
Information Asymmetry in Information Systems Consulting: Toward a Theory of Relationship Constraints

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ABSTRACT: Opportunism, or self-interest seeking with guile, is often witnessed in human behavior, and it bedevils human interactions and relationships. Organizations expend considerable effort to reduce opportunism. Agency theory espouses formal

contracts as effective constraints on opportunism; however, a consultant's use of tacit knowledge subjects clients to information asymmetry that is not amenable to formal contracts. The principal–professional lens was developed to accommodate the presence of tacit knowledge, but it ignores formal contracts and, like agency theory, ignores the existence of principal opportunism. This examination of information systems (IS) consulting notes that when information asymmetry is present, both clients and consultants sometimes behave opportunistically. The level of information asymmetry, the type of knowledge, and the level of contract specificity in an IS consulting engagement determine the mixture of legal and social constraints that are efficacious. Based on these revelations and the inadequacy of other theories, a theoretical model of relationship constraints is developed to explain the interplay between signaling and screening, knowledge type, contract specificity, and the levels of information asymmetry in predicting adopted constraint mechanisms. For researchers, this new model offers a lens to study opportunism from a knowledge-based perspective, whereas for practitioners it offers the possibility of forestalling a decline in markets due to rampant opportunism.

KEY WORDS AND PHRASES: agency theory, information asymmetry, information systems consulting, opportunism, principal–agent relationship, screening, signaling, tacit knowledge.

U.S. federal investigators have accused Unisys, a major IS [information systems] consulting firm, of failing to provide the cyber security required under its \$1.7 billion contract with the Department of Homeland Security and then covering it up. The contract called for Unisys to install seven intrusion-detection devices, but it allegedly installed only three. Investigators say that Unisys tried to hide its performance gaps in an attempt to win future contracts. [27, p. A1]

OPPORTUNISM HAS BEDEVILED HUMAN RELATIONS for thousands of years, and evolutionary biologists believe that the dominant quality of a successful gene is “ruthless selfishness” [5, p. 200]. Opportunism is self-interest seeking with guile—it differs from simple self-interest seeking [45]. Without the fear of opportunism, many forms of complex contracts vanish and parties can self-enforce an incomplete contract through a general contractual clause that obligates the parties to self-disclose relevant information and behave cooperatively [46]. An opportunistic individual might not behave responsibly, and therefore the notion of a “contract as a promise” is fraught with hazard [45]. If the risk of opportunism is high, firms divert considerable resources to control and monitor for it [42].

Within the IS consulting domain, the problem of opportunism looms large and a host of business press articles allege harmful and unethical behaviors performed by consultants [29, 31]. Academic publications question the rigor of consulting services and categorize consultants as “peddlers of management fads and fashions” [17, p. 3] and examine the potential harm that could result from following flawed or impractical consulting advice [15, 17]. These articles typically describe confident consultants

duping gullible clients through the use of highly developed impression management skills [29, 31], and this neatly squares with the notion of opportunism. This is troubling, given the size (\$44.5 billion/year) and growth (8 percent/year) of the U.S. public-sector consulting market [10].

According to agency theory, a principal can minimize opportunism by establishing an appropriate contract to reduce agent-favoring information asymmetry [6]. Despite these safeguards, researchers remain concerned about agent opportunism resulting from information asymmetry, particularly in situations when agents are professionals [35]. These “professional agents” use a highly specialized and abstract body of knowledge to solve problems, and this type of expertise can prevent principals from effectively supervising them [8]. Professional agents hold power over the principal by dint of their specialized knowledge base and the “intrinsic ambiguity” of the services that they provide. As a result, the professional agent holds a substantial information asymmetry advantage over a client and this emasculates the principal’s ability to evaluate the professional agent’s efforts [35]. Successful principal–professional relationships depend on the mutual efforts and obligations of the professional agent and principal, and this social interplay enables principals to use socially (rather than contractually) oriented constraints. The principal–professional lens argues that formal contracts, the preferred method to constrain agent opportunism according to agency theory, are ineffective for professional agents [35].

Studies of agency theory or the principal–professional lens have generally taken place within domains that fit squarely within one theory base or the other. Thus, these existing theories are judged apt since the study domain matches the theory. However, IS consulting straddles the two domains, which presents a challenge because agency theory and the principal–professional lens have tenets that make the use of them mutually exclusive. IS consulting offers a relevant domain [35] to address this conflict, and it allows exploration into issues of shared delivery, responsibilities, and consultant and client opportunism resulting from information asymmetry. For example, by concealing information about the availability of its key delivery personnel, a client could avoid revealing staff resentment toward the implementation of a new system, while a consultant could overrepresent the skill of its staff. Either opportunistic act could make system implementation longer and far more costly. Although no known studies have examined principal opportunism, it is reasonable to expect that it exists. Because the IS consulting relationship can be theoretically considered from both agency theory and the principal–professional lens, we can examine the explanatory power of these theories in an important arena of information age business practice. Also, we can focus on the services side of IS [32] and in so doing illuminate an often-neglected “gray area” in IS [43]. Our research questions are as follows:

RQ1: How does opportunism manifest itself in IS consulting engagements?

RQ2: How is opportunism constrained?

We examine the types of principal and professional agent opportunism that occur in IS strategy and implementation consulting engagements and seek to uncover constraint mechanisms under different conditions of information asymmetry. We study

opportunism from both the IS consultant's and the client's perspective. Our "soft positivism" orientation allows for examination of existing constructs while uncovering previously unknown ones [24]. This study contributes to knowledge of opportunism within the principal–professional domain and offers theoretical insights into the existence and constraint of opportunism. We propose a theoretical model that is applicable to both the IS consultant as well as the client and suggest areas of further research.

The next section examines current literature on IS consulting, information asymmetry, and opportunism. The third section describes our research methodology. The fourth section presents our results, and the fifth section includes a discussion that outlines our research propositions and suggests a new model of relationship constraints. Finally, the paper closes with concluding thoughts.

Current Literature and Research

Information Asymmetry in IS Consulting

ACADEMICS OFTEN REGARD CONSULTANTS AND CONSULTING ACTIVITIES as a single unit, rather than understanding the salient differences between consultants' various roles [17]. The role of management consultant has been understood as service provider, information supplier, and business doctor [40], and consultants are often hired to provide fresh insights to struggling chief executive officers [25]. The role has also been described as following a purchase model, doctor–patient relationship, or process consulting [34]. IS consulting is commonly divided into implementation and strategy consulting. IS implementation consulting is "the set of services involved in developing and implementing IT solutions, assets and processes," and IS strategy consulting is "the set of advisory services that organizations use to assess and improve the effectiveness of functional, operational, and IT strategies" [14, p. 1].

There are several useful ways to frame IS consulting services (e.g., product versus services [39]), but because consulting firms' activities are increasingly presented as an exemplar of knowledge communities [15], a knowledge-based framework is useful. There are two general types of knowledge—explicit and tacit [3, 12, 13, 18, 20, 33]. Explicit knowledge can be easily codified and is readily accessible to anyone willing to undertake the time and energy to learn it [11, 21]. Explicit knowledge is domain specific; hence, it is focused on knowing usable information in a particular content [2]. Simply knowing the rules of chess, explicit knowledge, does not allow someone to be an effective chess player; that requires practice in order to accumulate tacit knowledge [3]. Tacit knowledge provides wide latitude to frame, interpret, and creatively solve problems [4, 16, 33, 37] and is deeply embedded in an individual's skill repertoire [3]. Tacit knowledge is focused on know-how—that is, being able to apply explicit knowledge in a competent manner. Over time, as an individual continues to apply tacit knowledge, additional competency is developed through the enrichment of know-how [2, 3, 19].

Domain competency requires understanding the elements of the domain (explicit knowledge) and successfully applying them (tacit knowledge), and so, to be consid-

Table 1. Typology for Categorizing IS Knowledge

Type of knowledge	Component	Specific elements
Explicit	Technology	Current and emerging technologies Current technology assets Competitors' use of technology
	Applications	Current and emerging applications Current assets
	System development	Development methodologies Project management practices
	Management of technology	IS planning and business deployment Resource allocation
Tacit	Experience	Personal use of computers IS project management experience Management of IS
	Cognition	Process adaptiveness Vision of the role of IS in the organization

Source: Bassellier et al. [3].

ered competent, an IS consultant needs explicit and tacit information technology and systems knowledge (see Table 1) as well as other domain-specific knowledge sets, such as client industry knowledge (e.g., health-care industry).

The knowledge required for IS consulting projects can be mapped using this tacit versus explicit typology, along with the types of projects typically associated with different levels of tacit and explicit knowledge. As shown in Table 2, complex implementation projects are more similar to complex strategy projects than they are to simple implementation projects. Both complex implementation and strategy projects require high levels of tacit and explicit knowledge while a simple implementation project may require low levels of both. Implementation and strategy projects can use varying levels of explicit and tacit IS knowledge; hence, a knowledge-based orientation yields insights that are obscured by simply focusing on the end product.

Information is rarely fully and equally shared between the participants in a consulting engagement, and participants have different levels of information about other participants and knowledge itself [22]. If asymmetric information exists—that is, if one party has more knowledge (tacit or explicit) than the other party—it creates a market problem and, left unconstrained, drives out high-quality goods/services and honest competitors [1]. Asymmetric information is common in IS consulting engagements and indeed should be expected (see Table 3).

Signaling and screening are approaches to the problem of information asymmetry [1]. In signaling, the party with the information advantage, often in hopes of inducing a higher price, conveys meaningful information about itself to the other party [36]. For example, IS consulting firms often advertise their CMMI (capability maturity model integration) maturity level as a signal of their ability to deliver high-quality work. By

Table 2. IS Consulting Knowledge Typology

Tacit IS knowledge	Explicit IS knowledge	
	High	Low
High	<p>Very complicated projects:</p> <ul style="list-style-type: none"> • Implementation: complex enterprise-wide application spanning numerous divisions, which requires significant knowledge of systems development (explicit) and cognition (tacit). • Strategy: development of an enterprise information security strategy, which requires significant knowledge of applications (explicit) and cognition (tacit). 	<p>Broad but not deep consulting projects:</p> <ul style="list-style-type: none"> • Implementation: data quality-oriented projects that are focused on processes and people rather than technology. Need low knowledge of technology (explicit) but significant experience (tacit). • Strategy: sweeping strategy projects encompassing the organization but are not technology-centric, which requires low technology knowledge (explicit) but significant cognition (tacit).
Low	<p>Deep but not broad consulting projects:</p> <ul style="list-style-type: none"> • Implementation: implementing security-based technology, such as a firewall, which requires high knowledge of applications (explicit) but low levels of cognition (tacit). • Strategy: developing an upgrade plan for a current technology, which requires high knowledge of applications (explicit) but low levels of cognition (tacit). 	<p>Simple projects:</p> <ul style="list-style-type: none"> • Implementation: development of a basic spreadsheet application, which requires low knowledge of systems development (tacit) and low levels of experience (explicit). • Strategy: development of a basic feasibility assessment for an uncomplicated application, which requires low knowledge of applications (tacit) and low levels of experience (explicit).

Source: Bassellier et al. [3].

signaling, the consulting firm aims to induce clients to pay a higher price for services based on the expectation that CMMI maturity level has a relationship with project success. However, a client may also signal to the consulting firm, with the hope of obtaining a lower cost for the requested services. For example, a client may signal that its organization is supportive of a proposed major system implementation to induce the consulting firm to bid a lower price for the work based on the assumption that the change management required for the effort will be modest rather than substantial.

Table 3. Client-/Consultant-Favored Information Asymmetry in IS Consulting

Holder of information asymmetry advantage	Explicit knowledge examples	Tacit knowledge examples
Consultant favored	Knowledge of emerging, envisioned technology or application Access to additional knowledge about a new or planned product or approach Competitor's use (or planned use) of a new technology State-of-the-art project management techniques	Deeper base of experience with a particular new/emerging technology Greater breadth and depth of technology experience More experience in process adaptiveness More broad experience on how technology could be employed at the client organization
Client favored	Knowledge of current assets or applications at the client organization Knowledge of skills of internal staff Current resource allocation	Better understanding of the current process and environment More insight into change management issues associated with service delivery within the organization Understanding the organizational culture and climate

While the firm with the information advantage signals, the party that lacks suitable information initiates screening. In screening, the information-disadvantaged firm attempts to learn about the other in order to judge its suitability [38]. For example, a client firm may ask a consulting firm to provide references in order to understand how successful the consultant had been when working on other projects. Based on this information, the client can screen out firms that it believes could not perform effectively. Similarly, consulting firms also screen potential clients to attempt to determine the required effort for an engagement. If the consulting firm overestimates the required work, it will bid too high and, given a competitive procurement, will likely lose the work (or shock the client). If the consulting firm underestimates the effort, it will bid too low and lose money on the engagement. Despite signaling and screening, opportunism continues to flourish in conditions of information asymmetry, particularly because of the difficulty of signaling and screening tacit knowledge.

Opportunism

The original conceptualization of opportunism focuses on blatant opportunism, which constitutes a formal contract violation [42]. Blatant opportunism can be active or passive and can occur before the contract is signed or during contract execution.

Active blatant opportunism is the deliberate misrepresentation of facts, while passive opportunism means withholding critical information, even when requested. Shirking, the deliberate withholding of expected effort, is also a form of passive opportunism, although it involves withholding effort rather than information [42]. There is considerable evidence that blatant opportunism (in all its forms) is commonplace in new and ongoing relationships.

Opportunism studies also deal with relational contracts, which are social contracts that often remain incomplete in the formal sense but are legally enforceable [42]. There is considerable ambiguity in defining what constitutes a violation of a relational contract, but the dominant perspective considers opportunism to have occurred if a given action is “contrary to the principles of the relationship in which it takes place” [23, p. 1024]. Specifically, a given action might constitute a violation within one relational contract but not in another, based on the prevailing relationship norms.

Relational contract violations occur in two forms: the inequitable sharing of emerging benefits and burdens and unilateral use of power. Partners in a relational contract might expect to share benefits and burdens, but they can be opportunistic by attempting to assign these benefits and burdens inconsistently under the relationship’s norms. For example, if two parties in a relationship have historically split the cost of buying computer software equally, it creates a presumption that the benefits from the software would also be equally shared. Any attempt to claim more than an equal share would be considered a violation of a relational contract. As to the norm of unilateral use of power, it restrains parties from excessive value-seeking behaviors. For example, one partner would be considered opportunistic in a relational contract for independently attempting to include a new partner in the relationship in order to shift the power structure. In both cases, opportunism in relational contracts presupposes violation of an existing relationship norm. Opportunism is a key feature of relationships, and agency theory offers insight into constraining opportunism. However, it relies on certain assumptions that are not relevant to IS consulting.

The Difference Between Agency Theory and Principal–Professional Perspectives

Agency theory posits that the agent (the person performing the work) might behave opportunistically if the agent’s goals conflict with the principal’s [16]. Agency theory focuses on creating an optimal contract that balances risk and cost [6]. Principals can monitor or meter an agent to prevent opportunism [44]. To monitor an agent, a principal can invest in mechanisms to oversee agent performance and reduce information asymmetry, which would otherwise favor the agent. The principal seeks to create a contract that specifies the desired behaviors of the agent and invests in an information source (such as a supervisor) to oversee the agent. Monitoring assumes that the principal can, within a reasonable price, obtain sufficient information to reduce agent opportunism. If the principal is unable to purchase such information, metering can be tried. Metering creates and enforces an outcome-based contract that precisely specifies the agent’s desired work product. While an outcome-based contract does not reduce the

agent's information advantage, it shifts the burden to the agent to perform consistently within the principal's goals. Such an arrangement assumes that the principal has the power to envision, create, and enforce specific agent outcomes, and that the agent is powerless to resist the contract [35].

Agency theory falters if the agent is a professional [35]. Professionals apply a specialized body of abstract knowledge to problem solving and share "a relatively permanent affiliation, identity, personal commitment, specific interests and general loyalties" with their ilk [19, p. 11]. They enjoy wide latitude in defining their work, the scope of the problems addressed, and the process through which a problem is solved [35]. Principals who are not professionals are incapable of independently solving the problem in its entirety; instead, principals require external professional guidance. As a result, they are challenged to protect themselves against "incompetence, carelessness and exploitation" [8, p. 41], and it is impractical for those outside the profession to control or regulate the professional's actions.

Physicians are commonly studied as examples of professionals. It is difficult for nonmedical professionals to assess the quality of medical care received. Consequently, patients frequently obtain second opinions to better evaluate service quality. Other similar professionals include management consultants, lawyers, and engineers [35]. While not every profession has identical challenges (e.g., the effects of poor treatment by a physician lead to more consequential and visible failures than poor advice from IS consultants), it is information asymmetry that differentiates professionals and nonprofessionals.

Because agency theory is focused on the contract as the control mechanism, it implicitly assumes that explicit knowledge is the dominant knowledge base and, because explicit knowledge can be codified, also assumes that a specific contract can be prepared to adequately measure the final product (outcome-based contract) or the process (behavior-based contract). Finally, agency theory assumes that both parties have sufficient and symmetric knowledge and can come to agreement on a specific engagement contract. Agency theory reasons that it is unlikely that a party will consent to a contract if it lacks the ability to determine if the other party fulfills its legal obligations.

Rapid technological changes surrounding IS strategy and implementation work often make it difficult for a client IS manager to manage IS consultants. Clients, who have limited exposure to consultants, likely operate at a distinct information disadvantage. For example, a client IS manager might negotiate a large systems implementation task only once or twice in the span of a career, while a partner at a major consulting firm might negotiate multiple contracts a week. As a result, the IS client (principal) might be knowledgeable about IS efforts but lack sufficient knowledge of IS in a consulting environment, which would greatly inhibit the ability to negotiate a fair contract or monitor performance. By contrast, clients also can hold an information asymmetry advantage because they have information about their organization that could be germane to the consultant, yet may withhold details in an attempt to gain a more favorable contract. For example, a client could be aware of staff resentment toward a new system and may withhold that information in order to get the consultant

to commit to a lower bid. By providing less than full disclosure, the client might get the desired work (a completed system) for a lower price than by revealing all. The consultant, by dint of not knowing the client's organization, can fall victim to a lack of information—an example of client-favored information asymmetry.

The final difference between principal-agent and principal-professional is co-production, which focuses on the client's involvement in the specification and delivery of services and suggests that, without client participation, the service cannot be performed [28]. A principal-professional engagement requires mutual collaboration. In this scenario, "clients or customers of service organizations are indispensable to the production activities of the professional organization . . . [and] output emerges from the coordinated effort of the both service employee and customer; it comes from a social situation that involves at least an exchange of information" [26, pp. 726–727]. A key aspect of co-production is that mutual risks, promises, services, and expectations exist, and without the participation of both parties, the likelihood of success diminishes. Co-production creates a social relationship between the two parties and leads to the emergence of issues such as social exchange, attraction, and trust [35]. Active coordination of service delivery is not easily captured in agency theory because it "neither describe[s] nor predict[s] the behavior of principals . . . engage[d] in high levels of collaborative problem solving" [30, p. 836].

Social Constraints

While agency theory uses contracts to control opportunism, the principal-professional lens eschews them in favor of socially focused methods of constraint—self-control, community control, bureaucratic control, and client control [35]. *Self-control* argues that a professional, rather than being motivated by self-interest, takes pride in performing the craft and will engage in self-control, which suggests that altruistic tendencies function as a constraint. However, professionals have been found at times to be more opportunistic than altruistic [35]. *Community control* relies on a professional body of community experts to provide normative oversight of its members. Community control exists outside of the formal contract, since the community is not a formal party to the relationship. The exemplar of this type of community control is the medical board for physicians. Since it recognizes that nonphysicians are unable to accurately evaluate the quality of medical services performed, the medical board sets normative standards and maintains sanctioning ability but has extremely little control over medical personnel who are not members of the community. *Bureaucratic control* is provided by a professional's firm, which, if run by members of the same profession, can provide a restraint on opportunism. For example, a firm might have a quality control process to ensure that the work is performed according to its standards. *Client control* entails the principal's organization hiring other specialists to oversee the professional agent. For example, a client might hire a project management specialist from another consulting firm to provide oversight, which would be analogous to a patient obtaining a second opinion. Within the IS domain, scholars have remained focused on the contractual controls of agency theory, and no known studies have examined the applicability of

the social controls suggested by the principal–professional lens. As a result, we do not know if these controls constrain opportunism by professionals.

Gaps

Serious gaps remain in understanding information asymmetry and constraints in the IS consulting domain. First, it is not clear whether agency theory’s legal orientation or principal–professional’s social orientation is more successful in constraining opportunism. This leaves important theoretical and practical gaps. Most previous studies of the principal–professional have focused on controlling professional opportunism [35]. Although both parties might have an incentive to be opportunistic, no known studies have considered principal opportunism in such relationships. In a consulting project, both the consultant and client may be favored by (or be a victim of) information asymmetry. For example, a principal could willfully conceal the vacation or job transfer plans of a key informant for a new system to mislead the consultant to induce a lower price, while the consultant could take advantage of client naiveté with a new technology. Because information is not symmetric, both parties can be opportunistic, but this duality of information asymmetry has not been previously examined in the context of IS consulting or other similar domains. Instead, research has generally assumed that the client has no incentive to withhold information and has ignored the myriad reasons why it benefits a client to withhold pertinent facts.

Second, even if prior studies on principal–professional opportunism eschew legal constraints [35], both IS strategy and implementation engagements also use contracts. It is not clear if the formal contract is merely a legal requirement and lacks any capability to constrain opportunism, or if it lends a measure of control that is not covered by social constraints. This lack of understanding leaves an important gap in the understanding of the potential for formal contracts (from agency theory) and social constraints (from principal–professional perspectives) to function together.

Third, studies of professional opportunism assume the existence of an established professional community with the ability to formally sanction members. However, IS consulting does not require membership of a formal community and therefore lacks this restraint on opportunism. Although many IS consultants associate with a strong informal professional community, the power of such communities has not been explored as a possible constraint for either IS implementation or strategy consultants.

Fourth, the role of information asymmetry in selecting constraint mechanisms has not been previously examined. It is impractical to acquire all the tacit and explicit knowledge necessary to execute an IS consulting project, and it is equally impractical to apply all possible constraint mechanisms to reduce opportunism. There clearly needs to be a balance between information asymmetry and constraining opportunism, but no theoretical or practical models exist. Table 4 summarizes the strictures of agency theory and the principal–professional lens as it relates to IS consulting and highlights the gaps that exist.

IS consulting does not allow for the simple combining of agency theory and the principal–professional lens. Theoretical assumptions between the two perspectives

Table 4. Comparison of Theoretical Bases

Dimension	Principal-professional	Principal-agent	IS consulting domain
Problem domain	Relationships in which the principal and the professional agent engage for a knowledge-intensive task, have differing risk preferences, and exhibit partial goal conflict	Relationships in which the principal and the agent have partly differing goals and risk preferences	Relationships in which the client and consultant have co-production responsibilities and information asymmetry can be bilateral
Type of knowledge	Mainly tacit	Mainly explicit	Tacit and explicit
Information market assumption	Incomplete market for knowledge	Information as a purchasable commodity	Information can either have an incomplete market for abstract knowledge or can be purchased
Human assumptions	Professional prone to opportunism	Agent prone to opportunism	Client and consultant prone to opportunism
Organizational assumptions	Co-production of services	Principal delegates task to agent	Co-production of services
Constraint assumptions	Social constraints on professional	Legal constraints on agent	Unknown

Source: Inspired by Sharma [35].

conflict, and even if the assumptions are relaxed, some critical considerations are not addressed in either theory (e.g., signaling/screening). While agency theory and the principal–professional lens can offer insights, numerous gaps remain in understanding the role of information asymmetry in establishing constraints in IS consulting engagements. Practically, we have limited information on what constraints are applied, and, theoretically, we do not have a conceptual framework for understanding how the forms of information asymmetry in a principal–professional relationship determine constraints. The unique characteristics of IS consulting make it an ideal context to examine the identified gaps.

Research Method

GIVEN THAT OPPORTUNISM IN IS CONSULTING is a poorly understood phenomenon, we sought a research method that would allow for in-depth insight and theoretical development. We conducted a field study based on a “soft positivism” approach [24]. In agreement with this approach, we explored a preexisting, objective phenomenon (consistent with the positivist view) while also uncovering potentially relevant, new constructs (consistent with the interpretive view) [13]. As such, our approach was not limited to uncovering existing constructs but, like that of interpretivists or grounded theorists, was also designed to surface constructs that were not originally envisioned [13, 24]. Because the phenomenon under study (opportunism in IS consulting) is relatively stable and can be objectively observed, while also being understudied, this approach was deemed particularly appropriate.

Research Domain

The public sector is the domain of examination, and we chose this for three reasons. First, it is an extremely large and lucrative segment of the consulting domain [10], and we expected that we would find numerous instances of opportunism within this domain. Second, the public sector uses a relatively common process to hire consultants, and this enhances the comparability of stories and constraints. Finally, clients and consultants in the private sector are frequently bound by “nondisclosure of information” forms, which enact substantial penalties for revealing anything that took place within a project. Fortunately, the public sector, which operates under full disclosure (sunshine laws), generally does not apply nondisclosure requirements to clients or consultants, and this frees both parties to share openly without fear of incurring penalties. For these three reasons, the public sector is an interesting and appropriate site to conduct our research. The unit of analysis is an opportunistic act between an IS consultant and the public-sector client.

Data Collection

Data collection involved interviewing 15 participants, all of whom had been directly involved with numerous IS implementation and strategy projects, and asking them

about situations they had witnessed in which one party (or both) committed a self-interested act with an intent to deceive the other, a definition consistent with opportunism. Together, the participants commented on a total of 85 different opportunistic acts. There was approximately equal representation of acts in which the consultant was opportunistic, the client was opportunistic, or both were opportunistic. The number of interview participants was not established a priori; rather, interviews were conducted until theoretical saturation was achieved [7, 9, 13]. To be selected in our study, participants had to have deep experience in public-sector IS consulting. Specifically, we only considered participants who had a least ten years of experience as (or interacting with) an IS consultant, either on implementation or strategy projects. Consultants and clients are often accused of having a revolving-door relationship, and virtually all of our interviewees had experience as both a client and a consultant as well as experience in both strategy and implementation projects. Hence, they were uniquely suited to have seen the opportunistic acts from both the client and consultant viewpoint on a wide variety of projects.

Details about the sample appear in Table 5. Interviews lasted between 45 and 60 minutes and were conducted by telephone due to geographic constraints. The interviews were taped-recorded (with the participant's permission) and later transcribed. They were semistructured to allow greater discovery to occur and to avoid inadvertently restricting discovery. The same interviewer (the first author) conducted all the interviews and the second and third authors reviewed the resulting transcripts and coding.

Social desirability bias is always possible when interviewing on sensitive topics, and so we only discussed opportunism observed in others by the participants rather than attempting to induce them to disclose their own opportunism. We limited our discussions to those incidents of which the participant had direct rather than secondhand knowledge to reduce inaccurate or sensationalized understanding of the situation. We asked respondents to provide stories of opportunistic acts that they had seen. Respondents were also asked to specifically identify the source of the opportunistic behavior (client or consultant) but were not asked to identify the individual by name. We believe that this approach was necessary to get respondents to share stories of opportunism, but it also prevented the possibility of using secondary data to triangulate results. In addition, approximately 100 public- and private-sector consulting agreements (contracts, statements of work, letters of intent, etc.) were reviewed to get a better understanding of the contractual relationships existing between consultants and government agencies.

Data Analysis

Data analysis was done in four steps. In the first step, we developed an initial coding scheme based on the constructs used in agency theory and the principal–professional lens, as they help define the initial topics and areas for fieldwork (Table 6). In the “Theoretical Model” section, we return to refine, clarify, add, or dismiss these initial theoretical formulations.

Table 5. Exploratory Participants' Background

Category	Participant background
Work experience	Consultants (8) Government (4) Both (3)
Gender	Male (10) Female (5)
IS consulting experience	Strategy (15) Implementation (15)
Years of experience with IS consultants	11–35
Type of public-sector experience	Federal only (3) State/local only (4) Federal/state/local (8)
Work experience	Consultant only (1) Client only (2) Both client and consultant (12)

In the second step, the transcripts were compared and contrasted based on the respondent's role. This was fundamental to understanding if opinions varied according to the participant's primary work experience (e.g., consultant, client, or both). In the third step, we coded the transcripts based on the initial set of codes and added new ones as necessary. Through coding, we learned more about the attributes of opportunism, knowledge types, and constraint mechanisms. Upon further analysis, we uncovered a new construct, which we termed *contract specificity*, as being very relevant to opportunism in the context of IS consulting. We defined contract specificity as the extent to which either party can unambiguously measure the success of an engagement. It was also in this phase that we started developing a model conceptualizing opportunism in IS consulting, which kept evolving as we further coded and reflected on our data. Finally, we created our interpretation of the interviews and collated our findings into a comprehensive model that we compared to our initial theoretical expectations [7, 47].

Results

Prevalence of Opportunism

THERE WAS SURPRISING UNANIMITY ON THE PERVASIVENESS of opportunism by IS consultants, and most consultants agreed that it existed and was a serious problem.¹ One consultant asserted, "I don't think there is an SI [systems integration] vendor out there that I haven't seen be opportunistic." Another consultant, when asked how prevalent a particular opportunistic pricing practice was, said, "I'd say they're all guilty of it. It is done with an intent to deceive." One client, when asked about how many consulting firms in her market space were opportunistic, said, "[Of the 20 firms] I'd say the category of being completely trustworthy is the smallest. I'd say there are only about

Table 6. Summary of Initial Assumptions

Rationale	Assumption	Attribute
Forms of opportunism	Both the consultant and client may violate formal contracts	Active Passive
	Both the consultant and client may violate relational contracts	Sharing of benefits and burdens Use of power
Timing of opportunism	Violations may take place throughout the relationship	Ex ante Ex post
Formal constraints on opportunism	Contracts might provide some constraint on opportunism	Formal Relational
Social constraints on opportunism	Social sanctions might provide some constraint on opportunism	Self-control Formal community control Bureaucratic control Client control Informal community control
Direction of information asymmetry	Information asymmetry may favor either party	Client favored Consultant favored
Signaling and screening	Signaling and screening could be done by either party	Signaling Screening
Sources of opportunism	Opportunistic acts can be performed by either the client or consultant	Client opportunism Consultant opportunism

four of those. I would not want to do business with ten of those firms and the rest are in between.” In each case, information asymmetry favoring the consultant was a necessary condition for opportunism to occur.

A number of participants noted that client opportunism was frequent. One consultant said,

The client takes advantage of the consultant in that he wants the most work for the least amount of money that he possibly can have. In some cases, they will hide or obscure problems or issues or say that they have more than they do . . . to get you onboard or interested.

One consultant described client opportunism this way:

[Opportunism] looks like increasing scope knowingly and then holding the vendor [consultant] accountable with essentially threats of nonpayment or termination or intransigence in a “thou shalt do this” or else I will be very unhappy with you for a long time.

Respondents readily identified times when clients and consultants were opportunistic, and, in some cases, frequency of opportunistic acts was surprisingly high (e.g., every firm in the industry). Williamson [46] argued the opportunism was neither ubiquitous nor rare; if anything, we find he was unduly optimistic.

Signaling and Screening

Numerous respondents surfaced the role of signaling and screening in IS consulting relationships. One client said about signaling and screening:

It's a human element of people to want to tell you the best things about their company, about how the project is going to work and you [evaluate based] on the best information that you have. There's a responsibility on the other side to the person [doing the] evaluating to say, "well, is this person completely accurate in what [he is] saying? [Is he] being overly optimistic in something like that?"

One consultant commented on what happens if screening is not adequately performed by saying:

[Because] of the contracting process, you don't get the opportunity to really do a full due diligence prior to putting in a fixed price bid. And because you can't do that full due diligence that means there's a risk.

One client described how screening results are used by suggesting:

If you understand that this is going to be a difficult person to deal with, you're going to have to build that into your project plan and your costs.

One consultant described a screening episode:

I recall one very specifically where a person from an oversight agency got up at the bidder's conference and said this is for such and such organization within our enterprise but I'm in charge. And this is mine and I'm going to make it successful and you all are going to be working for me. And it was this attitude that you knew right off the bat. . . . He was trying to do this to put a notch on his belt and show how tough he could be on the consultants. And for that reason . . . we made a very strategic decision to not bid.

Another consultant offered the following advice to clients on how to interpret signaling:

From the get go, I think they need to do a little bit of homework. Number one, they need to first understand what the problem is—why are they engaging a third party, number one. And number two is they would also need to do some investigation and some background check on this firm. And maybe do some reference checks and check their [qualifications], check their peers. Are there any other [places] that you've done this type of work, for example? Can we call [company X] and interview them prior to engaging this third party. So those kinds of due diligence in the get go, before awarding a contract, could really significantly decrease the risk of engaging a bad partner.

Although these respondents did not connect signaling and screening with constraint mechanisms, it is clear that they view these functions as integral to the IS consulting relationship and specifically to the level of information asymmetry. Both clients and consultants signaled and screened; this supports the idea that both parties can

simultaneously have advantageous information asymmetry, although the type of information may differ. Signaling and screening appeared to address both tacit knowledge-based and explicit knowledge-based information asymmetry. That is, signaling and screening were not limited to one type of knowledge or to any particular project type (strategy or implementation).

Constraints

Constraint mechanisms vary based on the entity needing the protection (consultant versus client), level of contract specificity, and level of information asymmetry. Relying solely on agency theory, one would expect that contracts, which existed for every incident reported, would be sufficient to constrain opportunism by clients and consultants. Relying solely on the principal–professional lens, we would expect that if a contract existed, it would lack any ability to constrain client or consultant opportunism and would not be mentioned as a constraint. Contracts are required for public-sector procurements and also commonly used for private-sector ones. Contractual documents all have two parts—a description of the process and a description of the deliverable—and these neatly align with the behavior-based and outcome-based contracts (respectively) described in agency theory. However, the robustness of the required process and outcome vary widely, mainly based on the type of knowledge required for the project. Table 7 summarizes an analysis of the contracts. We notice a relationship between contract specificity and knowledge type. This review indicates that contract specificity—and therefore enforceability—varies by the amount and type of knowledge used in the engagement.

Legal constraints (agency theory) and social constraints (principal–professional lens) are both used, but unexpected constraints also emerged. We observed that respondents generally described varying conditions of high and low client or consultant information asymmetry. Incidents were identified in each of the quadrants, and we capture the general theme of each condition in Figure 1. In addition, respondents also repeatedly referred to an additional dimension of contract specificity within each of the quadrants, and we use that framing to present our results.

Matched Low Information Asymmetry

Matched low information asymmetry (Figure 1, cell 1) occurs when the client and consultant both hold low levels of information asymmetry advantage. As a result, both have similar information, and so this quadrant represents a relatively low risk of opportunism, and this is reflected in the particular constraints chosen for projects with high and low contract specificity.

High Contract-Specificity Projects

In conditions of matched low information asymmetry and high contract specificity, both clients and consultants are likely to feel comfortable that they know the salient

Table 7. Contract Analysis Examples

Tacit IS knowledge	Explicit IS knowledge		
	High	Low	Low
High	<ul style="list-style-type: none"> Highly complicated strategy and implementation projects. Major system strategy and implementation project (\$20 million). The statement of work had a long but high-level and conceptual description of the required process and approximately 750 line items of expected outcomes (deliverables and requirements). The requirements were well specified and clear. System is partially implemented. Specification of the tacit component is subjective but doable. Specification of explicit components is uncomplicated and there are no disagreements regarding the consultants' and clients' achieving (or failing to achieve) the outcome measures. 	<ul style="list-style-type: none"> Broad but not deep consulting projects. Development of a new organizational structure for a technology department (\$2 million). Statement of work had a two-page description of the required process and a one-paragraph description of the final deliverable. The contract was largely focused on the desired organizational outcomes from the redesign (e.g., more efficiency and better career paths). Specification of the tacit component is subjective and difficult to measure. The client and the consultant agreed that the work has been satisfactorily performed. Specification of the explicit component is fairly simply because it just required that a final deliverable would be prepared and presented to three groups of top management. Simple projects. 	<ul style="list-style-type: none"> Development of reports using Crystal Reports (\$75,000). The statement of work had two to three paragraphs describing the process and approximately three to seven requirements for each requested report. Specification of the tacit component is cursory (at best), given the abbreviated process definition. Specification of the explicit component is clear, although only a few detailed requirements are present.
Low	<ul style="list-style-type: none"> Deep but not broad consulting projects. Development, monitoring, and maintenance of a fiber optic network (\$1 million). The statement of work had a two- to three-paragraph description of the process and approximately 125 requirements and service-level agreements. The network is partially implemented. Specification of the tacit component is cursory (at best), given how abbreviated the process definition is. Specification of the explicit component is detailed and clear, including specifying numerous service-level agreements and possible exemptions. 		

		Client	
		Advantageous Information Asymmetry	
		Low	High
Consultant	High	<p>3</p> <p>Consultant has significant information advantage over client. Most often occurs with experienced consultants and novice clients.</p>	<p>4</p> <p>Both client and consultant have significant advantageous information asymmetry. Most often occurs in new consulting relationships.</p>
	Low	<p>1</p> <p>Neither client nor consultant has any significant information advantage. Most often occurs in a recurring relationship.</p>	<p>2</p> <p>Client has significant information advantage over the consultant. Most often occurs when the client is a former consultant and knows the consultant's approach.</p>

Figure 1. Typology of Information Asymmetry

facts about the project and are capable of creating clear and unambiguous measures of project success. As a result, both clients and consultants rely on the formal contract to provide a measure of constraint on the other party. If the consultant and client can, *ex ante*, describe performance expectations in the contract, it puts the other party on notice and, *ex post*, can provide sanctions for opportunism. One client described the formal contract his organization developed for a large implementation project by saying, “[The system requirements] were very highly detailed. . . . It was a very time-consuming process and I think we spent a couple of months to analyze four responses.” Another consultant said that the advantage of a highly specific implementation contract was that it “drove out ambiguity and risk,” and another said that “it would give the bidder a better, stronger and more accurate understanding about the core business and what is needed to be done.”

Bureaucratic control is an embedded resource available to the client and, when in situations of low consultant advantageous information asymmetry, adds a constraint without the additional cost of a third party. One client described the consulting firm's bureaucratic process saying, “The firm that we hire, every project that they work on the firm's own internal audit division, will come in at least twice a year and audit the project. . . . The firm sort of polices itself during the process.” Another consultant added,

I think there is significant value in it. If anything, what I'm seeing more and more is companies that are getting recognized for that. And they're looking for it in bids. [A consultant] is more likely to lie to his customer, yeah, I would say yes. Because [his] quality control boss is smarter, [he] is more on top of what's going on.

In summary, clients referenced formal contracts, bureaucratic controls, and the informal community as constraining opportunistic acts by the consultant, while the consultant relies on the formal contract and the informal community. Because of the low information asymmetry, neither feels the need to enact additional controls, perhaps reasoning that additional cost is not beneficial.

Low Contract-Specificity Projects

For these projects, the client and the consultant have low levels of information asymmetry; however, the knowledge required is not easily captured in a contract. One consultant described it this way:

[Suppose] a client asks for a high-level IT strategic plan. Well, because I say high-level and I don't necessarily delineate or define the levels of strategy that I'm going to provide you, at the end of the day, whatever I give you is high-level. So, that could be a ten-thousand-foot view of IT strategy or it could be the five-hundred-foot view of IT strategy.

Another consultant added,

Deliverables tend to be a little more vague since they are harder to describe. In other words, it is really hard to put into words exactly what the client is going to get.

Lacking the ability to use a formal contract as an effective constraint, consultants and clients rely on the informal community, which was frequently mentioned as an effective constraint. Several consultants commented on the "incestuous" nature of the IS informal community. One consultant said, "The industry is so small that it doesn't take long to find out about a person." Another consultant said, "It is an effective constraint because I know that the circles that I run in tend to overlap so I wouldn't want my reputation to get out there that I was opportunistic or played the game dirty." The informal community represents a readily available and efficacious resource and is a natural outgrowth of the social interaction within the client and consultant community. Due to the close-knittedness of the informal community, clients and consultants can use it *ex ante* to validate the reputation of the consultant/client or *ex post* as a threat to prevent opportunistic behaviors. In summary, both clients and consultants only find the informal community to be an efficacious constraint in low contract-specificity projects.

Client-Favored Information Asymmetry

Client-favored information asymmetry (Figure 1, cell 2) occurs when the client is very familiar with the work that the consultant provides but the consultant does not know the client very well. This situation may result when the consultant is new to a particular market but the client is familiar with the consulting firm or the type of service to be provided. Most often this occurs when the client leader is a former consultant—particularly if the consulting firm is the client leader's former employer.

High Contract-Specificity Projects

For high contract-specificity projects in this quadrant, consultants react to their disadvantageous information asymmetry by creating a detailed formal contract to provide an additional constraint. A consultant may add contractual clauses or assumptions to more closely specify acceptance criteria or turnaround dates for the review of documents. These clauses protect a consultant from a client who is trying to receive additional services that the consultant does not intend to deliver. Clients and consultants differentiate the type of formal contract that they would create under conditions of high and low information asymmetry. One consultant said,

As I evaluate and pursue new clients, I gauge the client's likelihood to change direction mid-project and develop the scope accordingly. For clients that I have a high degree of comfort with, I am more likely to develop a contract with more flexibility. For those that I am apprehensive towards, I am more likely to develop a detailed contract with sufficient controls (i.e., assumptions) in place to be able to hedge against scope creep.

Another described a detailed process that he goes through if he believes the client could take advantage of him by saying,

I would be very specific in terms of the deliverable(s) to be developed as a result of the engagement (size of deliverable document, outline of document, level of detail in document, etc.). More importantly, I would be very specific about the process by which these deliverables would be developed.

Another consultant said, "Basically, you want to create a very detailed statement of work and then stick to it." One consultant, when asked about the value of highly detailed formal contracts, said,

[The more] you can nail down in detail, the better. I've had clients before who, if you leave it with anything vaguely worded, then they'll take advantage of it and ask you to do additional work. So what I like to do is to be very specific and detailed on what deliverables the client is going to get and get their sign-off [on it] up front. If you leave it ambiguous, then some clients will take advantage of it and they'll try to milk a fixed-fee contract for all they can get out of it.

Based on what both clients and consultants stated, a highly detailed formal contract differs from a regular formal contract in terms of its specificity and number of assumptions, its processes, measurement of outcomes, and overall level of detail. By creating a highly detailed formal contract, clients and consultants are reacting to high levels of disadvantageous information asymmetry for one party. Clients, having an information advantage, do not need to enact any new constraints and so rely on the same constraints as in the "matched low information asymmetry" (Figure 1, cell 1). In summary, clients rely on a formal contract, bureaucratic control, and the consultant's informal community, whereas consultants rely on a detailed formal contract and the client's informal community.

Low Contract-Specificity Projects

For low contract-specificity projects, the consultant does not have additional constraints to deploy beyond those in “matched low information asymmetry” (Figure 1, cell 1) and must continue to rely on the informal community for these projects. The consultant’s other choices are not efficacious. The client does not feel the need to implement any additional constraints over those of matched low information asymmetry because the level of information asymmetry remains the same. Hence, the client continues to rely on the formal community, bureaucratic control, and the consultant’s informal community as efficacious constraints.

Consultant-Favored Information Asymmetry

Consultant-favored information asymmetry (Figure 1, cell 3) results when the consultant is familiar with the client but the client is unfamiliar with the consultant or the desired services. The client is in the more vulnerable position and enacts additional measures to constrain opportunism. This is a common situation, particularly with a client who does not frequently hire consultants. It can also result from a revolving-door policy in certain industries (e.g., U.S. federal government agencies). In those cases, a consulting firm may hire former clients with an expectation that they will sell and deliver services to their former employer (client firm).

High Contract-Specificity Projects

For high contract-specificity projects, the consultant continues to rely on a formal contract and informal community, but the client adds detailed formal contracts and client control (an informed third party) to constrain the consultant. For clients, a detailed formal contract may include hundreds of highly detailed requirements or service-level agreements that the consultant must meet. One client noted that the extra conditions, placed in his formal contracts for a particularly large and risky effort, included a \$50,000 penalty established for each key person the consulting firm removed from the project. When asked if he would have applied it, he claimed, “Absolutely. If it were necessary, if they were going to remove one of those key people without my permission, I would have penalized them \$50,000.” Because detailed contracts can be highly efficacious, clients can detail outcomes or behaviors that address the information asymmetry.

Clients have an additional effective constraint. They can make use of a third party (client control) to oversee the actions of the consultant. Some government organizations, such as the state of California, mandate the use of client control for all technology projects over \$1 million. Unlike bureaucratic control, client control has an incremental cost and perhaps that is why it is only applied in conditions of high consultant advantageous information asymmetry. Every respondent who emphasized the value of such oversight felt it provides strong evidence of the professional nature of IS consultants. One client said, “the oversight person [from a third-party consulting firm] provides a lot of prior experience of how projects are progressing and helps identify issues that

could be problems on how to resolve them.” One consultant said, “[A consultant] is more likely to lie to a client. The quality control contractor is smarter and more on top of what is going on. I don’t mean to say that the [client] person isn’t smart, but the quality control person is trained to do this stuff and the [client] person is probably not.” Another said, “[A third-party oversight consultant] knows the games another consultant will play.” In summary, clients rely on a highly detailed formal contract, client control, bureaucratic control, and the consultant’s informal community, whereas consultants, who hold the information asymmetry advantage, rely on a formal contract and the client’s informal community.

Low Contract-Specificity Projects

On low contract-specificity projects, clients and consultants continue to use the informal community; however, clients use the consulting firm’s bureaucracy as an additional constraint. This bureaucracy results from the nesting of the consultant in a consulting firm, and use of this constraint suggests that only another deeply immersed consultant is capable of fully understanding the details of the project. The selection of bureaucratic control suggests that the client believes that the consultant is more likely to attempt to mislead a client rather than the consultant’s management, and as a result, bureaucratic control can be effective. As one consultant said, “I think very effective and successful programs have real [internal] quality reviews where they actually look at the products that are being produced and a time of where they are and compare that to what was originally bid and take action.”

Mutual High Information Asymmetry

Mutual high information asymmetry (Figure 1, cell 4) is the case when a consultant provides new services to an unfamiliar client. This might occur when a consultant is trying to enter a new market. For clients, this can happen when the client firm typically performs work in-house but, as a result of a special need, hires a consultant. During the time period leading up to the year 2000, many clients used consultants for the first time in order to address this novel issue. As a result, both the client and the consultant were disadvantaged by information asymmetry, and both enacted high levels of constraints.

High Contract-Specificity Projects

On high contract-specificity projects, the client and consultant continue to use the informal community and both add a highly detailed formal contract. One client, referencing a large (over \$20 million) high-risk systems implementation contract, said,

The RFP [request for proposal] was hundreds of pages and a lot of that was attachments where we had documented our processes and asked them to look at our business processes and tell us how their solution mapped to ours or to

make suggests for how we could improve our processes using their software or their approach. So, it was a very detailed document that went out. And then what came back from the vendor was volumes of information. So it was a very time-consuming process to go through that.

In addition, the client uses client control and bureaucratic control constraints that are unavailable to the consultant.

Low Contract-Specificity Projects

On low contract-specificity projects, the consultant and client use the informal community as a constraint, and the client adds bureaucratic control—a constraint only available to clients. Despite the high level of mutual information asymmetry, no additional constraints are effective in reducing the risk of opportunism, which is a dangerous situation for both parties because of the lack of efficacy of a formal contract. Given the high level of information asymmetry and the low level of specificity, clients and consultants are thrust into a situation where a formal contract is ineffectual and only social constraints are useful. As a result, clients are forced to rely on bureaucratic controls and the client's informal community, whereas consultants rely only on the client's informal community.

Expected but Unseen Constraints

The literature suggests that relational contracts, formal community, and self-control are sources of constraint. Nevertheless, the respondents perceived none of these constraints as being reliably efficacious for either strategy or implementation projects.

Summary

Opportunism is rife in IS consulting, and consultants and clients both can behave expediently. Both appear to recognize the danger of information asymmetry in creating an environment conducive to opportunism and engage in signaling and screening to reduce information asymmetry. However, there is no evidence that information asymmetry can be eliminated, and so consultants and clients enact constraints to limit its consequences and add constraints as it becomes increasingly pronounced. This suggests that clients and consultants view any information asymmetry as disadvantageous and take steps to minimize the risk of opportunism even in conditions of low information asymmetry. As a result, both clients and consultants enact basic constraints in low information asymmetry situations, but enact more constraints as the degree of information asymmetry grows (Figure 2).

Only social sanctions are effective constraints on low contract specificity projects (Figure 2, upper right-hand corner of each cell), and this is because the tacit knowledge they require cannot be adequately captured in a written contract. As a result, clients rely on the informal community and bureaucratic control to constrain consultant op-

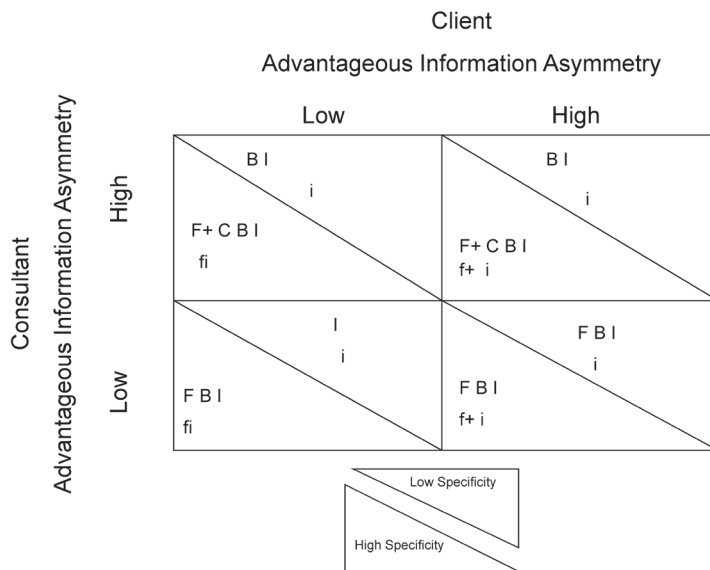


Figure 2. Summary of Efficacious Constraints

Notes: Relevant client-enacted constraint mechanisms: I = informal community; B = bureaucratic control; C = client control; F = formal contract (F+ refers to a highly detailed formal contract). Relevant consultant-enacted constraint mechanisms: i = informal community; f = formal contract (f+ refers to a highly detailed formal contract).

portunism. Consultants, lacking the mechanism of client bureaucratic control, rely solely on the informal community. The principal–professional lens predicts social mechanisms, but the informal community was not previously identified.

For high contract-specificity projects (Figure 2, lower left-hand corner of each cell), clients and consultants rely on formal contracts, and as information asymmetry becomes more pronounced, both rely on increasingly specific contracts. The use of formal contracts is consistent with agency theory but is not expected by the principal–professional lens. Several social constraints are seen in high contract-specificity projects, and this suggests that clients and consultants do not believe that a formal contract is sufficient to constrain opportunism even in high contract-specificity projects. This finding contradicts both agency theory and the principal–professional lens.

Consultants and clients take advantage of information asymmetry and engage in opportunistic behaviors, and a variety of constraint mechanisms exist as a result. Clients and consultants have different constraint mechanisms available to them and engage each constraint under a well-defined set of circumstances. However, these situations are not parsimoniously and exhaustively captured in existing theories, and a new theoretical model is necessary to explain the choice of constraint mechanisms.

Theoretical Model

AGENCY THEORY AND THE PRINCIPAL–PROFESSIONAL LENS acknowledge the role of information asymmetry in opportunism and propose two types of constraint mechanism.

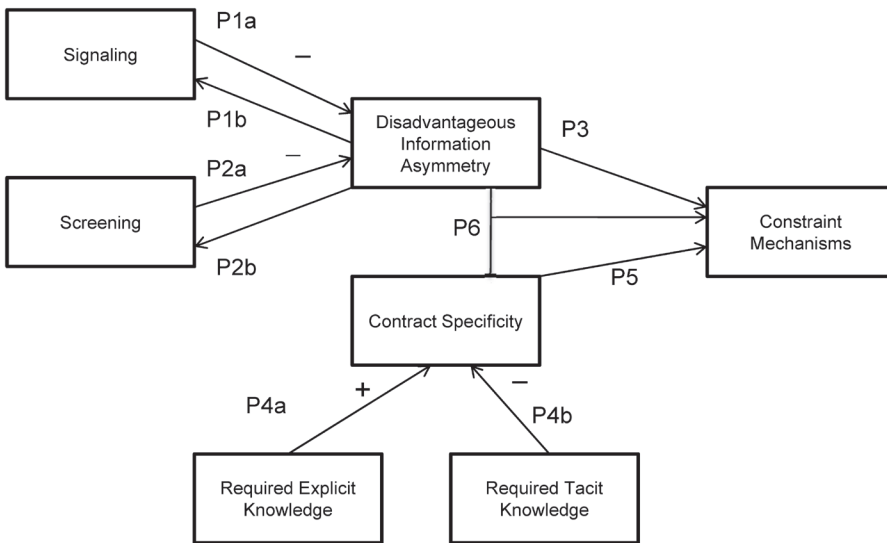


Figure 3. Theory of Relationship Constraints Model

Agency theory uses legal constraints, and its efficacy is predicated on the belief that information can be readily understood and codified in a contract. The principal–professional lens eschews legal constraints in favor of social constraints and argues that only other professionals are capable of providing the knowledge necessary to reduce information asymmetry. Both theories offer insight into some possible constraint mechanisms and the choice of constraint mechanism, but neither theory considers (1) that both the client and consultant can *concurrently* hold an information advantage and are capable of being opportunistic, (2) that different constraint mechanisms exist for the two parties in a relationship, (3) that different types of knowledge exist based on project type, (4) the efficacy of the informal community as a source of constraint, (5) the interplay between information asymmetry and contract specificity, (6) the existence of signaling and screening, and (7) the concurrent use of both legal and social constraints. Taken together, these theoretical shortcomings obviate simply combining agency theory and the principal–professional lens. We argue that a fresh look at constraining opportunism is required and propose a theory of relationship constraints (TRC) to explain how firms deal with opportunism in IS consulting engagements and potentially similar domains. Figure 3 shows the proposed theoretical model for TRC, and Table 8 defines its constructs.

Relationship of Signaling and Screening to Information Asymmetry

Screening has the capability of decreasing the level of disadvantageous information asymmetry based on the information that is uncovered during the process. For example, most public-sector contracts require the consulting firm to report its CMMI level of maturity, and this is based on a belief that maturity levels influence project outcomes.

Table 8. Theory of Relationship Constraints Construct Definition

Construct	Definition
Signaling	Information shared by the party with the information asymmetry advantage [40].
Screening	Information sought by the party with the information asymmetry disadvantage [42].
Disadvantageous information asymmetry	The situation where one party has less relevant knowledge (tacit or explicit) than the other party.
Explicit knowledge	Knowledge that can be easily captured or codified in a document or a database and is readily accessible to anyone willing to undertake the time and energy to learn it [11, 21].
Tacit knowledge	Knowledge that is focused on know-how. Being able to apply explicit knowledge in a competent manner [3].
Contract specificity	The extent to which either party to a contract can unambiguously measure the success of an engagement.
Constraint mechanism	A method for limiting opportunistic behavior.

Even if the client discovers that the consulting firm has a low level of CMMI maturity, the client's disadvantageous information asymmetry is still reduced—because the client knows salient information about the consulting firm—however, it is likely that the client would put additional controls around dealing with that consulting firm.

Similarly, the consultant is usually aware that the client holds an information asymmetry advantage. The consultant might well ask the client numerous probing questions in an attempt to surface staff attitudes toward the proposed project and other information relevant to completing a project successfully. Consultants screen for the same reason as clients: to surface critical information in order to reduce the level of information asymmetry.

The firm with the information asymmetry advantage engages in signaling, and so we expect that it is likely to communicate what it believes is important to the client. For example, if a client is soliciting bids for a large change management action, the client may have an information asymmetry advantage regarding the client's internal political environment. If the consulting firm is knowledgeable about potential resistance, it is likely to raise the bid price, something the client wants to avoid. In order to reduce the level of information asymmetry, the client may sponsor meetings between the potential bidders (consulting firms) and the business users in order to signal the low likelihood of resistance. As a result, signaling reduces information asymmetry. Table 9 gives examples by our respondents of signaling and screening done by advantaged (disadvantaged) clients and consulting firms.

The relationship of signaling and screening to reduce the level of information asymmetry is well founded [1, 36]. We suggest that the signaling and screening literature implicitly suggests a circular relationship between the constructs, and clients and

Table 9. Examples of Signaling and Screening

	Consultant examples	Client examples
Signaling (by the firm that has the information asymmetry advantage)	Prior project success Project manager experience (e.g., Project Management Institute certified, number of years of experience, etc.) Years of working with client (or in industry) Number of consultants certified in a particular technology	Degree of executive support Number of staff devoted to the project Amount of budget available Future work potential
Screening (by the firm that lacks the information asymmetry advantage)	Client's perceptions of project Client's commitment to project Obstacles to project success Ability of the client to work with the consulting firm	Consulting firm's commitment to project Consulting firm's prior project successes Ability of the consulting firm to work with the client

consultants will adjust their signaling and screening based on the remaining level of information asymmetry. For example, a consultant is expected to signal key aspects about its skills to the client, and this reduces the client's information asymmetry. After a screening event (e.g., a meeting), the client can be expected to indicate any remaining concerns, and this can be viewed as disclosing the level of information asymmetry that the client still has with respect to the consultant. In response, the consultant will engage in more signaling or will change what is signaled. Given that some level of information asymmetry will always exist in an exchange relationship, we envision a circular relationship between signaling and the level of information asymmetry. The relationship between screening and the level of information asymmetry follows a similar pattern, although the disadvantaged party does the screening. While we are aware that testing a circular relationship requires a process model approach [41], our reasoning and observation indicate this is the correct way to conceptualize the relationship. The remainder of the model can be tested using a variance approach. Our propositions for signaling and screening are as follows:

Proposition 1a: Signaling reduces disadvantageous information asymmetry.

Proposition 1b: The level of disadvantageous information asymmetry influences signaling.

Proposition 2a: Screening reduces disadvantageous information asymmetry.

Proposition 2b: The level of disadvantageous information asymmetry influences screening.

Relationship of Information Asymmetry to Constraint Mechanism

Clients and consultants enact constraint mechanisms based on, among other things, their perception of the level of disadvantageous information asymmetry. However, constraint mechanisms are rarely without cost, and we would expect that clients and consultants would seek to apply the least costly effective constraint for each engagement. Clients and consultants also deploy different constraints based on the level of information asymmetry. Even when the disadvantaged party thinks that the level of information asymmetry is low, constraint mechanisms are enacted, and this suggests recognition of the inevitability of information asymmetry in the consulting domain and that legal contracts are ubiquitous in nearly all commercial relationships. For example, only a client can know the full details of the motivation for a given project; the consultant, as an outsider, is simply not privy to all the details.

Proposition 3: The level of information asymmetry influences the choice of constraint mechanism.

Relationship of Tacit and Explicit Knowledge to Contract Specificity

Strategy and implementation projects have varying requirements for tacit and explicit knowledge, and it is clear that the amount and type of knowledge has a significant effect on the specificity of the contract. Explicit knowledge can be more easily codified in a contract. However, as the amount of required explicit knowledge increases, it becomes increasingly challenging to capture all the salient elements in the formal contract; that is, while all explicit knowledge can be codified, a greater need for explicit knowledge challenges contract authors to capture all of the salient explicit knowledge requirements. Higher levels of required explicit knowledge can be captured in a contract, and this increases contract specificity:

Proposition 4a: Required explicit knowledge increases contract specificity.

The use of tacit knowledge offers different challenges. Any level of tacit knowledge is difficult to capture in a contract because tacit knowledge is not easily codified. However, as the amount of tacit knowledge increases, it further erodes contract specificity and so a greater required tacit knowledge also reduces contract specificity:

Proposition 4b: Required tacit knowledge decreases contract specificity.

Relationship of Contract Specificity to Constraint Mechanism

Contract specificity has a direct relationship to the choice of constraint mechanism. Clients and customers desire to have the most efficacious and least costly constraint on opportunism and so will choose to apply constraints based on this internal calculus of costs and benefits. A formal contract is present in all consulting engagements, but it

offers varying levels of constraint based on its specificity of behavior and outcomes. Hence, contract specificity has a direct relationship on the choice of constraint mechanisms. In particular, as contract specificity decreases, selected constraint mechanisms will increasingly be social rather than legal:

Proposition 5: Contract specificity influences the choice of constraint mechanism.

Interaction of Contract Specificity and Level of Information Asymmetry in Choice of Constraint Mechanism

Contract specificity and the level of information asymmetry interact in predicting the choice of constraint. As the level of information asymmetry rises and contract specificity decreases, clients and consultants are likely to feel increasingly exposed, and so will enact more constraints in an attempt to lessen opportunism. However, if the level of information asymmetry is low and contract specificity is high, both will primarily focus on legal constraints as well as low-cost (or no-cost) social constraints:

Proposition 6: There is an interaction between contract specificity and disadvantageous information asymmetry with respect to constraint mechanism selected.

Discussion of Theory of Relationship Constraints

Tacit and explicit knowledge are used in strategy and implementation projects, but the amount and type of knowledge can vary. Formal contracts are the most efficacious choice of constraint for projects that primarily rely on explicit knowledge because of its potential for codification. Tacit knowledge is more difficult to record, and so it is challenging to convey precisely the joint expectations in a project that relies on such knowledge. As a result, social measures become the major form of constraint in this case. This relationship between contract specificity and constraint mechanism holds for both clients and consultants, although the specific constraint mechanism for each party depends on what is available to them. TRC suggests that the degree of information asymmetry between client and consultant, the level of contract specificity, and their interaction determine the type of constraint.

Conceptually, TRC has a close lineage with the signaling and screening literature base. TRC, like signaling and screening, attacks information asymmetry as the root cause of opportunism and predicts that clients and consultants will first attempt to reduce disadvantageous information asymmetry and then will adopt different constraints based on the level of information asymmetry that is present and the type of knowledge used. By returning the focus to information asymmetry, TRC can help explain the underlying cause of opportunism, and this allows formal contracts and social constraints to be more consistently applied in obviating opportunism.

The model is at the organizational level of detail and can be viewed from the consultant's or the client's vantage point. It is equally applicable to understanding how either deals with information asymmetry and opportunism. TRC, unlike agency

theory or the principal–professional lens, accommodates differing levels of tacit and explicit knowledge and contract specificity and predicts that the direct relationship and interaction between information asymmetry and contract enforceability are the key variables in predicting the constraint mechanism. The model allows for varying levels of information asymmetry but does not restrict the information asymmetry to a single party. The level of information asymmetry and the level of contract specificity individually predict the constraint mechanism, but they also interact in prediction. Finally, the model does not restrict the choice to simply social or legal constraints but allows for both, as well as for additional constraints. Further research is required to establish whether other constraint mechanisms exist or explanatory variables exist and whether they fit the proposed theoretical model.

Conclusion

INFORMATION ASYMMETRY IS ENDEMIC TO IS CONSULTING, and this fosters an environment in which clients and consultants can be opportunistic. Agency theory and the principal–professional lens attempt to explain the constraint mechanisms selected for an IS consulting assignment; however, these theories are insufficient because they fail to accommodate key attributes of the domain. We propose a theory of relationship constraints to parsimoniously reflect the interaction between contract specificity and information asymmetry in predicting the choice of constraints. TRC returns the focus to information asymmetry (the root cause of opportunism), and this allows constraint mechanisms to be better understood. TRC can be viewed from either the client’s or the consultant’s perspective. As such, it offers additional insights not available from either agency theory or the principal–professional lens, including (1) acknowledgment of principal and professional opportunism, (2) use of multiple types of knowledge, (3) focus on information asymmetry, and (4) incorporation of contract specificity.

As with many revelatory studies, this research is limited by the specific domain and expertise of those who were interviewed. As a result, a cadre of constraint mechanisms is suggested, but these constraints may not represent the full universe of possibilities. Researchers are encouraged to examine other domains in which opportunism occurs. In addition, although we cautioned our respondents to focus on situations where other people were opportunistic and not on situations where they might have been, we acknowledge that social desirability might have influenced our findings.

This study contributes to theory by highlighting important assumptions that limit the effectiveness of agency theory and the principal–professional lens and proposes a theoretical model that overcomes these shortcomings. Theory guides effective research, and agency theory and the principal–professional lens have been useful in highlighting the contractual and social relationship between consultants and clients. TRC enhances the study of consultants and clients by relaxing the limiting assumptions of prior theories and by returning the theoretical focus to information asymmetry. As a result, we are better able to understand the rich and interconnected dynamics that take place between two firms in a contractual relationship.

This study contributes to practice by highlighting the interconnectedness of IS consultants and clients and provides evidence of the duality of opportunism. It highlights the role of information asymmetry in predicting constraint mechanisms and suggests practical strategies for setting constraints when faced with different types of knowledge. For clients, it enables them to understand how consultants react to information asymmetry and highlights effective constraints in all variations of knowledge used and information asymmetry. For consultants, it acknowledges that clients can also be opportunistic and highlights what can be done to constrain client opportunism.

The proposed theory is a parsimonious treatment of the relationship between knowledge, information, and constraint mechanisms, from either the client's or the consultant's viewpoint. Future researchers should be aware that this represents an initial foray, and additional research is needed to identify the full domain of constraints and their antecedents. This research is limited to IS consulting, but the proposed theory may be broadly generalizable to other domains. Others can build on this initial research and explore other constructs in the study of constraints on opportunism.

Information asymmetry is an inevitable by-product of a knowledge-based society, and some market participants will always be eager to exploit this asymmetry for personal and professional advantage. It is clear that some are unwilling or unable to regulate their opportunistic inclinations without the implementation of legal or social constraints. Efficacious constraints are necessary to ensure that the field of consulting, and business relationships in general, does not devolve into Akerlof's [1] prediction of a marketplace populated solely by unscrupulous actors.

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NOTE

1. Respondents provided numerous incidents to support the opportunism and constraint mechanisms used by clients and consultants, and all the relevant stories were coded and analyzed. In the interest of brevity, we selected only the most insightful quotations for this paper.

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