



# Managing tensions related to information in coopetition



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## ABSTRACT

This study seeks to provide insights into the management of tensions related to information in coopetition. The literature on coopetition management recommends a separation principle, an integration principle or a combination of both. Focusing on tensions related to information in coopetition at the project level, we consider which principle is most appropriate. We theoretically discuss the control mechanisms used to address information criticality and information appropriability. In addition, we conduct an in-depth case study of a space project involving two competitors, Astrium and Thales Alenia Space. First, we describe the tensions related to information that arose in the context of this coopetitive project. In particular, financial and technical information presented dilemmas. Second, we explain how the coopetitors used formal control mechanisms to separate critical information from non-critical information. Specifically, information that was critical to the project's success was shared through a common information system specially designed for the project, whereas non-critical information was withheld from the partner. Third, because formal control mechanisms were insufficient to address critical information that was also appropriable, we show how project managers implemented informal control mechanisms. For example, project managers transformed appropriable information into non-appropriable information by aggregating data and withholding details such as calculation methods and cost structures. Our findings suggest that the management of tensions related to information in coopetitive projects requires a combination of formal control mechanisms (to manage information criticality) and informal control mechanisms (to manage information appropriability).

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## 1. Introduction

Firms adopt coopetition strategies – simultaneous collaboration and competition – to address current technological challenges (Bengtsson & Kock, 2000; Czakon, Fernandez and Minà, 2014; Gnyawali & Park, 2009; Ritala, 2012; Santamaria & Surroca, 2011). However, coopetition strategies are replete with tensions as a result of combining these two contradictory forces (Bengtsson, Hinttu, & Kock, 2003; Fernandez, Le Roy, & Gnyawali, 2014; Gnyawali & Park, 2011; Raza-Ullah, Bengtsson, & Kock, 2014; Tidström, 2014).

The management of coopetitive tensions has become a critical factor in coopetitive success and a pervasive research issue. Previous studies have identified various solutions to manage coopetitive tensions. Based on the notion that individuals are unable to internalize the paradox, certain scholars recommend a separation principle, i.e., the spatial, functional or geographical separation of competition and collaboration management (Bengtsson & Kock, 2000; Dowling, Roering, Carlin, & Wisniewski, 1996; Herzog, 2010). However, because the separation principle creates new internal tensions, other scholars recommend an

integration principle, which is based on individuals' capacity to integrate collaboration and competition (Chen, 2008; Das & Teng, 2000; Oshri & Weeber, 2006). In addition, despite the theoretical contradiction between these two principles, recent studies show that the efficiency of coopetition management depends on a combination of separation and integration (Fernandez et al., 2014; Pellegrin-Boucher et al., 2013).

Previous studies have focused on coopetitive tensions as a whole and show that coopetitive tensions are multidimensional and can arise at different levels (Chiambaretto & Dumez, 2016; Fernandez et al., 2014; Tidström, 2014). The project level is one of the most relevant levels of analysis. Indeed, the implementation of coopetition strategies requires employees from competing parent firms to work together on specific projects on a daily basis (Fernandez et al., 2014; Gnyawali & Park, 2011). Among the numerous coopetitive tensions at the project level, the tension between sharing and protecting information is critical (Baruch & Lin, 2012; Fernandez et al., 2014; Levy et al., 2003). Although partners must share information and knowledge to achieve the common goal of the collaboration (Dyer & Singh, 1998; Gnyawali & Park, 2011), they remain competitors and therefore must protect certain information from each other (Baruch & Lin, 2012; Khanna, Gulati, & Nohria, 1998; Lane & Lubatkin, 1998). This dilemma is even greater in innovative coopetitive projects because the risk of opportunism and appropriation is particularly high in such projects

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(Baruch & Lin, 2012; Bouncken & Kraus, 2013; Hurmelinna-Laukkanen & Olander, 2014; Ritala & Hurmelinna-Laukkanen, 2009, 2013). Thus, we define the tensions related to information in a cooperative project as the difference between a firm's need to share information to ensure the success of the common project and the firm's need to limit information sharing to avoid informational spillovers into other markets.

There is a gap in the coopetition management literature regarding the management of tensions related to information. To explore this issue, we build on control mechanisms designed to foster the success of a common project while limiting the risk of opportunism (Das & Teng, 2001). We distinguish between formal and informal control mechanisms to manage tensions related to information (Das & Teng, 1998a, 1998b; Hurmelinna-Laukkanen & Olander, 2014; Ritala, Hurmelinna-Laukkanen, & Blomqvist, 2009). To determine whether information should be shared and/or protected, managers must consider two dimensions of the information: criticality (Baumard, 2010; Pfeffer & Salancik, 1978) and appropriability (Das & Teng, 1998a, 1998b; Miller & Shamsie, 1996; Oxley, 1997).

Regarding information criticality, both formal and informal control mechanisms may be used to share critical information and to protect non-critical information. However, critical information can be non-appropriable or appropriable. Although non-appropriable critical information may be shared with low risk, the sharing of appropriable critical information is highly risky (Padula & Dagnino, 2007; Un, Cuervo-Cazurra, & Asakawa, 2010).

Thus, our research questions are as follows: (a) What control mechanisms do companies use to manage tensions related to information in cooperative projects? (b) Are these mechanisms consistent with the separation principle, the integration principle or a combination of both?

To provide relevant insights, we conducted an in-depth case study of Yahsat, a space project jointly implemented by Astrium and Thales Alenia Space (TAS), two major competitors in the European market for the manufacture of telecommunications satellites.

Our findings contribute to the knowledge on the management of tensions related to information in cooperative projects. First, we describe the existence of different forms of tensions related to information. Second, we show that the management of information in a cooperative project depends on the nature of the information, i.e., its criticality and appropriability. The studied competitors constructed formal control mechanisms to address information criticality. However, we show that these formal control mechanisms were insufficient to address information appropriability because they were incapable of managing information that was simultaneously critical and appropriable. Consequently, the management of information appropriability necessitated informal control mechanisms implemented by project managers. Thus, both formal and informal control mechanisms were necessary to manage tensions related to information. Formal control mechanisms were used primarily to address information criticality, whereas informal control mechanisms were used to manage information appropriability.

We make several contributions to the coopetition literature. First, we develop literature- and case-based insights into how firms involved in a cooperative project effectively manage tensions related to information through a combination of formal and informal control mechanisms. These revelations provide original insights into coopetition theory and have important theoretical and managerial implications. Second, we discuss our findings in the context of the existing coopetition management literature. Whereas most previous scholars opposed the separation principle to the integration principle (Bengtsson & Kock, 2000; Chen, 2008; Das & Teng, 2000; Dowling et al., 1996; Herzog, 2010; Oshri & Weeber, 2006), our research seems to be more consistent with recent research that reconciles these two principles (Fernandez et al., 2014; Pellegrin-Boucher et al., 2013). Our results suggest that the combination of separation and integration principles in a cooperative project can be achieved by effectively managing tensions related to information through a combination of formal and informal control mechanisms. Third, our research underlines the key role of project

managers in the management of tensions related to information and in the success of coopetition strategies. We show that the efficient management of tensions related to information is critical to the success of a cooperative project. Finally, our paper is based on rich conceptual development and provides a solid basis for expanding the understanding of coopetition and its implications. The findings from the studied case provide interesting perspectives for the design of future research, such as large-scale empirical studies.

## 2. 1. Theoretical background

### 2.1. Tensions related to information in cooperative projects

Bengtsson and Kock (2014: 182) define coopetition as “a paradoxical relationship between two or more actors simultaneously involved in cooperative and competitive interactions, regardless of whether their relationship is horizontal or vertical”. Because coopetition combines the benefits of cooperative and competitive behaviors, it is meant to produce greater results than pure collaborative agreements (Bengtsson & Kock, 1999, 2000; Brandenburger & Nalebuff, 1996; Czakon, Fernandez and Minà, 2014; Czakon, Mucha-Kuś and Rogalski, 2014; Lado, Boyd, & Hanlon, 1997; Peng, Pike, Yang, & Roos, 2012; Ritala, 2009). However, the combination of collaborative and competitive behaviors contributes to the emergence of tensions at various levels, including inter-organizational, intra-organizational and inter-individual levels (Bengtsson & Kock, 2000; Czakon, 2010; Fernandez et al., 2014; Le Roy & Fernandez, 2015; Luo, Slotegraaf, & Pan, 2006; Padula & Dagnino, 2007). Cooperative tensions are even more important at the project level because the implementation of coopetition strategies requires employees from competing parent firms to work together (Fernandez et al., 2014; Gnyawali & Park, 2011). The project level is thus crucial to an understanding of how intra-organizational tensions are managed. One critical intra-organizational tension arises from the dilemma between sharing and protecting information (Baruch & Lin, 2012; Fernandez et al., 2014; Levy et al., 2003).

The partners of an alliance can easily learn from one another, especially if they are competitors (Baruch & Lin, 2012; Capaldo & Petruzzelli, 2014; Khanna et al., 1998; Lane & Lubatkin, 1998). Although partners must share information and knowledge to achieve the common goal of the collaboration (Dyer & Singh, 1998; Gardet & Mothe, 2011; Gnyawali & Park, 2011; Mention, 2011), each partner must also protect the strategic core of its knowledge from its competitor (Baruch & Lin, 2012; Baumard, 2010; Hoffmann, Neumann, & Speckbacher, 2010; Ritala, Olander, Michailova, & Husted, 2015) because partners that operate in the same industry must develop unique skills (Nelson & Winter, 1982). Information that is shared within a common collaborative project potentially could be used in a different market in which the partners compete. In brief, the competing partner could benefit by appropriating the shared information (Hurmelinna-Laukkanen & Olander, 2014). Building on Saxton and Dollinger (2004), we define the appropriability of information as the extent to which an organization could incorporate such information into its own products or markets. In inter-organizational relationships, firms must share resources while remaining wary of the risk that a partner may use these shared resources for other products or markets. This risk, or “appropriability hazard” (Oxley, 1997), is stronger when partners are competitors because the appropriated resources might be used to develop products that could compete in the future with the focal firm's products (Ritala & Tidström, 2014; Ritala et al., 2009). Coopetition thus offers interesting learning opportunities for partners (Larsson, Bengtsson, Henriksson, & Sparks, 1998). In a cooperative project in which partners could utilize shared information for their own purposes, the risk of opportunism and appropriation is particularly high (Baruch & Lin, 2012; Bouncken & Kraus, 2013; Hurmelinna-Laukkanen & Olander, 2014; Ritala & Hurmelinna-Laukkanen, 2009, 2013).

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