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Strategic Asset Transfer in IT Outsourcing Contracts

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ABSTRACT
Outsourcing contract with IT asset transfer limits the options of the client firm in vendor selection in future, and it is puzzling as why client self creates “switching costs” which limit her own contractual options. This paper attempts to unravel this puzzle through a game theoretic set up wherein the client faces vendors endowed with heterogeneous capabilities whose effort is unobservable and though IT services quality is observable; it is not verifiable and thus not contractible. Counter to intuition, we show that client uses asset transfer as a costly device to screen out vendors of low capability and voluntarily lock herself in a long-term relationship by enhancing the bargaining of the vendor ex-post. We extend the model to a multi-tasking vendor who also exerts asset-upgrading effort and show that screening power of IT asset transfer in enhanced when asset-improving effort has spill over effect on delivered IT services.

Key words
IT services, outsourcing, asset transfer, monopolistic screening, non-contractible quality

INTRODUCTION
“One of the most important factors determining pricing, incentive alignment, and other dynamics of an outsourcing engagement is the ownership of IT assets”.

“Show Me the Assets!” Everest Research Institute 2007

It is commonly thought that asset ownership plays an important role in encouraging asset-specific human capital investments by reducing the threat of hold-up and by providing strong incentives to the vendor to make large asset-specific investments when those investments are critical for efficient provisioning of IT services in outsourcing relationships (Grossman and Hart 1986; Hart and Moore 1990; Hart 1995). On the other hand, transferring IT assets (IT systems and human capital) to the vendor creates a substantial switching cost for the client (Barthélemy and Quélin 2006) and thus raises the risk of the client getting locked-in a sub-optimal outsourcing relationship and subject to even severe holdup risks. Furthermore, owning the IT assets may incentivize the vendor to exert more effort on improving the value of the assets and vendor may systematically substitute effort away from improving quality of services. Further, often clients face heterogeneous vendors with private information about their own intrinsic abilities and quality-improving effort is not observable. Some of these agency issues in IT services outsourcing are further compounded by the fact that though the quality of IT services is observable, it’s not verifiable and thus not contractible. So why do client firms limit their future partnership options and put themselves in a vulnerable position by making IT asset transfer as a part of the outsourcing contract? The answer may lie in the ongoing nature of long-term IT outsourcing relationships, which may provide the client the opportunity to reduce the inefficiency caused by unverifiable quality in screening out low capability vendors under information asymmetry (Holmstrom 1985, Williamson 1983, Halonen 2002).

Asset transfer and investment incentives in IT outsourcing

Firms may outsource their IT services in two fundamentally different ways: transferring the ownership of the IT assets to the vendor, commonly referred to as “asset-heavy” approach, or retaining the ownership of the IT assets, referred to as “asset-light” approach. While the asset-heavy approach was sort of industry norm in 90s, asset-light approach has gained popularity in recent years (Ritwik and Tisnovsky. 2007). While transferring the IT assets to the vendor has immediate cash benefits, it may create substantial switching costs since it takes a large amount of resources (both financial and human capital) to recreate a working IT environment including IT infrastructure and skilled human capital to provide comparable IT services when the incumbent outsourcing vendor is to be replaced. It’s not clear as why the client firms self create switching cost and thus get locked-in long-term relationships given
that switching costs seems to discourage the vendors exert efficient effort to improve service quality (Williamson 1983). Further, its not clear as what specific elements of the client-vendor relationship drive asset transfer and under what conditions no asset transfer may be optimal.

In this research, we study the effects of asset ownership and other contractual mechanisms such as probationary period (or trial period) and contract extendibility terms on providing incentives to the vendor in the context of IT services outsourcing. In our conceptualization, while the vendors are heterogeneous in their intrinsic capability, they may exert two kinds of efforts: asset-upgrading effort (improving the value of the assets) and quality-improving effort which are not contractible as services quality is non-verifiable though observable. We show that client uses asset transfer as a costly device to screen out vendors of low capability and voluntarily locks herself in a long-term relationship. Additionally, we find that the positive spillover of the vendor’s asset-upgrading effort enhances the screening power of asset transfer.

**Literature review**

Inefficiency caused by unverifiable quality under information asymmetry has been intensively studied by economists. Farrell and Shapiro (1989) study optimal contacts when quality is not verifiable and the buyer incurs some switching costs, and show that, when switching costs are unobservable, long-term contracts can mitigate opportunism but some inefficiency still remains. Bac (2000) developed a model in which the switching costs created by the buyer play a role in screening vendors and thus decrease inefficiency caused by unverifiable quality under asymmetric information. Bernheim and Whinston (1998) show that firms may also strategically leave some verifiable aspects of performance unspecified when some other aspects of performance are unverifiable, intentionally creating incompleteness in a well-designed contract.

The property rights literature (Grossman and Hart 1986, Hart 1995, Hart and Moore 1990) has emphasized that asset ownership is determined by the marginal product of quasi-rents with respect to non-contractible investments. Hart (1995)’s showed that if the buyer’s human capital is essential, then the buyer owning all the assets is optimal; if the seller’s human capital is essential, then vendor owning all the assets is optimal. In a recent work, Hart (2009) showed that one party should own all the assets if payoff is uncertain, and asset ownership matters because it determines which assets each party can walk away with if trade does not occur. Our research combines the notion that owning the assets necessary for service delivery increases the party’s ability to engage in holdup (Hart, 2009) with the property rights notion that assets ownership provides high-powered incentives for relationship-specific investments.

While very little theoretical work has been done to investigate the incentive issues in the IT outsourcing literature, a few studies empirically examine how contractual provisions are determined. Using the multi-task principal-agent framework, Fitoussi and Gurbaxani (2011) study how contractual mechanisms are used to provide incentives to the vendors when client firms share the object of reducing IT costs and differ in the importance of increasing IT quality. Gurbaxani (2007) focuses on how specific clauses are used to mitigate the risks of opportunism faced by both parties.

IT outsourcing relationships have some unique features which worth serious theoretical investigation: transferring the IT assets necessary for service delivery to the vendor creates a substantial switching cost (Barthélemy and Quélin 2006); quality is not verifiable and thus not ex-ante contractible (Holmstrom 1985); the vendors are heterogeneous in intrinsic capability; quality-improving effort are unobservable and thus non-contractible; the contracts vary in duration and asset ownership choices; probationary or extendibility clauses can be used to provide incentives or mitigate risks (Susastra et al 2010); and the clients have different preferences on IT services quality (Fitoussi and Gurbaxani 2011). Our model attempts to capture these essential characteristics of IT outsourcing contract and is different from Banerjee and Dulfo (2000) model in which the quality is exogenous, observable and verifiable, while in our model, IT services quality is endogenous, observable but not verifiable and vendors are heterogeneous in capability that affects services quality.

This paper is organized as follows: In §2, we set up the basic model. In §3 we examine optimal contracts under one dimensional quality-improving effort by the vendor. In §4 we analyze optimal contracts with multi-tasking vendor. In §5, we discuss our results and identify suitable theoretical and managerial implications.

**THE MODEL**
We consider a client who has a pool of large number of vendors who can provide him one unit of IT services in each period. There are two periods: probationary period and second period. The vendors are heterogeneous in their intrinsic capability: \( q = \{ q_L, q_H \} \), with probability \( m \left( 1 - m \right) \), the vendor will be of high capability type (low capability type). Intrinsic capability \( q_H > q_L \) is private knowledge of the vendor and client only knows the distribution. The quality of the outsourced IT services depends on the costly quality improving effort \( x \) of the vendor, which is not observed by the client. Further, the quality of the IT services is observable by the client but is not verifiable, and thus is not contractible. The quality of IT services is given as \( q(x) = q + x \) and the client’s payoff is given as \( v = q(x) - p \), where \( p \) is the monetary transfer from the client to vendor for receiving contracted IT services. The vendor’s payoff is given as \( u = p - c - e(x) \), where \( e(x) \) is the cost of quality improving effort and \( c \) is cost of IT services provisioning. The contractual arrangement between the client and vendor can be for two periods and the total payoff for each party is additive over two periods, \( V = v_1 + v_2 \) for the client and \( U = u_1 + u_2 \) for the vendor. Without loss of generality, we assume that there is no discounting for the payoffs from the extended period. Furthermore, the quality-improving effort by the vendor in the probationary period is consistent with ex ante relationship-specific investments in the property rights literature.

The contract offered by the client can have IT asset (including physical and human assets) transfer provision or not. In our conceptualization, IT asset transfer induces a self-imposed switching cost for the client and is denoted by variable \( A \). \( A = 0 \) represents a contract with no asset transfer. Note that the switching cost \( A \) is real resource cost for the client in case of termination of the contract after the probationary period. \( A \) is verifiable and contractible variables.

Assumptions:
1. Cost of IT services provisioning \( c \) is exogenously determined and is common knowledge.
2. The vendor’s cost of quality improving effort \( e(x) \) is strictly convex and increasing in \( x \), i.e., \( e'(x) > 0 \), and \( e''(x) > 0 \) for all \( x \).
3. \( q_H > c > q_L \). This ensures that if client contracts with vendor of \( q_H \) type who puts in zero quality improving effort, the total payoff in each period (sum of pay off of client and vendor in each period) is negative.
4. \( m q_H + (1 - m) q_L - c \geq 0 \). This ensures that if client contracts with a vendor of unknown capability type, who exerts zero quality improving effort, the expected payoff is positive.
5. Any quality \( q \) contingent contracting mechanism is infeasible as quality is non-verifiable.

We consider two types of contractual arrangements: a short-term contract \( S_s = \{ p_1; A \} \) which is only for the first period, i.e., probationary period; and a long-term contract \( S_l = \{ p_1; p_2; A \} \). We model the two period relationships as a dynamic game and the sequence and timing of the events is given in Figure 1 and is postulated to be consistent with a real outsourcing contracting process in which outsourcing client firms seek an appropriate vendor in the first period (probationary period) and then negotiate prices for the second period (extended period). At Date 1, the client offers a contract \( S_s = \{ p_1; A \} \), at the beginning of probationary period, to all potential vendors; the vendors make acceptance decisions, the client chooses one among those who accept, and the relationship begins. The vendor chooses quality-improving effort \( x \). At Date 2, IT services quality is realized and upon observing it, the client updates her beliefs on the vendor’s intrinsic capability. The client decides to terminate the relationship or continue. If the contract is terminated, game ends. If client chooses to continue the relationship, client negotiates with vendor and the price \( p_2 \) for the extended period is determined. At Date 3, the parties’ payoffs (sums of their respective payoffs in the two periods) are realized.
The client’s objective is to construct a contract mechanism so that he can successfully screens out the heterogeneous vendors in order to avoid being locked-in with the low intrinsic capability vendor \( q_l \) and also to induce the vendor to exert optimal quality improving effort. Note that the non-contractibility of quality and private information on intrinsic capability, creates fertile ground for a \( q_l \) type vendor to mimic \( q_H \) vendor by putting in sufficiently high effort and thus effort can be used to conceal the “true icapability” as two are substitutes.

**Definition 1:** A contracting mechanism is efficient if it ensures (i) that the client contracts only with the high capability \( q_H \) vendor, and (ii) the vendor exerts the optimal effort \( x^* = \arg \max_x \{ x - e(x) \} \).

The efficient contracting mechanism has to keep in consideration the effect of effort as a substitute for intrinsic capability at both the beginning of the contracting relationship and the contract renewal stage to avoid getting locked-in with a “low capability” vendor. In §3 and §4 we construct efficient mechanism for the vendor under different conditions and study their implications for efficient mechanism for IT services outsourcing.

**OPTIMAL EFFICIENT CONTRACTS**

Our parsimonious model set up has three key characteristics, namely IT services quality, intrinsic capability of vendors and quality-improving effort by the vendor that capture the essence of the contracting issues in IT outsourcing. In order to contrast our results under non-contractible quality and adverse selection, first we develop benchmark contracts when quality is verifiable and thus contractible. It is easy to see that client will offer a short term contract in the first period with \( q_l = q_H + x^* \), \( p_l = c + e(x^*) \). The vendor with high capability contracts and puts in optimal quality-improving effort \( x^* \) as only that level of effort can produce the contracted quality, and gets zero payoffs which is equal to his outside option. Any vendor with low capability will not contract as her payoff will be negative \( e(x^*) - e(x^* + q_H - q_l) < 0 \). This contract is perfectly separating and allows for costless screening to the client as he is able to bind the desirable matching party \( q_H \) type to her outside option. Thus in the benchmark case, even with asymmetric information and unobservable effort, client offers the first-best contract. The economic intuition behind this somewhat surprising result is that “it is possible to design contracts that are contingent upon variables that are both relevant to the delivery of the service and are observed so that contracts can be enforced” (Holmstrom 1985, pp. 188). Since the quality is verifiable, contracts contingent upon quality can be enforced to achieve the first best efficiency.

When the quality is non contractible, then the client can not screen out the low-capability types or induce effort by using only price as contracting variable and thus no efficient contracting mechanism is possible. If the client chooses a long term contract \( S_l = \{ p_l, p_2, T \} \) with some sufficiently large termination fee \( T \), then the vendor faces virtually no risk of termination. Both parties are locked in for two periods, and therefore the vendor will choose \( x_1 = 0 \) in both periods. The payoff to the vendor will be \( p_1 + p_2 - 2c \), and in order to make sure that the vendor participates, client must satisfy the individual rationality constraint of the vendor and so the client must choose \( p_1 + p_2 = 2c \).
and his payoff will be \(2\tilde{m}_n + (1 - m)q_c - c_i\). Interestingly, the vendor’s utility \(U = u_1 + u_2 = 0\) is independent of the type and this contacting mechanism has no screening power. This is due to the fact that large termination fee \(T\) imposes large cost of breach of contract and there is no link between the vendor’s second period payoff \(u_2\) and client’s belief about the vendor’s type based upon the observed quality of the IT services after the first period. Thus any efficient contracting mechanism requires that the vendor should have ability to terminate the contract if he believes that he is matched with a \(q_L\) type vendor, and also should provide incentives to the vendor to exert effort.

It’s easy to see that any contract that specifies second period price \(p^*_2\) ex-ante can never do that. Further, in order to provide the incentives to the vendor to exert effort in the period 1, we need to have an instrument to credibly signal commitment of the client that he will not appropriate the gains of the quality-improving effort of the vendor and thus must self impose a one sided cost if the contract is not extended into second period. As described earlier, asset transfer \(A\), imposes a cost on client if the contract is terminated after the period 1. Thus, now onwards we consider the take-it-or-leave-it offers of \(\mathcal{S}_q = \{p_t, A\}\). Next, we develop contracts with no asset transfer, \(A = 0\), and then we analyze the role of asset transfer on the efficiency of the contracting mechanism.

**Optimal contracts with no asset transfer**

We study the dynamic game by solving the price for the second period first. Given that the quality is not contractible and relationship ends by the end of the extended period, the vendor would clearly exert no quality-improving effort in the second period. The vendor’s second period payoff is given by \(v^*_2(p) = p^*_2(p) - c\), where \(p\) is the client’s updated belief on the vendor being high capability. Note that the vendor updates her belief upon observing the quality by the end of the probationary period: \(p(q = q_H | q_1) = 1\) if \(q_1 \geq q_H + x^*\), \(p(q = q_H | q_1) = 0\) if \(q_1 < q_H\), and \(p\) is increasing in \(q_1\) if \(q_H \leq q_1 < q_H + x^*\). We assume that the client’s optimal price, \(p^*_2(p)\), is increasing in \(p\) to capture the idea that the client’s confidence on the vendor’s capability increases the incumbent vendor’s bargaining power at the interim and thus the price for the second period. Now we proceed to the first period and focus on the set of efficient screening Perfect Bayesian Equilibrium (PBE) defined below.

**Definition 2:** Given the price for the extended period, an Efficient Screening PBE, denoted \(\{p^*_1, x^*_H, x^*_L, p^*_2\}\), is the price for the probationary period, \(p^*_1\), the vendor’s effort choices \(\{x^*_H, x^*_L\}\), and the client’s beliefs on the vendor being high capability, \(p^*_2\), for which,

1. The effort choices are the best responses given the price offered
2. The price is sequentially rational given the belief updating
3. The belief updating satisfies Bayes’ Rule when it applies.
4. Only \(q_H\) type vendors accept the contract and the selected vendor exerts the efficient quality-improving effort \(x^* = \arg \max_x \{x - e(x)\}\)
5. The client continues with the \(q_H\) type vendor in the extended period.

**Proposition 1:** Given the expected price \(p^*_2(p)\) to be negotiated for the extended period,

1. The efficient screening PBE exists if \(p^*_2(1) > c + e(x^*)\) in which, \(p^*_1 = 2c + e(x^*) - p^*_2(1)\) and the client’s payoff is given by \(V^* = 2q_H + x^* - 2c - e(x^*)\),
2. The efficient screening PBE does not exist if \(p^*_2(1) < c + e(x^*)\). (See proof in the Appendix).
Figure 2 above explains the efficient screening PBE. The dashed downward-sloping line, $U^L_H = p_1^* - c$, is the total payoff of the $q_L$ type vendor who exerts zero effort in the probationary period and thus does not extend the contract in the second period. The dashed horizontal line, $U^H_L = e(x^*) - e(x^* + q_H - q_L)$, is the mimicking $q_L$ type vendor’s total payoff. The solid downward-sloping line, $U^H_H = p_1^* - c - e(x^*)$ is the $q_H$ type vendor’s payoff for the probationary period. $U^H_2 = p_2^*(1) - c$ is the vendor’s (the $q_H$ type or the $q_L$ type who mimics as $q_H$ type) extended period payoff. While the $q_H$ type vendor’s total payoff is zero, the mimicking $q_L$ type vendor’s payoff is negative since he has to exert higher level of effort to successfully convince the client he is a $q_H$ type. Note that the unmimicking $q_L$ type vendor’s payoff would be positive when $p_2^*(1) - c < e(x^*)$ and thus he would accept the contract and there would be no successful screening.

Note that, when $p_2^*(1) - c < e(x^*)$, the client could offer a contract $p_1^* = c$ to prevent the $q_L$ type vendor from getting the “free lunch”. However, setting the first period price as $c$ without increasing the vendor’s bargaining power effectively forces the $q_H$ type vendor to get a negative total payoff if he exert his quality-improving effort at the efficient level (as shown by the solid downward sloping line $U^H_H = p_2^*(1) - c - e(x^*)$ in Figure 3 below). Thus a $q_H$ type vendor who plans to exert his quality-improving effort at the efficient level would not accept the contract. Therefore an efficient screening PBE cannot be obtained by price alone.
Figure 3: No efficient Screening PBE when $p_2^*(l) - c \not\in \mathbb{E}(x^*)$.

Intuitively, given the expected price to be paid for the extended period, the client can construct the optimal price for the probationary period that just compensates the vendor’s total costs for the two periods and deprive the vendor of the future gains in advance as well. In other words, the client compensates the high-type vendor for the cost of his quality-improving effort he exerts in the probationary period with the price she pays for the extended period so that the $q_H$ type vendor exerts his effort in the probationary period at the efficient level and waits until the extended period to get the compensation. However, it is too costly for the $q_L$ type vendor to deliver a quality that is at least the same as what is delivered by the $q_H$ type in order to mimic. This successfully screening can be achieved only when the vendor’s compensation (namely, his net revenue from providing services) in the extended period is larger than the cost of the quality-improving effort he exerts in the probationary period. When the when the vendor’s net revenue from providing services in the extended period cannot compensate the cost of the quality-improving effort he exerts in the probationary period, exerting efficient quality-improving effort is too costly ($p_1 - c - \mathbb{E}(x^*) + p_2^*(l) - c < 0$) for any vendor which may allow the $q_L$ type to get a free lunch by accepting the probationary contract and exerting zero quality-improving effort ($p_1 - c \geq 0$). Thus a cost device is needed for the client to successfully screen out low capability vendors under this condition. The idea is that the client has to be convincingly promise the $q_H$ type vendor that he will be sufficiently compensated for the quality-improving effort he exerts in the probationary period. In order for her promise to be convincingly, the client has to increase the vendor’s bargaining power in the extended period by self creating a substantial switching costs (namely, transferring the IT assets to the vendor).

Optimal contracts with asset transfer

With asset transfer, the vendor’s second period payoff is now given by $U_2^*(p, A) = p_2^*(p, A) - c$. We assume that the client’s optimal price, $p_2^*(p, A)$, is increasing in both $p$ and $A$ to capture the idea that the client’s confidence on the vendor’s capability and positive asset transfer that creates switching cost for her, increases the incumbent vendor’s bargaining power and thus the price for the second period. Now we proceed to the first period and focus on the set of efficient screening Perfect Bayesian Equilibrium (PBE) defined in Definition 2.

PROPOSITION 2: Given the expected price $p_2^*(p, A)$ to be negotiated for the second period,
(1) The efficient screening PBE exists if \( p_2^*(1, A) - c > e(x^*) \) in which, \( p_1^*(A) = 2c + e(x^*) - p_2^*(1, A) \) for any \( A \in [0, \bar{A}^*], \) where \( \bar{A} = pq_H + (1 - p)q_L - c \)

(2) The efficient screening PBE exists if \( p_2^*(1, A) - c \in e(x^*) \) in which, \( p_1^*(A) = c \) only for \( A = A^* \) that satisfies \( p_2^*(1, A^*) - c = e(x^*) \)

(3) In the efficient screening PBE, the client’s payoff is given by \( V = 2q_H + x_H - 2c - e(x^*) \)

Note that, if the switching cost is larger than \( \bar{A} \), than client would prefer not to outsource IT services in the extended period, rather than outsource services to a vendor of unknown capability. The efficient screening PBE with asset transfer is shown in figure 4 below.

**Figure 4: Efficient Screening PBE with asset transfer**

As we have shown in Figure 3, when the vendor’s bargaining power is low, setting the first period price as \( c \) would not only just prevent the \( q_L \) vendor from accepting the contract but also force the \( q_H \) vendor who exerts efficient level effort to get a negative total payoff. Note that, carefully-chosen \( A^* \) effectively keeps the \( q_H \) vendor’s payoff for the extended period at \( e(x^*) \), his payoff for the probationary period at \( -e(x^*) \), and his total payoff the same (zero). And the non-mimicking \( q_L \) type vendor’s payoff is kept at zero as well and so that he would not strictly prefer to accept the contract. Comparing the client’s payoffs under asset transfer and no asset transfer, we have the following proposition:

**PROPOSITION 3:** Asset transfer broadens the set of the efficient screening PBE, though the client’s payoff given by \( V = 2q_H + x_H - 2c - e(x^*) \) remains the same under both asset transfer contract and no asset transfer contract.

The qualitative interpretations of this result are as follows. Introducing a positive switching cost increases the vendor’s bargaining power on negotiating the second period price. The vendor’s increased second period payoff compensates him for the cost of exerting efficient level of effort in the probationary period, which allows the client to efficiently screening out vendors of low capability. Since the vendor’s cost of effort in the first period is being offset by the increased payoff in the second period, he is indifferent. Since the screening efficiency is increased by
introducing a positive and carefully chosen switching cost, the client would be less likely to be locked in a relationship with a vendor of low capability.

The key insight is that the client has to convince the \( q_H \) type vendor that he will be sufficiently compensated for the quality-improving effort he exerts in the probationary period. When the vendor’s natural bargaining power is not convincing enough, the client has to increase the vendor’s bargaining power in the interim stage by self creating a substantial switching costs (namely, transferring the IT assets to the vendor). So the vendor’s cost of effort in the probationary period can be compensated by the increased net revenue for the extended period and the probationary period price just covers that service cost so that the \( q_L \) type vendor just stay with his outside options.

**DISCUSSION**

When vendors are heterogeneous in intrinsic capabilities that impact the quality of delivered IT services, transferring the IT assets to create switching costs for the client affects her in an asymmetrically way: it only affects her (the client) if she is not able to extend the contract in the second period. The positive switching cost that client bears in case the contract is terminated after the probationary period, increases the vendor’s bargaining power in negotiations on price ex-post, at the beginning of the extended period, which compensates him for the cost of exerting efficient level of effort in the probationary period. The low capability vendors would find it either worthless to accept the contract (if he does not exert any effort) or too costly to mimic as a high capability vendor. A pricing mechanism, on the other hand, affects the vendors’ payoffs symmetrically: it affects all the vendors in the same way, which either allows a positive payoff for the low capability vendor if the client wants the high capability vendor to accept the contract, or client fails to attract the high capability vendor if she attempts to prevent the low capability vendor from accepting the contract. Therefore transferring the IT assets to the vendor allows the client to efficiently screening out vendors of low capability when a pricing mechanism alone has no screening power. Since asset transfer allows efficient screening, the client is less likely to be locked in a relationship with a low capability vendor.

This seemingly surprising result is consistent with the observations in IT infrastructure outsourcing contracts. The outsourcing firms often sign the so-called “transformational” IT infrastructure outsourcing contracts, which are characterized by long duration with asset transfer, with the reputed vendors or market leaders in the industry while they often sign the so-called “pure labor arbitrage” contracts, which are characterized by short duration with no asset transfer, with emerging players in the industry. Since the leading vendors are willing to take the risk of making efficient upfront investment on transferred assets that allows them to make substantial profits beyond the initial periods of the contracts. On the other hand, emerging vendors with unproven records are unable to bear the high risk of premature termination of the relationships, and are thus not willing to accept such contracts. Thus asset transfer serves as an effective screening device for the outsourcing client firms to mitigate the risks of being locked-in with low capability vendors.

The key managerial insight of our research is that, self created switching cost with asset transfer allows the client to credibly signal her long-term commitment to the high capability vendor so that she is able to use penalizing pricing mechanisms in the probationary period to deter low capability vendors. Taking the advantage of seemingly-negative contractual mechanisms strategically and using complementary mechanisms together may create surprising benefits to the firms in matching with high capability vendors.

There are many possible extensions of this research. The costs of quality-improving effort may be correlated with capabilities among outsourcing vendors. Allowing vendors to be heterogeneous on efficiency and correlated cost of quality-improving effort may provide more realistic results on the client-vendor matching.

**REFERENCE**