

Disentangling Alliance Management Processes: Decision Making, Politicality, and Alliance Performance

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ABSTRACT Using a sample of 106 organizations engaged in strategic alliances, we develop and test a framework of alliance-related organizational decision-making processes and their impact on alliance performance. With regard to direct effects, our results show a negative impact of decision-making recursiveness and no significant relationship for openness and procedural rationality. Acknowledging the importance of the organization's micropolitical context in which these decision processes are embedded, we also test the moderating influence of politicality. Our findings provide support for our hypotheses that in a context of low politicality, the decision-making characteristics of openness and procedural rationality have a positive influence, whereas recursiveness negatively affects alliance performance. In a context of high politicality, however, openness and procedural rationality exert a negative influence, and the negative impact of recursiveness is aggravated. We suggest that alliance-related decision making cannot be adequately understood without explicitly considering the micropolitical context in organizations.

INTRODUCTION

Strategic alliances have emerged and proliferated as interorganizational designs that enable firms to cope with the increasing complexity of learning and building new sources of competitive advantage to compete successfully in the global economy (Lei et al., 1997). Despite increasing popularity and strategic importance, however, the failure rates of strategic alliances lie between 50 and 80 per cent (Bleeke and Ernst, 1991; Geringer and Hebert, 1991; Harrigan, 1988; Janis, 1982; Kogut, 1989; Park and Ungson, 1997; Yan and Zeng, 1999). Due to their managerial complexity and other alliance-specific difficulties, such as substantial coordination costs, risks of proprietary knowledge leakage, disproportional appropriation of rents, and free-rider problems (Balakrishnan and Koza, 1993; Hamel, 1991; Koh and Venkatraman, 1991), these collaborations present signifi-

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cant challenges to the strategic decision-making processes of their parent organizations. During the life cycle of its alliances, each parent firm has to make a multitude of far-reaching decisions, such as selecting an appropriate partner (Saxton, 1997), defining alliance scope (Khanna, 1998; Oxley and Sampson, 2004), designing governance and monitoring systems (Das and Teng, 1998a; Gulati and Singh, 1998), allocating resources (Das and Teng, 1998b), or determining dissolution procedures (Park and Ungson, 1997). Managing an alliance is, therefore, not simply a matter of initially selecting the right partner and alliance structure, but of designing decision processes that generate high-quality decisions as the alliance progresses over time.

In spite of the broad academic and managerial attention that strategic alliances have received, we have only limited insights into alliance processes in general, and alliance-related decision making in particular. With rare exceptions (e.g. Draulans et al., 2003; Subramani and Venkatraman, 2003), academic research has largely neglected concepts and measures that focus on decision processes as explanatory variables for alliance success (Spekman et al., 1998). We attempt to address this gap in the literature and explain how characteristics of such processes influence the performance of alliances. In particular, we empirically examine the performance impact of alliance-related decision processes and assess the moderating influence of the micropolitical context these processes are embedded in.

Concerning the former, we define *alliance-related decision making* as an intra-organizational process dealing with all the strategic judgments (in terms of actions taken, resources committed, or precedents set) that a focal organization makes in a cooperation (Mintzberg et al., 1976). Based on this definition, we develop a theoretical decision process framework that comprises elements of both the classic rational (e.g. Andrews, 1971; Ansoff, 1965; Lorange, 1980) and the behavioural model of decision making (Cyert and March, 1963; Mintzberg et al., 1976; Quinn, 1980). It is represented by three basic dimensions: receptivity of the decision process towards new information (openness), the systematic processing of this information along specific stages (procedural rationality), and the degree of iteration across these stages (recursiveness). We predict that higher degrees of openness and rationality and lower degrees of recursiveness will positively impact alliance performance.

Concerning the latter, we acknowledge that alliance-related decision making – as many other organizational phenomena – does not unfold in an intra-organizational vacuum, but is embedded in the micropolitical fabric of the organization. Organizations are comprised of coalitions with different, competing, and, in some cases, conflicting interests (Pfeffer, 1992; Pfeffer and Salancik, 1974); strategic decisions are assumed to follow the desires and subsequent choices of powerful organizational members and coalitions within the organization (Pettigrew, 1973; Salancik and Pfeffer, 1974). As decision making in an alliance context is confronted with significant internal and external uncertainties, politicality represents a crucial contextual factor. In particular, decision makers may attempt to influence decision processes by engaging in political tactics such as coalition formation, lobbying, co-opetition, control of agendas, and strategic use of information (Eisenhardt and Zbaracki, 1992). Thus, by incorporating politicality as a moderating factor, we hope to untangle potentially ambiguous relationships between decision-making characteristics and alliance performance.

After analysing the theoretical background of alliance-related decision making, we first examine the direct effects of decision process characteristics and then consider the moderating effect of politicality. We describe our methodological approach, present results from our empirical data, discuss implications for theory and practice, and outline areas for future research.

ALLIANCE-RELATED DECISION MAKING, MICROPOLITICS, AND ALLIANCE PERFORMANCE

During the last two decades, the number of alliances – defined as voluntary arrangements among independent firms that entail exchanging, sharing, and jointly developing or providing products, services, or technologies (Gulati, 1998; Lavie et al., 2007) – has increased dramatically (Dyer et al., 2001; Gulati, 1998). Alliances are perceived as interorganizational designs enabling firms to build or renew their competitive edge in the global economy (Hamel, 1991; Teng, 2007). We focus on *strategic* alliances; that is, ‘the means by which a firm seeks to implement, in part or in whole, elements of management’s strategic intent’ (Ariño, 2003, p. 67).

Several authors have argued that financial indicators do not fully capture the extent to which an alliance has achieved its objectives (Geringer and Hebert, 1989). We therefore follow recommendations in the alliance literature suggesting that the parent firm’s satisfaction with the alliance is the most appropriate criterion for performance evaluation (Geringer and Hebert, 1991). Accordingly, we define *alliance performance* as the extent to which a partner believes that the alliance is characterized by a strong and harmonious relationship; that the primary objectives for the alliance have been fulfilled; and that the company has succeeded in gaining an enhanced competitive position or new capabilities (Kale et al., 2002; Krishnan et al., 2006). As a consequence of their proliferation and increasing strategic importance, the quest for factors affecting alliance performance has captured broad academic attention.

The focus of scientific inquiry has expanded over the years from content-related topics, such as fit between alliance partners (Douma et al., 2000), alliance governance (Gulati and Singh, 1998; Wright and Lockett, 2003), and alliance-based competitive dynamics (Silverman and Baum, 2002), to more process-related topics. For example, researchers have investigated evolutionary processes (Das and Teng, 2002; Zajac and Olsen, 1993), learning processes (Doz, 1996; Inkpen, 2000), the consequences of trust and distrust (Krishnan et al., 2006; Lui and Ngo, 2004; Luo, 2002), the effects of partners’ communication behaviour (Mohr and Spekman, 1994), conflict management (Buechel, 2000; Kale et al., 2000; Lin and Germain, 1998; Mohr and Spekman, 1994), the interplay between cooperation and competition (Hamel, 1991; Khanna et al., 1998; Lui and Ngo, 2005; Parkhe, 1993), and the impact of alliance experience and investment in a dedicated alliance management function (Draulans et al., 2003; Kale et al., 2002).

Much less attention, however, has been devoted to managerial processes in the realm of alliance-related decision making. Previous research on strategic decision making in other contexts has produced a significant number of studies supporting a strong relationship between the characteristics of decision processes and both decision effectiveness and overall firm performance (for an overview, see Rajagopalan et al., 1993). Although

we expect the cumulative influence of decision process characteristics on the stream of alliance-related decisions to affect the subsequent performance of such collaborations, we expect unique effects in the context of alliances for the following reasons.

First, in contrast to organizational entities with a single chain of command, strategic alliances usually consist of multiple decision-making centres. This requires a significant coordination of activities between the partners, without the benefits of structures and systems available in traditional hierarchies (Gulati and Singh, 1998). For example, the alliance between Ciba-Geigy and Alza in the advanced drug-delivery business was under constant strain due to diverging interests and aspiration levels at its global R&D department headquartered in Basel (Switzerland) and its American divisional headquarters in Summit, New Jersey (USA). Alza had to manoeuvre between these two centres and reconcile the inconsistencies between them (Angelmar et al., 1994). Second, due to the interplay of cooperation and competition between alliance partners (Khanna et al., 1998; Yan and Gray, 2001), alliance-related decision making is subject to a high degree of uncertainty about the behaviour of partners and ambiguity about the development of the alliance. Each organization has to incorporate aspects of cooperative behaviour, such as integrating both partners' decisions, with the challenges of competitive behaviour, such as considering the impact of alliance-related decisions on each partner individually (Zajac and Bazerman, 1991). This high degree of uncertainty and ambiguity, at both the firm level and the 'relational' level (i.e. the behaviour of alliance partners and alliance evolution), requires a careful calibration of decision-making processes (Das and Teng, 1996; Ring and Van de Ven, 1994).

In the case of multi-partner alliances, this phenomenon becomes even more strongly visible. For example, the Wi-Fi ('Wireless Fidelity') Alliance was founded by 3COM, Agere, Cisco, Intersil, Nokia, and Symbol Technologies with the objective of promoting the IEEE 802.11 standard among consumers and manufacturers that certified the interoperability of WLAN products. More than 250 corporations have joined this alliance, although many of these firms are in fierce competition with each other, both in terms of wireless technology products and related areas (Lavie et al., 2007). Third, alliance-related decision making has to consider the phenomenon of unintended consequences that may pose a major threat to collaborative relationships, which are especially perilous when firms are cooperating and competing at the same time. For example, unintended knowledge transfers to its partner may deprive a firm of its competitive advantage (Dyer et al., 2001; Hennart, 1988; Inkpen and Dinur, 1998), and even initially promising collaborations might degenerate into 'learning races' in which a firm's primary motive becomes to quickly acquire a partner's skills. Once learning objectives are achieved, an underinvestment in the alliance by the winner of the learning race can often be observed (Hamel, 1991). This, in turn, requires decisions on structuring interfaces among partners, determining areas of cooperation and flows of information, or installing protective measures, which complicate alliance-related decision processes.

Because decision processes pertaining to strategic alliances are embedded in a unique micropolitical context, they are particularly vulnerable to micropolitical influence attempts for several reasons. One is that strategic alliances expose member corporations to a high degree of ambiguity and uncertainty (Das and Teng, 1996; Doz, 1988; Ring and Van de Ven, 1994), which have been found to induce micropolitical

actions (Drory and Romm, 1990; Fandt and Ferris, 1990; Papadakis et al., 1998; Tushman, 1977), an effect mainly due to increased managerial discretion (Narayanan and Fahey, 1982; Quinn, 1980). This inherent uncertainty concerning the rules and regulations that govern an alliance's actions (Anand and Khanna, 2000) leaves managers with few clues as to acceptable behaviour. Therefore, they will develop their own, potentially self-serving, rules (Kacmar and Carlson, 1997), which in turn might influence alliance-related decision making.

Another reason for the influence of politicality is the coexistence of cooperating and competing interests within a firm (Doz, 1988). Some coalitions within a firm might benefit from an alliance (e.g. by gaining additional financial resources), while others might be negatively affected. As a consequence of this unequal distribution of alliance benefits throughout the firm, various coalitions might try to influence major decisions, thus triggering the emergence of micropolitical behaviour, with consequences for decision making.

By taking this micropolitical context into consideration, we gain further insights into alliance-related decision-making processes and their influence on alliance performance. In particular, the influence of politicality, defined as acts intended to enhance or protect the self-interest of individuals or groups (Hickson et al., 1986), has several implications. First, because they may receive biased information that has been distorted or restricted by the interests of coalitions or individual managers (Cyert and March, 1963; Pettigrew, 1973), alliance managers may draw inappropriate conclusions or initiate actions that do not advance the alliance. They might misunderstand others' opinions and communicate poorly, thereby limiting their ability to form coalitions of interest and effectively collaborate with colleagues (Eisenhardt and Bourgeois, 1988). Complicated and lengthy information-gathering processes might be necessary to obtain relevant facts, which is particularly detrimental when a premium is placed on timeliness and accuracy (Devlin and Bleackley, 1988). Second, a high degree of politicality distracts decision makers' attention from their functional and alliance-related responsibilities. Attention becomes focused on interests, power bases, and positions inside the organization rather than on the opportunities and constraints associated with the alliance. Decision makers may be forced to participate in micropolitical struggles and devote a substantial share of their attention to this activity. This is especially problematic in alliances, since cross-functional teams and teams from different units within the firm are needed, and ad hoc coalitions are formed to address the day-to-day business of the alliance (Doz, 1988; Niederkoffler, 1991). And third, in the ideal, alliance-related decisions should be mainly oriented towards organizational and collective objectives, whereas politicality distorts the process due to the self-interests of certain individuals or groups. If these interests conflict with those of the organization, the alliance partner, or both, political activity makes it less likely that a decision will serve organizational and collaborative interests. Coalition formation, lobbying, or negotiation might impact managerial processes (Bourgeois and Eisenhardt, 1988), with consequences for alliance performance.

Overall, decision making with respect to alliances seems to occur in a unique context. As a result, each theoretical framework trying to capture alliance-related decision making at the firm level needs to take this unique context into account and develop sufficiently differentiated hypotheses that capture these crucial nuances.

HYPOTHESES

Building on the theoretical conceptualization of discrete stages in the rational model of decision making (e.g. Andrews, 1971; Ansoff, 1965; Lorange, 1980) and incorporating contributions of behavioural research (e.g. Cyert and March, 1963; Mintzberg et al., 1976; Quinn, 1980), we decompose alliance-related decision making into three components: the degree to which the process is receptive to new ideas (*openness*); the degree to which a systematic processing of informational inputs along the stages of analysis, generation of options, evaluation, and choice occurs (*procedural rationality*); and the degree to which the decision process cycles between these stages (*recursiveness*). This decomposition captures the iterative nature of the overall decision-making process, but also allows for an analytic ordering of subprocesses.

In addition, as alliance-related decision making is embedded in the micropolitical context of an organization and fraught with a high degree of uncertainty, we argue that this particular context heightens the importance of politicality as a contextual variable. Thus, we propose the degree of politicality as a moderator on each of these direct relationships.

Openness and Alliance Performance

Openness refers to the extent to which decision makers are receptive to new ideas, information sources, and roles (Sharfman and Dean, 1997). Although prior research on strategic decision processes in general has indicated a positive relationship between openness and a number of decision outcomes, most studies do not empirically support this notion (Ford and Gioia, 2000; Nutt, 1993; Sharfman and Dean, 1997). With regard to strategic alliances, we expect a positive relationship, mainly for two reasons.

First, the more open the decision process, the more receptive decision makers are to diverse information sources inside and outside the organization. With regard to inside information, managers at all levels often possess experience that might be valuable for alliance management, yet companies fail to tap into and leverage this knowledge (Kale et al., 2001). The more their expertise can be utilized, the more effective the decision makers and their ability to coordinate their decisions with other decision-making centres will be, which in turn will contribute to enhanced alliance performance. In a similar vein, advice and knowledge about pitfalls in alliances is available from many external sources, which might nurture the quality of decision making and translate into better decisions affecting alliance performance.

Besides the informational advantage of being receptive to internal and external contributions, opening up participation in the decision process to managers from other functional areas has been found to increase acceptance of and, subsequently, commitment to a decision (Floyd and Wooldridge, 1992; Fredrickson and Mitchell, 1984; Quinn, 1980). This, in turn, further enhances the belief among the organization's managers that this is a valuable and strong alliance relationship that is worth pursuing. For example, in the course of the alliance of Helvetia (a European insurance firm) with Raiffeisen (a European cooperative retail bank) in order to sell insurance products

through banking channels, managers of Helvetia frequently met and exchanged their views on avenues for strengthening the relationship. They searched for information at both successful and failed 'banc assurance' alliances and used this knowledge to fine-tune their collaborative activities in training bankers on insurance products, easing the flow of processing new policies, and modelling incentive schemes.

Second, since managers' previous experiences and habits that have been codified in their job descriptions may constrain their decision-making effectiveness in non-routine situations such as strategic alliances, encouraging contributions from managers above and beyond their formal job responsibilities might be beneficial to alliance-related decision making. These diverse and non-routine inputs might be particularly valuable for firms that use alliances to develop new skills or capabilities, thus enhancing alliance performance. Extending that argument, even if an alliance is developed for one specific strategic purpose, its potential value often extends beyond this initial purpose (Bleeke and Ernst, 1991; Young-Ybarra and Wiersma, 1999). Decision processes that are characterized by a high degree of openness to novel alternatives, information sources, and roles are more likely to produce innovative decisions that facilitate organizational adaptation to changing circumstances (Ford and Gioia, 2000; Sharfman and Dean, 1997). These innovative decisions, in turn, are better suited to succeed in an alliance context fraught with uncertainty and ambiguity and to enhance alliance performance. Accordingly, we propose:

Hypothesis 1: Openness in alliance-related decision making is positively associated with the performance of a firm's strategic alliances.

Procedural Rationality and Alliance Performance

Building on seminal research by the Carnegie School (March and Simon, 1958; Simon, 1955, 1964, 1978) and later empirical studies on strategic decision processes (Dean and Sharfman, 1993a, 1993b, 1996; Ford and Gioia, 2000; Priem et al., 1995), rationality is understood here as the extent to which decision makers attempt to make the best decision possible under the circumstances of incomplete information and bounded rationality, and not as the economic concept of maximizing preference (or utility) functions. *Procedural rationality*, therefore, can be defined as the extent to which the decision process involves the collection of relevant information and the reliance upon analysis of this information in making a choice (Dean and Sharfman, 1996). It is characterized by systematic and comprehensive scanning for problems and opportunities, intensive decision-making analysis, long-range planning, and formal codification of strategies (Fredrickson, 1986; Miller, 1987). Although some studies have found a negative relationship between rationality in the decision-making process and firm performance in dynamic environments (Fredrickson, 1984; Fredrickson and Iaquinto, 1989; Fredrickson and Mitchell, 1984), the majority of studies have supported a positive relationship (Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Glick et al., 1993; Goll and Rasheed, 1997; Judge and Miller, 1991; Miller and Friesen, 1983; Mueller et al., 2000; Priem et al., 1995). With regard to strategic alliances, we predict a positive relationship to alliance performance for several reasons.

First, procedural rationality helps to determine and improve the substance of alliance-related decisions, with positive implications for alliance performance. It is an important mechanism to cope with uncertainty, information asymmetry, and lack of information sharing (Eisenhardt, 1989; Langley, 1995; Miller and Friesen, 1983), all inherent properties of alliances (Borys and Jemison, 1989; Mohr and Spekman, 1994). As a result of procedural rationality, alliance managers may be better able to assess critical issues for inter-firm cooperation, such as deciding which changes in the environment of a specific alliance should be ignored as transient and which should be addressed (Glick et al., 1993), determining each partner's learning intent (Hamel, 1991), and monitoring the extent and management of intended and unintended knowledge flows (Dyer et al., 2001; Hennart, 1988; Inkpen and Dinur, 1998). This improved assessment enables managers to develop decisions to meet alliance objectives, enhance their company's competitive position, and learn from their alliance partner while mitigating the risk of unintended knowledge spillovers. In contrast to a sole reliance on intuition, therefore, a rational search for strategic alternatives may align an organization not only with its external environment, but also with the idiosyncrasies of its alliance partner, resulting in enhanced alliance performance.

Second, procedurally rational decision processes may generate a variety of options (Nutt, 2004). Alliance managers following a rational decision-making approach are more likely to obtain a comprehensive view of the available options, to recognize trade-offs among competing options, to choose an option that best meets the essential objectives of a particular collaboration, and to develop alternative or fallback options in case the chosen option proves to be infeasible or ineffective (Janis, 1989). Having simultaneous options available reduces the escalation of commitment to any one alternative and enables alliance managers to quickly shift between options when necessary (Staw, 1981). Moreover, procedural rationality may enhance creativity in the decision-making process (Ford and Gioia, 2000). It tends to be more far-reaching and unbiased by previous experiences and habits, which might be misleading in the novel context of a collaborative relationship (Spekman et al., 1996), and to generate options that vary widely from existing strategy (Jones et al., 1992). A collective and simultaneous analysis of multiple alternatives not only allows quick and intelligent responses to a changing environment, but also provides alliance managers with options for mutual gains, which is particularly important when managers from different parts of the organization do not necessarily share the same goals (Doz, 1988; Kanter, 1994). Procedural rationality, therefore, enables managers to develop options to cope with the dynamic interplay of cooperation and competition with the alliance partner and maintain a relationship that is advantageous for the organization as a whole.

Third, procedural rationality can also improve decisions indirectly by ensuring that all ideas are thoroughly debated and verified (Langley, 1995). In fact, the more strategic decision-making power is shared among those with dissimilar interests – in our case, the alliance managers throughout the firm with potentially diverging objectives – the more formal analysis enhances effective decision making. Procedural rationality can force managers to reach organizational decisions through communication, direction and control, and symbolism (Langley, 1995), even amid a lack of formal structures and

hierarchies. Based on these arguments, we hypothesize a positive effect of rationality on alliance performance:

Hypothesis 2: Procedural rationality in alliance-related decision making is positively associated with the performance of a firm's strategic alliances.

Recursiveness and Alliance Performance

Recursiveness can be defined as the tendency of decision makers to cycle between the stages of a decision process in order to re-examine key assumptions. In strategic decision processes in general, it allows managers to recalibrate their decisions as circumstances change, to reallocate resources as new opportunities arise, and to continuously refine their plans according to the feedback they receive (Evans, 1991). This ability to cycle between analysis, generation of options, evaluation, and choice should improve the flexibility of the decision process, thus preventing premature commitments to irreversible actions.

In the context of strategic alliances, however, these arguments might be only partially valid. Although it has been argued that modification, adjustment, and strategic flexibility are elements of successful partnerships (Bleeke and Ernst, 1991; Doz, 1988; Niederkofler, 1991; Young-Ybarra and Wiersma, 1999), it has also been shown that recursiveness in decision making has some serious drawbacks. In order to view alliance management as part of a firm's resource-accumulation process which needs time and consistency to develop the desired benefits (Dierickx and Cool, 1989; Kellermanns and Floyd, 2005), a minimum set of clearly defined goals and objectives is necessary (Devlin and Bleackley, 1988; Doz, 1988), preferably with objectives that are backed by irreversible resource commitments between alliance partners that foster trust building and enhanced coordination, cooperation, and learning (Doz, 1988, 1996; Ring and Van de Ven, 1994).

In contrast to annual resource allocation at the firm level, partnerships extend contractual commitments over a number of years, thus making ad hoc revisions more difficult (Doz, 1988). If one firm continuously re-examines its assumptions and readjusts its goals and objectives, not only does it prohibit consistency in resource flows and endanger the learning process, but it also becomes increasingly difficult for its alliance partner to cope with and adjust to these changes, which in turn jeopardizes effective cooperation. Supporting this line of reasoning, Farr and Fischer (1992) found that successful collaborations are shielded from the 'vagaries of capricious change' (p. 64) when the firm honours the strong commitments made to its partners. With unsuccessful projects, on the other hand, the altering of goals and requirements to reflect environmental changes creates considerable confusion and might impede the achievement of alliance objectives. In the context of strategic alliances, therefore, the benefits arising from consensus, consistency, and reliability may outweigh the advantages of increased recursiveness. We therefore propose:

Hypothesis 3: Recursiveness in alliance-related decision making is negatively associated with the performance of a firm's strategic alliances.

Politicality as a Key Moderator

By incorporating the micropolitical context as a moderating variable, we not only capture crucial particularities of alliance-related decision making that otherwise would be neglected, but we also hope to untangle potentially ambiguous relationships between decision-making characteristics and alliance performance. In particular, we expect politicality to negatively moderate the effects of openness, rationality, and recursiveness on alliance performance.

With regard to openness, decision processes that utilize available knowledge fully are assumed to be highly beneficial (Amason, 1996). Once political behaviour develops and coalition building occurs, however, the positive effects of openness are diminished (Bourgeois and Eisenhardt, 1988). In a highly political context, openness to new ideas, information sources, and roles makes the decision process vulnerable to a wide variety of influence attempts that support individual or self-serving goals (Dean and Sharfman, 1993b; Fandt and Ferris, 1990). More specifically, the lack of a systematic structure inherent in alliances (Gulati and Singh, 1998) allows outside 'shadow' decision makers to misuse an open participation in alliance-related decision making for the pursuit of individual agendas (Doz, 1996). Rather than providing the firm with access to and open discussion of information, such political behaviour is incongruent with organizational and collaborative goals and may create an atmosphere of distrust (Pillemer and Racioppo, 2003) that threatens the success of the alliance and diminishes alliance performance. We therefore propose:

Hypothesis 4a: Politicality moderates the relationship between openness and the performance of a firm's strategic alliances. Specifically, politicality diminishes the positive effects of openness on the performance of a firm's strategic alliances.

With regard to procedural rationality, we start from the notion that managers weigh the costs and benefits of exerting political influence in strategic decisions (Schilit and Paine, 1987). Thus, there are rational elements interwoven in the decision-making process subject to political activity. Because politicality is an expression of fundamental differences in self-interest among alliance managers (Doz, 1988; Kanter, 1994), managers may act rationally individually, but not collectively (Eisenhardt and Zbaracki, 1992). The diverse criteria used by managers representing different constituencies may rule out alternatives that might be valuable under less contentious circumstances (Ford and Gioia, 2000). Moreover, promising strategic alternatives or potentially valuable fallback options may be eliminated because of the anticipated opposition of a powerful individual or group. Finally, politicality can create rigid barriers to communication, thereby further constraining the range of possible alternatives (Eisenhardt and Bourgeois, 1988).

Aggravating this negative influence of conflicting interests on alliance-related decision making is the fact that alliance managers who are already committed to a particular decision may use formal analysis solely to convince other decision makers of the correctness of their position (Dean and Sharfman, 1993b; Fandt and Ferris, 1990; Mueller et al., 2000; Pearce, 2001). As a result of these micropolitical tactics, even those alliance managers that strive for rationality in their decision-making processes might experience

suboptimal decision outcomes resulting from inadequate or incorrect information (Dean and Sharfman, 1996). In other words, the positive impact of rationality on alliance performance depends on the reliability of information; however, the collection, evaluation, and utilization of such data are highly problematic from a political perspective. The implicit assumption of the economic concept of rationality (i.e. that decision content can be detached from its organizational context) may not reflect organizational reality when high levels of politicality exist (Narayanan and Fahey, 1982). As a result, decision-making processes characterized by individual political interests, preferences, and influences diminish the positive influence of rationality on arriving at high-quality solutions and, subsequently, effective alliance performance. Thus:

Hypothesis 4b: Politicality moderates the relationship between procedural rationality and the performance of a firm's strategic alliances. Specifically, politicality diminishes the positive effects of procedural rationality on the performance of a firm's strategic alliances.

A high degree of recursiveness, as mentioned previously, is likely to have a negative impact on alliance performance. This effect might be exacerbated when a recalibration of previous decisions is based on distorted, restricted, or otherwise biased information, which is typical in highly political decision contexts (Cyert and March, 1963; Pettigrew, 1973). Here, both ongoing reinterpretation of decisions' underlying assumptions and multiple opportunities to reconsider resource allocations not only interfere with consistency in resource accumulation and the development of irreversible commitments, but also invite political influence attempts in the pursuit of individual agendas (Mintzberg, 1985; Nutt, 1993; Pfeffer and Salancik, 1974), with detrimental effects for decision outcomes and alliance performance. More parties are likely to be involved or to actively influence the decision process. The more often key assumptions are reassessed, the worse this effect could become. Thus:

Hypothesis 4c: Politicality moderates the relationship between recursiveness and the performance of a firm's strategic alliances. Specifically, politicality enhances the negative effects of recursiveness on the performance of a firm's strategic alliances.

METHODOLOGY

Data and Sampling Procedure

We obtained our initial sample of strategic alliances from the Securities Data Company's (SDC) Platinum Database, which collects data from publicly available sources, including SEC filings and their international counterparts, trade publications, and news and wire sources. Although this database clearly does not track all alliance deals entered into by companies over the 1995–2002 sample period, it is a sensible starting point for empirical analysis, since it is among the most comprehensive sources of such information (Anand and Khanna, 2000).

We focused on high-technology industries, which are characterized by high degrees of uncertainty, substantial operating risks, high entry costs, and rapidly changing

technologies (Evans, 1991). In such environments, profitability critically depends on firms' abilities to create and commercialize new technologies quickly and efficiently (Oxley and Sampson, 2004). Thus, inter-firm collaborations in these industries are generally considered an important element of firm strategy (Culpan and Costelac, 1993) and the main mechanism for accessing and acquiring external innovative capabilities (Grant and Baden-Fuller, 2004; Hagedoorn and Duysters, 2002b). Indeed, companies in this sector prefer alliances to other means of integrating external sources of innovation, such as mergers and acquisitions (Hagedoorn and Duysters, 2002a). Moreover, previous research has provided evidence for a moderating influence of industry dynamism on the relationship between decision-making process characteristics and outcome variables (e.g. Bourgeois and Eisenhardt, 1988; Goll and Rasheed, 1997; Hough and White, 2003; Judge and Miller, 1991). By focusing on high-technology industries, which are inherently dynamic, we implicitly control for industry dynamism.

In particular, we employed SDC Platinum's characterization of high-technology industries, including, among others, computers (SIC Codes 357 and 737), telecommunications (366), pharmaceuticals and chemicals (283, 284, 286, 289), and related services (874), all previously identified as high-technology (Hagedoorn, 1993; Hagedoorn and Duysters, 2002a; Kale et al., 2002). In line with other researchers (e.g. Saxton, 1997), focusing on *dyadic* alliances (i.e. two partners) allowed us to more easily capture and measure key strategic variables. For reasons of data access, we restricted our sample to alliances with at least one partner located in either Germany, Austria, or Switzerland. After having cleaned our data set of firms no longer in business, our final data set contained 530 organizations.

To ensure a high quality of responses, we relied on the key informant method (Kumar et al., 1993; Seidler, 1974). Given the complex context of strategic alliances and the need to access information on an aggregate organizational level of analysis, we chose our informants based on their in-depth knowledge of their firms' collaborative agreements and their impact on the overall organization. After directly contacting each company and confirming its involvement in the reported alliance, we then asked them to identify an upper-echelon executive familiar with the alliance-related activities of the firm in general and with the specific alliance under examination in particular. These potential key informants were then contacted via phone, email, or both and asked to fill out the questionnaire only if they had directly been involved in the management of the alliance (Kumar et al., 1993). In the introductory comments of our survey, we asked these executives to relate their responses only to this specific alliance of their organizations (Tsang, 2002). We shortly stated the purpose of our study, explained the main construct of alliance-related decision making, and gave some illustrations (e.g. 'decisions of your firm about alliance governance mechanisms'). Our subsequent questions explicitly referred to the context of 'alliance-related decisions' (see Table I) to empirically ground their answers in the context of this alliance.

Two follow-up emails resulted in usable data from 106 organizations. This 20.0 per cent response rate was satisfactory, given the seniority of our key informants as well as the heavy surveying activity in the targeted industries. It also corresponds to other studies of strategic alliances (e.g. Tsang, 2002) and to recent process-related studies (e.g. Ray et al., 2004).

The average participating company employed 3,061 people, and the average age of participating companies was 21 years. Our informants' average age was 42 years; 18 per cent were female. We included a question about the informants' position both in their respective firm and in the alliance into our questionnaire to guarantee that the informant had been actively involved and could provide an adequate assessment of the alliance. Of those executives that provided this information, a large majority held senior positions within the alliance they were asked to assess, such as board member (21 per cent), CEO (9 per cent), managing director (34 per cent), or VP (28 per cent). Most important, besides having a senior position in – and therefore in-depth knowledge of – the alliance in question, our informants held senior positions in their respective firms: CEO (10.8 per cent), CFO/COO (4.1 per cent), president (6.8 per cent), VP (6.8 per cent), managing director (13.5 per cent), and department head (18.9 per cent). Because our informants were familiar with their firm's corporate strategy and the overall impact of the alliance, we expected them to be able to provide high-quality and reliable assessments (Eisenhardt and Schoonhoven, 1996).

Measures

Independent variables. Where available, we used established measurement instruments to operationalize our theoretical constructs, with slight modifications to reflect the specific context of our study. We adopted our measures of procedural rationality and politicality from Dean and Sharfman (1996) and our measures for openness and recursiveness from Sharfman and Dean (1997). All independent variables were measured on five-point Likert scales. For a detailed description of the measurement items for our independent variables, see Table I.

Dependent variable. Using a seven-point Likert scale, we based our subjective alliance–performance measure on Dyer et al. (2001), Kale et al. (2001), and Krishnan et al. (2006), which is described in detail in Table I. The construct is comprised of multiple dimensions such as the extent to which a partner believes that this is a strong and harmonious relationship; that the primary objectives for the alliance have been fulfilled; and that the company has succeeded in gaining an enhanced competitive position or new capabilities. We are confident that this self-reported performance measure adequately operationalized our dependent variable, since Geringer and Hebert (1991) and Kale et al. (2001) demonstrated a high correlation between subjective assessments of performance and more objective performance measures, such as those based on accounting data and abnormal stock market gains. Moreover, subjective performance assessments tend to be stable across alliance organizational modes, such as equity joint venture or contractual (Glaister and Buckley, 1998), and have been frequently used in the strategy process and the alliance literature (e.g. Child and Yan, 2003; Dess and Priem, 1995).

Control variables. Of these four variables, one was alliance-specific and one was decision-process related. The first, *firm size*, affects interorganizational collaboration (Hagedoorn and Schakenraad, 1994; Simonin, 1997). Large firms likely have more resources, which enhances the probability of alliance success. They are also more likely to have greater

Table I. List of measurement items

<i>Variable</i>	<i>Items</i>	<i>Scale</i>	<i>Source</i>
<i>Openness</i> (5-point Likert-type scale)	<ul style="list-style-type: none"> • How often did you rely on <i>new sources of information</i> in making alliance-related decisions? • How often were novel or original ideas <i>presented</i> during alliance-related discussions? • To what extent were these novel or original ideas <i>seriously considered</i>? • To what degree were people able to <i>contribute</i> to the alliance-related decision in ways that did not strictly match their job description or level of authority? • How <i>extensively</i> did you <i>look for information</i> in making alliance-related decisions? • How <i>extensively</i> did you <i>analyse</i> the relevant information before making an alliance-related decision? • How important were <i>quantitative analytic techniques</i> (such as net present value or discounted cash flow analysis, etc) in making alliance-related decisions? • In general, how <i>effective</i> were you at <i>focusing your attention</i> on crucial alliance-related information and ignoring irrelevant information? • How would you <i>describe the decision processes</i> that had most influence on alliance-related decisions? • To what extent did you <i>reconsider any choices</i> made during decision-making processes? • How often did individuals <i>change their minds</i> during decision-making processes? • In alliance-related decisions, were people primarily concerned with <i>their own goals</i> or with the <i>goals of their organizations</i>? 	1 = not at all, 5 = very often/ a great deal	(Sharfman and Dean, 1997)
<i>Procedural rationality</i> (5-point Likert-type scale)	<ul style="list-style-type: none"> • To what extent were people <i>open with each other</i> about their interests and preferences in alliance-related decisions? • This <i>alliance</i> is characterized by a strong and harmonious <i>relationship</i> between the alliance partners. • Our <i>company</i> has achieved its primary <i>objective(s)</i> in forming this alliance. • Our <i>company's competitive position</i> has been greatly enhanced due to this alliance. • Our <i>company</i> has been successful in <i>learning some critical skill(s)</i> or capabilities from its alliance partner. • Please give an <i>overall assessment of this alliance</i>, based on all the above dimensions. 	1 = not at all, 5 = extensively/highly	(Dean and Sharfman, 1996)
<i>Recursiveness</i> (5-point Likert-type scale)	<ul style="list-style-type: none"> • How often did individuals <i>change their minds</i> during decision-making processes? • In alliance-related decisions, were people primarily concerned with <i>their own goals</i> or with the <i>goals of their organizations</i>? 	1 = mostly intuitive, 5 = mostly analytical	(Sharfman and Dean, 1997)
<i>Politicality</i> (5-point Likert-type scale)	<ul style="list-style-type: none"> • To what extent were people <i>open with each other</i> about their interests and preferences in alliance-related decisions? • This <i>alliance</i> is characterized by a strong and harmonious <i>relationship</i> between the alliance partners. • Our <i>company</i> has achieved its primary <i>objective(s)</i> in forming this alliance. • Our <i>company's competitive position</i> has been greatly enhanced due to this alliance. • Our <i>company</i> has been successful in <i>learning some critical skill(s)</i> or capabilities from its alliance partner. • Please give an <i>overall assessment of this alliance</i>, based on all the above dimensions. 	1 = own goals completely, 5 = organizational goals completely (reverse-scaled in analysis)	(Dean and Sharfman, 1996)
<i>Alliance performance</i> (7-point Likert-type scale)	<ul style="list-style-type: none"> • To what extent were people <i>open with each other</i> about their interests and preferences in alliance-related decisions? • This <i>alliance</i> is characterized by a strong and harmonious <i>relationship</i> between the alliance partners. • Our <i>company</i> has achieved its primary <i>objective(s)</i> in forming this alliance. • Our <i>company's competitive position</i> has been greatly enhanced due to this alliance. • Our <i>company</i> has been successful in <i>learning some critical skill(s)</i> or capabilities from its alliance partner. • Please give an <i>overall assessment of this alliance</i>, based on all the above dimensions. 	1 = not at all, 5 = completely (reverse-scaled in analysis) 1 = strongly disagree, 7 = strongly agree	(Kale et al., 2002)
	<ul style="list-style-type: none"> • Please give an <i>overall assessment of this alliance</i>, based on all the above dimensions. 	1 = unsatisfactory/failure, 7 = satisfactory/success	

alliance experience because of additional opportunities to engage in alliances, which in turn affects the success rate (Kale et al., 2002). Firm size was measured as the logarithm of the number of employees. We obtained this data from Compustat, Compact Disclosure, and Hoovers and validated it with companies' annual reports.

With respect to alliance performance, although older firms may have an experience advantage, younger firms may have a higher capacity to absorb new knowledge (Autio et al., 2000). Therefore, following others (Autio et al., 2000; George et al., 2001; McEvily and Zaheer, 1999; Powell et al., 1996; Stuart, 1998; Yli-Renko et al., 2001), we included the logarithm of *firm age* as our second control variable.

Whereas weak firms may seek alliances to improve their performance, strong performers may enter into a partnership to leverage some of their successes (Gulati, 1995). Because this may significantly influence the assessment of alliance performance, we included *past firm performance* in our analysis. Specifically, respondents rated their firm's performance compared to similar firms on sales growth, after-tax return on sales and total assets, and overall performance or success (Dess and Robinson, 1984), which is generally highly correlated with objective measures of firm performance (Dess and Robinson, 1984; Robinson and Pearce, 1988; Venkatraman and Ramanujam, 1987).

Firm-level slack, our fourth control variable, is 'that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment' (Bourgeois, 1981, p. 30). Respondents were asked, 'How difficult would it currently be to get approval for a medium-sized capital project related to the alliance that is worth doing?' (1 = very difficult, 5 = not at all difficult), and 'Businesses often go through cycles in the availability of money. Sometimes it is very tight, and other times very loose. How would you describe your current situation related to the alliance?' (1 = very tight, 5 = very loose) (based on Sharfman and Dean, 1997).

Longer *alliance duration* could be associated with greater collaborative benefits acquired from the alliance partner or could increase the likelihood of one partner losing proprietary assets to the other (Kale et al., 2000). Therefore, we included alliance duration as a control variable, measured as the logarithm of the number of years from alliance formation until dissolution or until the year of the study.

Lastly, we included the *pace of the decision process* as a control variable. The longer the process for each decision, the more open the decision process becomes to new information and the participation of managers, as well as increasing managers' ability to re-examine key assumptions and cycle back and forth between the formulation and the implementation stages. The pace of the decision process was conceptualized based on three items by Wally and Baum (1994) and measured on a five-item scale (1 = strongly disagree, 5 = strongly agree). Respondents were asked, 'When we see a business opportunity related to the alliance, we can move faster than our competitors'; 'In the context of this alliance, our competitors consider us fast in responding to their actions'; and 'From start to finish, we respond faster than our competitors to alliance-related problems'.

To test for robustness, we examined whether a firm's particular industry within the high-technology industry sample (indicated by its three-digit SIC Code) or its alliance

type (i.e. joint venture or contractual) affected our analyses. We found that when we added industry dummy and joint venture dummy variables to our regression analysis (only partial data was available for this control step due to the reporting structure of the SDC Platinum database), the observed directionality and significance of the relationships was not affected. Due to these results, we excluded these control variables from subsequent regressions reported here.

Examination of Potential Biases

To address common method bias and consistency artefacts that could lead to an overstatement of the statistical relationship among our variables, questionnaire items were arranged so that the dependent variable followed, rather than preceded, the independent variables (Salancik and Pfeffer, 1977). Similar to other studies on strategic alliances (e.g. Simonin, 1997; Tsang, 2002; Zollo et al., 2002), we used Harman's (1967) single-factor test for common method bias, which showed that no single method factor emerged in the unrotated factor analysis that explained the majority of variance. Moreover, the alliance performance measure (dependent variable) loaded on one factor, the independent and control variables on other factors. To confirm these results, we partialled out potential method effects via structural equation modelling (Podsakoff et al., 2003). We followed Widaman (1985) and Williams et al. (1989), who state that if the fit does not significantly improve after adding a method factor to a measurement model with latent constructs (oblique), then no common-method bias effects exist. To achieve an admissible solution, we imposed four equality constraints on error terms. The overall first statistics for the factor model-oblique were $\chi^2(240) = 361.45$, $p = 0.00$, CFI = 0.92; for the factor model-oblique that adds an additional method factor, $\chi^2(216) = 317.15$, $p = 0.00$, CFI = 0.932. Although both χ^2 statistics were significant, the fit did not considerably improve between the two models (increase in rho = 0.006), which indicates that the common-method effects are insignificant (Bentler and Bonned, 1980).

We also took several precautions against single-respondent bias. We assured respondents complete anonymity in order to decrease the tendency to provide socially desirable answers and we reduced item ambiguity by carefully avoiding vague concepts. Also, we presented the survey to managers of an executive MBA programme who made suggestions regarding proper wording. Further, because incomplete recall and retrospective rationalization of past events may confound survey results (Golden, 1992), we took steps to ensure that our respondents had been actively involved in the respective alliance-related decision-making processes.^[1] With respect to survey design, the items that constituted a specific construct were separated from the others to limit consistency bias and to reduce repetitiveness. Additionally, some measures were composed of reverse-coded items. Lastly, the complex data relationships created by our predicted moderation effects cannot easily be explained by the common method (Brockner et al., 1997), because respondents were unlikely to guess our hypotheses or to respond in a socially desirable manner that would lead to spurious findings.

Although there is no generally accepted minimum percentage for response rates, non-response bias is always a concern. Because the opinions of late respondents are assumed to be somewhat representative of the opinions of non-respondents, we followed

Armstrong and Overton (1977) and formed two groups to test for non-response bias. A *t*-test between early and late responding groups showed no significant differences at the 0.05 level, thus indicating that the two groups did not differ significantly in their assessments.

To address potential multicollinearity between main effects and interaction terms, we centred the variables prior to calculating the interaction analyses by subtracting the mean of the scores for each predictor from each individual score for that predictor (Cronbach, 1987). To detect possible multicollinearity, we not only investigated the correlation between the variables (see Table II), but also calculated the variance inflation factors (all < 2.959) and condition indices (all < 19.266) for our regression model. These indices were below the suggested warning level; thus, multicollinearity was not a concern (Hair et al., 1998).

To test for robustness, we examined whether a firm's particular industry within the high-technology industry sample (indicated by its three-digit SIC Code) or its alliance type (i.e. joint venture or contractual) affected our analyses. The industry dummy and joint venture dummy variables that we added to our regression analysis (only partial data was available for this control step due to the reporting structure of the SDC Platinum database) did not affect the observed directionality and significance of the relationships.

RESULTS

All our independent, dependent, and control variables had high inter-item reliabilities (see Table II); all but politicality (0.68) had alphas above 0.75. Descriptive statistics are displayed in Table II and regression results in Table III. We tested our hypothesized relationships by using a hierarchical regression analysis and entering variables in four steps. Model 1 shows the estimates for control variables and their influence on alliance performance. Alliance duration was significantly and positively related to alliance performance ($\beta = 0.312$, $p < 0.01$), which supports the argument that the longer the alliance, the greater the collaborative benefits (Kale et al., 2000). Moreover, the pace of the decision process positively influenced alliance performance and was only marginally significant ($\beta = 0.180$, $p < 0.10$). This is in line with previous studies that found a positive effect of the pace of the decision process on performance outcomes (e.g. Baum and Wally, 2003; Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Judge and Miller, 1991).

Model 2's independent and control variables together explain 39.7 per cent of the variance of the dependent variable. In Model 3, we added the moderator, while we tested the interaction effects in Models 4, 5, and 6 independently, as common in smaller sample sizes (McGrath, 2001).

As indicated in Model 2, the proposed positive relationship between openness and alliance performance, although pointing in the right direction, was not significant ($\beta = 0.094$, n.s.); therefore, Hypothesis 1 was not supported. Because the relationship between procedural rationality and alliance performance was positive but not significant ($\beta = 0.146$, n.s.), Hypothesis 2 was also not supported. In contrast, the relationship between recursiveness and alliance performance was negative and highly significant ($\beta = -0.623$, $p < 0.001$); therefore, Hypothesis 3 received strong support. Although we

Table II. Descriptive statistics and correlation matrix

<i>Variable</i>	<i>Mean</i>	<i>s.d.</i>	<i>Alpha</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1. Firm size (log)	6.02	2.40											
2. Firm age (log)	2.51	1.08		0.472**									
3. Past firm performance	16.67	3.67	0.88	-0.182	-0.014								
4. Firm-level slack	5.51	2.16	0.81	0.076	-0.023	0.075							
5. Alliance duration (log)	0.90	0.44	0.001	0.001	0.084	0.066	0.041						
6. Pace of the decision process	11.32	3.13	0.89	-0.030	0.019	0.044	-0.001	-0.046					
7. Openness	13.57	4.04	0.88	0.072	0.105	0.087	0.099	0.071	0.438**				
8. Procedural rationality	17.30	5.71	0.93	0.186	0.071	-0.119	-0.014	-0.122	0.338**	0.366**			
9. Recursiveness	6.01	2.15	0.76	0.158	0.127	-0.014	0.025	-0.179	0.201*	0.690**	0.383**		
10. Politicality	5.05	1.76	0.68	0.048	0.000	-0.265**	-0.017	-0.073	-0.285**	-0.239*	-0.189	-0.058	
11. Alliance performance	23.43	7.70	0.91	-0.052	-0.111	0.010	0.026	0.292**	0.162	-0.181	-0.008	-0.500**	-0.227*

Notes: N = 106; ** p < 0.01; * p < 0.05 (2-tailed).

Table III. Results of hierarchical regression analysis^a

<i>Independent variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>
Step 1: Control variables						
Firm size (log)	0.020	0.066	0.068	0.033	0.019	0.030
Firm age (log)	-0.150	-0.104	-0.102	-0.074	-0.057	-0.080
Past firm performance	-0.017	-0.003	-0.048	-0.020	-0.031	-0.031
Firm-level slack	0.010	0.019	0.022	0.082	0.037	0.066
Alliance duration (log)	0.313**	0.209*	0.201*	0.235**	0.208*	0.222**
Pace of decision process	0.180 [†]	0.211*	0.181 [†]	0.271**	0.182*	0.268**
Step 2: Main effects						
Openness		0.094	0.061	-0.047	0.064	-0.003
Procedural rationality		0.146	0.118	0.162 [†]	0.158 [†]	0.137
Recursiveness		-0.623***	-0.597***	-0.516***	-0.582***	-0.549***
Step 3: Moderator						
Politicality			-0.175*	-0.203*	-0.208*	-0.232**
Step 4: Interaction effects						
Politicality × openness				-0.246**		
Politicality × proced. rationality					-0.187*	
Politicality × recursiveness						-0.237**
ΔR^2		0.261	0.025	0.043	0.028	0.040
ΔF		13.876***	4.080*	7.537**	4.739*	6.921**
R^2	0.136	0.397	0.422	0.465	0.450	0.462
F	2.600*	7.035***	6.943***	7.431***	6.991***	7.334***

Notes. ^a N = 106. All standardized regression coefficients are from the final step in the hierarchical regression.

*** p < 0.001; ** p < 0.01; * p < 0.05; [†] p < 0.10.

had no formal hypothesis for a direct effect, our results show a negative and significant relationship ($\beta = -0.175$, $p < 0.05$) between politicality and alliance performance (Model 3).

Concerning the interaction effects of politicality (Models 4, 5, and 6), significant interaction terms exist for all three decision-making characteristics: openness ($\beta = -0.246$, $p < 0.01$), procedural rationality ($\beta = -0.187$, $p < 0.05$), and recursiveness ($\beta = -0.237$, $p < 0.01$) were all significant and negative. In order to interpret these results, we graphically plotted the interactions (see Figure 1) and performed *t*-tests on simple slope regressions, as recommended by Aiken and West (1991). Our decision characteristics (openness, procedural rationality, and recursiveness) and the moderator (politicality) took the values of one standard deviation below ('low') and one above ('high') the mean. The positive relationship between openness and alliance performance for low levels of politicality and the negative relationship for high levels of politicality support Hypothesis 4a. Although our results also indicate a positive relationship between procedural rationality and alliance performance for both high and low levels of politicality, the stronger relationship at a low level (as indicated by the steeper upward slope) supports Hypothesis 4b. Finally, the negative relationship between decision-making recursiveness and alliance performance at both high and low

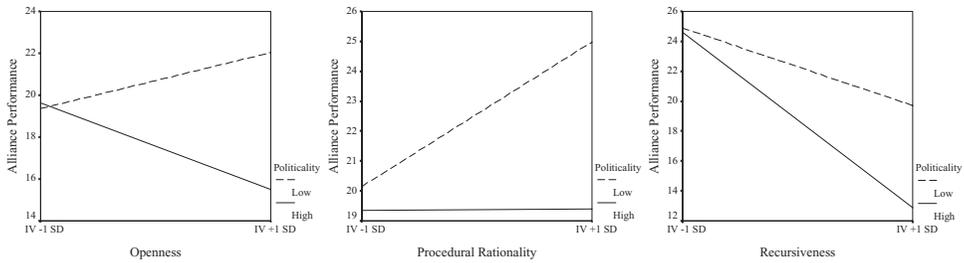


Figure 1. Interaction between decision-making characteristics and politicality on alliance performance

levels of politicality is stronger at a high level (as indicated by the steeper downward slope), thus supporting Hypothesis 4c.

DISCUSSION AND IMPLICATIONS

Our examination of the relationship between decision-making characteristics and alliance performance extends previous research in two ways. First, based on the rational and behavioural model of strategy making (e.g. Andrews, 1971; Ansoff, 1965; Cyert and March, 1963; Lorange, 1980; Mintzberg et al., 1976; Quinn, 1980), we conceptualized alliance-related decision making at the firm level in terms of three stages – openness, procedural rationality, and recursiveness – and focused on how alliance-related decisions are made at the firm level and how they influence alliance performance. Our findings generally support the argument that the unique context of inter-firm collaboration, with its high degree of (relational) uncertainty, interdependence between alliance partners, and vulnerability to political influence attempts, needs specific organizational decision-making procedures that are open to new ideas and follow a rational and analytic approach, but avoid iterative cycles across decision stages. These results are consistent with information-processing theory, which argues that the fit between an organization's information-processing requirements and its information-processing capacity ultimately determines organizational performance (Galbraith, 1973; Tushman and Nadler, 1978).

Openness was not significantly related to alliance performance, possibly because of its context- and, particularly, time-specific benefits. Following findings in the decision making and consensus literature, premature consensus and groupthink should be avoided (e.g. Janis, 1982; Kellermanns et al., 2005; Park, 2000) and openness to new ideas should be highly beneficial. Later in the commitments and execution stage (Ring and Van de Ven, 1994), however, excessively focusing on new ideas and deviating from predetermined alliance goals may be a distraction and create perceptions of uncertainty or moral hazard, since the alliance partners would constantly be exploring new options rather than fulfilling their promises. Openness in the negotiations (Ring and Van de Ven, 1994) or the re-evaluation stage (Doz, 1996), however, might be more beneficial to alliance performance by increasing the upside variance of the collaborative relationship.

Moreover, a decision-making process characterized by procedural rationality that considers a variety of information sources before reaching a conclusion makes intuitive

sense. Recent studies, however, also suggest limitations. Ford and Gioia (2000) did not find a significant relationship between rationality and creativity, and Hough and White (2003) did not show that rationality was positively related to decision quality. Our findings of the lack of impact of rationality on alliance performance suggest that the benefits of rationality seem to be contingent on other factors; namely, how the gathered information is further processed (e.g. through constructive confrontation) (Burgelman, 2002).

We also found that recursiveness was negatively associated with alliance performance, which, although contrary to previous research on both firm-level processes (Ford and Gioia, 2000; Nutt, 1993; Sharfman and Dean, 1997) and strategic alliances (Bleeke and Ernst, 1991; Doz, 1988; Niederkofler, 1991; Young-Ybarra and Wiersma, 1999), is consistent with our hypothesis for this specific context. Our findings seem to suggest that whereas *ex post* flexibility on behalf of both partners (i.e. adjustments undertaken jointly after a triggering episode in the internal or external environment has occurred) might be positive, the decision-making process clearly suffers from *ex ante* flexibility of one alliance partner (Evans, 1991), since that runs counter to the necessity for agreed-upon goals and objectives (Devlin and Bleackley, 1988; Doz, 1988) and the irreversible commitment of resources to the alliance (Doz, 1996; Ring and Van de Ven, 1994). In terms of alliance management, therefore, a high degree of recursiveness might hinder the managerial consensus that is required for a common understanding and commitment aimed at implementing crucial alliance-related decisions. In essence, alliance managers do not seem to consider recursiveness as a potential opportunity for creativity and adaptation (Ford and Gioia, 2000), but as indecisiveness.

We also considered the micropolitical context within an organization and explored its moderating effects on our process characteristics. In this respect, our findings support our argument that politicality is a key influence factor in alliance-related decision making. The negative influence of politicality seems to outweigh the advantages for effective change and adaptation (Pfeffer, 1992; Quinn, 1980). Whereas Mintzberg (1985, p. 148) argues that politicality is imperative to 'correct certain deficiencies and dysfunctions in other, legitimate, systems of influence – to provide for certain forms of flexibility that these others deny', alliance-related decision making seems to be too vulnerable to politically motivated disruptions to benefit from this added flexibility.

In addition to the direct effect, we observed three significant interactions. The interaction between politicality and openness suggests that if ideas are considered solely on their merits (i.e. low politicality), then openness has a positive impact. If openness falls victim to political agendas (i.e. high politicality), however, the resulting inconsistencies and goal conflicts diminish alliance performance. Additionally, procedural rationality positively influenced decision contexts characterized by low politicality, but had an adverse effect in high-politicality contexts, suggesting that politicality inhibits the benefits of procedural rationality. Even if an organization is virtually a completely political arena (Mintzberg, 1985), adherence to rational decision-making practices can ensure at least minimum performance standards by creating instrumental knowledge about the value of alternatives, which helps to manage decisions imbued in politics. Such carefully constructed arguments about the merits of alternatives have been found to successfully inhibit political power struggles (Nutt, 1998). And lastly, given that recursiveness negatively impacts

alliance performance, it is not surprising that the observed moderation effect of politicality on this relationship is also negative, thus supporting our hypothesis. Hence, while recursiveness prevents a coherent pattern of actions and decisions (Kellermanns and Floyd, 2005; Mintzberg, 1978), political behaviour might lead to revisiting decisions for personal gain, thereby amplifying the negative impact on alliance performance.

By applying a political perspective, we not only corroborate the notion that politicality is particularly prevalent in strategic alliances and significantly impacts alliance performance, but also shed light on the complex and subtle influence of politicality on various other characteristics of the decision-making process. Although studies on inter-firm collaborations usually assume conflicting interests between partners (Hamel, 1991; Khanna et al., 1998; Killing, 1988), our findings enable us to empirically support previous claims of the existence of diverging interests and the resulting micropolitical behaviour *within* each partner's organization (Doz, 1988; Kanter, 1994).

Further, our study contributes to the emerging study of alliance capabilities (Draulans et al., 2003; Heimeriks and Duysters, 2007; Kale et al., 2002). Our analysis of the processes that successful alliance management entails complements the more prevalent, content-driven research (e.g. Gulati and Singh, 1998; Silverman and Baum, 2002) and provides empirical support for the importance of decision making as part of a firm's alliancing skills. The management of intangible, socially complex, and causally ambiguous decision processes, which requires intricate coordination between managers and resources (both internal and external), is difficult to comprehend and imitate; therefore, it is likely to provide a competitive advantage (Hart and Banbury, 1994; Ray et al., 2004). At Roche, one of the leading global pharmaceutical firms, the importance of decision making is strongly reflected in their alliance activities, as the following statement illustrates: 'At Roche, we take alliance management very seriously. We believe no other pharma company has elevated the role of alliance management to the senior level that we have and integrated it into every level of decision making. Our partners know that. That's why 13 have recently signed further deals to extend existing collaborations into strategic partnerships' (Roche, 2007).

Finally, by developing a model of alliance-related decision making, we believe that our study also has implications for the behavioural theory of the firm (Bromiley, 2005; Cyert and March, 1963). Although behavioural theory states that search behaviour is expected to be conducted 'locally' until a satisfactory solution can be found, our results show that this tendency of firms needs to be countered to generate more positive effects. Future research might examine how firms can prevent this tendency for minimalist search. Further, our results suggest that decision-making processes in alliances are dependent on the bargaining process by which the composition and general terms of the dominant coalition are fixed. However, our results also indicate that firms characterized by a high degree of politicality caused, for example, by the existence of various competing coalitions, experience negative alliance performance. While some degree of 'politics' always has to be expected, a line can be crossed, where internal conflicts damage the relationship to the alliance partner and, subsequently, alliance performance (as in the case of Ciba-Geigy and Alza). This downside of micropolitical struggles in the absence of a 'winning coalition' and its consequences for the setting of goals is, so far, an under-researched topic in the behavioural theory of the firm.

Managerial Implications

Previous research has established the paramount importance of alliance management processes for the performance of these inter-firm collaborations. For instance, Kale et al. (2001) have found alliance management to account for 23 per cent of variation in alliance success rates, vs. 5 per cent for alliance experience, and 7 per cent for alliance structure. Furthermore, decision making has been considered as central to the field of strategy because it involves those fundamental decisions which shape the course of the firm (Eisenhardt, 1999; Nutt, 2005). For alliance managers, as we have outlined above, the task of managing alliance-related decisions is even more challenging than for managers in other organizational contexts. Alliance managers must cope with a higher degree of (relational) uncertainty and ambiguity and carefully manoeuvre the dynamic interplay of cooperation and competition. They must also shape or cope with the micropolitical context in which decision-making processes are embedded. In this difficult context, our findings provide detailed managerial guidelines to successfully design alliance-related decision-making processes.

Our results indicate that, in a low-politicality decision context, managers are well advised to strive for greater openness and rationality in their alliance-related decision making. The more insightful internal and external information they can access, the better the impact on their decision performance. Although this strategy alone is insufficient to survive in high-technology environments, it is necessary to cope with the complexities of most technological and business developments. Interestingly, however, managers often limit their 'search' behaviour to their own, often relatively limited expertise with alliances and do not expose themselves to external sources of knowledge. Alliances seem to be less important for managerial agenda-setting than, for example, acquisitions, although both mechanisms are equally effective means for the growth path of an organization. As alliances are often focused on a particular issue along the value chain, executives tend to delegate details to lower-level managers and do not apply the full range of 'procedural' rationality in taking their decisions. This approach, however, is often superficial and underestimates both intended and unintended consequences of alliance relationships.

Executives should also be aware that their decisions are embedded within the overall micropolitical arena of their organizations. This requires that they not just individually evaluate their own behaviour, but instead try to change the overall firm-level decision-making process. In situations of high politicality, executives should focus less on openness, procedural rationality, and recursiveness, and more on building a micropolitical coalition that is strong enough to conduct thorough analyses, without them being sidelined by other organizational actors. In addition to more carefully pre-selecting and critically evaluating incoming new ideas and information sources based upon overall micropolitical settings, executives should put less emphasis on a systematic scanning of issues and intensive long-range planning and instead focus on the political feasibility and consequence of each decision.

And finally, in situations of high politicality, executives might deliberately cycle back and forth as a tactical move in order to reach consensus on selected issues. Experienced managers know that a premature 'flagging' of positions often may trigger

adverse coalitions and expose them to costly clarifications. Letting the process unfold and tentatively shaping its development seems to be the more promising way forward.

Based on these recommendations, we hope that our findings will inform and support practitioners in their alliance-related decision making (Bell et al., 2006) and decrease the significant gap between alliance formation and success rates.

Limitations and Future Research

Because this study is the first (to our knowledge) to empirically investigate the influence of strategic decision making on the performance of collaborative agreements, further research is needed, since our arguments and findings may be susceptible to certain theoretical and methodological boundary conditions.

First, because only a limited number of managers were directly involved with alliance-related decision making in each organization, we used the key informant method, which relies on a single respondent. Similar to other studies on strategic collaborations (e.g. Bowman and Ambrosini, 1997; Deeds and Hill, 1998; Lui and Ngo, 2005; Parkhe, 1993; Tsang, 2002; White and Lui, 2005; Young-Ybarra and Wiersma, 1999), we believe that the quality of information from our senior-level key informants is sufficiently rich for building theories that address complex organizational phenomena, despite the problems inherent in relying on single informants (Heide and John, 1990).

Although the use of subjective, self-reported performance data is increasingly acknowledged as a reasonable way to assess alliance performance (e.g. Das and Teng, 2000; Geringer and Hebert, 1991; Lane and Lubatkin, 1998; Lin and Germain, 1998; Parkhe, 1993; Saxton, 1997), an objective measure would have led to greater confidence in our results. Unfortunately, the private status of a number of companies in our sample prevented us from collecting reliable secondary performance data. Results were robust, however, when we analysed alternative subjective performance data based on the achievement of alliance objectives (Barringer and Harrison, 2000; Hatfield et al., 1998) (included in the survey but not reported here).

We studied decision-making processes pertaining solely to strategic alliances in high-technology industries. Prior research indicates a moderating influence of environmental context on the relationship between decision-making characteristics and organizational performance; that is, performance effects cannot be adequately explored without considering the industry context (e.g. Baum and Wally, 2003; Eisenhardt, 1989; Goll and Rasheed, 1997; Judge and Miller, 1991; Priem et al., 1995). Future research, therefore, might assess the generalizability of our findings to different industries and environmental contexts and, given the obvious interdependencies of alliance-related decision making, also examine strategic decision-making processes at the inter-firm level (i.e. in cooperation with the alliance partner) and their impact on alliance performance.

Due to cultural variations (Hofstede, 2001), results from our sample of European high-technology firms might not be generalizable to other countries (e.g. the United States). A recent study examining the differences in decision styles between German, Japanese, and British or US companies, however, indicates support for the hypothesis that convergence pressures – spurred by global capital markets, global competition, and

a diffusion of professional management practices – significantly attenuate such differences (Carr, 2005), thus reducing generalizability concerns.

In conclusion, our comprehensive framework combines decision-making characteristics with the micropolitical context in which they are embedded. We found that politicality overshadows all decision-making variables to a significant degree, and that firm-level decision making with regard to strategic alliances, therefore, cannot be adequately understood without explicitly considering the micropolitical context in organizations. Thus, we suggest that more research is needed on how politicality impacts other management processes in strategic alliances and networks.

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NOTES

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- [1] To avoid the selection problem associated with key informant research (Kumar et al., 1993), we not only relied on global measures of informant competency (e.g. length of an informant's tenure with the organization or hierarchical position both within the firm and within the alliance, which are reported above), but also obtained explicit verification from our key informants that they had been actively involved in the actual alliances they evaluated.

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