (07/2006)</p> <p>sponsoring racing teams in Spain and Italy (07/2006)</p> <p>win awards in mountain racing (09/2006)</p> <p>designated as the racing bikes by European racers in Olympics (11/2008)</p> <p>sponsoring mountain racers in Olympics (02/2009)</p> <p>win awards by Norway racers (08/2012)</p> <p>titled-sponsoring racers in Italy road racing (03/2013)</p> <p>titled-sponsoring the racing bikes of the champion racer in tour de France (03/2014)</p> <p>win awards by Portugal racers in Sweden (07/2014)</p> <p>sponsoring Taiwanese racers in tour de France (11/2014)</p> <p>win awards by Norway female racers in mountain racing (07/2015)</p> <p>continually sponsoring the Taiwanese racers in tour de France (12/2015)</p>

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		participating in exhibitions (04/2006)		win awards by mountain bikes in Germany (09/2008)
		participating in exhibitions in Czech (04/2006)		hold product launch in Spain (02/2009)
		win awards by city bikes in IF exhibitions in Germany (09/2008)		promoting for outmodes bikes (07/2010)
		visit the cycling infrastructure in Netherlands by King Liu (03/2010)		participating in exhibitions in Munich, Germany (09/2011)
		promoting brands in Netherlands (03/2010)		win awards by mountain bikes in Germany (08/2012)
		promoting the champion bike TCR in Paralympics (08/2012)		promoting mountain bikes in Paralympics (08/2012)
marketing/ promotion	10	participating in the exhibition in Spain (11/2013)	12	participating in the exhibition in Spain (11/2013)
		participating in exhibitions in Taipei Cycle Show (03/2015)		hold 2015 new product launch (08/2014)
		promoting for the pre-order of commemorative bikes and peripherals (04/2015)		participating in EUROBIKE (09/2014)
		announce that Giant will not participate in EUROBIKE since 2017 (10/2016)		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)

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**Table 5.**

The number of competitive actions-by year.

Counts	Production		R&D/Pricing/ Product		Channel		Branding		Sponsoring		Marketing	
	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

## Appendix A.

### Theoretical review of literatures 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 <i>et al.</i> (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-netw orks	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Two networks will find it easier to balance competition and cooperation when each network has compatible but distinctly different structures.</li> </ul>
Peng <i>et al.</i> (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"> <li>• Competition and cooperation are reciprocally rooted in and mutually promoted by each other.</li> <li>• Cooperation with competitors did lead to better performance at least over a period of time.</li> </ul>

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.
Czaron 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 <i>et al.</i> (2015)	<ul style="list-style-type: none"> <li>• Present a systematic literature review and a focus on a general overview of research on coopetition</li> <li>• Review two main research topics on coopetition: coopetition as a strategy and the management of coopetition</li> </ul>	Conceptual/ Literature review	Synthesis	N/A	N/A	<ul style="list-style-type: none"> <li>• 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></li> <li>• Possible dimensions in future coopetition research can be classified into: roles, content, process, levels, and theoretical perspectives</li> </ul>

Dorn <i>et al.</i> (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"> <li>• The implicit consensus shows that coopetition research is still tackling a crucial definition problem</li> <li>• The explicit consensus demonstrate that coopetition has been recognized as a strategy on its own that differs from cooperation and competition</li> </ul>
Ritala <i>et al.</i> (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>behavioural</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"> <li>• Competition-cooperation relationships can be depicted as three generic conceptions: independent opposites, interrelated opposites, and all-inclusive interdependent opposites.</li> <li>• “Interdependent opposites” (dual) encompasses all possible situations of interfirm dynamic, in which competition and cooperation together form the union of the two, implying inseparable interdependent element that together form a whole.</li> </ul>
Cassiman <i>et al.</i> (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	<ul style="list-style-type: none"> <li>• Firms’ R&amp;D activities is an organizational process in which firms are subject to, combine and synthesize both co-operative and competitive actions.</li> <li>• The capability to match project knowledge attributes, form of governance, and characteristics of potential partners explains the success of the innovation process of firms.</li> </ul>



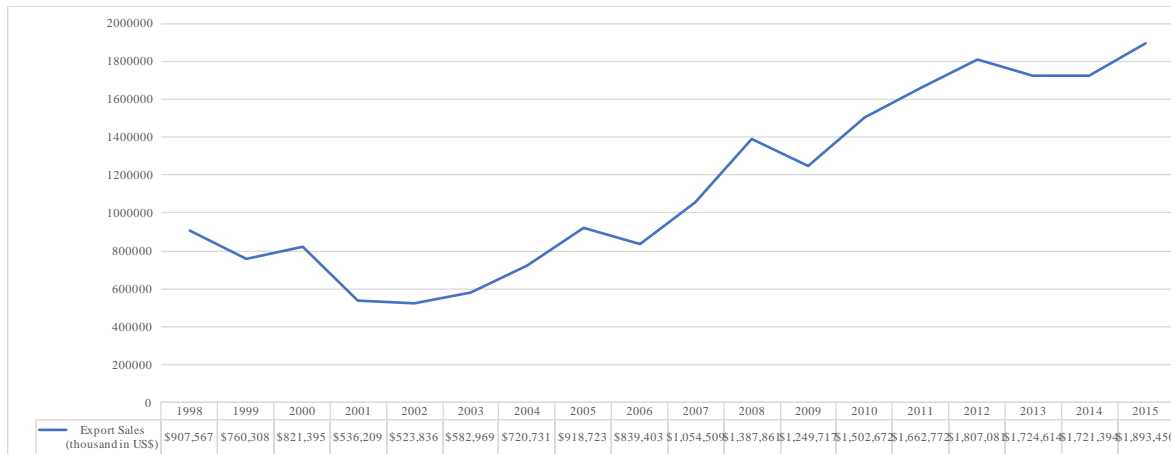
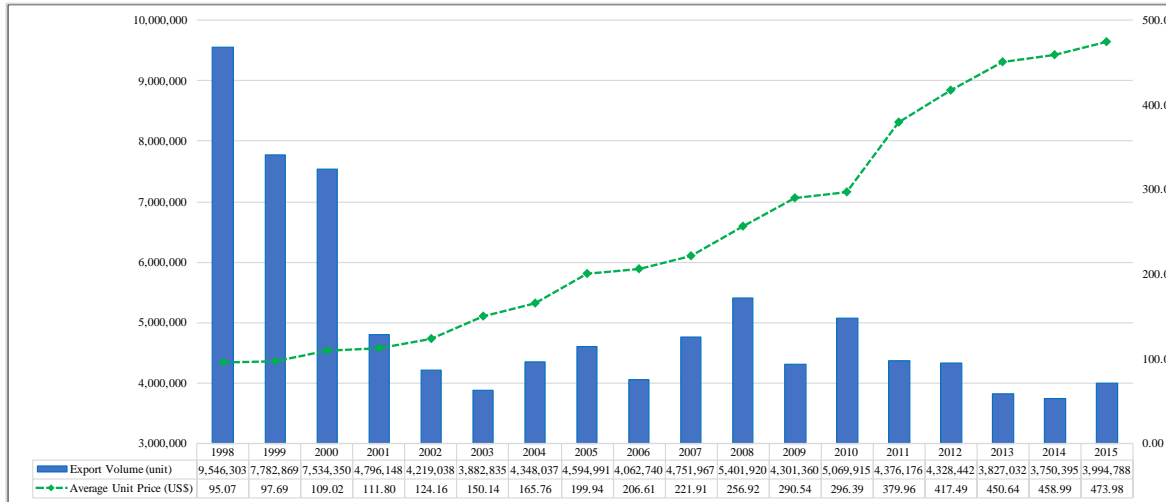
Fang <i>et al.</i> (2011)	Present a conceptual model explaining how tensions within coopetition can moderate the positive relationship between relationship quality and relationship function.	Empirical/ Quantitative	136 manufacturing firms in Taiwan	Tension-based view	Firm	Relationship quality is positively associated with relationship function and the influence of relationship quality on relationship function is strengthened or weakened when three relationship tensions (namely, behavioral, structural, and psychological tension) are balanced or imbalanced.
Fernandez <i>et al.</i> (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	<ul style="list-style-type: none"> <li>• Tensions can be viewed in multilevel which includes inter-organizational cooperative tensions, intra-organizational cooperative tensions, and inter-individual cooperative tensions.</li> <li>• Tensions can be managed by the separation principle, the integration principle, or the both.</li> </ul>
Raza-Ullah <i>et al.</i> (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	<ul style="list-style-type: none"> <li>• The coopetition context that forces or motivates rival firms to cooperate or partner firms to compete, creates external and internal boundaries to materialize a coopetition paradox.</li> <li>• 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 coopetition paradox.</li> </ul>
Tidström (2014)	To investigate how tensions are managed in cooperative business relationships and examine the potential	Empirical/ Qualitative (comparative case study)	Four steel companies involve in voluntary	Coopetition Tension-based view on	Firm	<ul style="list-style-type: none"> <li>• Tensions can be categorized into domain-related, delivery-related, and cooperation-related.</li> <li>• Competition and avoidance are the</li> </ul>

	outcomes of the management of such tensions.		coopetition and ten natural products companies involve in forced coopetition.	coopetition		<p>most common ways of managing tensions in cooperative business relationships.</p> <ul style="list-style-type: none"> <li>The same type of tension may produce different outcomes depending on how it is managed.</li> </ul>
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	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.
Gnyawali <i>et al.</i> (2016)	Develop a conceptual framework that explicates key paradoxical conditions, paradoxical tension, and performance implications of tension in cooperative relationships.	Conceptual	Strategic alliances and buyer-supplier transactions	Paradox view on cooperative	Inter-firm	<ul style="list-style-type: none"> <li>The intensity of the dualities has a positive relationship to the level of felt tension experienced by firms primarily through the development of strain.</li> <li>The level of contradictions in cooperative has a positive relationship to the level of felt tension experienced by firms primarily through the development of manifest conflict.</li> <li>An inverted U-shaped relationship exists between felt tension and cooperative performance.</li> </ul>
<i>Theme: Competitive dynamics in cooperative</i>						
Chi <i>et al.</i> (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"> <li>Firms with high complexity in their competitive action repertoires will have high IOS reach and range values.</li> <li>Firms with high heterogeneity in competitive actions will have high diversity of IOS use.</li> </ul>

Garraffo and Rocco (2009)	Propose a two-step model for assessing the level of interest and commitment of a rival in a cooperation venture.	Conceptual	N/A	Competitive dynamics Coopetition	Inter-firm	<ul style="list-style-type: none"> <li>Firms with high degree centrality will have high action complexity.</li> <li>The higher the rival's perceived benefits the higher its interest in the focal firm's cooperative proposal.</li> <li>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 cooperative agreements.</li> </ul>
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.
Andrevski <i>et al.</i> (2016)	Investigate how firms' alliance portfolio configuration affect their ability to develop and introduce new competitive actions.	Empirical/ Quantitative (structural content analysis)	Horizontal cooperation 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 <i>facing the common threats</i> 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 <i>sharing information liberally</i> .
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 <i>product line strategies</i> 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 <i>product line strategies</i> 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 <i>channeling and branding strategies</i> 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 <i>channeling and branding strategies</i> 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 <i>channeling strategies</i> 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	Informant A (A-Team)	While cooperating with competitors, firms will differentiate their competitive actions on

“Liv/Giant”, demonstrating our commitment to ladies-bike. We provide total solution from bicycles to peripheral accessories.		<i>channeling and branding strategies</i> 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 <i>channeling strategies</i> 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 <i>sponsoring strategies</i> 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 <i>targeting at different geographic market segments</i> toward each other.
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 <i>co-learning process</i> .
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 <i>co-learning process</i> .
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	The former chairman of the A-Team and the	Based on the trust cultivating in cooperation,

<p>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.</p>	<p>president of Merida (Lee, 2013)</p>	<p>cooperated rivals will <i>differentiate their competitive actions</i> toward each other.</p>
<p>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.</p>	<p>Informant A (A-Team)</p>	<p>To balance the paradoxical tension between competition and cooperation, rival partners are more likely to <i>increase heterogeneity in competitive actions</i>.</p>

## Appendix D.

### An example of action coding

Issue date	Giant	Coding	Issue date	Merida	Coding
2006.03.13	Giant Focuses on “ <i>increase value but decrease quantity</i> ” 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 <i>Athens 2004 Olympic</i> , 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 <i>Le Tour France</i> .	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, Poutugal, 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 <sup>th</sup> JV. Now, more than 30% of Merida’s total sales came from European market.	Channel
2007.02.12	With the glory of Championship in <i>Le Tour France</i> , 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 <i>Milestone 2008</i>	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 <i>IF EUROBIKE</i>	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

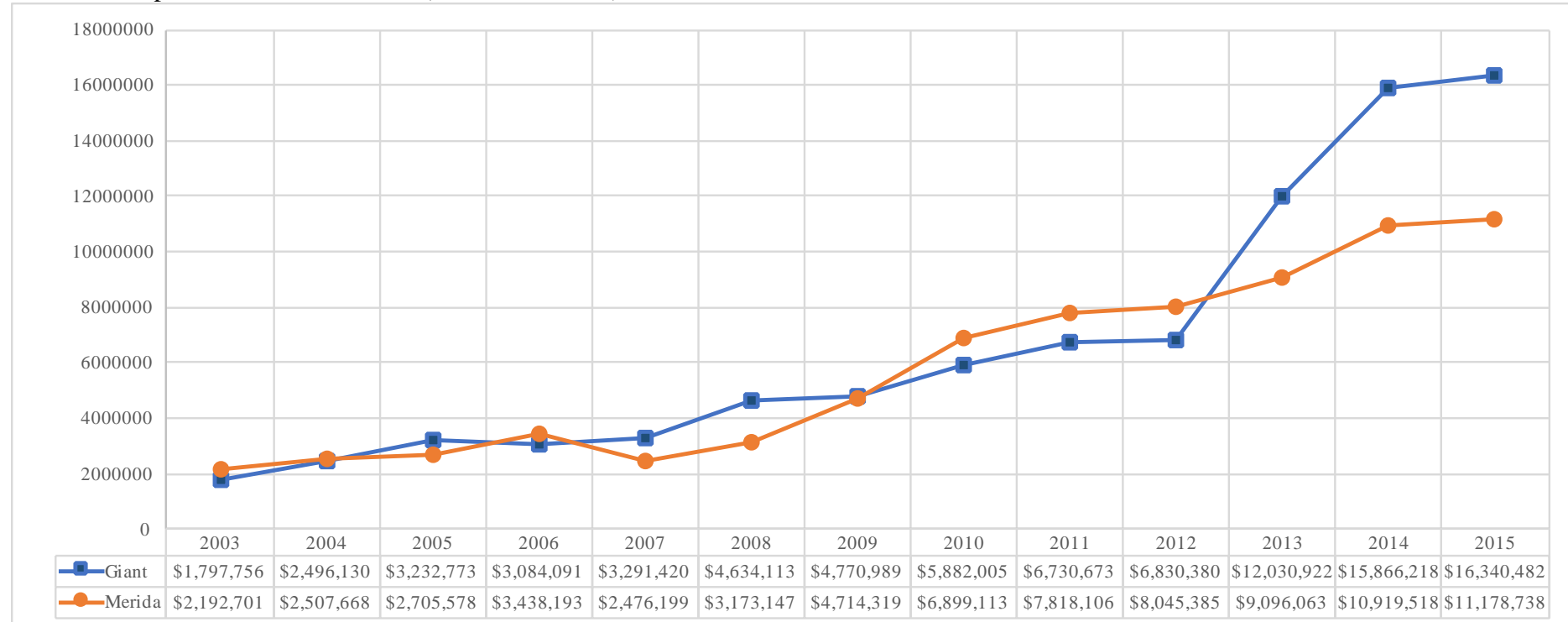
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Giant: stock price (NT\$)*	72.60	72.90	89.60	119.00	117.00	166.50	205.00	281.00	219.00
EPS (NT\$)	6.47	8.30	6.71	7.17	8.04	8.02	9.34	10.96	10.25
Net income (thousands of NT\$)	2,302,716	3,313,403	3,048,551	4,084,854	3,592,058	3,954,658	3,443,352	4,106,331	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