M@n@gement

ISSN: 1286-4892

Bo Bernhard Nielsen 2004

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M@n@gement, 7(3): 239-256.

M@n@gement, Vol. 7, No. 3, 2004, 239-256
Special Issue: Practicing Collaboration

The Role of Trust in Collaborative Relationships: A Multi-Dimensional Approach

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Although trust has been given much attention in the management literature as an explanatory factor, less research has been devoted to defining and operationalizing the role of trust, particularly in relation to interorganizational collaboration. The role of trust in collaboration is usually attributed ex post; successful alliances seem to involve trust; unsuccessful alliances do not. As such, much of the extant literature has treated trust as a residual term for the complex social-psychological processes necessary for social action to occur. Yet the relationship between trust and performance remains somewhat elusive in collaborative relationships, perhaps due to the frequent application of interpersonal types of trust to interorganizational types of collaborations. Based on a synthesis of research on trust with research on other aspects of collaboration, this paper identifies the multi-dimensional role played by trust in collaborative relationships. By distinguishing between different roles of trust pertaining to different phases of alliance evolution, and recognizing the recursive nature of collaborative trust, this paper attempts to respond to calls for research examining the evolution of trust and its impact on interorganizational collaborative relationships. The simultaneous focus on trust as an antecedent of relationship development, a moderator of these on outcome, and direct effects on relationship outcome has important implications for both research and practice alike.

INTRODUCTION

Collaboration across institutional, sectoral, and national boundaries is now an accepted strategic choice for most businesses competing in an increasingly competitive world. It seems somewhat of a paradox that in order to be an effective competitor in the modern economy a firm needs to be a trusted cooperator in some network. Research on strategic collaboration between firms has received increasing attention in the literature during the last two decades, reflecting the increasing frequency and importance of strategic alliances in business practice. Two main streams, in terms of focus, in this literature can be identified: one stream is mainly concerned with examining the underlying conditions favoring alliance formation (motivation for alliance formation and contractual, or structural, structures used in these alliances) (e.g., Contractor and Lorange, 1988); the other stream is occupied with investigating alliance outcomes and the impact of alliances on the partner firms (e.g., Doz, 1996). Contributions to both streams are based on an impressive range of theoretical perspectives including corporate, social, economical, institutional, and political (see Gray and Wood, 1991) and cover a range of collaborative relations such as public-private partnerships, industrial networks, and strategic alliances (Child and Faulkner, 1998; Genefke and McDonald, 2001).

Apart from the increasing number of journal articles, there have also been several special issues (see, for example, the 1998 *Academy of Management Review* special issue, the 2001 *Organization Studies* special issue, and the 2003 *Organization Science* special issue) and books (e.g., Gambetta, 1988; Kramer and Tyler, 1996; Lane and Bachmann, 1998) devoted to the topic of trust in and between organizations. These contributions offer a host of diverse conceptualizations and interpretations of trust in the context of both intra- and interorganizational collaboration as well as interpersonal collaboration. Some of these contributions have aimed to provide an overview of, and synthesize theories on, trust (see, for example, Kramer and Tyler, 1996; Lane and Bachmann, 1998; Rousseau, Sitkin, Burt and Camerer, 1998). Nevertheless, Child (2001: 275) concludes: «despite the value placed on it, trust remains an undertheorized, underresearched, and therefore poorly understood phenomenon». Furthermore, though several theoretical traditions have recognized the importance of trust in economic exchange, limited research exist on how trust, particularly conceptualized as a dynamic phenomenon, operates to affect the performance of interfirm exchange over time (see Lane, 1998). Consequently, while some empirical confusion still exists in terms of defining trust (see below) and sources of trust, the extant literature seems to agree that trust has a positive, albeit limited and indirect, impact on performance (cf. Rousseau *et al.,* 1998; Dirks and Ferrin, 2001).

This article attempts to respond to the call for more systematic research into the role of trust in business relations (e.g., Koza and Lewin, 1998) by shedding light on the dynamic, multi-dimensional role of trust in collaborative relationships. The article aims at achieving this through the synthesis of research on trust in interorganizational collaboration with research on other aspects of dynamic collaboration, thereby contributing to practice-oriented theory on collaboration (Gray, 1989; Osborn and Hagedoorn, 1997).

DEFINING TRUST

Despite Rousseau *et al.'s* (1998: 394) conclusion in their review of the trust literature that «[r]egardless of the underlying discipline of the authors (…) confident expectations and a willingness to be vulnerable are critical components of all definitions of trust», no single agreed-upon interpretation of trust exists in the literature (see Hosmer, 1995; Currall and Inkpen, 2002). Whereas some scholars tend to view trust in broad terms as one's belief and expectation about the likelihood of having a desirable action performed by the trustee (e.g., Sitkin and Roth, 1993), others tend to define trust in terms of one's assessment

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of others' goodwill and reliability in a risky exchange situation (e.g., Ring and Van de Ven, 1994). According to Becker (1996: 47), authors of this rational predictive account of trust (see Lewis and Weigert, 1985 for a detailed description of rational prediction) «appear to eliminate what they say they describe», thereby removing core elements of trust and reducing it to pure prediction. Other scholars distinguish between cognitive- and affect-based dimensions of trust (McAllister, 1995; Johnson, Sakano, Voss, and Takenouchi, 1998). Similar to the rational prediction perspective described above, cognitive-based trust is based on predictability, past behavior, dependability, and fairness (Rempel, Holmes, and Zanna, 1985). In contrast, affect-based trust is based on non-calculative reliance on the moral integrity, or goodwill, of others based on emotional bonds between individual and social interaction (Lewis and Weigert, 1985). Consistent with this view, Ring (1996) renamed these two types of trust into fragile and resilient trust, respectively, and related them to collaborative interorganizational relationships (CIOR's), arguing that resilient trust explains the relative stability of CIOR's (see Ring and Van de Ven [1994] for a definition of CIOR).

From an economic perspective, trust emerges as a result of a cost/benefit analysis of perceived risks versus perceived (economic) gains of interaction. The perceived positive intentions in calculus-based trust derive because of credible information regarding the intentions and/or competence of another (Barber, 1983). Such credible information about a trustee may be provided by experience (prior relationships), others (reputation), or by certification (e.g., ISO 9000). Deterrence-based trust, on the other hand, fosters trust simply because the costs (sanctions) in place for breach of trust exceeds any benefits from opportunistic behavior (Ring and Van de Ven, 1992). Consistent with transaction cost economics, asset specificity effects in the form of switching costs to parties are examples of deterrence-based trust (Williamson, 1985).

Trust is by many seen as an inherently individual-level phenomenon (e.g., Zaheer, McEvily and Perrone, 1998) and not specifying clearly how it translates from the individual to the organization—and beyond—may blur the theoretical development. It has often been argued that individuals, not organizations trust. However, individuals act within institutional and social contexts (institution-based trust), which introduce a degree of ambiguity about the multilevel and multidimentional nature of trust. For instance, within the transaction cost perspective (Williamson, 1985), organizations (macro-level) are attributed individual (micro-level) motivations and behaviors and thus committing a "cross-level fallacy" (Rousseau, 1985). This issue is addressed within relational exchange theory (e.g., Dore, 1983), where personal relations generate trust and hence discourage opportunistic behavior between firms, however, neglecting to stipulate the mechanisms by which individual level action affects exchange between complex social systems, such as organizations. Responding to this ambiguity, Zaheer *et al.* (1998) took on the ambitious task of teasing out how trust at the two levels is related. Their important study of buyer-supplier relationships in the electrical equipment manufacturing industry found some support for the relationship between trust and performance, albeit not in the way proposed. Similar to Doney and Cannon (1997) the study established that interpersonal trust and interorganizational trust are related but empirically and theoretically distinct concepts. Interestingly, however, interorganizational trust emerges as the overriding driver of exchange performance, negotiation, and conflict, whereas interpersonal trust exerts little direct influence on those outcomes. Moreover, they found that interorganizational trust is associated with lowered costs of negotiation and conflict. In contrast, interpersonal trust showed a positive association with negotiation costs, indicating that institutionalized practices and routines for dealing with a partner organization, as captured by interorganizational trust, transcend the influence of the individual boundary spanner (Zaheer *et al.,* 1998). **Table 1** shows different definitions and roles of trust in collaboration.

Table 1. The Role of Trust in Collaboration

Type of trust	Theoretical grounding	Definition	Level of analysis	Role of trust in collaboration
Cognitive-based trust or fragile trust	Rational prediction—sociology/psychology	Assessment of reliability is based on past behavior and cognitive reasoning (Lewis and Wiegert, 1985)	Interpersonal	Antecedent role as enabling condition which facilitates formation of ongoing networks (Ring, 1996; Das and Teng, 1998)
Affect-based trust or resilient trust	Emotional prediction—sociology/psychology	Non-calculative reliance on the moral integrity, or goodwill, of others based on emotional bonds between individual and social interaction (Homans, 1961; Lewis and Wiegert, 1985)	Interpersonal	Antecedent role as firms learn from each other and develop trust over time through ongoing interaction and reciprocity (Axelrod, 1984; Gulati, 1993; Ring, 1996)
Calculus-based trust	Rational choice—economics	Trust emerges when the trustor perceives that the trustee intends to perform an action that is beneficial (cost/benefit)	Interpersonal/(inter)organizational	Antecedent role as firms seek credible information regarding intentions and competence of partner. (Luhmann, 1979) Moderating and effect role as risks are continually monitored and evaluated against performance (Das and Teng, 1998)
Deterrence-based trust	Utilitarian—economics	Enables one party to believe that another will be trustworthy, because the costly sanctions in place for breach of trust exceeds any potential benefits from opportunistic behavior (Ring and Van de Ven, 1992; 1994)	(Inter)organizational	Moderating role as institutional sanctions and assets specificity effects may act as substitutes for control (Bradach and Eccles, 1989) Effect role as cost of sanctions may deter from opportunistic behavior in performance evaluation
Institution-based trust	Conditional—institutional economics and sociology	Institutional factors can act as broad supports for the critical mass of trust that sustains further risk taking and trust behavior (Zucker, 1986; Gulati, 1995; Sitkin, 1995)	(Inter)organizational/societal	Antecedent role as legal systems and reputational sanctions act as a deterrent from opportunism. (Fukuyama, 1995) Moderating role as facilitator of collaborative culture (Miles and Creed, 1995) Effect role as trust is dependent variable (Hagen and Choe, 1998)

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THE ROLE OF TRUST IN COLLABORATION

In the extant literature, trust has often been treated as either 1/a determinant or an antecedent of relationship quality (Anderson and Narus, 1990, Mohr and Nevin, 1990), 2/a feature or a moderator of relationship quality (Dwyer, Schurr, and Oh 1987), or 3/an outcome or effect of collaboration (Zucker, 1986). For instance, Anderson and Narus (1990) view trust as a determinant of the amount of cooperation and the functionality of conflict between parties. Similarly, trust is often modeled as an independent variable in studies of economic transactions, where high trust, perhaps based on previous experiences with a partner in a repeated game, tends to result in the decision to cooperate, which, in turn, can lead to access to economic gains (Axelrod, 1984). Consistent with this perspective, transaction cost economists frequently cite trust as a cause of reduced opportunism among transacting parties, resulting in lower transaction costs (Williamson, 1975).

In terms of the evolution of strategic interfim collaboration, trust, modeled as an independent, antecedent variable, seems to be consistent with early stages of alliance evolution.

In other studies, trust is viewed as a feature of relationships, in addition to power, communications, and goal compatibility (Anderson, Lodish, and Weitz, 1987). Consistent with this perception of trust as moderating the causal relationships of interpersonal behavior in organizations and social settings, often found in both micro-organizational behavior and social psychology (e.g., Mishra and Spreitzer, 1998), Das and Teng (1998) model the moderating effects of trust on control from an economic perspective, however, paying attention to all three roles of trust (cause, moderator, and effect) simultaneously. The moderating role of trust in collaboration implicitly assumes that trust develops incrementally as the parties move from one stage to another during the evolution of the relationship (Lewicki and Bunker, 1996).

A third conceptualization of trust as a dependent variable (effect) models trust as the result of, for instance, institutional arrangements (Zucker, 1986) or attributes of the other partner (Mishra, 1996). For instance, Hagen and Choe (1998) propose that a combination of institutional and societal sanctioning mechanisms is largely responsible for the trust-induced cooperation in the Japanese auto industry. Similarly, Doney, Cannon and Mullen (1998) trace the antecedent processes of trust building, posit that cultural factors, such as societal norms and values, facilitate or inhibit application of a particular process, and speculate that trustors may assign greater weight to trust developed via one cognitive process compared to another. The underlying assumption here is that trust is somehow related to collaborative performance—or indeed is a measure of performance itself. Consequently, trust modeled as the dependent variable relates to later stages in the relationship development process.

MULTI-DIMENSIONAL MANAGERIAL ISSUES OF TRUST IN COLLABORATION

Trust is path-dependent and evolves over time, depending, among other things, on the social, institutional and national context. In other words, trust exists in context and is shaped by dynamics specific to particular social settings—that is trust is socially embedded (Granovetter, 1985). Interorganizational collaboration is also path-dependent and continuously changing over time. Future-based trust is gained through agreements, made in early stages of a collaboration, in which trust serves as a substitute for formal contracts (Bradach and Eccles, 1989; Gulati, 1995). Hence, since trust is a dynamic and continuous variable, which can vary substantially both within and across relationships, as well as over time, it is conceptually important to distinguish between the role of trust at different phases of the collaborative relationship. Hence, building on Lewicki and Bunker's (1996) idea of the stagewise evolution of trust, the following discussion of the issues facing management in relation to trust in inter-organizational collaboration is organized around the phases of alliance development suggested by Child (1998) and the core dimensions of interorganizational relationships (see Parhke, 1993). **Table 2** outlines the different managerial issues pertaining to trust at different phases of alliance evolution. It should be noted, however, that these phases are only used to illustrate changing roles of trust and should not be considered

Table 2. Trust and Evolution of Alliance Relationship: Managerial Issues

	Phase		
Issue	Alliance Formation	Alliance Implementation	Alliance Evolution
Managerial issue(s)	Partner selection and initial trust building	Governance and control	Performance evaluation
Type(s) of trust	Cognitive-based trust Affect-based trust Calculus-based trust Institution-based trust	Deterrence-based trust Institution-based trust	Calculus-based trust Deterrence-based trust Institution-based trust
Role of trust	Antecedent: information seeking and uncertainty (risk) reducing Effect: transparency and embeddedness leads to more trust	Moderation: relational governance mitigating risk Mediation: indirect, intervening effect on governance choice	Mediating: indirect, intervening effect on objective and subjective performance Effect: reducing conflict and instability caused by ambiguity in formal contracts
Managerial mechanism(s)	Select partner with whom you have prior experience of collaboration, if no such partner is available, select partner with favorable reputation Transparency, flexibility, and willingness to adapt	Ensure goal congruency and design flexible contracts Develop collaborative know-how and capabilities	Specify method and terms of performance evaluation early during relationship development Allow for flexibility but reduce ambiguity clearly communicating goals and expectations
Operationalization of trust	Nature and degree of physical interaction Nature and degree of knowledge transfer Nature and degree of adaptation and flexibility	Model trust as partially moderating and/or mediating the effects of the antecedent variables on performance	Impact of interpersonal and (inter)firm trust on a combination of objective and subjective measures, assessed in the short, medium, and long-term

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absolute in any sense. As will be discussed later, careful attention to the dynamic, recursive, and often overlapping properties of trust as it relates to alliance evolution, is warranted.

TRUST AND ALLIANCE FORMATION

Trust is often treated as a precondition for successful collaboration in the literature (e.g., Lane and Bachmann, 1998; Cullen, Johnson and Sakano*,* 2000). As argued by Ring (1997), trust is an enabling condition, which facilitates the formation of ongoing networks. Others argue that a certain minimum level of interfirm trust is indispensable for any strategic alliance to be formed and to function (Das and Teng, 1998). However, the question remains as to how management builds initial trust in the alliance formation phase.

Trust improves and accelerates exchanges, as economic actors have access to more information about the predictability of other's behaviors so as to be able to identify reliable partners in the search and partner selection (formation) phase. Moreover, trust can modify partners' intentions about future exchanges when it is based on direct experiences with previous business relationships with a partner. The desire and willingness to expend resources in the development of trust and long-term relationships is closely linked to a firm's prior experiences with that partner and the extent to which positive or negative expectancies have been fulfilled (Larson, 1992). Trust earned from prior engagement serves as evidence to justify subsequent risky steps beyond the accumulated evidence (Das and Teng, 1998). That is, faced with a situation in which one can be taken advantage of, a natural response is to restrict one's transactions to those who have shown themselves to be trustworthy. This is consistent with Ariño, de la Torre and Ring (2001), who found prior experiences to be a critical determinant of future levels of relational quality. These direct experiences are likely to influence the parties' views of each other's capabilities and trustworthiness in the face of internal or external challenges (Lewicki and Bunker, 1996). It follows that if trust in business relationships initially develops on a calculative basis (Shapiro, Sheppard, and Cheraskin, 1992), as parties try to determine the nature of their interdependence, prior experience is likely to minimize uncertainty (and increase predictability), thus impacting the evolution of trust.

In lack of prior experience with a particular partner, the next logical step is to rely on the reputation of that firm, which is a direct consequence of prior relational behavior (Granovetter, 1985). According to Granovetter (1985: 490-491, emphasis in original): «The widespread preference for transacting with individuals with known reputation implies that few are actually content to rely on either generalized morality *or* institutional arrangements to guard against trouble. [Instead] social relations, rather than institutionalized arrangements or generalized morality, are mainly responsible for the production of trust in economic life». Research suggests that most firms are embedded in a social network of prior alliances through which they are connected with one another either directly or indirectly (Kogut, Shan and Walker, 1993). The concept of structural embeddedness focuses on the informational role of the position an organization occupies in the overall structure of the network (Uzzi, 1996; Gulati, 1998). Thus, the type of network in which a firm is embedded defines the opportunities potentially available; its relative position in this structure and the types of interfirm ties it maintains defines its access to those opportunities (Uzzi, 1996). Within such a dense social network, reputational considerations play an important role in a firm's potential for future alliances, because these social affiliations determine the firm's perceived status and serve as a source of legitimacy. This is especially true for firms entering new markets or industries or collaborating across organizational and national boundaries, where affiliation with a known firm might signal quality and trustworthiness and thereby serve as a foundation for a favorable evaluation by a potential partner. An example is the establishment of foreign trade councils by many countries to support international trade, which help firms obtain valuable information about potential partner firms. For instance, whereas the business license of a focal firm can provide information about its legal capacity, registered capital, and business scope, foreign trade councils can usually provide invaluable reputational information regarding local (consumer) perceptions of the focal firm, its competitive position, and its relationship to local authorities.

Once the partner is selected, the basis for initial trust needs to be built. Open and honest communication at the outset of any relationship is important and in terms of forming a complex business relationship even more so. Communication can be described as the glue that holds together a channel of exchange. In this sense, communication can be broadly defined as «the formal as well as the informal sharing of meaningful and timely information between firms» (Anderson and Narus, 1990: 44). Communication fosters trust by assisting in resolving disputes and aligning perceptions and expectations (Etgar, 1979) and it would be impossible to theorize about trust in collaboration without paying due attention to communication. As argued by Lane and Beamish (1990), high quality communication leads to trust and openness and essentially to higher performance. Consistently, Nielsen (forthcoming) argues for the existence of a dyadic embeddedness construct, which serves as a mediator between trust and synergies of learning (innovativeness), pointing to the multi-directional and dynamic role of trust. Formation of an alliance involves a search and identification process in order to find the right partner, where differences and complementarities need to be recognized and articulated. Different perspectives and expectations do not necessarily lead to conflict and subsequent poor performance, however, the probability of this occurring is, all other things being equal, higher when there is a lack of transparency between the parties involved. Communication and proactive information exchange as well as willingness to make adaptations according to the partnership is likely to build initial trust (Webb, 1991; Das and Teng, 1998).

From a research perspective, a multi-dimensional operationalization of trust at both the interpersonal and interorganizational level is needed, as the level of institutional flexibility in terms of policies and procedures

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for knowledge exchange, risk taking, and goal adjustment needs to be combined with cognitive and affect-based measures of interpersonal interaction. Moreover, a multi-directional approach is needed in order to account for the simultaneous cause-effect roles of trust.

TRUST AND IMPLEMENTATION

In the implementation phase of the alliance, key issues for firms include, among other things, defining transaction rules, certifying exchange elements, and creating mechanisms to support decisions. In short, this phase is concerned with the governance of the alliance relationship.

A large part of research on choice of governance form in alliances has been based on the distinction between equity and non-equity arrangements (Pisano, 1989; Osborn and Baughn, 1990). Equity alliances involve, by definition, common ownership, and are typically organized as joint ventures. In the market-hierarchy continuum of organizational forms, equity joint ventures most closely replicate the characteristics normally associated with hierarchies, as they entail the creation of a separate administrative structure with formal coordination and control mechanisms. Non-equity alliances, on the contrary, are contractual agreements that lack shared ownership or dedicated administrative structures. Hence, equity arrangements are seen as governance forms fundamentally different from non-equity alliances, which are more akin to arm's length market exchanges (Contractor and Lorange, 1988). Research concerning the choice between equity and non-equity contracts has traditionally focused on the level of control typical of different governance forms (Das and Teng, 1998). Part of this literature assumes that, because equity alliances provide more control over partner behavior than non-equity alliances, non-equity arrangements require a higher level of trust than equity arrangements to effectively manage the uncertainty surrounding the alliance partner's behavior. According to this view, through the familiarity developed in past alliances, partners build enough confidence in each other to give up the hierarchical control offered by equity forms of governance in favor of the trust-based flexibility of non-equity alliances (Gulati, 1995). However, the notion that, in the absence of trust, equity arrangements protect collaborators from undesirable partner behavior more effectively than non-equity arrangements is questionable. In fact, equity and non-equity arrangements offer different sets of advantages and disadvantages in controlling partner behavior, with neither governance form dominating the other in this respect. Specifically, equity alliances are believed to provide partners with more control by creating a "mutual hostage" situation that helps align the interests of all partners, since partners' concern for their investment reduces the probability that they will behave opportunistically (Williamson, 1993). However, it can be argued that the mutual hostage condition protects partners from each other while exposing them to a different type of risk. For instance, firms operating in the same markets may attempt to use an alliance to gain as much as possible from their partners while sharing as little as possible (protectiveness) of their knowledge and resources (Hamel, 1991). In such a context, by facilitating the unintended transfer of tacit knowledge across tightly connected organizations (Hennart, 1988), joint ventures can provide a partner with greater opportunities for free-riding than non-equity alliances. In general, because they entail the establishment of an *ad hoc* organizational entity, equity alliances require a higher level of alliance-specific investment than non-equity alliances (Das and Teng, 1998), and thus a higher degree of mutual dependence and connectedness between partners (Osborn and Baughn, 1990). Thus, in spite of the commitment they induce (and because of it), equity investments increase the difficulty and cost of exit, thus intensifying the vulnerability to undesirable partner behavior. For these reasons, equity alliances may require a higher level of confidence (trust) in a partner than non-equity arrangements (Das and Teng, 1998), however, this relationship may be contingent upon the nature of the collaboration (i.e., marketing of low-tech products versus R&D agreement of high-tech products).

Some scholars view trust as a specific type of control mechanism that governs economic transactions. Accordingly, it is argued that social knowledge can be viewed as a social control mechanism that can substitute certain formal control mechanisms, such as majority equity ownership in joint ventures (Sohn, 1994). Social knowledge (i.e., the ability to understand and predict other's behavior) is not the same as trust; however, one could argue that trust is a substitute for hierarchical control in organizations (e.g., Zaheer and Venkatraman, 1995). That is, trust is not in and by itself a control mechanism, but it might be viewed as a reason not to use objective controls. Ring and Van de Ven (1994) support this argument in their discussion of the relationship between formal legal contract (control) and psychological contract (trust) in interfirm cooperation. Empirically, Gulati and Singh (1998) find support for their hypothesis that alliances in which there is less trust between partners are more likely to be organized with more hierarchical governance structures than are those in which there is greater trust. Hence, relational norms, such as trust, are often viewed as substitutes for complex, explicit contracts or vertical integration (Granovetter, 1985; Bradach and Eccles, 1989). Indeed, some contend that formal contracts may even undermine a firm's capacity to develop relational governance as it signals distrust of your exchange partner and undermines trust, thereby encouraging, rather than discouraging, opportunistic behavior (Ghoshal and Moran, 1996). From this perspective, relational governance is regarded a substitute for formal contracts and, in the presence of relational governance, formal contracts are at best an unnecessary expense and at worst counter-productive (Poppo and Zenger, 2002). According to Poppo and Zenger (2002), however, formal contracts and relational contracts complement each other rather than act as substitutes, since well-specified contracts promote more cooperative, long-term, trusting exchange relationships.

Managerially, this paradox translates into the question of how to optimally mix formal and relational governance. Clearly, far from all contingencies can be worked into a formal contract, hence it seems that the role of trust may be, in conjunction with formal governance, to mit-

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igate risk. Indeed, most definitions of trust regard risk as an integral part of trust (Das and Teng, 1998). It seems evident, then, that the nature of the contractual agreement is contingent upon the level of trust developed in the initial stages of alliance formation, which in turn is contingent upon the motives (for instance exploitation versus exploration) behind the alliance and the perceived risk associated with the investment in the relationship. Goal congruence and collaborative know-how (see Simonin, 1997; 2000) provide the basis for assessing the extent of formal contracting needed in a given situation. Practices like owning stock (e.g., stock swaps), transferring employees, having guest engineers, and using flexible legal contracts create a high degree of goal congruence and mutual trust (Dyer and Ouchi, 1993). Building on prior research suggesting that alliances go through several stages of evolution, Simonin (2000; 2002) identified five separate dimensions of his collaborative know-how construct via factor analysis. The five underlying factors pertaining to the assessed level of corporate expertise with aspects of 1/managing and monitoring, 2/negotiation, 3/search and selection, 4/knowledge and skills transfer, and 5/exiting relate directly to the moderating role of trust. As noted by several authors (e.g., Brouthers, Brouthers, and Harris 1997), changes in the environment, business climate, venture objectives, and the commitment of partner firms warrant modifications to the original agreement, hence, the configuration of relational and formal contracts should be considered an ongoing ordeal.

Operationally, trust must be captured primarily at the (inter)organizational level as a moderator of the degree of goal congruency and collaborative capabilities on the degree of sanctions and specificity of contracts (control). Moreover, trust may also have indirect, mediating effects on governance choice and performance. For instance, Rajan, van Eupen and Jaspers (1997) linked the effects of trust to intrafirm team-working and organizational learning. According to Ring and Van de Ven (1992), under conditions of high trust, developed in a long-standing relationship, both implicit and proprietary knowledge considered confidential is made available to the exchange partner. Sako (1998) suggested that such easy exchange of information, in turn, makes exchange partners more open to each other and thus inclines them to explore new opportunities of collaboration, such as exploitation of new technology. Hence, relational governance (trust) may mediate the relationship between antecedent variables of formal governance and control.

TRUST AND PERFORMANCE

As the alliance relationship evolves and matures the focus shifts toward the problem of assessing performance and divvying up the profit (or loss). Despite the apparent importance and frequency of strategic partnerships, many of these report only limited success (Adler, Brahm, and Graham, 1992, Beamish and Delios, 1997). The literature suggests that one of the most critical factors determining alliance performance is the degree of trust between the partners (e.g., Madhok, 1995; Inkpen and Beamish, 1997). Trust has been shown to increase cooperation, improve flexibility, lowering the cost of coordinating activities, and increasing the level of knowledge transfer and potential for learning. According to Sherman (1992: 78) «the biggest stumbling block to the success of alliances is the lack of trust». Among the few empirical studies dealing explicitly with antecedents of trust in conjunction with alliance performance is Aulakh, Kotabe, and Sahay (1996), who addressed behavioral issues in cross-border marketing partnerships. The findings that initiating and fostering norms of continuity, flexibility, and information exchange between the firms are positively related to trust illustrates the importance of trust building *ex post.* The study did not, however, establish a direct significant relationship between trust and performance. Similarly, Dyer and Chu's (2000) study of supplier-automaker relationships in the US, Japan, and Korea found strong support for process-based determinants of trust for all countries but did not link it to performance. Lane, Salk, and Lyles (2001), however, found trust to be positively associated with international joint-venture performance but, unexpectedly, not learning, perhaps a testimony to the difficulty of operationalizing both trust and learning. Most researchers and practitioners can agree that trust promotes voluntary, non-obligating exchanges of assets and services between actors. Consequently, a significant outcome of trust is that it facilitates tighter social relationships and hence reduces uncertainty in transactions. However, despite the seemingly obvious benefits of trust, debate on its value in organizational exchange continues to persist. Williamson (1993) contends that exchange relations are calculative and explains trust in terms of efficiency and credibility. Others concur that trust is ephemeral and may have little bearing on economic exchange (e.g., Barney and Hansen, 1994). Individuals may engage in trusting actions with an intention to develop close, collaborative relationships, but if the organizations are not supportive of these actions, interorganizational benefits may never be achieved (Barney and Hansen 1994).

In this phase, management is concerned with accurate evaluation of performance, for instance via quality control or enhancements in organizational effectiveness (subjective measures) in addition to more traditional measures of financial performance (objective measures), in order to verify the exact match between the partner's performance and the mutual agreement (specified in the terms and conditions of the contract). Trust plays a pivotal role in the evaluation of performance as it dramatically reduces the potential for conflict and instability resulting from incomplete, ambiguous formal contracts. Managers should seek to agree upon and specify the exact terms of performance evaluation of the collaborative venture early on during the contract negotiations, as these may have an influence on both partner selection and the type of governance form chosen. For instance, if the motivation behind the cooperation is exploration, such as the case of many R&D agreements, the type of partner and desired trust levels (perhaps based on prior relationships and/or reputation) may lead to a looser governance structure based on flexible relational governance, where performance is measured as a combination of subjective (i.e., innovation and level

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of learning) and objective (i.e., number of patents filed and profits from commercialization) elements. Although open to interpretation and negotiation, managers in this case should clearly stipulate in the contracts both how innovation and learning is evaluated and profits shared as well as who owns the rights to any patents resulting from the alliance.

Trust is often considered a dichotomous variable, where one is either trustworthy or not, however, recent research suggests that different levels and degrees of trust might exist or even co-exist. Some authors even point to the existence of optimal trust, which is a match between trust and interdependence levels (Wicks,Berman and Jones, 1999). As argued above, both interpersonal and (inter)organizational types of trust play a role in developing and measuring performance in collaborative relationships. Consequently, both aspects of trust should be included in determining performance outcomes of these relationships, for instance, by considering the simultaneous role of trust in reducing costs associated with instability and conflict and the influence of trust on individual—and team-based—performance. Both dimensions should be evaluated based on their direct and indirect contribution to both objective and subjective performance measures in the short, medium, and long-term.

CONCLUSION

Most practitioners and researchers agree that trust is one of the main concerns for partners in strategic collaborative relationships. In spite of this, the emerging literature has paid insufficient attention to the multi-dimensional role of trust in these relationships. Trust among partners in collaboration is obviously important, however, in the extant literature, trust is mainly conceptualized statically as a social control mechanism based on the notion of interdependence between trustor and trustee and limited attention is paid to the evolution and cyclical nature of trust in collaborative organizational relationships (a notable exception is Vangen and Huxham, 2003). Although some studies point to the stage-wise development of trust in alliances (e.g., Lewicki and Bunker, 1995; 1996), most of these studies assume an incremental process of trust development as parties repeatedly interact. Moreover, trust development is often separated from the very functions it is supposed to impact and treated in an isolated and often unidirectional manner. Trust, however, transcends this unidirectional, incremental pattern of evolution because it acts, simultaneously, as a cause, a moderator/mediator, and an effect at different phases of the relationship development. As illustrated in the preceding discussion, collaborative relationships do not evolve in clearly defined phases or stages. Nor does collaborative trust, rather it develops as a complex systemic process involving continuous (re)evaluation and (re)adjustment across multiple dimensions of the relationship simultaneously. As the nature of the relationship changes so does the nature and role of trust. Hence, in order to understand the complex nature of collaborative trust, a multi-dimensional approach is needed, which simultaneously pays attention to the different, multi-directional roles trust play in different phases of the collaborative relationship as well as to the different types and levels of trust involved. Moreover, it is important to fully understand the recursive nature of collaborative trust development over time. For instance, as organizations make changes to their aspirations and realign their goals over time the underlying role of trust may change. This change is likely to be both a determinant and a feature of the relationship, simultaneously involving cognitive, affective, calculative, and institutional aspects of trust.

The theory of the role of collaborative trust presented in this article reflects the complex, multi-dimensional management challenge that practitioners face. It is developed from a synthesis of several important strands of literature pertaining to the dynamic development of collaborative arrangements and trust. Several important contributions to both research and management practice can be derived. First, the theory illustrates the multi-dimensional roles of trust pertaining to different phases of collaboration. Second, without claiming to operationalize trust at different levels or phases, this article points to important underlying elements of trust operationalization pertaining to different roles of trust, which may help enrich future conceptualizations of collaborative trust. Finally, trust management requires the careful assessment of different dimensions of each collaborative situation as the collaborative relationship evolves. Simultaneously paying attention to how the role of trust changes as the nature of the relationship evolves and identifying the recursive patterns of interaction between elements of trust and collaboration is likely to provide practitioners with valuable cues as to how to effectively manage collaborative trust.

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