INTERFIRM COOPERATION AND CUSTOMER ORIENTATION

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ABSTRACT

This article examines the implications of interfirm cooperation for a firm's level of customer orientation. Drawing from research in marketing, organizational theory, and economics, we suggest that firms engaged in cooperative alliances with competitors will become less customer-oriented over time. Using longitudinal survey data, we find that firms in alliances dominated by competitors experience a significant decrease in their level of customer orientation. In contrast, this type of decrease is not observed for firms in alliances dominated by channel members. Moreover, we find that the relationship between alliance type and customer orientation is influenced by both behavioral and structural mechanisms. Behaviorally, firms in competitor-dominated alliances with weak relational ties with their collaborators exhibit a greater decrease in customer orientation compared to firms with strong ties with their collaborators. Structurally, firms collaborating with competitors in alliances with a third-party monitor, such as a government agency, experience a smaller decrease in customer orientation than firms in alliances without such a monitor.

Over the past two decades, interfirm cooperation has emerged as an important area of managerial practice and academic inquiry. In the realm of practice, cooperative interfirm relations have been successfully employed in both vertical relations (between channel members) as well as horizontal relations (between competitors) as a means of gaining access to new knowledge and reducing the costs and risks associated with developing new products and processes (Brandenburger and Nalebuff 1996; Millson, Raj, and Wilemon 1996). In the realm of inquiry, marketing scholars have investigated several aspects of these cooperative relations, including their antecedents (e.g., Anderson and Weitz 1989; Heide and Miner 1992), key success factors (e.g., Bucklin and Sengupta 1993; Morgan and Hunt 1994), and new product-related outcomes (e.g., Rindfleisch and Moorman 2001; Sivadas and Dwyer 2000).

Although this literature has produced a considerable amount of knowledge about the precursors, facilitators, and outcomes of cooperative interfirm relations, this knowledge is largely centered upon outcomes tied directly to either the relationship itself or the firms within it. Thus, relatively little is known about the effect of these relations upon the broader marketing environment, including their impact on a firm's customers. This is an important issue, as scholars and public policy officials suggest that while cooperative interfirm relations may be beneficial to participating firms, they may be harmful to their customers (e.g., Sakakibara 1997; Wright 1986).

Concerns about the possible anti-competitive effect of interfirm cooperation have been voiced for well over a century, as historical incidents have shown that collaboration can readily lead to anti-competitive practices. For example, Lamoreaux (1985) documents how collaboration within the copper, whiskey, rubber, oatmeal, cotton, and sugar industries led to wide-ranging collusion and harm to customers in the form of restricted production and high prices during much of the 19th century. As noted by Adam Smith over two centuries ago, "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public" (Smith [1776] 1930, p. 130).

Although this type of blatant collusive activity has been constrained by modern antitrust regulation since the early 20th century, the risks associated with collaboration has risen sharply over the past 20 years, following the passage of the National Cooperative Research Act of 1984 (and its revision in 1993). This act opened the door for increased interfirm cooperation by reducing the threat of antitrust prosecution (U.S. House 1984). In response, economists and legal scholars have taken renewed interest in the possible anti-competitive effects of interfirm cooperation (e.g., Petit and Tolwinski 1999; Wright 1986). Despite this interest, empirical research on the impact of collaborative activities on customers is scant at best (see Scott 1988 and Vontoras 1997 for exceptions).

In this paper, we seek to address this gap by examining the effect of interfirm cooperation on a firm's level of customer orientation. Our definition of customer orientation bridges the two views offered in the literature. Specifically, we define *customer orientation* as the set of behaviors and beliefs that place a priority on customers' interests and continuously create superior customer value (Deshpandé, Farley, and Webster 1993, p. 27; Narver and Slater 1990, p. 21). Thus, interfirm cooperation may directly affect firm behaviors, such as the extent to which marketing practices (e.g., price) reflect market-based considerations. In addition, interfirm cooperation may have more subtle effects on a firm's culture or belief systems, such as the degree to which the firm prioritizes customers in its decision-making. The latter effects are longer-run in nature and may be more difficult to detect, but have been found to be crucial to a firm's customer orientation (Deshpandé et al. 1993).

Although alliances can be formed for many purposes, our study will focus on alliances formed for conducting joint research, development, and commercialization of new products and/or processes. Hence, following recent research (Rindfleisch and Moorman 2001), we adopt the term, *new product alliances*, defined as formal collaborative arrangements among two or more firms to conduct these activities.

We offer a longitudinal examination of the effect of vertical (i.e., channel-dominated) versus horizontal (i.e., competitor-dominated) new product alliances on changes in a firm's level of customer

orientation over time.[1] We hypothesize that firms in competitor-dominated alliances will have greater difficulty maintaining a strong customer orientation than firms in channel-dominated alliances because of overlapping knowledge, low levels of mutual trust, and a tendency to collude. In addition, we investigate two mechanisms for minimizing this deleterious effect of competitor-dominated alliances on customer orientation. Specifically, we suggest that firms in competitor-dominated alliances can maintain a strong customer orientation by altering either the *structure* of their alliance or their *behavior* with their collaborators. Thus, our research provides not only an examination of the relationship between interfirm cooperation and customer orientation, but also an investigation of potential remedies for maintaining a strong customer orientation for firms cooperating with competitors.

From our review of the literature, we believe this study represents the first longitudinal investigation of how interfirm cooperation affects changes in a firm's level of customer orientation over time. Thus, this research provides an important first look at the determinants of the evolution of a firm's customer orientation and offers insights for marketing scholars and practitioners interested in interorganizational relations or customer orientation.

AN OVERVIEW OF THE EFFECT OF INTERFIRM COOPERATION ON CUSTOMERS

Traditional marketing strategy depicts firms as engaged in a zero-sum game in which cooperation is both infrequent and undesirable (Arndt 1979). Over the past two decades, this traditional economic-based view has given way to a relational perspective which suggests that interfirm cooperation is both frequent and desirable (Dwyer, Schurr, and Oh 1987). However, even relational marketing scholars seem to operate under a meta-belief that interfirm cooperation may lead to negative consequences. For example, while Hunt and Morgan (1995, p. 2) recognize the benefits of interfirm cooperation, they also acknowledge that, "Economies premised on competing firms are far superior to

[1] In contrast to dyadic alliances (i.e., buyer-seller partnerships), the alliances in our study typically entail more than two members. Thus, we employ the terms, "competitor-dominated" for alliances mainly populated by competitors and "channel-dominated" for alliances mainly populated by channel members.

economies premised on cooperating firms." This acknowledgement is based on a fundamental premise of neoclassical economic theory: cooperation interferes with efficient market processes.

This traditional neoclassical view of the perils of interfirm cooperation has played a major role in the development of U.S. antitrust policy. For example, based on the premise that information sharing among current or potential rivals will lead to anti-competitive collusive behavior, U.S. antitrust policy has historically tried to limit this type of collective behavior (Best 1990; Mowery 1998). Due to this traditional stance, new product alliances are a recent phenomenon, following a relaxation in the U.S. Department of Justice's position on interfirm cooperation (Wright 1986). Given its phenomenological recency, the effect of new product alliances on customer-related outcomes has not received attention from either relationship marketing scholars or market orientation researchers.

Although the effect of interfirm cooperation on customers has received little attention in the marketing literature, economists and legal scholars have regularly debated this issue for some time. Essentially, two divergent schools of thought frame these debates.[2] On one side, advocates of interfirm cooperation argue that alliances, joint ventures, and other forms of collaboration are largely *pro-competitive* because they help firms reduce risks, lower costs, and provide the opportunity for organizational learning through knowledge sharing (Best 1990; Teece 1992; Telser 1985). For example, Teece (1992) suggests that cooperation is necessary to promote competition because it helps firms gain access to important industry information. Similarly, other advocates suggest that interfirm cooperation enhances welfare by promoting collective innovation (e.g., Clarke 1983; Telser 1985).

On the other side, detractors of interfirm cooperation argue that these collaborative activities may be *anti-competitive* because of the risks that this cooperation may lead to outcomes that are harmful to customer welfare (Clarke 1983; Petit and Tolwinski 1999; Wright 1986). Wright (1986), for example, suggests that alliances among competitors may suffer from "over-inclusiveness."

[2] Both schools of thought focus mainly on other forms of cooperation among horizontally-related firms. However, these arguments also seem at least partially applicable to channel-dominated alliances, as vertically-related firms may also engage in both anti-competitive activities such as channel price fixing (e.g., Heil and Langvardt 1994) as well as pro-competitive activities such as developing innovative products and services (e.g., Sivadas and Dwyer 2000).

Basically, this argument asserts that a new product alliance comprised of several competitors may use its collective research endeavor as a substitute for firm-level in-house research and development, and that this substitution will result in a net reduction in overall R&D and weakened incentives for independent innovative activity.

Although both of these viewpoints appear to have theoretical merit, neither side has much empirical evidence. The scant research that has been conducted in this area only indirectly tackles the issue of how interfirm cooperation impacts customers, as it is largely derived from econometric models that are based on macro-market indicants such as industry price movements (e.g., Clarke 1983; Telser 1985). Thus, economic and legal research on the effects of interfirm cooperation on customers is thin in terms of empirical verification. To our knowledge, there are no longitudinal studies of this issue at the level of changes in individual firm behavior utilizing primary data sources. Our research seeks to address this limitation.

CONCEPTUAL FRAMEWORK

Alliances and Customer Orientation

Our conceptualization of the effect of new product alliances on customer orientation draws insights from the market orientation literature combined with recent research on interfirm alliances in marketing, organizational theory, and economics. Collectively, this literature suggests that firms engaged in competitor-dominated alliances differ from firms in channel-dominated alliances in several important ways. Specifically, firms in competitor-dominated alliances display higher levels of overlapping knowledge (e.g., McEvily and Zaheer 1999), lower levels of mutual trust (e.g., Rindfleisch 2000), and a stronger tendency for collusion (e.g., Petit and Tolwinksi 1999) compared to firms in channel-dominated alliances. We believe these differences have implications for an alliance member's ability and motivation to develop and maintain a strong customer orientation. In aggregate, these differential profiles suggest that firms engaged in competitor-dominated alliances should experience a

decrease in customer orientation over time, while firms engaged in channel-dominated alliances should not.

Degree of Overlapping Knowledge. Due to their shared location at a similar point in the value chain and membership within a common industry, firms in competitor-dominated alliances share a much higher level of overlapping knowledge about products and customers than firms in channel-dominated alliances (McEvily and Zaheer 1999; Rindfleisch and Moorman 2001). There is good reason to believe that this high level of knowledge overlap may hamper their ability and motivation to access valuable information. Overlapping knowledge has been negatively related to a firm's ability to develop innovative solutions to customer needs. In the parlance of organizational learning scholars, exposure to redundant knowledge creates a bias in favor of *knowledge exploitation* by encouraging the use of existing skills and capabilities at the expense of *knowledge exploration*, which entails the development of novel skills and abilities (March 1991).

Organizational learning theorists argue that the inputs essential for knowledge exploration often lie outside a firm's industry (Garud 1994; Nonaka and Takeuchi 1995). For example, Garud (1994) suggests that firms that collaborate with organizations with similar capabilities seek to protect the status quo while firms that collaborate with organizations with dissimilar capabilities seek to destroy existing know-how. Similarly, Scott (1988) and Vontoras (1997) suggest that participation in horizontal alliances has only a marginal impact of knowledge exploration, as these alliance participants tend to invest in existing lines of product development.

Due to this bias for the familiar, the critical infusion of novel information essential for developing and sustaining a strong customer orientation (Deshpandé et al. 1993; Kohli and Jaworksi 1990) is likely to be attenuated among firms participating in competitor-dominated alliances. Over time, this attenuation is likely to hamper the ability of these firms to sustain a strong absorptive capacity (Cohen and Levinthal 1990), which is considered a critical aspect of a firm's ability to develop innovative customer solutions in the form of new product development. Specifically, lack of

exposure to new information may atrophy a firm's capabilities to sense and respond to emerging customer needs. Without such a capability, firms will display a reduction in customer orientation.

In contrast, channel-dominated alliances tend to be comprised of firms from different industries and different points in the value chain, and hence have lower levels of knowledge overlap. Thus, firms in channel-dominated alliances are more likely to be exposed to new information essential for generating customer-focused innovation. Moreover, firms in channel alliances should also have greater access and understanding of the entire value chain, which is considered a critical input for developing and sustaining a customer orientation (Day and Wensley 1988; Narver and Slater 1990). Importantly, channel alliances typically involve partners that are closer to the customer, thereby increasing the opportunity to access customer information. This proximity may also increase the benefit of using customer information, as it should improve relationships with channel members interacting more directly with customers.

Amount of Mutual Trust. Trust is widely regarded as an essential component for a firm's ability to succeed in interorganizational relationships (Moorman, Zaltman, and Deshpandé 1992; Morgan and Hunt 1994). Prior alliance research suggests that firms in competitor-dominated alliances display lower levels of mutual trust than firms in channel-dominated alliances (Bucklin and Sengupta 1993; Rindfleisch 2000). This weakened level of trust arises from the fact that firms in competitor-dominated alliances face higher levels of opportunism (cf. Williamson 1985) and are fearful that their self-interested alliance partners will shirk on their alliance investments and exploit the products of their collective endeavors. As noted by Park and Russo (1996, p. 887), "cooperating with competitors is risky business…the incentives to act opportunistically appear to motivate actions that threaten and frequently undermine joint ventures with them." Likewise, Bucklin and Sengupta (1993, p. 33) warn that in horizontal alliances, "The potential for opportunism is high as partners may use the alliance only as a means to gain market position at the expense of a partner." Opportunism and mistrust have been shown to have a negative impact on the acquisition and utilization of information among exchange

partners (Vontoras 1992). Consequently, mistrust's negative influence on the willingness of alliance participants to share and utilize information should diminish the ability of firms engaged in competitor-dominated alliances to sustain a strong customer orientation.

In addition to hampering the free flow of information, the fear of opportunism also increases the amount of resources firms need to expend in monitoring the behavior of their exchange partners (Williamson 1985). Consequently, firms in competitor-dominated alliances will need to devote considerable managerial resources trying to monitor alliance partners. Faced with the reality of limited resources (Pfeffer and Salancik 1978), participants in these alliances may have fewer resources available to monitor customers. Thus, due to mistrust in their alliance partners, firms in competitor-dominated alliances could find it difficult to make sufficient investments in the monitoring functions essential for sustaining a customer orientation over time. This view is supported by research indicating that trust reduces the need to monitor (Heide 1994; Heide and Miner 1992) and encourages risk-taking behavior among exchange partners (Moorman et al. 1992; Morgan and Hunt 1992). In the absence of trust, partners are likely to be more conservative in making specific investments in an exchange relationship (Anderson and Weitz 1992). Following this logic, in contrast to competitor-dominated alliances, the higher levels of trust characterizing channel-dominated alliances should enhance a firm's willingness and ability to invest in and maintain a focus on customer needs.

Tendency for Collusion. As widely noted by neoclassical economists, firms that cooperate with competitors have strong motives to engage in collusive practices (Clarke 1983; Katz 1986; Petit and Tolwinski 1999). The dangers to consumer welfare from the collective setting of high prices or agreements to restrain production are the most widely acknowledged forms of collusive activity (Clarke 1983). As Katz (1986, p. 541) suggests, "a cooperative R&D arrangement might serve as a chance for the guys to get together to discuss means of colluding in the product market." The fear of price and production collusion in horizontal cooperation is a clear and present concern among critics of the NCRA (Petit and Tolwinski 1999; Scott 1991; Wright 1986). Thus, it is conceivable that firms in

competitor-dominated alliances may exhibit a reduction in their focus on customers by substituting market-focused pricing strategies for collectively determined ones and/or replacing demand-forecasted production for output established by collective agreement. This reduction in customer focus is unlikely to occur for firms in channel-dominated alliances, as the members of these alliances occupy different points in the value chain and are competing in different markets (Katz 1986). Thus, external competitive pressures should decrease the likelihood that firms in channel-dominated alliances engage in such practices.

In addition to these more explicit forms of collusive activity (i.e., prices and production), economists note that collusion comes in many other forms, including a reduction in collective innovation (Telser 1985; Wright 1986). As noted earlier, these economists suggest that firms in competitor-dominated alliances may use their collective R&D activities as a substitute for individual-level R&D, and that this substitution results in a decline in the diversity of innovation to the detriment of customers. In the long-term, this type of decrease in firm-level R&D investment will, as Cohen and Levinthal (1990) show, weaken a firm's absorptive capacity. This leaves firms with less ability to sense and respond to market developments. As noted by Cohen and Levinthal, firms that skimp on R&D investments often find themselves "locked out" of perceiving emerging market trends. In contrast, due to their greater variance in terms of products and technology (Scott 2000), firms participating in channel-dominated alliances should be less likely to use collective R&D as a substitute (intentionally or otherwise) for in-house R&D activities.

Finally, collusive-type outcomes may arise in competitor-dominated alliances through a weakening of the cultural foundations and belief systems underlying a customer orientation. Specifically, the very act of interacting with competitors in an ongoing cooperative manner may lessen a firm's degree of competitiveness. As noted by Mandell (1995), opponents of horizontal R&D cooperation fear that this type of weakening of competitive spirit is an unintended by-product of such alliances. Consistent with this viewpoint, Mariti and Smiley (1983, p. 449) warn that, "…the cordial

linkages that prevails between partners may preclude vigorous competition." As noted by several market orientation scholars, having a strong focus on competitive threats (i.e., competitor orientation) is strongly correlated with having a strong focus on customers (Gatignon and Xuereb 1997; Narver and Slater 1990). This cultural shift towards a lessening of competitive spirit is unlikely for firms in channel-dominated alliances, as their competitors do not populate their alliance.

In aggregate, the economic literature on alliances suggests that firms engaged in competitor-dominated alliances are more likely than firms in channel-dominated alliances to engage in collusive activity. This shift in behaviors and/or culture (whether in the form of increased prices, restricted production, diminished investment in R&D, lower absorptive capacity, or weakening in competitive focus) is likely to amount to a reduction in a firm's customer orientation by de-emphasizing the market sensing and customer linking activities that are crucial to a firm's ability to sustain a market orientation (Day 1994; Moorman 1995).

Counter-arguments. While we believe the arguments above provide good reason to suspect that firms participating in competitor-dominated alliances will have difficulty sustaining a strong customer orientation, there is little empirical research to provide strong substantiation for these claims. Thus, each of these arguments can be countered.

First, while the overlapping knowledge associated with competitive alliances may hurt customer orientation by restricting knowledge exploration, it also may enhance customer orientation by increasing a firm's capacity to absorb and apply information from alliance members in the near term (Mowery, Oxley, and Silverman 1996; Saxton 1997; Teece 1977). For example, Mowery et al. (1996) find that shared technological experience enhances the transfer of complex capabilities among alliance members. Similarly, Rindfleisch and Moorman (2001) show that the overlapping knowledge structures characterizing competitor-dominated alliances have a positive influence on the acquisition and utilization of novel information from partners. As past research has shown, redundancy may also allow firms to find innovative ways to *combine* their knowledge (Madhavan and Grover 1998). Therefore,

depending on the level of shared knowledge, firms in competitor-dominated alliances could actually experience an *increase* in customer orientation via both the acquisition and utilization of information.

Second, while a low degree of trust is unlikely to have any direct positive direct effects on the customer orientation of firms in competitor-dominated alliances, a lack of trust could indirectly help these firms maintain a focus on their customers. This indirect effect may arise because the fear of opportunistic exploitation should serve as a stumbling block to the development of explicit collusive arrangements to restrict production or increase prices. In effect, this view suggests that the lack of mutual trust and threat of opportunism should encourage firms in competitor-dominated alliances to keep their focus on meeting customer needs, as the threat of competition remains high.[3]

Third, while it is possible that firms in competitor-dominated alliances may still seek to collude even under low trust conditions (Burns 1936), explicit collusion seems unlikely for alliances filed with the U.S. Department of Justice (as required by the NCRA). In fact, none of the 800+ alliances filed to date under the NCRA have been accused of this type of collusive activity. Therefore, at least in terms of price or production control, there is little evidence of explicit collusion in these alliances.

Finally, one counter to the idea that competitor-dominated alliances result in a decrease in R&D activity comes from research in the Schumpeterian tradition (Schumpeter 1942). This view suggests that firms in concentrated markets can more easily appropriate the returns from innovative activity, which may create an incentive to invest more in R&D. Translating to alliances, this view would imply that cooperative relationships among competitors should actually stimulate, not decrease, R&D investments. However, as reviewed by Cohen and Levin (1989), empirical support for the relationship between industry concentration and R&D investment is quite mixed. Thus, the implications of this Schumpeterian perspective for positive customer-related outcomes from competitive-dominated alliances are questionable.

[3] Although a lack of mutual trust should make explicit collusion more difficult to enact, prior research has shown that mutually beneficial arrangements, such as price collusion, are feasible even under conditions in which trust is absent (Axelrod 1984).

Summary. In sum, although these three characteristics provide mixed arguments about the relationship between alliance type and customer orientation, we believe the collective weight of these arguments suggests that competitor-dominated alliances should have a negative effect while channel-dominated alliances should have little influence on customer orientation over time. Moreover, while the positive effect of competitor-dominated alliances on customer orientation may have a broad theoretical basis, the negative effects appear to have stronger empirical validation. Thus, we hypothesize:

> **H_1:** Firms cooperating in competitor-dominated alliances will experience a reduction in their level of customer orientation over time, while firms cooperating in channel-dominated alliances should experience a stable level of customer orientation over time.

Mechanisms Underlying the Negative Impact of Competitor-Dominated Alliances

Although we predict that competitor-dominated alliances will have a detrimental effect on a firm's focus on their customers, this relationship may be influenced by various mechanisms. We examine two mechanisms in particular. First, competitor-dominated alliances may erect *structural mechanisms* such as the involvement of a neutral third party to monitor their behavior and mediate disagreements (Scott 2000). Second, competitor-dominated alliances may provide added *behavioral mechanisms* in the form of higher levels of relational ties, which may influence the outcomes of these alliances (e.g., Axelrod 1984; Heide and Miner 1992; Rindfleisch and Moorman 2001). Our focus on structural and behavioral mechanisms is congruent with prior research on interfirm cooperation, which suggests that cooperation is a by-product of both mechanisms (e.g., Gulati 1998; Smith, Carroll, and Ashford 1995). We offer hypotheses regarding the expected effects of each mechanism. Note that because we expect that channel-dominated alliances should not reduce a firm's level of customer orientation, we examine these mechanisms for only competitor-dominated alliances.

Third-Party Monitor. As noted earlier, competitor-dominated alliances are generally thought to have a strong tendency to engage in explicit or tacit collusion (cf. Ouchi and Bolton 1988; Teece 1992; Telser 1985). This is essentially a governance problem in the sense that these alliances lack the

structural mechanisms of monitoring and enforcement provided by the competitive forces of the market. As noted by Williamson (1985, p. 90), marketplace competition "promotes high-powered incentives" which deter opportunistic behavior and encourage innovative activity. If competitor-dominated alliances weaken these competitive incentives, monitoring activities, and enforcement structures, the result should be a reduction in the customer orientation of alliance members.

In order to ensure that competing firms maintain a strong customer orientation, traditional thought (from neoclassical economists) and practice (by the U.S. Department of Justice) has focused on the role of *preventing* the breakdown of marketplace incentives by making most forms of horizontal cooperation either illegal or subject to a high degree of scrutiny (Teece 1992; Telser 1985). These scholars suggest that competitor-dominated alliances will not harm customers provided they are governed by a system that provides adequate monitoring of their activities and enforcement against anti-competitive practices. One means of providing this form of governance is the inclusion of a neutral third party such as a government agency or university (Williamson 1985). Theoretically, these third parties have no profit motive and serve a watchdog function by ensuring that the participants do not engage in anti-competitive practices.

In addition to serving as a watchdog against collusion, a third-party monitor can also infuse fresh ideas, which may minimize the dangers of overlapping knowledge. As hypothesized by cluster theorists, neutral third parties such as research universities are critical sources of knowledge exploration for firms cooperating with fellow industry members (Rosenfeld 1997; Saxenian 1994). Finally, a third-party monitor can also play an important mediating function by serving as a neutral judge and group facilitator to help resolve disagreements and build trust among alliance participants (Ouchi and Bolton 1988; Scott 2000). In sum, competitor-dominated alliances that have a third-party monitor should be more likely to maintain a stronger customer orientation over time compared to competitor-dominated alliances without such a monitor. This leads to our second hypothesis:

H_2: The presence of a third-party monitor will attenuate the reduction in customer orientation experienced by firms cooperating in competitor-dominated alliances.

Relational Ties. In addition to the structural mechanism of a third-party monitor, firms in competitor-dominated alliances may also employ the behavioral mechanism of relational ties to influence alliance outcomes. Specifically, relational ties may serve as a governance mechanism by developing norms of reciprocity and feelings of interconnectedness among alliance participants (Rindfleisch and Moorman 2001). While these norms and feelings may evolve into trust in the long-term (Axelrod 1984; Gulati 1998), relational ties rely more on the mutual past debts and the prospects of future interactions (e.g., Heide and Miner 1992) than on explicit trust in exchange partners.

Critics of interfirm cooperation have expressed considerable concern about the development of relational ties among competing firms, due to the fear that these ties may lead to implicit collusion and a decreased focus on customers (e.g., Clarke 1983; Mariti and Smiley 1983; Petit and Tolwinski 1999). Related, cross-disciplinary research focuses on how the subtle pattern of ties and informal interconnections between executives of rival firms through such mechanisms as common social backgrounds (Chandler 1977; Sabel 1993) and interlocking corporate directorates (Scott 1991; Westphal and Zajac 1997) influence firm behavior. In aggregate, these studies imply that the development of close, relational ties among competing firms are detrimental to customers, as these linkages subvert marketplace incentives by promoting feelings of goodwill and the development of norms of reciprocity among competitors.

This traditional view of the dangers of relational ties stands in stark contrast to the manner in which relational marketing scholars view such ties. Over the past decade, these scholars have established that the presence of relational ties (e.g., reciprocity, embeddedness) enhances the performance and satisfaction of firms engaged in alliances and other forms of long-term relations (Heide and John 1992; Lusch and Brown 1996; Morgan and Hunt 1994). For example, Lusch and Brown (1996) find that relational behavior between distributors and suppliers is positively related to distributor performance. As specified by Heide (1994), relational ties provide an effective form of governance that reduces the hazards of opportunism and other forms of exploitation among exchange

partners. Similarly, Gulati (1998, p. 296) suggests that relationalism "diminishes uncertainty and promotes trust between actors." Thus, relational ties should enhance the ability of firms in competitor-dominated alliances to focus on customer needs by reducing the amount of time and attention that they need to devote to monitoring the actions of their fellow alliance participants.

Although the relational marketing literature's findings regarding the benefits of relational ties are impressive, this research is largely focused on vertical relations and has not yet examined the relationship between interfirm relations and customer orientation. Thus, the extent to which these findings are relevant for customer-related outcomes among participants in competitor-dominated alliances remains an empirical question. However, recent research both in marketing and related fields provide suggestive evidence that relational ties may also provide enhanced outcomes for firms participating in horizontal relationships. For example, research on geographic clusters indicates that relational ties among competitors enhance information acquisition and organizational learning (Porter 1998; Rosenfeld 1997). In a marketing context, Rindfleisch and Moorman (2001) show that relational ties enhance information acquisition and utilization among firms in both vertical and horizontal alliances. This increased information should provide firms with an increased ability to be responsive to customer needs.

Given these two divergent perspectives on relational ties, it is possible, depending on the focus of the norms that are developed among alliance participants, that strong relational ties could either strengthen (as suggested by neoclassical economists) or weaken (as suggested by marketing relationship scholars) the reduction in customer orientation among participants in competitor-dominated alliances. Specifically, on the one hand, as suggested by neoclassical economists, if alliance participants develop relational ties centered on norms of collusive activity, a drop off in customer orientation should be observed. On the other hand, as suggested by relational marketers, if alliance participants develop relational ties centered on norms of innovation or any other area of competition, a decrease in customer orientation should not be observed. Given this conceptual controversy and lack

of prior empirical support for either direction, our third and final hypothesis explores the moderating role of relational ties in general without detailing a specific direction. We hypothesize:

H_3: The presence of strong relational ties will moderate the reduction in customer orientation experienced by firms cooperating in competitor-dominated alliances.

METHOD

Sample and Procedures

The sample frame for this longitudinal study is firms that have recently participated in new product alliances. As a sampling base, we examined the 242 alliances filed in the *Federal Register* from January 1, 1989 to March 15, 1995. In accordance with the National Cooperative Research Act (NCRA) of 1984 (updated in 1993), participants may file written notification of their alliance with the U.S. Department of Justice in order to protect alliance members from the threat of anti-trust prosecution. These filings are published in the *Federal Register* and provide information about the formation date, identity and location of each participant, and basic objective of each alliance. These NCRA filings provide one of the few freely available systematic data sources documenting interfirm cooperative activity (Hemphill 1997). As specified by the NCRA, all of these alliances were formed for the purposes of research and development, but could legally encompass a broad swath of activities, including prototype development and model testing. In addition, although joint commercial production was beyond the scope of protection afforded by the original NCRA (though not illegal), the expanded Act of 1993 (the National Cooperative Research and Development Act) explicitly included joint commercialization activities under its purview.

Using these 242 filed alliances as a starting point, we selected 153 alliances (which contained 719 participants in total for an average of 4.7 participants per alliance) for sampling. The 89 alliances that we omitted were deemed either too large for a firm to reasonably report on (i.e., more than 12 participants) or had no new firms to sample (i.e., all of the participants were members of one or more of the other alliances in our dataset). We limited the number of firms selected in each alliance to no

more than six in order to increase the diversity of alliances in our sample. Within each alliance, we selected each firm (up to six), unless that firm had already been included in an earlier alliance. Thus, firms that participated in more than one alliance were mailed only one survey about one specific alliance. We adopted this approach in order to increase the diversity of our data and the generalizability of our results. Because prior research indicates that international alliances systematically differ from domestic alliances (Harrigan 1985; Kogut and Singh 1988), we only included firms that were U.S. companies or domestic divisions of multinational corporations. These procedures resulted in 380 firms for inclusion in our study.[4] Within each firm, we targeted the vice president of R&D (or an occupant of a similar position) as our key informant (Campbell 1955).

Time 1 Survey. Prior to mailing our first survey, we attempted to precontact key informants by telephone. This process eliminated 39 firms (among six alliances) we could not reach or for which we could not identify a knowledgeable informant. Thus, the population for our final sampling frame consisted of 341 firms. Each informant was mailed a cover letter, a summary describing the alliance in question, and a postage-paid reply envelope. Three weeks following this mailing, we telephoned non-respondents as a reminder. One week later, we sent each non-respondent a handwritten reminder postcard. Informants who did not reply within six weeks were mailed a second set of survey materials.

The surveys for eight firms were undeliverable and 33 firms replied that they lacked sufficient information about the alliance in question to provide useful information. This left an effective sampling frame of 300 firms across 147 alliances. From this base, 106 surveys were returned (across 70 alliances), for a 35% response rate. This response rate compares favorably with previous studies of alliance activity (e.g., Littler et al. 1995; Sivadas and Dwyer 2000). As recommended by Armstrong and Overton (1977), we assessed potential non-response bias through an extrapolation method by comparing early (first two thirds) versus late (last third) respondents. These tests showed no

[4] Of the 339 entities omitted from our sampling frame (719 – 380 = 339), 136 were duplicate firms, 51 were non-firm entities (e.g., universities), 42 were foreign firms, and 110 were firms from alliances in which six members had already been selected.

significant differences between these two groups (alliance type: $F_{(1, 104)} = 1.18$, n.s.; customer orientation: $F_{(1,96)} = .36$, n.s.; relational ties: $F_{(1,103)} = .08$, n.s.; presence of a third-party monitor: $F_{(1,99)} = .001$, n.s.; number of alliance partners: $F_{(1,104)} = 1.42$, n.s.; alliance duration: $F_{(1,104)} = .14$, n.s.). This suggests that our data is unlikely to be tainted by non-response bias.

As an informant validity check, respondents provided information about their position, the number of years they had worked for the focal firm, and their degree of familiarity with the alliance in question. This information revealed that respondents were highly knowledgeable about the alliance (5.8 on a seven-point scale) and had substantial experience with their firm (14.8 years on average). Two-thirds (66%) of these respondents were presidents or vice-presidents of their firms. Thus, our sampling approach appears to have been quite successful in identifying knowledgeable and experienced key informants.

Although the updated NCRA includes commercialization under its purview, we took steps to ensure that the alliances in our sampling frame engaged in customer-related activities. First, we content analyzed the *Federal Register* filings for the 147 alliances in our sample and coded each alliance's stated objectives regarding research, development, and/or commercialization. Based on the assumption that product development and commercialization are activities that are closer to the market (and hence, the customer), we sought to discern the frequency of these activities in our alliances. Results indicate that 97% of the sample had a research objective, 82% had a development objective, and 38% had a commercialization objective. These results show that most alliances had multiple objectives and that a large percentage were connected to the market through either product development or commercialization. Importantly, we find no significant difference in the overall distribution of these objectives among firms in competitor-dominated (Research = 98%, Development = 83%, Commercialization = 45%) versus channel-dominated (Research = 97%, Development = 81%, Commercialization = 36%) alliances.

As an additional means of evaluating the appropriateness of our sampling frame, the Time 1 survey included questions that provide information about the underlying motives driving alliance formation. Specifically, we asked informants to rate the importance of a series of motives behind their firms' decision to enter the alliance using a seven-point scale where 1 is "not at all important" and 7 is "very important." These factors (and reported means) were: changing customer needs (M = 4.80), increased threat of foreign competition (M = 3.15), increased threat of domestic competition (M = 3.93), and increased government legislation or regulatory requirements (M = 3.58). Analysis of mean differences reveals that changing customer needs was a significantly more compelling motive than the threats of foreign competition ($t = 7.14$, $p < .001$), domestic competition ($t = 4.33$, $p < .001$), or government requirements ($t = 3.72$, $p < .001$). These results indicate that customer-related concerns were the most important motive behind alliance formation, and provide further support that the alliances formed under the NCRA have a substantial connection to customers.

Time 2 Survey. Approximately *three years* following the mailing of our initial survey, we conducted a follow-up study. We mailed a cover letter, a survey, a description of the alliance in question, a postage-paid reply envelope, and a $10 bill as an incentive to the 106 respondents from our initial study. Three weeks following this initial mailing, non-respondents were mailed a remainder letter. Three weeks later, the remaining non-respondents were mailed a second complete set of survey materials. Twenty of our surveys were non-deliverable due to relocation on the part of our participants. This left an effective population of 86 respondents, from which 60 surveys were returned for a 70% response rate. This response rate compares favorably to that found in prior longitudinal surveys (e.g., Jap 2001; Moorman and Rust 1999; Wotruba and Tyagi 1991). After eliminating five surveys that contained a severe amount of missing data, we were left with 55 longitudinal responses (from 39 alliances) for analysis.

In order to ensure that the respondents to our Time 2 survey were representative of both our Time 1 respondents and our sampling frame in general, we conducted several checks. First, we

compared the means for our key measures among the 55 respondents of our Time 2 survey versus the 51 non and partial respondents. These tests showed no significant differences between these two groups (alliance type: $F_{(1,104)} = .001$, n.s.; customer orientation: $F_{(1,96)} = 1.15$, n.s.; relational ties: $F_{(1,104)} = .54$, n.s.; presence of a third-party monitor: $F_{(1,99)} = .26$, n.s.; number of alliance partners: $F_{(1,104)} = .912$, n.s.).[5] Thus, it appears that the respondents to our Time 2 survey are representative of the firms that replied to our Time 1 survey.

As a second means of safeguarding against selection bias, we compared our Time 2 respondents to the *last third* of our Time 1 respondents (cf. Armstrong and Overton 1977). Based on the assumption that the last third of the Time 1 respondents are similar to non-respondents, similarity in response profiles between these two groups would lend confidence that our Time 2 sample is not different from the original sample. An analysis of responses to our key measures indicate no significant difference between these two groups: (alliance type: $F_{(1,70)} = .04$, n.s.; customer orientation: $F_{(1,64)} = .28$, n.s.; relational ties: $F_{(1,70)} = .31$, n.s.; presence of a third-party monitor: $F_{(1,68)} = .02$, n.s.; and number of alliance partners: $F_{(1,71)} = .07$, n.s.).

As a third test of non-response bias, we examined the formation dates and number of alliance participants for the 39 alliances in our Time 2 sample against the remaining 108 (147 – 39) alliances in our original sampling frame. We computed the formation date of each alliance in terms of the number of months transpired since the beginning of our examination date (i.e., January 1989). Results indicate no difference in the alliance formation date between these two groups ($M_{(\text{Study 2})} = 55$, $M_{(\text{Sampling Frame})} = 49$, $F_{(1,145)} = 2.01$, n.s). However, results do show a significant difference in the number of alliance participants between these two groups ($M_{(\text{Study 2})} = 6.3$, $M_{(\text{Sampling Frame})} = 4.4$, $F_{(1,145)} = 14.03$, $p < .001$). This difference largely arises from the fact that, on average, larger alliances had more surveys mailed out than smaller alliances. Considering that collusion and interfirm cooperation is more difficult to

[5] It was not possible to calculate differences in alliance duration, as we do not have information on Time 1 alliances that did not participate in Time 2.

establish in large alliances (e.g., Heil and Robertson 1991), this difference actually works against, not in favor, of our hypotheses.

Finally, based on the coding of alliance objectives, we used a repeated-measures test to compare the alliance objectives for our Time 2 alliances relative to both Time 1 alliances and the 147 alliances in our initial sampling frame. Results indicate no significant differences in the percentage of firms with either research (Sample: 97%, Time 1: 95%, Time 2: 100%, $F_{(2,144)} = 1.87$, n.s.), development (Sample: 82%, Time 1: 90%, Time 2: 87%, $F_{(2,144)} = .01$, n.s.) or commercialization (Sample: 38%, Time 1: 45%, Time 2: 38%, $F_{(2,144)} = .42$, n.s.) objectives. In aggregate, these four tests of non-response bias provide a reasonable degree of confidence that our final Time 2 sample is representative of both our Time 1 sample as well as our original sampling frame.

Measurement and Validation

Measure development began with interviews and a field test of our instrument among product development personnel at IBM in order to ensure our measures were relevant and our language was appropriate for target respondents. Using the learning gained from this field test, we developed a pretest survey administered to 50 firms (23 responded) from a broad array of industries that had recently participated in new product alliances. Psychometrics were assessed and measures were adapted as needed. The final Time 1 survey contained measures of the key constructs and a set of control variables. A subset of these key constructs was also assessed in our Time 2 survey. These measures are detailed in the Appendix and the intercorrelations, reliability, and descriptive statistics are provided in Table 1. With the exception of our Time 2 measure of customer orientation and our calculation of alliance duration, all of these measures were collected in our initial survey, as they served as our key predictor variables.

Insert Table 1 about here

Customer Orientation. We assessed customer orientation using five items from Narver and Slater's (1990) customer orientation dimension of their market orientation scale. These items are conceptually similar to the items in the Deshpandé et al. (1993) customer orientation scale, and hence tap both the behavioral and cultural foundations of customer orientation. All items were assessed on a seven-point Likert scale in which 1 = "strongly disagree" and 7 = "strongly agree." This scale was included in both the Time 1 and Time 2 surveys, and demonstrated good reliability in both applications (Time 1: $\alpha = .81$; Time 2: $\alpha = .83$).

Alliance Type. This measure is designed to capture the horizontal versus vertical nature of the relationship among new product alliance participants. Respondents were asked to classify each organization participating in the alliance as a customer, a supplier, a competitor, or other (adapted from Littler, Leverick, and Bruce 1995). On the basis of these classifications, we calculated the percentage of competitors in each alliance. The mean percentage of competitors across all alliances was 37%. Approximately 40% of the firms participated in an alliance in which half or more of the participants were competitors. The incidence of competitor-dominated alliances found in our sample is similar to that reported in prior studies (e.g., Robertson and Gatignon 1998; Vontoras 1997).

To reflect our theoretical interest in the distinction between horizontal versus vertical alliances, alliances were classified into channel-dominated alliances (alliances composed of 0-49% competitors) versus competitor-dominated alliances (alliances composed of 50% or greater competitors). Similar types of categorizations of alliance type have been successfully employed in prior research (Rindfleisch and Moorman 2001). As a means of assessing the validity of this categorization, we conducted a two-group k-means cluster analysis for alliance composition. This analysis reveals that our grouping displays a high degree of correlation ($r = .96$) with this cluster-group membership. Thus, it appears that our categorization closely fits the pattern of responses seen in our data, which is the essential concern when conducting categorical splits of continuous data (Tybout 2001).

As a means of assessing the equivalence of firms involved in competitor-dominated versus channel-dominated alliances, we examined the size of the firms (i.e., sales and employees) in the two types of alliances. Firm sales were measured by the overall firm revenues as reported in COMPUSTAT for 1997 (the year the Time 1 survey was fielded). The number of firm employees was measured using 1997 information collected from onesource.com. Results indicate that firm sales in these two types of alliances ($M_{(Competitor\text{-}dominated)}$ = \$17.07M, $M_{(Channel\text{-}dominated)}$ = \$23.68M, t = -.51, n.s.), and number of employees ($M_{(Competitor\text{-}dominated)}$ = 780 employees, $M_{(Channel\text{-}dominated)}$ = 667 employees, t = .31, n.s.) do not differ between firms across these two types of alliances.

Third-Party Monitor. Recall that our conceptualization of a third-party monitor focused on the effects that a neutral third party has on the interaction among alliance participants. We felt that respondents might have limited knowledge or difficulty reporting the specific activities of a third-party monitor. Therefore, instead of introducing error due to reporting problems, we simply asked respondents whether or not a neutral third party such as a government agency played a role in monitoring or enforcing the behavior of alliance participants. Forty-nine percent of the firms in our Time 1 sample and 52% of the firms in our Time 2 sample reported participating in an alliance with this type of third-party monitor.[6] In 86% of the cases, this monitor was *not* a formal participant in the alliance as verified in the *Federal Register* filings.

Relational Ties. Following research in the relational exchange literature (e.g., Dwyer et al. 1987; Heide and John 1988; Lusch and Brown 1996), we view relational ties as evolving over time and focused on interconnectedness and reciprocal exchange. In contrast to trust, these norms do *not* assess the degree to which respondents place confidence in the integrity and reliability of alliance partners (cf. Moorman et al. 1992; Morgan and Hunt 1994). To capture this construct, we employed a four-item Likert scale, developed by Rindfleisch and Moorman (2001) that asks respondents to assess their firm's

[6] Firms in alliances with a third-party monitor are statistically similar to firms without a third-party monitor in terms of both the number of alliance participants ($Mean_{(Monitor)}$ = 6.92, $Mean_{(No\ Monitor)}$ = 6.10, t = -1.55, n.s.) and alliance duration ($Mean_{(Monitor)}$ = 84.6, $Mean_{(No\ Monitor)}$ = 70.6, t = -1.58, n.s.).

level of reciprocity and closeness with their alliance partners in general. This measure displayed adequate reliability ($\alpha = .83$).

Dimensionality and Discriminant Validity. We assessed the unidimensionality and discriminant validity of our two multi-item measures (i.e., customer orientation and relational ties) via a confirmatory factor analysis using LISREL 8.3 (Jöreskog and Sörbom 1993) based on the data from our Time 1 sample. This model assessed the fit of these latent indicants by specifying the observed items for each measure as loading on their hypothesized latent construct. This model had strong fit indices ($\chi^2_{(36)} = 349$, GFI = .93, CFI = .95, TLI = .95, RMSEA = .06), suggesting that our multi-item measures display adequate dimensionality.

To assess the discriminant validity between our two latent constructs, we re-ran this initial model (in which the correlation between the latent constructs was freely estimated) using a model in which the correlation between these latent constructs was constrained to unity (Anderson and Gerbing 1988). We found that the chi-square values for the unconstrained model was significantly lower than the chi-square values for the constrained model ($\Delta\chi^2_{(1)} = 134$, $p < .001$), providing evidence of the discriminant validity of these measures. As a more stringent test of discriminant validity, we employed Fornell and Larcker's (1981) test of shared variance between our two latent constructs. The results of this test reveal that the squared correlations between these constructs do not exceed average variance extracted for each single latent construct ($p < .001$), indicating discriminant validity.

Control Variables. In addition to these key measures, we also collected data on two control variables. Specifically, we assessed the number of alliance partners and the duration of the alliance in order to ensure that these alliance characteristics are not confounding the relationships among our key predictor variables and customer orientation. Prior research suggests that these two variables play an important role in influencing the outcomes of alliance activity (e.g., Heil and Robertson 1991; Link and Bauer 1989; Morgan and Hunt 1994). The number of participants is important because it should be easier to conduct anti-competitive collusive activities in small groups than in large ones. The duration

of the alliance is important because a long history of interaction should allow firms to develop relational ties that may influence the outcomes of interfirm cooperation.

The number of alliance partners was observed by counting the number of alliance members listed in the *Federal Register*. The mean number of alliance partners was 5.42 (range: 1 – 11) for the 106 firms at Time 1 and 5.57 (range: 1 - 11) for the remaining 55 firms at Time 2. We controlled for the duration of the alliance by asking respondents (at Time 2) if and when they stopped participating in the focal alliance. Using the filing date in the *Federal Register* as a starting point, we calculated the number of months the firm had spent in the alliance. For firms that were still participating in their focal alliance at the time of the follow-up survey, we used September 2000 (the date the survey was closed) as the end point in calculating alliance duration. The mean duration was approximately 79 months (range: 17 – 132 months).

RESULTS

Overview of Analysis Approach

We tested our hypotheses using a general linear model (GLM) with a repeated measures design. This model included: (1) customer orientation (Time 1 and Time 2) as a within-subjects factor, (2) alliance type, third-party monitor, and relational ties as between-subjects factors, and (3) number of partners and alliance duration as between-subject covariates. In addition to providing a longitudinal perspective, a repeated measures analysis also controls for subject variability. As noted by Keppel (1991, p. 334), "The error component…should be smaller in the case of repeated measures…This reduction in error variance represents a direct increase in economy and statistical power." This increase in statistical power reduces the likelihood of Type II errors and helps compensate for the smaller sample sizes typically associated with longitudinal surveys. The key results from our GLM analysis are presented in Table 2.

Insert Table 2 about here

Tests of Hypotheses

As predicted in H_1, our results indicate that alliance type has an important influence on customer orientation, as the two-way interaction between customer orientation and alliance type is significant ($F_{(1,33)} = 6.65$, $p < .01$) and has a medium effect size (partial $\omega^2 = .14$). A plot of this interaction, which is shown in Figure 1, indicates that while firms in channel-dominated alliances experience essentially no change in their level of customer orientation over time (Time 1 = 5.95, Time 2 = 5.99), firms in competitor-dominated alliances experience a significant drop in their level of customer orientation over time (Time 1 = 6.22; Time 2 = 5.70). This pattern of results provides strong support for Hypothesis 1.

Insert Figure 1 about here

Our second hypothesis predicted that firms in competitor-dominated alliances with a third-party monitor should experience a smaller decrease in customer orientation compared to firms in competitor-dominated alliances without such a monitor. This hypothesis is tested by examining the three-way interaction of customer orientation, alliance type, and third-party monitor. As shown in Table 2, this three-way interaction is significant ($F_{(2,33)} = 6.05$, $p < .02$) and has a medium effect size (partial $\omega^2 = .13$). A plot of this interaction is shown in Figure 2, and reveals that firms in alliances with competitors without a third-party monitor experience a sharp drop in customer orientation (Time 1 = 5.86, Time 2 = 4.86), while firms in competitor-dominated alliances with a third-party monitor experience only a slight decrease in customer orientation (Time 1 = 6.42, Time 2 = 6.15). This finding provides strong support for Hypothesis 2.

Insert Figure 2 about here

In contrast to the significant influence of the presence of a third-party monitor for *competitor-dominated alliances*, the presence of a third-party monitor had no effect on customer orientation for firms in *channel-dominated alliances* (Third party absent: Time 1 = 5.91, Time 2 = 5.94; Third party present: Time 1 = 6.00, Time 2 = 6.04). Interestingly, firms in competitor-dominated alliances with a third-party monitor appear to also possess a higher level of initial customer orientation (M = 6.42) compared to firms in such alliances without such a monitor (M = 5.86). This difference is reflected in third party's significant ($F = 8.06$, $p < .01$) and medium between-subject effect size (partial $\omega^2 = .16$) shown in Table 2.

Our third hypothesis predicted that firms in competitor-dominated alliances with strong relational ties with their collaborators should experience either an increase or a decrease in customer orientation compared to firms in competitor-dominated alliances with weak ties. We tested this hypothesis by examining the three-way interaction between customer orientation, alliance type, and relational ties. As shown in Table 2, this three-way interaction is significant ($F_{(2,33)} = 4.91$, $p < .03$) and has a medium effect size (partial $\omega^2 = .11$). Thus, Hypothesis 3 is supported. The plot of this interaction is shown in Figure 3, and reveals that firms in competitor-dominated alliances with a *low* degree of relational ties with their collaborators actually experience a much greater decrease in their level of customer orientation (Time 1 = 6.13, Time 2 = 5.42) compared with firms in such alliances with a high degree of relational ties (Time 1 = 6.31, Time 2 = 6.00).

While relational tie strength has a strong influence on customer orientation for firms in *competitor-dominated alliances*, it has little effect on customer orientation for firms in *channel-dominated alliances* (Strong relational ties: Time 1 = 6.12, Time 2 = 5.94; Weak relational ties: Time 1 = 5.77, Time 2 = 6.18). Unlike the presence of a third-party monitor, relational ties does not have a significant between-subjects effect (F = .02, n.s.) on customer orientation.

Insert Figure 3 about here

DISCUSSION

Understanding the consequences of interfirm relations is one of the central issues in contemporary marketing strategy research. Although considerable work has been conducted regarding the consequences of these relations for participating firms or the alliance overall, relatively little is known about how such relations impact these firms' constituencies, including their customers. As research on interfirm relations matures, a growing number of scholars have begun to raise concerns about the broader consequences of these relations. As noted by Smith, Carroll, and Ashford (1995, p. 17), "Cooperation among individuals, groups, and organizations can have harmful consequences for others…additional research is needed on the potential drawbacks of cooperation and the conditions under which a very high degree of cooperation is not desirable." Likewise, Ingram and Roberts (2000, p. 420) suggest that understanding the impact of cooperation among competitors, "presents a very challenging but useful goal for future researchers." Our longitudinal research directly addresses such concerns by finding that one key drawback to cooperation among competitors is a decrease in customer orientation. Moreover, we identify the conditions under which this drawback may be alleviated. In this final section, we review these findings, discuss their implications, identify the limitations of our work, and highlight future research opportunities.

Review and Implications of our Findings

Using a longitudinal study among alliance participants over a three-year time frame, our study reveals three important findings about the relationship between interfirm cooperation and customer orientation: (1) cooperation among competitors appears to have a negative impact on a firm's level of customer orientation over time, (2) this negative impact may be attenuated among competing firms in alliances with a neutral third-party monitor, and (3) the presence of a high degree of relational ties among competing firms helps maintain a strong customer orientation. Collectively, this set of findings advances knowledge on the effects of interfirm cooperation on customers and holds important implications for both managerial practice and public policy. Based on our review of the literature, we

believe our findings are unique, as research on interfirm cooperation has paid scant attention to the broader impact of these collaborative arrangements.

Reflecting the new realities of our globalized, information-based, and time-dependent economy, interfirm cooperation has been heralded as the form of economic organization best suited to the environmental threats and customer demands of the 21st Century (e.g., Best 1990; Brandenburger and Nalebuff 1996; Teece 1992). Our findings suggest the possibility that while cooperation may be beneficial for certain firm-level or alliance-level outcomes, it may also harbor a hidden danger by making some firms less sensitive to the needs of their customers. This danger appears to be greatest for firms involved in competitor-dominated alliances rather than channel-dominated alliances. Given marketing's traditional focus on channel-dominated alliances (Sheth and Sisodia 1999), decrements in customer orientation and other negative by-products associated with horizontally based cooperation has received little attention in the relational marketing literature. Our findings imply that these potential hazards are deserving of further consideration from both marketing scholars and public policy officials.

One means of minimizing the hazards of competitor-dominated alliances appears to be the inclusion of a neutral third-party monitor such as a government agency or a university. As shown by our findings, firms participating in competitor-dominated alliances in which this type of third-party monitor is present exhibited no decrease in customer orientation over time. In contrast, firms in these alliances that lack a third-party monitor experienced a sharp decrease in customer orientation during the three-year study period.

Transaction cost theorists (e.g., Williamson 1985) have noted that a neutral third party can provide an effective monitoring mechanism to ensure that exchange parties act in a forthright manner and resist opportunistic exploitation. However, the focus of these theorists has been on deceptive and opportunistic behavior between the exchange parties themselves. We believe our research enriches this theory by showing this type of monitoring mechanism may also extend protection to the *customers* of these exchange parties. As shown in Table 1, these third-party actors appear to be quite common in

alliances, as nearly half of the R&D alliances in our sample had a third-party monitor. To date, the roles of these actors remain largely hidden, as the vast majority of alliance-based research focuses on the main players (i.e., profit-based firms) themselves. Our research suggests these hidden actors deserve more scholarly attention.

In sharp contrast to the lack of attention paid to third-party actors, relationship marketing scholars have devoted considerable attention to the issue of relational ties among alliance participants (e.g., Heide and Miner 1992; Rindfleisch and Moorman 2001). The general consensus among these researchers is that stronger relational ties are a boon to performance, as alliances characterized by strong ties last longer and produce superior relationship outcomes. This viewpoint is so widely shared that the benefit of strong relational ties is rapidly emerging as an established paradigm in the literature.

Our findings lend additional credence to this paradigm by suggesting that the benefits of strong relational ties extend beyond the particular exchange partners themselves, as firms engaged in competitor-dominated alliances exhibited a much weaker decline in customer orientation if they have high levels of relational ties with their competitors. Specifically, by serving as the building blocks of mutual trust, these ties should lower opportunism among alliance partners. This should help alliance members reduce the time and effort needed to monitor each other, thus freeing up their scarce managerial resources for sensing and responding to changing customer needs. We feel that these findings are particularly exciting and that they provide a marked extension to the relational marketing literature, which has focused on the internal benefits of relational ties for firms engaged in dyadic vertical relationships.

Collectively, this pattern of results helps shed light on the reasons why competitor-dominated alliances appear to be harmful for customer orientation. Recall that competitor-dominated alliances differ from their channel-dominated counterparts in terms of displaying (1) higher levels of overlapping knowledge, (2) lower levels of trust, and (3) stronger motives for collusion. Although our study was not designed to test the predictive power of each of these characteristics, our findings lend

some preliminary insight about their relative efficacy. Specifically, our finding that customer orientation is higher among competitors with *strong* relational ties with their alliance partner seems to discount the premise that competitor-dominated alliances are havens for collusive activity. In addition, the positive effect that the presence of a third-party monitor plays in terms of sustaining the customer orientation of firms in competitor-dominated alliances appears to have more to do with its role as a *mediator* of interfirm conflict than as a *monitor* of interfirm collusion. Combined, these findings suggest that the ability of competitor-dominated alliance participants to sustain a customer orientation is largely hampered by the devotion of scare managerial resources trying to build trust, gain information, and establish cooperation with competitors. In support of this supposition, our Time 1 survey revealed that firms in competitor-dominated alliances report a significantly lower level of trust in their alliance partners than firms in channel-dominated alliances ($M_{(Competitor\text{-}dominated)} = 4.39$, $M_{(Channel\text{-}dominated)} = 4.86$, $p < .03$) (see Rindfleisch 2000 for details).

Our findings also hold implications for the market orientation literature. Although there are exceptions, most of the market orientation literature has not paid explicit attention to the impact of the distinct components of a customer orientation versus a competitor orientation. Narver and Slater (1990) measure these separate components but combine them to examine the overall effect of market orientation on return on assets. Likewise, Jaworski and Kohli (1993) have separate items associated with competitors versus customers, but fold them into their intelligence acquisition, dissemination, and response dimensions of market orientation. Only Deshpandé et al. (1993) examine customer orientation in isolation. Following their lead, our focus on customer orientation in isolation allows us to discern the effect of interfirm cooperation on this specific orientation. As we have shown, cooperative arrangements among competitors can reduce customer orientation, especially if the alliance does not have the structural (e.g., third-party monitor) or behavioral (e.g., strong relational ties) mechanisms in place to ensure customer-focused outcomes.

While our findings suggest that *cooperation* among competitors may be harmful to a firm's orientation towards its customers, it is also possible that this orientation may also suffer under conditions of intense *competition*. As several scholars across a broad range of disciplines have observed, competitive rivalry does not always maximize customer welfare (see Kohn 1986 for a review). For example, both Moorman (1995) and Gatignon and Deshpandé (1994) argue that excess competition can result in a cultural shift in which firms focus so heavily on beating their competition that they loose sight of their customers and innovating on their behalf. Relatedly, Day and Nedungadi (1994) find that managers with a strong competitor orientation make relatively little use of customer-based information when making marketing-mix decisions. In sum, as Best (1990) suggests, "The task is to create the right mix of competition and cooperation, a mix that is continually shifting" (p. 17).

Limitations and Future Research Directions

Perhaps the major limitation of our study is the restricted size of our sample. Although our follow-up study obtained only 55 usable responses, our response rate was extremely high (70%) and our effect sizes are substantial (cf. Cohen 1977). Moreover, this type of longitudinal inquiry is often called for by relational marketing scholars (e.g., Dwyer et al. 1987; Heide and Miner 1992), but seldom conducted. Nevertheless, future research efforts using alternative sampling frames would nicely complement our work.

A second limitation concerns the breadth of our sample. Although our sample included a broad swath of industries (e.g., manufacturing, energy, chemicals, electronics, transportation, customer goods, among others), it is focused solely on American firms. Thus, future research is needed to establish if our patterns of effects are generalizable globally. In particular, it would be interesting to see if collaboration among competitors also weakens customer orientation in Japan and Western Europe, where governments view cooperation as a means of enhancing both allocative and productive efficiency (e.g., Best 1990; Cohen et al. 2002; Villas-Boas 1994).

Our findings are also limited by our focus on a single dependent variable (i.e., customer orientation). Clearly, interfirm cooperation is a complex phenomenon that has numerous effects on the broader environment. Some of these effects may be quite beneficial in terms of enhancing customer welfare. For example, collaborative R&D alliances are widely regarded as beneficial in terms of eliminating wasteful duplication of research by firms engaged in similar activities (e.g., Katz 1986; Petit and Tolwinski 1999). Thus, future research efforts could provide a valuable contribution by exploring a broader scope of consequences of interfirm cooperation, such as R&D savings, standardization of formats, and enhanced new product development activities (cf. Ouchi and Bolton 1988; Teece 1992).

A related limitation concerns the self-report nature of our study. It is possible that competitor-dominated alliances did not change a firm's actual customer orientation level, but instead changed the manager's *perception* of that orientation. Specifically, as firms interact with competitors they may learn more about how competitors handle customer-related issues. As a result of this learning (i.e., benchmarking), firms in competitor-dominated alliances may systematically report a reduction of their firm's customer orientation over time. On the other hand, self-report measures, if biased, should be biased in a direction that reflects favorably on informants. Obviously our results do not, and so they work against this potential bias.

Nevertheless, future research could enhance our efforts by examining more direct indicants of customer welfare, such as average price levels, customer satisfaction, or customer perceptions of the innovativeness of a firm's new products. As a preliminary indicant of customer welfare, our Time 2 survey asked respondents to report the number of patents applied for based on their firm's participation in the new product alliance. It is notable that firms in channel-dominated alliances applied for approximately four times more patents than firms in competitor-dominated alliances ($M_{(Channel\text{-}dominated)} = 1.61$, $M_{(Competitor\text{-}dominated)} = 0.41$, $t = 1.84$, $p < .08$). This finding is congruent with our results for customer orientation and suggests that while competitors' overlapping knowledge may enhance self-

reported innovation levels compared to internal firm standards (Rindfleisch and Moorman 2001), this effect does not appear when more objective measures (e.g., patent filings) are utilized.

As a final limitation, our study's focus on the formal aspects of interfirm cooperation does not address the vast amount of informal cooperation that occurs among firms on a regular basis (Lee and Lee 1992). For example, several studies of interfirm R&D activity show that informal know-how trading is commonplace in many industries (Allen 1983; von Hippel 1987). In addition to this informal research activity, competitors often cooperate on many day-to-day activities. For example, major airlines often sell each other's tickets and typically provide advance notice of fare increases (Cooper 1993). Similar forms of cooperative activity are also commonplace among major U.S. oil companies (Renfrew 1993). Future researchers may wish to investigate the impact of these informal forms of cooperation on customer orientation and other aspects of a firm's broader environment.

APPENDIX

KEY MEASURES

Customer Orientation: (Narver and Slater 1990), 7-point Likert scale.
Please rate the extent to which your firm:

1. Is committed to its customers.
2. Creates customer value.
3. Understands customer needs.
4. Has objectives for customer satisfaction.
5. Provides after-sales service.

Alliance Type: (Adapted from Littler, Leverick, and Bruce 1995)
We are interested in the nature of your firm's relationship with each of the other organizations who initially founded this venture. Using the coding scheme listed directly below, please classify each of the participants by recording the appropriate code in the space next to the organization's name. Please select only one code for each participant.

Codes: A = customers, B = suppliers, C = competitors, O = other

Third-party Monitor: (New Measure), Yes/No
Are there any third parties such as a governmental agency or a university which plays an active role in the monitoring and enforcement of participant activities?

Relational Ties: (Rindfleisch and Moorman 2001), 7-point Likert scale
Please rate the degree to which the following items accurately describe the nature of your firm's overall relationship with the other organizations participating in this venture:

1. We feel indebted to our collaborators for what they have done for us.
2. Our engineers share close social relations with the engineers from collaborating organizations in this venture.
3. Our relationship with our collaborators can be defined as "mutually gratifying."
4. We expect that we will be working with our collaborators far into the future.

TABLE 1

KEY MEASURE STATISTICS

Variable	n	Mean	S.D.	Correlations 1	2	3	4	5	6	7
1. Customer Orientation (Time 1)	98	5.91	.83	(.81)						
2. Customer Orientation (Time 2)	55	5.82	.88	.46[a]	(.83)					
3. Relational Ties	105	4.16	1.22	.20	.26	(.76)				
4. Presence of a Third-Party Monitor	101	.49	.50	-.02	.28[b]	-.07	(na)			
5. Number of Alliance Partners	106	5.42	2.68	.03	-.11	-.02	.15	(na)		
6. Alliance Duration	54	78.74	33.41	.14	-.05	.04	.22	.10	(na)	
7. Alliance Type	105	.40	.49	.07	-.14	-.25[b]	.20[b]	.35[a]	.48[a]	(na)

Notes: The coefficient alpha for each measure is on the diagonal, and the intercorrelations among the measures are on the off-diagonal. The coefficients for Third-Party Monitor and Alliance Type represent point-biserial correlations (r_{pb}). For Alliance Type: 0 = Channel-dominated alliances, 1 = Competitor-dominated alliances. a = significant at $p < .01$, b = significant at $p < .05$. na = not applicable.

TABLE 2

FACTORS INFLUENCING CHANGE IN FIRM CUSTOMER ORIENTATION

Between-Subjects Effects	F-Test	Effect Size
Alliance Type	.03	.01
Presence of a Third-Party Monitor	8.06[a]	.16
Relational Ties	.02	.00
Number of Alliance Partners	.11	.01
Alliance Duration	.14	.01
Within-Subjects Effects		
Customer Orientation x Alliance Type	$F_{(1,33)} = 6.65$[a]	.14
Customer Orientation x Alliance Type x Third-Party Monitor	$F_{(2,33)} = 6.05$[b]	.13
Customer Orientation x Alliance Type x Relational Ties	$F_{(2,33)} = 4.91$[b]	.11

Notes: This repeated measures general linear model included customer orientation as the within-subjects factor, alliance type, third-party monitor, and relational ties as between-subjects factors, and number of partners and alliance duration as between-subjects covariates. All lower-level effects were included in the analysis but are not shown, as they represent non-hypothesized relations.

[a]significant at $p < .01$ and [b]significant at $p < .05$.

FIGURE 1

CHANGE IN FIRM CUSTOMER ORIENTATION BY ALLIANCE TYPE

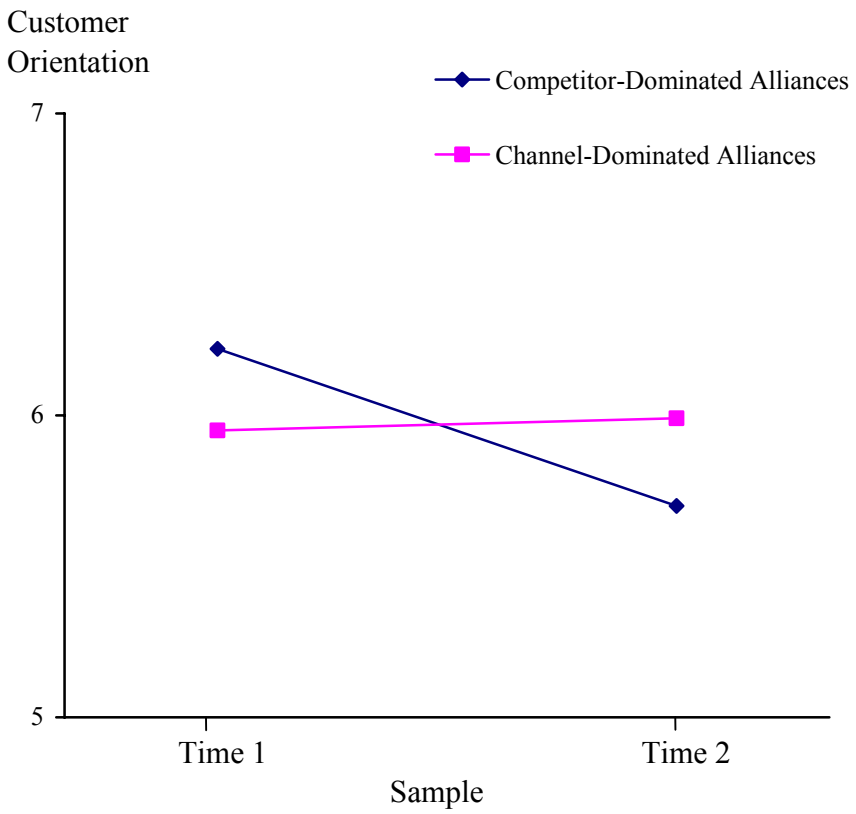


FIGURE 2

THE EFFECT OF A THIRD-PARTY MONITOR ON CHANGE IN FIRM CUSTOMER ORIENTATION IN COMPETITOR-DOMINATED ALLIANCES

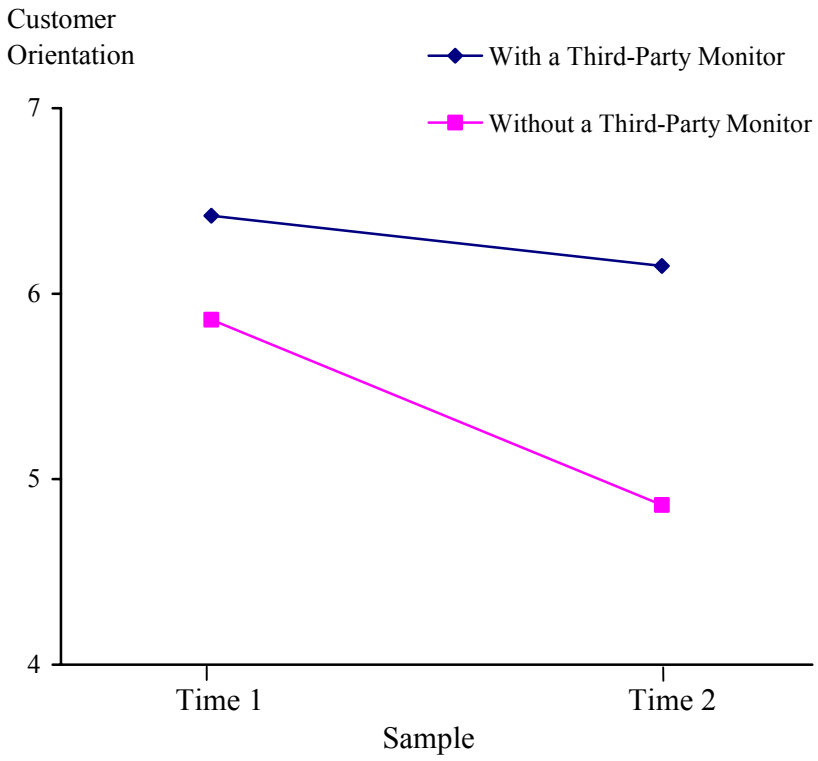
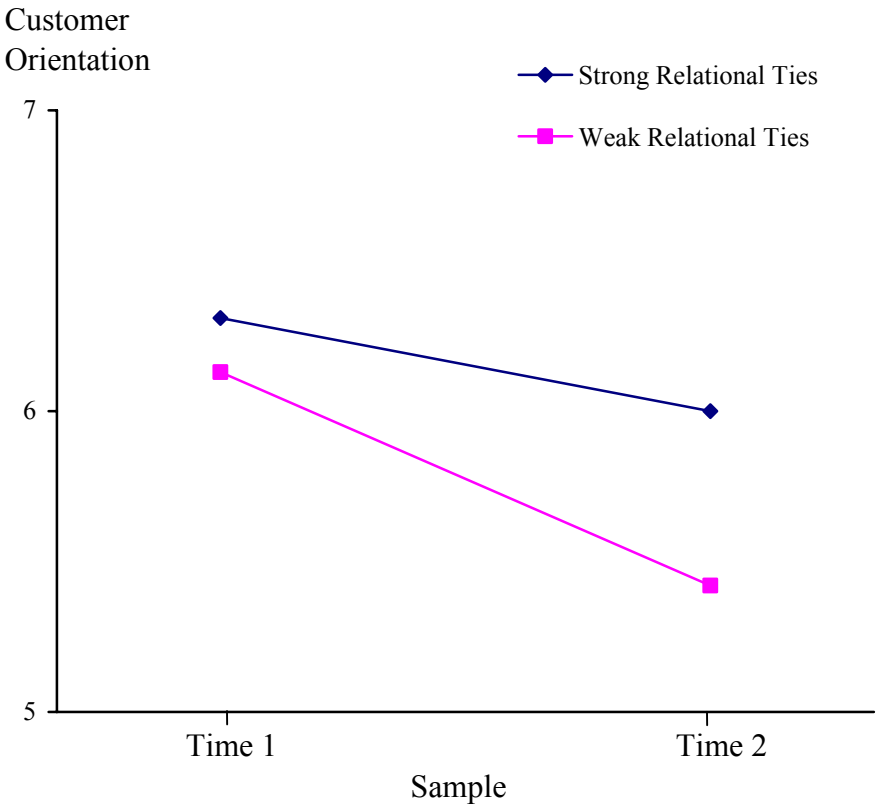


FIGURE 3

THE EFFECT OF RELATIONAL TIES ON CHANGE IN FIRM CUSTOMER ORIENTATION IN COMPETITOR-DOMINATED ALLIANCES



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