

**PERSPECTIVES ON JOINT COMPETITIVE ADVANTAGES
IN BUYER-SUPPLIER RELATIONSHIPS***

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ABSTRACT

A critical outcome of competitive strategy is the attainment of competitive advantages. Recently, there has been a growing recognition that such advantages may reside in the boundaries of a firm -- via its relationships with outside organizations. However, there is little understanding regarding how such advantages are created, eroded, and preserved in such relationships. In this paper, I summarize the findings around competitive advantages from three studies, all of which involve longitudinal empirical tests of over 200 industrial buyers and their suppliers in a variety of industries. The collective results indicate that specialized investments facilitate the attainment of joint competitive advantages and these advantages are positively correlated with economic outcomes, organizational behavior, and expectations of continuity. Competitive advantages can also be eroded over time for buyers by suspicions of *ex post* opportunism that arise within the course of the relationship. However, the detrimental effects of opportunism suspicions for both firms can be mitigated via the strategic use of various governance modes such as bilateral investments, goal congruence, and interpersonal trust.

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INTRODUCTION

One of the key outcomes of competitive strategy is the attainment of *competitive advantages* -- the resources or capabilities that enable a firm to compete more effectively in the marketplace. In the strategic management literature, the “Resource-Based View” (RBV) of the firm offers the explanation that these differences may be due to heterogeneity in differentiated or superior resources relative to competitors (Teece 1980; Wernerfelt 1984). More recently, there is a growing recognition that this principle is generalizable to the *boundaries* of the firm, in relationships with organizational buyers and suppliers. Particularly noteworthy is the work of Dyer (1996; Dyer and Singh 1998) who argues the need for specialized supplier networks. These networks interrelate the use of idiosyncratic investments, knowledge-sharing processes, complementary capabilities and effective governance to create competitive advantages. However, one shortcoming of the research in this literature is that few studies specify *how* these factors interrelate to develop, maintain, and erode competitive advantages over time.

This raises several questions in the area of buyer-supplier relationships: How are competitive advantages jointly created? How are they eroded? And how are they preserved in relationships over time? These are the motivating questions in this research. In this paper, I identify a subset of critical factors highlighted in the marketing, RBV, and transaction cost economics (TCE) literatures that illuminate how buyers and suppliers jointly create, manage, and erode competitive advantages. This is accomplished by reviewing a series of three longitudinal studies that examine the risks and returns associated with specialized, collaborative relationships between firms (Jap 1999; Jap and Anderson 1999, 2000). All of these papers are generated from the same dataset, involving 200+ buyers and their respective suppliers. The longitudinal nature

of the data enables the examination of causality issues, which are more often assumed than tested in past research.

These papers explain general performance; they do not focus on the attainment of joint competitive advantages, although this variable is embedded within the conceptual models of each paper. The purpose of the present paper is to highlight the specific results around this variable and consider positive spill over effects on the relationship over time. Thus, this paper makes several contributions to our understanding of the dynamics of competitive advantages at the boundaries of the firm. First, it illuminates specific empirical results from various studies, consolidating these results within one paper to provide an overall perspective of how joint competitive advantages are developed, maintained, and eroded over time. Second, it supplements the insights from these papers with additional empirical analysis that suggests that the attainment of these advantages has a strong, positive relationship with changes in the dyad's economic performance, collective functioning, and relationship stability over time. And finally, it provides a theoretical perspective on the conditions that facilitate such advantages at the boundaries of the firm.

The topic of competitive advantages at the boundaries of the firm is particularly timely, given recent growing interest in the "virtual firm" and the "extended enterprise." These discussions view organizations as decentralized networks of financially independent organizations that are coordinated in such a way as to appear and behave as one unified organization. Understanding how competitive advantages are developed between each linkage has important ramifications for the overall functioning of the organizational network. The structure of the paper is as follows. After a brief review of the conditions that facilitate the attainment of joint competitive advantages in buyer-supplier relationships, learnings from the

three empirical papers are reviewed, as relevant to the development, erosion, and presentation of competitive advantages. This is followed by a discussion of the spillover effects of competitive advantages on buyer-seller relationships and a set of conclusions regarding key learnings. Data characteristics and details regarding empirical analyses are available in various appendices.

CONCEPTUAL FRAMEWORK

LITERATURE REVIEW ON COMPETITIVE ADVANTAGES

In an industrial supply context, competitive advantages are defined as *strategic benefits gained over competing dyads that enable the dyad to compete more effectively in the marketplace* (Sethuraman, Anderson, and Narus 1988). In the RBV framework, there are four theoretical conditions that underlie the achievement of competitive advantages: (i) resource heterogeneity, (ii) ex ante limits to competition, (iii) ex-post limits to competition, or causal ambiguity, and (iv) imperfect mobility. These characteristics also create the backdrop for the attainment of competitive advantages in interorganizational relationships. In this section, these conditions are briefly reviewed and its relevance is discussed in an industrial supply context.

Resource heterogeneity refers to the resource bundles and capabilities that underlie production in a firm (Barney 1991). These resources have varying levels of productivity efficiency that enable firms to produce more economically or better satisfy customer demands than their competitors. When these factors are inelastic in supply and insufficient to satisfy demand, then the low-cost firm will earn supernormal profits in the form of rents to their scarce resources. Other high-cost firms will breakeven. This is known as the Ricardian rents argument (Ricardo 1817; Rumelt 1987). A key aspect of the argument is that the superior resources remain limited in supply. This allows efficient firms to sustain their competitive advantage as long as the resources cannot be expanded or freely imitated by competition. Prahalad and Hamel

(1990) note that core competencies that are enhanced as they are applied (i.e., those which involve collective learning and are knowledge based), contain natural learning trajectories that also serve as a basis for competitive advantage.

In industrial supply relationships, buyers and suppliers bring together unique competencies in differing functional areas. These competencies may involve learning curves and differing levels of efficiency. When they are combined, the dyad gains access to critical resources that enable the creation of superior value in the marketplace. The more unique the combination of capabilities and the more inelastic the supply of the joint capability, the greater the potential for generating supernormal returns relative to competing dyads. For example, suppose a computer chip-manufacturer and a car manufacturer consider the possibility of developing a chip that optimizes the performance of a new car. The chip manufacturer possesses chip design capabilities while the car manufacturer has car production capabilities. The heterogeneity of capabilities along with the inelasticity of supply of these capabilities allows for the creation of a unique, joint competency (i.e., car-chip optimized capabilities). This competency serves as the basis for superior product offerings to downstream customers.

Ex-ante limitations to competition means that there must be limited competition for a particular resource position prior to any firm's establishing the position. Barney (1986) contends that economic performance depends not only on the returns from various strategies, but also on the cost of implementing the strategies. Imperfections in strategic resource markets, where the necessary resources for implementation are acquired, enable the creation of supernormal returns. Without these imperfections in the markets, firms can only hope for normal returns. Rumelt (1987) argues that unless there is a difference in the ex post value of a venture and the ex ante cost of acquiring the necessary resources, the entrepreneurial rents are zero.

The chip-car collaboration between the two manufacturers may be an area in which there is limited competition. In the car market, there are many ways in which car manufacturers can create new customer value and earn supernormal rents. Some might offer better designs, lower costs, more efficient distribution, etc. Each car manufacturer may choose one or more of these bases by which to differentiate its competitive offering. Since each manufacturer is heterogeneous in its ability to exploit or access these resources, the potential for competitive advantages is created. In the previous example, the design of a unique microprocessor that optimizes the performance of a new car is just one of many possible ways in which a car manufacturer may compete in the industry; hence, competition for this position may be limited or even unrecognized as a possible basis for competitive strategy. In order for competitors to duplicate this advantage, they would have to collaborate with the chip manufacturer or some other chip manufacturer and have similar capabilities for exploiting the joint competency.

Ex-post limitations to competition is the notion that once a firm is able to gain a superior position, there must be barriers to competition for the associated rents. The work in this area has focused on two forms of ex post competition: imperfect substitutability and imperfect imitability (Barney 1991; Reed and DeFillippi 1990). Substitutes erode rents by making demand more elastic. Much greater attention has been paid to the concept of imperfect imitability. This is the notion that competitors have difficulty imitating the resource stream and eroding the firm's rents. Lippman and Rumelt (1982) call this 'causal ambiguity,' which prevents would-be imitators from knowing exactly what to imitate or how to go about it. Other similar mechanisms include producer learning, switching costs, reputation, search costs, or others barriers to entry.

Relationships between organizations are particularly amenable to ex-post limitations to competition because it is very difficult for competitors to observe and duplicate the efforts and

activities of the dyad. Returning to the car-chip manufacturer example, the development of a unique microprocessor is an elaborate process involving considerable specific, tacit, and complex information. In order for competitors to erode the rents that result from these efforts, the competition must be able to observe and easily duplicate the dyad's interactions and collective functioning. They must understand the 'causal' structure of activities, communication, and work processes occurring within the dyad that creates the basis for competitive advantage. This is a very difficult thing to accomplish.

Imperfect mobility refers to resources that are not easily traded; they are more valuable within the firm than in other firms. This includes resources that are ill defined or non-fungible. Ill-defined resources are those for which there are no well-defined property rights. Examples of this may include customer loyalty or supplier trust. Non-fungible resources are those whose value is derived within a specific context; its value is not transferable to alternative relationships or firms. These resources may be tangible (e.g., capital equipment, manufacturing facilities), or intangible (e.g., human resource capabilities, specific technologies and know-how). Teece (1986) describes co-specialized resources as another case in point. These are resources that have higher value when employed together than when employed separately. When co-specialized or non-fungible resources have few other equivalent uses or value outside the firm, then they are imperfectly mobile. These resources have less value outside the firm, hence, they are not readily bid away, remaining bound to the firm and available for use over the long run.¹ This provides a basis for competitive advantage.

In the chip-car manufacturer example, the unique microprocessor that is developed between them is a non-fungible, co-specialized resource that enables superior value over

¹ The disadvantage to such resources is that they may result in a reduction in flexibility in the face of environmental or technological changes.

competitive offerings. In order for competitors to generate the same offering, they must work with the chip manufacturer or a competing chip manufacturer to develop another unique microprocessor that is optimized for their cars. This can take considerable time, energy, and effort to accomplish and may ultimately be imperfect. In the meantime, the rents of the original chip-car dyad and unique microprocessor are preserved.

In sum, industrial supply relationships are particularly amenable to the generation of competitive advantages, because (i) the buyers and suppliers are heterogeneous in their resources and capabilities, (ii) they can identify joint positions for which there may be limited competition, (iii) their activities are difficult for competitors to observe and duplicate, and (iv) the creation of specialized, idiosyncratic investments between them enables a distinct advantage over competitors that can be realized into the long term. By moving away from arms-length exchanges and specializing their relationships through idiosyncratic investments, knowledge exchange, complementary competencies, and more effective governance mechanisms, buyers and suppliers can create the potential for earning competitive advantages (Dyer 1996; Dyer and Singh 1998).

There are many examples of this in the marketplace. Baxter Healthcare Corporation works closely with hospitals on storing and distributing supplies to and within a hospital. By focusing on the creation of optimal inventory levels and non-price benefits, both parties receive several valuable outcomes -- the hospital gains reduced inventory investment and operating costs, while Baxter receives increased revenue, market share and customer loyalty. Similarly, in 1986, Xerox worked closely with their suppliers to develop customized processes and components that reduced their copier manufacturing costs 30-40%. In turn, the suppliers

received sales and volume guarantees, an enhanced understanding of their customer's needs, and a strong position with Xerox for future sales.

The preceding discussion identifies the conditions under which buyers and suppliers might jointly create competitive advantages. However, it does not identify *the processes* by which organizations produce these advantages together, or the means by which these advantages are either eroded or preserved at the boundaries of the firm. In the following sections, we review three papers that test possible explanations for how advantages are developed and managed over time. The creation of competitive advantages is formulated using an RBV perspective, while the erosion and preservation of these advantages is based on a TCE explanation. Clearly, these explanations are not exhaustive of the many ways in which competitive advantages evolve over time, but they represent an initial step in understanding this complex phenomenon. The focus of this discussion is on the substantive results and implications of each paper, as analysis details and theoretical frameworks can be found in the specific papers. Collectively, these papers inform our understanding of a key outcome of competitive strategy, the central topic of this special issue. Details of the empirical methodology are contained in Appendix 1.

CREATING COMPETITIVE ADVANTAGES

Despite the widespread interest in the use of close, collaborative relationships, there is little understanding of *how* strategic outcomes are achieved at the boundaries of the firm. Dyer and his colleagues suggest that buyers and suppliers utilize complementary competencies, specialized investments, knowledge exchange processes, and various governance modes to create advantages. However, they do not specify how these factors interrelate to build these advantages. Recent work in marketing tests a possible set of interrelationships between Dyer's four factors (Jap 1999). Essentially, this research suggests that complementary competencies,

environmental conditions, and human resources provide incentives for the dyad to create knowledge exchange processes, or coordination efforts, and specialized, investments. These two factors – coordination efforts and bilateral idiosyncratic investments -- are critical for generating competitive advantages and economic performance. An overview of this conceptual model and estimation effects is depicted in Figure 1.

When buyers and suppliers strive to attain competitive advantages, they must creatively consider how to leverage their unique environment, respective competencies, and human resources available to them. They recognize and understand that each firm's success depends in part on the other firm. As such, their coordination efforts – *the regular pattern of similar or complementary actions and activities* (Anderson and Narus 1990) – enables them to share information, opportunities, and processes in such a way as to facilitate the achievement of competitive advantages. These efforts may be manifested in the formation of joint projects tailored to the dyad's needs and an ongoing effort to exploit existing synergies and unique opportunities between the firms. Although the empirical results suggest that these efforts have a marginally positive effect ($\beta=.11$, $p<.10$) on the achievement of competitive advantages one year later, the directional consistency is informative.

Idiosyncratic investments are *non-fungible investments that uniquely support the buyer-supplier relationship* (Williamson 1985). The joint creation of these investments promotes the achievement of strategic outcomes because they promise efficiencies in coordination and promote interfirm cooperation and enhanced performance (Dyer 1996). The empirical results verify this, indicating that such investments do play a significant role ($\beta=.35$, $p<.01$) in the buyer and supplier's ability to realize joint competitive advantages up to one year later. This finding is

consonant with recent studies that indicate that productivity gains are attainable when the parties to an exchange are willing to make idiosyncratic investments and combine their resources in unique ways (Asanuma 1989; Dyer 1996). Amit and Schoemaker (1993) argue that specialization of investments is “a necessary condition for rent,” and that “strategic assets by their vary nature are specialized.” Hence, by definition, buyers and suppliers must do something specialized or unique to develop a competitive advantage.

Collectively, these results suggest that the use of bilateral idiosyncratic investments may enable the achievement of competitive advantages via lower total value chain costs, enhanced product differentiation, fewer defects, and faster product development cycles. Differentiation, however it is achieved, is a necessary condition for competitive advantages. The interaction patterns and coordination efforts transpiring across the dyad, along with dedicated investments, creates the differential advantages that the firms strive for together. This general result echoes Harrigan’s (1986) study of joint ventures. She found that interorganizational strategies for competitive or strategic purposes² typically required substantial resources and coordination effort. It is the combination of the two – effort and investments – that provides the foundation for the inimitable aspects of the collaboration process as a source of strategic outcomes.

ERODING COMPETITIVE ADVANTAGES

Increasing specialization in interfirm relationships is not without cost. By making specific commitments in effort and investments to a particular strategy, the dyad will forego alternative opportunities. They might also be less flexible to technological changes in their environment. The non-fungible nature of idiosyncratic investments also creates the potential for “hold-up” problems and additional forms of opportunism.

² Competitive purposes may include preemption of competitors and influence of industry structure, while strategic purposes include activities such as new market entry, technology transfer, production synergies, etc.

Opportunism is *self-interest seeking with guile*, and includes overt behaviors such as lying, cheating and stealing, as well as subtle behaviors such as dishonoring an implicit contract, shirking, failing to fulfill promises, and obligations. It is the equivalent of bad faith, the implication being that the party who is opportunistic is not trustworthy. In an industrial supply setting, opportunism may involve misrepresentations (e.g., making hollow promises or “window-dressing” one’s efforts), unresponsiveness (e.g., aloofness), unreasonable demands (e.g., asking the other party to pay more than their fair share of a problem), and lying.

The notion of opportunism is what differentiates transaction cost economics (TCE) from alternative conceptualizations of the firm, such as agency theory, relational exchange theory, or RBV.³ The TCE presumption is that economic actors attempt to forecast the potential for opportunism as a function of unfolding circumstances, then take preventive actions in transactions where opportunism is likely to be high. Opportunism is an explanatory mechanism, not readily observable, and typically empirically untested. However, it is important because it has potential for enormous impact on economic performance. The work to date has instead, focused on the *antecedents* of opportunism (Anderson 1988; John 1984; Smith and Barclay 1997) and strategies for minimizing opportunism (Brown, Dev and Lee 2000; Wahtne and Heide 2000), but not its impact on the performance and collective functioning of exchange relationships.

Recent research considers the impact of opportunism on a number of outcomes of buyer-supplier exchanges, ranging from the collaborative tendencies and problem-solving orientation

³ This aspect of TCE has been criticized, most notably by Ghoshal and Moran (1996), who argue that TCE fails to consider that agents can behave in *both* opportunistic and trustworthy ways. Hence, the TCE premise renders a distorted view of reality. Commercial life is comprised of both opportunistic and trustworthy behaviors. In fact, trustworthy behavior is both pervasive and of paramount importance for the functioning of the firm in an economic system.

of the dyad to economic performance, long-term expectations, and the realization of joint competitive advantages (Jap and Anderson 1999). The conceptual model and estimation results are illustrated in Figure 2. In this research, we find that the mere *suspicion* of opportunism is sufficient to damage, even destroy, a relationship, regardless of whether the suspicion is factually justified (cf., Ross, Anderson and Weitz 1997).

As a buyer or supplier becomes increasingly suspicious of its counterpart, there is a decreasing motivation to make the exchange successful through coordination efforts and the creation of bilateral idiosyncratic investments. These activities typically require the sharing of sensitive information in order to identify opportunities for joint success. If one of the parties in the exchange suspects that the counterpart is acting opportunistically, the firm will be reluctant to share such information, thus adversely affecting the exchange activities and investments necessary for achieving competitive advantages, and exchange activities. Organizational theorists have observed that when exchange deteriorates, behaviors such as tolerance of incompetence, replacement of substance with form, scarcity of clear goals and decision benchmarks, and loss of effective communication, are evidence of some of the first observable signals of decline (Lorange and Nelson 1987).

As interfirm coordination processes disintegrate, there is diminishing incentive for the firms to continue to specialize their relationship through idiosyncratic investments because the ability to exploit these investments has deteriorated. In this manner, opportunism suspicions across the dyad can cause the exchange relationship to take a dysfunctional turn. Hence, over time, one would expect that opportunism suspicions would facilitate the erosion of competitive advantages. This is empirically verified for buyers ($\beta = -.33, p < .05$), but not suppliers ($\beta = -.11, ns$).

Why do opportunism suspicions erode the buyer's perspective on joint competitive advantages but not the supplier's perspective? This may be due to issues of distributive justice that are not captured in the model. For example, it may be that the competitive advantages, although jointly attained and created, may not be equally shared or valued between the firms. If the buyer receives 60% of the benefits from creating competitive advantages and the supplier receives 40%, buyers may feel more threatened by opportunism suspicions than suppliers. This is not uncommon in industrial procurement exchanges. Suppliers generally serve their customers, even if the exchange contains bilateral dependence and relatively close ties. While the overall results of this research indicate that opportunism suspicions generally have a negative effect on outcomes for both buyers and suppliers (even when controlling for past performance at time 1), the impact on joint competitive advantages is differential across the dyad. Additional research is needed to better inform our understanding of how and why this occurs.

PRESERVING COMPETITIVE ADVANTAGES

Because of the many circumstances within buyer-supplier relationships that permit opportunism, TCE recommends that a governance structure be put in place as a means to reduce it, since total elimination is typically infeasible or prohibitively expensive. Toward this end, considerable research in various disciplines has been directed toward the *use* of governance mechanisms as a means of reducing the incentive for opportunistic behavior. Within marketing, numerous studies have considered the antecedents of various mechanisms, including pledges in the form of bilateral investments, explicit and normative contracts, relational norms, qualification procedures, and monitoring. Given this, it is surprising that there are virtually no studies that consider whether these mechanisms are actually capable of safeguarding the firm's critical outcomes. All of these mechanisms impose varying economic or social costs of opportunistic

behavior and are typically put in place in the relationship as a preventative measure. However, over time, circumstances do change and *ex post* opportunism suspicions may arise as a result of the change in circumstances. When this happens, it is not clear whether the governance mechanisms that were put in place earlier in the relationship are able to *safeguard* the outcomes of the relationship against the poisonous effects of opportunism.

A recent paper considers the safeguarding capability of three different governance mechanisms in the presence of *ex post* opportunism (Jap and Anderson 2000): bilateral, idiosyncratic investments, goal congruence, and interpersonal trust. These three mechanisms have distinct theoretical roots and characteristics; all have received considerable attention in the literature on interorganizational relations. Bilateral idiosyncratic investments figure prominently in transaction cost economics (TCE), while goal congruence is central to agency theory. Both are interorganizational properties. Interpersonal trust is a property of the boundary-spanning individuals; it is a construct often noted in the growing literature on relationship marketing. These three theoretical perspectives – TCE, agency theory, and relationship marketing -- have had an enormous impact on research in the channel management literature.

The safeguarding capability of these three governance mechanisms at time 2 is considered at varying levels of *ex post* opportunism (high and low) at time 1. An overview of the conceptual model and estimated effects is provided in Figure 3. I now consider each mechanism in turn.

Bilateral investments. Earlier, I noted that bilateral investments are often made for the creation of value and the achievement of competitive advantages, as mentioned earlier. However, these investments also have an important relationship stabilizing quality in that they represent a credible sign of each party's commitment to the relationship (Anderson and Weitz

1992) and result in a situation of “mutual hostage taking” that prevents both parties from behaving opportunistically. By “tying each other’s hands,” the parties can paradoxically strengthen their relationship (Schelling 1960).⁴ Hence, such investments facilitate expectations of continued exchange into the future. The results suggest that such investments are capable of safeguarding the achievement of competitive advantages against varying levels of ex post opportunism ($\beta=.55$, $p<.05$). When a firm begins to suspect its counterpart of opportunistic behavior, bilateral investments can shift the focus to mutual cooperation and create an incentive to maintain and continue the relationship until the value of its investments is recouped. By imposing costs on premature termination of the relationship, these investments enable the preservation of valuable outcomes, such as competitive advantages, in long-term exchanges. Even if higher levels of opportunism suspicions exist within the dyad, these investments continue to have a powerful, positive effect on the attainment of competitive advantages. Over time, subsequent investments may be even more connected, making the outcomes of each party increasingly interdependent (and increasing the safeguarding capability of bilateral investments).

Goal congruence. The domain of agency theory is to determine the most efficient contract to govern the relationship, given that the parties are self-interested, bounded in rationality, risk-averse, and having goal conflict (see Bergen, Dutta and Walker 1992 and Eisenhardt 1989 for a review). Agency theory notes that whenever cooperating parties have differing division of labor, goal conflicts can create incentives for opportunistic behavior (Jensen and Meckling 1976). The goals of exchange for buyers and suppliers are typically at odds with

⁴ Empirical results are supportive of the positive link between bilateral investments, commitment intentions, and joint activities. Gundlach, Achrol, and Mentzer (1995) found a positive relationship between joint inputs and long-term commitment intentions. Zaheer and Venkatraman (1995) show a strong correlation between reciprocal investments and joint action in the area of new product launches.

each other. Buyers desire the most cost-effective purchase, while suppliers strive to achieve the sale with the highest profit margins or revenue potential.

By developing goal congruence -- *the extent to which firms perceive the possibility of common goal accomplishment* (Eliashberg and Michie 1984) – between the parties, the incentive for opportunism can be curbed. Anderson (1988) finds that goal congruence is related in a convex way to opportunism; the more salespeople perceive alignment between their goals and the company's goals, the less opportunism they practice on the job – and at an increasing rate. By developing common goals between the buyer and supplier, a perception is created that what is beneficial for the counterpart will also be in the best interests of the firm. This creates a reduced incentive to act opportunistically and inhibits the development of suspicions within the dyad. It also incents the dyad to seek mutual gains and forego individual gains detrimental to their joint returns.

However, the empirical results are interesting in that they suggest that goal congruence has its greatest impact on the preservation of competitive advantages when the threat of opportunism suspicions is high ($\beta=.34, p<.05$). When suspicions are low, goal congruence has no effect ($\beta=-.21, ns$). Evidently, greater goal congruence becomes a more effective way to keep the relationship on track for achieving strategic outcomes and bolsters confidence in the long-term future of the arrangement. In contrast, when things are running smoothly (very little opportunism is suspected), higher levels of goal congruence have a lesser impact on the relationship's outcome. This is an important result, as it highlights the differential value of goal congruence, depending on the nature of the relationship.

Why should goal congruence be a less valuable safeguard when things are going well? A likely explanation is that agreement on goals, on objectives, is taken for granted in ongoing

relationships when opportunism is not suspected (Neilsen and Rao 1987). This is because goal congruence is useful for aligning the firms' incentives and charting the dyad's course of activities in the early and buildup phases of a relationship. As the relationship reaches maturity, goal congruence may assume an unspoken or unarticulated quality, as the dyad focuses on day-to-day activities and the ongoing operations of the exchange. However, as a firm comes to suspect that its counterpart is engaged in opportunistic behavior, goal congruence, where it exists, may be invoked as a means by which to evaluate and understand the counterpart's deviation in behavior. Hence, goal congruence comes to the foreground, becoming salient. The firms may find that an appeal to common objectives (super ordinate goals) is a more effective way to resolve their differences and enhance the day-to-day functioning of ongoing exchanges between organizations, such that they continue to relate in a manner consistent with their shared goals. This improves the buyer and supplier's ability to generate performance outcomes and extends its time horizon, thus preserving the competitive advantages jointly achieved.

Interpersonal trust. One of the most widely acknowledged social norms for governing and coordinating interorganizational exchange is trust (Morgan and Hunt 1994). Trust is *the ability to reliably predict the actions of the other party in the relationship and the belief that the other party will not act opportunistically if given the chance to do so* (Andaleeb 1992; Anderson and Narus 1990). Increasingly, channel relationship researchers are acknowledging the impact of interpersonal factors such as trust, on interfirm outcomes. Larson (1992) found that personal relationships and reputations, coupled with knowledge of the firm's skills and capabilities, shaped the context for new exchanges between firms by reducing risks and uncertainties about the motives and intentions of the other firm.

Several studies suggest that interpersonal trust operates in an independent, yet complementary manner to many organizational variables; that is, it facilitates relational processes, such as collaboration and relational norms, but has limited impact on performance (Smith and Barclay 1997; Jap 1999; Moorman, Zaltman and Deshpande 1992). Yet the empirical results suggest that interpersonal trust is capable of safeguarding joint competitive advantages against varying levels of ex post opportunism. The empirical results suggest that the poisonous effect of opportunism suspicions may be limited to less tangible relational outcomes – such as expectations of continuity and evaluations of an exchange counterpart. Evidently, the tangible aspects of competitive advantages bolster them unsusceptible to changes in the interpersonal relationships between individual boundary spanners. It may be that such advantages have direct implications for economic performance or critical aspects as market strategy that they are not quickly eroded by opportunistic behavior. Hopefully, this finding will stimulate additional research to further understand the boundary conditions around this particular governance mode.

Collectively, the implication for managers regarding all three governance modes – bilateral investments, goal congruence, and trust -- is that they do play important, but differing roles for safeguarding competitive advantages in the interorganizational relationship. Each is useful for safeguarding the achievement of competitive advantages, in the face of ex post opportunism, although goal congruence is less effective as opportunism suspicions decrease. The impact of bilateral investments and interpersonal trust remain robust against varying levels of increased opportunism suspicions.

SPILL OVER EFFECTS OF COMPETITIVE ADVANTAGES

The preceding discussion focus on the dynamics of competitive advantage – how it is developed, eroded, and preserved over time. Another useful aspect to consider regards the potential *implications* of realizing competitive advantage on the relationship – the positive spill over effects that occur with the attainment of competitive advantages over time. For example, it would be interesting to know whether the attainment of joint competitive advantages over time is accompanied by an improvement in economic outcomes or collective functioning as well.

To date, the literature indicates that long-term, collaborative relationships yield significant *financial* pay offs for both buyers and suppliers (Kalwani and Narayandas 1995; Noordewier, John and Nevin 1990). Specifically, these studies show that these purchasing arrangements enable reduced possession and acquisition costs and enhanced inventory utilization, without sacrificing sales growth. This is accomplished via idiosyncratic investments, repeat sales and cross-selling opportunities, idea-sharing, switching barriers, and the use of supportive norms (e.g., flexibility, assistance, information exchange, etc.). However, these studies do not consider other strategic or less tangible aspects. I address this gap by considering how improved financial performance over time is related to the achievement of competitive advantages and improvements in relationship functioning. I do not delve into the specific activities that create these outcomes, but instead examine the interrelationships between these outcomes using the same longitudinal data set of the previous three studies.

Profit performance is a perceptual measure of profits resulting from the dyad's effort (the information expressed in currency was judged as too sensitive); it is a measure of the economic payoffs from collaborating together. The firm's *expectations of relationship continuity* speak to the long-term viability of the relationship. *Constructive responses to problems* are a process

measure indicating how it approaches and deals with problems that arise in the course of the relationship. Collectively, these variables tap a variety of critical aspects of buyer-supplier exchange: current financial performance, future expectations, and ongoing relationship functioning.

My expectation is that the realization of competitive advantages should be positively correlated with performance, continuity, and problem-handling behaviors because the achievement of competitive advantages may enable the firms to attain positions with higher rent-earning potential, and motivates them to continue working together into the future in a constructive manner in order to preserve and realize the potential rent earnings from this improved position. Hence, these factors reinforce each other over time; constructive communication and work processes enable the achievement of competitive advantages and financial performance, which bolsters their confidence in each other and provides new opportunities for the dyad to develop and enhance further. As the dyad grows in its understanding of each other, they are able to engage in more sophisticated planning activities and processes that may lead to greater positions of rent-earning potential. All of these uphold a variety of tangible and intangible performance outcomes.

I explore this possibility by correlating a measure of change in competitive advantages, with changes in profit performance, expectations of continuity, and constructive responses to problems over time. The residual change score reflects the change from time 1 to time 2, while controlling for the impact of the initial starting point (time 1). In other words, these scores reflect the amount of change in a construct at time 2 per unit increase at time 1. Additional details are provided in Appendix 2. The correlations of residual change scores for competitive

advantages are: .53 with profit performance, .61 with expectations of continuity, and .49 with the focal firm's response to problems. All of these are significant at $\alpha=.0001$.

These suggest that as joint competitive advantages are achieved over time, there is a corresponding improvement in profit performance, expectations regarding the future viability of the relationship, and interparty functioning. Similarly, if competitive advantages are eroded over time there is a corresponding decrement in profit performance, future expectations, and constructive responses to problems. While this does not imply causality among the variables, it does suggest that when competitive advantages are developed in these relationships, there is a positive spillover effect on other critical aspects of the relationship: economic performance, problem resolution processes, and long-term expectations. The implication is that carefully managing the development of competitive advantages has important ramifications for the state of the overall relationship. There is also great value in monitoring the circumstances that lead to erosion of competitive advantages, as this will likely imply erosion in the overall state of the relationship.

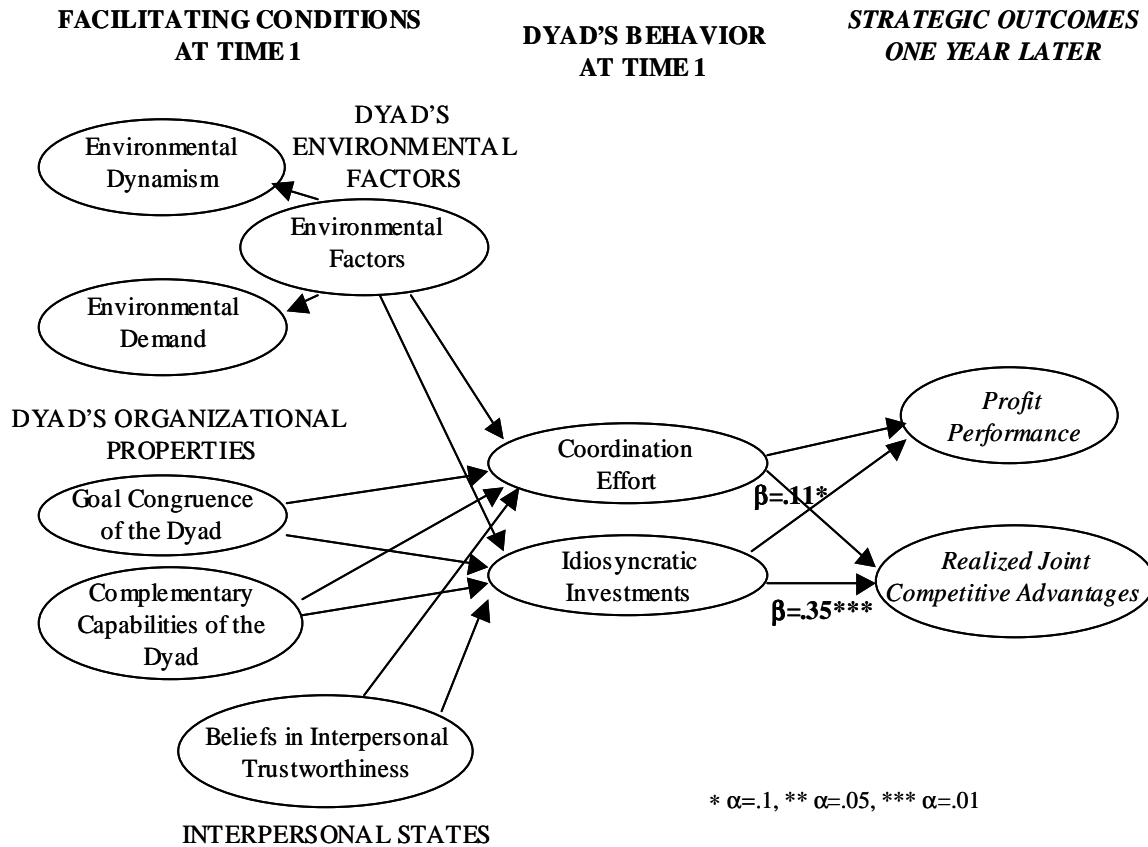
CONCLUSIONS

This paper has reviewed the theoretical conditions that are foundational for the attainment of competitive advantages and has compiled specific results of various studies that illuminate how such advantages might be obtained, eroded, and preserved in buyer-supplier relationships. Clearly, the development of idiosyncratic investments plays a critical role, both in facilitating the achievement of joint advantages as well as preserving such advantages from ex post suspicions of opportunism. Interorganizational goal congruence and the trusting relationships of individuals also aid in the preservation and sustainability of these advantages against the poisonous effects of opportunism suspicions over time. This research also considers the spill over effects of creating

such advantages at the boundaries of the firm. These results indicate that the achievement of joint competitive advantages over time is positively associated with corresponding improvements in profitability, future expectations, and relationship functioning. Hence, the payoffs of achieving competitive advantages goes well beyond the attainment of the advantages themselves, extending to other key aspects of buyer-supplier relationships.

Although this research is not exhaustive in nature, it does examine a subset of possible variables and represents an incremental step toward better understanding the complex phenomenon of how joint, competitive advantages are created in ongoing industrial supply relationships. The intent of this work is to stimulate additional research on this important aspect of competitive strategy. Future research ought to consider additional conditions for competitive advantage that are omitted here, such as environmental conditions and competitive actions. How buyer-supplier dyads respond to the competitive signals and actions of competing dyads is an avenue of inquiry never before considered. Additionally, the achievement of competitive advantages in electronic contexts is an important area of future inquiry. How does technology provide opportunities for bolstering competitive advantages? What can buyers and suppliers do together to leverage emerging technologies at the boundaries of the firm? The current market environment provides a ripe opportunity for considering such issues.

FIGURE 1
CREATING COMPETITIVE ADVANTAGES



The italics indicate that the data were collected one year later.

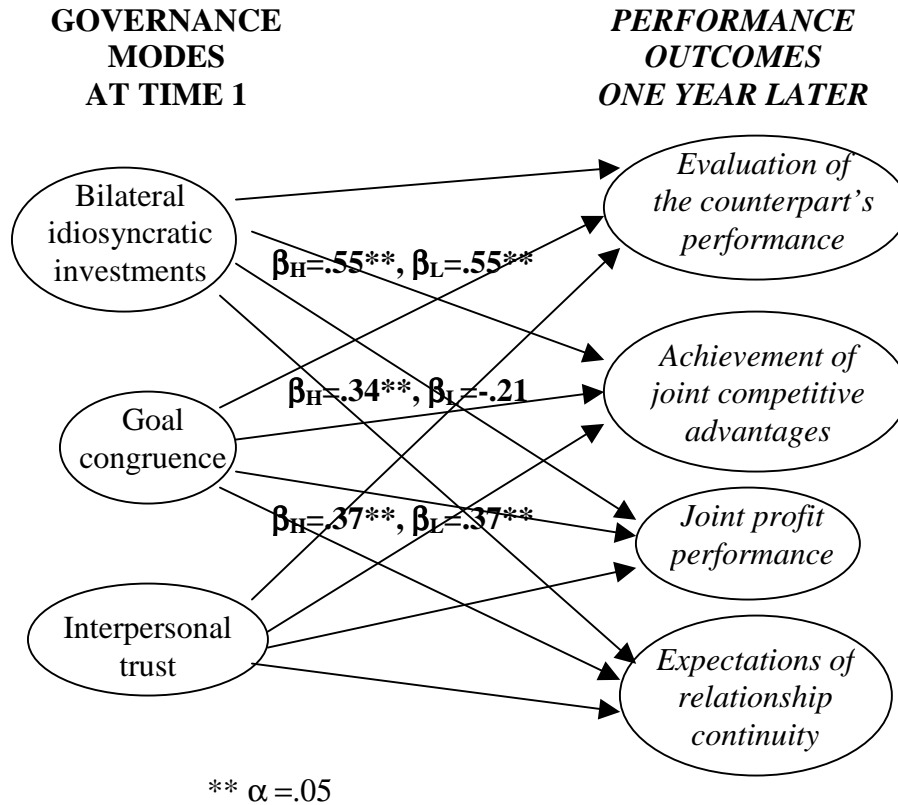
Intercorrelations, factor loadings, and measurement and latent errors are not included for simplicity of depiction.

The measurement model for buyers has a χ^2 of 1028.9 (404 df, $p < 0$), a comparative fit index (CFI) and incremental fit index (IFI) of .87 and a Tucker-Lewis Index (TLI) of .85. The root mean square error of approximation (RMSEA) is .075.

The χ^2 for the suppliers' measurement model is 704.6 (404 df, $p < 0$), with CFI=.91, IFI=.91, and TLI=.89. The RMSEA=.058.

The χ^2 of the two-group structural model is 1689.31 ($p < 0$) with 784 df, CFI=.88, IFI=.88, TLI=.87, and RMSEA=.048.

FIGURE 3
PRESERVING COMPETITIVE ADVANTAGES



H refers to high ex post opportunism, L refers to low ex post opportunism.

The italics indicate that the data were collected one year later.

Intercorrelations, factor loadings, and measurement and latent errors are not included for simplicity of depiction.

Measurement model for buyers and suppliers pooled: $\chi^2=969.54$ (377 df, $p<0$), CFI=.94, IFI=.94, TLI=.93, RMSEA=.056

Structural model: $\chi^2=709.3$ (383 df, $p<.001$), CFI=.92, IFI=.92, TLI=.90, RMSEA=.052.

TABLE 1
MEANS, STANDARD DEVIATIONS, AND CORRELATIONS

Construct	Mean	SD	Min	Max	1	2	3	4	5	6
Time 1										
1. Coordination efforts	5.1	1.1	1.0	7.0	---					
2. Bilateral idiosyncratic investments	5.2	1.2	1.0	7.0	.46	---				
3. Opportunism suspicions	2.2	1.0	1.0	6.6	-.43	-.09	---			
4. Goal congruence	5.1	1.1	1.3	7.0	.63	.31	-.56	---		
5. Interpersonal trust	5.8	1.0	1.8	7.0	.41	.27	-.54	.49	---	
Time 2										
6. Realized competitive advantages	5.1	.8	1.5	7.0	.02	.14	.08	-.00	.02	---

All correlations >.1 are significant at $\alpha=.01$

TABLE 2
CROSS-SECTIONAL AND LONGITUDINAL STATISTICS

SD=standard deviation

Construct	<u>Cross-Sectional Statistics</u>				<u>Longitudinal Difference Statistics</u>						
	Time 1		Time 2		Total Change Mean	Negative Change			Positive Change		
	Mean	SD	Mean	SD		(N)	Mean	SD	(N)	Mean	SD
Realized competitive advantages	20.35	4.46	20.47	3.99	-.03	156	-3.47	2.64	162	2.95	2.03
Profit performance	12.89	3.43	13.36	3.33	.36	164	-2.10	4.19	153	3.00	4.32
Expectations of relationship continuity	10.35	2.65	11.09	2.51	.93	150	-1.14	3.46	166	2.80	2.84
Constructive responses to problems	12.00	1.97	12.04	1.76	.03	181	-1.10	2.45	136	1.53	2.08

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APPENDIX 1 METHODOLOGY

All of the models of Figures 1 to 3 are estimated on the same dataset, a longitudinal survey of over 200 buyer-supplier dyads in a variety of industries. In this section, I briefly describe the characteristics of the data and estimation procedures. Additional details can be found in each of the three papers (Jap 1999; Jap and Anderson 1999, 2000).

DATA COLLECTION AND SAMPLE

Procedure. The procurement divisions of four *Fortune 50* manufacturing companies are represented in the dataset: a computer (PC) manufacturer, a photography equipment manufacturer, a chemical manufacturer, and a brewery. In order to maximize the sample size and minimize potential attrition effects at time 2, two hundred buyers from across the four firms were asked to report on two different supply relationships, in reference to a specific supplier and identify a knowledgeable, key informant at the supplier firm with whom it was currently working with and had experienced at least one year of frequent interaction. When the *buyer* surveys were returned, a parallel survey was sent to individuals in the supplier firms identifying the buyer firm and individual respondent and instructing the supplier to complete all items and questions in reference to the buyer firm. Thus, both the buyer and supplier used the other as a reference point for their respective surveys, such that the data collected reflect the same relationship as viewed by each side. One year later, the buyer and supplier were asked to complete similar surveys with respect to the same firm. The respondents completed identically worded, multiple-item, 7-point Likert scale measures with respect to the current state of the relationship. A listing of the scale items and reliabilities is presented in Appendix 3. Construct means, standard deviations, and correlations are presented in Table 1.

Sample characteristics. Two hundred seventy-five buyer surveys were returned at time 1 (a 69% response rate) and from these, 220 corresponding supplier surveys were completed (an 80% response rate), creating 220 matched pairs of dyads. At time two, 167 buyer surveys and 154 supplier surveys were returned, representing a 61% and 70% response rate at time two among buyers and suppliers respectively. The dyads had worked with each other an average of 3.7 years, indicating that they had a significant base of past history and transaction experience. Annual transactions involved over \$63 million in materials and services, such as capital equipment, components, services, and maintenance, repair and operating supplies.

ANALYSIS

Measurement. The unidimensionality and convergent and discriminant validity of the constructs in each figure was assessed via latent variable confirmatory factor analysis (CFA) techniques. Estimation is accomplished via full-information maximum-likelihood in LISREL 8.03 (Jöreskog and Sörbom 1993). The specific fits of the models are displayed below each figure. Collectively, they demonstrate adequate fit, convergent validity and discriminant validity among each factor in the model.

Structural model estimation. The model of Figure 1 is simultaneously estimated among buyers and suppliers using maximum-likelihood estimation of latent variables in LISREL 8.03; there were no significant differences between the β parameter estimates across the two groups. The fit indices of this model are displayed below the Figure.

The impact of opportunism suspicions on the realization of competitive advantages as shown in Figure 2, is examined via an ordinary least-squares regression in which the impact of opportunism suspicions and control variables (i.e., the level of mutual dependence between the buyer and supplier, and purchase type) are estimated on competitive advantages one year later.

The model specification for this regression is as follows: $Y = \beta_0 X_0 + \beta_1 X_1 + \varepsilon$, where Y represents the achievement of competitive advantages. X_0 is the intercept, and X_1 represents opportunism suspicions of the counterpart. β_1 is the regression coefficient, and ε is the random error term for the equation. The equation for buyers is significant at $\alpha=.001$ ($F_{1,155}$), with an $R^2=.10$. For suppliers, the equation is also significant at $\alpha=.001$ ($F_{1,155}$), with an $R^2=.08$.

The preservation of competitive advantages (Figure 3) is estimated in a model in which buyers and suppliers are pooled together (i.e., each side's view of the dyad is treated as an independent observation) and then simultaneously estimated under hi/low opportunism (hi/low is determined by a median split of the opportunism scale). Differences in the parameters are tested across hi/low opportunism and the parameters with significant differences are freely estimated. Model specifics are represented below the figure. In this way, we are able to test and examine the interactions of a complex model structure.

APPENDIX 2
SPILL OVER EFFECTS OF COMPETITIVE ADVANTAGES

The spill over effects of competitive advantages is considered via correlations between changes in competitive advantages over time and changes in profit performance, expectations of continuity, and problem-handling behaviors. Before calculating this, I undertook a descriptive analysis of the longitudinal changes for each construct. Table 2 gives the cross-sectional statistics (i.e., time 1 and time 2 measures) and longitudinal statistics (i.e., difference measures) for each construct. Two types of raw difference scores are provided under the longitudinal statistics. The first reflects the average total change for each construct between time 1 to time 2. These numbers are relatively small, with less than a 1 point change over time. While this may suggest that the scores are relatively stable, the second difference score gives greater detail – it summarizes the number and extent of negative and positive changes in the constructs between time 1 and 2. A greater amount of diversity is reflected in these scores, which indicate that 42-56% of the sample changed in a positive or negative direction, and the average magnitude of these changes ranged from 1.1 to 3.5 points. This diversity of changes in each construct across the respondents suggests sufficient variation for meaningful analysis of the interrelationships among change scores.

The most direct measure of change in these constructs is the raw difference ($X_{t2}-X_{t1}$) in scores for each respondent over time. However, this is an inappropriate measure because the time 1 scores are reflected in the time 2 scores (Lord 1963); thus, time 2 scores are dependent on the values at time 1, creating (unwanted) variance due to time 1 scores (see Cohen and Cohen 1983 for more details). To overcome this bias, researchers (Cohen and Cohen 1983; Cronbach

and Furby 1970)⁵ recommend the use of residualized change scores (RCS), which is obtained by regressing the summed-scale value⁶ of each construct at time 2 on the summed-scale value for the construct at time 1. This essentially partials out a residual measure that reflects the change from time 1 to time 2 and removes the impact of the initial starting point (time 1). The residuals are the RCS values – this is, the amount of change in the construct at time 2 per unit increase at time 1. The RCS values thus provide comparable measures of change across respondents that are not affected by initial values.

The structure of such regressed or partialled change scores helps clarify the nature of the defect of simple change scores. A simple change score presumes that the regression of time 2 scores on time 1 has a slope of 1. This almost never occurs in the behavioral sciences, as this requires that the correlation between time 1 and 2 (r_{12}) is unity when the standard deviations (sd) are equal, and more generally that $r_{12} = sd_2/sd_1$, which is relatively unlikely. Both individual differences and measurement error operate to reduce the β of the partialled score. Thus, the effect of using pure difference scores is typically one of *over* correction of the postscore by the prescore. My interest in this paper is in whether changes in competitive advantages are correlated with changes in other key outcome measures. To this end, having estimated the RCS scores, I then estimate the correlation between competitive advantages and profit performance, expectations of relationship continuity, and constructive responses to problems using the subset of respondents who completed surveys at both time periods (N=321).

⁵ Johnston, Parasuraman, Futrell and Black (1990) are an example of a study in marketing that also employs this technique.

⁶ Each respondent's score to individual items are summed to obtain a summed-scale value of the corresponding construct.

APPENDIX 3
SCALE ITEMS AND RELIABILITIES

α = Cronbach alpha scale reliability. Likert Scales (1=Strongly Disagree; 7=Strongly Agree)

Unless otherwise noted, “They” and “us” refer to the two firms, the buyer and supplier together.

All of the scales below, with the exception of interpersonal trust, refer to the organizational relationship between the firms.

Time 1 Measures

COORDINATION EFFORT ($\alpha = .79$)

They work on joint projects tailored to their needs.
They work together to exploit unique opportunities.
Both companies are always looking for synergistic ways to do business together.

BILATERAL IDIOSYNCRATIC INVESTMENTS ($\alpha = .76$)

If this relationship were to end, they would be wasting a lot of knowledge that's tailored to their relationship.
If either company were to switch to a competitive buyer or vendor, they would lose a lot of the investments made in the present relationship.
They have invested a great deal in building up their joint business.

SUSPECTED OPPORTUNISM OF THE COUNTERPART ($\alpha = .90$)

When a problem occurs, how often will the buyer (supplier) do the following? (1=Hardly Ever, 7=Very Often)

They make hollow promises.
They are aloof toward us.
They “window dress” their efforts to improve.
They expect us to pay for more than our fair share of the costs to correct the problem.
They are unwilling to accept responsibility.
They make false accusations.
They provide false information.
They fail to provide proper notification.

GOAL CONGRUENCE ($\alpha = .87$)

The firms share the same goals in the relationship.
They have compatible goals.
They support each other's objectives.
They have different goals. (R)

INTERPERSONAL TRUST* ($\alpha = .91$)

Our promises to each other are reliable.
We are very honest in dealing with each other.
We trust each other.
We would go out of our way to help each other out.
We consider each other's interests when problems arise.

* For this scale only, “Our” and “We” refer to the individual representatives.

Time 2 Measures

REALIZED COMPETITIVE ADVANTAGES ($\alpha = .81$)

They have gained strategic advantages over their competitors.

The relationship has not resulted in strategic advantages for them. (R)

They have gained benefits that enable them to compete more effectively in the marketplace.

The relationship has not resulted in strategically important outcomes. (R)

PROFIT PERFORMANCE ($\alpha = .83$)

They have achieved a high level of joint profits between them.

They have generated a lot of profits together.

CONSTRUCTIVE RESPONSES TO PROBLEMS ($\alpha = .71$)

We try to repair problems that occur between us.

We try to work things out when a problem arises.

EXPECTATIONS OF RELATIONSHIP CONTINUITY ($\alpha = .84$)

Our relationship with this firm will last far in to the future.

We expect to continue working with this firm on a long-term basis.