

AN ANALYSIS OF EXTENDIBILITY AND EARLY TERMINATION PROVISIONS: THE IMPORTANCE OF FRAMING DURATION SAFEGUARDS

LIBBY WEBER

University of California, Irvine

KYLE J. MAYER

University of Southern California

JEFFREY T. MACHER

Georgetown University

We augment transaction cost economics with social cognitive psychology to show that contract framing is an important element in minimizing issues in focal exchanges and managing buyer-supplier relationships. We find that exchange partners use promotion-framed extendibility clauses to address contract duration in the presence of greater physical distance, measurement difficulty, prior relationships in other businesses, and reusable technology. Our results suggest that contracts not only protect against exchange hazards, but also function as relationship management tools.

No consensus exists in the strategy literature on how contracts impact the development of buyer-supplier relationships. Contracts help overcome exchange hazards (Williamson, 1985) but may also create conflict between exchange partners (Macaulay, 1963). In this article, we seek to direct discussion toward how contracts can be used to effectively manage transactions and partner relationships through duration safeguards. We complement transaction cost economics with regulatory focus theory from social cognitive psychology to demonstrate that contracts serve both to safeguard exchanges and facilitate (and sometimes deter) the development of buyer-supplier relationships, depending on how contract clauses are framed.

Although scholars have extensively examined contract use in a variety of buyer-supplier contexts, much of this research focuses either on mitigating opportunism by including specific contractual safeguards or using different contract types (see, e.g., Macher and Richman [2008] for a literature review). Largely missing from the literature is an understanding of how safeguards may have unanticipated consequences for relationship development between the parties. Ghoshal and Moran (1996) suggested that by focusing on incentive mechanisms and mitigating opportunism, firms may unintentionally design contracts that lead to

dysfunctional relationships. We argue that contractual safeguards are not necessarily detrimental to buyer-supplier relationships. By complementing transaction cost economics with regulatory focus theory, we suggest that firms can determine when contractual safeguards are necessary and how to frame them to induce appropriate behaviors during exchange, as well as manage partner relationships going forward. We propose that contract framing is an important relationship management capability.

We believe strategy research benefits from our combined economics and psychology approach for at least two reasons.¹ First, social psychology investigates interactions between individuals and groups in specific contexts, such as interfirm employee interactions, which can inform the development and management of buyer-supplier relationships. Second, firm outcomes are typically the result of activities conducted by individuals with at least some discretion over their actions (Thompson, 1967). Social cognitive psychology sheds light on individuals' motivations and actions, which is useful for understanding strategic decision making

¹ See Weber and Mayer (2010) for a theoretical discussion of how regulatory focus theory and expectancy violation theory can help bridge the gap between transaction cost economics and the relational view of governance (e.g., Dyer & Singh, 1998; Ghoshal & Moran, 1996). The authors determine when to use prevention and promotion contracts and how each affects relationship development and transaction performance.

All authors contributed in different but roughly equivalent ways to this article. Comments are welcome; send comments to Kyle Mayer.

within and between organizations (Zajac & Bazerman, 1991). By integrating social psychology and economic theories, we hope to contribute to and stimulate multidisciplinary strategy research by examining how contract framing shapes buyer-supplier relationships.²

Although psychological theory can address many aspects of buyer-supplier relationships, one key application is determining how to structure duration safeguards. These safeguards specify when (i.e., at what point) and how (i.e., under what circumstances) a contract terminates. Duration safeguards are important for buyer-supplier relationships for at least three reasons. First, they can influence whether buyers and suppliers maintain ongoing relationships. Second, they are intensely negotiated by buyers and suppliers during contract formation (Somers, 1993). Third, they are particularly important when contracts play definitional roles in exchanges. One example of such a definitional role for contracts is seen when suppliers perform moderately complex tasks with no fixed costs to spread out over time or over other deliverables, as is common in information technology (IT) services and other industries.

Because buyers typically make these contractual provision decisions, they benefit directly from the additional flexibility provided. In contrast, suppliers are more reluctant to include duration safeguards, given the inherent uncertainties. We therefore focus on the suppliers' perspective, as buyers will always accept more flexibility. We also focus on competitive contexts in which efficiency considerations dominate, as buyers with sufficient market power can force suppliers to accept such provisions (Shervani, Frazier, & Challagalla, 2007).

When a buyer and supplier include a duration safeguard in their contract, they must decide on whether to frame it as an extendibility provision (i.e., a shorter contract with an option to extend) or an early termination provision (i.e., a longer contract with the option to terminate early). The payoffs and tasks of a contract with an extendibility provision that is not extended can be identical to the payoffs and tasks of a contract with an early termination provision that is terminated early.

² Our approach is not entirely novel, as behavioral economics successfully combines economic and psychological theories (e.g., Camerer & Lowenstein, 2009). Behavioral economists generally model how biased perceptions impact economic behavior (Camerer, 2006); we examine how framing activities affects economic behaviors between firms. We suggest that our approach does not contradict, but instead complements, the behavioral economics approach.

Only the decision at the project milestone (i.e., whether to terminate or extend) differs between the two provisions. As a result, the framing of duration safeguards provides an excellent setting in which to examine how psychology can inform transaction cost economics, which is agnostic about safeguard framing.

To understand how contract framing impacts the current exchange between parties and their ongoing relationship, we tested our predictions using proprietary data from a large IT services firm (hereafter, "Compustar") and its contracts with different buyers. Unlike the samples of earlier contracting and buyer-supplier studies that have investigated long-term contracts, our contract sample allows for an examination of project-based transactions in which a current contract impacts the ability of the supplier to win future business from the buyer. We examine in particular contracts in which a supplier provides separable and moderately complex tasks (e.g., not just filling in a template) to better determine when and where contract framing plays an important role in the exchange and ongoing relationship. Because several other industries (e.g., film production, construction, music, telecommunications, pharmaceuticals, and aerospace) conduct similar project-based work, our results likely generalize beyond the IT services industry.

EXTENDIBILITY AND EARLY TERMINATION CLAUSES

Extendibility and early termination provisions act as safeguards against potential opportunism by allowing buyers to alter exchange durations. These two provision types operate differently, yet they offer similar buyer protections. Extendibility provisions provide safeguards by allowing the buyer to unilaterally continue a contract for a specific period beyond the end date if the supplier has performed well. Early termination provisions provide safeguards by allowing the buyer to unilaterally terminate the contract before the end date if the supplier does not meet prespecified conditions or provides unsatisfactory performance.

Economic Drivers of Extendibility and Early Termination Clause Inclusion

Extendibility and early termination provisions might appear to be standard contract boilerplate, but neither is implemented automatically. As with other safeguards, the transaction cost economics (Williamson, 1975, 1985) prediction is that duration safeguards are necessary for exchange to occur only when transactional characteristics invite op-

portunistic behavior. After parties elect to include a duration safeguard, they must still decide how to structure and frame it (that is, as a shorter contract with a possible extension or as a longer contract with a possible early termination). Consider Figure 1, which indicates that contract negotiation takes place at M_0 (milestone 0) and maximum contract duration lasts until M_2 (milestone 2) is completed. The decision to either continue (extension) or not continue (early termination) the contract until M_2 is made by the buyer at M_1 (milestone 1). All decision points and milestones are identical in both cases, including the performance metrics that determine whether to continue to M_2 . The two provisions also reach the same financial ends (i.e., provide the same payouts). For example, regardless of whether M_1 occurs 10 percent into the project (e.g., the option must be exercised one month into a project that will potentially last for ten months) or 80 percent into the project, the only difference between the clauses is the decision made at that milestone—terminating a longer contract early or extending a shorter contract. Because these two provisions are equivalent in terms of tasks, milestones, schedules, and payoffs, transaction cost economics does not provide particularly useful guidance in determining when to use one versus the other.

Psychological Drivers of Extendibility and Early Termination Clause Inclusion

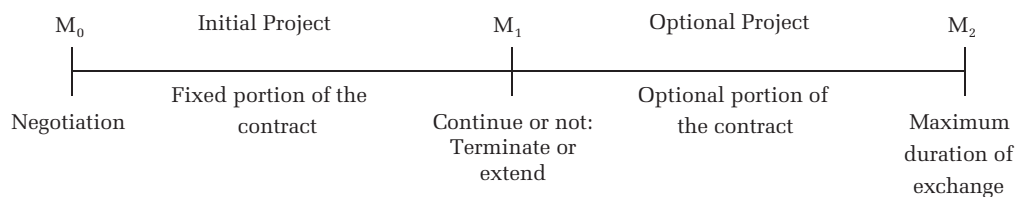
Extendibility and early termination provisions can be structured to produce identical economic ends, yet these clauses differ significantly from a psychological perspective. An early termination provision leads contracting parties to view a goal as a minimal requirement, but an extendibility provision leads the parties to interpret the goal as an

ideal outcome. According to regulatory focus theory, the dissimilar perspectives produce different motivations, behaviors, and perceptions regarding the parties' exchange and ongoing relationship (Higgins, 1998).

Regulatory focus theory is used widely in many fields, including marketing (e.g., Louro, Pieters, & Zeelenberg, 2005; Wang & Lee, 2006), entrepreneurship (e.g., Aidism, Mickiewicz, & Sauka, 2008; Baron, 2004), health care (e.g., Keller, 2006; Meyerowitz & Chaiken, 1987), and persuasive communications (e.g., Lee & Aaker, 2004). Regulatory focus theory suggests that *different framing* of the *same goal* leads to different emotional responses to meeting or missing the goal, as well as different behaviors in pursuing it. If a goal is framed in a "prevention manner"—which can be situationally induced by a loss frame (Roney, Higgins, & Shah, 1995)—then an individual will view it as a minimal goal (Higgins, 1998) that must be met. In contrast, if the same goal is framed in a "promotion manner"—which can be induced by a gain frame—then the individual will instead view it as a maximal goal that represents an ideal outcome. The individual experiences high-intensity happiness if the achieved goal was promotion-framed (i.e., achieving this goal represents a profound accomplishment), whereas he or she experiences low-intensity calm if the *same goal* was prevention-framed. When the same goal is not achieved, the individual feels low-intensity sadness if it was promotion-framed, since failing to reach a maximal goal is seen as falling short of an ideal (but not failing), but if the same goal was prevention-framed, the individual feels high-intensity agitation as the result of falling short of a minimum requirement.

The different emotional reactions based on goal framing also lead to different goal pursuit behaviors, given the different motivations. When a goal is

FIGURE 1
Framing Contract Duration: Early Termination and Extendibility Clauses



M_0 (milestone 0): Initial contract negotiation

M_1 (milestone 1): Decision of whether to continue or not (terminate or extend), made at whatever milestone is identified in the contract.

M_2 (milestone 2): Maximum duration of the exchange through the completion of the final milestone.

framed as prevention-focused, an individual displays vigilant behavior in an effort to prevent mistakes (i.e., avoid errors of commission). The high-intensity agitation felt if the minimal goal is missed creates a strong drive to avoid failure that takes precedence over the weaker drive to achieve success, created by the low-intensity calm felt in meeting the minimal goal. Alternatively, when the same goal is framed as promotion-focused, an individual displays creativity and flexibility in an effort to avoid missing possible solutions (i.e., avoid errors of omission). The high-intensity happiness experienced in meeting an ideal goal creates a strong drive to achieve success that overwhelms the weaker drive to avoid failure, created by the low-intensity sadness felt at missing the goal. As the sting of failure is not as intense as the jubilation of success, an individual with a promotion focus is more likely to pursue creative and flexible options in an effort to meet the ideal goal and is less likely to be overly concerned with failing.³

The different goal framings also lead to different relationship experiences. A prevention focus emphasizes vigilance and limiting mistakes—suggesting a successful relationship is one in which errors are avoided. Contracting parties in such relationships only experience low-intensity calm when the outcome is successful, and as a result, feelings between parties border on neutral as opposed to positive. By contrast, a promotion focus emphasizes creativity and flexibility in reaching ideal goals. Contracting parties experience high-intensity emotional upsides if goals are met and low-intensity emotional downsides if not, resulting in higher levels of partner satisfaction and commitment (Winterheld & Simpson, 2008).

Prevention and Promotion Framing of Duration Safeguards

The contrasting effects of prevention and promotion framing can be used in contract design to influence exchange expectations. Prevention-focused clauses emphasize project performance based on exact specifications and meeting specific milestones during execution, but promotion-focused clauses emphasize flexibility and creativity in project execution (Pham & Higgins, 2005). Duration safeguards can therefore be framed in either a prevention (early termination) or promotion (extend-

ibility) manner to strategically induce task-appropriate behavior and shape the ongoing exchange relationship. An extendibility clause is a promotion-focused duration safeguard that frames the specific goal of continuing an exchange until M_2 is completed (refer to Figure 1) as an ideal goal. As such, the contract either is extended (to include M_2), which is seen as a gain, or ends (at M_1), which is seen as a nongain. In contrast, an early termination clause is a prevention-framed duration safeguard, which frames the same goal of continuing the exchange until M_2 is completed as a minimal goal. As such, the contract either is terminated (after M_1) and is viewed as a loss or continues (to M_2) and is viewed as a nonloss.

Interviews conducted by one of the authors confirmed a distinct difference in how managers and engineers perceive duration safeguards and their associated framing. One Silicon Valley manager explained that when a contract contains a detailed early termination clause, his task is to “basically do just enough to prevent the customer from exercising the clause.” He went on to suggest that “it is frustrating sometimes because I can’t do anything the least bit risky as I might miss a deadline and give them the right to terminate the engagement early, which would be a huge issue for me and my career . . . having a project cut off early is a killer.” If the task in this example requires flexible behavior or creativity, the duration safeguard impedes this behavior and results in a negative exchange experience for both parties. Another manager indicated that “avoiding early termination is expected while getting a customer to extend looks better upstairs.”

Impacting a current exchange. Since a promotion frame initiates big picture (or global) information processing (Forster & Higgins, 2005), extendibility clauses induce both firms involved to focus on the potential duration of their extended contract (extended to M_2) and display creative and flexible behavior in an effort to reach this ideal goal while avoiding sins of omission. In contrast, a prevention frame encourages detail-oriented (or local) information processing (Forster & Higgins, 2005), and early termination clauses induce exchange partners to focus on completing the first project part (i.e., going to M_1) rather than the entire potential project (i.e., to M_2), and display vigilance in an effort to meet the minimal goal and thereby avoid sins of commission.

An extendibility clause therefore enhances performance in a current exchange if a project requires creativity and flexibility (e.g., when leading-edge technology is being developed), and an early termination clause has a similar effect when vigilance is

³ In each of these scenarios, the goal is held constant but framing differences change perceptions around goal success or failure and thus affect how the goal will be pursued.

required (e.g., when adherence to detailed specifications is critical). As such, we suggest that aligning exchange expectations with induced behavior, by matching duration clause framing with the characteristics of a transaction, will lead to superior performance outcomes.

Impacting the ongoing relationship. Contract framing impacts perceptions about the relationship between exchange partners and directly affects whether these parties will continue to work together in the future in at least three different ways. First, different framings lead a supplier to view the same goal differently, which induces different emotions when it is reached or missed. In one interview, a Silicon Valley manager revealed that when a buyer exercised an early termination provision, a supplier engineer working on the project refused to work on subsequent projects with that buyer, but did not react similarly when buyers did not extend projects. Why is termination more painful than nonextension when the supplier reaches the exact same endpoint under both scenarios? If a smaller contract is not extended (ends at M_1), the supplier still interprets the nongain as a somewhat positive outcome because the core part of the contract has been successfully completed. The reaction is tinged with low-intensity sadness, however, from not having achieved the ideal goal. If the buyer terminates a larger contract prematurely (ends at M_1), the supplier feels high-intensity agitation as the minimal goal was not achieved. Similarly, if a contract is extended (to M_2), the supplier experiences high-intensity happiness at the gain, as it is allowed to continue working for a period beyond the original contract term, thus meeting an ideal goal. If the contract is not terminated at M_1 , however, the supplier experiences low-intensity calm at meeting the minimal goal. The high-intensity negative emotions at missing the minimal goal, coupled with the low-intensity positive emotions at meeting the goal, produce negative to neutral feelings, fostering a more arms-length relationship with lower levels of partner commitment (Winterheld & Simpson, 2008). In contrast, because both the high-intensity positive reaction at reaching the ideal goal and the low-intensity negative reaction at not meeting it are inherently more positive than either reaction under a prevention frame, parties develop more positive feelings about the exchange when an extendibility provision is used, rather than an early termination provision. These feelings can subsequently positively impact relationship longevity.

Second, contract framing also impacts how ambiguous actions are interpreted in an exchange, which influences the relationship between the parties. Extendibility clauses induce a focus on posi-

tive aspects of the exchange, but early termination clauses draw attention to the negative aspects. As such, when a behavior is ambiguous, it will be interpreted positively under an extendibility clause and negatively under an early termination clause. The display of positive behaviors fosters greater satisfaction and trust between the parties, suggesting that an extendibility clause prolongs the overall relationship. In contrast, the interpretation of behaviors as negative due to an early termination clause may damage or end the relationship.

Finally, a promotion-framed contract is more likely to promote trust than a prevention-framed contract by inducing creativity, flexibility, and collaboration and generating fewer negative (and arms-length) emotions. When a supplier seeks a longer-term relationship with a buyer, it may be able to use promotion-framed contract clauses as one mechanism to facilitate trust development, which should increase its chances of winning future business from the buyer.

HYPOTHESES

Our hypotheses examine how particular project and relationship characteristics impact duration safeguard framing to prevent problems in a current buyer-supplier project as well as extend the ongoing relationship. We believe that framing is particularly likely when a project is more complex (i.e., is not for standard transactions such as buying nuts and bolts) and thus plays an important definitional role in laying out nonobvious responsibilities. We focus our theory on project-based buyer-supplier exchanges in which contracts are independent of prior projects and each other, are at least moderately complex, and do not involve multiyear deals with fixed administrative costs (e.g., defense contracting).

Preventing Problems in the Current Exchange

Duration safeguard framing can be used to limit or prevent contentious buyer-supplier issues arising by better aligning expectations with actual behavior. In IT services, we suggest that duration safeguard framing is beneficial for issue avoidance when (1) geographic distance between the parties exists and (2) project measurement issues are a concern.

Geographic distance. Although not investigated widely in contract research, geographic distance between parties greatly increases exchange challenges. Information transfer between parties is more difficult with greater geographic distance (Jaffe, Trajtenberg, & Henderson, 1993) and leads to increased exchange uncertainty. Greater geo-

graphic distance between contracting parties also makes monitoring more difficult and costly (Kalnins & Lafontaine, 2004; Mayer, Weber, & Wu, 2009). The greater uncertainty and more limited abilities to monitor the supplier compel the buyer from an economic perspective to include a duration-based contractual safeguard. The economic rationale for utilizing a safeguard does not inform the early termination versus extendibility provision choice, however, as both clauses provide similar supplier opportunism protections.

We suggest that a psychological approach provides a more thoughtful perspective. A prevention-framed early termination clause emphasizes buyer monitoring to ensure a supplier meets detailed performance specifications. Because monitoring is more difficult with geographic distance, however, the parties experience greater conflict. In contrast, a promotion-framed extendibility clause allows for supplier flexibility, yet still safeguards against supplier opportunism (i.e., allows shorter contracts to not be extended). Extendibility clauses thus allow the buyer to better address the uncertainty created by geographic distance, while inducing behavior conforming to the reality of the exchange.

Geographic distance also affects party relationship formation. In IT services, a collaborative relationship is generally desired to facilitate project task completion. Because face-to-face interactions foster development of collaborative relationships, a contract plays less of a role when the parties are geographically proximate and have more frequent interaction opportunities. Conversely, the contract is a much larger factor in how geographically distant parties perceive the exchange and one another. For example, if the contract contains punitive provisions but the parties work in close geographic proximity, they may overlook this negative implication by attributing the terse contract language to lawyers. With more geographic distance, however, each party is more likely to use the contract to interpret the other's intentions. When the parties are geographically distant, prevention-framed contract provisions lead to the development of arms-length relationships rather than committed and cooperative relationships. We therefore suggest that extendibility clauses are more likely when exchange partners are more geographically distant.

Hypothesis 1. When a buyer and supplier are geographically distant, their contract is more likely to contain an extendibility provision than an early termination provision.

Measurement difficulty. For certain deliverables, quality is not readily apparent ex post (Alchian & Demsetz, 1972; Holmstrom, 1979). From an

economic perspective, quality measurement difficulties provide the supplier greater opportunity to shirk and suggest the buyer will demand greater control. This type of situation often results in firm decisions to make instead of buy (e.g., Anderson, 1985; Anderson & Schmittlein, 1984; Mahoney, 1992). But when integration is not feasible or practical, a contractual solution such as a duration safeguard may be more effective. As with geographic distance, the economic rationale for including a duration safeguard does not elucidate which provision type to include in the contract, as both protect the buyer from potential supplier opportunism.

Psychology provides a better understanding of which duration safeguard is more appropriate. As suggested, an early termination clause leads suppliers to vigilantly perform to strict specifications and buyers to actively monitor supplier performance. If supplier performance is hard to assess ex post, outlining performance metrics ex ante often leads to misspecifications and supplier behavior incompatible with exchange task requirements (e.g., suppliers work to the letter of specific contract requirements rather than trying to do the best job overall). Moreover, a buyer focused on detecting supplier mistakes perceives ambiguity (resulting from measurement difficulty and/or misaligned performance expectations) as failure to meet minimal goals. Finally, if the buyer and supplier disagree over deliverable quality (again owing to misaligned performance expectations), the supplier considers early termination to be particularly unjust. As a result, an early termination clause exacerbates issues that arise from measurement difficulty.

In contrast, an extendibility clause deemphasizes performing to detailed specifications. Although measurement difficulties remain, the supplier does not commit to potentially ill-defined and/or inappropriate performance milestones, which allows both exchange partners to avoid unnecessary conflict. Because an extendibility provision fosters greater partner satisfaction and deemphasizes detection of supplier mistakes, performance ambiguity is perceived as flexibility and not as failure. Finally, if the buyer declines to extend the exchange, the supplier does not experience an intense negative reaction because a maximal (not minimal) goal was not realized. As a result, the psychological ramifications suggest that both parties prefer an extendibility clause to an early termination clause when quality is difficult to measure.

Hypothesis 2. When the quality of project output is difficult to measure, a contract is more

likely to contain an extendibility provision than an early termination provision.

Extending an Ongoing Relationship

Contract framing can also extend relationships between buyers and suppliers. In an IT services context, buyers are particularly important when (1) the supplier and buyer have prior relationships in other lines of business and (2) the supplier develops reusable technology.

Prior relationships in other lines of business. If the parties have no prior history and thus have had no chance to build up trust or learn to work with one another, the supplier has strong incentives to maintain its focal exchange relationship with the buyer. If the buyer and supplier have a prior relationship in the current line of business, however, the contract is less likely to be salient as a means of shaping the relationship (Gulati, 1995). Although the contract still complements trust, there may be less for the contract to provide as the parties understand or have learned how best to work together. If prior relationships exist in other lines of business (i.e., the buyer procures goods or services from other supplier business units), however, the buyer is especially important to the supplier, given the project portfolio. We focus therefore on relationships in other lines of business, because the contract plays an important role in shaping the relationship and the framing decision is particularly salient.⁴

Prior relationships in other lines of business increase the value of a buyer to a supplier and the desire of the supplier to maintain and extend the relationship. The transaction cost economics prediction is that prior relationships lead to “hostage” conditions and strong incentives for a supplier to act in good faith (Williamson, 1983), because a buyer can terminate the entire relationship if the supplier acts opportunistically (de Figueiredo & Teece, 1996). Hostage conditions may prevent the supplier from deliberate opportunism, yet the buyer may still interpret supplier behavior as such, particularly if it deviates from expectations. In such cases, the buyer will demand a contract duration safeguard, both to protect itself and to more effectively align expectations and limit potential misunderstandings (Mayer & Argyres, 2004). Although the supplier business unit involved in the focal exchange might not desire a duration safeguard because it limits options, supplier corporate head-

quarters will demand the safeguard to protect the broader relationship. Since the overall business with the buyer is more important than any one specific exchange, corporate incentives usually take precedence over business unit incentives. Transaction cost economics implies safeguard inclusion, but it does not inform optimal framing, as both provisions are equally capable of protecting the buyer by better aligning expectations and preventing opportunism.

Social psychology better addresses the framing decision. Under an early termination provision, the overall relationship becomes a tally of supplier errors, as both parties are focused on avoiding missed performance goals. If exchanges in all lines of business are based on prevention-framed contracts, the cumulative missed performance goals create negative supplier impressions that threaten the relationship. If and when termination occurs, both parties experience personal relationship costs as buyer-supplier ties are broken prematurely (Guiltingan, 1989). These negative aspects undermine the broader buyer-supplier relationship.

In contrast, an extendibility provision emphasizes positive milestones. The broader relationship between contract parties represents the sum of positive supplier events and serves as the foundation for a solid relationship. The greater creativity provided by an extendibility provision allows the supplier to provide superior product and service solutions for various business units. Finally, a promotion-framed duration safeguard mitigates the impact of exercising this clause on the broader relationship, as choosing not to extend a project in one line of business is less likely to negatively impact relationships in other business lines. We therefore hypothesize that an extendibility clause is more likely when prior relationships exist between a buyer and supplier in other lines of business.

Hypothesis 3. When a buyer and supplier have prior relationships in other lines of business, their contract is more likely to contain an extendibility provision than an early termination provision.

Reusable technology. Buyers are also particularly important to suppliers when the technology in a focal exchange can be reused (with minor modifications) for other potential projects. Buyers at the technological frontier frequently spur suppliers to develop leading-edge services and applications that can be redeployed to other buy-

⁴ We controlled for prior ties in the current line of business in our empirical analysis.

ers.⁵ Suppliers therefore desire to retain these buyers as sources of innovation. Moreover, the buyer is attractive to the supplier because the ongoing reusable technology development is funded directly by the buyer and not from the supplier's own R&D budget. The supplier therefore has strong incentives to develop an ongoing relationship with the buyer so external funding continues.

From an economic perspective, when parties contract around a leading-edge IT services project utilizing relatively standardized hardware and software (e.g., Oracle databases, SAP systems), the supplier may act opportunistically by generalizing the technology to other buyers, which may not be effective for or useful to the focal project. In a project-based environment, it is generally infeasible for the parties to agree to a long-term contract, however, since neither party can accurately predict future needs and costs. The buyer cannot identify its specific needs in order for the supplier to provide a price, and the supplier cannot know with certainty the costs of performing future services. According to transaction cost economics, the buyer will desire a performance-based duration safeguard in the contract to protect itself from potential supplier opportunism, but this theory does not provide guidance as to how this safeguard should be framed (i.e., early termination or extendibility), as both are economically equivalent.

From a psychological perspective, the supplier wants the buyer to focus on positive exchange aspects to prolong the ongoing relationship. The supplier also desires flexibility within the exchange to enhance technology development creativity that may benefit both current and future buyers. An extendibility provision sets positive expectations as it emphasizes achieving performance goals as opposed to missing them. This promotion-based framing also leads to the development of more positive emotions and more favorable judgment as to whether or not the goal has been achieved than does use of an early termination clause. Promotion framing also leads to greater feelings of satisfaction and commitment, which help extend the exchange partner relationship. In contrast, an early termination provision emphasizes negative exchange aspects and leads to more vigilant behavior by both parties. If the buyer is constantly policing the sup-

plier's performance, a collaborative and long-term relationship is more difficult to develop (Gulati & Singh, 1998; Macaulay, 1963). We therefore suggest an extendibility clause is more likely when projects include reusable technology.

Hypothesis 4. When a project includes reusable technology, the contract is more likely to contain an extendibility provision than an early termination provision.

EMPIRICAL ANALYSIS

Industry Context: The Information Technology Services Industry

IT services is an ideal industry in which to test these hypotheses, given its size and importance in almost all sectors of the global economy. The industry is characterized by rapidly changing technology around the storage, transfer, and management of information, typically using mainframes, servers, and other related hardware. IT services firms perform a variety of projects for their customers, including but not limited to designing customized software systems, updating and maintaining existing software or hardware systems, and assisting with network design and security.

IT services work is performed predominantly on a project basis. A buyer identifies an IT project and then secures resources to fund and complete it. Each project is sourced separately—that is, the buyer engages a particular IT services firm for one project but can engage other IT services firms for other projects. Most projects are complex, and they often require the development of novel and/or proprietary technology. These industry attributes suggest that it is often worth the extra effort for contracting parties to build collaborative relationships that encourage flexibility and creativity. As a contract serves a key role in defining an exchange, contract design (including duration options) is particularly important.

Data

We tested our hypotheses with data from CompuStar, a provider of computer-related hardware and IT services that has produced mainframes and related hardware since the 1970s and entered the platform-independent IT services business in the mid 1980s.⁶ By 1997, the company's IT services

⁵ In the IT services industry, the technological frontier does not typically involve path-breaking innovation, but rather a new type or level of service or application that other customers are likely to desire, because many customers tend to use common platforms and programs in their data centers.

⁶ "Platform-independent" means independent of the type of hardware that will be used to supply services, which include network support, programming, data migration, and more.

division accounted for revenues of approximately \$100 million worldwide. Compustar's buyers are mostly *Fortune* 1000 firms, as its core mainframe business naturally coincided with the needs of larger clients.

This firm provided access to IT services contracts with buyers, as well as corresponding internal documentation and other records in its corporate contracts library. One of the authors inspected IT services contracts spanning the years 1986–98. This sample includes IT services contracts between the firm and 141 customers and represents approximately 25 percent of the Compustar contract population. A review by Compustar personnel indicated that this sample was representative, in terms of such features as customer industries represented, customer size, and the number of contracts between Compustar and a customer. Several contracts could not be used because of missing data (17 in total) or because they perfectly predicted one of the dependent variables (11 in total).⁷ Each of the 385 remaining contracts in the sample documents a discrete project for which Compustar supplied IT services. A typical IT services contract is about five pages long and is designed to accomplish a specific task. It contains a detailed project description, including the type of service required and the parties' responsibilities. Some projects specify a fixed fee, and others stipulate time and materials (e.g., an hourly wage with or without a maximum number of hours). Project duration can range anywhere from one week to more than a year, and project values range from one thousand to several hundred thousand dollars.

Two experienced Compustar engineers familiar with the contracts library coded several sample variables. To ensure measurement validity, we used the following coding process: Each engineer first coded the same 80 randomly selected contracts. The two engineers and one of the authors then examined all 80 contracts and identified coding discrepancies in some variables ("measurement" [three], "reuse" [five], "programming" [two], and "innovation" [one]; variables are described below). The engineers then discussed conflicts and converged on the same criteria to code the remaining contracts. One of the authors also interviewed IT professionals inside and outside of Compustar to discuss the measures and solicit additional comments and feedback.

⁷ The omitted contract type calls for the supplier to be compensated as a percentage of the money that the supplier saves the buyer. None of these 11 contracts contained an extendibility or early termination clause.

Measures

Dependent variables. *Extend* was coded 1 if an IT services contract allowed the buyer the unilateral right to extend the project and 0 otherwise. *Early termination* was coded 1 if a contract allowed the buyer the unilateral right to terminate the project prior to completion and 0 otherwise. Of the 385 contracts in the sample, 51 included an early termination provision, and 55 included an extendibility provision. If a provision was included, rights were granted to the buyer but not to the supplier (Compustar). Two contracts that contained both early termination and extendibility clauses—suggesting the incidence of both clauses used jointly is rare—were eliminated from the sample.⁸ The remaining 279 contracts in the sample did not contain either provision but are included in our econometric analysis to demonstrate robustness.

Independent variables. Hypothesis 1 examines the effects of geographic distance. During the sample period, Compustar had five U.S. offices (including headquarters) staffed with IT professionals and sales personnel. *Minimum distance* was a continuous variable measuring the natural log of the geographic distance between the customer in a focal contract and the closest Compustar office. A robustness variable alternatively examined whether a geographic distance cutoff influenced the use of either contract provision. *Any office 50* is a dichotomous variable coded 1 if the closest Compustar office was within 50 miles of the customer and 0 otherwise.

Hypothesis 2 examines the effects of supplier quality measurement difficulty. *Measurement* captures the cost of measuring quality after project completion and is based primarily on technological aspects. Given the largely subjective nature of measurement costs, Compustar personnel coded measurement as 1 if quality was difficult to determine and 0 if it was readily apparent. The coding criterion used was whether a brief, inexpensive test or inspection could determine the quality of the work done.

Hypothesis 3 examines the effects of prior relationship breadth in other lines of business. Information on the level of business each customer had completed with Compustar prior to a focal project measured this effect. Compustar was reluctant to provide customer dollar values but did develop a

⁸ These contracts were special cases involving longer than average projects. As both clauses are found together in less than 0.5 percent of our sample and industry experts indicated that both types in a contract is highly unusual, we do not address these special cases.

Likert-type variable for relationship breadth. *Breadth*, which captured the extent of non-IT services provided by Compustar for each customer, ranged from 1 (no prior ties in other lines of business) to 7 (one of the largest customers outside of IT services). A robustness variable represented the number of Compustar business lines (excluding IT services) a given customer had purchased from Compustar. *Lines* was a count variable ranging from 0 to 9, with purchases by a buyer across more business lines representing more extensive ties between the firms.

Hypothesis 4 examines the effects of reusable knowledge. *Reuse* was coded 1 if a project had the potential to produce knowledge that Compustar could reuse for projects with other customers and 0 otherwise. Compustar engineers coded reuse on the basis of examination of the contract for a project (not project execution).

Control variables. We employed several variables to control for other factors that might influence the use of early termination or extendibility provisions. Compustar's use of duration provisions may have changed over time, possibly as a result of the firm's learning how to write better IT services contracts. This learning was likely greatest at the beginning of the sample period, as Compustar was relatively new to the IT services industry at that time, but may have leveled off as Compustar gained more experience. Two variables controlled for changes in the use of contractual provisions over time. *Time* was a linear time trend coded 0 for 1986, 1 for 1987, and so on, and *time squared* was coded as the square of time and allowed the use of contractual provisions to vary over time nonlinearly. We also utilized year fixed effects as a robustness test.

We controlled for three distinct but commonly used contract types. *Fixed fee* was coded 1 if a contract required completing a specific task in exchange for a predetermined total price and 0 otherwise. *Time and materials* was coded 1 if a contract indicated an hourly or daily rate plus expenses until the task was completed and 0 otherwise. *Hybrid* was coded 1 if a contract specified both an hourly wage and a maximum amount the buyer could be charged (with Compustar covering expenses above this amount), and 0 otherwise. This contract type combines the features of a fixed fee and a time and materials contract. Fixed fee served as the omitted category in our empirical estimations. Because fixed fee contracts are more difficult to negotiate with early termination or extendibility provisions, we expected these contracts to be less likely to include either provision.

We also included several other control variables that not only potentially influenced the use of duration provisions, but also helped control for alternative hypotheses. Compustar has superior internal capabilities relative to its competitors in servicing hardware that it designed and manufactured. *Compustar hardware* was coded 1 if a project involved Compustar hardware and 0 otherwise. Compustar engineers are acknowledged experts at servicing mainframes from other vendors because of their experience and training in all aspects of mainframe technology. *Mainframe* was coded 1 if a contract involved mainframe computers and 0 otherwise. Although Compustar has relative strengths in these areas, the technology used is not proprietary. If a close, cooperative relationship with a buyer is desired, we believe the supplier will tend to set positive expectations via extendibility clauses. Another capability-related variable examined the use of Compustar's proprietary technology. Compustar engineers used both a list created by Compustar personnel of proprietary technologies important to the firm's IT services competitive advantage and examination of the contracts to code *proprietary* (1 if one or more of Compustar's proprietary technologies was required for a project and 0 otherwise).

Areas in which Compustar's capabilities were acknowledged as weaker or at best equivalent to its competitors' were servicing other vendors' non-mainframe hardware and programming. *Other hardware* was coded 1 if a contract involved hardware from another vendor and 0 otherwise. Compustar was founded as a hardware firm and has relatively limited experience in programming. *Programming* was a dummy variable coded 1 if a project involved programming and 0 otherwise. In both cases, Compustar was less confident that it would be able to meet the positive expectations set by an extendibility clause. We believe that, rather than create strong negative emotions by violating these positive expectations, suppliers tend to set negative expectations up front using an early termination clause.

Three other project-level attributes that may affect the duration provision decision were also included. IT services projects that require the parties to depend upon one another provide greater opportunities to interact and give the buyer additional information regarding the supplier's abilities and character. These interdependencies are described in the deliverables and responsibilities sections of the contracts in our data set and were coded by the Compustar engineers. *Interdependence* was coded 1 if a buyer was directly involved in a project in such a way that Compustar depended upon the buyer to complete its task(s) and 0 otherwise. As

interdependence requires the parties to collaborate on a project in a flexible manner, we believe that suppliers would seek a promotion-framed clause to induce cooperation and flexibility.

Uncertainty surrounding an IT services project might also influence the use of contract framing provisions. To capture this project-level attribute, we measured the degree of innovation required. *Innovation* was an ordinal variable that ranged from 1 for projects that “require no innovation to complete” to 7 for projects that “cannot be completed without a technological breakthrough.”⁹ This variable does not merely capture complexity, but instead measures the need to push technology forward for successful project completion. When innovation requirements are high, greater uncertainty surrounds Compustar’s ability to successfully complete the task(s). A promotion-framed extendibility clause is designed to induce creativity while a firm is striving for maximal goals, which is necessary for innovative projects.

Longer IT services contracts typically have more milestones and review points associated with them than do shorter IT services contracts, which suggests a duration provision might prove desirable. *Duration* was the number of weeks it took to complete a project. We therefore expected IT services contracts with longer durations to be more likely to have contract provisions. We unfortunately did not possess duration data for the entire sample (some contracts specified only milestones and not a specific duration), and therefore we tested for the effects of duration on a slightly smaller sample in the robustness section of the empirical analysis.

We also controlled for the influence of the prior relationship between buyer and supplier in IT services (i.e., prior transactions in which this buyer engaged Compustar for IT services). *Prior projects* represents the logged value of prior IT service projects that Compustar has completed for the buyer. This measure accounted for the fact that larger projects have a greater impact than smaller projects. By adjusting for project size and project sequence (i.e., early projects play a greater role in relationship development than later projects), we obtained a more accurate picture of the prior relationship between the parties in IT services.

Empirical Estimation

Two empirical estimation approaches were implemented to test the hypotheses and demonstrate

⁹ The engineers coded no project as a 7. The actual range was from 1 to 6.

robustness. Given the categorical nature of the dependent variables, for the first empirical estimation we chose a qualitative choice model that examined only those contracts that included an early termination provision or an extendibility provision (106 projects). We utilized maximum-likelihood logit estimation, although probit estimation results were virtually identical. Contracts with an early termination provision served as the base category. The second empirical estimation recognized that three outcomes were possible in any given contract—no provision, extendibility provision, or early termination provision. Given the multiple outcomes, a multinomial logit regression using the entire sample (385 projects) was appropriate. Contracts with early termination provisions again served as the base category.¹⁰ Both of the empirical estimation approaches utilized the Huber-White sandwich estimator of variance for robust standard errors as well as correcting the variance-covariance matrix to account for the clustering of observations across buyers (i.e., observations are independent between and among buyers, but not necessarily within a given buyer).

A third empirical estimation approach was used in recognition of the fact that buyers and suppliers might implement contract provisions in two stages. First, firms decide whether to use a contract provision or not, and second, firms decide on provision type. A maximum-likelihood probit model with sample selection (i.e., the Heckman probit) was utilized. The results obtained are nearly identical to those in our first empirical estimation. We do not report these results, as rho (a parameter that captures first- and second-stage equation correlation) and a Wald test of independent equations did not justify rejecting the null hypothesis (at $p < .05$) that selection was present. Our first empirical estimation is therefore neither biased nor inconsistent.

Empirical Results

Table 1 provides summary statistics for the dependent and independent variables used in the analysis, and Table 2 provides correlation statistics. Preliminary analyses of these tables provide

¹⁰ The multinomial logit model relies on an assumption of the independence of irrelevant alternatives (IIR) among outcomes, which can be questioned. We present the results not only for expositional reasons, but also because strong arguments can be made that buyers and suppliers consider the choice among no provision, extendibility provision, and early termination provision as uncorrelated.

TABLE 1
Summary Statistics

	Mean	s.d.	Minimum	Maximum
1. Early termination	0.13	0.34	0.00	1.00
2. Extend	0.14	0.35	0.00	1.00
3. Time	8.12	2.90	0.00	12.00
4. Time squared	74.38	39.95	0.00	144.00
5. Fixed fee	0.56	0.50	0.00	1.00
6. Time and materials	0.31	0.46	0.00	1.00
7. Hybrid	0.10	0.30	0.00	1.00
8. Compustar hardware	0.24	0.43	0.00	1.00
9. Mainframe	0.26	0.44	0.00	1.00
10. Proprietary	0.15	0.35	0.00	1.00
11. Other hardware	0.09	0.29	0.00	1.00
12. Programming	0.46	0.50	0.00	1.00
13. Interdependence	0.12	0.33	0.00	1.00
14. Innovation	2.53	1.20	1.00	6.00
15. Prior projects	7.90	6.10	0.00	15.23
16. Duration	2.11	1.06	0.18	4.95
17. Minimum distance	4.14	1.76	0.69	6.56
18. Any office 50	0.45	0.50	0.00	1.00
19. Measurement	0.44	0.50	0.00	1.00
20. Breadth	3.96	1.85	1.00	7.00
21. Lines	4.19	2.74	0.00	9.00
22. Reusability	0.39	0.49	0.00	1.00

some insight regarding the unique determinants of extendibility and early termination provisions. Table 1 indicates significant heterogeneity in both the dependent and independent variables. Early termination and extendibility provisions were utilized relatively modestly (13 and 14 percent, respectively) in the IT services contracts in our sample. Table 2 indicates our two measures of contract

provisions are negatively correlated with each other. This table also indicates that each provision varies positively with some of the independent variables and negatively with other independent variables, but these patterns differ noticeably from each other. These results suggest that the use of each contract provision type is driven not only by particular project-, contract- and firm-level factors,

TABLE 2
Correlation Statistics^a

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1. Early termination																						
2. Extend	-.16																					
3. Time	.03	.05																				
4. Time squared	-.01	.03	.97																			
5. Fixed fee	-.21	-.23	-.06	-.07																		
6. Time and materials	.08	.31	.17	.17	-.76																	
7. Hybrid	.02	-.06	-.17	-.15	-.38	-.23																
8. Compustar hardware	-.13	-.09	.10	.10	.29	-.25	-.05															
9. Mainframe	-.06	.06	.02	.04	-.09	.09	.07	.35														
10. Proprietary	.22	-.02	.08	.06	.02	-.16	-.02	.00	.01													
11. Other hardware	.16	-.05	-.01	-.04	.09	-.07	-.02	.06	.00	-.08												
12. Programming	.04	.26	.03	.01	-.42	.46	.06	-.27	.06	-.05	.05											
13. Interdependence	.06	.10	-.06	-.07	-.08	.08	-.02	-.10	.02	.04	.01	.14										
14. Innovation	-.15	.10	-.09	-.09	-.15	.14	.16	-.23	-.05	-.14	-.11	.28	.14									
15. Prior projects	-.02	.13	.39	.37	-.08	.12	-.04	-.01	-.08	.04	.02	.06	-.05	.01								
16. Duration	.21	.14	.07	.05	-.27	.25	.05	-.04	.05	-.06	.10	.25	.05	.19	.10							
17. Minimum distance	-.01	.22	.04	.04	-.23	.20	.01	-.13	.03	-.02	-.16	.16	.02	.02	-.03	.10						
18. Any office 50	.02	-.19	-.05	-.06	.20	-.20	.04	.09	-.01	.07	.15	-.16	.01	.00	.08	.00	-.89					
19. Measurement	-.16	.29	-.12	-.10	-.24	.29	.04	-.22	.06	-.13	-.22	.27	.18	.36	-.10	.07	.13	-.10				
20. Breadth	-.13	-.04	.15	.14	.15	-.14	.02	.16	-.05	.16	-.04	-.12	-.09	-.01	.40	.11	-.17	.17	-.26			
21. Lines	-.17	-.04	.13	.10	.15	-.15	.04	.13	-.07	.17	-.09	-.07	-.06	.00	.39	.09	-.11	.13	-.20	.91		
22. Reusability	-.15	.16	-.04	-.02	-.17	.15	.11	-.20	.05	-.02	-.20	.23	.14	.58	-.03	.12	.08	-.05	.38	-.05	-.03	

^a Bold represents pairwise significance at the .05 level.

but also by certain relational and cognitive factors. Finally, correlations between and among the main independent and control variables in Table 2 are generally low to moderate, suggesting that multicollinearity is not a concern.

Table 3 presents the results of our logit and multinomial logit estimations. Models 1–3 are logit results that compare contracts with either an extendibility or early termination provision (contracts without a duration safeguard are not included in these models). Models 4–6 are multinomial logit results comparing contracts that contain no provision with contracts that contain extendibility provisions and contracts that contain early termination provisions. The dependent variable for the multinomial logit estimation takes on three distinct values: 0 for no provision contracts, 1 for extendibility provision contracts, and 2 for early termination provision contracts. We are particularly interested in the right column of models 4–6, which compares extendibility provision contracts to early termination provision contracts. The multinomial logit estimation is informative as it compares the three possible provision outcomes—none, extendibility, and early termination—against each other, in comparison to the logit estimation, which captures just two provision outcomes (extendibility and early termination). The Table 3 models are paired for each estimation approach in terms of variable loadings. Models 1 and 4 include the contract type control variables. Models 2 and 5 add the project-, firm- and relationship-level control variables to models 1 and 4, respectively. Models 3 and 6 add the independent variables of interest to models 2 and 5, respectively. We focus our attention on models 3 and 6.

The empirical results demonstrate that only a few of the contract-, firm- and relationship-level control variables drive the use of extendibility provisions vis-à-vis early termination provisions. In the logit and multinomial logit estimations, involvement of one or more of Compustar's proprietary technologies increases the likelihood of a contract's using an early termination provision ($p < .05$). The logit estimation indicates contract type (i.e., time and materials contracts) decreases the likelihood of using an extendibility provision ($p < .05$), but a prior relationship in the current line of business (i.e., logged dollar value of prior IT projects) increases the likelihood of implementing an extendibility provision ($p < .10$). The multinomial logit estimation indicates none of the other control variables have statistically significant effects on the use of extendibility provisions vis-à-vis early termination provisions.

We find strong support for Hypothesis 1, as our preferred measure of geographic distance has the hypothesized effect and achieves statistical significance ($p < .01$ in both estimations). We also find strong support in both the logit and multinomial logit estimations for Hypothesis 2, which suggests greater project output measurement difficulty is more likely to lead to an extendibility provision ($p < .01$ in both estimations). Hypothesis 3 states that prior relationships in other lines of business are more likely to lead to extendibility provisions than early termination provisions. We find strong support for this hypothesis, as greater breadth increases the likelihood of extendibility provisions in comparison to early termination provisions ($p < .05$ in both models). Hypothesis 4 states that reusable technologies are more likely to lead to extendibility provisions than to early termination provisions. We find strong support for this hypothesis, as projects with the potential to produce knowledge Compustar could reuse with other customers increased the probability of using an extendibility provision ($p < .05$ in both estimations).

An examination of economic significance helps to demonstrate further the comparative effects of our hypothesized factors on the use of contractual provisions. Table 4 provides the economic significance of our results by demonstrating how various levels of our independent variables differentially impact the likelihood of early termination provisions versus extendibility provisions. For this analysis we held all variables at their respective means and then varied a particular variable of interest from low (mean less standard deviation) to high (mean plus standard deviation) levels within the range of the given variable.

Table 4 indicates a one standard deviation increase in the logged minimum distance between a buyer and a Compustar office increases the probability of an extendibility provision from roughly 45 percent to roughly 73 percent. The measurement difficulty variable was dichotomous and thus was examined as to whether it was low (i.e., 0) or high (i.e., 1). The change in measurement difficulty from "easy" to "difficult" increases the probability of an extendibility provision from nearly 11 percent to more than 90 percent. A one standard deviation increase in relationship breadth increases the probability of an extendibility provision in comparison to an early termination provision from roughly 45 percent to roughly 69 percent. Finally, for reusability, also a dichotomous variable, a change from "no reusability" to "reusability" increases the probability of an extendibility provision from roughly 27 percent to roughly 75 percent.

TABLE 3
Empirical Results

Variables	Logit Estimation ^b				Multinomial Logit Estimation ^b			
	Model 1: Base	Model 2: Controls	Model 3: Full	Model 4: Base	Model 5: Controls	Model 6: Full Model	Model 6: Full Model	Model 6: Full Model
Time	-0.38 (0.48)	0.03 (0.54)	0.30 (0.85)	-0.36 (0.43)	-0.96** (0.38)	-0.45 (0.47)	-0.86* (0.38)	-0.10 (0.50)
Time squared	0.02 (0.03)	-0.003 (0.04)	-0.03 (0.06)	0.02 (0.03)	0.07** (0.03)	0.03 (0.03)	0.06* (0.03)	0.003 (0.03)
Hybrid	-0.30 (0.84)	-2.02 [†] (1.03)	-0.81 (1.05)	-0.25 (0.79)	-1.20 (0.79)	-1.25 (0.79)	-1.50* (0.70)	-1.37 (0.92)
Time and materials	1.06* (0.45)	-0.50 (0.89)	-1.86* (0.89)	1.03 [†] (0.57)	-1.71** (0.57)	-0.15 (0.59)	-1.88** (0.57)	-0.48 (0.61)
CompuStar		0.20 (0.94)	-0.82 (1.36)		1.09 (0.72)	1.00 (0.72)	0.88 (0.76)	1.32 (0.81)
hardware		0.51 (0.66)	2.02 [†] (1.12)		0.35 (0.54)	0.66 (0.56)	0.27 (0.58)	0.40 (0.63)
Mainframe		-1.23 [†] (0.70)	-2.48* (1.00)		-1.86** (0.38)	-1.43** (0.55)	-2.07** (0.40)	-1.37* (0.62)
Proprietary		-2.14* (0.88)	0.40 (1.17)		-1.52* (0.65)	-1.70* (0.84)	-0.81 (0.62)	-0.05 (0.84)
Other hardware		1.02 (0.66)	0.34 (0.77)		-0.05 (0.42)	0.89 [†] (0.52)	0.04 (0.44)	0.65 (0.54)
Programming		0.05 (0.71)	-0.59 (0.97)		-0.64 (0.44)	0.04 (0.55)	-0.98* (0.44)	-0.49 (0.60)
Interdependence		0.38 (0.29)	-0.29 (0.32)		0.57* (0.23)	0.51* (0.25)	0.30 (0.25)	0.01 (0.27)
Innovation		0.08 (0.05)	0.17 [†] (1.00)		0.02 (0.03)	0.08* (0.04)	-0.02 (0.04)	0.06 (0.05)
Prior projects			0.69** (0.27)				0.05 (0.14)	0.47* (0.20)
Minimum distance			4.38** (1.26)				1.09** (0.40)	2.51** (0.69)
Measurement			0.54* (0.27)				0.36** (0.11)	0.36* (0.15)
Breadth			2.09* (1.07)				0.54 (0.52)	1.06* (0.54)
Reusability			-8.50** (2.77)				2.86 [†] (1.60)	-5.01* (2.30)
Constant	1.04 (1.76)	-1.45 (2.01)		0.78 (1.55)	4.20** (1.25)	-0.49 (1.57)		
Dependent variable	EXP	EXP	EXP	EXP	NP	EXP	NP	EXP
<i>n</i>	104	104	104	385	385	385	385	385
Log-likelihood	-69.34	-56.48	-33.90	-272.38	-240.61	-213.69	-213.69	-213.69
χ^2	7.78 [†]	26.86**	23.78*	33.24**	122.18**	156.84**	156.84**	156.84**
Pseudo- <i>R</i> ²	0.06	0.23	0.53	0.10	0.21	0.28	0.28	0.28

^a The numbers in each cell are coefficients with standard errors (robust and clustered by customer) in parentheses.

^b The logit estimation compares contracts with extensibility provisions (EXP) with contracts with early termination provisions (ETP). The multinomial logit estimation compares contracts with no provisions (NP) and contracts with extensibility provisions (EXP) with contracts with early termination provisions (ETP). Early termination provisions (ETP) serve as the base category in both estimations. We introduce our control variables in stages to establish a stripped down baseline to examine the effectiveness of our main control variables before introducing the hypothesized variables. The second columns of models 4–6 are the relevant comparisons to models 1–3 and used to test our hypotheses.

[†] $p < .10$

* $p < .05$

** $p < .01$

TABLE 4
Economic Significance: Probability of Extendibility versus Early Termination Provisions^a

Minimum distance	Mean - 1 s.d.: 19.7%	Mean: 45.1%	Mean + 1 s.d.: 73.3%
Measurement	Low (0): 10.7%		High (1): 90.5%
Breadth	Mean - 1 s.d.: 23.2%	Mean: 45.1%	Mean + 1 s.d.: 69.1%
Reuse	Low (0): 26.7%		High (1): 74.6%

^a All variables were held at their respective means and each variable of interest varied from low (mean less standard deviation) to high (mean plus standard deviation). If a variable fell outside its range, it was set to its minimum or maximum. Dummy variables were examined at 0 and 1. Percentages refer to the probability of observing an extendibility provision.

Empirical Robustness

Table 5 provides the results of a variety of empirical robustness tests for both the logit and multinomial logit estimations. Models 7 and 10 replace our preferred measure of geographic distance (minimum distance) with our alternative measure (any office 50) that captures whether a geographic distance cutoff influences the use of either contract provision. Given that coding of the alternative measure was opposite that of minimum distance, the expected sign is reversed. The results from models 7 and 10 are nearly equivalent to those in Table 3 (models 3 and 6) with no loss of statistical significance in the hypothesized variables in the logit or multinomial logit estimations.

Models 8 and 11 replace our primary measure of relationship breadth (breadth) with our alternative measure (lines) to test whether relationship breadth accurately reflects (non-IT services) customer value. The results are again strongly similar to those in Table 3 (models 3 and 6). Although Hypothesis 3 now receives only moderate empirical support ($p < .10$), all other main independent variables maintain their original level of statistical significance.

Models 9 and 12 control for contract duration, which might be important as shorter (longer) contracts are less (more) likely to have some type of duration provision. The results indicate that longer contracts are more likely to contain a duration provision (i.e., the right-hand column of model 12), but there does not appear to be any statistically significant difference between IT services contracts that contain either extendibility provisions or early termination provisions. With the inclusion of duration, Hypothesis 4 receives strong empirical support ($p < .05$) in the logit estimation but only moderate empirical support ($p < .10$) in the multinomial estimation. All of the other hypothesized variables maintain their original level of statistical significance.

Finally, we replaced the contract-level time control variables (time and time squared) with year fixed effects. We confirm but do not report that the

results are nearly identical with no loss in statistical significance in any of the variables of interest.

DISCUSSION AND CONCLUSIONS

In this article, we address how contracts can be used to effectively manage transactions and partner relationships through the framing of duration safeguards. When addressing whether contracts have a detrimental effect on relationships, following Ghoshal and Moran (1996), we argue that it is not the mere presence of safeguards, but how they are framed that matters. We further suggest that the optimal framing depends on the context in which an exchange occurs; thus the goal is to align the frame with the attributes of the transaction and the desired type of relationship between the firms.

We focus on duration safeguards, as these clauses are often contentiously negotiated (Somers, 2003), are typically not contract boilerplate (Arino, Reuer, Mayer, & Jane, 2011), and may be framed in markedly different ways—as early termination or as extendibility. We show how suppliers use contract framing not only in efforts to manage exchange challenges arising from geographic distance and measurement difficulty, but also in efforts to retain particularly valuable buyers. Although transaction cost economics can indicate when a duration safeguard is necessary, it does not indicate how the clause should be framed. Using the IT services industry as our empirical context, we demonstrate that complementing transaction cost economics with regulatory focus theory provides better understanding of framing decisions, as frame choice elicits different emotions, behaviors, and views of exchange relationships. We therefore suggest that economics and psychology are best utilized jointly to determine when to use and how to frame contractual safeguards.

Our results suggest that extendibility clauses are more likely to be present in contracts when certain exchange characteristics are present. When contracting parties are more geographically distant, we find greater use of contract clauses emphasizing

TABLE 5
Robustness Results^a

Variables	Logit Estimation ^b				Multinomial Logit Estimation ^b							
	Model 7		Model 8		Model 9		Model 10		Model 11		Model 12	
	Distance	Breadth	Distance	Breadth	Duration	Distance	Distance	Breadth	Breadth	Duration	Duration	
Time	0.55 (0.81)	0.31 (0.83)	0.45 (0.76)	-0.87* (0.38)	-0.10 (0.49)	-0.88* (0.39)	-0.10 (0.50)	-0.82 (0.51)	0.04 (0.60)			
Time squared	-0.04 (0.06)	-0.03 (0.06)	-0.03 (0.05)	0.06* (0.03)	0.003 (0.03)	0.06* (0.03)	0.004 (0.03)	0.06 [†] (0.03)	-0.01 (0.04)			
Hybrid	-0.82 (0.90)	-0.82 (1.06)	-0.49 (1.41)	-1.48* (0.71)	-1.26 (0.87)	-1.41* (0.70)	-1.22 (0.94)	-1.08 (0.71)	-0.97 (0.91)			
Time and materials	-1.86* (0.90)	-1.55 [†] (0.86)	-1.77 (1.16)	-1.86** (0.56)	-0.49 (0.61)	-1.79** (0.56)	-0.41 (0.61)	-1.64** (0.61)	-0.31 (0.71)			
Compustar hardware	-0.75 (1.25)	-0.74 (1.32)	-0.66 (1.25)	0.87 (0.77)	1.19 (0.81)	0.91 (0.73)	1.37 [†] (0.79)	1.33* (0.79)	1.71* (0.83)			
Mainframe	2.11* (1.03)	1.90 [†] (1.18)	2.14* (1.01)	0.26 (0.57)	0.39 (0.63)	0.24 (0.56)	0.34 (0.62)	0.06 (0.62)	0.42 (0.65)			
Proprietary	-2.39** (0.94)	-2.22* (0.98)	-2.42 [†] (1.27)	-2.06** (0.41)	-1.36** (0.64)	-2.14** (0.38)	-1.32* (0.61)	-2.56** (0.53)	-1.65** (0.64)			
Other hardware	0.72 (1.11)	0.12 (1.09)	0.90 (1.43)	-0.81 (0.63)	-0.06 (0.82)	-0.71 (0.64)	-0.03 (0.86)	-1.04 (0.68)	-0.24 (0.95)			
Programming	0.20 (0.86)	0.07 (0.78)	0.66 (0.89)	0.03 (0.44)	0.67 (0.56)	-0.12 (0.44)	0.50 (0.55)	0.24 (0.52)	0.56 (0.62)			
Interdependence	-0.68 (0.87)	-0.53 (0.92)	-0.67 (0.94)	-0.98* (0.44)	-0.44 (0.60)	-0.99* (0.46)	-0.47 (0.60)	-1.12* (0.56)	-0.49 (0.65)			
Innovation	-0.18 (0.31)	-0.26 (0.32)	-0.19 (0.37)	0.29 (0.25)	-0.02 (0.28)	0.31 (0.26)	0.03 (0.27)	0.26 (0.26)	-0.05 (0.26)			
Prior projects	0.18* (0.09)	0.19 [†] (0.10)	0.14 [†] (0.08)	-0.02 (0.04)	0.07 (0.05)	-0.02 (0.04)	0.07 (0.05)	-0.01 (0.04)	0.05 (0.05)			
Duration			-0.41 (0.36)					-0.88** (0.28)	-0.51 (0.32)			
Minimum distance		0.66* (0.27)	0.65* (0.26)			0.05 (0.14)	0.47* (0.20)	-0.02 (0.15)	0.40* (0.21)			
Any office 50	-1.95* (0.83)			-0.07 (0.43)	-1.21* (0.52)							
Measurement	4.37* (1.24)	4.10** (1.21)	4.13** (1.03)	1.08** (0.40)	2.55** (0.72)	1.08** (0.41)	2.44** (0.69)	1.05* (0.48)	2.49** (0.85)			
Breadth	0.55* (0.26)		0.62* (0.31)	0.36** (0.11)	0.37** (0.15)			0.42** (0.13)	0.42* (0.18)			
Lines		0.25 [†] (0.14)				0.27** (0.07)	0.20* (0.09)					
Reusability	1.79* (0.92)	2.03* (1.05)	1.86* (0.95)	0.54 (0.52)	1.06* (0.55)	0.51 (0.54)	1.03* (0.52)	0.48 (0.55)	0.92 [†] (0.54)			
Constant	-5.63 (2.59)	-7.32** (2.74)	-8.61** (3.10)	3.11* (1.32)	-2.41 (1.79)	3.22* (1.57)	-4.48 (2.27)	4.95* (2.35)	-3.58 (2.86)			
Dependent variable	EXP	EXP	EXP	NP	EXP	NP	EXP	NP	EXP			
n	104	104	104	385	385	385	385	385	385			
Log-likelihood	-35.22	-34.76	-32.65	-215.67	-212.42	-212.42	-212.42	-213.69	-213.69			
χ ²	23.94*	25.34*	23.93*	170.42**	156.31**	156.31**	156.31**	156.84**	156.84**			
Pseudo-R ²	0.51	0.52	0.50	0.27	0.28	0.28	0.28	0.28	0.28			

^a The numbers in each cell are coefficients, with standard errors (robust and clustered by customer) in parentheses.

^b The logit estimation compares contracts with extendibility provisions (EXP) with contracts with early termination provisions (ETP). The multinomial logit estimation compares contracts with no provisions (NP) and contracts with extendibility provisions (EXP) with contracts with early termination provisions (ETP). Early termination provisions (ETP) serve as the base category in both estimations. All models in Table 5 replicate model 3 and model 6 from Table 3. We examine alternative measures of distance (models 7 and 10) breadth (models 8 and 11) and add a control for duration (models 9 and 12).

[†] $p < .10$

* $p < .05$

** $p < .01$

positive outcomes—a result that is somewhat counterintuitive (although in line with the predictions of regulatory focus theory) and that suggests more work is needed to fully understand the impact of distance on buyer-supplier contracting (and interfirm relationships more generally). We also find that measurement difficulties not only affect buyers' outsourcing decisions (Mayer & Nickerson, 2005) and monitoring choices (Mayer, Nickerson, & Owan, 2004), but also influence the framing of contractual safeguards. Framing allows firms to craft expectations that reduce tensions arising from difficulties in measuring quality.

Moreover, when close, cooperative, and ongoing relationships are desired with particularly valuable customers, promotion contact framing is an important strategic tool. We find that if exchange partners have extensive prior corporate relationships in other lines of business, these relationships impact a current contract. Although relationships at both the corporate and business unit levels are important, we find that corporate relationships create an overarching need to maintain the broader relationship through promotion-focused contract safeguards. We also find that when reusable technology is generated in an exchange, the supplier seeks to prolong the close cooperative relationship with the buyer (to maintain a source of buyer-funded innovation) through the use of promotion-framed extendibility clauses, which creates greater partner satisfaction. Together, these findings contribute to a better understanding of how to manage customer expectations to improve customer retention, a major issue in the marketing literature (e.g., Bolton, 1998).

Our results overall suggest that contract framing is important for the performance of an exchange and for the ongoing relationship between the parties. The predominant economic focus in contract research has been on the need for safeguards to mitigate opportunism. We posit instead that researchers need to balance an economic approach with a psychological understanding of cognitive and social processes to gain a more complete picture of interfirm exchanges and relationships.

Theoretical Contributions

We make several contributions in this work. We examine how contractual safeguards are framed, and how this framing impacts exchange relationships. Although contract researchers know a great deal about mitigating opportunism through specific contractual safeguards (Macher & Richman, 2008), contract framing has not been extensively examined. We demonstrate that managers make conscious framing decisions when designing contracts.

Interviews with Compustar managers involved in contract negotiations and project execution provide evidence that managers recognize the importance of framing. The following quote from a Compustar project manager is representative:

We had to be careful how we set up the termination clauses—when we agreed to include one. Some of the engineers are very touchy about having projects terminated early; they take it personally. [Joe] got upset the last time [customer A] exercised an early opt-out because he thought they didn't appreciate the expertise that it took to do what he had done. We need to be careful because now [Joe] doesn't want to work with them [customer A] anymore but we still bid on their projects.

Project managers never actually used the word "framing," but many made similar remarks about how the type of duration safeguard included in a contract impacted Compustar's view of the buyers. Another IT project manager indicated that framing had an impact on the expectations of management (i.e., more "pushback" when a project is terminated early than when it is not extended).

We believe that understanding the impact of contract framing has widespread implications for interfirm relationships, including buyer-supplier contracting, alliances, and even mergers and acquisitions. In general, studying framing provides a new perspective on how these relationships can and should be managed.

We also contribute to the field of strategy more broadly by offering one of the first studies to complement economics with psychological theory to address the impact of governance choices on the relationship between exchange partners, although others have used this theoretical combination to examine strategic decision making (Zajac & Bazerman, 1991) and interorganizational trust (Barney & Hansen, 1994). Simply put, social psychology research is necessary for a complete understanding of how contracts impact exchange relationships. Strategy has always been multidisciplinary, yet the major disciplines (e.g., economics, sociology, and psychology) have been utilized largely in isolation (Agarwal & Hoetker, 2007). We demonstrate that combining insights from multiple disciplines leads to a more complete understanding of traditional topics. By augmenting regulatory focus theory with transaction cost economics, we go beyond suggesting when a safeguard is necessary to determining how it should be framed to benefit a transaction and develop the desired relationship between the partners.

We also contribute to the capability literature by extending the idea of a contracting capability. Transaction cost economics explicitly examines

the conditions under which contractual safeguards must be included to facilitate exchanges. From this perspective, firms develop contracting capabilities from learning when to include safeguards to facilitate exchange and when not to. Regulatory focus theory suggests that contracting capabilities are even more complex, however, as transaction cost economics addresses neither how to frame these safeguards nor how these safeguards impact the exchange partner relationship. We argue that a fully developed contracting capability includes an understanding of when a safeguard is necessary and how to frame it to direct the transaction and ongoing exchange relationship. As firms develop complex contracting capabilities, they develop important abilities in managing both exchanges and relationships.

This study has implications for other literature streams as well. Our results suggest a more nuanced approach to the ongoing debate regarding whether contracts and trust are complements or substitutes. Past literature has argued that formal contracts either hurt (Ghoshal & Moran, 1996; Gulati, 1995) or help (Kalnins & Mayer, 2004; Lazarrini, Miller, & Zenger, 2004; Poppo & Zenger, 2002) relationship development. Our results suggest that the impact of a contract may depend on the clauses it includes and how they are framed (see Weber and Mayer [2010] for a broader theoretical discussion of this topic).

We believe that both prevention and promotion contracts have their place in buyer-supplier exchanges. If an arms-length relationship is desired, prevention-focused contract clauses support this arrangement and lead to expectations of vigilance and meeting specific milestones in a timely manner. In contrast, if a repeated, collaborative relationship is desired, promotion-focused contract clauses support it by setting positive expectations of creativity and flexibility between the partners. Each of these scenarios suggests that contracts can positively (and negatively) impact relationship development. When the clause framing is mismatched with the desired type of relationship, however, the contract may be detrimental to the ongoing relationship. This point is an important, counterintuitive element of our study. We do not argue that firms should always use the more positive, promotion-framed clause when crafting a duration safeguard. If a vigilant, arms-length relationship is desired, then prevention-framed safeguards are appropriate. Promotion-framed safeguards are best suited to situations in which the parties seek a collaborative, longer-term relationship.

Our study also has implications for the social networks literature. The idea of embeddedness suggests that social networks provide unique opportunities that arm's-length relationships do not (Gra-

novetter, 1985), leading to a positive impact on firm performance and survival. Other research has indicated that overembeddedness can negatively impact firm performance, as friendship may override economically sound decisions that are not favorable to network members (Uzzi, 1997). To balance these two effects, a firm must instead maintain some combination of arms-length and embedded ties with other firms. We suggest that contract framing is one strategic tool for managing these relationships, as prevention and promotion framing respectively lead to arms-length and committed relationships with exchange partners.

Limitations and Future Research

Although our study offers many important insights, it is important to note key limitations and qualifications. First, use of a template in studied contracts might have biased results. Most contracts in our sample were based on Compustar's basic contract template, however, so differences in the template used for different customers do not explain our results. In addition, Compustar's contract template is relatively sparse, consisting of a series of headings (e.g., "task," "timeline"), and, most importantly, it does not contain any reference to early termination or extension provisions. Contracting parties must therefore make a joint decision to include an early termination or extendibility clause for each individual project. An examination of decisions about what to include in a contract template, as well as the effects of different templates on exchange performance, are also productive avenues for future research.

One of the strengths of our approach—utilizing microanalytic data from within a single firm—is also a limitation. The detailed, transaction-level data analyzed here enable us to offer insights into contractual choices rarely available with larger interindustry studies. Critics may suggest that the results only reflect Compustar's contracting policy, and not that of its buyers. As Compustar's buyers are mostly large companies with many alternatives for IT service suppliers, we are confident the negotiated contracts do not solely reflect Compustar policy but also significantly integrate buyer concerns. Moreover, the existence of duration safeguards in our sample of contracts offers proof that buyers have a significant influence on contract design, because Compustar would not want to include any clauses limiting its discretion in an exchange. Critics may also suggest that results from a single firm do not generalize to other industries and settings. Because a large percentage of contracts—particularly those in high-technology industries—govern complex and uncertain project-based ex-

changes, we suggest that our theory generalizes quite well to other types of projects in other industries, including product development, telecommunications and other infrastructure, consulting, and joint development, among others. Nevertheless, future research to explore the generalizability of this study would be valuable.

A final note is that the contracts examined here were negotiated by managers and engineers rather than lawyers. Although lawyers conducted a final-stage review of the contracts, the contracts might have been different if lawyers had been the primary negotiators. Lawyers are trained to protect the interests of a firm, but managers and engineers are focused on making sure they get what they need to complete projects. How the identity of the negotiators affects what is included in a contract and how it is framed is an interesting topic for future research.

In conclusion, we believe that this work represents the start of a novel research stream that unpacks the impact of contract framing on exchanges and relationships. A natural first step is to demonstrate that framing choice matters—that firms decide to frame in different ways in different situations—and in future research we hope to show how framing choices affect the performance of exchange relationships and transactions. Specifically, future research could examine how clause framing impacts emotional responses, partner satisfaction, and desire to continue an exchange, as these are key elements impacting the clause-framing decision. In addition, future research could examine how framing affects related transactions, such as joint ventures (forming a separate entity) and mergers and acquisitions (one party's acquiring ownership and thus control of the other). The combination of microlevel mechanisms from social and cognitive psychology, along with the careful incentive focus of economics, is powerful and has the potential to address many key issues in the field of strategy.

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Libby Weber (lweber@uci.edu) is an assistant professor of strategy in the Paul Merage School of Business at the University of California, Irvine. She received her Ph.D. in strategy from the Marshall School of Business at the University of Southern California. Her research focuses on combining theories from social psychology and economics to provide new insights to the study of mergers and acquisitions, alliances, and the management of interfirm relationships using a variety of methods (e.g., regression, experiments).

Kyle J. Mayer (kmayer@marshall.usc.edu) is an associate professor of strategy in the Marshall School of Business at the University of Southern California. He received his

Ph.D. from the Walter A. Haas School of Business at the University of California, Berkeley. His research interests focus on applying theories from strategic management, economics, and more recently social psychology, to the intersection of governance and capabilities, specifically addressing contract design, capabilities in the governance of interfirm relationships, and vertical integration.

Jeffrey T. Macher (jtm4@georgetown.edu) is an associate professor of strategy, economics and policy in the McDonough School of Business at Georgetown University. He is also the director of Georgetown's Center for Business and Public Policy. He received his Ph.D. from the Walter A. Haas School of Business at the University of California, Berkeley. His research examines the intersection of strategy, economics, and innovation. His research interests include industry structure, regulation, competitive strategy, and the organization and economics of innovation in a variety of high-technology industries, including biotechnology, medical devices, pharmaceuticals, and semiconductors.

