

Strategic Sourcing for Services: Assessing the Balance between Outsourcing and Insourcing

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1. Introduction

1.1. Objectives of this paper:

This paper seeks to provide an enhanced awareness of the issues that can inform and motivate strategic sourcing decisions. We begin with an assessment of the **risks** associated with outsourcing, so that these risks can be used to **screen** potential candidates for outsourcing and to guide the decision of which activities to outsource and which to keep within the firm. Once the specific threats can be listed, it is possible to begin to **design contracts** to **manage** the associated risks; therefore, we next explore the various contractual mechanisms that are presently employed to deal with specific risks. When the risks have been listed and the contractual options assessed, it is then possible to **evaluate the residual, unmanageable risks** and to use the assessment of residual risk to screen the candidate activities to determine which can and should be outsourced. Subsequent work will provide more detailed tools for designing contracts to manage risks in specific industries.

1.2. “Keepers“ and the risk-based screen for outsourcing:

Other authors have suggested that activities that represent core competences cannot be outsourced and that non-core activities are candidates for outsourcing (e.g., Quinn and Hilmer, 1994). We find this to be initially plausible but, upon reflection, conclude that it is misleading for two reasons:

- Firstly, the term core competence is poorly specified. The definition of a core competence has never been clear or unambiguous. It appears that a core competence is an activity that represents a skill that is shared by all divisions of a conglomerate, or by all members of a management team. Thus, in some sense a core activity is as much an aspect of corporate culture and shared beliefs as it is a skill. Moreover, it would appear that the use of core competence is in some sense redundant — it is hard to imagine a core activity, done well in all divisions, that was not a competence.

- Secondly, the term core competence leads to poor outsourcing decisions. Since the terms core and competence have become so tightly linked, the term core competence makes it difficult to consider outsourcing an activity that is performed well and difficult to consider retaining internally an activity that is done poorly.

Later in this paper we will introduce a risk-based rather than a skill-based screen for outsourcing decisions. In medieval castles the most secure part of the castle, used in time of siege to protect the wealth and the family of the lord of the manor, was termed the keep. We will exploit this term. Those activities that must be protected — those whose loss would result in unacceptable economic damage and, perhaps, to failure of the firm — must be protected and deserve to be placed in the central keep of the firm. They cannot be outsourced or left to the periphery. In brief, “activities that belong in the keep are keepers;” they are strategic, and should not be outsourced.

While this paper does not suggest that outsourcing is over-used, our sense is that outsourcing decisions rarely fully examine the expected benefits, seldom fully understand the risks of outsourcing and the costs that these risks impose, and almost never are based on a sound trade-off of risks and benefits. That would imply that many poor outsourcing decisions are made, and that many successful outsourcing arrangements owe their success more to intuition or serendipity than to careful planning. Conversely, many potentially beneficial outsourcing opportunities are probably lost because contracts cannot be negotiated.

1.3. Introduction to the size of relevant outsourcing markets

It is important to have a sense of the current size of various markets for outsourcing of technology-related services, their current rates of growth, and available estimates for their expected future levels. Although estimates are often apparently contradictory, because different assumptions have been made about which activities are outsourced, or about which outsourced activities should be considered in the category of information technology, the following figures are suggestive of the size and the growth of technology-related markets. We will draw our illustrative examples from information technology and call center operations, but areas of technology outsourcing are expected to show comparable rates of growth.

The market for all information technology outsourcing in 1997 has been estimated at \$26.5 billion in the U.S. (Saunders, Gebelt, and Hu, 1997) and at \$90 billion world-wide (Verity, 1996). Current estimates of annual growth of IT outsourcing range from 15% (Gurbaxani, 1996) to 25% (Saunders, 1997). Analysis of historical data show that outsourcing among the Fortune 500 has grown even more rapidly, with outsourcing representing 5% of total IT budget in 1993 and having grown to 13% of total IT budget by 1995 (Brynjolfsson and Hitt, 1996)

For telephone call center services growth may be even more rapid, though growing from a lower current base. It is estimated that U.S. call center were a \$77 billion business in 1995, with outsourcing vendors capturing about \$3.5 billion. While call center operations are estimated to grow by about a quarter, to \$ 100 billion by 1998, for a variety of reasons the portion of this business being outsourced is expected to grow far more rapidly, with call center vendors share growing to \$15 billion.

Clearly, technology-related outsourcing is large and is still growing rapidly. Moreover, increasing competitive pressures may give many outsourcing decisions the feel of strategic necessities¹: It may appear necessary to take any actions that offer the prospect of reducing costs or improving quality, not as means of gaining competitive advantage, but as means of preserving parity with competitors. Outsourcing may represent one such opportunity to reduce costs or improve quality.

Strategic sourcing decisions are fraught with risk for both buyer and seller. These risks are seldom well understood or even clearly articulated, For this reason, outsourcing often creates its own problems:

- Buyers' risks include risk of overpaying, risk of damage to reputation resulting from inferior service, and risk of loss of control over vital assets.
- Sellers' risks include principally under-charging as a result of contracting error, though other risks exist.

Additionally, sourcing decisions are often emotionally charged:

- *"We can't outsource management of our data-processing facility; the people of this town are counting on us as employers"*
- *"We can't outsource supply of those components — no one could possibly it as well as we do!"*
- *"We can't outsource maintenance and warranty service — customers expect us to do it ourselves!"*

¹A **strategic necessity** is an activity that must be taken to preserve parity with competitors. Strategic necessities are complex enough to require careful execution, but there are few barriers to the duplication of their implementation by competitors and only limited market imperfections to prevent the acquisition of necessary resources. Thus there is little chance of gaining competitive advantage. Despite the difficulty of gaining advantage, strategic necessities remain vitally important. Getting them correct is a cost of doing business; doing them poorly may result in business failure.

- “We are not a service bureau or an information vendor! If the time comes when we start substituting software revenues for revenues from securities operations I for one say, ‘Just fold this old trading house and die!’”

We need to address how management, both on the buyer (client) and seller (vendor) sides, can rationally approach sourcing decisions, manage their risks, reach mutually acceptable decisions, and achieve stable and mutually beneficial relationships. Equally importantly, we need to determine when is this inherently impossible, and thus which relationships should be avoided.

We divide this overwhelming problem into four smaller ones:

- **What should be outsourced** and what goods, components, or services should be produced internally, within the firm?
- For those goods or services that should be outsourced, **how should the contract be structured?**
- For those goods or services that should be outsourced, **how should the contract be negotiated?**
- For those goods or services that should be outsourced, **how should the relationship be managed** to assure its continued strategic success? When should the relationship be **terminated?**

In this paper, we will address only the first two questions. The final two questions will be addressed in subsequent work.

1.4. Structure of the paper:

Section 2 addresses determining **which activities can be outsourced**, by extending the concept of core competence (Prahalad and Hamal, 1990). We introduce the concept of a **keeper**. A keeper will be shown to be an activity that cannot and should not be outsourced; other activities will be seen as potential candidates for outsourcing. The degree of risk and strategic vulnerability associated with outsourcing, rather than the degree of internal competence, will be seen as the basis for identifying targets for outsourcing. Section 3 introduces a risk framework for determining which activities are and are not core. Section 4 shows how to use this risk framework to assess activities as candidates for outsourcing. Risks are listed and their implications are explored. Section 5 explores a wide range contractual mechanisms available to mitigate the risks explored in section 4, using specific examples selected from experience with contracting for call center management. Section 6 presents preliminary conclusions

and suggests extensions to apply results to contracting for information systems outsourcing.

2. Deciding What Should be Outsourced

What should be outsourced? It is generally agreed in the popular business press that a **core competence** should not be outsourced (Prahalad and Hamal, 1990).

Presumably, then, anything that is not a core competence is a target for outsourcing. But what does this mean? To decide, we must first examine what it means for an activity not to be a core competence.

It appears straightforward to determine if an activity is a **competence**. If an activity is not a competence of the firm then it can be done more cheaply outside the firm, for the usual reasons:

- **Economies of scale** arise when for any reason average costs decline as production increases. There are numerous sources of economies of scale, including dividing fixed development efforts over larger transactions base, accommodating large random variation in demand for services from any one client over a larger and more stable set of clients, and having dedicated facilities and longer run lengths and thus fewer line changes and reduced down-time resulting from switch-overs.
- **Economies of scope**, arise when the total costs of producing several related goods or services together are lower than the sum of the costs of producing them separately. The strengths of the old AT&T Bell System resulted in part because the costs of switching local and long distance services within a single firm were lower than for separate firms attempting to coordinate on standards, technologies, and co-located physical facilities. Universities have long enjoyed advantages over alternative forms of single course instruction, at least before distance learning technologies become prevalent. Similar advantages are often attributed to Microsoft as developer of operating systems and applications packages that run under them.
- **Economies of specialization** arise when the cost of performing only one activity is lower than the cost of performing that activity as one of a portfolio of activities. Benefits of this type can come from doing only payroll processing or call center management, and doing them better or more efficiently as a result, with fewer levels of management coordination than would be required in a more diversified organization.

It may be less straightforward to determine what is and is not **core**. Using generally accepted definitions, seldom clearly articulated by the managers who use them as the basis of their decisions, we may conclude that if an activity is a core activity then it is directly part of the firm's mission. If the activity is not directly part of the mission of the firm, then using the "*stick to your knitting*" criterion that has become so popular, the activity is appropriate for outsourcing. This criterion, however, has historically been more than unreliable as the basis of sourcing decisions; it has occasionally been dangerous, as we can see by examining two outsourcing decisions in the operation of airlines.

Airlines' CRSs (computerized reservations systems) for use by travel agents would not appear to be part of serving passengers or flying planes, and thus would not appear to be core activities. And yet, the major failures in the airline industry were all from among those that chose not to develop these non-core systems and chose not to invest in these non-core development efforts. CRS vendors eventually repriced their reservations services, imposing fees on participating airlines that were extremely burdensome to the participating airlines and extremely profitable for the CRS operators. AMR's SABRE and United Airlines' Apollo in the early 1980s were more profitable for American and United than were the business of serving travelers by operating an airline. In contrast, Pan Am and Eastern, which did not operate their own CRSs, failed and were liquidated under Chapter 7. Likewise, TWA, and Continental, which did not operate CRSs, have survived but only after going into and out of Chapter 11. The major airlines that have survived now all participate as owners or partial owners of travel agent CRSs.

Aircraft maintenance, in contrast, would appear to be a core activity, without which it would be unsafe to fly, and without which airlines would be denied certification to operate from their national regulators. And yet, many airlines safely continue to outsource maintenance from other, larger carriers — American Airlines, Lufthansa, and Swiss Air.

Since the *stick-to-your-knitting* criterion appears unreliable, we will develop an alternative, **risk-based** criterion for separation of activities that should be candidates for outsourcing and those that should not. We will first examine the two airline examples just presented above:

As is now well-known, outsourcing a portion of the primary means of reaching customers is fraught with danger. CRS operators Apollo and Sabre initially made their services available to all competing airlines; after significant adoption by travel agents made participation in these CRSs essential for all airlines, the CRS operators instituted high service fees. At the peak of CRS profitability, American Airlines is reputed to have earned more money by providing reservations services for Delta's flights than Delta made by flying them, and operating a CRS was more profitable than operating an airline. CRS vendors were able to earn these high fees because they could plausibly

threaten to drop the flights of any single airline from their coverage within their system. The damage to the airline would be enormous, as expenses would not be dramatically reduced but load factors and revenues would drop precipitously. Moreover, the impact on the CRS vendor would be only minor: American and United ticket revenues would not be affected by the actions of their CRS subsidiaries, and even CRS revenues would not change much as passengers would simply shift their other to other airlines, which would pay the fees that the dropped carrier would have paid instead. Indeed, when Braniff and Frontier were each dropped from a major CRS, both airlines ended in bankruptcy and liquidation².

The risks of outsourcing maintenance service are, paradoxically, much less than the risks of outsourcing reservations service. In contrast with CRS services, hold-up is not plausible in the aircraft maintenance business. There are alternative providers of maintenance service, and an airline would switch service providers at contract renewal time if its service provider attempted to impose unfair charges. Moreover, since aircraft are by their very nature mobile, and are flown in for service, and standardized, able to be serviced at any service provider, there would be no additional cost to the airline for switching service providers. There would, however, appear to be a danger of substandard service: What if the maintenance service provider did a poor job on the customer's planes? Wouldn't a crash or two destroy the customer's reputation for safety and put the customer out of business? Well, yes. But the crash would also destroy the maintenance provider's reputation for safety and would most likely put it out of business as well. This, presumably, is why airlines obtain in-flight meal service from catering kitchens that need not be associated with an airline, but seldom obtain maintenance service from other than the aircraft manufacturer or other airlines; these parties have reputations that are as important, and are as much at risk from safety problems, as are those of their maintenance client airlines.

Our experience and these examples suggest that the traditional characterization of core is of little use in assessing what can be outsourced. We argue instead that the distinction between activities that are candidates for outsourcing and those that are not should be based on risk. We offer the following risk-based screens for identifying keepers:

<p>Screen 1: A firm should consider an activity to be a keeper if the size of the economic loss that can result from an outsourcing contract is too great to absorb and if the loss, should it occur, would destroy the firm.</p>

²In the outsourcing literature the imposition of unplanned, higher fees, backed up by the vendor's threats to discontinue service or by other unmanageable threats is frequently termed vendor hold-up (Milgrom and Roberts, 1992).

This screen is conservative. It is extremely risk-avoiding. It does not make use of portfolio theory or other risk reduction techniques based upon diversification. This form of survival-based screening is used as a basis of national security analyses, and is employed by closely held firms where the management team is unwilling to risk the entire firm on the behavior of a single client or vendor.

Screen 2: A firm should consider an activity to be a **keeper** if the size of the **expected** economic loss that can result from an outsourcing contract exceeds the expected economic gains.

This screen is less conservative, and indeed is non-controversial. As long as the risks associated with the outsourcing of any single activity do not have expected losses that exceed the expected gains, then on average the firm's portfolio of activities should be economically neutral. Of course, firms that design their portfolio of outsourcing decisions to include activities whose expected gains exceed expected losses in accordance with Screen 2 should profit in the long run; those firms that likewise avoid any outsourcing decision from which the loss would be catastrophic, in accordance with Screen 1, are likely to survive long enough to have a long run.

While these screening mechanisms may appear non-controversial, and may even seem to be intuitive, applying them in practice is quite difficult.

Defining loss is relatively easy: We can define the expected potential loss from outsourcing and activity simply as the magnitude of the exposure times the probability of loss³.

Delimiting all the ways that damage can occur is seldom easy: Exposure includes possible damages, such as overcharges, deliberate under-performance of critical tasks resulting in loss of customer good-will, and others that we have not yet discussed. For example, a major super-regional bank outsourced the service of its credit card accounts and, indeed, sold its credit card portfolio, while the new account servicing organization continued to use the original bank's logo on its cards and on its correspondence with customers. However, the best customers of the bank were frequently not profitable customers for the new servicing organization; consequently, the new servicing organization responded by raising the rates these customers were charged or reducing the quality of the service that they received. While this served the interests of the credit card servicing organization, they were extremely damaging to the

³To be precisely correct, in place of **expected loss** the evaluations should use the smaller of the two quantities: 1.) expected loss without any contractual attempt at mitigation of risk; and 2.) expected loss after contractual risk reduction, less the real costs of the risk reduction mechanisms employed.

relationships that these customers had with their primary banking institution, which was blamed for the change in the quality of the credit card operation. The resulting damage to the bank's remaining businesses, while unanticipated, were so severe that the bank was ultimately driven to reacquire its credit card portfolio and redevelop the ability to serve its credit card customers internally.

Determining the probability of loss likewise is seldom easy, even for those losses that have been identified: Many potential sources of loss can be eliminated by effective contracting, in ways that we have not yet discussed. Other potential sources of loss can be rendered unlikely, but unanticipated environmental changes can create unanticipated opportunities for exploitation that were not protected against in the outsourcing contract. The probability of these residual losses that remain after contracting is thus determined by the unknown probability of unforeseen events, which if they had been foreseen well enough to permit probability assessment would probably have also been subject to contractual risk reduction. The probability of losses from these residual risks are also determined by the unknown probability that outsourcing partners will see and exploit these opportunities.

The analysis to determine which activities to outsource and which to retain internally can be summarized as shown in the following figure and accompanying text.

Keeper	Non-Keeper	
<p style="text-align: center;">Strategic Competence</p> <p style="text-align: center;">Don't attempt to outsource!</p>	<p style="text-align: center;">Non-Strategic Competence</p> <p>Can outsource, though there is no need. Can operate an outsourcing business as vendor.</p>	Competence
<p style="text-align: center;">Strategic Incompetence</p> <p style="text-align: center;">Don't attempt to outsource; fix deficiency!</p>	<p style="text-align: center;">Non-Strategic Incompetence</p> <p>Should outsource, to remedy a strategic deficiency</p>	Incompetence

- An activity that represents both a **keeper** and a **competence** will be termed a **strategic competence**; there is neither need to motivation to outsource such activities.
- An activity that after a risk assessment appears to be a **keeper**, and that after competitive benchmarking is determined to be poorly done internally, is not a candidate for outsourcing. Although outsourcing would initially offer benefits, the risks and potential losses of outsourcing these core activities will ultimately come to dominate any short-term gains. Such **strategic incompetence** activities should be improved but retained internally.
- A **non-strategic competence** can be kept internally if performing it does not distract management focus. It can be outsourced if this appears to offer significant benefits. It can even become a business unit, if performing these activities for other firms can be done profitably. If these activities are seen as strategic necessities, then all competitors will need to perform them well and while outsourcing these activities is unlikely to offer competitive

advantage in the central business, supporting other companies' operations could represent a large and profitable business opportunity (Clemons, 1990).

- Any activity that is seen as not a keeper after risk analysis and as a corporate incompetence after benchmarking should be seen as an opportunity for outsourcing. Such **non-strategic incompetence** activities are done poorly, outsourcing offers opportunities for performance improvement, and the risks associated with outsourcing are limited and can be managed.

These risk-based criteria should be non-controversial and should, of course, guide all business decisions:

- The worst case potential loss should not lead to economic ruin.
- The benefits expected from a decision should exceed the full sum of expected costs.

Regrettably, in outsourcing decisions most corporate decision makers have not known how to enumerate expected costs or how to assess their magnitude or their likelihood. Therefore, these rules for guiding outsourcing decisions have not been followed, and *ad hoc* assessments of strategic and non-strategic activities have been the norm.

The next section develops a risk framework for enumerating the sources of risks and the mechanisms available for dealing with them, and estimating the sizes of risks and the costs of non-contractual mechanisms for reducing them; this will help determine when outsourcing is appropriate and when it is not. Section 4 will describe contractual mechanisms for reducing risks when the decision has been made to consider outsourcing.

3. The Risk Framework

3.1. Categories of risk

Three classic categories of risks are present in outsourcing and other forms of inter-firm activities. Specific actions of one party, damaging to the interests of the other, usually fall into one of these three categories⁴:

⁴Material in this section draws heavily upon work by Klein, Crawford, and Alchian (1978), and secondarily upon work by Williamson (1975).

- Shirking
- Poaching
- Opportunistic Renegotiation

These risks may impose additional costs upon parties to inter-firm relationships, which are included in the category of costs called transaction costs (See (Klein, Crawford, and Alchian, 1978; or Williamson, 1975). Transaction costs include not only the costs produced by risks resulting from the vulnerability created by inter-firm relationships, but also the costs of contractual mechanisms employed to reduce these risks.

We will defer for now the assessment of probabilities, the assessment of magnitude of risks, and the contractual mechanisms to control these risks. These categories represent sources or types of contractual abuses that can occur. Specific instances within these categories — specific risks in individual business settings — will have probabilities, losses, and expected costs.

We assume that there are certain opportunities for abuse in a relationship that, if not properly delimited, will create expensive problems for one or both parties. The manifestation — degree of exploitation should these opportunities arise — will be determined by a variety of factors outside the contract, such as cultural norms. Likewise, the probability that opportunities to abuse the relationship may arise, not covered by the contract, is a function of environmental turbulence, leading to unanticipated conditions, and a function of contracting skill. If the environment were predictable or certain, and if the behavior of counterparties in response to predictable environmental conditions were known with certainty as well, not all of the following would represent economic risks since they could be covered in contracts. The threat of these behaviors would still need to be understood, and would still need to be covered within the contracts.

3.2. Shirking

Shirking, represents deliberate under-performance on a task that is difficult to measure, while still claiming full payment as if the task had been fully accomplished and had been completed in accordance with agreed upon standards of performance.

Opportunities for shirking include substitution of lower quality goods (cod) for better and more expensive items that were specified in contract (plaice), requiring testing laboratories; moving furniture in a group, or any group activity where individual effort and contribution is difficult to measure; and allocation of personnel to joint research consortia where the output is owned jointly but the opportunity cost of assigning personnel to the project is borne by their primary organizations. Of most relevance to

this study is shirking in outsourcing, where the level of effort and the quality of service is difficult to observe.

The seller or service provider shirks because he has preferable uses for his effort or of his resources. For example, he may find it more desirable to spend time at the office working on issues of personal interest rather than on activities of value to his employer, a consulting firm may find it more profitable to substitute lower quality personnel if he can charge the same hourly rate, or a vendor may find it more profitable to substitute lower quality goods if he can charge the same unit price or price per pound. That is, the seller or service provider has his own incentives and his own preferences, which may be only partly aligned with those of the buyer. This leads to the principal-agent problem (Grossman and Hart, 1983; Milgrom and Roberts, 1992). The service provider, acting as **agent**, will likely choose activities that are most rewarding for himself, rather than those that are most rewarding for and most desired by purchaser of services, the **principal**.

For shirking to occur there must be **private information**; that is, shirking is not possible when the behavior of both parties is completely observable and can be completely specified in an enforceable contract.

3.3. Poaching

Poaching represents the theft and subsequent misuse of information or training and expertise, given in trust for the accomplishment of a specific purpose, now used for the gain of the recipient of the information and to the detriment of the giver.

Opportunities for poaching arise any time it is necessary to grant a partner or participant in a relationship access to sensitive data or to provide specialized training to the partner to enable him operate effectively. Once information or expertise and training is transferred, it is impossible to reclaim it. Thus, any time a service provider is given access to information that would enable easy targeting of the provider's best and most profitable customers, there is a risk that the service provider may misuse this information to pitch services directly to these accounts, in competition with its client; likewise, there is a risk that the service provider may sell this information to one of its client's competitors or use this information to sell its own services to one of its client's competitors⁵. Similarly, any time a partner in a relationship is given specialized training, there is some danger that the service provider may itself begin to compete directly with the firm that provided its specialized training. While it may be possible to place limits on how this information can be used in direct competition with its original owner, it is difficult to anticipate all possible uses that would be competitively

⁵The competitive value of such information is demonstrated by Clemons, Croson, and Weber (1996).

damaging, and it is difficult to detect and to prevent even some uses that may be anticipated.

3.4. Opportunistic Renegotiation

Opportunistic Renegotiation becomes possible when either party comes to enjoy an unanticipated increase in power. The party with power can exploit the strategic vulnerability of the other; for example, the client can decide to pay less, or the vendor can demand more. Such repricing occurs because the increase in strategic vulnerability, being unanticipated, is not adequately protected by terms of the contract, allowing the stronger party to make plausible threats if the new payment structure is not accepted.

Opportunistic renegotiation (opportunistic repricing) may occur whenever one party to a relationship has a high degree of **strategic vulnerability** relative to the other. That is, if the parties' levels of commitment are not equal, the party with weaker commitment (alternatively, less at risk) can act with a higher degree of freedom. For example, if the client is committed to a course of action and needs the vendor for support, and the client's vulnerability is much higher than the vendor's if the relationship is terminated, then the vendor is free to reprice and the client has only limited recourse.

It is possible to construct examples where the client's entire line of business, and the profits that it generates, are dependent upon one critical supplier or vendor. If, upon termination, the vendor loses only the value of the contract, while the client loses the full value of the line of business, it is reasonable to expect that the vendor could demand substantially higher prices. In the absence of a complete and enforceable contract, the client would have few options that were more attractive than paying the new fees, perhaps after some ineffectual grumbling. The following list appears to cover completely the sources of strategic vulnerability that lead to opportunistic renegotiation (Tirole, 1988)

- **Small numbers bargaining**: When a buyer has few alternative sources of supply and a supplier has a large number of alternative customers then the buyer has a high degree of strategic vulnerability and the supplier can indeed engage in opportunistic pricing. Small numbers bargaining situations can be created even when there are alternative suppliers, if the costs of locating them and rapidly switching to them are high; these are called **switching costs**.
- **Relationship-specific investment, leading to small numbers bargaining**: Similar problems of strategic vulnerability can be created when one party in a relationship makes an investment that has only limited usefulness outside

the relationship. Such sunk investments (also called relationship-specific investments or idiosyncratic investments) create their own small numbers bargaining problems and thus create strategic vulnerability.

- The problem of **co-located facilities** as an example of relationship-specific investments: A co-located physical plant is difficult to move; if there is only one convenient customer, the customer whose location the plant is built to serve, then it may be difficult and expensive to serve alternative markets. This gives the customer unintended bargaining power. Although the builder of the plant may have anticipated significant savings, perhaps as a result of reduced shipping costs and reduced need for inventory within a lengthy supply chain, the customer can arbitrarily reprice and command most of the savings for himself. If the customer offers any price higher than the plant operator's **next best use** available through serving more distant markets, the plant operator may have no better alternative than to accept.
- **The problem of learning, training, and relationship-specific human capital**: If the client has significant investment in learning to work with the vendor's systems, or if locating and training to work with an alternative supplier would be time-consuming and expensive, the client may experience switching costs that limit his bargaining power.

Similar problems exist in outsourcing information systems and other services:

- If the client is dependent upon the supplier for critical services, and it is difficult or impossible to arrange an alternative supplier, then the client faces a small numbers bargaining situation. He may be forced to be a significant premium to preserve his business if the vendor threatens to withhold service. This could occur for example if no telemarketing service provider were available to support a critical sales campaign, or if no other systems vendor were able to maintain software written by a vendor who delivered poorly structured and incompletely documented code.
- If either party has made a sunk and relationship specific investment, it may have counted upon setting high enough prices to enable recovery of this investment. However, if this party's investment (Party-A's investment) is indeed sunk and has no other comparably valuable use, the other party to the relationship (Party-B) may enjoy considerable economic power. That is, because Party-A's investment is relationship-specific and has limited alternative use, it has created a small numbers bargaining problem for Party-A. Party-B can opportunistically renegotiate its payments down as long as Party-A has no better uses for its investment. Thus, investing to support a data center facilities management contract in a client's remote

location, or investing to support a client's unique telemarketing program, may create the possibility of opportunism by the client.

3.5. **Applicability of this risk framework to assessing activities for outsourcing**

We can relate these risks back to our definition of strategic activities and keepers.

Where there is a high risk of **poaching**, it may be unsafe to outsource critical activities.

- A contract service division of a financial services firm may provide telemarketing services for a competitor. This may enable it to identify the competitor's most profitable accounts and to gain vital information about the preferences of these accounts. This, in turn would enable it to market its own services directly to these accounts, an unauthorized use of the client's data that harms the client by competing with it.
- A travel agency or other service provider could begin to operate overseas with an international partner, until it learned enough about the local market conditions and developed a sufficient client base to compete directly with its former partner.
- Thus, the potential risk of poaching will determine the magnitude of losses that can arise as a result of sharing information or expertise with an outside vendor and thus the expected costs due to these potential losses. The expected loss will be determined in part by the magnitude of the loss and by our assessment of the probability of loss, which is a function of contracting skill and of the expected behavior of our partners. Together, our two screening criteria will determine which activities are best considered keepers.

Where there is a high risk of **opportunistic renegotiation**, or a high degree of strategic vulnerability to the actions of single supplier, it may once again be unsafe to outsource:

- If only the contract developer of software applications will be able to work with the intricate code to make enhancements or perform routine maintenance, then the contractor will have almost unlimited ability to charge for these services; the limit will be imposed principally by the client's costs of starting over with a new developer.
- After a bank has undertaken the marketing and systems development investments for a new product launch, they may be totally dependent upon their telemarketing service provider until they are able to locate an alternative vendor, and complete training and systems development to

enable the new vendor to provide the essential service; this, once again, gives the service provider considerable ability to reprice.

- These examples suggest that the potential for opportunism and strategic vulnerability to the actions of a supplier are limited by the cost of escape. Opportunism can create significant risks and expected costs, and thus may also determine which activities are and are not keepers, and which can and cannot safely be outsourced. Once again, our two screening criteria will determine which activities are best considered keepers.

We will see that the risk of shirking alone rarely is sufficient to determine that an activity cannot safely be outsourced.

4. How to Outsource (Part One):

Problems that Can Arise in Contracting

4.1. Risk-based causes of problems in contracting and outsourcing

The problems associated with contracting and outsourcing generally have one or more of the following causes. Our intent in listing the numerous problems associated with outsourcing and their causes is not intended to suggest that outsourcing should be avoided. By listing these causes, it becomes possible to make a more comprehensive list of the risks, to estimate the magnitude of these risks, and to consider appropriate contractual mechanisms for the reduction of these risks; these actions could have the effective of enabling outsourcing to be successfully accomplished in areas where contracts would otherwise have been too risky⁶.

4.2. Pre-contractual Private Information:

4.2.1. Before the contract is signed, one or both parties may have **private information concerning costs or productivity**. While this may lead to small concerns about costs or productivity, private information may, in the limit, lead to concerns about a party's ability to deliver, that is, to concerns about whether the contract can succeed at all.

- The client may have a better sense of his current costs of operation, which could provide a sound basis for pricing the contract. He may share this information if the vendor's bid is too high, but may withhold this information if the vendor's bid is too low. Sharing of information

⁶Material in this section draws heavily upon Williamson (1975), Chandler (1977), and Milgrom and Roberts (1992).

may be useful if the negotiations continue through multiple rounds, but any shared information must be credible if it is to influence the terms of the contract.

- The client may have a better sense than the vendor of the expected productivity of telemarketing sales personnel, or of the time and effort needed to identify a promising lead and to complete a sale; the client may once again choose to share this information if the vendor's bid is too expensive, but may withhold this information if the vendor's error is in his favor. Once again, sharing of information may be useful if the negotiations continue through multiple rounds, but any shared information must be credible if it is to influence the terms of the contract.
- The vendor may misrepresent the productivity of his telemarketing sales personnel, causing the client to over-estimate the sales that may be expected from a sales effort.
- The vendor may misrepresent the quality of his software applications development team, leading the client to over-estimate the quality of the systems that will be delivered and to under-estimate the cost of maintenance and enhancements.

4.2.2. Similarly, one or both parties may have **private information concerning their values or their objectives**:

- The client may understate his willingness to pay for outsourcing or may overstate the savings he expects, and thus may understate the price that he is willing to pay.
- The vendor may misrepresent his degree of interest in the contract, and thus may overstate the minimum price that he expects to receive.
- While this form of strategic misrepresentation should not affect the ultimate terms of any contract that is successfully negotiated, in the presence of imperfectly skilled negotiation it can lead to failure to reach a contract, and to mutually beneficial deals that are never contracted.

4.2.3. Unobservables before the development of a contract tend to represent the inability to assess the **type** of a counter-party correctly, that is, the inability to judge the quality, cost, and reliability of a potential contracting client or vendor. Two types of problems can result:

- **Adverse selection**: I expect all vendors to perform badly, and I know that I will not be able to catch every potential abuse. Therefore I will accept only the very lowest bids, well below my current costs. This assures that I will indeed receive bids from vendors who will be unable to perform well, or who will be forced to perform badly by the economics of the contract that I have written.
- **Winners' curse**: All bidders have equivalent access to data from the potential client, roughly similar cost structures, and roughly similar models for preparing their bids. However, even if all models are equally accurate and are statistically unbiased estimators of true costs, no two potential vendors' bids for a contract will be exactly the same. With a sufficiently high number of competing vendors, for any given client request for bids the winning vendor will probably have bid lower than the others due to an error of estimation; thus profits are likely to be lower than estimated and the winning vendor may regret winning the bid.

4.3. **Unobservable Behavior During Performance of the Contract**

4.3.1. Unobservables during the performance of the contract are likely to represent the inability to assess the **behavior** of the counter-party. As we shall see, this may lead to deliberate under-performance by client, vendor, or both. (As we shall see in section 4.4, unobservables during the performance of the contract can also lead to poaching.)

4.3.2. **Unobservables during performance of the contract / vendor behavior**:

- The client may wish to encourage certain vendor behaviors that, unfortunately may be difficult or impossible to observe directly. Problems with **observability** lead inevitably to problems with **verifiability**: activities that cannot reliably be observed and measured cannot reliably be demonstrated to an independent third party, such as the courts. This, in turn, leads directly to problems with **enforceability**⁷. Thus, those behaviors that cannot be observed cannot

⁷Strict enforceability is not always required. If the benefits from the contract are roughly symmetric — that is, if there are significant and roughly equivalent benefits for both client and vendor — observability may be sufficient since neither party wants to terminate the contract. Relational contracts, based on renegotiation on mutually observable behaviors, may be sufficient. This will not deal with the risks of poaching or opportunism, discussed below, nor will it deal with the risks of extremely asymmetric gains from contracting.

be reported back to a neutral third party and thus cannot be made the basis of a classical enforceable contract (I.e., one that is legally binding and enforceable by the courts.)

- Often, surrogate measures can be attempted, but these seldom reflect precisely or exactly the behaviors that the client wants to encourage. These measures may correlate only partially with the desired behaviors (they may be noisy measures) and thus create the risk that one party may over-pay or that the other may be under-compensated. Worse, from the perspective of providing economic incentives, these surrogates may be perfectly correlated with only some of the activities performed by the vendor to create value for the client in a complex, multi-task environment. This will lead to the vendor rationally allocating his effort to maximize compensation from the activities that are rewarded, rather than to the activities that create value for the client.
- Call center contracting for inbound help desk services can specify number of calls taken or call minutes spent on service. They can specify average time customers spend in queue or the percentage of customers who hang up before being taken out of queue for service. It is difficult to specify quality of advice that customers receive or the customers' overall level of satisfaction with the quality of the support offered by the help desk.
- Telemarketing contracts can specify call minutes or calls completed, but they cannot specify telemarketing sales effort because it cannot be observed or measured
- Software development contracts can specify the number of modules to be completed and their functional requirements. They can specify mean time to failure. But it is more difficult to specify software quality, in terms of ease of user acceptance, natural feel of the user interface, or ease of extension of the interface to new applications. Mean time to failure is less interesting than expected financial loss due to software error. Even these measures do not capture quality of documentation and clarity of code structure, which will profoundly alter the cost of maintenance and enhancements.
- Sometimes it is possible to observe and measure the desired results, in which case it is possible to develop contracts that provide the correct incentives and reward the desired behaviors. Call center retention specialists are paid to deal with customers who call to cancel their credit cards, and to keep those that are profitable for the issuer. The

most frequent reason for customers' canceling their cards is to take advantage of a lower rate offered by a competing card company. For each customer there is a break-even rate; below this APR the customer would be unprofitable for the issuer. Retention specialists who are rewarded solely on the basis of customer calls serviced could maximize the number of calls taken and thus maximize their personal gains simply by telling all customers to destroy their cards and cancel their accounts. Retention specialists who are rewarded on the basis of profitable customers retained could quickly offer each customer his break-even APR. Properly designed contracts, however, would have the retention specialists rewarded on the basis of the expected annuity value of each account retained; that is, rewards can be based not only on success at retaining customers, but also on how high an APR each customer retains and thus on far above the break-even APR each retained customer remains⁸.

Experience with the principal-agent problem suggests that vendors will learn to respond to these surrogate measures to maximize their own expected benefits rather than those of the client:

- The behavior of consultants on fixed price contracts is very different from contracts based on time and materials.
- Software vendors will deliver systems that maximize the degree to which the client will be dependent upon them for future maintenance efforts.

4.3.3. Unobservables during performance of the contract / client behavior:

The buyer of services will inevitably have shifted at least some of the risks to the service provider. When the actions of the buyer are not fully observable by the service provider this frequently alters the behavior the buyer in ways that may appear at least morally questionable, even if not strictly illegal.

- A driver of a rental car may drive through forbidden territories or over low quality roads; the damage to the car can not be observed until long

⁸Clearly, outsourcing retention specialists requires providing call center contractors with a high degree of extremely sensitive information on customer profitability. This may be extremely interesting to competitors and thus may be unsafe to share with outside firms. For this reason it may be uncommon to share this information, even though it does enable the design of contracts that provide the desired incentives.

after its return, and the risks are borne by the rental car company and not the renter.

- A driver of a rental car may drive with less care if he has purchased full collision insurance since, once again, the risks are borne by the rental car company; conversely, if he has declined full insurance, he may drive more carefully, or select his parking location more carefully, since he himself is bearing the risks.

The latter example, in particular, is typical of a class of problems known as **moral hazard**.

- The buyer of call center management services may contract for provision of overflow or backup for his own call center. He may fail to notify the call center of advertising campaigns, staff picnics, or other activities that would cause demand for call center services to increase, although this would enable the call center to staff to higher levels, since he may expect the call center to provide service whenever he needs it. More likely, to reduce the risk to his own operations, he would inform the call center in advance of activities that would increase demand, so that they can have staff available. In contrast, he may fail to inform the call center service provider of actions that would cause demand for their services to decrease, such as canceling the picnic or delaying the advertising campaign, since he views the service provider as a free option, with no cost to him if he chooses not to exercise the option after the center has increased its staffing to meet his announced demand forecasts. These actions are costless to the buyer of telemarketing services, but impose real costs on the service provider.

4.3.4. Unobservables during performance of the contract / mutually unobservable behavior:

Mutually unobservable behavior may lead to inter-firm problems associated with **imperfect commitment**. This frequently manifests itself through mutual shirking. For example, a manufacturing company developing an entirely new product line may attempt to protect itself by shifting some of the sunk development costs, and hence some of the risks, to its suppliers of components. Critical suppliers may be asked to pay for the initial development of their components, and thus may be asked to absorb all the risks associated with the development of their components; to provide incentives they may be assured of sole sourcing relationships for the product life-cycle if the new product line succeeds. However, if the product line fails, the suppliers will lose their full investment in development. If the supplier fears that the manufacturer may

under-invest in marketing, sales, distribution, final assembly, or quality assurance, then the supplier will rationally attempt to limit his own risk by under-investing in the development of his components for the new product. If the manufacturer fears that the suppliers will under-invest, he too may under-invest until he sees what they have developed. If both parties shirk, fearing shirking by the other, then the product line will probably fail. Both parties will feel that events have justified their caution, even though, paradoxically, it is this mutual caution and inability to coordinate actions in a way that would have been mutually beneficial that led to the failure of the venture.

Mutual shirking in a manufacturing setting may occur when the new product developer relies upon a software outsourcing vendor to provide the systems needed to integrate the various component vendors along the supply chain. The software vendor, like the component suppliers, may be asked to front the development costs, in exchange for a share of the profits (royalties) over the life time of the product line. While this may create incentives to perform well as long as the venture appears to be succeeding, it may create incentives for the software vendor to shirk if he fears that the manufacturer will do so, and for the manufacturer to shirk if he fears that the software vendor will do so.

Mutual shirking can occur in the provision of services. The developer of an innovative financial service may be responsible for advertising, for obtaining regulatory approval, for product design and systems development, and for final pricing decisions, while a contract telemarketing firm may be responsible for distribution and for investment in training and systems to enable that distribution. If the primary service provider doubts that the telemarketing firm has invested to handle his peak capacity, he may price to maximize profits under more limited service capacity; if the telemarketing firm doubts that the primary service provider will be ready, or that he will price to maximize profits under assumptions of adequate telemarketing capacity, he may under-invest in development, training, or staffing.

Shirking can also occur in anticipation of opportunism, once again leading to imperfect commitment by both parties. A service provider who is dependent upon a third party for distribution may anticipate that his telemarketing supplier will raise prices after he has invested in system development, marketing, and advertising; in consequence, the service provider may limit his risks by under-investing, or by canceling the venture entirely.

This suggests some activities may be tightly coupled and indeed co-specialized, and that the provision of co-specialized assets may require careful contractual management. Section 5 explores the contractual mechanisms available.

4.4. **Poaching and Theft or Misuse of Critical Information**

There clearly exist examples when strategic sourcing agreements, or strategic partnerships more generally, have enabled one party to have access to information that was critically important to the success of the other. If this information is then misused in ways that were unintended, and that were not precluded by enforceable contract terms, considerable damage may result. As we have seen, a travel agent or other service provider may operate for a while with a foreign partner, until it has learned enough from this partner to compete with it in its home market. A vendor of trading services for securities firms or stock exchanges may implement a system for one organization, then implement a similar system for a competitor, including in the new system critical trading enhancements developed by the first. A manufacturer of stereos or other consumer electronics may outsource much of its manufacturing to an off-shore firm, only to discover that its off-shore supplier has learned its technology well enough to compete with it effectively, perhaps indeed driving it from the market.

It would appear that these problems should never have occurred. Contracts should always be sufficiently detailed about what uses of information are permitted and which are prohibited to preclude this sort of misuse by either party. However, it was difficult for either party to the travel agency partnership to anticipate that they might eventually compete. The London Stock Exchange did not anticipate that changes in its trading environments — especially regulatory change associated with European Monetary Union — would create so many potential competitors on the continent. Cuisinart did not anticipate that its supplier — Robotcoupe — would become a competitor.

Unfortunately, information products are easy to poach: It is difficult to be forced to forget what you have learned. It is hard to restrict poaching because it is difficult to anticipate all the ways in which the environment may change, creating opportunities to use information for personal gain in ways that were not anticipated, or that cannot be directly observed.

Bounded rationality implies limited ability to anticipate the future with complete accuracy:

- It is difficult to anticipate all possible environmental changes; that is, not only may it be impossible to assign probabilities to all possible future events, it may be impossible even to list those that may influence the long term behavior of parties to the contract.
- Thus, it is difficult to anticipate actions that the firm itself may wish to take in response to these environmental changes.

- Moreover, it is difficult to anticipate the actions that the outsourcing partner may wish to take in response to these changes, perhaps to the detriment of the firm. Since it is difficult to anticipate how contracting partners may wish to act, it is difficult to anticipate what to observe and to anticipate what explicit restrictions should be placed upon their future behavior.

Therefore, bounded rationality implies limited ability to design an appropriate contract, based on the limited ability to foresee the actions of the firm and the actions of its contracting counter-parties. Since not all eventualities can be anticipated, it is not possible to design a contract that covers all eventualities and specifies all future behaviors of both parties.

Other problems may result from international differences in contracting, intellectual property protection, or other failure of enforceability. However, it is not necessary to postulate problems with enforceability as long as it is clear that there are almost always problems with specifiability. Quite simply, neither party can enforce terms of a contract that they did not have sufficient foresight to include in the contract.

This should have strong implications for the decision to consider an activity as a keeper and not as a candidate for outsourcing.

4.5. **Sunk Investments, Leading to Opportunistic Repricing**

Sunk investments, which were designed for one purpose and have limited utility in alternative uses, restrict the options of whichever party made these investments and themselves lead to small numbers bargaining situations. This was most true of traditional investments in co-located physical facilities. Examples can be found (see, for example, Chandler, 1977; or Milgrom and Roberts, 1992) where co-located facilities will have the same ownership of these sunk assets, to avoid opportunism. Milgrom and Roberts present the example of power generation utility companies that are co-located at the mouth of a coal mine to gain the benefits of lower shipping costs, and that are co-owned by same company to avoid opportunistic repricing by the coal company.

Clearly, while investments based on information technology are less sunk than are investments in traditional physical plant (as examined by Clemons, Reddi, and Row, 1993), they may still create the possibility of opportunistic renegotiation. A major travel agency may make a multi-million dollar investment in serving a major corporate client, and may expect to retain the benefits that accrue from cost savings. The client may note that this investment has limited use outside the relationship and that it is a sunk cost. Just as with co-located dedicated physical facilities, as discussed in section

3.6, the client may be able to demand most of the savings, by explicitly appealing to the limited attractiveness of the vendor's next-best use.

Again, bounded rationality is a factor. If it were possible to envision all possible potential abuses and to contract against them then initial development costs could be ignored as a source of risk in relationships and in outsourcing contracts.

Paradoxically, the very magnitude of the client's sunk investment in his own business, the limited usefulness of these sunk investments in other businesses, and the large exit barriers that make it undesirable for the client to terminate his business, all combine to give significant power to the vendor if alternative vendors cannot readily be found.

- Example: When CRS vendors began to impose high fees on airlines, airlines had few options other than to pay these fees or to fail and declare bankruptcy. As discussed in section 2, this gave the CRS vendors enormous power; the airlines' next best use for their partially filled aircraft appeared far worse, for most, than simply paying the new CRS fees. Again, this problem was created for the airlines largely due to bounded rationality and the limited ability to foresee the possibility for opportunism that success of the CRS distribution system would create.
- Example: After outsourcing all operations and facilities management, a financial services firm may find that it cannot rapidly reclaim the operation of data processing facilities after outsourcing, with the associated "badge flipping" of employees to the vendor, the closing of dedicated data centers, and the dispersion of critical personnel to other locations within the vendor's organization. This can lead to the imposition of substantially higher fees in the later period of the contract, or after contract renegotiation, since the client has few options other than to pay the fees or cease operations until the effects of the outsourcing decision can be reversed.
- Example: After outsourcing software development and maintenance for strategic value-adding applications, key applications development personnel will have left the firm. New applications may be incompletely documented and perhaps poorly structured. These factors make it extremely difficult to reverse the effects of outsourcing and to reclaim applications development or maintenance of existing applications, and thus suggest that the client will have little bargaining power when the terms of maintenance contracts need to be renegotiated in the future.

Once again, **bounded rationality** implies limited ability to anticipate the future with complete accuracy:

- It is difficult to anticipate all possible environmental changes, including those caused by the outsourcing arrangement itself. For example, the advent of travel agent CRSs fundamentally altered the distribution channel for air travel, leading to increased market share for corporate travel and increased power for the CRS vendors. These effects were accelerated by deregulation of air travel, increasing the complexity of fare structures and increasing corporate reliance upon travel agents. This change in power enabled the opportunism of CRS vendors when renegotiating the terms of CRS service for airlines. (See Clemons and Row, 1991.)
- Once again, it is difficult to anticipate the actions that the outsourcing partner may wish to take in response to these changes, perhaps to the detriment of the firm. Since it is difficult to anticipate how contracting partners may wish to act, it is difficult to anticipate what to observe and to anticipate what explicit restrictions the contract should attempt to place upon their future behavior.

4.5.1. Since bounded rationality implies limited ability to design an appropriate contract, the possibility of opportunistic behavior by counter-parties should have strong implications for the decision to consider an activity as a keeper and not as a candidate for outsourcing.

4.6. **Strategic Uncertainty**

Strategic uncertainty may once again imply bounded rationality, an inability to design an appropriate contract. Thus, a highly turbulent and rapidly changing environment exacerbates all of the problems addressed above. For example, most of the truly costly examples of opportunistic renegotiation deal with events that were enabled by unforeseen environmental changes. The most common of these, changes in regulation of air travel, financial markets, telecommunications, and power generation, were unforeseen but not unforeseeable (Clemons, 1995). Strategic planning tools exist for dealing with strategic uncertainty (e.g., Clemons, 1995; de Geus, 1988; Schoemaker, 1995; Schwartz, 1991), but the links between strategic planning and contracting for outsourcing often appear to be tenuous at best.

4.7. **Summary of Problems Associated with Outsourcing**

It is customary to argue that if all issues could be anticipated, and if all behaviors could be measured and specified in an enforceable contract, then there would be no problems associated with outsourcing. Thus, the literature refers to our bounded

rationality, or limited ability to contract. We will for clarity call this **bounded contractibility**.

- Bounded contractibility may be due to **limited foresight**: It is not possible to anticipate all possible future conditions, and thus impossible to envision the behaviors that the client may wish or the vendor may attempt. Therefore, not all eventualities can be contracted. This can lead to poaching and opportunism.
- Alternatively, bounded contractibility can be due to **limited observability**: not all behaviors of interest will be observable, or unambiguously verifiable to a third party; thus it may be impossible to specify all behaviors in an enforceable contract. This can lead to shirking and poaching.
- Finally, bounded contractibility can be due to cognitive limitations: We may not know how to infer from observable behaviors what is actually occurring in terms of behaviors of interest, or we may not know how to convert this into a contract, or we may not wish to invest the effort needed to convert this into an enforceable contract. These limitations are a subset of what is best termed **bounded rationality** (see, for example, Simon, 1951).

Limited observability can itself be subdivided:

- Private pre-contractual information represents the inability to assess correctly the **type** of the counter-party. This can lead to the problem of **adverse selection** and to **winners curse**.
- Private information during contract execution represents the inability to observe accurately the **behavior** of the counter-party. This can lead to the performance problems associated with **shirking**, of **moral hazard**, and of **imperfect commitment**. It can also lead to poaching.

5. How to Outsource (Part Two): Contractual Mechanisms to Address Risks

Each of the problems detailed in section 4 produces a different risk profile, and hence each requires a different contractual mechanism to reduce or mitigate risks⁹.

5.1. Classical mechanisms to reduce inter-firm risks

Standard actions are described in the economics literature, but most of these are better suited for older, manufacturing industries and not for dynamic and rapidly changing industries with intangible information-based assets.

- **Williamsonian under-investment:** Forgo the benefits of outsourcing. Walk away from the deal and do not invest in partnership. This, of course, means that potential benefits are lost (Williamson, 1975).
- **Uneconomic vertical integration:** Buy the outsourcing partner and forego the benefits of outsourcing. This, of course, is rarely possible in an information technology outsourcing agreement: few clients can or would wish to buy IBM, Andersen, or CSC.
- **Pseudo-vertical integration:** Form a long-term contract, to preclude vendor's subsequent opportunistic price changes. This works with near-commodity products, for which product quality and market prices can be determined. It does not address issues of shirking or of poaching, which, as we have seen, may be critical.
- **Ownership of critical assets:** If the ownership of stamping dies gives parts manufacturers (suppliers) too much power over their customers (the primary manufacturer), the risk of opportunism can be reduced by having the primary manufacturer retain ownership of these dies; this mechanism, in fact, has been frequently used by automobile manufacturers in their dealings with component manufacturers.

This fourth mechanism (ownership of critical assets) is not always directly applicable in the context of information technology outsourcing, as it is difficult or impossible to reclaim information assets with sufficient completeness to prevent poaching and the subsequent misuse of these resources. Moreover, the risk of poaching persists after the

⁹This section draws heavily on work by Williamson (1975). For a sense of the current state of understanding concerning the application of transaction cost economics to information technology outsourcing, see Lacity and Willcocks (1995) or Lacity, Willcocks, and Feeny (1995, 1996).

contract ends, which is why intellectual property agreements and non-disclosure agreements may be signed before a contract is negotiated and may extend beyond the contract duration.

Ownership of critical assets may be directly applicable to avoiding opportunism: if the client can regain ownership of his data in a fairly routine application like payroll processing, and if he can find an alternative provider for payroll processing services, then he can safely avoid opportunistic repricing.

Moreover, ownership is principally interesting because of the **decision rights** that it confers. That is, the owner of data or other assets can, in principal, determine who can use them and how they can be used. Thus, with a sufficiently detailed contract, and in an environment that is sufficiently stable to permit reasonably accurate predictions of how either party may wish to use data or other resources in the future, it may be possible to enjoy the same benefits as are conferred by the ownership of more traditional physical assets.

Finally, economic theory describes the role of **posting bond**. Contracts may require that a cash sum or other asset be pledged as a token of good faith. In practice, performance bonds seldom take the form of purely cash. Likewise, they seldom take the other form that is commonly modeled, that of medieval hostages. However, the **reputation** of contract participants often serves a role similar to that of hostages. Actions that would encourage a contracting partner to “go public” with his complaints and to “destroy the reputation of the offending firm” have much in common with provoking a decision to “kill all the hostages.”

5.2. Non-traditional (relational) contracts

Economic theory developed by Williamson (1975) also describes the role of flexible relational contracts. Traditional or **neoclassical contracts** attempt to specify fully the conditions that may arise, the actions that both parties must take in response, the compensation that each will receive, and (by default) the residual rights that each will enjoy. In contrast, **relational contracts** specify that we agree to work together now, in order to achieve gains from cooperation now, and that while we agree to work to achieve an agreement, we also agree to specify the details of our agreement at a later time and to revise the terms of that agreement as conditions evolve. This will often reduce the cost of developing detailed contracts with expensive safeguards.

Relational contracts can work under certain conditions:

- If both parties perceive significant gains from the continuation of the relationship.

- If general principles can be agreed for determining initial obligations and compensation.
- If general principles can be agreed for determining when it is necessary to renegotiate terms, and if general principles can be agreed for determining how to recalibrate terms of compensation.
- If future conditions do not present situations where either party perceives either excessive risk to himself or overly attractive opportunities to exploit their contracting partner with limited risk to himself.

However, relational contracts are **not** effective when they are used to defer discussion of profound and difficult areas of strong disagreement, or to defer discussion of profound and uncontrollable risks until later, “when we’re friends.” Deferring detailed contract negotiations until a later time frequently makes it more difficult to resolve these issues, because one or both parties feels trapped, with his range of options limited by investments that have been made and by poorly informed or ill-considered decisions that have already been made. Moreover, deferring detailed contract negotiations until a later time frequently makes it more difficult to resolve disagreements because they have surfaced in a more emotionally charged context, often leading to a sense of betrayal by one or both parties. Actions that were that prescribed, that counter-parties view as threatening, or a failing to comply with their unstated sense of their rights and objectives, frequently leads to a sense that “my partner would not treat me that way!” Once the emotional cast of the relationship has been poisoned in this way, it is extremely difficult to resume the deferred negotiations of the terms of a relational contract.

Relational contracts are principally concerned with reducing the costs of contracting, and work well when the possibilities for opportunism are limited. They work well when environmental shifts are likely to require changes in parameters of the contract; for example, if a change in the market changes the time required to complete a sales call, and thus the level of compensation that is appropriate, but when these environmental changes are limited. Relational contracts do not work well when changes are great enough to create significant possibility for opportunistic behavior. However, as we have seen a high risk of opportunism frequently is sufficient to determine that an activity should be considered a keeper, and thus to render an IT outsourcing venture unsafe or uneconomic.

5.3. Risk management in contracts involving information assets

Risk management in contracts involving information assets will frequently involve a more complex and more robust set of options than those frequently employed in more traditional contracting for physical assets:

5.3.1. **Dealing with problems caused by Pre-contractual Private Information:**

- **Exercise Due Diligence** — purchase information from third parties, explore reputations, and reduce pre-contractual differences in information endowment.
- **Test-market the relationship** — observe behaviors during a well-defined test phase, assuming that realistic tests can be devised and that necessary observations can be obtained, even if pre-contractual monitoring can only be done at a cost that could not be sustained during the contract. For the test to be meaningful, a certain level of environmental stability relative to the contract duration is required. Additionally, it must be possible to perform the test phase without massive irrecoverable investment from either party. Finally, the test must be reliable: it must be too expensive for either party to manipulate the test phase to influence the results, or their must be recontracting intervals if the initial tests do not turn out to have been reliable.

Test marketing to calibrate estimates and reduce pre-contractual information asymmetries works relatively well in the call center outsourcing environment:

- **Set-up costs and initial investments are low.** It is not possible to run a test of a dedicated data processing facilities management contract because the cost of building and observing the facility would be prohibitively high.
- **It is possible to measure behaviors and performance for the calibration period.** It is possible to determine how long a call lasts, and sometimes it is possible to predict how many calls it should be possible to make in a unit of time or what percentage of calls should lead to sales.
- **The environment is likely to be stable enough to permit meaningful inferences to be drawn from the initial calibration period.** Thus there is little risk in using the data from one period to determine compensation in the periods that immediately follow.

Indeed, experience with call center contracting indicates that call center service providers and their clients are able to agree in advance on the general functional form of the their contracts, that they agree to test and calibrate for the first month, and that they use the results of this calibration period to set the specific terms of compensation needed to implement the contract.

5.3.2. **Dealing with Private Information and Unobservables during the performance of the contract:**

Agreeing in the contract to **recalibration and renegotiation** may help achieve a contract in the presence of unobservables and to share risks. It is possible to agree to recalibrate the time taken to complete a sales call and the proportion of calls that are successful, and to use this information to renegotiate the parameters used to determine compensation during the duration of a contract, much as it is done to provide the initial settings for these parameters after the first month of the contract. The same characteristics of call center outsourcing that support calibration after an initial month support recalibration as well. Moreover, since initial setup costs for the vendor are low, and switching costs to the client are limited, either party can safely terminate the contract using the industry standard 30-day cancellation option, if acceptable terms cannot be agreed upon.

It may be possible to structure a contract using surrogate measures to achieve **payment for results** instead of **payment for behaviors**. Contract negotiation can include the design of surrogate measures that can be observed and that are more closely correlated with the desired results of the client than are simple measures of call minutes or calls completed. The client would prefer measures that were more directly related to his profitability, such as quality of leads generated, sales volume generated, or even high-margin sales volume generated; if these measures were mutually accepted, they could also be used to compensate the vendor for behavior that would be profitable for the client. Contracting based upon such measures would enable risk shifting, risk sharing, and profit sharing¹⁰.

We find only limited evidence that such contracts are currently employed in the call center management industry. An example that comes close entails paying the vendor using three different compensation levels. The client agrees to pay a low fee for each and every outbound call completed by the vendor (perhaps \$1.00), a higher fee for a call that generates a qualified lead (perhaps \$5.00),

¹⁰For example, negotiating a contract based on payment for the number of successful telemarketing sales rather than upon the number of sales calls completed should create better incentives from the client's perspective and if the vendor acts upon these incentives this should produce greater revenues for the client. Unfortunately, this compensation system does, however, force the vendor to bear more risk, and thus may initially be acceptable to the vendor. However, since the better alignment of incentives should produce more sales and thus more client revenue, it should be possible for the client to share some of this revenue with the vendor. Thus, a well designed contract will serve the economic interests of both parties.

and a still higher rate for any call that generates a completed application (perhaps \$15.00). While this stops short of rewarding the vendor for applications that are ultimately approved (deferring compensation until the approval process can be completed, but rewarding the vendor for more careful screening), or for applications that yield substantial and profitable business (which requires payment over time and requires providing the vendor with credible information sharing), this contract does provide some reward for the vendor's production of results.

Other alternative mechanisms appear to be slight variants of "pay for behavior," with some limited ability to shift or share risks. The client may tell the vendor how many minutes each call should take, and then negotiate a payment for each **call** that yields expected revenue that approximates the vendor's desired target rate per minute. This reduces the likelihood of vendor shirking by putting less effort into each call since this would cause calls to take longer and thus shirking would reduce the number of calls made and the vendor's revenue. However, the client may deliberately understate the time required for each call or take actions (such as failure to advertise for an inbound program or to screen target names adequately for an outbound program); this could increase the time required for each call and thus reduce vendor revenues. These risks are handled by frequent recalibration and renegotiation of payment per call. Alternatively, the client can agree to pay the vendor for time spent calling, and the vendor can agree "to attempt to reach" targets that are mutually negotiated. For example, in an outbound survey program, the client may agree to a fixed dollar amount and the vendor may agree to try to complete a fixed number of surveys. While a contract in which the vendor agrees to "attempt to reach" targets may appear to shift all risk to the client, reputation effects and the desire to keep the client satisfied, to gain future business from the client and from other potential clients may create significant vendor risk if the vendor fails to reach the targets. This may provide sufficient incentives for the vendor, even without more specific contractual obligations. However, we are concerned that by shifting too much risk to the client, a vendor may cause the client to view the expected cost as too high; this may result in mutually beneficial deals that do not get done, or in the vendor losing profitable opportunities to competitors.

5.3.3. **Dealing with Sunk Costs and Opportunism**

Sunk costs associated with investments needed for start-up of the contract produce risks for whichever party makes these investments. If the investments are generally applicable to alternative call center vendors because of largely standardized equipment then the client would bear little risk in paying for development provided he retained ownership of the materials generated, since

if he terminated the contract he could use the set-up materials at any other vendor. If the vendor were to pay for development, and if the materials developed were largely applicable only to the specific client's program for which they were developed, then the vendor would be bearing the risk of early termination. Some sharing of development cost, or at least some sharing of the relationship-specific portions of these costs, would appear to share risks, while having the client pay but retain ownership would appear to minimize risks. (Having the client pay reduces the risk of opportunism by the vendor, but it does not eliminate the risks associated with programs that fail due to unanticipated environmental factors and that are consequently terminated early.)

We see little evidence that the call center outsourcing business uses sophisticated contractual mechanisms to share the risks associated with opportunism enabled by sunk development costs. Rather, a small industry standard set-up charge is used, which covers a portion of the development cost. The vendor usually attempts to recover the rest of the client-specific development costs by bundling them into the monthly costs for the initial contract period, without actually itemizing these costs explicitly, by imposing certainly monthly minimum charges in the initial period to help assure that these charges cover development costs, and by imposing an early termination charge to assure that these setup costs are covered even if the contract does not run long enough to permit development costs to be recovered by these mechanisms.

5.4. Examining a Sequence Of Contract Types

The remainder of this section will examine simple alternatives for providing incentives and sharing risks in contracting for the performance of an outbound sales program.

5.4.1. Basic compensation, risk sharing, and incentives:

The vendor wants to earn **c per call hour**, where **c** is a market rate that is fairly standardized and readily determined by client and vendor. This form of compensation leaves the vendor with very little risk: The market for the client's product may be smaller than estimated, or the client's product may be less attractive, so that more vendor time will be required to make each sale. Additionally, the client may fail to advertise or may set an unrealistically high price for products, shifting the sales effort to the vendor of telemarketing services; this represents forms of moral hazard, as described in section 4. Compensation based on calling time assures the vendor that he will earn his target hourly rate, regardless of success in sales.

The client wants to pay S per sale, or S per sale subject to a cap that yields compensation roughly equivalent to c per call hour. This protects the client against shirking by the vendor, such as artificially padding reported sales efforts by making effortless and unproductive sales calls.

A possible form of compensation for this contract might be a weighted combination of the objectives of both client and vendor:

$$\text{PAYMENT} = (c - x) \text{ CALL HOURS} + (S - y) \text{ SALES}$$

Such contracts do not appear to be widely used in the call center outsourcing industry, nor is there reason to assume that they are optimal. Linear contracts like this are simple enough to be easily analyzed and explained, however, and represent a good way to begin the exploration of alternative contractual forms of risk sharing and incentives.

If $x > 0$ then the vendor is being paid for only some of his call hours. The smaller x is, the more closely the contract approaches the vendor's request to be paid on the basis of calling time, the smaller the vendor's exposure to environmental surprises and surprises caused by moral hazard by the client. If $y < S$ then the vendor is paying paid partly for sales efforts. The smaller y is, the more closely the compensation plan resembles pure commission, as requested by the client. The constants x and y can be set so that the expected payments approach c CALL HOURS, or S SALES, or any value in between.

There is no reason to assume that this contractual form is optimal, or, initially, to assume even that it produces desirable behavior. It might appear that it would be optimal for the per hour charge (c-x) to be zero. That is, since it is not call hours that the client desires but sales, and since the client should neither care how many hours it takes to make these calls if the vendor is efficient nor wish to pay for these calls if the vendor is inefficient, it is not clear that there should be any time-based compensation for the vendor. However, compensation based solely on sales forces the vendor to accept all of the costs that may potentially be created by environmental risk or by client under-investment; it should be evident that the vendor may attempt to pass some of these costs back to the client, or that the vendor may reject many mutually beneficial contract offers as a result of the associated risks. It should appear that compensation based solely on time likewise is undesirable because it generates significant incentive to shirk and only minimal incentives to sell successfully. However, a linear weighted combination of time-based and sales-based compensation could be the worst possible contract type, since it could encourage shirking by the vendor and under-investment and moral hazard by the client. That is, if $x < c$ there may still be incentives for the vendor to shirk

by padding call hours, and if $y > 0$ there may still be risk to the vendor if the client under-invests in supporting activities.

Subsequent analysis suggests that under modest and plausible behavioral assumptions this contract will not be worse than the two extreme forms of determining compensation, and that it can often be better. For example, we may assume that the **desire to shirk** increases rapidly as the size of the **opportunity to shirk** (that is, as the size of the opportunity to shirk increases by P% the desire to do so increases by more than P%). This would be plausible if the penalty for being caught shirking — for contract violation — was contract termination or some other penalty not proportional to the size of the offense. For small opportunities we would expect parties to resist temptation, as the penalty would outweigh expected gains if they were detected. As the opportunities to shirk get larger, the temptation to shirk might become harder to resist. Under this assumption a weighted average would be strictly better than either extreme form of compensation.

5.4.2. Sharing of risks associated with development costs

The vendor wants to recover any significant relationship-specific development costs rapidly, either up front or over the first n months of the contract. In contrast, the client wants to pay no up-front development costs, but may be willing to pay a premium to the vendor to have the vendor absorb the risk associated with fronting the development costs. Either alternative creates risks:

- If the client fully and rapidly repays the vendor for investments to support the program, the client's sunk investment is increased, increasing the vendor's bargaining power and possibly subjecting the client to opportunistic renegotiation imposed by the vendor.
- If the client defers repayment, then the vendor's sunk investment remains large, increasing the client's bargaining power and possibly subjecting the vendor to opportunistic renegotiation imposed by the client.

It is necessary to develop some contractual mechanism that allows the vendor to recover development costs, and to do so in a way that balances risks and preferences of client and vendor and, most importantly, does not distort incentives.

- **Impose a surcharge on billable time:** The first alternative would be to impose a surcharge c' on each call hour until the sunk portion of the

development cost was completely repaid. This is a poor solution since it distorts the behavior of both vendor and client. Since the vendor is being paid more for time than cost plus standard markup, there is an incentive to over-bill. Since the client is paying more for time than cost plus standard mark-up there is an incentive for the client to terminate the contract early.

- **Recovery payments not tied to billable time:** Recovery payments not tied to billable time have the desirable property that they do not create economic incentives for the vendor to overbill for time or for the client to terminate the contract. As noted above, payment can be rapid, shifting risk to the client, or slower, leaving risk with the vendor.

A possible form of compensation for this contract might once again be a weighted combination of the objectives of both client and vendor:

$$\text{PAYMENT} = (\alpha - \beta) \text{ CALL HOURS} + (\beta - \gamma) \text{ SALES} + (\alpha - \beta) (\text{DEVELOPMENT} - \text{SALVAGE}) + \beta (\text{DEVELOPMENT} - \text{SALVAGE})$$

$(\alpha - \beta) (\text{DEVELOPMENT} - \text{SALVAGE})$ represents the initial payment the client makes to the vendor to repay the client-specific or program-specific costs of launching the program; as α approaches 1 the client's initial payments approach full compensation. Likewise, $\beta (\text{DEVELOPMENT} - \text{SALVAGE})$ represents the client's monthly payments for these costs. Monthly payments can be continued for n months until full recovery (i.e., until $\alpha + n\beta = 1$); alternatively, the parties can agree to continue the payments beyond full recovery to compensate the vendor for bearing initial risk (i.e., until $\alpha + n\beta > 1$).

As we have seen, the call center industry uses a limited range of contractual options to deal with the possibilities for opportunism that are created by sunk program-specific development costs.

A wider range of options is observed in other industries for sharing the risks associated with sunk development costs. A major European automobile manufacturer has undertaken the development of an environmentally friendly commuter vehicle, which is fuel efficient, small and easily parked, with capacity for two passengers, and large trunk capacity. An optional package will permit the car to be switched to electric operation for center city "combustion free zones" should they become prevalent. This program is not intended to develop an inexpensive vehicle for emerging economies, but rather to provide a safe, comfortable, and economically rational second or third car

for affluent European consumers. The car is unlike anything the manufacturer has attempted to produce before, and the development costs for small, fuel efficient engines, for electronic and hybrid operation, and for a high degree of safety and comfort in a car that is a third shorter and half the weight of their existing automobile lines, will all be quite high. The manufacturer has chosen to outsource a far higher proportion of the components for this car than would be common in the United States, and a higher proportion than it does on its current models. Most of the suppliers that it hopes to use in this new vehicle program have agreed to pay the full costs of research and development for their new components. Thus, component vendors are absorbing the risks created by the possibility that the venture may fail for reasons outside their control; this could occur for any of a wide range of reasons, including other vendors' technical difficulties in developing their critical components, a change in anticipated environmental regulations, or a change in consumer interest in "green issues." The venture could also fail if the manufacturer prices the product too high, fails to advertise the product effectively, or decides not to invest in the appropriate channel for distribution, sales, and service. In exchange for absorbing these risks, the component suppliers are assured a premium price and sole sourcing relationships for the product life-cycle.

The manufacturer has also chosen to outsource the systems needed to integrate its supply chain and manage its novel partnership relationships with a wide range of component suppliers. For a variety of reasons — principally lack of a sufficient number of skilled programming personnel — it chose to outsource this vital systems component. Its contract with its systems development outsourcer is novel and especially interesting. The systems vendor originally proposed a fixed price contract, and after negotiation a revised total cost was agreed by both parties. The client then proposed a novel payment option: A very small fixed payment was made, a small fraction of what the vendor would normally charge, which we have termed "minimum wage outsourcing." However, the vendor has also been promised a royalty on each car sold. The level of the per-car royalty has been determined so that if the new vehicle program succeeds and reaches the sales levels anticipated by the manufacturer, the systems vendor will receive a payment that both client and vendor agree is fair payment for the work that the vendor has contracted to deliver. Clearly, the systems vendor has, by paying for most of the cost of systems development without assured payment from the client, absorbed most of the risks associated with developing the supply chain management system. However, the royalty payments will not be capped after the vendor has received the price that was agreed upon as fair for the system; thus, in exchange for absorbing the risks, the vendor has been granted the ability to participate in the upside. It can be argued that in the event the vehicle program succeeds, the client may end up

paying far too high a price for the systems the vendor delivers. The client argues that this is fair, given the degree to which risks have been shifted.

It is interesting to contrast this example with the experience of the travel agency that invested in systems to support a single client, and then was able to recover none of its development costs that remained after the first year. Alternatives suggest themselves to explain the differences:

- The first is that reputation effects may be far more important in the European market, or in the automotive industry. Thus, a major automobile manufacturer that betrayed its suppliers might be unable to get any of them to participate in shared development partnerships, and thus might be at a significant competitive advantage relative to other manufacturers in any vehicle program that required cooperation and shared investments.
- A second is to look at switching costs and the “next best use” available to each player (that is, to look at the outcomes predicted by Nash bargaining, (Tirole, 1988)). In the travel industry, the absence of switching costs for the client suggest that after the contract expired at the end of one year the client had neither cost nor risk of service degradation if it switched travel service providers. The travel agency, however, had no other use for its systems. Thus, the client’s next best alternative if the vendor does not share the savings resulting from the systems that he developed (switch vendors) was a matter of indifference. The vendor should not have been surprised by the proposed new contract, as he had no bargaining power after the old contract expired. In contrast, the bargaining power in the automotive example may be more symmetric: It may be true that the client needs the vendor because there will be no alternative supplier for the innovative components that the supplier developed, and that the vendor needs the client because there is no other customer. In this case bargaining power may remain sufficiently balanced.
- A third possibility is that structural changes in the automobile industry may explain current behavior. In particular, global excess capacity may make parts suppliers more compliant, increasing the buyer’s bargaining power and increasing the suppliers’ willingness to accept risk. It has been suggested that automobile manufacturers may “turn themselves inside out and become more like systems integrators than metal-bashers (The Economist, 1997).

- A final possibility is that it is simply too soon to tell if the mechanisms employed by the automotive development program will work.

In brief, only a limited range of options is regularly employed to manage the risk of opportunism created by the presence of sunk costs in outsourcing agreements. For the more creative, less traditional options, there is as yet limited experience to assess how well they do (or do not) perform.

5.4.3. Dealing with the risks of Moral Hazard and free options:

The client wants to know that vendor will always have capacity available to meet unanticipated spikes in demand.

The vendor knows that maintaining excess (unused) capacity will be expensive. If capacity is maintained as a free option for the client, the client will abuse it (moral hazard). The vendor will either have to absorb losses or to raise hourly billing rates. Raising rates may either drive client away or create sense of entitlement, leading the client to further abuse of the free option.

Incentives must be developed to encourage information sharing, allowing appropriate staffing levels to be maintained to the greatest degree possible given the client's imperfect forecasts.

A possible form of compensation for this contract might once again be a weighted combination of the objectives of both client and vendor:

$$\begin{aligned} \text{PAYMENT} &= (c - x) \text{ CALL HOURS} + (S - y) \text{ SALES} + \\ &\quad (\text{DEVELOPMENT} - \text{SALVAGE}) + \\ &\quad (\text{DEVELOPMENT} - \text{SALVAGE}) \\ &\quad c^* (\text{CALL HOURS} - \text{FORECAST}) \end{aligned}$$

If the client accurately forecasts call hours there is no additional cost borne by the manufacturer either due to idle time (if the client's estimates are too high) or due to last-hour heroic efforts such as reallocation of supervisors to call center service stations (if the client's estimates are too low). Thus, if the client's estimates are correct, payment is not affected. If the client's estimates are significantly off, then there is a penalty imposed of c^* , the avoidable incremental costs that were caused by the inaccuracy of the estimate, times the number of hours by which the estimate was in error. However, this contract provides distorted incentives when the vendor can manipulate call hours, since

the incremental charge of c' does provide an incentive for the vendor to pad call time¹¹.

6. Conclusions

6.1. Summary of call center experience

We began with two risk-based screens for determining which activities might be considered as targets for outsourcing, and concluded that firms should outsource those activities for which they lacked critical competence, as determined by benchmarking studies, and for which a careful assessment of the risks created by outsourcing suggested might be safe to outsource. We then used transaction costs economics to provide the basis for a study of the sources of risk. We explored the contractual mechanisms available to reduce the costs that these outsourcing risks might be expected to impose, and concluded with a study of contractual mechanisms employed in the call center outsourcing marketplace. We focused on call center outsourcing because although the risks were of the same types as in information technology outsourcing generally and had the same generic causes, the risks were simpler and more easily described, the expected losses were smaller, and the contractual mechanisms employed appeared to be simpler than in full information technology outsourcing.

6.2. Future Extensions in Information Technology Outsourcing

We plan the following extensions to our current work in technology outsourcing:

- We plan to examine a sample of contracts for information technology outsourcing, to explore alternative contractual mechanisms for risk sharing and risk shifting. We hope to be able to determine which forms of contractual mechanisms are currently in use to manage risks; additionally, we hope to be able to use longitudinal company data, to assess which forms of risk management have been successful. Success will be evaluated in terms of client and vendor satisfaction, as well as with measures of service quality.
- We plan to examine a sample of sourcing contracts from different countries. We wish to determine if the risks that are considered significant differ

¹¹Fortunately, for inbound call center operations such as help desks, where the problem of moral hazard may be most severe, it is possible to verify the number of incoming calls and it may be possible to obtain accurate estimates of expected call duration. This would make it difficult for the vendor to pad call hours.

systematically from country to country, and if the contractual mechanisms employed to manage these risks differ as well.

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