

**ZIGZAGGING ACROSS THE BOUNDARY:
EXAMINING THE INTERPLAY OF MARKETING ACTIVITIES
WITHIN AND BETWEEN FIRMS**

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SUMMARY

This thesis consists of two central Parts. Part 1 examines the extent to which an agent's transaction-specific investments (TSIs) in a customer relationship increase his/her concerns for opportunism by his/her own co-workers. Thus, unlike prior research in marketing that examines opportunism by the *recipient* of TSIs, I show that agents become concerned with opportunism by *non-recipients* of TSIs. I then introduce novel moderators that shape the relationship between TSIs and concerns for internal opportunism. Importantly, I also show that in response to concerns for internal opportunism, agents will engage in internal safeguarding behaviors. Notably, unlike external safeguards between firms which tend to benefit firms (e.g., relational norms), I show that internal safeguarding has a deleterious effect on performance. I test the set of hypotheses with data collected from two sources: account managers and their supervisors.

In Part 2, I advance the emerging view on customer solutions by simultaneously examining the networks within and between selling and buying teams involved in the development and deployment of complex customer solutions. Such a concurrent *within-and-between* perspective helps to bridge research on buying and selling teams, which prior research tends to examine only in isolation of each other. This research also extends the literature by showing how within-team network characteristics interact with between-team network characteristics to affect solution effectiveness. Notably, I advance the literature by moving beyond firm-level and individual-level dyads to team-level

dyads and introduce a new network characteristic – *mirrored ties* – to help our understanding of the interactions between these dyads. I develop my hypotheses in the context of a sales team selling a complex customer solution to a buying team and test the hypotheses using an innovative, picture-based conjoint field experiment from 233 purchasing managers.

CHAPTER 1

INTRODUCTION TO THESIS

In this thesis, I “zigzag” across the firm’s boundary to better understand the interplay between interfirm activities and intrafirm activities. Part 1, for example, examines how an agent’s investments in a customer relationship affect his/her concern for internal opportunism and, subsequently, his/her internal safeguarding behaviors. Part 2 builds on this notion by examining how communication patterns both within selling teams and between buying and selling teams affect the overall effectiveness of customer solutions.

Part 1 makes three central contributions. First, I introduce the notion of mTSIs (transaction-specific investments made by agents of the firm) and propose that agents who make specific investments in customers become concerned with opportunism by their own teammates (i.e., concerned with internal opportunism by *non-recipients* of mTSIs). This is in stark contrast to the extant view which only considers opportunism by the *recipient* of TSIs.

Second, I introduce and test novel moderators of the mTSIs-concern for internal opportunism relationship that surface when taking an internal, ‘micro-perspective’. These include promotion aspirations of specialists, agent-customer extendedness and specialist-customer extendedness.

Third, I surface a key consequence of internal opportunism – internal safeguarding. Notably, unlike prior research which generally shows positive

consequences of external (or firm-level) safeguards such as relational norms (e.g., Heide and John 1992), I show that internal safeguarding has deleterious effects on performance.

Part 1 employs the context of individual account managers (*agents*) that invest their time and energies to cultivate their customers (via mTSIs), but also draw on the support of specialists – i.e., product and technical specialist teammates on as as-needed basis to deepen customer relationships. Such a context is ideal because the information asymmetries inherent in such teams are fertile ground for internal opportunism (Wathne and Heide 2000). I test my hypotheses from data collected from two different sources: account managers (for the independent variables) and their supervisors (for the dependent variables)

Part 2 makes the following contributions. First, I show that *intrafirm* (e.g., within both the selling and buying teams) and *interfirm* (between the selling and buying teams) linkages *jointly* affect the effectiveness of customer solutions at *both* the solution development and deployment phases. Such a perspective is noteworthy, because I show that the ability of one team to be effective (e.g., selling team) depends in large part on the relational characteristics between teams (e.g., between the buying and selling teams).

Second, the implicit assumption in the literature is that strong *relational ties* between network members, generally speaking, have very positive effects. However, to date, there is little understanding about whether strong ties between teams, for example, compliment or substitute for strong ties within teams or whether strong ties are needed at both the solution development and the solution deployment phases. These notions are of particular consequence because strong relational ties within and between teams can be

very costly to develop and maintain (Hansen 1999). Therefore, from an efficiency and practical standpoint, it behooves managers to understand whether, where and when to encourage strong ties (e.g., within and/or between teams; at the development and/or the deployment phase).

Third, I extend the emerging view on the importance of the structural aspects of interfirm relationships by focusing on the structure of relations between buying and selling teams (Wuyts et al. 2004). Specifically, I introduce the concepts of *mirrored ties* (i.e., ties between a network member and similar others -- in this thesis, I focus on knowledge similarity) and *more-than-mirrored ties* (i.e., ties between a network member and similar others (i.e., mirrored ties) *and* dissimilar others) to lend clarity and context to the preferred network structures between buying and selling teams during both the solution development and deployment phases.

Finally, this study sheds new light on buying and selling teams. Although empirical work tends to examine these teams in isolation of each other, I show that the ability of one team to be effective (e.g., selling team) depends in large part on the relational characteristics between teams (e.g., between the buying and selling teams). This contribution is particularly timely, given the increasing use and importance of, yet paucity of empirical research on, selling teams in practice (Homburg, Workman, and Jensen 2002; Weitz and Bradford 1999).

PART 1

MICRO TRANSACTION SPECIFIC INVESTMENTS, INTERNAL OPPORTUNISM AND INTERNAL SAFEGUARDING

CHAPTER 2

INTRODUCTION TO PART 1

Team-based structures are becoming increasingly important in marketing and sales organizations. This is evidenced by the significant increase of key account management teams (e.g., Homburg, Workman, and Jensen 2002; Jones et al. 2005), product development teams (e.g., Sethi, Smith, and Park 2001) and boundary-spanning service teams (e.g., Jong, Ruyter, and Lemmink 2004). The rationale for setting up team-based structures is to craft superior customer offerings. One potential issue, however, is that such structures are ripe for team member opportunism which can hurt performance (Alchian and Demsetz 1972; Wathne and Heide 2000). We refer to this type of opportunism as *internal opportunism* because it stems from within the organization. The purpose of this paper is to better understand its role within teams, its antecedents, and consequences.

The focus on internal opportunism (i.e., opportunism by teammates) is in stark contrast to past literature which centers primarily on external opportunism (i.e., opportunism between firms) (Wathne and Heide 2000). Previous literature assumes that internal opportunism can be effectively controlled through fiat and other internal governance mechanisms (e.g., Williamson 1975). We argue, however, that the structure of most marketing and sales teams makes mechanisms such as fiat play a much less significant role in controlling internal opportunism. Indeed, recent work supports this notion and argues that internal opportunism is widespread within firms (Ghoshal and

Moran 1996). Surprisingly, there is little empirical research which speaks to the implications of internal opportunism for marketing teams.

Similar to previous research, we take the position that opportunism is engendered by transaction-specific investments (TSIs) (e.g., Anderson 1988; Rokkan, Heide, and Wathne 2003). However, we depart from this perspective in two important ways. First, while prior research speaks to TSIs made by firms, we introduce the notion of micro-TSIs or mTSIs which refer to transaction-specific investments that *individuals* make on behalf of their firm. In a key account team context, an example of mTSIs are the investments an account manager makes to understand the unique buying policies and procedures of a specific customer. Second, prior research suggests that firms making TSIs become vulnerable to opportunism by firms that are recipients of these investments (e.g., Jap and Ganesan 2000; Rokkan, Heide, and Wathne 2003). We build upon this view and take the position that an agent making investments can *also* become vulnerable to opportunism from *non-recipients* of the investments. Specifically, we argue that agents who make mTSIs in their customer relationships become vulnerable to (and, therefore, concerned with) internal opportunism by their own team members (henceforth referred to as specialists).

The extent to which an investing agent becomes concerned with internal opportunism is not that straightforward (Crosno and Dahlstrom 2007; Rokkan, Heide, and Wathne 2003). We draw on extant literature to identify three moderating variables that can significantly shape the relationship between mTSIs and internal opportunism. Williamson (1985) suggests that internal promotion incentives can effectively curb internal opportunism. We test this prevailing assumption and examine whether

promotion aspirations of specialists can mitigate the relationship between mTSIs and concern for internal opportunism. In addition, while prior research examines extendedness at an aggregate level, we show that two types of extendedness emerge when disaggregated and examined at a micro-level of analysis – *agent-customer extendedness* and *specialist-customer extendedness*. Taking a disaggregated view of extendedness is important because *agent-customer extendedness* is expected to sharpen the relationship between mTSIs and concern for internal opportunism, whereas *specialist-customer extendedness* is expected to dampen it. Thus we show that extendedness, a well-documented *interfirm* governance mechanism (e.g., Anderson and Weitz 1989; Rokkan, Heide, and Wathne 2003), can morph and have different effects on concerns for internal opportunism when examined through a micro lens.

Lastly, ours is among the first studies to examine a key consequence of concern for opportunism – *internal safeguarding*. Importantly, we suggest that concern for internal opportunism leads to internal safeguarding behaviors which, in turn, adversely affect performance with customers.

We make three key contributions to the literature:

- We introduce the notion of mTSIs and propose that agents who make specific investments in customers become concerned with opportunism by their own teammates (i.e., concerned with internal opportunism by non-recipients of mTSIs). This is in contrast to the extant view which only considers opportunism by the recipient of TSIs.
- We identify and test novel moderators of the mTSIs-concern for internal opportunism relationship that surface when taking an internal, ‘micro-

perspective'. These include promotion aspirations of specialists, agent-customer extendedness and specialist-customer extendedness.

- We surface a key consequence of internal opportunism – internal safeguarding. Notably, unlike prior research which generally shows positive consequences of external (or firm-level) safeguards such as relational norms (e.g., Heide and John 1992), we suggest that internal safeguarding can have deleterious effects on performance.

The present research employs the context of individual account managers (*agents*) that invest their time and energies to cultivate their customers (via mTSIs), but also draw on the support of specialists – i.e., product and technical specialist teammates on as as-needed basis to deepen customer relationships. Such a context is ideal because the information asymmetries inherent in such teams are fertile ground for internal opportunism (Wathne and Heide 2000). We test our hypotheses from data collected from two different sources: account managers (for the independent variables) and their supervisors (for the dependent variables).

CHAPTER 3

BACKGROUND

3.1 Concern for Internal Opportunism

The concern for internal opportunism is defined as the extent to which an agent (e.g., account manager) is concerned that specialists will act selfishly with guile towards him/her. For instance, account managers may be concerned that their specialists will try to take undue credit for business s/he develops with a customer. Extant marketing literature tends to focus on actual opportunism (e.g., John 1984; Rokkan, Heide, and Wathne 2003) rather than the concern for opportunism. Actual opportunism tends to include opportunistic (in)actions (e.g., shirking, free riding) that have already taken place (Wathne and Heide 2000). This distinction is important because one is likely to self-select out of a relationship in response to actual opportunism; however, one is more likely to maintain a relationship if concern for opportunism can be effectively mitigated.

Agents concern for internal opportunism stems from three main reasons. First, the structure of many marketing and sales teams is such that team members often have little legitimate authority over one another. In a key account team, for instance, the key account manager typically has little or no formal authority over specialists. The lack of authority to punish malfeasance means that there is little opportunity for team members to align interests by fiat (Williamson 1975). Second, Ghoshal and Moran (1996) argue that internal control systems can reduce one's affinity towards a firm, engendering opportunistic proclivities by employees. Correspondingly, some suggest that common forms of internal control systems (e.g., behavioral and outcome controls) can engender

dysfunctional and opportunistic behaviors (Ramaswami 1996). Third, by their very nature, many teams bring in members with different skill sets and, thus, the information asymmetries inherent within these teams makes it difficult for team members to detect opportunism, which makes them more vulnerable to opportunism (Wathne and Heide 2000).

3.2 micro -Transaction-Specific Investments or mTSIs

Agents of the firm make individual transaction-specific investments on behalf of their firm. We label these investments *mTSIs* and define them as non-redeployable investments of time and effort that an agent makes on behalf of his/her firm. For instance, in a key account management setting, these are the specific investments that an account manager makes in a particular customer relationship (cf. Galunic and Anderson 2000). The key account manager may learn about an organization's hierarchy, its unique buying processes, the backgrounds and biases of decision makers, and such. Likewise, in a product development team context, the product development manager may learn about a customer's innovation process, its systems for applications engineering, the roles and responsibilities of different members of the customer's R&D team and so on.

Like the extant literature on transaction specific investments, we recognize that mTSIs made by an agent of the firm in a customer relationship makes them vulnerable to customer opportunism. However, because the investing agent is locked-in to the customer relationship (e.g., Ganesan 1994), we argue that s/he also becomes concerned with internal opportunism by his/her own specialists. The concern for opportunism by specialists emerges for two reasons. First, mTSIs carry with them certain *value creating*

(or “pie-expansion”) properties (Ghosh and John 1999; Jap 1999). For instance, prior research suggests that TSIs can lead to joint action between exchange partners, which can increase utility for both parties (Heide and John 1990). Thus, an account manager who invests heavily in learning a customer’s unique challenges and needs, for example, is better positioned to offer superior solutions that create value for both the customer as well as to her/himself. Second, mTSIs can *minimize costs* of exchange (Ghosh and John 1999). For instance, an account manager who invests in learning a customer’s unique buying policies and procedures is likely to save time and effort negotiating subsequent contracts with this customer. These arguments suggest that an investing agent is likely to be concerned with others who might try to *opportunistically exploit or jeopardize* the value created by his/her mTSIs.

CHAPTER 4

THEORY and HYPOTHESES

As stated previously, the extent to which an agent's mTSIs lead to higher concerns for internal opportunism rests on important contingency factors (Crosno and Dahlstrom 2007; Rokkan, Heide, and Wathne 2003). First, we draw on Williamson's (e.g., 1985) work on promotion incentives to illustrate how a *specialist's promotion aspirations* help shape the relationship between an agent's mTSIs and his/her concern for internal opportunism. Second, we draw on past literature (e.g., Heide and Miner 1992; Rokkan, Heide, and Wathne 2003) to introduce and show how two new forms of extendedness – *agent-customer extendedness* and *specialist-customer extendedness* – can differentially affect the mTSIs–concern for internal opportunism relationship. In subsequent sections we argue that if an agent's concern for opportunism is not sufficiently curbed, s/he will engage in internal safeguarding behaviors, which can be detrimental to performance.

4.1 Promotion Aspirations of Specialists

Promotion aspirations of specialists refers to the extent to which agents perceive their specialists to be motivated to advance into higher-level positions within the firm (Tharenou 2001). We suggest that the promotion aspirations of specialists can signal important information to agents who seek to claim value from their mTSIs. This approach is consistent with research suggesting that beliefs about coworker motivations can significantly influence group processes (Kim 2003).

Williamson argues that promotion incentives are a key reason why hierarchies can attenuate internal opportunism (e.g., Williamson 1985). The rationale is that promotion incentives reduce a firm's moral hazard problem. At the individual level, research suggests that when promotion incentives are strong, individual effort increases (Drago and Garvey 1998). More importantly, when individuals have aspirations for promotion, they tend to be motivated in working with team members to attain team objectives (need cite). Indeed, promotion-aspiring specialists are more likely to go above and beyond to help the account manager claim value in order to enhance their chances of attaining the promotion they desire (need cite). Therefore, agents who make mTSIs in a customer relationship should be less fearful that a promotion-aspiring specialist will jeopardize this value by acting opportunistically. It is more likely, therefore, that an account manager will sense difficulties in claiming value from his/her mTSIs because non-promotion-aspiring specialists are likely to be viewed as more *prone* to act opportunistically.

Formally,

H₁: The relationship between an agent's mTSIs and his/her concern for internal opportunism is less positive when the promotion aspirations of his/her specialists are higher rather than lower.

4.2 Extendedness

Extendedness¹ is defined as the expectation of indefinite future interactions between exchange partners (e.g., Rokkan, Heide, and Wathne 2003). In the channels literature, extendedness has generally been shown to be beneficial to interfirm relationships because it engenders greater cooperation (Axelrod 1984; Heide and Miner 1992; Parkhe 1993),

¹ In the marketing literature, extendedness has also been referred to as long-term orientation (e.g., Lusch and Brown 1996) and expectation of continuity (e.g., Anderson and Weitz 1989; Heide and John 1990; Noordewier et al. 1990).

higher levels of trust (Anderson and Weitz 1989) and more relational behavior (Lusch and Brown 1996).

In the present study, however, our focus is on the individual level of analysis and as such, new and different forms of extendedness can emerge. We introduce two forms of extendedness – *agent-customer extendedness* and *specialist-customer extendedness* – and suggest that they can impact the relationship between mTSIs and concern for internal opportunism in countervailing ways.

Agent-Customer Extendedness. Agent-customer extendedness refers to the extent to which an agent foresees having indefinite future interactions with a particular customer (cf. Rokkan, Heide, and Wathne 2003). We argue that agent-customer extendedness moderates the relationship between an agent's mTSIs and his/her concern for internal opportunism.²

As previously discussed, mTSIs have the ability to create value for the agent. Correspondingly, when agent-customer extendedness is **high** (i.e., the agent expects a long-term relationship with the customer), the agent has the opportunity to claim value from her investments on a long-term and, perhaps, even on a recurring basis. Consequently, the potential to reap long-term benefits should increase the perceived net present value of his/her mTSIs. Therefore, the investing agent is likely to be more concerned about whether others will act opportunistically and jeopardize this long-term

² Prior research suggests that TSIs can *lead* to greater expectations of continuity (i.e., extendedness) (Heide and John 1990). We suggest, however, that this relationship may not be as straightforward as presumed. For instance, consider an account manager who is promoted to a new sales territory. She may have an extended view of her new set of customer accounts, but is yet to make a significant investment of specialized time and effort with these accounts. Alternatively, consider the case of many government contracts. An account manager may make significant mTSIs in developing a winning bid even though he foresees little future opportunity with this government entity (i.e., the transaction may be considered a “one-and-done” transaction). Thus, we treat extendedness as a moderator variable, which is consistent with Rokkan, Heide, and Wathne (2003).

value claiming opportunity (cf. Ghosh and John 1999). We also suggest that an agent with an extended customer relationship needs to contend with the *residual effects* of actions taken by others – i.e., “live with the consequences” of behaviors by his/her specialists. Thus, an agent who makes mTSIs becomes more sensitive to the potential of dealing with residual expenses associated with the long-term fallout of an opportunistic specialist.

Alternatively, when agent-customer extendedness is *low* (i.e., the agent expects a short-term relationship with the customer), the agent has less ability to claim value on a long-term basis. Overall, compared to when extendedness is high, the agent is likely to perceive less value in his/her mTSIs and, therefore, be less concerned about others jeopardizing the value of his/her mTSIs by acting opportunistically. Formally,

H₂: The relationship between an agent’s mTSIs and his/her concern for internal opportunism is more positive when agent-customer extendedness is higher rather than lower.

Notably, this hypothesis extends the extant firm-level view which suggests that extendedness between firms should work to *reduce* the positive impact of TSIs on *external* (or customer) opportunism (e.g., Rokkan, Heide, and Wathne 2003). Our perspective takes this argument a step further by suggesting that extendedness between the agent and the customer should *exacerbate* the positive relationship between an agent’s mTSIs and his/her concern for *internal* opportunism by his/her specialists.

Specialist-Customer Extendedness. Specialist-customer extendedness refers to the extent to which an agent expects that his/her specialist(s) will have indefinite future interactions with a particular customer. In contrast to the effects of agent-customer extendedness, we argue that the positive impact of an agent’s mTSIs on his/her concern for internal

opportunism will be lessened when his/her internal collaborators have an extended relationship with the customer. Thus, the relationship is flipped when one considers specialist-customer extendedness (as opposed to agent-customer extendedness).

When a *specialist has an extended relationship* with a customer, s/he is more likely to derive value from maintaining a cooperative relationship with the customer (Heide and Miner 1992; Murnighan and Roth 1983). Therefore, the specialist is likely to behave in ways that will ensure the continuation of his/her relationship with the customer. One important way for a specialist to ensure the continuation of his/her customer relationship is to not act opportunistically towards those who manage the relationship with the customer (i.e., the agent or account manager). Therefore, an agent who makes value creating mTSIs is less likely to worry about opportunistic behaviors by specialists when the specialist has an extended relationship with the customer. On the other hand, when a *specialist does not have an extended relationship* with a customer, s/he may care less about trust and cooperation with the customer (Anderson and Weitz 1989; Heide and Miner 1992). As a consequence, a specialist has less incentive to behave in ways that will preserve his/her relationship with the customer, which should increase an investing agent's concerns for internal opportunism by the specialist. Formally,

H₃: The relationship between an agent's mTSIs and his/her concern for internal opportunism is less positive when specialist-customer extendedness is higher rather than lower.

4.3 Internal safeguarding

In concert with TCA's theoretical underpinnings, we suggest that an agent will engage in *internal safeguarding* behaviors when concerned with internal opportunism (cf. Rindfleisch and Heide 1997). We define internal safeguarding as an agent's (in)actions aimed at precluding others from accessing information and/or people related to the object of his/her investments (e.g., customer information and/or customer employees). For instance, an account manager might try to 'block' information to potential internal opportunists by providing customer information to his/her specialists on a need to know basis (cf. Kohli 1989). Such behavior alleviates the threat of internal opportunism by, for example, reducing the ability of specialists to take undue credit for business developed by the account manager. This line of reasoning is consistent with Heide and John (1988), who argue that manufacturers' representatives respond to vulnerability to opportunism from their principal by taking actions to offset this vulnerability (e.g., by making offsetting investments in their customer relationships).

H₄: There is a positive relationship between concern for internal opportunism and internal safeguarding.

4.4 Performance with customer

Account managers who engage in internal safeguarding block information and access to specialists regarding their customer accounts. By blocking information, an agent reduces the opportunity to share and to integrate important customer information with his/her specialists, which can be critical for better performance with customers. For instance, sharing customer information with specialists should increase the likelihood of uncovering new opportunities that can increase the customer 'pie' for the firm (Jap 1999).

Corresponding research from new product development teams suggests that sharing and integrating information is essential because it can increase product quality (Sethi 2000). It follows, therefore, that the firm's performance with a particular customer is likely to benefit when its account manager does not engage in internal safeguarding behaviors.

H₅: There is a negative relationship between internal safeguarding and customer performance.

CHAPTER 5

RESEARCH METHOD

5.1 Sample and Survey Procedure

We enlisted a Fortune 500 business-to-business reseller of office equipment to participate in this study. This company integrates technologies and products from a variety of different manufacturers to provide solutions to its customers. To provide these solutions, it utilizes a generalist-specialist approach to selling; that is, it maintains an in-house salesforce of generalists (i.e., account managers) who are responsible for creating and maintaining customer relationships. These account managers call upon their in-house product/technical specialists (who have deeper, vertical knowledge of specific products/technologies) to assist them in developing integrative customer solutions.

Working with senior management of the firm, we identified and emailed a link to an online survey to all 350 account managers from three of the firm's U.S.-based divisions. The survey instructed the account managers to think about the last customer they called on for which they actually used (or could have used) their specialists to help them in their selling effort.

This approach is preferred for three main reasons. First, it required the account manager to randomly select one of their customers (i.e., the last customer they called on). Second, by requesting the last customer they called on, there should be little recall difficulties for the account managers. Third, it was important to have variance on internal safeguarding. Therefore, the process of specifying customers "for which they actually used (or could have used) their specialists" engendered responses regarding customers for

which the account managers had various degrees of internal safeguarding. The account managers were then asked to complete a questionnaire with respect to this particular customer.

To boost response rates, we incentivized the account managers with \$10 amazon.com gift cards. We received exactly 175 responses within two weeks for a 50% response rate. After receiving the completed surveys, we tailored the account managers' supervisor surveys to include the name of the customer that the account manager had responded to. We then asked the supervisors to complete the internal safeguarding and performance questionnaire with respect to only this account manager and this particular customer. Supervisors were incentivized with \$15 amazon.com gift cards. Of the 175 supervisor surveys, we received 160 responses from the supervisors within two weeks (91% response rate).

Because some account managers shared the same supervisor, the supervisor was often required to complete more than one survey (the minimum number of surveys any supervisor responded to was 1 and the maximum was 9; the average was 4.02 surveys per supervisor). Therefore, care was taken to minimize the burden on supervisors in order to maximize response rates and to obtain accurate information. We did this by including only fifteen questions per supervisor survey (twelve items are applicable to this study: five performance items, six internal safeguarding items and one familiarity-with-the-customer item). We eliminated 2 supervisor surveys with customer familiarity scores of 1 (on a 1-5 scale, with 1 indicating 'very unfamiliar' and 5 indicating 'very familiar'; the overall mean manager familiarity score was 3.96 with a standard deviation of .99) and 3

account manager surveys due to excessive yeh/neh saying. Therefore, the overall number of matched pairs of account manager and supervisor data is 155.

Although it is inherently more difficult to utilize the preceding procedures, we did so for two main reasons. First, by obtaining the predictor variables and the dependent variables from different sources, we reduce concerns for common respondent bias (Podsakoff et al. 2003). Second, we reduce concerns of social desirability bias by obtaining data on internal safeguarding behaviors of account managers and performance from the account managers' supervisors.

5.2 Measures

In all cases, we either adapted or were guided by existing measurement scales. All measurement items can be found in Appendix A. Other summary statistics (correlations, means, and standard deviations) can be found in Table 1 (below).

TABLE 1.

Correlation Matrix and Summary Statistics

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. micro Transaction specific investments	.80												
2. Extendedness between account manager and customer	.36 ^a	.96											
3. Extendedness between specialist(s) and customer	-.13	.15	.97										
4. Promotion aspirations of specialist(s)	.16	.01	.04	.73									
5. Management monitoring	-.01	.07	.11	.11	.77								
6. Goal incongruity between account manager and specialist(s)	.27 ^a	.04	-.54 ^a	-.05	-.30 ^a	.89							
7. Sales experience of account manager	.08	.16	-.17 ^b	.07	-.15	.15	n/a						
8. Benevolence of specialist(s)	-.06	.08	.59 ^a	.16 ^b	.21 ^a	-.60 ^a	-.17 ^b	.95					
9. Competence of specialist(s)	.07	.12	.57 ^a	.25 ^a	.21 ^a	-.52 ^a	-.11	.61 ^a	.94				
10. Number of specialists in sales team	.25 ^a	.15	-.05	.20 ^b	.10	.13	.20 ^b	.02	.03	n/a			
11. Agent's concern for specialist opportunism	.15	-.05	-.48 ^a	-.15	-.28 ^a	.64 ^a	.01	-.64 ^a	-.54 ^a	.08	.95		
12. Internal safeguarding	.06	.11	-.03	.03	-.29 ^a	.24 ^a	.21 ^a	-.20 ^b	-.09	-.05	.27 ^a	.81	
13. Performance with customer	.09	.26 ^a	-.01	-.04	.17 ^b	.02	.07	.07	.04	.11	-.02	-.19 ^b	.91
Mean	3.76	4.41	3.08	3.04	3.08	2.48	12.31	3.39	4.13	3.82	2.01	2.59	3.59
Standard deviation	.87	.87	1.20	.85	.91	1.09	9.73	1.14	.95	2.59	.97	.92	.89
Composite reliability	.80	.96	.97	.77	.78	.90	n/a	.96	.95	n/a	.95	.81	.91
Average variance extracted	.51	.92	.94	.63	.51	.74	n/a	.88	.85	n/a	.72	.52	.68

^asignificant at .01 (2-tailed)

^bsignificant at .05 (2-tailed)

* Note: Cronbach's alphas are on the diagonal of the correlation matrix

micro-Transaction-Specific Investments. We use pre-existing scales to develop a scale of micro-transaction-specific investments. This scale needed to be adapted for the following two reasons. First, mTSIs are generally more intangible in nature (e.g., time and effort) than the tangible firm-level investments often referred to in other studies (e.g., tooling and equipment). Second, prior TSI scales are at the firm level of analysis and thus, the referent is usually 'we' or 'our'. It was necessary, therefore, to tailor the items and the referent to the individual level of analysis. The scale consists of five items and are consistent with several TSI scales used at the firm level of analysis (e.g., Anderson and Weitz 1992; Heide and John 1988).

Concern for internal opportunism. In contrast to prior scales which measure *actual external opportunism*, we adapted our scale to reflect one's *concern for internal opportunism*. We adapted and augmented the four-item *partner opportunism* scale from Wuyts and Geyskens (2005) by including four new items. We added four items because this construct is of central interest and because opportunism in team-based contexts generally consists of behaviors such as shirking and/or freeriding (e.g., Jones 1984), which are less prevalent in prior firm-level opportunism scales. All the items in this scale are tailored to elicit the account manager's concern for opportunism by his/her product/technical specialists. (Wathne and Heide (2000) distinguish between *passive* (e.g., shirking) and *active* (e.g., deliberately lying) opportunism. Initial exploratory factor analysis, however, resulted in only one underlying concern for internal opportunism factor.)

Internal safeguarding. We assess internal safeguarding behaviors from the account managers' supervisors. This new six-item scale reflects the extent to which the

account manager blocks access to and information regarding a particular customer. In constructing this scale, we used the existing literature to aid us. For instance, we use the information integration scale used by Sethi (2000) as input in our delineation and construction of the measurement items.

Performance with customer. We assess the firm's performance with the particular customer from the account managers' supervisors by adapting the established scale of Homburg et al. (2002). Importantly, we specify that the supervisor respond to these questions regarding the particular customer relationship that the account manager used to respond to his/her questionnaire (i.e., the account manager's performance might vary considerably across different customers).

Extendedness. We adapt the scale used by Jap and Anderson (2003) to assess both the extendedness between the account manager and the customer and the extendedness between the account managers' specialists and the customer. These items have considerable overlap with other extendedness scales in the literature (e.g., Heide and Miner 1992; Noordewier, John, and Nevin 1990; Rokkan, Heide, and Wathne 2003).

Promotion aspirations of specialist(s). To assess the promotion aspirations of the account managers' specialists, we adapted four items from the original thirteen item managerial aspirations scale which best tap the different aspects of the construct (Tharenou 2001).

Control variables. We control for several variables that prior research and theory suggest are related to the theoretical constructs of interest in the present study. First, we control for two types of trust that account managers have with their specialists – benevolence and competence (Ganesan 1994). An account manager is likely to be less

concerned with opportunism from a benevolent specialist; therefore we assess specialist benevolence via the four-item benevolence scale from Becerra and Gupta (2003). An account manager is also more likely to seek advice from competent others and, therefore, is less likely to be concerned with specialist opportunism (Tushman and Scanlan 1981). We control for specialist competence via Kohli and Jaworski's (1994) five-item co-worker competence scale.

Second, we account for team size (via the number of specialists working with the customer) because larger teams increase the ability of team members to act opportunistically (i.e., shirk, freeride) (Jones 1984). Third, we control for the account manager's sales experience (in years). Experienced account managers are likely less dependent upon their specialists for help and, therefore, choose to include them less frequently in their customer accounts (i.e., internally safeguard).

Finally, as per agency theory, we control for (a) goal incongruity between account managers and their specialists and (b) monitoring by management – both of which are purported to affect opportunism (Anderson 1988). We adapted the three-item goal incongruity scale used by Song and colleagues (2000) to assess goal incongruity between the account manager and his/her specialists. Importantly, we specify that the responses should be *with respect this customer* relationship (because goals may be more or less aligned across different customers). Monitoring by management should increase the ability to detect opportunism and, therefore, should reduce the account manager's concern for specialists' opportunism (Stump and Heide 1996; Wathne and Heide 2000). Therefore, we adapted and augmented the management monitoring scale used by Sethi and colleagues (2001) to fit the present context.

5.3 Construct Validity

We follow Gerbing and Anderson (1988) to test the validity of our measures using confirmatory factor analysis. Using LISREL 8.54 (Jöreskog and Sörbom 1996), we assess the fit of a single overarching measurement model for all constructs (including all control variables, except for years of sales experience and the number of specialists working with the customer) across both respondents (i.e., the account managers and their supervisors) ($n = 155$). Given these constraints, the model exhibits excellent fit ($\chi^2 = 1170.49$, d.f. = 687; $\chi^2/\text{d.f.} = 1.70$ (i.e., less than 2); CFI = .90; RMSEA = 0.065; SRMR = 0.067).

The measurement items all load significantly on their latent factors (lowest t-value was 6.59 for item three of the management monitoring scale), demonstrating convergent validity. All coefficient alphas surpass the recommended reliability threshold of .70 (Nunnally 1978). Correspondingly, all composite reliabilities (CR), meet the recommended cut-off level of .70. In addition, the average variance extracted (AVE) of all variables meet or exceed the recommended standard of .50 (Fornell and Larcker 1981). Consequently, there is strong evidence that the items are internally consistent. Finally, we assess discriminant validity using the procedures outlined by Fornell and Larcker (1981). Specifically, the shared variance between all possible pairs of constructs is less than the AVE for all individual constructs. Thus, we provide evidence of unidimensionality, reliability, convergent and discriminant validity (Gerbing and Anderson 1988).

CHAPTER 6

ANALYSIS and RESULTS

To test our hypotheses (Figure 1) we following Anderson and Gerbing (1988) and simultaneously assess the measurement and structural models using LISREL 8.80. To test interactions between multiple indicant latent variables (i.e., H_1 and H_2), we utilize the procedures outlined by Marsh, Wen, and Hau (2004) and Ping (1995). The unconstrained approach (Marsh, Wen, and Hau 2004) suggests mean centering the indicators and using a matching system when creating the indicators of the latent interaction variables. A matching system has two main benefits (1) it does not reuse information (i.e., item 1 from an independent variable is not multiplied by multiple items from the moderator variable) and (2) it uses all of the information (i.e., all items between the two constructs are used in creating the interaction variables). Therefore, we multiplied the first two items of the mTSIs scale by the two agent-customer extendedness items and the last two items of the mTSIs scale by the two specialist-customer extendedness items to form two indicators for each of the two interaction variables.

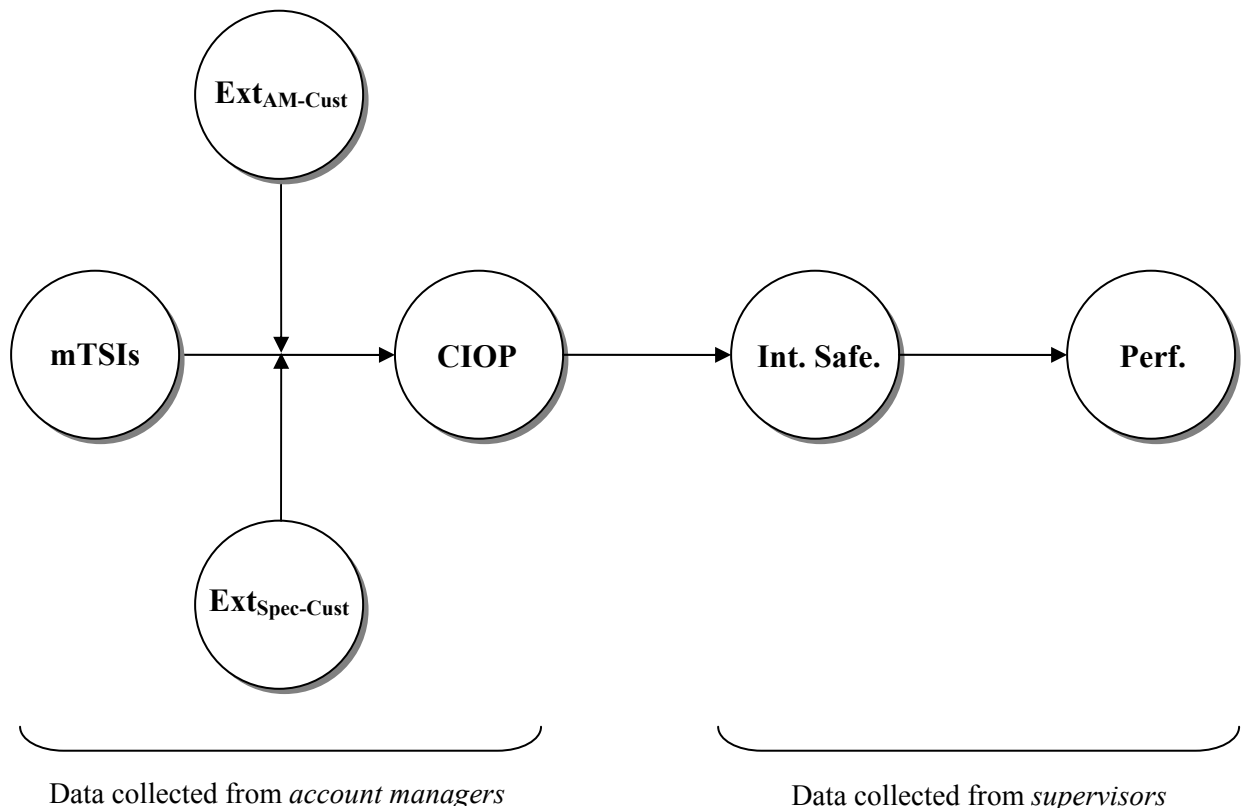
As a check on the results of the unconstrained approach, we also used the two-step procedure outline by Ping (1995). The Ping approach uses a single indicant of the latent interaction variables; however, the results are largely consistent across both approaches.

Table 2 reports the results of the structural equations and model fit. As expected, our results suggest that the relationship between mTSIs and concern for internal opportunism is moderated by the extendedness between the account manager and the customer ($\gamma = .20, p \leq .05$), supporting H_1 . Specifically, this result suggests that the

relationship between mTSIs and concern for internal opportunism becomes *more positive* as the extendedness between the account manager and the customer increases. H₂ is also supported ($\gamma = -.22, p \leq .05$). That is, as the extendedness between specialists and the customer increases, the relationship between mTSIs and concern for internal opportunism is *less positive*. Thus, we provide evidence that these two types of extendedness can have countervailing effects on the mTSIs – concern for internal opportunism relationship.

Our results also support H₃, which predicts a positive relationship between concern for internal opportunism and internal safeguarding ($\beta = .30, p \leq .001$). This finding lends credibility to notion that account managers will take steps to “block” others when they are concerned with internal opportunism. This is congruent with Heide and John (1988), who find that agencies will take action (by making offsetting investments in their customers) when concerned with opportunism by their principals.

Consistent with our prediction, our results suggest that internal safeguarding can have deleterious effects on performance ($\beta = -.22, p \leq .01$), providing support for H₄. Thus, managers may be keen to the notion that those account managers who engage in internal safeguarding behaviors are preventing others from helping to expand the customer “pie”.



mTSIs:	micro Transaction Specific Investments made by account manager in customer
Ext_{AM-Cust}:	Extendedness between the account manager and the customer
Ext_{Spec-Cust}:	Extendedness between the account manager's specialists (teammates) and the customer
CIOP:	Concern for internal opportunism
Int. Safe.:	Internal safeguarding
Perf.:	Performance

Figure 1.

Table 2.
Tests of Hypotheses

Path to	Path from	H₀	H₀ sign	Structural coefficients	Statistical significance (one-tail)
γ paths					
Concern for internal opportunism	mTSIs x Ext _{AM-cust}	H ₁	+	.20	p < .05
	mTSIs x Ext _{Spec-cust}	H ₂	-	-.22	p < .05
	mTSIs			.18	p < .05
	Ext _{AM-cust}			.08	ns
	Ext _{Spec-cust}			.52	p < .001
	Benevolence*			.69	p < .001
	Monitoring*			.21	p < .025
β paths					
Internal safeguarding	Concern for internal opportunism	H ₃	+	.30	p < .001
	Benevolence*			-.04	ns
	Monitoring*			-.24	p < .025
Performance	Internal safeguarding	H ₄	-	-.22	p < .01
	Monitoring*			.15	p < .05

Model fit: $\chi^2_{(618)} = 1139.02$ (p < .01), CFI = .93 , RMSEA = .069, SRMR = .087

ns = not significant

* = control variable

CHAPTER 7

DISCUSSION

Transaction-specific investments, opportunism and governance mechanisms examined at the firm level of analysis have significantly improved our understanding of interfirm relationships (e.g., Rokkan, Heide, and Wathne 2003). The present research extends this literature stream by illuminating the individual investors of TSIs, concerns for internal opportunism and internal safeguarding. Notably, our research suggests that one's mTSIs in a customer relationship can lead to a greater concern for internal opportunism under certain conditions. We show that this concern can lead to internal safeguarding behaviors that are incongruent with the team concept and consequently, negatively affect performance. The results of this research provide important implications for theory and practice.

7.1 Theoretical Implications

Using established theory, our research highlights new, important variables and relationships that can significantly affect a firm's performance with its customers. First, we underscore the important role that transaction-specific investments made by agents of the firm (i.e., mTSIs) can play in collaborative contexts. In doing so, our research complements and extends extant firm-level perspectives. For instance, prior research suggests that extendedness between firms can reduce the impact that TSIs have on the receiving firm's opportunism (Rokkan, Heide, and Wathne 2003). Our research takes this notion a step further by showing that *high* levels of agent-customer extendedness and

low levels of specialist-customer extendedness *increase* the impact that an agent's mTSIs have on his/her concern for *internal* opportunism (by *non-recipients* of the investments). Thus, we suggest that at more micro-levels of analysis there can be different types of extendedness and that these different types of extendedness can impact the relationship between mTSIs and concern for internal opportunism in interesting, countervailing ways.

Second, prior related research tends to focus on interorganizational governance and, as a consequence, internal governance mechanisms (such as promotion incentives) have taken a back seat in the literature. Presumably, promotion incentives should work to attenuate internal opportunism (Williamson 1985). We shed light on this under researched assumption by examining the extent to which specialists are motivated to be promoted (i.e., their promotion aspirations). Thus, we suggest that it may not be the presence or absence of promotion incentives per se, but rather the underlying motivation for a promotion that can guide behavior (or, as in our case, guide one's perceptions of another's likely behavior). Our results suggest that agents who make mTSIs in their customer relationships are more concerned with internal opportunism when their specialists have little motivation to be promoted. Thus, although there may be promotion opportunities within firms, individuals may be more or less concerned about a teammate's behavior depending upon whether this teammate is perceived to be motivated to be promoted.

Third, we identify a key consequence of internal opportunism – internal safeguarding behaviors – and show how it can adversely affect performance. Although prior research provides considerable insights into the antecedents of external (or interfirm) opportunism (e.g., Achrol and Gundlach 1999; Brown, Dev, and Lee 2000;

Rokkan, Heide, and Wathne 2003), an understanding of the consequences of opportunism has been conspicuously absent in the literature. Additionally, unlike much of the extant research which illustrates the positive consequences of *external safeguards* such as relational norms (e.g., Achrol and Gundlach 1999; Brown, Dev, and Lee 2000; Jap and Ganesan 2000), we argue and show that internal safeguarding behaviors by agents can have deleterious effects on a firm's performance with its customers.

Fourth, our research explicitly measures and assesses one's *concerns for opportunism* rather than *actual opportunism*. Although the marketing literature tends to focus on actual opportunism (e.g., John 1984; Rokkan, Heide, and Wathne 2003), Williamson suggests (1985) that it is difficult to know *a priori* who and when others will behave opportunistically. We suggest that this uncertainty can manifest itself in higher or lower concerns for opportunism, which can then lead to safeguarding behaviors. In addition, because actual opportunism can lead to self-selection out of a relationship and/or may be attenuated in self-reports (Crosno and Dahlstrom 2007), we suggest that assessing concerns for opportunism provides not only a theoretical contribution, but also a fruitful area for further research.

Finally, we strengthen our results by controlling for a number of important covariates. For instance, most prior studies on opportunism do not include *trust* as a covariate (perhaps, because some suggest that trust is “psychological converse” of opportunism (Parkhe 1993, p. 803)). Our results, however, suggest that trust may reduce concerns with internal opportunism, but that these concerns can significantly relate to other variables such as internal safeguarding, nonetheless.

7.2 Managerial Implications

Account managers are encouraged/expected to use available internal resources (e.g., their product and technical specialists) to cultivate and to strengthen their relationships with their customers. In this paper, we demonstrate that account managers are often cautious about utilizing these internal resources, for fear of opportunistic behaviors by these resources. Clearly, it behooves managers to find ways to reduce account managers' concerns for internal opportunism.

To reduce an account manager's concern for internal opportunism, managers should find ways to signal specialists' continued involvement with a customer (i.e., increase specialist-customer extendedness). There are at least two ways to do this. First, managers should consider assigning specialists to customers, rather than only to account managers (in the present context, specialists are assigned to account managers, while account managers are assigned to customers). This should increase a specialist's sense of attachment to and prolonged involvement with particular customers. Second, managers should consider making explicit the role of specialists in customer feedback (in the present context, customer feedback is based on the account managers specifically and the firm generally). Therefore, specialists would have a greater incentive to maintain good customer relationships on a long-term basis.

Our results also suggest that agent-customer extendedness can increase an investing agent's concerns for internal opportunism. Therefore, to offset concerns for opportunism, managers should (a) monitor account managers with more extended customer relationships (e.g., key account managers) and those specialists assigned to them and (b) encourage team-building activities between these account managers and

their specialists. Alternatively, managers can be more efficient by spending less time monitoring those accounts with short time horizons, as our findings suggest that account managers are less concerned with internal opportunism and, therefore, more likely to include their specialists in these accounts (as one executive put it – in “one-and-done type” transactions).

Managers also need to understand that the promotion aspirations of specialists matter in internal collaborative contexts. Our results suggest that account managers are likely to be more concerned that their value creating investments are at risk of internal opportunism when his/her specialists are not motivated to be promoted. Therefore, managers may choose to hire specialists who signal very high aspirational levels for moving up the corporate ladder. Managers of current employees should pay particular attention to a specialist’s age or tenure because prior research shows that age is negatively related to the valence for promotion (Cron, Dubinsky, and Michaels 1988). Thus, account managers may consider older and/or longer-tenured specialists to not be motivated to be promoted, which can increase their concerns for opportunism.

This finding regarding the promotion aspirations of specialists was very interesting to senior management at the participating firm because it also presents somewhat of a conundrum for managers. On the one hand, managers want to hire specialists who will to do a specific job for at least a minimum length of time. On the other hand, our results suggest that investing account managers are more concerned with internal opportunism when their specialists do not aspire to be promoted. Therefore, to the extent that account managers equate long job continuity of specialists to low

promotion aspirations of these specialists, managers will need to balance the benefits of specialists' job continuity with the potential pitfalls of such continuity.

7.3 Limitations

The present research has the following limitations. First, we collected data from a single firm and industry. Future research will be needed, to assess the overall generalizability of our contentions to other contexts. For instance, promotion-based incentives are more likely to be used in large corporations with many hierarchical levels (such as the one examined in the present study). Thus, our results may not generalize to smaller firms with fewer promotion opportunities (Baker, Jensen, and Murphy 1988). Second, the scale for promotion aspirations of specialists needs to be improved. We utilized only four of the most applicable items from Tharenou's (2001) original thirteen-item promotional aspiration scale; therefore, future researchers should try to incorporate and/or adapt other items from her scale.

7.4 Future Research Directions

There are considerable opportunities to extend the current research. For instance, research is needed to understand how established firm-level governance mechanisms (e.g., norms, qualification efforts) (e.g., Heide and John 1992; Jap and Ganesan 2000; Rokkan, Heide, and Wathne 2003; Stump and Heide 1996; Wathne and Heide 2004) work within the context of team-based collaborative arrangements. An interesting study would be whether extreme forms of solidarity between account managers and their specialists might actually create a moral hazard for the customer. In other words,

customers may be concerned that closely knit teams are more likely to take advantage of them. Thus, although there may be benefits to team solidarity (e.g., cohesion, motivation), there may also be detriments.

More research is also needed to better understand the role of internal promotions. Although prior research suggests that “Promotions are used as the primary incentive device in most organizations, including corporations, partnerships, and universities” (Baker, Jensen, and Murphy 1988, p. 600), there is little corresponding research in the marketing literature. Rather, research generally focuses on controlling employees via outcome or behavior control mechanisms (e.g., Anderson and Oliver 1987). A close examination of internal promotions could make a significant contribution because such an incentive device can induce motivation and effort by a large number of employees while offering only a single reward (Prendergast 1999; Rosenbaum 1984; Takahashi 2006). Such an endeavor, however, should account for the notion that when promotion incentives are strong, cooperation among participants (including potential teammates) may be *reduced* (Drago and Garvey 1998; Lazear 1989), which may hurt performance in collaborative contexts.

Additionally, research is needed to understand whether offsetting investments made by specialists in a customer creates a ‘mutual lock-in condition’ with the account manager (Heide and John 1988). Such a condition is likely to reduce an investing agent’s concerns for internal opportunism by his/her specialists. As we show in our study, however, an agent who is concerned with internal opportunism is likely to block others from accessing the customer account, which may prevent a specialist from making mTSIs in the customer. Therefore, future research would need to take this ‘chicken and the egg’

argument into consideration (i.e., Does internal safeguarding prevent mTSIs by specialists? *or* Do offsetting mTSIs by specialists lower the agent's concern for opportunism and, consequently, lower his/her internal safeguarding?)

. Correspondingly, research is needed to address the directionality of mTSIs among team members. For instance, specialists are likely to have made significant, specific investments in learning the unique applications of specific products/technologies (i.e., employer-specific investments), whereas account managers are likely to have made significant investments in their customer relationships. The literature would benefit from an examination of how the directionality of mTSIs among team members affects critical team variables.

An additional future study should examine the extent to which actual opportunism increases one's concern for opportunism or vice-versa. Indeed, some suggest that, "Individuals, treated with suspicion and on the expectation that given the opportunity they will cheat, may be induced to behave in the postulated manner" (Moschandreas 1997, p. 47).

Finally, the non-redeployability characteristic of mTSIs raises other interesting issues. For instance, agents who make mTSIs are likely to be very concerned with his/her internal reputation (Hirshleifer 1993). In other words, because the investments are non-redeployable, s/he will have a heightened awareness of how his/her mTSIs are perceived by others. Thus, an examination of other consequences of mTSIs could make a significant contribution.

PART 2

DEVELOPING AND DEPLOYING EFFECTIVE SOLUTIONS: THE CONCURRENT ROLE OF NETWORKS WITHIN AND BETWEEN BUYING AND SELLING TEAMS

CHAPTER 8

INTRODUCTION TO PART 2

Recent research suggests that sellers *and* buyers jointly play integral roles in developing and deploying effective customer solutions (Tuli, Kohli, and Bharadwaj 2007). As such, members of both selling and buying teams are often responsible for co-creating and assuring effective implementation of customer solutions (Dhar, Menon, and Maach 2004). Apart from qualitative case studies, prior business-to-business marketing research tends to examine selling and buying teams in isolation, leaving the natural bridge between these two counterparts uncrossed to date. Consequently, there is little research which concurrently examines how *intrafirm* (e.g., within both the selling and buying teams) and *interfirm* (between the selling and buying teams) linkages *jointly* affect the effectiveness of customer solutions at *both* the solution development and deployment phases. This omission is noteworthy because the ultimate effectiveness of within-team characteristics, for example, may be contingent upon between-team characteristics. Thus, the overarching research question we pursue in this paper is the following, “How do the relations within teams combine with the relations and structure between teams to enhance the effectiveness of a complex customer solution at both the solution development phase and the solution deployment phase?” To answer this question, we draw on and integrate perspectives from network theory and agency theory.

The present research makes two central contributions. First, the implicit assumption in the literature is that strong *relational ties* between network members, generally speaking, have very positive effects. However, to date, there is little

understanding about whether strong ties between teams, for example, compliment or substitute for strong ties within teams or whether strong ties are needed at both the solution development and the solution deployment phases. These notions are of particular consequence because strong relational ties within and between teams can be very costly to develop and maintain (Hansen 1999). Therefore, from an efficiency and practical standpoint, it behooves managers to understand whether, where and when to encourage strong ties (e.g., within and/or between teams; at the development and/or the deployment phase).

Second, we extend the emerging view on the importance of the structural aspects of interfirm relationships by focusing on the structure of relations between buying and selling teams (Wuyts et al. 2004). Specifically, we introduce the concepts of *mirrored ties* (i.e., ties between a network member and similar others -- in the present paper, we focus on knowledge similarity) and *more-than-mirrored ties* (i.e., ties between a network member and similar others (i.e., mirrored ties) and dissimilar others) to lend clarity and context to the preferred network structures between buying and selling teams during both the solution development and deployment phases. In doing so, we attempt to answer two important questions - (a) at what stage of the solution process are mirrored ties and more-than-mirrored ties most beneficial to solution effectiveness?, and (b) to what extent do mirrored ties or more-than-mirrored ties between teams interact with tie strength within and across teams to affect solution effectiveness?

Our study also makes several contributions to the emerging literatures on customer solutions (Tuli, Kohli, and Bharadwaj 2007) and on the effect of social networks in marketing contexts (Wuyts et al. 2004). For instance, we empirically show

that concurrent within- and between-team network characteristics (e.g., tie intensity, mirrored ties) are critical to solution effectiveness (Tuli, Kohli, and Bharadwaj 2007). In doing so, we highlight notable differences in preferred network structures during the solution development and solution deployment phases.

Our research also sheds new light on buying and selling teams. Although empirical work tends to examine these teams in isolation of each other, we show that the ability of one team to be effective (e.g., selling team) depends in large part on the relational characteristics between teams (e.g., between the buying and selling teams). This contribution is particularly timely, given the increasing use and importance of, yet paucity of empirical research on, selling teams in practice (Homburg, Workman, and Jensen 2002; Weitz and Bradford 1999).

The rest of this paper is organized as follows. First, we underscore important theoretical underpinnings and advances for which our subsequent hypotheses are based. Second, we formulate a set of hypotheses across both the solution development and solution deployment phases. Third, we provide details of our methodology, which includes details of our field-based conjoint study. Finally, we report our results and discuss important theoretical and practical implications as well as provide several areas for future research.

CHAPTER 9

THEORY

Networks have two key characteristics: (1) the configuration of relations among network members (i.e., structural embeddedness) and (2) the relationships between members in the network (i.e., relational embeddedness) (e.g., Moran 2005). It is important to understand how these network characteristics affect customer solutions at different phases of the solution process. Therefore, we first distinguish between the solution development and solution deployment phases using agency theory before integrating key concepts from network theory. Our conceptual model is depicted in Figure 2.

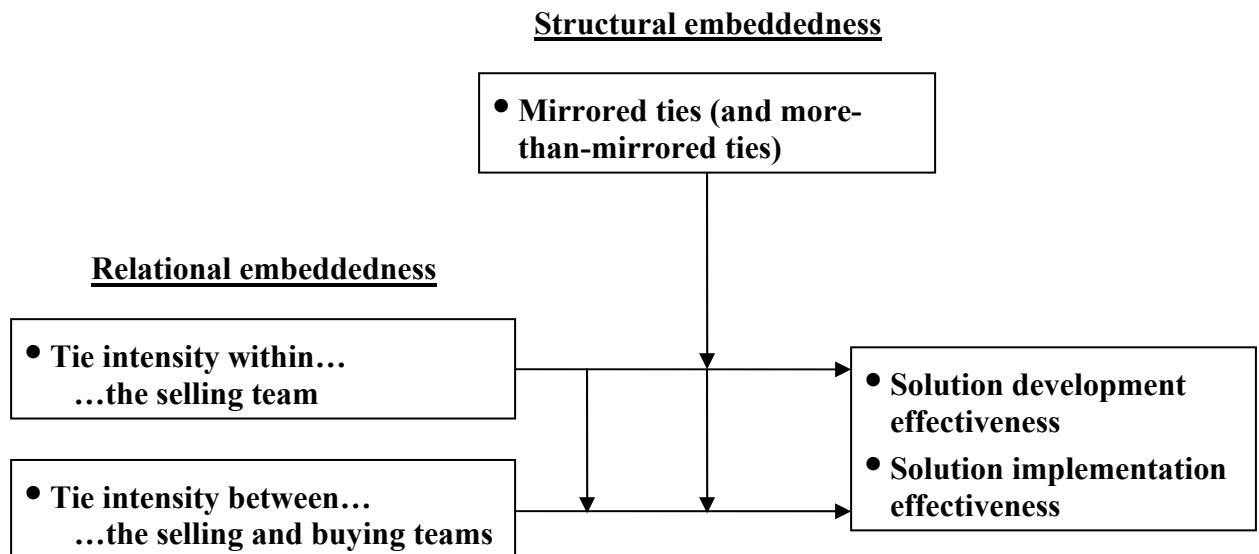


FIGURE 2.

9.1 Solution Development and Solution Deployment

We focus on solution effectiveness at two stages of the solution process: the solution development phase and the solution deployment phase. Effective solution development involves buying and selling firms working together to define customer requirements, and to customize and integrate the solution to meet customer requirements (Tuli, Kohli, and Bharadwaj 2007). Effective solution deployment, on the other hand, involves effective installation and training as well as maximizing the customer's utilization of the solution (Tuli, Kohli, and Bharadwaj 2007). Research suggests that being effective in *both phases* of the solution process is needed to be effective from the customer's point of view (Tuli, Kohli, and Bharadwaj 2007; Ustuner 2005).

Notably, these two phases map onto the agency theory notions of hidden information (i.e., adverse selection) and hidden action (i.e., moral hazard) (Bergen, Dutta, and Walker 1992; Eisenhardt 1989). In the hidden information phase (solution development phase), the buying team struggles with information asymmetries between its members and members of the selling team. These information asymmetries increase the buying team's fear that selling team members will misrepresent their abilities to develop an effective solution (Eisenhardt 1989). In response, buying teams rely on *screening* and *signals* (Bergen, Dutta, and Walker 1992). For instance, frequent communication (i.e., intense ties) between the buying and selling teams allows the buying team to screen the selling team's abilities directly. Frequent communication among selling team members signals their ability to work together on the solution. Thus, overcoming hazards posed by information asymmetries via screening and signals should play an integral role in the solution development phase.

In the hidden action phase (solution deployment phase), the buying team is concerned with selling team member opportunism (e.g., shirking on their training and installation duties) (Bergen, Dutta, and Walker 1992). Since the outcomes of these activities are difficult to evaluate and predict *ex ante*, they are more prone to moral hazard (Holmstrom 1979). In response, buying team members will *monitor* these activities in an attempt to reduce opportunism. For instance, frequent communication (i.e., intense ties) between the buying and selling teams allows the buying team to monitor the selling team directly. Thus, overcoming concerns with opportunism via monitoring mechanisms should play an integral role in the solution deployment phase (Bergen, Dutta, and Walker 1992). In the following sections we integrate these notions with the tenets of network theory before developing our hypotheses.

9.2 Structural Embeddedness

Structural embeddedness refers to the pattern of linkages between network members (e.g., Nahapiet and Ghoshal 1998). In the present paper, we focus only on the between-team network structure (i.e., the network structure between the selling and buying teams) (see Figure in Appendix). A central notion of structural embeddedness is *network density*, or, the number of linkages among members (or nodes) of a network. In this study, we extend the established idea of network density by introducing the notions of *mirrored ties* (MTs) and *more-than-mirrored ties* (MTMTs).

As stated previously, *mirrored ties* are ties between a network member and similar others, while *more-than-mirrored ties* are ties between a network member and similar others *and* dissimilar others. In the present paper, we focus on knowledge

(dis)similarity. For example, a mirrored tie would be a tie between the account manager from the selling team and the purchasing manager from the buying team (i.e., both have rather similar knowledge of the purchasing process and of each other's job roles). Thus, more-than-mirrored ties would include the aforementioned tie between the account manager and the purchasing manager (a mirrored tie) as well as a tie between the account manager and the I.T. manager within the buying team (a non-mirrored tie).

More-than-mirrored tie networks generally have more linkages between selling and buying team members than solely mirrored tie networks and, therefore, may be considered more dense than mirrored-only tie networks. As established theory and empirical evidence on network density would suggest, more-than-mirrored between-team tie networks would exhibit greater *opportunity for integration* and *observability* than would mirrored-only tie networks (cf. Van den Bulte and Wuyts 2007). We elaborate on the importance of the distinction between network density and (more-than-) mirrored ties below and in subsequent sections.

Opportunity for Integration. The opportunity for integration refers to the extent to which network members have the opportunity to share and to integrate information with each other. Research suggests that densely connected network members have a greater opportunity to transfer information (than if members were only sparsely connected) (Van den Bulte and Wuyts 2007). Such an opportunity makes it more likely that different opinions and perspectives will surface and be integrated, which is critical in developing effective customer solutions (Tuli, Kohli, and Bharadwaj 2007). For instance, it should be beneficial for selling team members to talk to many members of the buying team in order to recognize and appreciate different functional challenges and ways of working.

Thus, a buying firm is likely to prefer more-than-mirrored ties between the buying and selling teams during the solution development phase because more ties should signal more opportunities to share and integrate numerous perspectives.

Observability. Observability is the extent to which network members' actions are visible to other members of the network. As network density increases, an individual's behaviors become more observable by network members and, therefore, works to attenuate member opportunism (e.g., shirking) (Coleman 1988; Granovetter 2005; Van den Bulte and Wuyts 2007). Correspondingly, Coleman (1988) finds that closed networks (densely-knit networks) are more likely to enforce social norms and to engender trust among members. Thus, prior research would suggest that more-than-mirrored ties should increase observability and, therefore, work to attenuate opportunism in the solution deployment phase.

The present study extends this notion by offering a complementary perspective. We suggest that more-than-mirrored ties include linkages for which there are high levels of information asymmetry (e.g., between the account manager from the selling team and the I.T. manager from the buying team). Therefore, more-than-mirrored ties may do little more than mirrored ties to reduce opportunism because of the inherent information asymmetries involved in non-mirrored ties. In other words, non-mirrored ties have less ability to detect and, therefore, monitor for opportunism (Wathne and Heide 2000). Mirrored-ties, on the other hand, are characterized by information *symmetry* and, therefore, are best able to observe and monitor for opportunism. Consequently, we argue that more-than-mirrored ties may be seen as inefficient in the solution deployment phase, *ceteris paribus*, because of the non-mirrored ties' inability to observe opportunism.

9.3 Relational Embeddedness

Relational embeddedness refers to the relationships between network members (e.g., Nahapiet and Ghoshal 1998). The relational features of the network can play significant roles in a variety of phenomena such as influence (e.g., Brown and Reingen 1987) and information transfer (e.g., Hansen 1999; Reagans and McEvily 2003). Generally, the core ideas of relational embeddedness are captured by the notion of tie strength. We focus on *tie intensity*, or the frequency of communication between network members, as an indicator of tie strength (Van den Bulte and Wuyts 2007)³. Like structural embeddedness, relational embeddedness can impact effectiveness at both the solution development and solution deployment phases.

Tie Intensity as Information Exchange Mechanism

Intense ties ease the transfer of complex (Hansen 1999), tacit (Reagans and McEvily 2003) and private/restricted knowledge (Uzzi and Lancaster 2003). Correspondingly, intense ties can engender a shared language (Maltz and Kohli 1996; Van den Bulte and Wuyts 2007) and information processing heuristics (Hansen 1999), which can ease communication. Likewise, intense ties have been found to enhance explorative learning (complex learning via experimenting with alternatives) (Uzzi and Lancaster 2003) and understanding of formal and informal roles of network members (Spekman and Johnston 1986).

³ Research suggests that tie strength consists of two dimensions: tie intensity (the frequency of communication) and tie valence (the affective nature of the tie) (Van den Bulte and Wuyts 2007). We use the frequency of interaction between network members as a proxy for tie strength for two main reasons: (1) Prior researchers collapse communication frequency and valence because they are highly correlated (e.g., Hansen (1999) reports a correlation of .83) (2) Research suggests that complex knowledge transfer, which solutions call for, is often done in an iterative fashion (which implies frequent communication) (Van den Bulte and Wuyts 2007)

Weak ties (or infrequent communication between network members), on the other hand, require little investment in time which results in impersonal (or atomistic) relationships, which tend to inhibit information transfer (Uzzi and Lancaster 2003; Van den Bulte and Wuyts 2007). Thus, buying firms should prefer intense ties during the solution development phase because such ties can screen directly for selling team competence and can signal the ability of network members to share and process complex information, which is vital to developing effective solutions.

Tie Intensity as Governance Mechanism

There is ample evidence from the marketing literature suggesting that intense ties can also govern relationships. For instance, research suggests that frequent communication can increase trust (Anderson and Weitz 1989; Anderson and Narus 1990) and commitment between exchange partners (Anderson and Weitz 1992). Related research suggests that the norm of information sharing can increase commitment (Jap and Ganesan 2000) and govern against opportunism (Heide and John 1992). Thus, buying organizations should prefer intense ties during the solution deployment phase because such ties should (a) reduce concerns for opportunism, thereby reducing the need to monitor and/or (b) allow network members to directly monitor each other, thereby preventing opportunistic behavior.

Key Assumptions

We make three central assumptions in this paper. First, we assume that all within-team members are at least weakly tied to one another (see illustration in the Appendix). The rationale for this is that it is likely that team members from the same firm will at least have the opportunity to communicate with each other (i.e., at least weak ties

characterized by infrequent communication). Second, all tie strengths *within* each team are the same and all tie strengths *between* the buying and the selling team are the same. Without this assumption, there would be an inordinate number of combinations of weak and strong ties within and between the teams, making the research non-tractable. Third, we assume that transitivity does not hold between teams (i.e., a strong tie from sales team member #2 to member #1 and a strong tie between sales team member #1 and member B of the buying team does not imply that there needs to be a tie between members #2 and B). Because these teams are often formed on a temporary basis (i.e., they are often task-specific, ad-hoc teams) for which time commitments among team members are likely to vary and may or may not overlap, we suggest that such a scenario is feasible.

CHAPTER 10

HYPOTHESES

10.1 Tie Intensity within the Selling Team and Tie Intensity between Teams

To overcome the hidden information problem at the solution development phase, buying firms should prefer intense ties among selling team members. Such ties among selling team members should signal the ability to transfer private and tacit information (Reagans and McEvily 2003; Uzzi and Lancaster 2003). Frequent communication among selling team members should also increase empathy (Parker and Axtell 2001) which can overcome difficulties associated with different “thought worlds” stemming from team members who come from different functional areas (Dougherty 1992). Intense ties among selling team members should also increase the team’s ability to work out problems “on the fly” (Uzzi 1997). Such problem solving is important because it helps to flesh out requirements, articulate interdependencies across functions and adjust to different performance evaluation metrics.

As recent research evidences, however, effective solutions are co-created by *both* suppliers and customers (Dhar, Menon, and Maach 2004; Tuli, Kohli, and Bharadwaj 2007). Therefore, intense ties within the selling team can only go so far in developing truly effective solutions. Effective solution development requires the ability of the selling team to not only share and integrate perspectives with each other, but also the ability to share and integrate knowledge with members of the buying team. Intense between-team ties, therefore, should signal the ability to transfer the complex and private knowledge necessary to learn customer preferences and to co-develop customer solutions

(Dhar, Menon, and Maach 2004; Hansen 1999; Reagans and McEvily 2003; Tuli, Kohli, and Bharadwaj 2007; Uzzi and Lancaster 2003). Such ties are also important for learning the political and operational procedures of each other's firms, which recent research shows is essential to solution effectiveness (Tuli, Kohli, and Bharadwaj 2007). Intense between-team ties, therefore, should foster discussions within the selling team that are much more informed by customer preferences and procedures. Formally,

H_{1a}: During the solution development phase, the relationship between intense ties within the selling team and solution effectiveness is more positive when the between-team ties are more intense.

As stated previously, at the solution deployment phase, the onus shifts to monitoring against opportunism. To overcome this hidden action problem, buying firms are likely to prefer intense ties among selling team members because such ties should help selling team members monitor each other's behavior (e.g., by ensuring that selling team members are communicating with each other about installation and training). However, to the extent that frequent communication increases trust (Anderson and Weitz 1989) and commitment (Anderson and Weitz 1992) among selling team members, the customer may feel threatened by the team's solidarity, which permits it to act opportunistically without the threat of exposure by individual selling team members. Frequent communication *between* teams, therefore, should govern sales team member behavior because of the increased ability of buying team members to detect selling team opportunism (e.g., shirking). Therefore,

H_{1b}: During the solution deployment phase, the relationship between intense ties within the selling team and solution effectiveness is more positive when the between-team ties are more intense.

10.2 Tie Intensity within the Selling Team and Mirrored Ties

Intense ties should ease the transfer of complex and tacit knowledge among selling team members (Hansen 1999; Reagans and McEvily 2003). Such ties should signal an increased likelihood of conceptualizing effective solutions for the customer.

Corresponding evidence suggests that, "...salespeople who communicated with their engineer-contacts more frequently were more effective in solution creation" (Ustuner 2005, p. 121). If selling team members communicated only infrequently with one another, there is a greater likelihood that components will be misaligned, for example, leading to suboptimal solution development (cf. Fichman and Goodman 1996).

As stated previously, effective solutions are *co-created* by *both* selling teams and buying teams (Dhar, Menon, and Maach 2004; Tuli, Kohli, and Bharadwaj 2007) and that intense ties within the selling team can only go so far in developing truly effective solutions. Therefore, buying firms are likely to prefer more-than-mirrored ties (MTMT) over mirrored ties (MT) between the selling and buying teams. As prior research suggests, more densely-knit networks provide a greater opportunity to surface and incorporate different opinions and perspectives (Van den Bulte and Wuyts 2007), which is critical in developing effective customer solutions (Tuli, Kohli, and Bharadwaj 2007).

MTMTs, therefore, should impact the ability of tightly-knit selling teams to incorporate many different customer perspectives during their (frequent) discussions. If there were only mirrored ties between the selling and buying teams, discussions among selling team members are likely to remain in functional silos and not benefit from perspectives of other buying team members (Gulati 2007). Moreover, selling team members would receive some information second-hand, relying on their team members to

accurately relay information from their (mirrored) counterpart. Thus, MTMTs between teams should signal to purchasing firms that discussions within the selling team are likely to benefit from the inclusion of more perspectives and viewpoints from buying team members. Formally,

H_{2a}: During the solution development phase, the relationship between intense ties within the selling team and solution effectiveness is more positive when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams.

At the solution deployment phase, the focus shifts to governing against opportunism (Bergen, Dutta, and Walker 1992). As discussed, when the selling team members have intense ties to one another, the buying firm may have a moral hazard problem with the selling team. The increased risk of selling team opportunism should lower the buyer's confidence that the selling team is acting in its interests. Therefore, prior research would suggest that the buying firm is likely to prefer more-than-mirrored ties between members of the buying and selling team in order to increase the likelihood of detecting selling team opportunism (e.g., Coleman 1988).

H_{2b}: During the solution deployment phase, the relationship between intense ties within the selling team and solution effectiveness is more positive when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams.

We offer an alternative hypothesis, however, based on our previous discussion of (more-than-) mirrored ties. Specifically, non-mirrored ties (which are included in MTMT networks) are characterized by significant information asymmetries between members. Therefore, the ability to detect opportunism among non-mirrored ties is minimal (Wathne and Heide 2000). Thus, from an efficiency perspective, buying firms may prefer to focus

their energies on mirrored ties because they are best equipped to detect opportunism.

Formally,

H_{2balt}: During the solution deployment phase, the relationship between intense ties within the selling team and solution effectiveness is *less positive* when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams.

10.3 Tie Intensity between Teams and Mirrored Ties

As stated previously, intense between-team ties should signal the ability to transfer the complex knowledge necessary to learn customer preferences and to co-create customer solutions (Dhar, Menon, and Maach 2004; Reagans and McEvily 2003; Tuli, Kohli, and Bharadwaj 2007). More-than-mirrored ties may also be beneficial during the development phase because they signal an increased opportunity for members of both teams to consider and integrate multiple perspectives.

Although both intense and more-than-mirrored ties between teams may be beneficial, research suggests that combining them can result in “overembeddedness”, whereby maintenance of the ties becomes unwieldy (Rowley, Behrens, and Krackhardt 2000, p. 372). Therefore, intense between-team ties and more-than-mirrored between-team ties are likely to be substitutes, rather than complements. Formally,

H_{3a}: During the solution development phase, the relationship between intense between-team ties and solution effectiveness is less positive when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams.

Both intense ties and more-than-mirrored ties between teams can also play key governance roles during the solution deployment phase. That is, frequent communication (via intense ties) between teams can not only monitor behavior directly but can also can

increase trust (Anderson and Weitz 1989; Anderson and Narus 1990) and commitment between teams (Anderson and Weitz 1992). Per prior research, the observability mechanism associated with MTMTs between teams should also allay the concerns for opportunism (Coleman 1988). Thus, like the previous hypothesis, intense ties and more-than-mirrored ties between teams are likely to act as substitutes. This is also consistent with our other argument regarding the ability of mirrored-ties to effectively monitor behavior more efficiently.

H_{3b}: During the solution deployment phase, the relationship between intense Q between-team ties and solution effectiveness is less positive when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams.

CHAPTER 11

RESEARCH METHOD

11.1 Conjoint Study

We chose to conduct a field-based conjoint experiment to test our hypotheses for two key reasons. First, a conjoint experiment allows one to examine attributes simultaneously and allows the researcher to understand the relative importance of attributes, while still maintaining an attractive level of realism (e.g., Wuyts et al. 2004). This is vital to the present paper because we are most interested in the concurrent network characteristics that exist within and between buying and selling teams. Second, it may be difficult for a respondent (i.e., purchasing manager) to be highly familiar with a supplier's internal network. Therefore, we utilized both a text-based and a corresponding picture-based conjoint experiment to highlight relevant network attributes. The picture-based design was carefully crafted to eliminate demographic differences (e.g., age, gender, race diversity) among network members. This is important because demographic diversity has been found to affect team processes and subsequently, team performance (e.g., Williams and O'Reilly 1998).

11.2 Experimental Design for Conjoint Study

The dependent variable is customer solution effectiveness during the development and deployment phases. We manipulate three independent variables (attributes), each at two levels: (1) tie intensity within the selling team (frequent and infrequent communication), (2) tie intensity between the selling and buying teams (frequent and infrequent

communication) and (3) mirrored ties (mirrored ties and more-than-mirrored ties) (see Tables 3 and 4). This results in a $2^3 \times 2$ (phases) full factorial design (16 total runs) – 8 runs for the solution development phase and 8 runs for the solution deployment phase. This design elicits 16 total responses from each respondent (i.e., 8 for both phases), which pretests showed to not be too time-consuming. (Because we are collecting data at two phases of the solution process, we keep the tie intensity of the buying team fixed at ‘high’ (i.e., frequent communication). If we were to vary tie intensity within the buying team, the design would become too time-consuming and cumbersome for the respondents (i.e., requiring 32 total runs)). We randomize the order of the runs to reduce the possibility of order bias. The full factorial design allows us to clearly interpret all interactions. No main effects, two-way interactions or three-way interactions are aliased (confounded) with any other main effects, two-way interactions or three-way interactions (Box and Draper 1987).

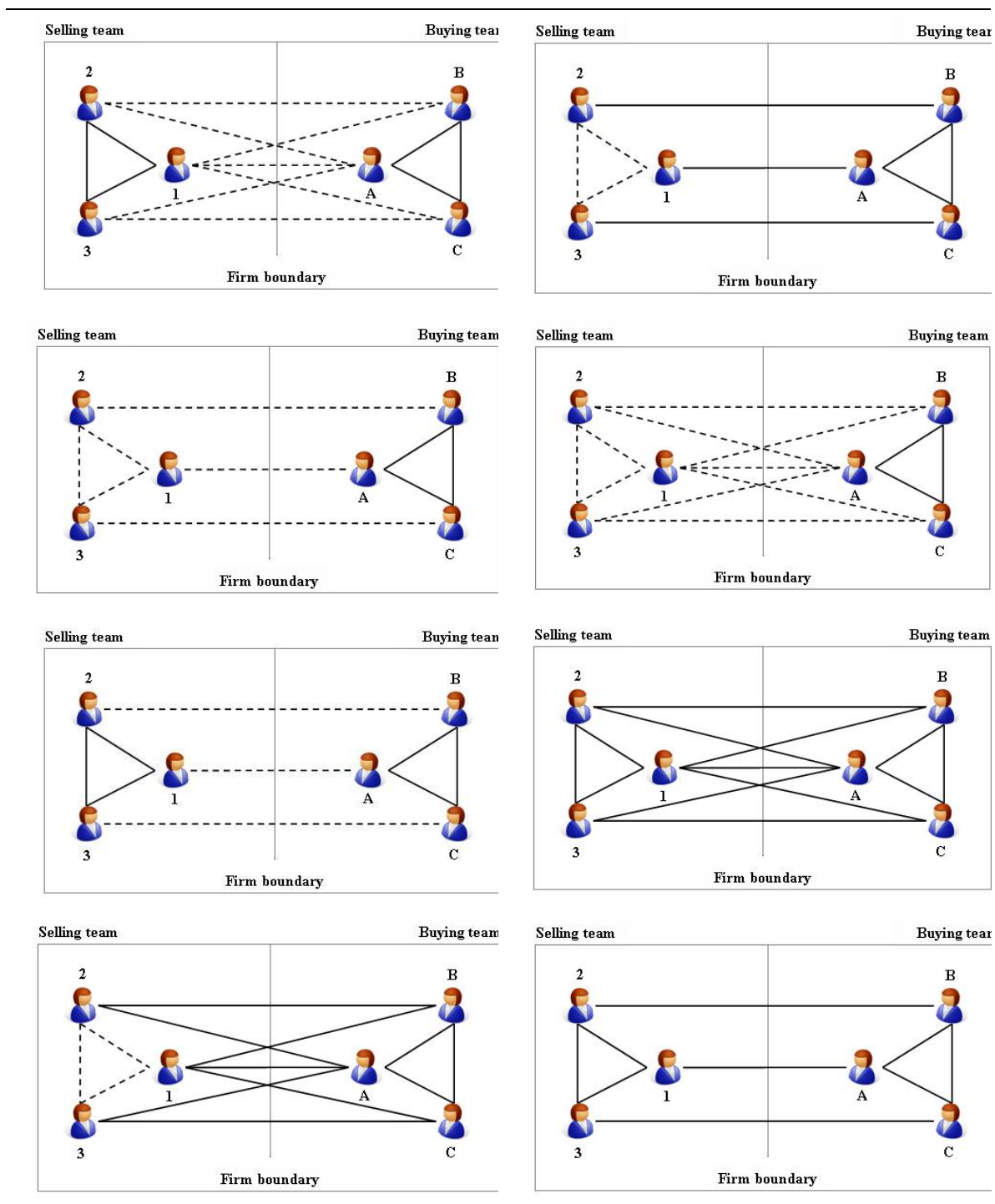
The scenario is that of a purchasing manager tasked with working with his/her own team members as well as selling team members to purchase a complex IT solution (see Appendix for full scenario). This purchasing scenario approximates that found in Wuyts et al. (2004) and is consistent with exemplars found in Tuli, Kohli, and Bharadwaj (2007).

TABLE 3.**Text-based Conjoint Attribute Levels**

<i>Dependent Variable: Solution Effectiveness</i>									
To what extent will this pattern of interaction within and between teams result in the timely (<u>design/development</u>) (<u>deployment</u>) of an effective solution that meets your firm's expectations?									
Very unlikely									Very
likely									
1	2	3	4	5	6	7	8	9	10
<i>Manipulated Attributes and Their Levels</i>									
1.) Tie intensity within the selling team			+1: Within the selling team, members communicate with each other several times per week						
			-1: Within the selling team, members communicate with each other only a few times per month						
2.) Tie intensity between the buying and selling teams			+1: Members of your buying team communicate several times per week with those members of the selling team that they are connected to						
			-1: Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to						
3.) Mirrored and more-than-mirrored ties between the buying and selling teams			+1: There are 7 linkages between members of your team and members of the selling team						
			-1: There are 3 linkages between members of your team and members of the selling team						

TABLE 4.

Picture-based Conjoint Scenarios



11.3 Pre-testing

Before sending purchasing managers the conjoint study, the instrument underwent two rounds of pre-testing. First, it was subjected to review by six PhD candidates across management disciplines, eighteen MBA students, and three academics. The extensive feedback generated in this phase was then incorporated into the instrument. The instrument then underwent another round of pre-testing from six individuals with significant purchasing experience. Responses from pre-test participants indicated that the picture-based scenarios were very helpful to understanding the context and questions in the survey. Overall, the pre-testing led to significant changes in the opening scenario, the text-based description of network attributes, the picture-based illustration of network attributes, and question wording.

11.4 Data Collection

Approximately 4,580 members across seven different chapters of the National Association of Purchasing Managers were contacted. The request to participate was sent by email which included a link to the online conjoint task. This email was accompanied by an endorsement of the head of the local chapter as well as a pledge to donate \$25 to one of three charities of the respondent's choice (Habitat for Humanity, Save the Children, American Cancer Society). A reminder email was sent approximately one week after the initial email. Based on discussions with chapter heads, only approximately 20% of emails sent by chapter heads to their members are actually opened. This is likely largely due to the privacy and security policies of the respondents' firms. Therefore, the approximate number of members who opened our email was 916. We received 281 completed surveys within two weeks, for an effective response rate of 30.7%. This is a

more than adequate sample size because each respondent is responding to 16 solution effectiveness questions.

11.5 Informant Quality

We assessed informant quality to ensure that respondents were qualified to understand and to answer the questions in the study in a meaningful way. Specifically, we asked each participant to respond (on a scale from 1 (strongly disagree) to 10 (strongly agree)) to questions regarding the extent to which they are familiar, knowledgeable, and have been involved with purchasing integrating systems solutions (IT or other). We took the mean scores across these three informant quality checks and deleted all respondents with mean scores less than 3. This resulted in a final data set of 233 individuals.

11.6 Statistical Model and Data Analysis

Since the dependent variable is a rating on a 10-point scale and we have repeated observations for each participant, we use fixed effects linear regression with clustered robust standard errors. Fixed-effects models control for observed and unobserved, time-invariant variables across respondents (e.g., age, race, gender, intelligence and so on) (Allison 2005). We also use clustered robust standard errors because responses are clustered by individual (and, therefore, are not independent of each other).

The fixed-effects model explaining solution effectiveness (Y_{ij}) is as follows:

$$(1) \quad Y_{ij} = \mu_j + \beta \mathbf{x}_{ij} + \alpha_i + \varepsilon_{ij}$$

Subscripts i ($i=1, \dots, n$) and j ($j=1, \dots, J$) denote individual (respondent) and ratings task (scenarios), respectively. α_i represents the time-invariant characteristics of the respondents. μ_j is an intercept that can vary across rating tasks (scenarios). ε_{ij} error term for each individual for each scenario

CHAPTER 12

RESULTS

Table 5 presents the results. It is noteworthy that *mirrored ties* rather than *more-than-mirrored ties* are more effective at *both* the solution development and deployment phases. These findings run in contrast to noteworthy views in the extant literature.

Therefore, we expand on potential reasons for these discrepancies in the *Explanations for Alternative Findings* section (below). Descriptive statistics are provided for the *most* and *least* effective scenarios across both phases of the solution process in Table 6.

H_{1a} ($\beta = .14, p < .001$) and H_{1b} ($\beta = .20, p < .001$) are both supported, which suggests that the relationship between intense ties within the selling team and solution effectiveness is more positive when the between-team ties are more intense during both the solution development and the solution deployment phases. H_{2a} ($\beta = -.10, p < .01$) and H_{2b} ($\beta = -.13, p < .001$) are not supported, but H_{2balt} is supported ($\beta = -.13, p < .001$).

These results suggest that the relationship between intense ties within the selling team and solution effectiveness is *less positive* when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams during the solution development and deployment phases. The finding for H_{2alt} provides evidence for our proposed alternative view of network density (i.e., mirrored-ties are able to efficiently monitor behavior because of their ability to do so). H_{3a} is supported ($\beta = -.07, p < .05$), but H_{3b} is not supported ($\beta = .00, ns$), which suggests that the relationship between intense between-team ties and solution effectiveness is less positive when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams *only*

during the solution development phase. We plot these interactions for the solution development phase in Figures 2a – 2c (solution deployment results are largely the same and, therefore, we do not plot them).

TABLE 5.

Fixed Effects Linear Regression with Clustered Robust Standard Errors

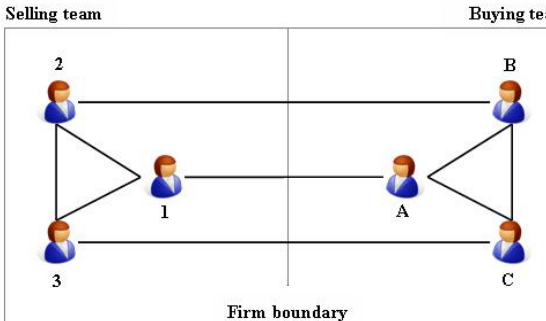
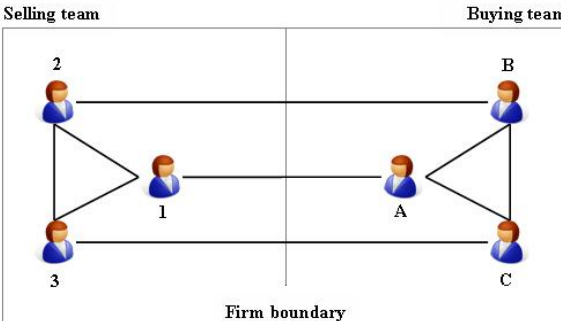
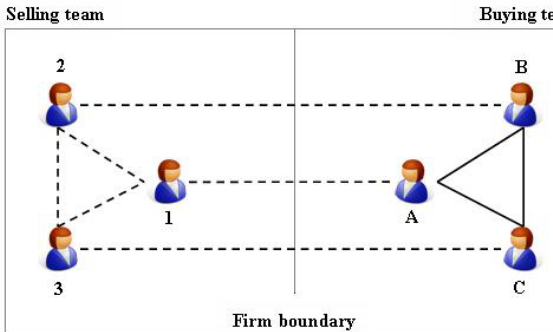
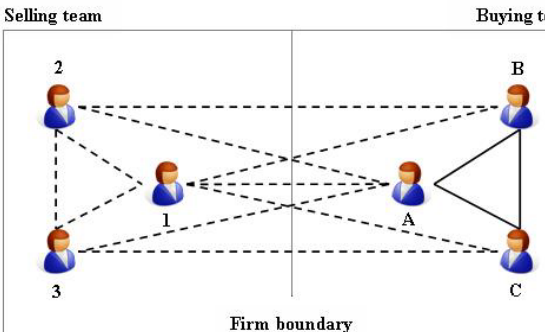
Independent variables	Dependent variable	
	Effectiveness at <i>Development Phase</i>	Effectiveness at <i>Deployment Phase</i>
<i>Main effects</i>		
• Tie intensity within the selling team (ti_{st})	.55*** (.04)	.47*** (.04)
• Tie intensity between the selling and buying teams (ti_{bt})	.91*** (.06)	.96*** (.06)
• More-than-mirrored ties (mtmt) (as opposed to mirrored ties)	-.10* (.06)	-.12* (.06)
<i>Interactions</i>		
• $ti_{st} * ti_{bt}$.14*** (.03)	.20*** (.03)
• $ti_{st} * mtmt$	-.10** (.04)	-.13*** (.03)
• $ti_{bt} * mtmt$	-.07* (.04)	.00 (.03)
• $ti_{st} * ti_{bt} * mtmt$.06* (.03)	-.03 (.03)
R^2	.22	.24
F -value	58.87***	63.91***

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Notes: Unstandardized coefficients; 233 clusters; 1,864 observations in each phase; one-tailed tests; clustered robust standard errors in parentheses.

TABLE 6.

Scenarios Considered *Most* and *Least* Effective by Respondents at Each Phase

Most Effective			
Solution Development		Solution Deployment	
			
<u>Solution effectiveness*</u> Mean: 7.18 Std. Dev.: 1.89		<u>Solution effectiveness*</u> Mean: 7.42 Std. Dev.: 1.76	
Least Effective			
Solution Development		Solution Deployment	
			
<u>Solution effectiveness*</u> Mean: 3.91 Std. Dev.: 1.97		<u>Solution effectiveness*</u> Mean: 4.25 Std. Dev.: 1.84	

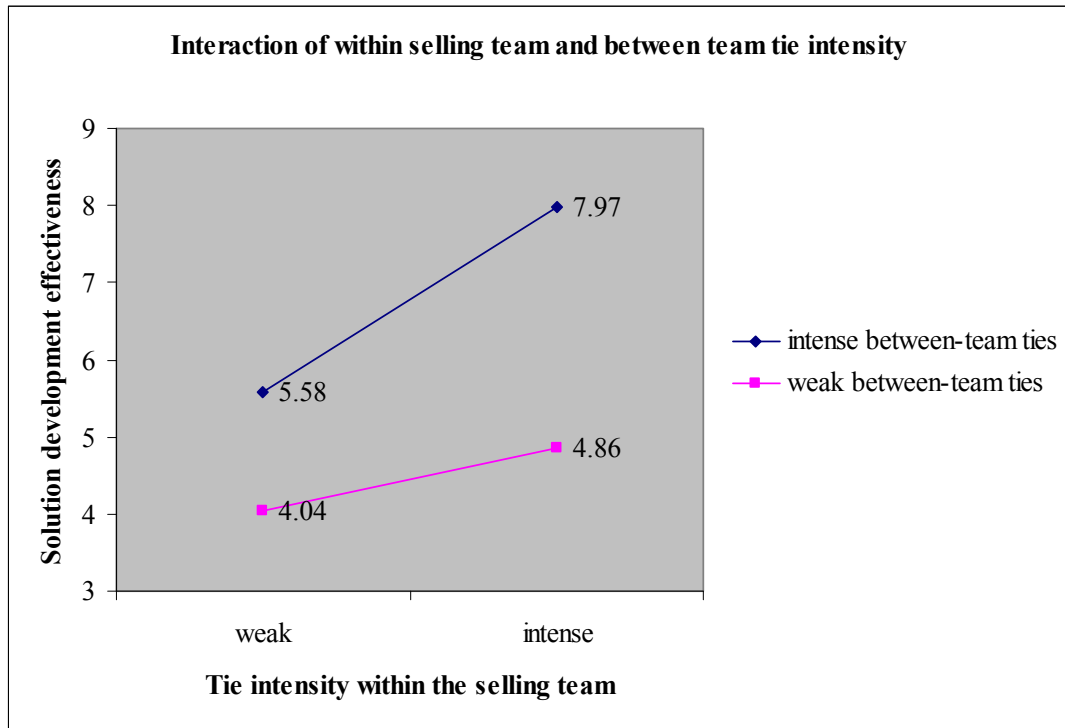


FIGURE 3a.

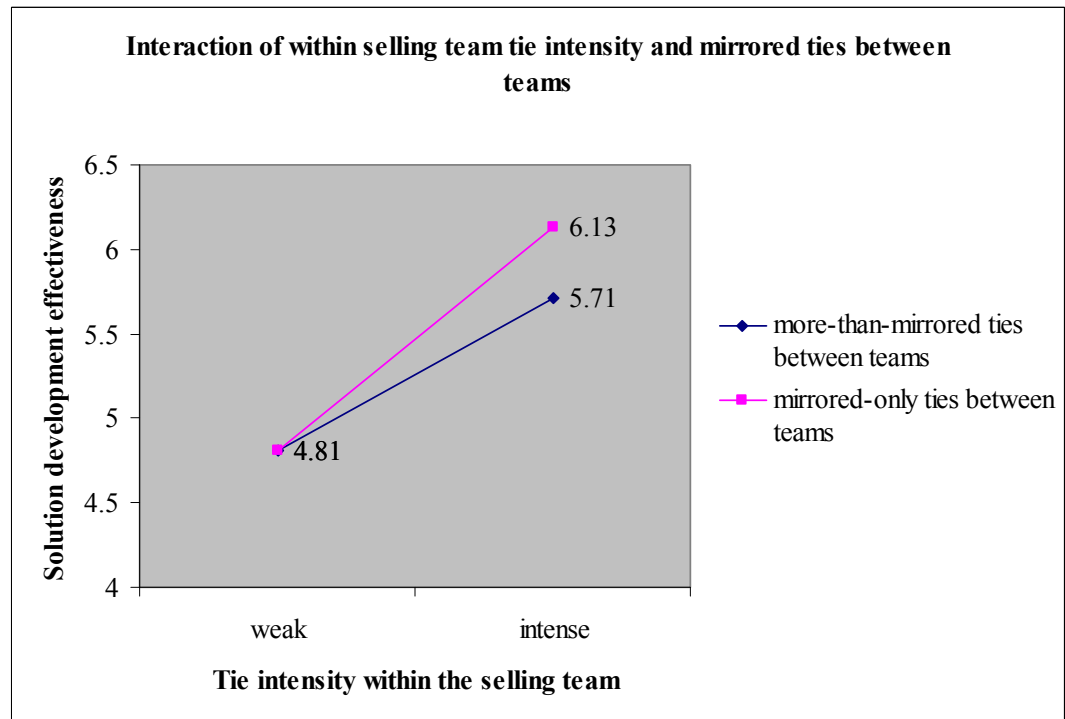


FIGURE 3b.

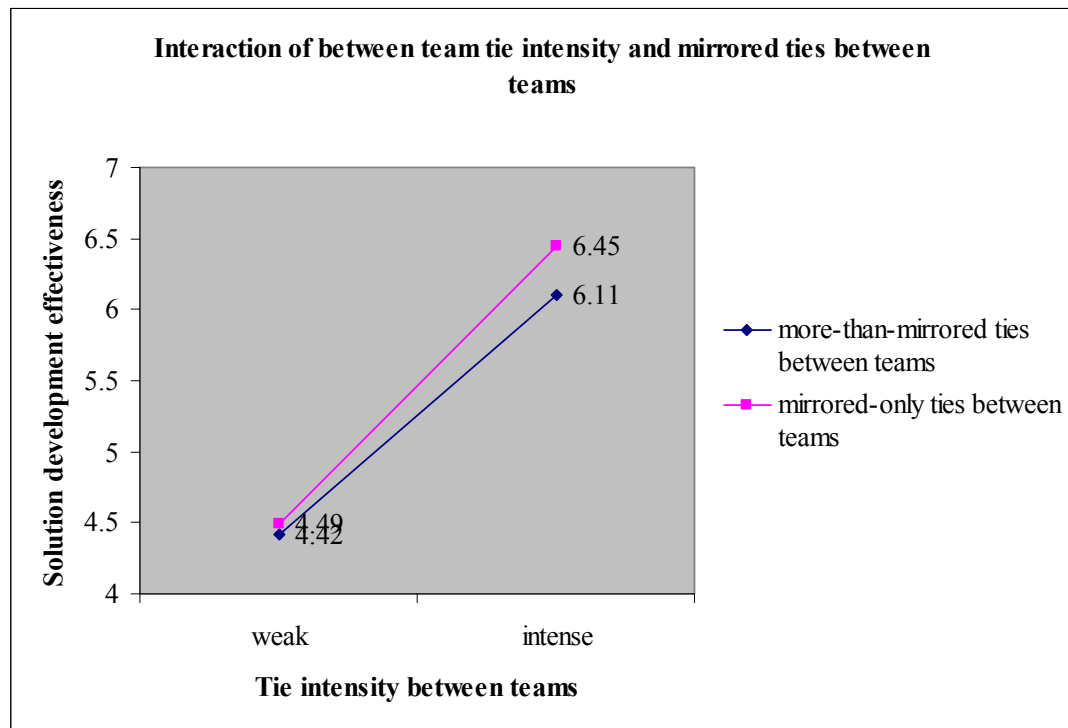


FIGURE 3c.

12.1 Three-way Interaction

Our results suggest that there is a significant three-way interaction among the three independent variables during the solution development phase ($\beta = .06, p < .05$). To better understand the nature of this three-way interaction, we plot the interaction out using the procedures outlined by Aiken and West (1991) (Figures 3a and 3b). In the more-than-mirrored between-team ties condition, the relationship between tie intensity within the selling team and solution development effectiveness is much more positive when the between-team ties are intense than when they are weak. On the other hand, in the mirrored-only between-team ties condition, the slopes of the regression lines between tie intensity within the selling team and solution development effectiveness are very similar across levels of intense between-team ties.

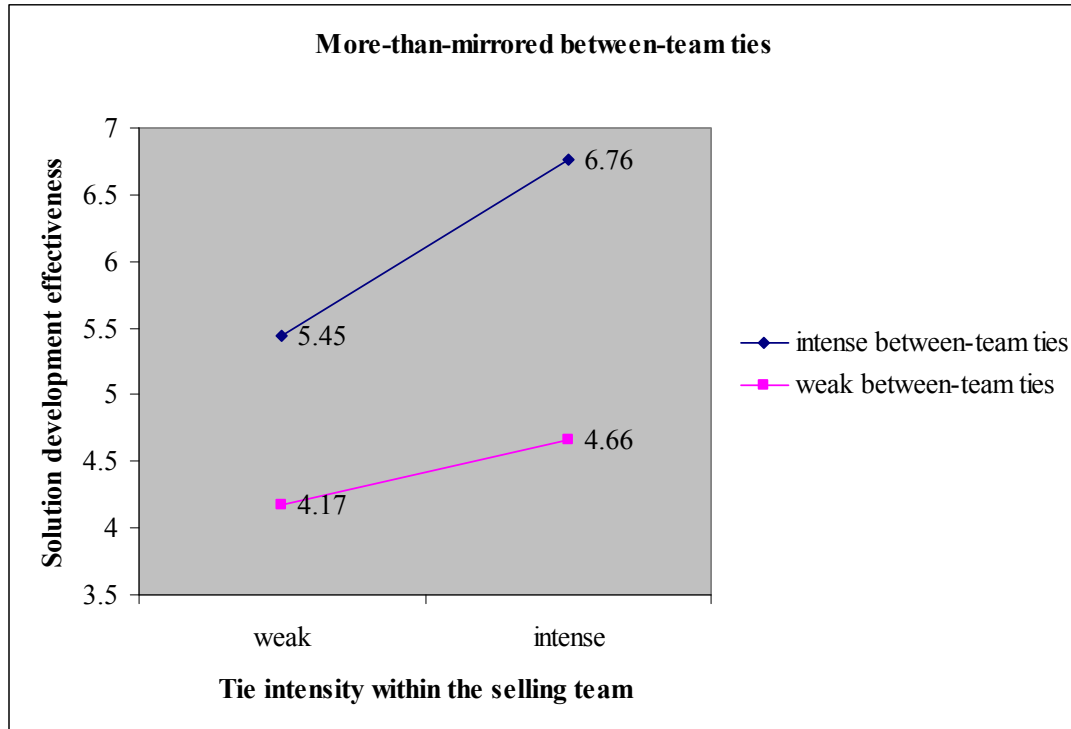


FIGURE 4a.

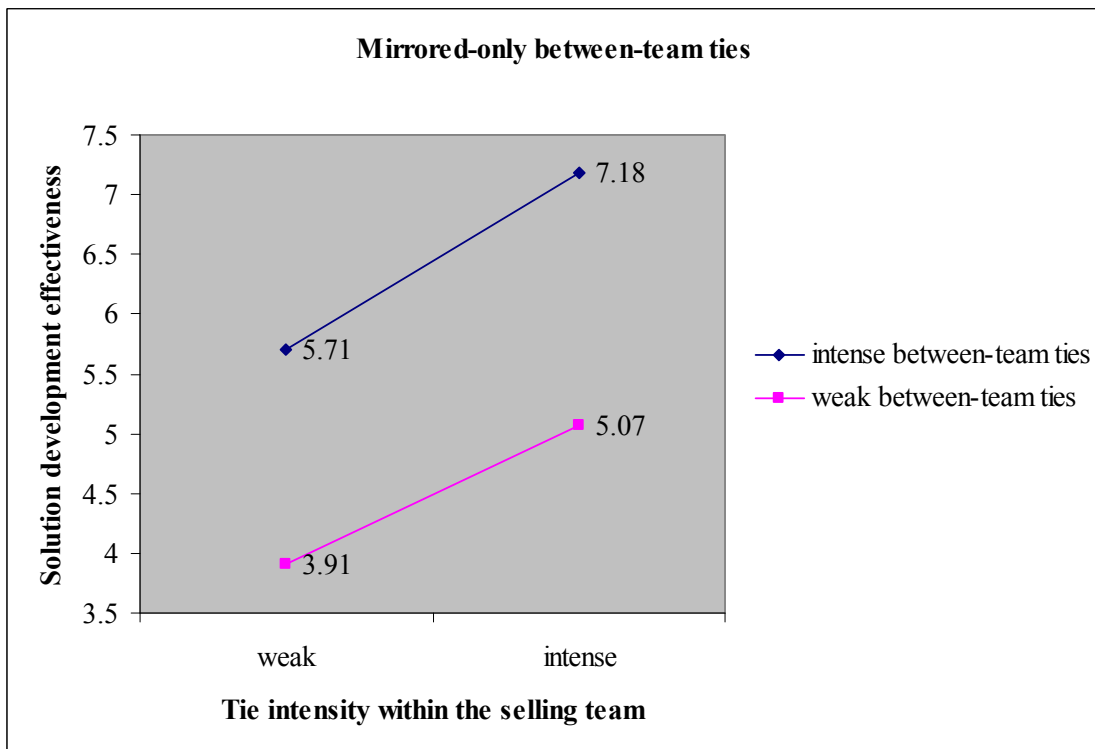


FIGURE 4b.

12.2 Explanations for Alternative Findings

Past research would suggest that more-than-mirrored ties should increase the opportunity to share information (which would be beneficial during the solution development phase) as well as increase the ability to observe and monitor behavior (which would be beneficial during the solution deployment phase) (Coleman 1988). Our findings, however, suggest the opposite effects for both phases. We suggest there are two main reasons for this.

First, from an efficiency perspective, purchasing managers may prefer fewer between-team ties (i.e., mirrored ties) because they are easier to maintain. This is consistent with homophily or, the notion that people tend to connect with similar others (McPherson, Smith-Lovin, and Cook 2001) and the related, similarity-attraction paradigm (Byrne 1961), which suggests that communication is easier, more desirable, and more satisfying when individuals possess similar attitudes (cf. Williams and O'Reilly 1998). Thus, individuals are likely to prefer mirrored-only ties to more-than-mirrored ties because the latter include more dissimilar others. In addition, as we argued earlier, mirrored-ties (because of the knowledge similarities between members) are able to efficiently (because they do not include ties to individuals with dissimilar knowledge) and effectively monitor behavior during the solution deployment phase (Wathne and Heide 2000).

Second, from a personal power standpoint, purchasing managers (i.e., the role of respondents in this study) may prefer mirrored-tie networks because more-than-mirrored tie networks may decrease their betweenness centrality (i.e., the extent of their 'go-

between') and, therefore, their control advantages within the network⁴ (Burt 1992).

Therefore, future research is needed to understand whether our results are, in part, due to the respondent playing a key role in the network (e.g., as purchasing manager), as opposed to a senior manager providing effectiveness ratings as an outside-the-network observer.

These explanations provide some clarity with respect to our unsupported hypotheses. For instance, H_{2a} asserts that, during the solution development phase, the relationship between intense ties within the selling team and solution effectiveness is *more positive* when there are more-than-mirrored ties between teams than when there are mirrored-only ties between teams. Our findings, however, suggest that buying teams prefer mirrored-ties (i.e., the relationship is *less positive*) in such an instance. Given the preceding rationale, one could argue that purchasing managers prefer to preserve their betweenness centrality when they are assured that selling team members are frequently communicating about solution development.

12.3 Differences between Phases

It is noteworthy that there were very few differences between phases. Indeed, only three coefficients showed significant differences between the solution development and deployment phases (Table 7). It appears, therefore, that intense ties within the selling team may be more critical to solution effectiveness during the solution development phase than during the solution deployment phase. Mirrored ties between teams are

⁴ The actual betweenness centrality of the purchasing agent in the present scenarios can be calculated (e.g., in Ucinet). For the more-than-mirrored tie scenarios, the purchasing agent's betweenness centrality score is .50, whereas in the mirrored only tie conditions, the purchasing agent's betweenness centrality score is 1.0. This lends credence to the notion that personal power effects may be driving some of our results. It should be noted, however, that it is possible for one's betweenness centrality to be higher under different scenarios of more-than-mirrored ties.

effective when the between-team ties are intense during the solution development phases, but have no impact on effectiveness when the between-team ties are intense during the solution deployment phase. Although the overall similarities between the two phases is somewhat surprising, recent research also suggests minimal differences between solution development effectiveness and solution deployment effectiveness (Tuli, Kohli, and Bharadwaj 2007).

12.4 Robustness Checks

We ran multiple robustness checks to assure that meaningful differences were not found across different assessment choices. Specifically, the coefficients and the pattern of our results do not change significantly across multiple measures of informant quality. For instance, our results are largely the same for different levels of familiarity, knowledge and involvement used separately and in different combinations.

TABLE 7.

Test of Differences between Phases (Clustered robust regression)

Dependent variable Solution Effectiveness	
Independent variables	
<i>Main effects</i>	
• Tie intensity within the selling team (ti_{st})	.63***
• Tie intensity between the selling and buying teams (ti_{bt})	.87***
• More-than-mirrored ties ($mtmt$)	-.09
<i>Interactions</i>	
• $ti_{st} * ti_{bt}$.09
• $ti_{st} * mtmt$	-.07
• $ti_{bt} * mtmt$	-.13*
• $ti_{st} * ti_{bt} * mtmt$.16**
<i>Differences between solution development and solution deployment phases</i>	
• Phase	.14**
• Phase * ti_{st}	-.08*
• Phase * ti_{bt}	.04
• Phase * $mtmt$	-.01
• Phase * $ti_{st} * ti_{bt}$.05
• Phase * $ti_{st} * mtmt$	-.03
• Phase * $ti_{bt} * mtmt$.07*
• Phase * $ti_{st} * ti_{bt} * mtmt$.10***
R^2	.23
F -value	36.44***
* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$	

Notes: Unstandardized coefficients; 233 clusters; 3,728 observations; one-tailed tests.

CHAPTER 13

DISCUSSION

Given the theoretical and practical linkages within and between buying and selling teams (e.g., Hutt and Walker 2006; Johnston and Bonoma 1981), it is surprising that there has been little empirical research to date on these issues. The present research, therefore, begins to address this void by focusing on how (a) intense ties within the selling team, (b) intense ties between the selling and buying teams and (c) (more-than-) mirrored ties between the buying and selling teams affect solution effectiveness at both the solution development and solution deployment stages. Below, we outline important theoretical and managerial implications.

13.1 Theoretical Implications

The present study contributes to theory in four important ways. First, we introduce the notions of mirrored and more-than-mirrored ties. This addresses the need to better understand the qualitative aspects of network structure and moves beyond a mere count of network ties which traditionally determines network density. Importantly, the mirrored tie perspective presents an alternate view from which to understand information exchange, governance and efficiency between buying and selling team networks.

Second, our research extends prior research on the interactive effects of network characteristics (i.e., density and tie strength) between firms (Rowley, Behrens, and Krackhardt 2000). The pattern of some of our results complement and extend prior research that suggests that network density and tie strength *between firms* may be *substitutes* of each other (due to the likelihood of “overembeddedness”) (Rowley,

Behrens, and Krackhardt 2000) (i.e., we show that more-than-mirrored ties between teams tend to reduce the positive effects that intense ties *within* the selling team and intense ties *between* teams have on solution effectiveness). Importantly, we also advance the literature by showing that *intense ties within* and *between* teams act as *compliments* of each other. Thus, our findings suggest that intense within and between team ties are less prone to “overembeddedness”.

The literature lends clarity to this notion by suggesting that intense ties can actually *enhance* efficiencies. Uzzi (1997), for example, suggests that embedded (“close or special,” p. 41) relationships can promote economies of time. In his ethnographic study of women’s better-dress apparel firms in New York City, he finds that embedded relationships are characterized by trust, fine-grained information transfer and joint problem solving. He suggests that trust acts like a heuristic which can speed decision-making. Trust-as-a-heuristic, therefore, confers time and cognitive resource saving advantages (Uzzi 1997). Regarding information transfer, he suggests that strong ties are more likely to transfer proprietary and tacit information in a more holistic manner, which saves the time of having to piece information together. From a problem-solving standpoint, he argues that embedded relationships are more flexible in that they allowed problems to be worked out “on the fly” (p. 47). Heuristic processing, holistic information transfer and flexible problem solving, therefore, should enhance the efficiencies of intense ties, reducing the potential for “overembeddedness”⁵.

⁵ Intense ties should not be considered a panacea, however. Indeed, frequent communication can also be inefficient. For example, in a new product development context Hansen (1999) argues that intense ties between members communicating codified knowledge (easy to articulate knowledge) is inefficient. Alternatively, weak ties (characterized by infrequent communication) are likely to slow projects down when information is non-codified (i.e., complex). In such an instance, team members spend time interpreting information for which there may be little opportunity for further explanation (because there is less communication). Such inferences lead to inefficiencies and potentially costly errors or delays.

Third, we advance the nascent literature on *team dyads* and the linkages between them (sometimes referred to as two-mode networks in the literature) (Iacobucci and Hopkins 1992). Although dyadic sets of individuals are very prevalent in practice (Granovetter 1985), the extant marketing literature typically focuses on firm-level dyads, individual-level dyads, or one-mode networks (i.e., a network encompassing a single focal member/node). Thus, our study extends this work as well as recent research on triadic relationships (e.g., Wathne and Heide 2004; Wuyts et al. 2004) to the realm of team dyads.

Fourth, although many of the effects found in this study were similar across both the solution development and solution deployment phases, there were notable differences nonetheless. For instance, our results suggest that intense ties within the selling team are more important to effectiveness during the solution development phase than the solution deployment phase. We also found that more-than-mirrored ties reduce the positive impact that intense between-team ties have of solution effectiveness during the development phase, but not during the deployment phase. This finding sharpens prior work that examines overall firm performance as a function of the interactive effects of tie strength and network density between firms (Rowley, Behrens, and Krackhardt 2000).

13.2 Managerial Implications

The present research should provide significant insights and recommendations to practicing managers. First, it is critical for managers to understand what their customers perceive to be most effective for developing and deploying effective solutions. For instance, managers of salespeople and selling teams should understand that purchasing

managers equate intense ties within the selling team to solution effectiveness at both the solution development and deployment phases. Therefore, managers should educate their selling teams to signal and to make salient to buying team members that they are indeed communicating frequently among themselves about the customer's solution (at both the solution development and deployment phases).

Selling teams also need to understand that customers may find more-than-mirrored ties to be detrimental to solution effectiveness and that these types of ties can actually reduce any positive effects that intense ties create. Thus, we illustrate to managers how the interplay between within-team and between-team factors can affect solution effectiveness.

13.3 Limitations and Future Research

This research presents an initial step towards understanding concurrent within and between team network linkages. As a result, this study has several limitations which may pave the way for fruitful future research. First, our results stem from the perspective of the purchasing manager. Thus, personal power considerations may trump solution effectiveness considerations (a point we considered earlier in the Results section). Future research, therefore, needs to assess what non-network members (e.g., sales manager, VP of Purchasing) perceive to be ideal network characteristics for solution effectiveness. Moreover, a parallel study done from the perspective of key account managers, for example, could shed light on discrepancies between purchasing managers and key salespeople. Such a study would complement the emerging solutions literature which

suggests that solution effectiveness may mean very different things to buyers and sellers (Tuli, Kohli, and Bharadwaj 2007).

Second, our experimental design allowed for the testing of only a few network theory variables. Thus, future research should vary within-team density, for example, because within-team density should also have important information sharing and governance implications. Further research should also examine how differences in the centrality of network members within and across teams affect information exchange and governance.

Third, we found very few differences between solution development and solution deployment. Although this is consistent with recent research (Tuli, Kohli, and Bharadwaj 2007), future research should examine solution stages that may precede solution development (e.g., negotiation) and/or follow solution deployment (e.g., maintenance) (e.g., Jap and Ganesan 2000). It may be the case, for example, that intense between-team ties are less effective during the maintenance stage.

Fourth, some of our theory rests in part on efficiency arguments; however, we did not measure network efficiency directly. Thus, future research should draw attention to and elaborate on the emerging, but oftentimes neglected, perspective of network efficiencies associated with strong/weak ties (e.g., Hansen 1999). Moreover, research is needed to assess why and when (more-than-) mirrored ties, for example, are perceived to be the most (in)efficient.

APPENDIX A

Measurement items	CFA Loading
micro Transaction-specific investments^a	
I have had to talk to many different people in order to understand this customer's specific needs	.75
I have made many visits to build relationships with this customer's employees	.66
Learning how to get things done for this customer has been a time consuming process	.75
Learning this customer's unique policies has taken considerable effort on my part	.68
The knowledge I've acquired while working with this customer is hard to use with other customers ^b	
Concern for internal opportunism^a	
I am concerned about my specialists...	
...promising to do things, even though they actually have no intention of following through	.77
...exaggerating their needs to get what they desire	.85
...altering the facts to get what they want	.90
...hiding important information from me	.85
...shirking on their obligations to me	.88
...trying to make me a scapegoat for problems with this customer	.82
...pushing inappropriate products on this customer	.85
...taking undue credit for business I develop with this customer	.87
Internal safeguarding^a	
The account manager for this customer...	
...encourages specialists to call on this customer regardless of whether he/she is with them or not (R)	.79
...suggests to his/her specialists that they check with him/her before they call on this customer	.71
...provides his/her specialists with information on this customer on a 'need to know' basis	.68
...proactively provides information about this customer's decision-making procedures to his/her specialists (R)	.70
...advises this customer to use him/her as its primary contact in our company ^b	
...is cautious about the kind of information he/she shares with his/her specialists about this customer ^b	

Performance with customer

(5-pt. Likert scale anchored by 'very poorly' and 'very well')

Relative to your competitors how has your firm performed at this customer in...

...achieving customer satisfaction	.86
...providing value	.91
...attaining revenue growth	.83
...securing customer share	.78
...successfully introducing new products	.75

Extendedness between account manager and customer^a

My relationship with this <u>customer</u> will last far into the future.	.95
I expect to continue working with this <u>customer</u> on a long-term basis	.97

Extendedness between account manager's specialist(s) and customer^a

My <u>specialists'</u> relationships with this <u>customer</u> will last far into the future.	.98
My <u>specialists</u> expect to continue working with this <u>customer</u> on a long-term basis	.96

Promotion aspirations of specialists^a

My specialists' plans include attaining higher positions within management	.60
My specialists would like to be in positions of greater influence in their department/organization	.95
For my specialists, the hassles of being in higher positions within management would outweigh the benefits ^b (R)	
It would not bother my specialists if they were to continue to do the same kind of work ^b (R)	

Control variables**Management monitoring^a**

Management is actively involved with this customer	.74
Management closely monitors our progress with this customer	.85
My specialists and I jointly meet with management to discuss our progress with this customer	.54
Management views internal reports which track our progress with this customer	.60

Goal incongruity^a**For this customer, my specialist(s) and I...**

...have different goals and objectives	.81
...have different time orientations	.85
...have different criteria for making decisions	.93

Benevolence of specialists^a

My specialists look out for what is important to me	.90
My specialists are concerned about my welfare	.97
My needs and desires are important to my specialists	.94
My specialists will go out of their way to help me ^b	

Competence of specialists^a

My specialists are knowledgeable about their products	.98
I have high regard for my specialists' capabilities	.83
My specialists know a lot about their respective products	.95
I trust my specialists' judgment about business matters ^b	
My specialists can offer good advice ^b	

Number of specialists (team size):

Please indicate the number of each of the following types of specialists with responsibility for this customer:

Product specialists	_____
Technical specialists	_____
Finance specialists	_____
Marketing specialists	_____
Other	_____

Sales experience of account manager:

Total sales experience: _____ years

^a 5-pt. Likert scale anchored by 'strongly disagree' and 'strongly agree'

^b Item dropped during scale refinement process

APPENDIX B

Introduction: You are asked to participate in a research study conducted by Brian Murtha and Dr. Goutam Challagalla, from the Georgia Institute of Technology. The results of this study will be used in academic and business publications. You were selected as a possible participant in this study because of your experience in sales. You should read the information below, and ask questions about anything you do not understand, before deciding whether or not to participate.

Participation and Withdrawal: Your participation in this study is completely voluntary and you are free to choose whether to be in it or not. If you choose to participate, or if you choose not to participate, it will not affect your job in any way. If you choose to be in this study, you may subsequently withdraw from it at any time without penalty or consequences of any kind.

Procedure: We would like you to complete the enclosed survey. We will request that you think only about a particular customer as you answer the questions and to provide the customer's name. We are only asking you for the customer name in order for your manager to respond to a small subset of these same questions with this same customer in mind. Please be assured that s/he will never have access to any of your individual responses. Your job should not be affected in any way because we are asking for you to respond to the survey thinking about the last customer you called on for which you used or could have used the help of your specialists (in other words, this is a random customer choice). Moreover, your manager will never see any of your responses to the questions in this survey.

Purpose and Benefits of the Study: The purpose of this study is to better understand selling tasks that can involve specialists such as product managers/specialists, technical specialists, and finance specialists. After these data are collected, they will be presented both in the form of academic publications and also in an executive summary format. If you choose to participate in the survey, you will be given access to these reports as a token of our appreciation.

Compensation to You: Upon completion of the survey, you will receive, via email, a \$10 Amazon.com gift card.

Potential Risks: None are known or expected.

Confidentiality: Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Company executives will not have access to the raw data, only aggregated data.

Identification of Investigators

If you have any questions or concerns about the research, please feel free to contact:

Brian Murtha	Goutam Challagalla
(Co-Principal Investigator)	(Principal Investigator and Faculty Sponsor)
College of Management	College of Management
Georgia Institute of Technology	Georgia Institute of Technology
800 West Peachtree St., NW	800 West Peachtree St., NW
Atlanta, GA 30332	Atlanta, GA 30332
404-944-8191	404-894-4362
brian.murtha@mgt.gatech.edu	Goutam.challagalla@mgt.gatech.edu

Rights of Research Subjects

You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you feel you have been treated unfairly, or you have questions regarding your rights as a research subject, you may contact the Office of Research Compliance, Georgia Tech, Research Administration Building, 505 Tenth Street, Atlanta, Georgia 30332, 404-894-6944.

Your completion of this survey indicates your consent to be in this study.

Sales Effectiveness Study

Researchers:

Goutam Challagalla, Ph.D.
Georgia Institute of Technology

Brian Murtha, Ph.D. Candidate
Georgia Institute of Technology

Thank you very much for your willingness to participate in this study. Its purpose is to better understand selling tasks that can involve specialists such as product specialists, technical specialists, and so on.

Your response is very important to us. Please rest assured that your individual responses will be kept **completely confidential** and will not be revealed to anyone other than the researchers for this study. The results will be reported in summary form only. As a token of our appreciation, upon completion of this survey, we will email you a \$10 gift card to Amazon.com.

You can complete this survey in one of two ways:

1. Insert your responses into this document and email it to brian.murtha@mgt.gatech.edu,

Or

2. Print the document, complete it by hand, and mail it to:

Brian Murtha
College of Management
Georgia Institute of Technology
800 West Peachtree Street NW
Atlanta, Georgia 30308
Phone: (404) 944-8191

Instructions

Please think about the last customer you called on for which you actually used or could have used specialists in your selling effort. ("Specialists" can mean your product specialists, technical specialists, and so on.) Please provide the name of this customer in the space below (we would like to ask your manager a small subset of the questions in this survey with respect to this customer). Please be assured that s/he **will never have access to any of your individual responses.**

Customer name: _____ (required)

Please focus on this customer as you respond to all questions in this survey.

SECTION I*: Please place an 'X' in the appropriate box to indicate the extent to which you disagree or agree with the following statements.

1.	I have invested a lot of time to get to know this customer
2.	I have had to talk to many different people in order to understand this customer's specific needs
3.	I have made many visits to build relationships with this customer's employees
4.	Learning how to get things done for this customer has been a time consuming process
5.	The knowledge I've acquired while working with this customer is hard to use with other customers
6.	Learning this customer's unique policies has taken considerable effort on my part

SECTION II: Now we'd like to ask you some questions regarding the specialists you use or could use to help you sell to the customer you identified earlier.

Compared to my specialists...

1.	...I know more about this customer's policies
2.	...I have a better idea about what people at this customer like and dislike
3.	...I know more about how decisions are made at this customer
4.	...I better understand how the customer positions itself against its competitors
5.	...I am more informed about what our competitors are doing for this customer

1.	My specialists look out for what is important to me
2.	My specialists are concerned about my welfare
3.	My needs and desires are important to my specialists
4.	My specialists will go out of their way to help me
5.	My specialists are knowledgeable about their products
6.	I trust my specialists' judgment about business matters
7.	My specialists can offer good advice
8.	I have high regard for my specialists' capabilities
9.	My specialists know a lot about their respective products

My specialists...

1.	...demonstrate originality in their work
2.	...find new uses for existing products
3.	...try out new ideas and approaches to problems
4.	...identify opportunities for new products
5.	...feel that decisions with this customer should reflect my preferences because I have more at stake than they do
6.	...feel they ought to comply with me because decisions with this customer affect me more than them

1.	My specialists' plans include attaining higher positions within management
2.	For my specialists, the hassles of being in higher positions within management would outweigh the benefits
3.	My specialists would like to be in positions of greater influence in their department/organization
4.	It would not bother my specialists if they were to continue to do the same kind of work

For this customer, my specialists and I...

1.	...have different goals and objectives
2.	...have different time orientations
3.	...have different criteria for making decisions

Compared to me, my specialists...

1.	...are more up to date on their respective products
2.	...can more accurately recommend correct configurations of their products
3.	...can better explain the nuances of their respective products
4.	...know how to effectively position their products against the competition

SECTION III: Now, we would like to ask you a few questions about the relationships among yourself, your specialists, and this customer.

1.	My relationship with this <u>customer</u> will last far into the future.
2.	I expect to continue working with this <u>customer</u> on a long-term basis

3.	My relationship with my <u>specialists</u> will last far into the future
4.	My <u>specialists</u> and I expect to continue working with each other on a long-term basis.

5.	My <u>specialists'</u> relationships with this <u>customer</u> will last far into the future.
6.	My <u>specialists</u> expect to continue working with this <u>customer</u> on a long-term basis

SECTION IV: Account managers tend to differ in how they utilize their specialists. Some encourage close involvement of their specialists with their customers, whereas others prefer to do most of the work on their own and treat specialists as resources to be drawn upon as needed. Please place an 'X' in the appropriate box to indicate the extent to which you disagree or agree with the following statements.

1.	I encourage my specialists to call on this customer regardless of whether I'm with them or not
2.	I suggest to my specialists that they check with me before they call on this customer
3.	I have indicated to specialists that information for this customer should be routed through me
4.	I encourage my specialists to contact any and all of the employees at this customer
5.	I advise this <u>customer</u> to use me as their primary contact for communicating with our company
6.	I am cautious about the kind of information I share with my specialists about this customer
7.	I provide my specialists with information on this customer on a 'need to know' basis
8.	I proactively provide information about this customer's decision-making procedures to my specialists
9	I am careful when it comes to giving my specialists information about this customer's employees
10	I make my entire 'rolodex' of contacts at this customer readily available to my specialists

SECTION V: Now, we'd like to ask you some questions about the outcomes associated with this customer.

1.	I would like my investments at this customer to improve my financial well-being
2.	It is important that the time I have invested in this customer translate into a financial payoff for me
3.	I would like the effort I have dedicated to this customer to result in better paychecks for me
4.	I would be disappointed if my work at this customer does not result in higher commissions for me
5.	The money I make off of my work with this customer is of little consequence to me

1.	I want my efforts with this customer to enhance my standing within my firm
2.	I would like my relationship building efforts at this customer to enhance my standing among my co-workers
3.	It is important that the time I have invested in this customer translate into a better reputation for me
4.	I think about ways to leverage my work with this customer to enhance my reputation within my firm

SECTION VI: Next, we'd like to ask you some questions regarding this customer.

1.	This customer often exaggerates its needs to get what it desires from me
2.	This customer often alters the facts to get what it wants from me
3.	This customer often promises to do things for me, even though it actually has no intention of following through
4.	I have reason to believe that this customer hides important information from me

SECTION VII: Next, we'd like to ask you some more questions regarding your work with this customer.

1.	I used to spend more time developing relationships at this customer than I do now
2.	The bulk of my involvement with this customer happened a long time ago
3.	Most of my effort with this customer has been in the recent past
4.	I am concerned about what others in my firm may think about my dealings with this customer
5.	I worry my manager may think I have done a poor job of building relationships with this customer
6.	I am concerned my specialists may think I do not know the right people at this customer
7.	I am concerned about how my co-workers might perceive my work with this customer

Please indicate how you would rate your work with this customer relative to your firm's expectations on the following criteria: (answers are 1 = below expectations to 5 = above expectations)

1.	Quality of relationships I have developed at this customer
2.	Quality of records I maintain about this customer
3.	Level of customer personnel I call on
4.	My knowledge of how decisions are made by this customer
5.	My understanding of decision-makers' likes and dislikes
6.	The job I have done positioning our products against our competitors' products

SECTION VIII: The following questions refer to the involvement of your management (i.e., your manager and your specialists' managers) with this customer.

1.	Management is actively involved with this customer
2.	Management closely monitors our progress with this customer
3.	My specialists and I jointly meet with management to discuss developments at this customer
4.	Management periodically asks this customer for feedback on how we are doing
5.	Management reviews internal reports which track our progress with this customer

SECTION IX: Please indicate your firm's performance with this customer on the following. (answers are 1 = very poorly to 5 = very well)

Relative to your competitors, how has your firm performed at this customer in...

1.	...achieving customer satisfaction
2.	...providing value
3.	...attaining revenue growth
4.	...successfully introducing new products
5.	...securing customer share

1.	We have yet to sell many of our products to this customer
2.	We have many opportunities to grow our revenues from this customer
3.	This customer is a good prospect for many of our services

SECTION X: Some specialists can be very helpful and others less so. For this customer, please indicate how you feel about your specialists' work-related attitudes.

I am concerned about my specialists...

1.	...promising to do things, even though they actually have no intention of following through
2.	...exaggerating their needs to get what they desire
3.	...shirking on their obligations to me
4.	...taking undue credit for business I develop with this customer
5.	...altering the facts to get what they want
6.	...pushing inappropriate products on this customer
7.	...trying to make me a scapegoat for problems with this customer
8.	...hiding important information from me

SECTION XI: Next, we would like to ask you a few sales-related questions.

1.	It is easy for me to get customer to see my point of view
2.	I am good at finding out what customers want
3.	I know the right thing to do in selling situations
4.	My temperament is not well-suited for selling
5.	It is difficult for me to put pressure on a customer
6.	I am good at selling
7.	I find it difficult to convince a customer that has a different viewpoint than mine

1.	I would like to be in a position of greater influence in my department/organization
2.	My plans include attaining a higher position within management
3.	For me the hassles of being in a higher position within management would outweigh the benefits
4.	It would not bother me if I was to continue to do the same kind of work

FINAL SECTION

How long have you had a relationship with this customer: Years: _____ Months: _____

What percent of the total revenues you generate comes from this customer _____ %

Total experience: _____ years

Total sales experience: _____ years

Gender: Female _____ Male _____

Please indicate the number of each of the following types of specialists with responsibility for this customer:

Product specialists	_____
Technical specialists	_____
Finance specialists	_____
Marketing specialists	_____
Other	_____

Thank You Very Much!

Please email the completed survey directly to brian.murtha@mgt.gatech.edu,

Or

Mail hard copy to the address on the first page of this survey

* Answers are from 1 = strongly disagree to 2 = strongly agree.

APPENDIX C

Please think only about the following customer when answering the questions below:

Customer name: _____

(Please place an 'X' in the appropriate boxes below)

Relative to your competitors, how has your firm performed at this customer in...(answers are 1 = very poorly to 5 = very well)

1.	...achieving customer satisfaction
2.	...providing value
3.	...attaining revenue growth
4.	...securing customer share
5.	...successfully introducing new products

(answers are 1 = strongly disagree to 5 = strongly agree)

1.	We have yet to sell many of our products to this customer
2.	We have many opportunities to grow our revenues from this customer
3.	This customer is a good prospect for many of our services

(answer is = very unfamiliar to 5 = very familiar)

1.	Please indicate your familiarity with this customer
----	---

Please respond to the following questions as they pertain to the account manager and his/her specialists assigned to this customer ("specialists" can mean the account manager's product managers, technical specialists, finance specialists and so on).

(answers are 1 = strongly disagree to 5 = strongly agree)

The account manager for this customer...

1.	...encourages specialists to call on this customer regardless of whether he/she is with them or not
2.	...suggests to his/her specialists that they check with him/her before they call on this customer
3.	...advises this customer to use him/her as its primary contact in our Company
4.	...is cautious about the kind of information he/she shares with his/her specialists about this customer
5.	...provides his/her specialists with information on this customer on a 'need to know' basis
6.	...proactively provides information about this customer's decision-making procedures to his/her specialists

APPENDIX D

Purchasing Survey

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We ask you to participate in an academic research project that investigates relationships within and between buying and selling teams. There are no costs to you (except for your time) and the survey should take about 12 minutes to complete. In appreciation for your completion of this survey, we will donate \$25 to one of three charities. You will be able to choose which one at the end of the survey: American Cancer Society, Habitat for Humanity or Save the Children. The information collected here is for research purposes only; it is not intended for commercial use and will not be shared or sold.

The results of this project will be used in academic and business publications and will only be reported in summary form; any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Your participation in this study is completely voluntary and you are free to choose whether to be in it or not. If you choose to participate, or if you choose not to participate, it will not affect your job in any way. If you choose to be in this study, you may subsequently withdraw from it at any time without penalty or consequences of any kind.

You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you feel you have been treated unfairly, or you have questions regarding your rights as a research subject, you may contact Melanie Clark at the Office of Research Compliance, Georgia Tech, Research Administration Building, 505 Tenth Street, Atlanta, Georgia 30332, 404-894-6942.

Your completion of this survey indicates your consent to be in this study. If you have any questions please contact Brian Murtha (404-944-8191). Thank you in advance for your participation.

You can complete this survey in one of two ways:

1. Insert your responses into this document and email it directly to brian.murtha@mgt.gatech.edu

2. Go to http://www.surveymonkey.com/s.aspx?sm=dyBk7rQqXEiEKfXXEQrG_2bA_3d_3d

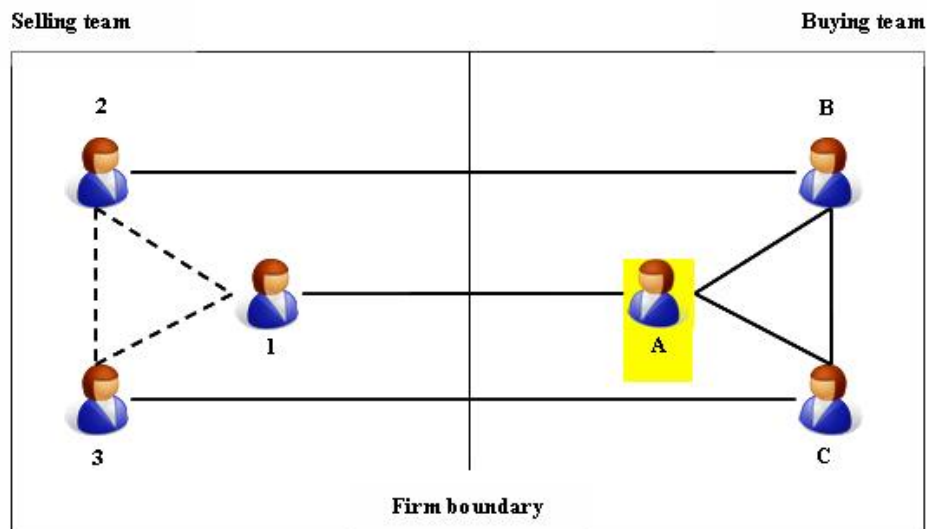
I. Instructions: Please take a moment to familiarize yourself with the following scenario:

Please put yourself in the role of purchasing manager for your firm. Your firm is involved in purchasing an integrated computer network solution consisting of hardware (e.g., server, workstations, routers, switches, access points) and software (e.g., network operating system, network security software, application software). This purchasing task requires that you include your functional and technical specialists in the solution process. It also requires that your buying team works with members of the selling team to develop and implement an effective systems solution on time

In the survey that follows, we will show you different scenarios. In each scenario, there is a buying team and a selling team, each with three members. Each scenario will describe four facets of the situation:

1. The frequency of interaction within the buying team;
2. The frequency of interaction within the selling team;
3. The frequency of interaction between the two teams;
4. The number of communication lines or relations between the two teams.

We will describe each scenario in words as well as in a picture, such as the diagram below.



Selling team members:	Buying team members:
Person 1 is the key salesperson assigned to your firm. S/he has a general base of knowledge, but often relies on his/her experts	Person A is the purchasing manager for your firm. <u>YOU</u> are the purchasing manager.
Person 2 is an industry expert (i.e., s/he is an expert in the industry you are in)	Person B is your industry expert (e.g., s/he is an expert in the industry you are in)
Person 3 is a technical specialist (i.e., s/he knows everything there is to know about IT configurations)	Person C is your technical specialist (i.e., s/he knows everything there is to know about IT configurations)

The lines connecting the people in the diagram reflect who interacts with whom. Whether the line is full or broken reflects how often they interact.

———A solid line between any two people means that they communicate with each other frequently. By frequently, we mean at least several times per week.

- - - - A dashed line between any two people means that they communicate with each other very infrequently. By infrequently, we mean only a few times per month.

Since the overall systems solution is complex, we will distinguish between two phases in the buying process.

1) The first phase is that of design and development. This includes defining and specifying the requirements and customizing and integrating the solution to fit your firm's specific needs.

2) The second phase is that of deployment. In this second phase, the total systems solution is being deployed or installed, and proper training of your users and staff is being provided to increase utilization of the solution to deliver optimal results.

Phase 1:

In this first phase, the total systems solution is being **designed and developed**. This phase includes defining the requirements and customizing the solution to fit your firm's specific needs.

After presenting each scenario, we will ask your assessment of whether the pattern of interaction in that particular scenario will result in an effective and timely solution that will meet your firm's expectations.

Before we proceed with the scenarios, please indicate your level of agreement with the following three statements:

During the **Design/Development phase** of an integrated and customized computer network solution...

...large amounts of information need to be shared among members of buying and selling teams

Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

...complex information needs to be shared among members of buying and selling teams.

Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

...sharing large amounts of information among many members of the buying and selling teams can become costly (i.e., inefficient)

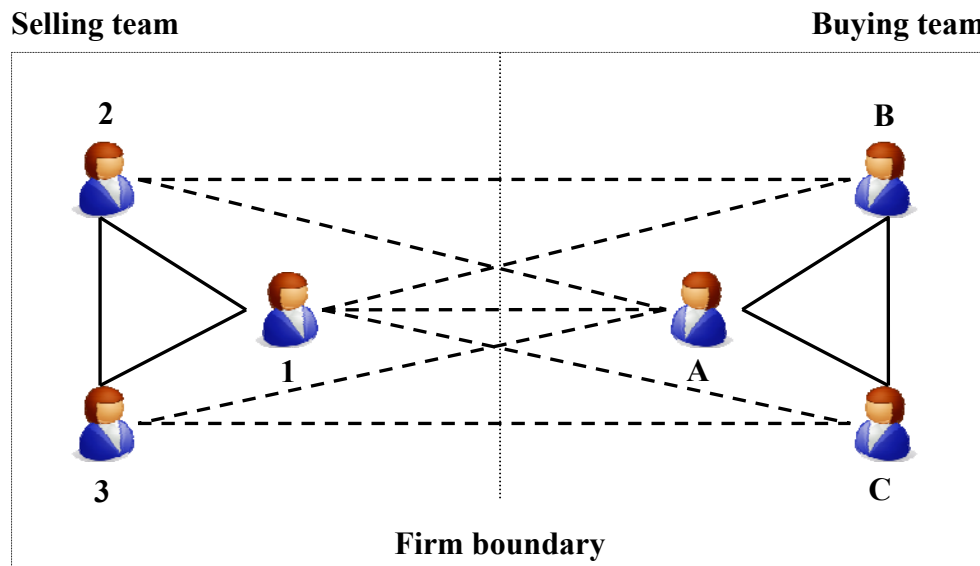
Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

II. Okay, let's get started

The process should get easier as you familiarize yourself with the scenarios and illustrations. Please carefully consider pattern of interaction within and between the buying and selling teams when answering the questions.

Scenario 1:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



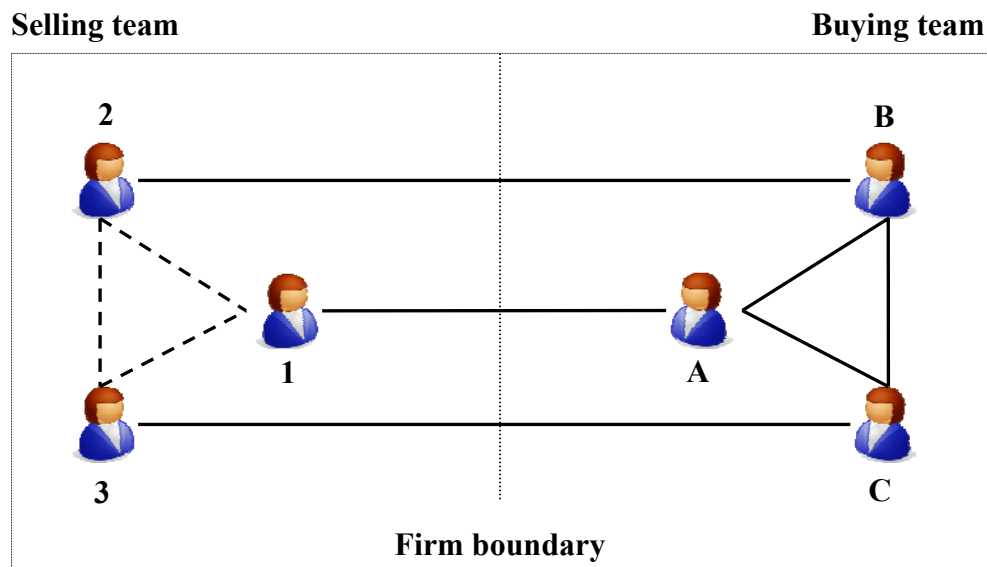
To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

(please place an "X" in the appropriate box)

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

Scenario 2:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



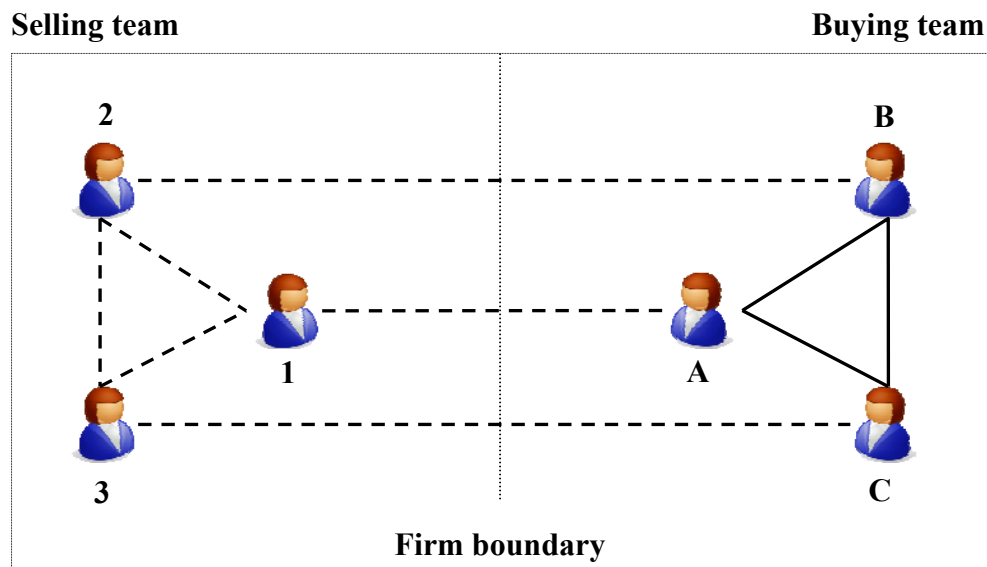
To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

Very unlikely							Very likely		
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 3:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



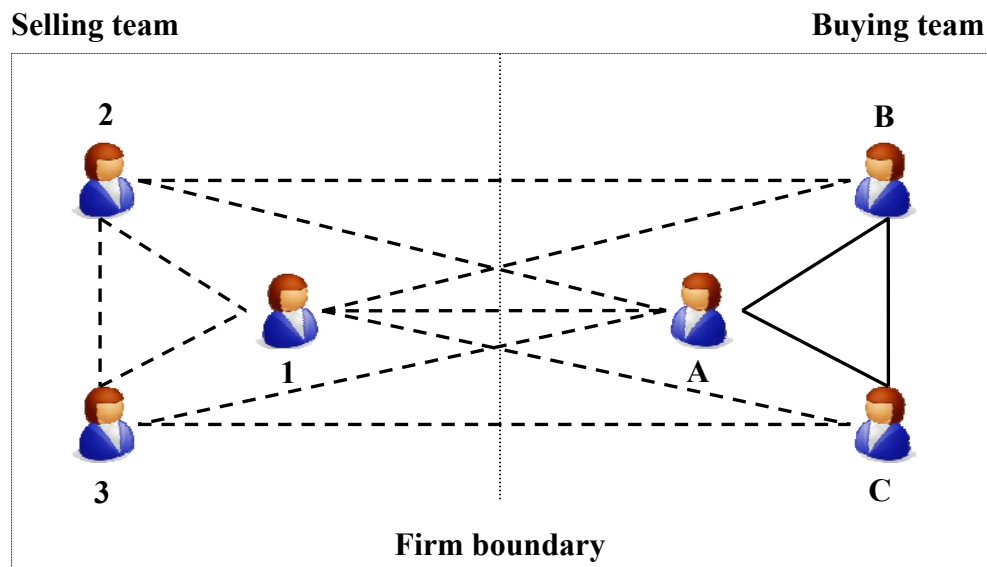
To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 4:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



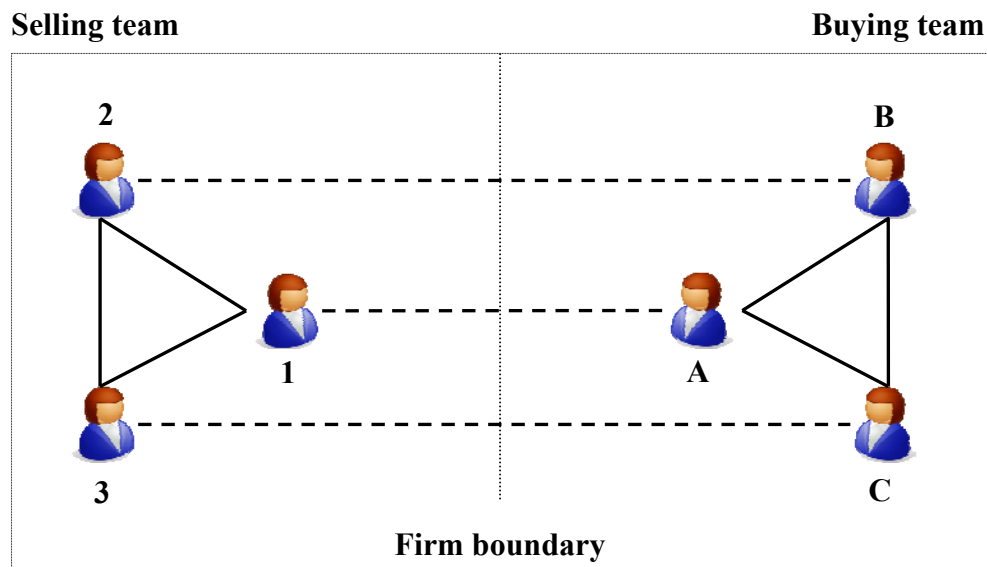
To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

Very unlikely							Very likely		
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 5:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



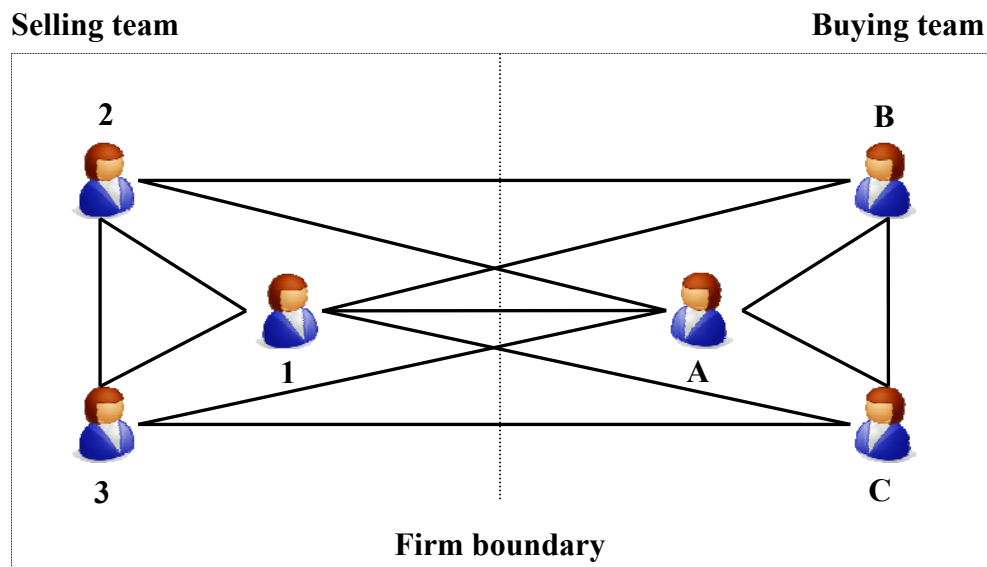
To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 6:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



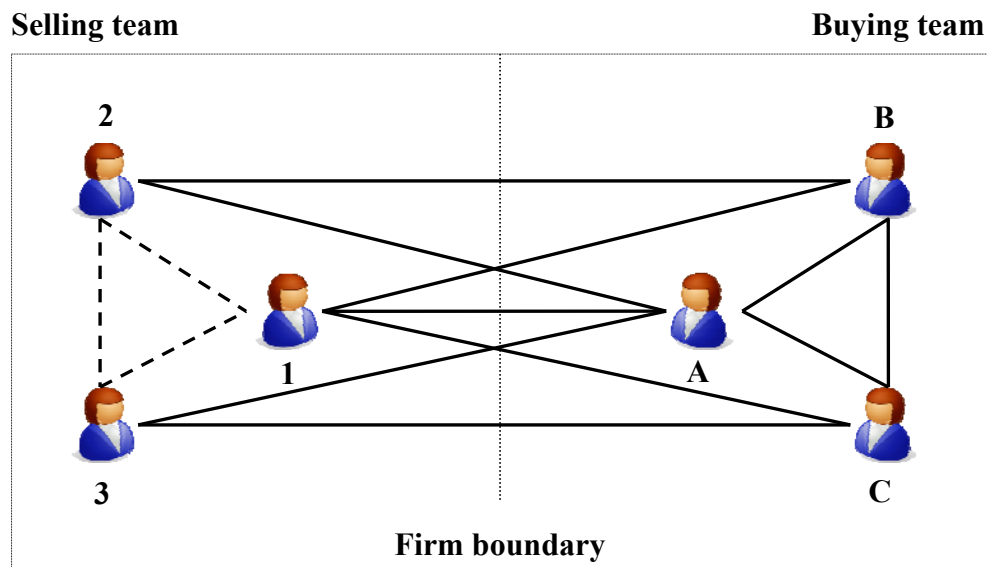
To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 7:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



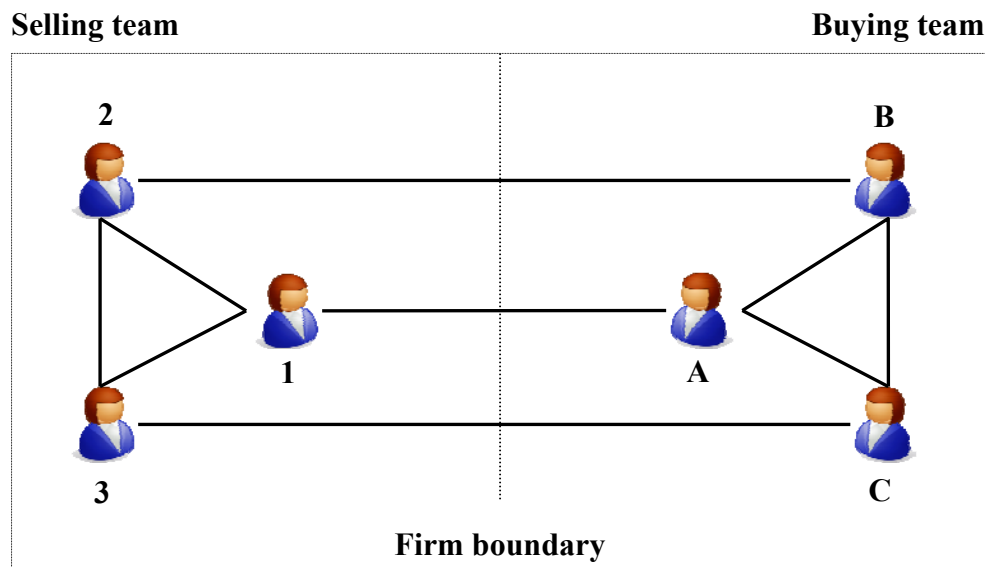
To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 8:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



To what extent will this pattern of interaction within and between teams result in the timely design/development of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Phase 2:

We would now like to ask you some questions about the **deployment** of the solution within your firm. In this second phase, the total systems solution is being deployed or installed, and proper training of your users and staff is being provided.

Before we proceed with the scenarios, please indicate your level of agreement with the following three statements:

During the **Deployment phase** of an integrated and customized computer network solution...

...large amounts of information need to be shared among members of buying and selling teams

Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

...complex information needs to be shared among members of buying and selling teams.

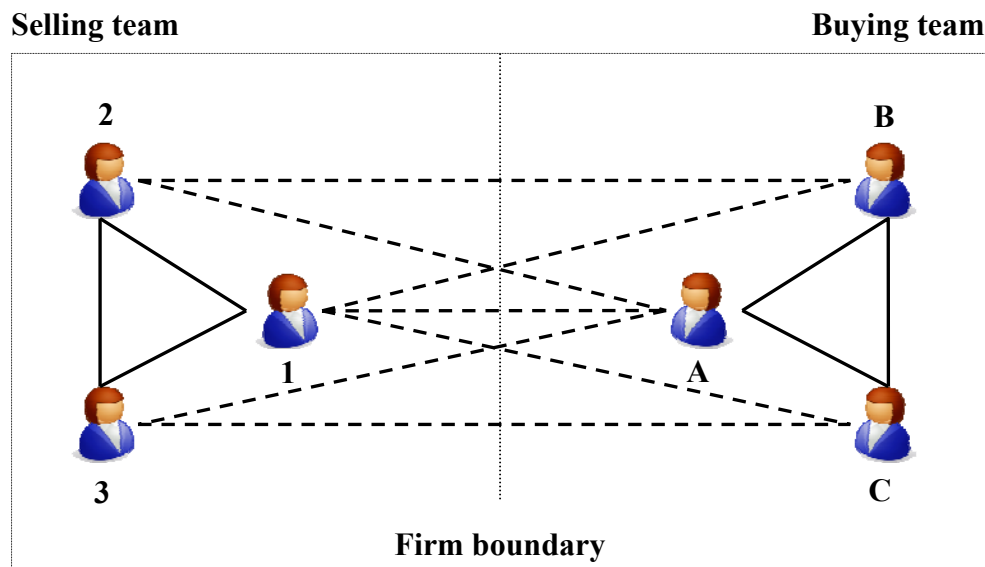
Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

...sharing large amounts of information among many members of the buying and selling teams can become costly (i.e., inefficient)

Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

Scenario 1:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



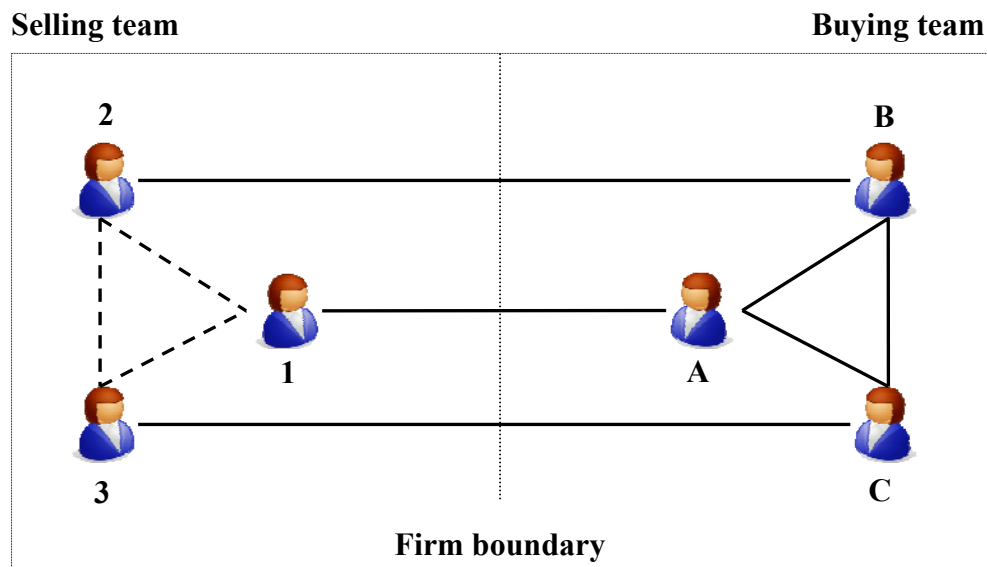
To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 2:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



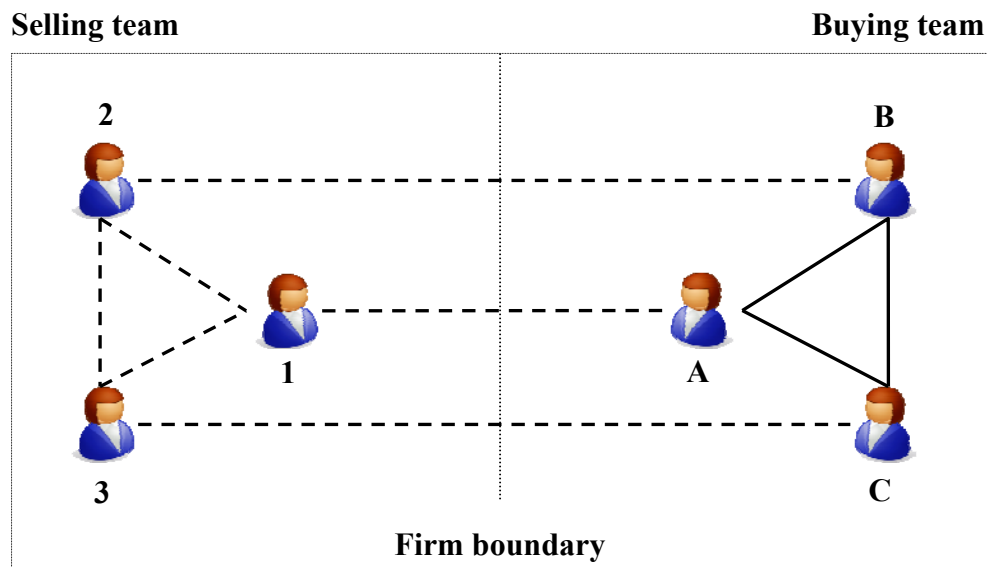
To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 3:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



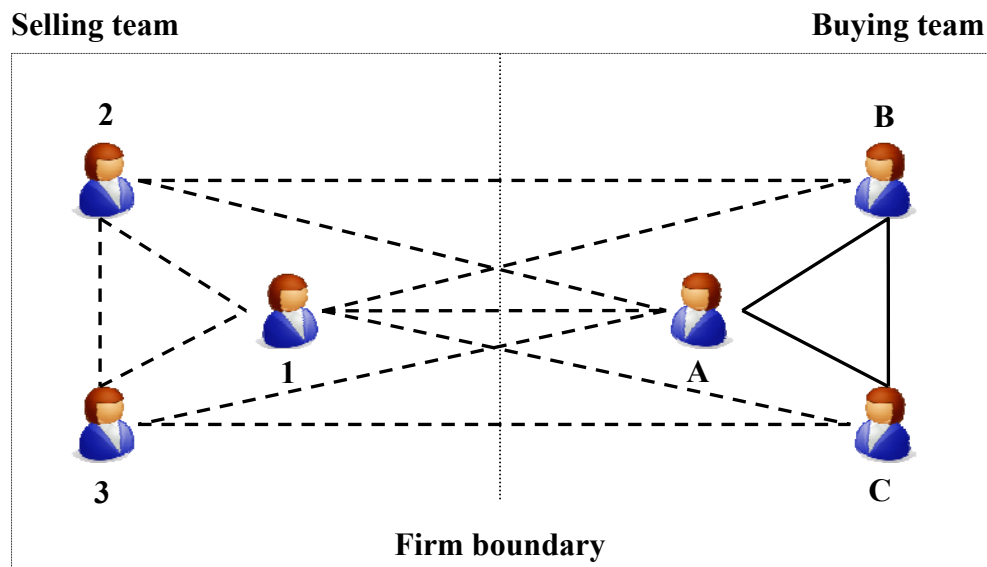
To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 4:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



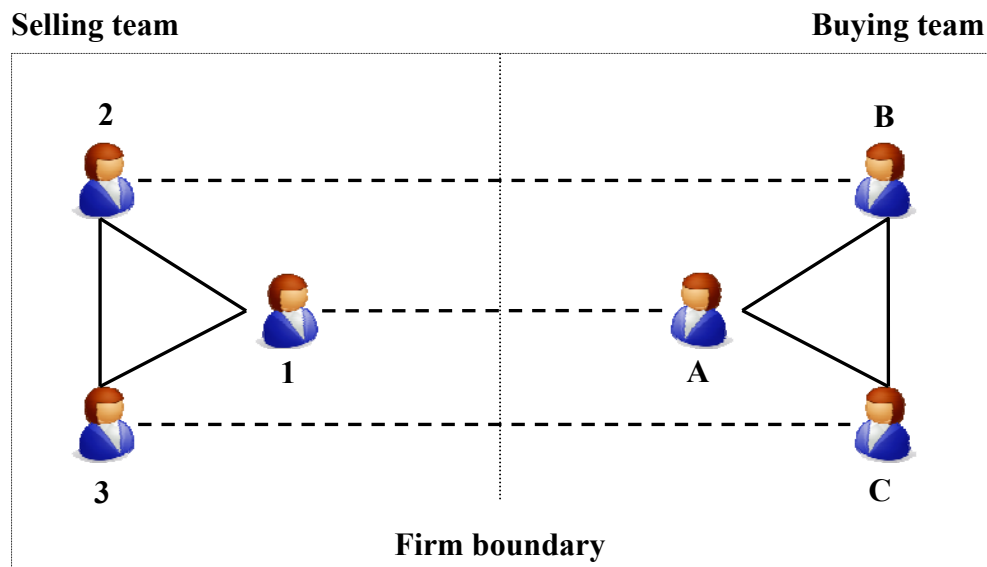
To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 5:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate only a few times per month with those members of the selling team that they are connected to



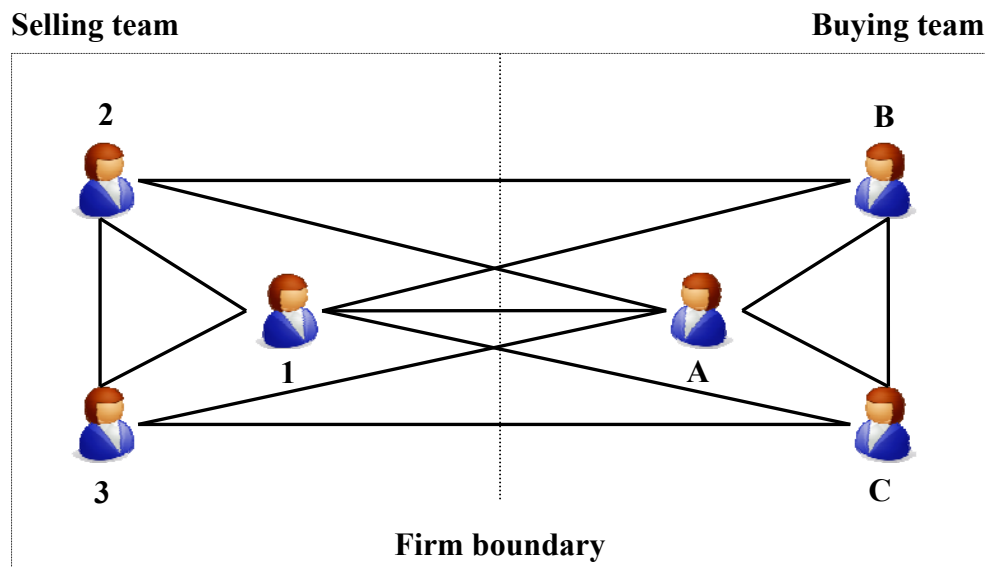
To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 6:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



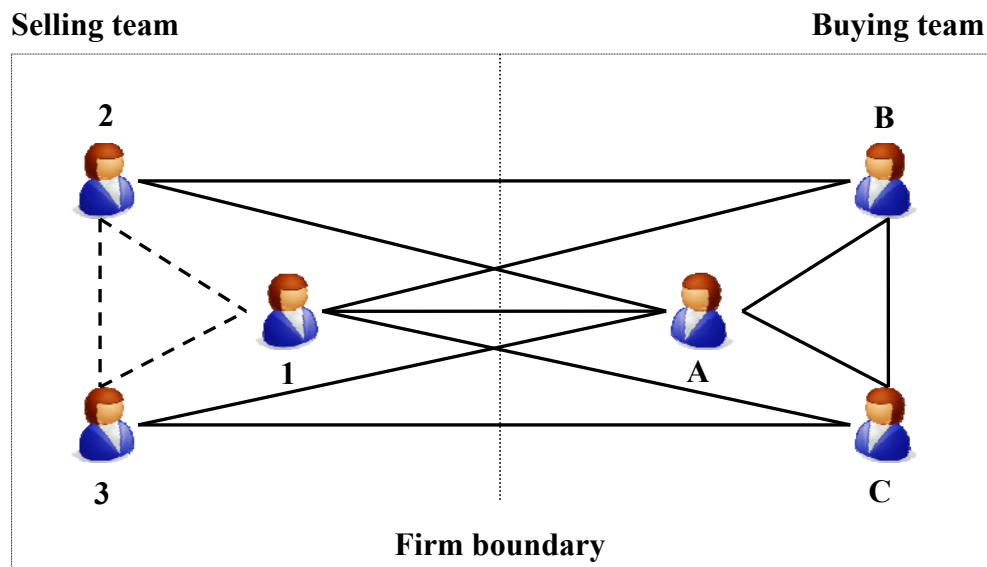
To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 7:

1. Within the selling team, members communicate with each other only a few times per month
2. Within your buying team, members communicate with each other several times per week
3. There are 7 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



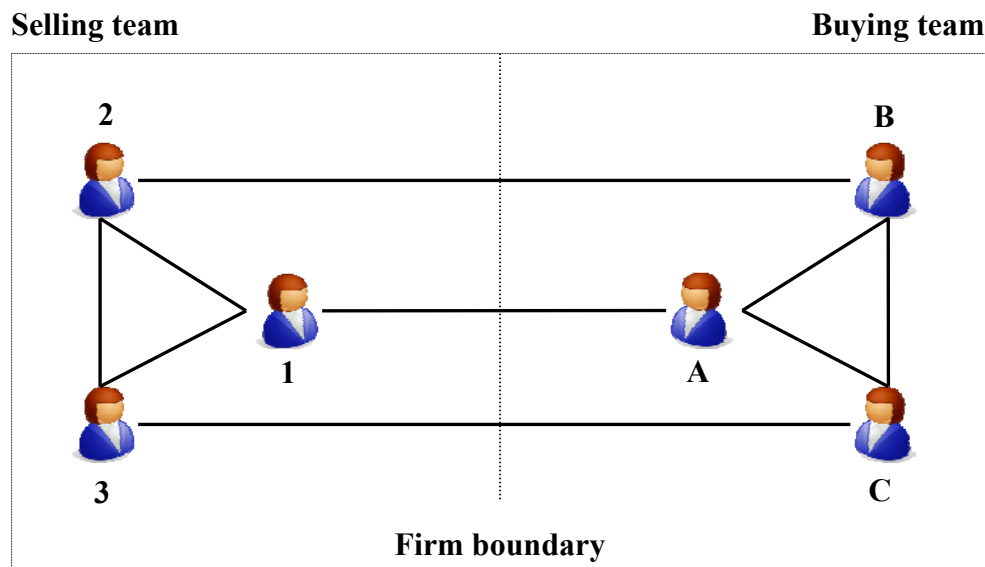
To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Scenario 8:

1. Within the selling team, members communicate with each other several times per week
2. Within your buying team, members communicate with each other several times per week
3. There are only 3 linkages between members of your team and members of the selling team
4. Members of your buying team communicate several times per week with those members of the selling team that they are connected to



To what extent will this pattern of interaction within and between teams result in the timely deployment of an effective solution that meets your firm's expectations?

Very unlikely								Very likely	
1	2	3	4	5	6	7	8	9	10

***Please feel free to go back and change any answers at any time.**

Final Section: Now, we would like to ask you a few final questions.

1. During the **design/development** phase, frequent communication is very important in order to ... (Check all that apply)
 - ☐ communicate complex information
 - ☐ increase commitment
 - ☐ increase empathy
 - ☐ increase cohesiveness
 - ☐ increase trust
 - ☐ reduce conflict
 - ☐ reduce shirking of responsibilities
 - ☐ design a creative offering
 - ☐ Other (please specify) _____

2. During the **deployment** phase, frequent communication is very important in order to ... (Check all that apply)
 - ☐ communicate complex information
 - ☐ increase commitment
 - ☐ increase empathy
 - ☐ increase cohesiveness
 - ☐ increase trust
 - ☐ reduce conflict
 - ☐ reduce shirking of responsibilities
 - ☐ ensure timely deployment
 - ☐ ensure effective delivery of promised solution
 - ☐ Other (please specify) _____

3. To what extent do the following statements describe your own professional situation?

I am familiar with purchasing integrated systems solutions (IT or other).

Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

I am knowledgeable about purchasing integrated systems solutions (IT or other).

Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

I have been involved in purchasing integrated systems solutions (IT or other).

Strongly disagree							Strongly disagree		
1	2	3	4	5	6	7	8	9	10

4. How many years of work experience (full-time) do you have?: _____
5. What industry do you work in?: _____
6. Please provide us with any comments that you feel could help us understand purchasing decisions better (thank you!):

Please choose which charity you would like \$25 to go to from the list below.

- ___ American Cancer Society
- ___ Habitat for Humanity
- ___ Save the Children

Thank you so very much for participating in this survey!

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