

# The stability of strategic alliances: Characteristics, factors and stages <sup>☆</sup>

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## Abstract

This paper presents a theoretical framework for understanding the evolutionary dynamics of strategic alliances. Using an integrated process model, we analyze the conceptual characteristics and antecedents of the stability of strategic alliances. The primary purpose of this study is to (1) conceptualize and characterize alliance stability to fill the *academic gap* in the literature, and (2) identify a range of endogenous factors underlying alliance stability across four developmental stages — partner selection, structuring/negotiation, implementation and performance evaluation — so as to fill the *managerial relevance gap*. From the discussion, we develop a number of propositions to facilitate future empirical testing of our conceptual model. Finally, we indicate some key implications for theoretical research and managerial practice.

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*Keywords:* Strategic alliances; Dynamics; Stability; Developmental stage

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## 1. Introduction

The dynamic aspects of strategic alliances have received increasing attention from both academics and practitioners in the past decade. In their recent contribution, however, Bell et al. (2006) contend that there are still both an *academic gap* and a *managerial relevance gap* in the literature on the dynamics of cooperation. The academic gap arises from the fact that the majority of the academic research has failed to contribute to a coherent and empirically validated knowledge foundation. Theoretical progress has been impeded by contradictory assumptions, theoretical diversity, insufficient knowledge accumulation, and scattered, non-comparable findings (De Rond and Bouchikhi, 2004). The managerial relevance gap exists because the existing dynamics research often addresses issues that are irrelevant to alliance managers' needs, providing only partial answers to managerial questions. Bell et al. suggest future research should be more devoted to developing a proper theory and improving managerial relevance so as to fill the two gaps.

What Bell et al. contend is direct to the point in current alliance research. The present paper is an attempt to offer the type of knowledge which they have called for. It is necessary to note that dynamics is a strategic variable which embodies different dimensions in itself, and therefore it is unlikely that a single research project will take all these

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dimensions into account. Hennart (2006: 1623) suggests that the main task in alliance research is to “keep it simple”. Hence, this study focuses on the stability dimension in particular.

Stability is vital for alliance survival, development and evolution, and it provides a necessary condition and a good proxy for performance gains and alliance success (Dussauge and Garrette, 1995; Beamish and Inkpen, 1995). Surprisingly however, few research efforts have been devoted to creating a comprehensive understanding of the stability issue in the strategic alliance field. With respect to the question of whether or not alliances are by nature unstable and transitional, we still have only limited knowledge. Some well-known alliances — for example, the IBM–Sony–Toshiba R&D alliance and the Disney–McDonald’s–Coca-Cola marketing alliance — have operated stably for many years and are considered successful. Many others, however, have been terminated shortly after they were formed. Alliance stability remains one of the least understood aspects of alliances and a big challenge for alliance researchers.

In this paper, we argue that at the center of this *academic gap* might be the lack of a rigorous conceptualization of alliance stability. The gap may also result from limited knowledge about antecedents, elements and consequences of alliance stability. To fill this gap, we will first stress the need for stability research and discuss its relationship with alliance outcomes, and then we propose a precise conceptualization of alliance stability. We feel this conceptualization will be helpful in understanding the evolutionary nature of strategic alliances.

Furthermore, while studies examining the developmental process of alliances are increasing (e.g., Ring and Van de Ven, 1994; Doz, 1996; Das and Teng, 2002; De Rond and Bouchikhi, 2004), they have failed to incorporate the stability issue into this process. To date, little is known about which variables and factors may have impacts on stability in each specific stage of alliance development. For the purposes of this paper, the research initiatives appear to be fragmented and incomplete: while some researchers have focused on initial alliance conditions, others have covered factors at later stages. We contend that any one of these issues alone is unlikely to provide sufficient guidance to alliance managers, and the research stream is therefore in need of a comprehensive synthesis that organizes the existing literature. To fill this *managerial relevance gap*, we propose a process model in which the main antecedents of alliance stability will be examined. We argue that an alliance’s evolutionary dynamics depend on these factors and variables that the partners must assess and manage over its developmental stages.

We begin with an in-depth review and critique of prior research on alliance instability and stability. After that, we explain the important role of stability as a strategic variable, analyze its relationship with alliance outcomes, and offer a clear definition for it. A subsequent section focuses on the four commonly identified stages of alliance development and the key factors that actually determine the dynamics underlying alliance stability across the stages. The final section presents implications, limitations and directions for future research.

## 2. Alliance instability and stability: a critical review

Increasing academic attention to the complex evolving phenomenon of strategic alliances has led to research examining the specific dynamics within alliances. Table 1 lists a number of previous important and representative studies and their findings related to alliance instability and stability. As shown in Table 1, scholars have examined this topic in such areas as strategic alliances in general, special alliances (e.g., Bidault and Salgado’s multi-point alliances), equity joint ventures (hereafter: JVs), and international joint ventures (hereafter: IJVs).

### 2.1. Previous research on alliance instability

#### 2.1.1. IJV instability research

Since the initial work undertaken by Franko (1971), the instability issue has long been a subject of research in strategic alliance literature. Notably, much of this prior research has addressed the issue in the context of IJVs. One possible reason is that international alliances that involve two or more firms across national and cultural boundaries have more fragile structures, more inter-partner conflicts, and a higher level of relational risks than other types of alliances. The inter-cultural and inter-organizational hybrid nature also suggests that the collaborative motives for IJVs and the factors underlying their instability are different from those associated with other types of alliances. As a result, IJV instability has received much attention in the literature.

Reuer et al. (2002) argue that the root of alliance evolution research lies at the early work on IJV instability. Past IJV instability research has gone through a methodological process consisting of statistical observation, theoretical analysis, and empirical investigation. Early research (e.g., Franko, 1971; Killing, 1983; Gomes-Casseres, 1987) adopted a survey-

Table 1  
Summary of previous studies on alliance instability and stability

Authors	Topic	Alliance types	Approaches	Findings related to instability or stability
Franko (1971)	Instability	JVs: subsidiaries of 170 US-based corporations	Empirical research	A JV was seen as unstable when parent holdings changed to include 50% or 95% ownership, a parent sold its JV interest, or the venture was liquidated.
Killing (1982, 1983)	Instability	37 IJVs in North America and Europe	Empirical research	Shared-management ventures are more difficult to operate and less stable than dominant-parent and independent ones. Culture difference, firm size, and the degree of ventures' linkages with parents affect stability.
Gomes-Casseres (1987)	Instability	JVs: 5933 subsidiaries of 180 large US multi-nationals	Empirical research	A JV is defined as "a subsidiary in which the multi-national enterprises own 5% to 95% of equity" (p.97). JVs were less stable compared to wholly-owned ventures.
Kogut (1989)	Stability	92 manufacturing JVs located in the US	Empirical research	The stability of JVs is promoted by the potential to reciprocate and the long-term, integrative ties among partners.
Beamish and Inkpen (1995)	Stability	40 US-Japanese IJVs	Case study	Foreign partner firms' knowledge of the local economic, political, and cultural environments is a critical factor in IJV stability. If foreign partner attaches a high value to the acquisition of local knowledge, the instability of IJVs will increase.
Inkpen and Beamish (1997)	Instability	IJVs	Conceptual framework: a bargaining power and dependence perspective	The primary factor associated with IJV instability is shifts in partner bargaining power that allow a firm to eliminate its dependency on its partners.
Yan (1998)	Both stability and instability	IJVs	Conceptual framework: structural instability and structural inertia perspectives	Four factors affect IJV instability: unexpected contingencies, undesirable venture performance, obsolescing bargain with the local parties, and inter-partner competitive learning. Four principal sources of structural inertia contribute to stability: the local political and legal environments at founding, partner initial resource contributions, the original match of inter-partner bargaining power, and pre-venture relationships between partners.
Yan and Zeng (1999)	Instability	IJVs	Conceptual framework: literature review	The authors summarized the major limitations of previous research on IJV instability. They then reconceptualized instability as a neutral, dynamic, process-based, and multi-faceted phenomenon.
Sim and Ali (2000)	Stability	59 IJVs from a developing country context (Bangladesh)	Empirical research	A set of firm, managerial and culture related determinants of IJV stability were examined. Cooperation and psychic distance between partners have significant impact on venture stability.
Das and Teng (2000)	Instability	Strategic alliances in general	Conceptual framework: internal tension perspective	Three sets of internal tensions that will lead to instability were identified: cooperation vs. competition, structural rigidity vs. flexibility, and short-term vs. long-term orientation.
Bidault and Salgado (2001)	Stability	29 multi-point alliances from 22 France's largest corporations	Case study	The higher the business and organizational complexities, the more likely a cooperative arrangement will diverge from its initial objectives and the less stable a multi-point alliance.
Gill and Butler (2003)	Instability	IJVs: two Japanese JVs located in the UK and Malaysia	Case study	The key factors affecting stability are: trust, conflict and dependence. The relative importance of these factors varies due to the different national cultures.
Ernst and Bamford (2005)	Stability	Strategic alliances in general	Practice experience	Corporate rigidity is the real reason for alliance instability. Flexibility must be built into alliances to make them succeed. Executives need to restructure their alliances, even though the alliances are stable.
Nakamura (2005)	Instability	231 IJVs formed in the post-World War II period until the late 1970s in Japan	Empirical research	Inter-organizational learning may alter the relative bargaining power of the partners over time. Such a change in the partners' relative power positions often results in reorganization of the IJV ownership, leading to instability.

based observation approach and cited the high incidence of IJV instability (for a review, see Sim and Ali, 2000). They therefore concluded that IJVs are fragile organizational forms. Following this view, subsequent research has proposed several important conceptual models in discussing the causes and antecedents of IJV instability, e.g., Inkpen and Beamish's (1997) bargaining power and dependence perspective and Yan's (1998) structural instability and structural inertia perspective. More recently, some scholars have empirically tested the factors and antecedents proposed by prior studies and offered important evidence for their arguments (e.g., Sim and Ali, 2000; Nakamura, 2005).

### 2.1.2. Limitations in instability research

Despite the rich literature on instability, previous studies have limitations (Yan and Zeng, 1999; Sim and Ali, 2000). First, several streams of research have examined alliance instability through a variety of theoretical perspectives and approaches (for a review, see Das and Teng, 2000), but no single theoretical approach can offer comprehensive insights into its nature. The incompatible perspectives have also produced different and even contradictory findings, leading to the result that relevant research findings are not cumulative and comparable. Second, these studies have the problem of non-generalizability. For example, most research focuses on the instability of IJVs, but these research findings are not necessarily the same as those associated with other types of alliances. Third, while researchers have identified various kinds of destabilizing factors, it is unclear how these factors emerge and how they affect instability.

There are two distinct approaches for conceptualizing and operationalizing stability in the extant literature (Yan and Zeng, 1999; Gill and Butler, 2003). One is a static and outcome-oriented approach whose focus is on the final fates of an alliance, including the alliance being bought out, turning into an acquisition, or being liquidated. The other is a dynamic and process-oriented approach, in which instability is defined as changes in ownership structure in terms of major reorganizations and reconfigurations or contractual renegotiations. Since instability itself is a dynamic process variable, the more process-oriented perspective provides a better explanation for alliance instability.

Unfortunately, prior research, with few exceptions (e.g., Killing, 1983; Yan and Zeng, 1999), has been dominated by the outcome-oriented approach. Das and Teng (2000: 96), who have conducted some of the most comprehensive and representative research so far, also acknowledge that their research only links alliance outcomes with imbalances of three pairs of competing forces and “does not clearly depict the evolutionary process by which these forces may develop”. As a result, the process aspect and dynamic nature of instability are largely ignored, incurring serious methodological barriers and understanding biases.

## 2.2. Previous research on alliance stability

Research on the topic of stability is relatively scarce as opposed to the rich instability literature. Table 1 also lists prior representative studies on alliance stability, research contributions which also have limitations. For example, many studies do not conceptually differentiate instability from stability. Others (e.g., Yan, 1998; Yan and Zeng, 1999) separate the two but do not offer a reasonable theoretical rationale for this separation. In particular, while some of the studies nominally address the stability issue, they instead center most attention on the inverse side, i.e., alliance instability, or mix the two concepts in one study. Moreover, many studies deal with the stability of some particular type of alliances (typically JV or IJV stability), leading to the lack of consensus on the relative stability of different types of alliances. As a result, the conceptual blurring and inconsistency in research results increase the difficulty in understanding the dynamics within alliances.

## 3. Toward a comprehensive understanding of alliance stability

### 3.1. Explaining the importance of stability research

#### 3.1.1. Necessity of perspective conversion

In contrast to prior relevant research, in this study we differentiate instability from stability. Instability is a dynamic concept in itself, but research has traditionally taken an outcome-oriented approach and treated it as synonymous with the alliance's termination, death or failure (Franko, 1971; Killing, 1983; Kogut, 1989). In fact, however, an alliance's termination does not necessarily imply instability. Some alliances are terminated according to plan (Inkpen and Beamish, 1997), and others go out of existence because they have successfully accomplished the initial objectives (Gomes-Casseres, 1987). Both of these possibilities indicate that not all terminated or short-life alliances should be considered unstable.

Furthermore, past studies have often cited high instability rates (or more precisely, a high termination ratio) and therefore have viewed alliances as inherently fragile and unstable. But this view has been challenged by other scholars. Yan (1998), for instance, argued that such a view fails to explain why many alliances have operated stably over a long period of time. Hennart et al. (1998) found, after controlling for age and size, that the instability of JVs is similar to that of wholly-owned subsidiaries. In a recent large sample analysis (27,974 Japanese foreign subsidiaries), Delios and Beamish (2004) similarly found evidence that JV exit rates (or survival rates) were almost identical to those of wholly-owned subsidiaries. Thus, strategic alliances should not be casually treated as intrinsically fragile or unstable (Doz, 1996; Koza and Lewin, 1998).

Because of these concerns, this paper adopts a different perspective and views stability as a process-based construct. This perspective requires an analysis of the evolutionary process of alliance development, so that we can develop a comprehensive framework of alliance stability. Further, we view stability as a determinant of alliance performance and success, rather than as an ultimate outcome emphasized by prior studies. Below, we will discuss these in greater detail.

### 3.1.2. Stabilizing forces

We first discuss why stability is an important construct in different theories used in the alliance literature. Many theories have been used to address alliance stability issues. Among these, the competitive learning perspective is a powerful tool (Inkpen and Beamish, 1997; Nakamura, 2005). It argues that learning and acquisition of knowledge over time may alter the relative bargaining power of the partners and thus seriously undermine the initial balance of collaborative relationships. Hamel (1991) describes alliances as a “race to learn”, and the partner who first successfully accomplishes its learning objectives will tend to leave the alliance. For example, the competitive learning between Chrysler and Mitsubishi leads to the termination of their Diamond Star alliance in 1991, with Mitsubishi taking over the jointly owned automobile assembly plant. The more speedy and efficient learning enabled the Japanese partner to successfully develop its own distribution network in North America, while Chrysler failed to acquire the manufacturing technologies from Mitsubishi. This exerted a negative influence on the stability of the Diamond Star alliance. In this instance, competitive learning becomes a critical source of instability.

We don't deny that collaboration, while initially harmonious, will gradually strain as a result of such considerations as the race to learn. But we contend that before the partners have achieved their learning goals, the alliances must go through a relatively stable (developmental) period so that the learning can be carried out. Inkpen and Beamish (1997) posit that a partner who is learning from the knowledge provider will prefer to maintain rather than terminate the relationship. Toppan Moore, a JV between Canada's Moore Corporation and Japan's Toppan Printing Company, was widely considered as one of the most successful IJVs in Japan. Despite many years of accumulated experience in the local market, Moore Corporation continued to cooperate closely with its Japanese partner in order to gain more specialized knowledge about the market and the customers. Likewise, Toppan Printing relied on Moore Corporation in order to obtain advanced manufacturing and product technology. Thus the partners' realization that they have much to learn from each other has made a major contribution to the stability of the venture (Beamish and Inkpen, 1995).

We also contend that, in most alliances, there are stabilizing and sustaining forces which may prevent instability and shelter alliance relationships from unplanned changes. Specifically, forming an alliance takes much time and effort. Substantial non-recoverable, relationship-specific investments must be put into the alliance, and these investments usually cannot be recovered for other uses (Anderson and Weitz, 1992; Parkhe, 1993). The efforts, time and resources involved in an alliance incur high exit costs and create inertia towards leaving the alliance (Ford et al., 1998). Even leaving is often done in a gradual way (Gadde and Mattsson, 1987).

Furthermore, joint contributions and reciprocal commitments create attachments among partners. Attachment refers to “an inertial or binding force between exchange partners that can lead to the maintenance of an existing relationship to the exclusion of alternatives” (Seabright et al., 1992: 126). By definition, partners with strong attachments may feel obligated to enhance the joint strength and maintain a high degree of “couplings”, which may act as a cohesive force that fosters confidence, reciprocation and intimate cooperation (Luo, 2005). As a result, attachment serves as a stabilizing force that blocks the pressures for change in each cooperative relationship (Seabright et al., 1992).

### 3.1.3. Relationship to alliance outcomes

Alliance outcomes have often been evaluated in terms of alliance success or failure. Despite a significant amount of research, however, alliance success remains a limitedly studied area, and thus far there are no all-accepted criteria and measures for alliance success. In the extant literature, a conventional measure is to examine whether an alliance has

achieved its set performance objectives (Geringer and Hebert, 1991; Dussauge and Garrette, 1995; Das and Teng, 2000).

Traditional research has used financial performance results, such as cost reduction, sales growth and profitability, as a proxy for alliance success. Yet the formal financial measures of performance are subject to controversy over their potential shortcomings (Geringer and Hebert, 1991; Glaister and Buckley, 1998). Some data are usually very difficult to obtain because not all information is publicly available, and especially some private firms will decline to provide such sensitive information for reasons of confidentiality.

Other scholars have focused on objective measures of performance, such as the survival of an alliance or its duration (e.g., Franko, 1971; Killing, 1983; Glaister and Buckley, 1998), the assumption being that a cooperative relationship that has lasted a long time is more likely to achieve satisfying performance and meet with success. As argued earlier, however, the fact that an alliance has not been terminated does not always mean that it has achieved desirable performance outcomes.

More often than not, firms enter into alliances with a number of non-financial, subjective goals in mind, such as learning about a new market or gaining a new technology. If one or all of the partners haven't achieved these objectives, even though they are satisfied with the financial results they may still consider the alliance unsuccessful. However, subjective measures of performance have been criticized as biased, inaccurate and fragmented (Kale et al., 2002).

An alternative interpretation suggests stability as a measure of performance or success (for a short review, see Mohr, 2006), with the implication that a more stable alliance may survive longer and that the partners are more likely to enjoy superior performance and achieve desired objectives. In an early study on IJV performance, for instance, Geringer and Hebert (1991) pointed out that stability is often one of the measures of performance. Yet we have realized that using stability as a measure of success also has limitations because it does not measure success directly and co-mingles alliance process and outcomes.

Instead, it is more reasonable to view stability as a determinant of performance and success (Dussauge and Garrette, 1995; Beamish and Inkpen, 1995). For example, Sim and Ali (2000) argue that stability is a critical performance factor for equity JVs. Once an alliance is established, stability becomes "a condition to reap the competitive benefits of strategic alliances" (Bidault and Salgado, 2001: 619). Even for those alliances (especially horizontal ones) that are designed for short-term duration, stability will still be a salient factor for the achievement of the desired objectives.

### 3.2. Conceptualizing alliance stability

The above analysis indicates that stability is a multi-faceted variable, and different partners may view it differently. To reach a comprehensive understanding of the dynamic nature of strategic alliances, a rigorous conceptualization of alliance stability is necessary. For this purpose, we should consider two critical points of view. From a relatively narrow perspective, defining stability will involve some judgments on alliance outcomes since stability provides an important condition and sometimes a useful proxy for alliance success. From a broader process perspective, the definition of stability will also need to reflect the processual situation of alliance evolution and development. Viewing stability as both an input to alliance success and an output of the interactions among partners, we define alliance stability as *the degree to which an alliance can run and develop successfully based on an effective collaborative relationship shared by all partners*.

This conceptualization indicates that stability is a dynamic, process-based and multi-dimensional construct. Here, we emphasize the importance of continuity, reciprocity, fit and "harmony" in understanding the concept. The reciprocity and harmony among partners determines the extent to which partner firms can realize anticipated synergies critical to alliance performance, which refers to the degree of partners' satisfaction with the alliance (Mjoen and Tallman, 1997). Thus, the concept of stability which points to the process aspect of alliances should be related to and distinct from alliance performance (or satisfaction): stability is not an ultimate outcome, but a determinant of alliance performance.

We now shed light on some key dimensions of our stability concept.

- (i) The simultaneous existence of a certain degree of stabilization and variation in the relationship is a key ingredient in the stability concept. Stability itself is not a static status, and its level changes over time. From both organizational change and strategic flexibility perspectives, a stable alliance needs timely and continuous adjustment, adaptation, reconfiguration and restructuring as the relationship evolves (Ernst and Bamford, 2005).
- (ii) There are no unexpected or unplanned major governance changes in the on-going relationship (Inkpen and Beamish, 1997). If no external environmental or market forces occur, the major partner(s) will not exit and the

alliance will not prematurely dissolve or be terminated. Therefore, this conceptualization of alliance stability, in terms of the absence of major changes in ownership structure, differs from previous instability definitions, whose focus has been solely on static alliance outcomes.

- (iii) The foundation of alliance stability is the maintenance and development of active and harmonious relationships among partners. If there are risks in inter-partner relationships which are perceived beyond a certain level and become the dominant threat to an alliance, the stability of the alliance will be undermined.

Further, the foregoing definition implies that stable alliances must have a balance of both structure rigidity and strategic flexibilities (Das and Teng, 2000). On one hand, a stable alliance should have enough rigidity or adaptive capabilities to resist unexpected environmental contingencies and internal risks. Rigidity is a key to the avoidance of premature dissolution. On the other hand, a stable alliance should also have a certain degree of strategic flexibility in order to continuously adapt to environmental changes, to adjust to the unexpected consequences of predictable changes and to respond to the changing partners' needs (Young-Ybarra and Wiersema, 1999; Ernst and Bamford, 2005).

#### 4. An integrated process model of alliance development

Alliances evolve during their lifetime. The process and evolution of alliances underscore the importance of the developmental stages. Although researchers agree that alliances evolve in stages, there is no consensus on the specific stages that alliances go through. Following Das and Teng (1999), we consider four stages in this paper: partner selection, structuring/negotiation, implementation and performance evaluation. Fig. 1 illustrates the theoretical framework of the paper and the conceptual orientation. The positive arrows indicate that alliances generally evolve along the four developmental stages, whereas the dashed left-pointing arrows suggest some of the reversals that might occur at any moment in the life span of the alliance.

Specifically, each alliance is a repetitive sequence of the four stages, and some stages may repeatedly occur as the alliance evolves (Ring and Van de Ven, 1994; Doz, 1996; Ariño and de la Torre, 1998). For example, after an alliance has formed, the criteria for partner selection will be reconsidered when a new partner enters into the current alliance. The initial alliance conditions (e.g., joint scope or division of labor) may have to be renegotiated in the event of unforeseen changes in the environment and in the relationship status. In some alliances, performance evaluation will recur regularly over time.

Despite increasing interest in the alliance developmental process, research has failed to consider the stability issue in the process. Researchers have usually investigated the many factors underlying alliance stability just a few at a time. And few of these researchers have examined the possible impact of individual factors on stability across the four stages. In addressing this gap, we propose a process model in which the main antecedents of alliance stability are examined. In the following we identify, review and integrate a number of factors underlying alliance stability in each stage. From this discussion, we generate specific propositions.

Certainly, our purpose is not to develop an exhaustive list of factors in this framework. Instead, we focus on the critical factors endogenous to the alliance relationship. Those factors exogenous to alliances (e.g., environmental

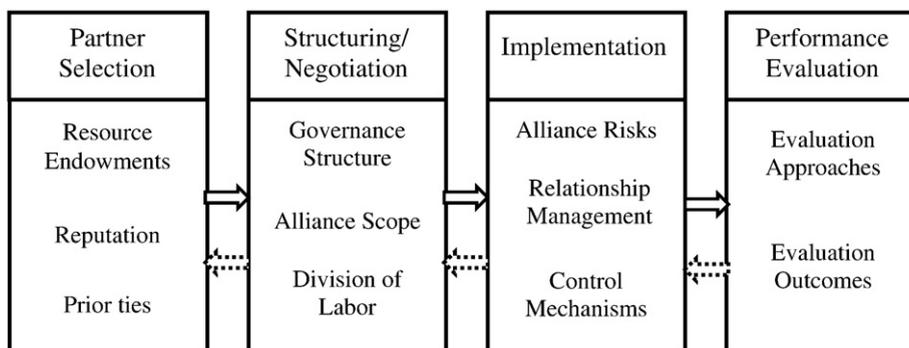


Fig. 1. Process model of alliance development: critical factors and managerial actions.

factors) are usually not controlled by managers and are therefore beyond the scope of this paper. Besides, we must acknowledge that we can provide only a cursory treatment of the various variables in the present study.

#### 4.1. Stage 1: partner selection

Forming an alliance includes a series of choices and decisions. Selecting a good partner is a critical first step. Partner selection emphasizes the desirability of a match between the partners' resource profiles, goals, incentives and strategies (Das and Teng, 2003). Some studies propose that firms should consider potential partners' reputation, experience, trustworthiness, capabilities and potential contributions to the alliance as critical selection criteria (e.g., Brouthers et al., 1995; Gulati, 1995; Dyer, 1997). Other studies highlight the importance of resource complementarities and learning in the partner selection process (e.g., Lane and Lubatkin, 1998; Mowery et al., 1998).

##### 4.1.1. Resource complementarity

Generally, firms have either similar or diverse resource endowments. Researchers suggest that firms should choose a partner with similar but complementary resources and capabilities (Lane and Lubatkin, 1998; Murray and Kotabe, 2005). On one hand, if firms are to effectively take advantage of the resources involved in an alliance to achieve desired objectives (say, learning a new technology), the resources must be complementary. If all partners have the same types of resources, there will be little knowledge to share and also few benefits to receive. On the other hand, if firms are to effectively understand, assimilate and absorb knowledge and skills involved in an alliance, they must have already shared some basic knowledge relevant to the resources and capabilities. If such overlap is lacking, firms may have incomplete information in identifying which ones can make real contributions to the alliance and how to value and acquire knowledge from the partners.

The degree of resource complementarity will be a critical factor in determining an alliance's future course and outcome. Kim and Inkpen (2005) argue that a tension exists between the need for diverse resources and a need for similar resources. More specifically, excessive resource similarity indicates that the partners have little to learn from each other, a situation that restricts the development pace of the alliance. But excessive resource diversity makes it difficult for partners to learn from each other. It requires utilizing coordination mechanisms across activities, and as a result the alliance will become difficult to manage. Therefore, a careful balance between resource similarity and diversity is at least in theory optimal for a stable relationship and a positive alliance outcome.

**Proposition 1a.** *Complementarity of partners' resource contributions will be positively related to alliance stability.*

##### 4.1.2. Reputation

Before allying with a partner, firms should also make clear whether this partner has a reputation for dealing fairly and performing well (Das and Teng, 2001). Such a reputation for trustworthiness and competence is an important strategic asset and tends to be cumulative over time. A good reputation signals the quality of a firm and encourages other firms to ally with it. By contrast, firms with a bad reputation are likely to behave opportunistically and be difficult to work with.

Reputation will be one of the key factors for the future stability and successful implementation of an alliance. Reputation is an important source of mutual trust, because it helps lower transactional costs, minimize potential opportunistic behaviors, decrease inter-partner conflicts and control relational risks (Saxton, 1997; Das and Teng, 2001). Firms tend to be confident that a partner with a good reputation will cooperate in good faith and make a real contribution to the alliance. They may therefore reasonably expect to collaborate with the partner for quite a long time in the belief that this partner will help them achieve the expected objectives and make the alliance succeed.

**Proposition 1b.** *Reputation of the partners will be positively related to alliance stability.*

##### 4.1.3. Prior ties

An embedded history of repeated interactions plays a critical role in firms' ex ante alliance design choice (Gulati, 1995). Studies have also viewed prior ties as critical factors for the dynamics within the future alliance. For example, Doz (1996) argues that the existence of prior repeated relations facilitates the formation of future cooperation, which in turn enables organizational learning and accelerates subsequent readjustment cycles as the relationship evolves. Reuer et al. (2002) posit that such experience provides firms with prescient capabilities in forming alliances and managing their evolution.

However, there are also opposing views. For example, [Beamish and Inkpen \(1995\)](#) argue that prior ties facilitate the partners' acquisition of knowledge, which in fact increases the probability of alliance instability. Moreover, prior ties are likely to yield redundant information and knowledge that may increase resource similarity between partners. As noted earlier, this resource similarity will restrict the development pace of an alliance.

Despite conflicting findings, we posit that prior ties are positive predictors of future relationship stability by providing a wide range of advantages and benefits for the partners (see [Kim and Inkpen, 2005](#); [Richards and Yang, 2007](#)). Firstly, through learning from the success and failure of prior relationships, firms accumulate substantial experience and lessons on how to avoid past mistakes, how to manage partner relationships, and how to reduce risks in the future ([Killing, 1983](#)). They can anticipate some of the contingencies in advance and thereby prevent possible changes. Secondly, experience derived from repeated ties provides information about each other's cultures, systems, structures and strategies, facilitating effective communication and mutual understanding ([Saxton, 1997](#)). The partners may be able to focus on strategies with the highest probability of success. Thirdly, repeated ties can engender close bonds and enhance mutual trust among partners ([Gulati, 1995](#); [Richards and Yang, 2007](#)). This in turn discourages opportunism and reduces transaction costs ([Parkhe, 1993](#)). Over time, both partners find themselves to be interdependent and become extensively embedded in the collaborative relationship.

**Proposition 1c.** *Prior ties among partners will be positively related to alliance stability.*

#### 4.2. Stage 2: structuring/negotiation

In this stage, partner firms should decide on appropriate governance forms, moderated scope of collaborative activities, effective division of labor, and so forth.

##### 4.2.1. Alliance governance forms

Firms can choose from two primary alliance governance forms: equity and non-equity alliances. [Osborn and Baughn \(1990\)](#) point out that the governance mode within an alliance may indicate the motives of the partners and have a large impact on alliance evolution. For the same reason, [Hennart \(2006\)](#) argues that choosing an ex ante contract or an equity JV is an important decision for alliance managers, and the chosen type can impact subsequent behaviors of the partners and predict the future alliance development and performance.

Equity JVs are found to be prevalently more suitable for complex relations that are exposed to greater risk of opportunism and behavioral uncertainty. For example, the “non-recoverable investments” and the mutual commitments in JVs create a mutual hostage situation that helps align the strategic goals of partners. This situation reduces relational risks, deters opportunistic behaviors and builds up high exit costs ([Pisano, 1989](#); [Parkhe, 1993](#)). JVs are also found to be associated with more trust and confidence, higher levels of structural embeddedness and higher possibility of dispute resolution ([Das and Teng, 2001](#)). In this sense, JVs are an internally stable governance form. By contrast, non-equity alliances that involve looser inter-connection and fewer commitments are more likely to go through instability and be more prone to failure.

**Proposition 2a.** *The presence of equity will be positively related to alliance stability.*

##### 4.2.2. Alliance scope

Firms must also decide on the area of the task or functional interface between them ([Gulati, 1995](#)). Generally, an alliance agreement may involve three separate functional areas or joint activities: R&D, manufacturing and marketing ([Kogut, 1989](#); [Oxley and Sampson, 2004](#)). Alliance scope refers to the number of joint activities involved in an alliance. The scope of the joint activities can vary considerably in different alliances. For instance, some cooperative arrangements are limited to only a single activity (e.g., either R&D or manufacturing or marketing) while others involve more functional areas. The scope of the multiple-activity or mixed-activity alliance is broader than that of the single-activity alliance.

The chosen scope has critical significance for the subsequent dynamics of the alliance. For instance, [Kogut \(1989\)](#) finds JVs to be more unstable in highly concentrated industries, particularly when the functional scope extends to marketing and after-sales service. [Reuer et al. \(2002\)](#) argue that it will be more difficult for firms to manage an alliance with broader scope, because it is accompanied by more uncertainty and more complexity about the implementation of

the activities at hand. The increasing scope of an alliance is expected to require greater extent of coordination, incur proportionally higher costs, and increase the potential hazards of the cooperation (Gulati and Singh, 1998). The need for higher levels of cooperation, coordination and integration is also likely to increase the problems relating to incompatible goals, systems, procedures and strategies. Predictably, an increase in the scope of an alliance will reduce the likelihood of the alliance's future stability and success.

**Proposition 2b.** *The scope of joint activities will be negatively related to alliance stability.*

#### 4.2.3. Division of labor

Reuer et al. (2002) emphasize the importance of division of labor as a major task undertaken by partner firms. They argue that a clear division of labor and allocation of responsibilities among partners can help decrease the governance changes of alliances. On one hand, an express provision of division of labor is expected to lower the need of complex coordination activities, decrease inter-partner disputes, and reduce the likelihood of relational risks. On the other hand, a clear division of labor also encourages the partners to contribute more resources to fulfill their responsibilities because the benefits the partners deserve may reasonably be in accord with their contributions. It is reasonable to predict that alliances with a clear division of labor may be more stable and successful than those with a blurry specification of responsibility allocation.

**Proposition 2c.** *A clear division of labor between partners will be positively related to alliance stability.*

#### 4.3. Stage 3: implementation

After the collaborative agreement is negotiated, partner firms will carry out the agreement and put the cooperation into operation. Doz and Hamel (1998: xv) argue that “[m]anaging the alliance relationship over time is usually more important than crafting the initial formal design”. Among the four stages, we believe the implementation stage is possibly the most pivotal one for alliance evolution and success. Accordingly, partners must take a variety of actions to manage destabilizing factors and cope with disadvantageous conditions in due time.

##### 4.3.1. Alliance risks

As collaboration unfolds, various kinds of internal risks may emerge and become key factors destabilizing the alliance. Das and Teng (1996, 1999, 2001) categorize these risks into two primary types: relational and performance. Relational risk is the probability and consequence of not having satisfactory cooperation between partner firms. Performance risk refers to the factors that may jeopardize the success of an alliance, even when the partners cooperate fully. Relational risks and performance risks are ever-present in an alliance relationship. To minimize both kinds, Das and Teng put forward two risk reduction approaches — trust and control. They suggest that the combinations of different types of trust and different modes of control can minimize either relational risk, or performance risk, or both. In particular, they affirm that these two separate factors are enough to determine the perceived risk level and “there is no third determinant that is of comparable importance” (Das and Teng, 2001: 254). We extend this argument from a broader view and propose that two types of managerial actions — relationship management (including trust) and control — are key approaches in reducing risks within alliances.

##### 4.3.2. Relationship management

Research on relationship and relationship management occupies a prominent position in recent strategic management and organizational literature. Relationships are always acknowledged to be important and valuable, but they have also been considered complex and difficult to manage (Dyer, 1996; Wong et al., 2005). In an alliance context, inter-partner relationships are a multi-faceted phenomenon which comprises the establishment, development, maintenance and optimization of harmonious and reciprocal relationships shared by all partners.

Building on the well-established importance of relationship management, we posit that effective management of inter-partner relationships constitutes the micro-foundation for alliance stability, and that it cannot be replaced by such things as external factors. An active and effective partner relationship may serve to encourage cooperative behavior and mitigate competitive conflicts (e.g., the above Toppan Moore alliance case), and thus contribute to the overall health of the alliance and the accomplishment of partner goals (Zeng, 2003; Wong et al., 2005). But the failure to develop

effective partner relationships often makes the joint activities ineffective and the alliance unstable and unsuccessful (Dyer, 1996). For example, despite a cooperative research agreement with Alza, Ciba-Geigy did not devote itself fully to the collaboration (Hennart, 2006; Doz, 1996). Instead, it continued to conduct in-house research in the same areas as Alza. This triggered a subsequent downward spiral of trust among the two parties and led them both to see that the possibility of a stable relationship was unlikely. After floundering for a time, the alliance finally failed.

Below, we discuss four relationship-related factors that contribute to alliance stability.

*4.3.2.1. Commitment.* Firms are committed to an alliance relationship by contributing specific resources and capabilities. Commitment signals a firm's loyalty to the alliance as well as to the partners. It demonstrates a long-term orientation in maintaining the collaborative relationship long enough for partners to realize their benefits (Zaheer and Venkatraman, 1995). When the bilateral commitments are established, all partners may become locked into minimizing the potential for opportunism and devoting to the relationship development. By contrast, if a firm is not committed to the alliance, it is less likely to cooperate closely with its partners. As a result, the lack of commitment on the part of either partner will become a destabilizing factor, whereas both partners' credible commitments tend to promote relationship stability by encouraging the level of reciprocity and cooperation.

*4.3.2.2. Interdependence.* By their very nature, strategic alliances create direct or indirect mutual dependencies between partners (Wong et al., 2005). Emergence, development and maintenance of symmetric interdependence may enhance the stability of an alliance. First, interdependence helps increase the partners' conformity in strategic responses to environmental or market changes, enhancing the joint resistibility. Second, interdependence causes the partners to be committed to the alliance, as both have made substantial contributions and investments to it (Parkhe, 1993). Third, interdependent partners have the right balance of resource contributions and economic rewards. Neither may feel their contributions being neglected or undervalued, and both have thus incentives to invest more in future alliance activities. Finally, mutual dependence provides both partners a motivation to act in a trustworthy manner. It also creates a situation of mutual forbearance and reciprocity, two critical conditions necessary for alliance development and success (Dyer, 1996, 1997; Kumar et al., 1995). Therefore, symmetrical interdependence enhances the long-term stability and increases the likelihood of alliance success.

*4.3.2.3. Mutual trust.* The term "trust" has been well-explored in extant literature. Trust is mainly understood in terms of the characteristics of the trusted party or the trustee, such as good faith, trustworthiness, benevolence, honesty, integrity, reliability, responsibility and competence (Mayer et al., 1995; McAllister, 1995; Das and Teng, 1996). Among these characteristics, Wang and Fulop (2007) propose that dependability, predictability and good faith are the common dimensions used to explain how trust is developed within an organization.

Previous research suggests that trust must be mutual for a stable on-going relationship (Anderson and Weitz, 1989). As such, James (2002) emphasizes the symmetry of trust as a premise of maintaining relationship stability. An environment of mutual trust may provide partner firms and their cooperative relationships with a variety of benefits and advantages (Gulati, 1995; Das and Teng, 2001). For example, mutual trust not only allows those firms with different knowledge bases and experience to collaborate closely by negotiating long-term, reciprocal contracts, but also enables them to expand the realm and scope of feasible alliance activities. Furthermore, mutual trust brings confidence and beneficial reputation, results in lower conflict and higher satisfaction, reduces the need for formal contractual safeguards, monitoring and other alternative control mechanisms, facilitates effective cooperative relationships and increases the benefits of such relationships. Mutual trust has thus been widely viewed as the fundamental of alliance stability and an important predictor of alliance success (e.g., Dyer, 1996; Gill and Butler, 2003).

*4.3.2.4. Conflict resolution.* Inter-partner conflicts is defined as "the degree to which partner firms have competing interests, preferences, and practices that cannot be easily reconciled in an alliance" (Das and Teng, 2003: 291). Conflict is a complex construct which has multiple causes and outcomes. Prior research has identified various reasons for inter-partner conflicts in alliances. For example, Ring and Van de Ven (1994) argue that conflict arises from coordination and efficiency problems or from issues of opportunism and injustice. Khanna et al. (1998) point out that the incompatibility between private benefits that accrue to only one partner and common benefits that accrue to all partners is a source of interest conflict. Das and Teng (2002) summarize the sources of alliance conflict into three categories. The first source comes from the misfit in different organizational routines, technologies, decision making styles, and preferences

between partners. The second source results from the private interests and opportunistic behavior of partner firms. And the third type of conflict arises because partner firms may be fierce competitors outside the alliance.

Unresolved conflicts are one of the key factors negatively affecting the stabilization and development of the on-going relationship. Firms must develop appropriate mechanisms to effectively manage conflicts. Researchers usually suggest the use of communication and the sharing of information as key means to resolve conflicts (Ring and Van de Ven, 1994; Doz, 1996). Moreover, trust building, attachments and management control may also facilitate conflict resolution. Once conflicts have been minimized, partner firms will have a strong desire to maintain the on-going relationship unchanged, and thus the alliance can go through a relatively stability period.

**Proposition 3.** *Relationship-related factors including (a) commitment, (b) interdependence, (c) mutual trust, and (d) conflict resolution will help reduce relational risks, thus providing incentives for partners to sustain the existing relationship unchanged.*

#### 4.3.3. Control mechanisms

Besides being important in relationship management, control is also an important factor in the determination of an alliance's future course and dynamics. Control can be viewed as a process of organizational coordination and regulation including monitoring, directing, evaluating and rewarding activities. Typical control literature differentiates between two modes of control: informal control and formal control (for a detailed discussion, see Das and Teng, 2001). Informal control, which is also called social control or clan control (Ouchi, 1979), emphasizes the establishment and utilization of long-term, subjective and sometimes intuitive criteria for the evaluation of actions or outcomes of the partners and the alliance per se.

Formal control, also called objective control, entails the use of short-term and formal rules, procedures and policies to monitor and evaluate behaviors and performance. Researchers have further classified formal control into two types: behavior control (or process control) and outcome control (Ouchi and Mary, 1975). Behavior control is the mechanisms that clearly specify the appropriate behaviors of the partners and the satisfying processes of partner interactions. It emphasizes the measure of behavior or process itself but not the economic or financial outcome. By contrast, outcome control is the mechanisms that focus on the outcomes or the specific outputs of alliance activities. It relates to the ability of the partners to achieve economic and strategic objectives and relies on an accurate and reliable assessment of alliance outcomes.

The three types of control may influence alliance dynamics differently. We argue that social control may be propitious for alliance stability and development. Social control influences partner firms' behaviors through creating shared goals, norms and values. Its intention is to reduce goal incongruence and preference divergence among partners (Das and Teng, 2001). Social control can increase mutual understanding and breed mutual trust. Importantly, no specific behavior or rigid outcome is prescribed ex ante, and partners have relatively sufficient autonomy to perform their jobs and develop the process of interaction. They may therefore enjoy a harmonious and stable relationship for the achievement of the joint objectives.

By contrast, if partner firms rely heavily on outcome control, then inevitably the stability of the alliance will be undermined. Outcome control entails the use of objective measures such as market share or ROI as criteria to assess performance. When this outcome-based control mode is adopted solely, problems may emerge: some outcomes cannot be measured before they are fulfilled, and others cannot be measured at all due to the lack of appropriate approaches or indicators. When such outcome is prescribed at the start, dispute and dissatisfaction is likely to occur, and the alliance will gradually become unstable.

Process or behavior control can have opposing effects on alliance dynamics. On one hand, if partner firms frequently utilize process control to coordinate alliance activities, the incessant monitoring and frequent checking are required. Such actions destroy both goodwill and competence trust between the partners, since they will have only limited autonomy to perform their jobs. Alliance managers may also react too sensitively when they face changes and problems in the process. In this instance, process control is a negative predictor of alliance dynamics. On the other hand, appropriate process control should allow partner firms to set up feasible goals and revise the unreasonable ones in due course. Through real-time monitoring and timely checking, partner firms can detect problems and contingencies that may arise in the implementation process. They can accordingly take effective actions to solve the problems and adapt to the changes. As alliance evolves, partner firms can enjoy sustaining stability for alliance operation and development.

**Proposition 4.** (a) *Social control is propitious to alliance stability; (b) outcome control is harmful to alliance stability; (c) appropriate process control is propitious to alliance stability, whereas frequent use of process control is harmful to alliance stability.*

#### 4.4. Stage 4: performance evaluation

After the alliance operates for some time, its performance can and should be evaluated with some certain measures. Performance evaluation is defined as examining the extent to which the partners' set objectives are met. When evaluated performance is better than one partner had expected, that partner may try to maintain the collaborative relationship and invest more resources and capabilities in order to benefit still more from the relationship in the future. But when the evaluated performance is worse than expected, the partner may reduce its commitment and withdraw some investments to limit future risks. Therefore, superior on-going performance of an alliance may serve as a stabilizing force, while undesirable performance outcomes are likely to lead to instability and partner exit (Gill and Butler, 2003).

In a complete sense, a firm's performance evaluation should consider two aspects, that is, the costs it undertakes and the benefits it deserves. In practice, disagreement may arise about appropriate performance measures among partners (Yan, 1998). Firms usually tend to overestimate their own expenditures but underestimate their partners' contributions; they may also underestimate their own benefits but overestimate those of the partners. Perceived inequity could therefore occur either when a firm perceives itself to have contributed more into the alliance than it has received or if the firm perceives its benefit–cost ratio is largely lower than that of its partners (e.g., Ariño and de la Torre, 1998; Kumar and Nti, 1998).

A firm's perception of inequity is related to the degree of its satisfaction with the relationship. When a firm perceives the existence of inequity, it may feel "unfair", and it is "less willing to undertake an alliance or continue a particular alliance in the same form" (White, 2005: 1390). If the perceived inequity cannot be eliminated over a long period of time, the alliance will be either restructured or terminated (Das and Teng, 2002). Accordingly, researchers suggest that a firm can minimize the perceived inequity either by increasing its benefits/reducing the partner's benefits, or by reducing its costs/increasing the partner's costs. In an IJV context, for example, Mohr (2006: 248) argues that a firm who feels unfair can "increase its efforts to exert control over the venture and/or demand to be compensated by the other side for this lower performance". Moreover, a few scholars (e.g., Hamel, 1991; Inkpen and Beamish, 1997) argue that some partners can learn and internalize knowledge and expertise faster and more efficiently than their partners, and thus either improve their own competitive position or reduce their partners' bargaining power. In other words, the faster learner can increase its benefits and simultaneously reduce its partner's benefits through engaging in the race to learn.

It is worth noting that we should differentiate the perceived inequity from the negative performance outcomes. The perceived inequity is an abstract psychological concept, and it reflects a firm's subjective evaluation of its realized benefit–cost ratio compared to its expectation or to its perception of the partner's evaluation. The negative performance refers to the planned performance objectives of one or both partners having not been achieved. If the performance outcome is evaluated as negative, the alliance will be seen as a failure by one or both partners. Possible results may include the following: (1) the partners modify evaluating approaches or indicators, such as switching from short-term objectives to long-term, strategic objectives; (2) they renegotiate the terms of their initial contracts and restructure the alliance with the expectation to achieve new aims; (3) one or both partners modify their behavior unilaterally to correct the negative outcomes, such as decreasing its earnings or increasing investments; (4) one of the partners sells its stakes to the other partners or to a third party; (5) the alliance is liquidated and the collaborative relationship terminates.

**Proposition 5.** (a) *Superior on-going performance serves as a stabilizing force; (b) disagreement about performance measures leads to perceived inequity, thus reducing the likelihood of alliance stability.*

## 5. Discussion and conclusion

The dynamics of strategic alliances can be analyzed in numerous ways. We have chosen to approach it in terms of alliance stability. Although increasing academic attention has been devoted to the alliance dynamics field, Bell et al. (2006) contend that the majority of prior research has neither contributed to a coherent knowledge foundation (an academic gap) nor provided adequate answers to managerial questions (a managerial relevance gap). We respond to their call for research by developing an integrated process model that integrates various studies on alliance stability.

The primary tasks were (1) to characterize and conceptualize the stability concept to fill the academic gap, and (2) to identify critical endogenous factors underlying alliance stability over the different developmental stages to fill the managerial gap.

### *5.1. Theoretical contributions*

One of the purposes of this study was to theoretically contribute to a more comprehensive understanding of the emerging concept of alliance stability. Previous studies have devoted most attention to the analysis of the inverse of stability, i.e., alliance instability. These studies have usually adopted an outcome-oriented approach and treated alliance instability as synonymous with alliance termination. As argued earlier, however, treating instability narrowly as termination is conceptually problematic and sometimes prone to misinterpretation (Yan and Zeng, 1999). Therefore, the outcome-oriented approach has intrinsic limitations in explaining alliance dynamics.

We have changed this perspective and have construed alliance stability from an endogenous and more process-oriented view, highlighting the evolving nature and dynamic process of alliances. We believe this focus on the process view leads to a comprehensive understanding of the issues surrounding the stability concept, which includes an explanation of the importance of stability research, an analysis of the relationship between alliance stability and alliance outcomes, and a rigorous conceptualization of alliance stability.

Another purpose of this study was to contribute to the strategy management literature by proposing a fairly comprehensive and integrated process model. Alliance stability cannot be studied without considering the factors associated with it. But the antecedents to alliance stability have not been adequately understood in the literature. Especially, prior studies have failed to analyze the factors along the alliance developmental process. In order to offer an initial synthesis, this paper incorporated the many research findings identified in various studies and integrated a range of endogenous factors over the different developmental stages. This analysis has not only offered a general framework which consolidates and simultaneously extends many previous valuable studies but also has provided a basis for identifying and analyzing the conditions under which an alliance can become more stable. It is up to academic researchers to make judgments, in future research, about which factors should be considered as the forces that drive the dynamic evolution of strategic alliances.

### *5.2. Managerial implications*

Knowledge acquired in this paper is also expected to offer alliance managers and practitioners some valuable implications as they strive for stable and successful collaborative relationships. As one of the basic arguments, stability has been viewed as a necessary condition for the achievement of collaborative objectives. When firms form, implement, adjust and evaluate their alliances, they should have the goal of stability in mind. At the same time, management should be in a position to determine the specific actions needed for stability at any given moment in the alliance's lifetime.

As argued by Doz and Hamel (1998: 118), "over their life alliances remain vulnerable to many types of destabilizing factors regardless of how well-conceived they are strategically". Even though future events are not fully predictable, management can apply the concepts and factors that we propose in this paper to dealing with these destabilizing factors and enhancing the collaborative sustainability and performance.

The dynamics of alliances is distinguished from their formation decision, but it also starts from this decision. When considering forming an alliance, it is essential to correctly assess the probability of instability prior to formation and to address any potential difficulties. Our analysis suggests that in the partner selection stage, complementarity of partners' resources, partner reputation and prior ties may be key attributes. This perspective has important implications for managerial practice. First, firms should choose those organizations with complementary resources and good reputation as partners. Further, if they had had previous cooperative experience with a partner in which the alliance performed well, they could consider collaborating with the same partner again, and by doing so they could ensure the existence of a reciprocal, favorable and stable alliance relationship.

When negotiating an alliance, firms should consider not just the scope and governance of alliances but also the division of labor as critical determinants of alliance stability. For firms which plan to form alliances, they should choose more hierarchical governance structure and moderate scope of joint activities to achieve balances between resource contributions and benefits procurement, between knowledge sharing and knowledge leakage, and between cooperation

and competition among partners (Zeng, 2003; Oxley and Sampson, 2004). In particular, they should negotiate a clear division of labor and proportional allocation of benefits at founding, so as to avoid unwanted disputes in the future.

However, it is worth noting that factors in the formation stage cannot consequentially foreshow the future development of the alliance. In particular, if we treat the formation stage in isolation, it seems as if it would be easy for the alliances to attain and maintain stabilization in the subsequent implementation stage by selecting an appropriate partner, limiting the scope, introducing a clear division of task, and establishing a hierarchical equity structure. But indisputably no partner, scope or governance structure is absolutely favorable in all settings. The favorable outcomes of an alliance are decided more directly by the variables that emerge in the implementation stage.

Therefore, management should be able to identify the various kinds of risks and learn how to reduce them in implementation stage. Both effective relationship management and appropriate control mechanisms may help minimize uncertainty and complexity. Generally, managers should concern themselves with developing dyadic relationships including reciprocal commitments, interdependence and mutual trust to maintain the effectiveness of collaborative relationships. They should also consider social control and moderated process control as effective control mechanisms.

Finally, reasonable evaluation approaches and appropriate measures should be incorporated when firms aim to evaluate an alliance's performance fairly. Once perceived inequity occurs, managers should take actions to minimize the inequity. One of the most effective ways is to invest in learning how to acquire knowledge and skills from the partners more quickly.

### 5.3. Limitations and future research directions

Our study is prone to several limitations that should be addressed in future research. First, it addresses the stability issue in general alliances but does not distinguish among various types of alliances. It is possible that different alliances may have different developmental dynamics. For example, stronger attachments between JV partners make equity JVs a more stable and long-lasting relationship than, for example, non-equity alliances. Research into the differences in the stability of various types of alliances is clearly needed.

Second, we have proposed a range of factors that may coexist in alliances. Although an alliance dynamically evolves under the influence of these factors, it is usually difficult to take into account a whole list of possible factors in one framework. It is possible that other key factors we haven't discussed in this paper might be just as vital for alliance stability. Therefore, the antecedents of alliance stability need to be examined further in terms of other factors beyond those that we have discussed here, such as firms' strategies and external factors.

Third, although the factors proposed here seem to conceptually differ from one another, they may interact and jointly create simultaneous effects. Moreover, the factors themselves may evolve and change over time, but this study has paid limited attention to the evolutionary process by which they may develop. Future research should further discuss how these factors develop and how they co-evolve to affect alliance dynamics in the alliance process.

Fourth, although we have discussed the relationship between alliance stability and alliance outcome, this analysis is cursory and superficial. Alliance outcomes involve a variety of possible dimensions for which scholars have proposed many measures. Therefore, impacts of stability on the different dimensions of alliance outcomes may be complicated and diverse. In future research, an in-depth study of alliance outcomes and their relationship with alliance stability is necessary and will be of great academic value.

Finally, while our study has provided several initial insights into alliance stability, it lacks empirical examination of the proposed framework. An important next step in this line of research is the empirical testing of the model developed in this paper. Toward this objective, it would be necessary to develop appropriate survey instruments for variables such as alliance stability and factors associated with it. Moreover, case studies can also be incorporated to illustrate and support the different theoretical proposals. We believe our definition and discussion of the stability concept have provided a necessary starting point for future empirical research.

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