



# From conflict to crisis in collaborative NPD

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## ABSTRACT

While manufacturer–supplier co-development of projects can contribute shared knowledge and expertise, such commitment also presents managerial challenges, particularly where crisis threatens the entire project. This paper explores how crisis is manifested, amplified, handled, and its outcomes in two longitudinal case studies, one between a food manufacturer and its packaging supplier and another between a window manufacturer and its software supplier. The analysis, the first to focus on co-development crisis, results in a better understanding of crisis episodes and in propositions around the crisis management challenges in co-developing new product projects.

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## 1. Introduction

Buyers and suppliers frequently collaborate in co-developing new products (Andersen & Drejer, 2009; Athaide & Zhang, 2011), but these development partnerships are not always harmonious and are frequently fraught with misunderstandings, miscommunications and downright crises (Hagel & Brown, 2005; Lam & Chin, 2004, 2005). Although the literature discusses collaborative new product development (NPD), little is known about crisis in such co-development processes. Therefore, managers lack guidance on how to recognize crisis, the factors driving crisis, how to handle crises, and the outcomes of crisis.

Co-development solutions are a natural evolution from the lead-user method (Von Hippel, 1988), especially in business markets where customers are often highly involved with innovative suppliers (Fliess & Becker, 2006; Stump, Athaide, & Joshi, 2002) and the boundaries between firms are blurred (Hillebrand & Biemans, 2004; Takeishi, 2001). Co-development offers the advantages of reduced transaction costs and risks, and allows firms to easily adapt to each other. Co-development may not work for every firm, but in a context of mutual interdependence it is often a natural corollary of a long-term relationship (Athaide & Klink, 2009; Ragatz, Handfield, & Petersen, 2002; Van Echtelt, Wynstra, Van Weele, & Duysters, 2008; Wynstra & ten Pierick, 2000). A collaborative relationship allows firms to identify conflicts at an early stage and

resolve them, thus reducing the likelihood of project failure. The innovation literature focuses on conflicts within the firm, for example, between R&D and marketing (De Clercq, Menguc, & Auh, 2009; Griffin & Hauser, 1996) and pays less attention to interorganizational conflicts (Dyer & Song, 1998; Hagel & Brown, 2005; Lam & Chin, 2004, 2005). In addition, the innovation literature neglects how conflict may evolve into crisis. This paper addresses this gap in the literature by investigating conflict and crisis in collaborative interorganizational NPD. A conflict episode evolves into a crisis situation when tension increases to such an extent that it threatens the immediate viability of the relationship and the co-development process. In a crisis situation the gap between expectations and evaluation of the relationship increases beyond what is acceptable to a partner and threatens the entire relationship (Ariño & Doz, 2000). This paper presents a framework for understanding and managing crisis in collaborative NPD. The framework is based on the extant literature in this area and on two in-depth case studies. The paper explores the following research questions: What are the characteristics of a crisis in a collaborative NPD project? What are the drivers of crises in collaborative NPD projects? How do firms handle crises in collaborative NPD projects? What are the outcomes of crises in collaborative NPD projects?

The study investigates two longitudinal in-depth cases of collaborative NPD between a manufacturer and a supplier. The paper first defines conflict and crisis, and discusses the potential for conflict to amplify into crisis, crisis handling mechanisms, and potential outcomes of collaborative NPD crisis. Next, it outlines the method involved in the case study research and describes the two cases in detail, focusing on their crisis and conflict episodes. This results in four key propositions based on the case analysis. The paper concludes with a discussion of managerial implications and suggestions for future research.

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## 2. Theoretical background

Collaborative NPD relationships, especially between manufacturers and suppliers, are deeply embedded (Granovetter, 1985; Håkansson, 1987; Håkansson & Ford, 2002). These relationships are based on social exchange and resource interdependencies and characterized by a less contractual, more informal, implicit kind of exchange based on reciprocity, connected ties, shared activities and resource patterns, and relational bonds (De Clercq, Thongpapanl, & Dimov, 2009; Macneil, 1980; McEvily & Marcus, 2005; Morgan & Hunt, 1994; Uzzi, 1997). In such relationships, conflict between the parties can have a beneficial impact on the relationship, with conflict episodes being part of the relationship atmosphere and its functioning (Assael, 1969; Rose & Shoham, 2004). Given the longevity of many NPD relationships, and the resulting inevitability of conflicts because of changing expectations, strategies and external events, effective conflict handling is a critical capability of successful partnerships.

The literature on relationship conflicts mainly refers to relationships and conflicts between different parts of the organization, for example, inter-functional conflict between R&D and marketing. The literature distinguishes between task-related conflicts, related to the tasks at hand (Amason & Sapienza, 1997; Jehn, 1997) and emotional conflicts, related to personality clashes between people (Amason, 1996; Jehn, 1995; Shapiro & Rosen, 1994); emotional conflicts have more detrimental effects, but both types of conflict are unavoidable in a working long-term cooperative relationship. Conflicts may last for a long time, but researchers typically focus on their defining moments, which are referred to as conflict episodes (Vaaland & Håkansson, 2003). Firms deal with conflicts using a range of conflict handling strategies, and this problem-solving capability is key to successful collaborative relationships (Dant & Schul, 1992; Plank, Reid, & Newell, 2007; Powell, Koput, & Smith-Doerr, 1996). This paper introduces the concept of crisis to complement conflicts in collaborative relationships. Crisis goes beyond task and emotional conflict and threatens the viability of the relationship itself. A crisis builds on conflict and impacts the entire collaborative relationship and its viability (Pearson & Clair, 1998; Quarantelli, 1988). The resulting tension is apparent in all core collaborative relationship processes and may lead to relationship breakdown. These core relationship processes are identified as expectations, communication, trust, interpersonal relationships and commitment (Dwyer, Schurr, & Oh, 1987; Mohr, Fisher, & Nevin, 1996; Morgan & Hunt, 1994; Ring & Van De Ven, 1994). Crises in collaborative NPD projects will challenge the balance and viability of the relationship. Such crises may even endanger the survival of the collaborating companies, depending on their level of interorganizational interdependence (Grewal, Johnson, & Sarker, 2007).

The relationship formation literature discusses several drivers of relationship crisis (Büchel, 2000; McIvor & McHugh, 2000). For instance, even in an ongoing relationship, which has developed its own culture, different organizational cultures of both partners may impede the project when a crisis occurs. Another driver of relationship crisis is organizational inertia; stable, ongoing relationships may lack the tolerance for change and ambiguity that is required in the search for new solutions. The resulting inertia leads to complacency, which may spark conflict and build into a crisis. Insufficient information sharing and communication also contribute to a deepening crisis (Mohr et al., 1996; Wynstra & ten Pierick, 2000). Similarly, diverging expectations may result in partners accusing each other of non-performance. If not managed appropriately, repeated failed expectations contribute to a fast deterioration of the relationship (Dwyer et al., 1987). Finally, interpersonal relationships between the people involved in the collaborative process can break down and have a detrimental effect on the relationship between organizations (Ring & Van De Ven, 1994). Any single factor may not be enough to evoke a crisis, but in combination they may move a relationship into crisis both at a structural and behavior level.

In responding to a crisis, firms should craft crisis handling mechanisms around the issues that drove the crisis in the first place. This implies that companies must understand not just the partner's visible behavior, but also its identity and welfare (the non-task related context) (Ren & Gray, 2009). Face-to-face meetings and informal information sharing promote such understanding and contribute to a constructive dialog (Croom, 2001; Petersen, Handfield, & Ragatz, 2003). Actions speak powerfully in a time of crisis; explicit shows of commitment, such as putting more resources into the development project, help to alleviate the problem. Boundary spanners or relational promoters, with a high stake in the relationship, connect the partnering organizations and help to resolve crisis episodes (Adobor, 2006; Walter & Gemünden, 2000). These individuals can mitigate organizational and personal problems by drawing on a rich history of interpersonal interactions.

The often cited performance benefits of collaborative NPD are speed, quality and lower cost (Bonaccorsi & Lipparini, 1994; Primo & Amundson, 2002). A crisis in a collaborative NPD relationship may have a positive impact on these metrics. For instance, while a crisis situation may grind down the collaborative project, it also serves to identify the key problem and thus contributes to a speedy resolution of the underlying causes. Thus, a crisis may actually speed up the development process, resulting in a shorter cycle time or earlier time-to-market. In addition, the resulting tension, in combination with an increased focus, may improve product quality (Hagel & Brown, 2005). Cost savings as a result of the crisis may be difficult to isolate and measure, but total NPD costs may be reduced when crisis resolution brings the parties closer together and better solutions are developed (Koufteros, Cheng, & Lai, 2007). On the other hand, crisis in a collaborative NPD relationship may also cause significant delays, resulting in increased time-to-market and higher costs (Littler, Leverick, & Bruce, 1995). In practice, it may be difficult to isolate the specific effects of a crisis on NPD outcomes.

## 3. Method

### 3.1. Data collection and analysis

In order to understand how crises develop and are managed in collaborative NPD relationships, the present study used a longitudinal case study method. In each of the two cases, conflict episodes were identified and used as milestones for the chronological presentation of how the collaborative NPD relationship evolved (Halinen, Salmi, & Havila, 1999; Schurr, Hedaa, & Geersbro, 2008) (Table 1).

These conflict episodes (Table 1) were identified as clashes between the parties over task-related expectations or more personal disagreements. In four conflict episodes, the conflict evolved into crisis as it enveloped the entire relationship and threatened its viability. The two contrasting cases (one existing relationship and one new relationship) contribute to an understanding of how the nature of crisis varies depending on the duration of the relationship.

Data were collected from four different sources (interviews, reflective practices, documents and observation) to (a) identify discrepancies or anomalies in the research data, (b) compensate for limitations in individual data collection techniques (Eisenhardt, 1989) and (c) improve validity through multiple lines of enquiry converging towards a particular conclusion (Yin, 2003). Table 1 provides a summary of the conflict and crisis episodes, based on the analysis of the interviews (sample quotes from transcripts are provided throughout the findings) and reflective practice (bringing the respondents back through the researchers' notes to ensure completeness of the narrative). Both observation (products, processes, industrial sites) and documents (product design specifications, industry reports, company reports, websites, newspapers, government policy reports) contributed to an understanding of the case contexts.

A brief description of the case companies is provided in the next section. A total of 29 interviews were conducted with the key members

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