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Purchasing leverage considerations in the outsourcing decision☆

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Abstract

As outsourcing has increased, an unanticipated problem has come to light for many manufacturers: as they reduce their purchase volume with their materials and parts suppliers for inputs to items that are now outsourced, these manufacturers lose their volume and price leverage for the inputs. As a result, they may have to pay more for parts and materials that they continue to buy from suppliers. In addition, the contract manufactures to whom they outsource may also be paying a higher material/part price or may get a lower price by consolidating volume from a number of customers, but may retain the volume discount as part of their profit. This paper uses the transaction cost literature to explore how purchasing can best manage the potential loss of volume/purchase leverage for the inputs to items that are outsourced. In exploring this issue, case studies are used to demonstrate both unsuccessful and successful attempts at managing this loss of purchasing leverage. A prescriptive framework is developed that suggests how to best manage the risk of losing purchasing leverage when outsourcing. This framework considers the relative volume of the buyer and the contractor, the level of trust, and the concerns of the supplier regarding its price visibility.

Keywords: Outsourcing; Purchasing leverage; Transaction cost analysis

1. Introduction

The issue to be examined in this study is:

Is there a way that purchasing can retain its buying leverage for intermediate materials and components when it outsources the manufacture of the item that consumes those inputs?

The question will be addressed primarily from an economic perspective, considering the amount of potential savings in purchase price that the organization might give up by outsourcing its purchasing of material/components used by subcontractors for outsourced items. This question was precipitated by Hewlett-Packard (H-P), a major manufacturer of personal computers. H-P was outsourcing its subassemblies/boards to an increasing degree. Some members of the supply function became concerned that H-P might lose its purchasing leverage on some of the parts and components that made up the board if it allowed the assemblers to purchase all the components. This issue took on supply chain design issues, broader than price leverage. It also concerns assurance of supply as key components were often on allocation, and inventory management, as prices are often volatile, and H-P does not want to pay for part devaluation due to excess inventory. Yet H-P did not want to take possession of the parts/components and reship them to subassemblers, as that was very inefficient, increasing inventory levels, costs and cycle times. Alternatives were needed.

The purpose of this study is to examine the question presented above. It will do so by first briefly exploring the related literature on outsourcing, and examining where outsourcing seems to apply from a theoretical standpoint. Second, based on interviews with organizations, the paper will present an examination of the practices of companies in three categories: those who have made unsatisfactory attempts to leverage purchased inputs used in outsourcing, those that believe they have successfully leveraged purchased inputs used in outsourced items, and those who have had mixed results in either leveraging

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or not leveraging the price of purchased inputs used in the manufacture of outsourced items. Based on an integration of theory and the interviews with organizations, recommendations are made as to the applicability of leveraging purchased input used in outsourced items in various situations.

2. Relation of outsourcing to core competency

For purposes of this paper, outsourcing is defined as the transfer of the production of goods or services that had been performed internally to an external party. This is consistent with the viewpoint of H-P in pursuing outsourcing implications on purchasing leverage. It seems to be well understood and agreed upon that organizations should build on their core competencies, and leverage these competencies. Core competencies should never be outsourced. It is those activities where the firm has no unique capabilities that should be considered as candidates for outsourcing.

Core competencies are (Quinn and Hilmer, 1994):

1. Skills or knowledge sets, not products or functions.
2. Flexible, long-term platforms that are capable of adaption or evolution.
3. Limited in number: generally two to three.
4. Unique source of leverage in the value chain.
5. Areas where the company can dominate/perform activities important to the customers better than others.
6. Elements important to customers in the long run.
7. Embedded in the organization's systems.

According to Quinn and Hilmer, core competencies are the activities that provide long-term competitive advantage. These must be closely protected. All other activities are candidates for outsourcing. Thus, if supplier markets were efficient, companies would outsource all activities except core competencies. However, markets have many inefficiencies, transaction costs, and other uncertainties. Thus, the market is not always the answer.

Clearly, suppliers are in the market to make money. The manner in which they make money while providing the customer with lower costs than internal production are:

1. Specialized knowledge that creates competitive advantage.
2. Lower cost of operations than its customers (wages, overhead, efficiency).
3. Leverage/better raw material prices with supplier than its customers (due to volume consolidation, ownership, or a host of other reasons).
4. Economies of scale and/or scope.

Outsourcing allows an organization to take advantage of the strengths within the supply market. The problem is that US companies generally outsource to save on short-term costs such as overhead. This creates inefficiencies, expensive management issues and huge numbers of subcontractors (Purchasing, 1998a,b). The creation of these issues significantly undermines the purpose of outsourcing in these organizations.

3. Transaction cost analysis

Transaction cost analysis (TCA, also referred to as transaction cost economics) is an approach that explicitly considers the implications of an organization's choice to perform a transaction or activity internally (vertically integrate), or in the market (horizontally integrate or outsource). According to Williamson the decision of whether or not to outsource, and the extent of outsourcing, depends on the transaction costs associated with outsourcing versus internalization (Williamson, 1981). Vertical integration represents the failure of the free market to handle exchange relationships efficiently. Thus, the transaction costs that result in the market are essentially the "costs of running the system". The level of transaction costs depends upon a number of factors:

- the frequency of the transaction;
- the level of transaction specific investments;
- the external and internal uncertainty.

Williamson describes uncertainty as the inability to predict contingencies that may occur (Williamson, 1979). This creates a problem in developing contractual relationships because contracts are somehow "incomplete". Such contingencies may create "opportunism", the ability to take advantage of the situation in order to favorably interpret the contractual terms. There are two types of uncertainty which may exist: external/environmental and internal/behavioral.

The first type of uncertainty, external/environmental uncertainty, deals with the level of uncertainty in the market in which the organizations operate. For example, external uncertainty is high where technology is rapidly changing, or where demand fluctuates significantly and unpredictably. The premise of Williamson's work is that as environmental uncertainty increases, so will the likelihood of vertical integration (Williamson, 1979).

The second issue, internal/behavioral uncertainty, reflects the idea that the organization really does not know what it wants, or the situation involving the transaction is such that the contracting parties have no assurance that the other party has actually fulfilled its obligation/performed. An example of this would be when a supplier says that the item it provides is "on allocation", and it cannot ship the full order. How can this truly be verified? Or a buyer may request a price decrease/improved service based on an offer it received from a competitor of the current supplier; again very difficult to verify. As a result, the organization(s) involved have difficulty evaluating whether the relationship is meeting expectations.

Transaction cost theory assumes that each of the above factors creates potential costs. If the costs are very high, complete vertical integration may be the answer. However, there is usually a contractual solution somewhere between vertical integration and complete free market forces that will better satisfy the organization's needs (John and Weitz, 1988; Walker and Weber, 1984; Heide, 1994; Venkatraman, 1997)

Power is also an issue in determining organizational boundaries. However, Williamson points out that integration decisions based on power rather than efficiency will eventually shift based on efficiency.

3.1. Recommendations for governance structure-based on TCA

Obligational contracting represents an ongoing, cooperative relationship with another channel member which is bound by a legal agreement. This could be an ongoing relationship with a supplier or a subcontractor. This section first presents the advantages of obligational contracting, then the disadvantages, followed by a review of situations where obligational contracts have the best competitive fit.

3.2. Advantages of obligational contracts

The advantage of contractual relationships may be classified as cost reduction or risk reduction. Each is defined below, and summarized in Table 1.

Cost reduction refers to the ability of the firm to lower the overall cost of conducting business. This could occur if the contracted supplier has more leverage in the supply base than the buying organization. Further, risks can be reduced through commonality of both information and assets. Lack of exclusive asset ownership increases the firm's flexibility. Information sharing can reduce costs and uncertainty, by allowing partners to anticipate/plan for the actions of other partners.

Table 1
Potential advantages of obligational contracts

Cost reduction
Reduced production costs
Reduced transactions costs
Better information/reduced uncertainty
Routinize transactions
Risk reduction
Sharing of assets
Lower break-even point
Sharing of information both formally and informally
Volume commitments
Increased flexibility versus vertical integration
Future orientation with joint planning
Trust
Interdependence
Sharing of risks and rewards of relationship

3.3. Disadvantages of obligational contracts

Contractual relationships are not without disadvantages. The disadvantages, as discussed below and shown in Table 2, may be classified as associated with either control/dependence or cost.

Clark notes that contractual relationships may create dependence without the control to balance that dependence; there is a dependence risk in terms of relative power (Clark, 1961). In comparing contractual relationships to vertical integration, a disadvantage of contractual relationships is a real or perceived loss of control over the activity which is performed externally. The supply chain may be more difficult to manage and control with additional parties involved in performing functions. Further, costs such as the price of purchased inputs, may rise when activities are dispersed among a number of parties, rather than performed internally. The outside firms must receive profit on the value they add.

3.4. When to use obligational contracts

Williamson discusses the fit of obligational contracts in terms of his three critical dimensions of transactions, as discussed earlier (Williamson, 1981). He postulates that obligational contracts fit best when transactions are recurrent, and assets needed for production are highly specialized, yet not limited to one use. However, firms must recognize the hazards of opportunism. When building flexibility into contracts, firms should not allow flexibility in areas where the potential for opportunism is high. This is congruent to Quinn and Hilmer's assessment that firms must reduce their vulnerability, while allowing contract flexibility (Quinn and Hilmer, 1994).

One factor that contributes to the success of obligational contracting is that the expectation of future business discourages opportunism. In obligational contracting, the pressure to maintain the relationship creates a credible commitment among parties, reducing opportunism. The reference point for interaction is not a single

Table 2
Potential disadvantages of obligational contracts

Control/Dependence
Loss of incentive to be competitive due to dependence
Trust may prolong relationship of unequal benefits
Increased risk if opportunistic due to dependence
Difficult to manage multiple relationships/complex governance
Difficult to build all contingencies into relationship
Difficult to evaluate due to multi-dimensionality
Real or perceived loss of control over operations
Informal relationships may be difficult to control
Heavily dependent on individuals involved; limited transferability
Cost
Outside firms receive profit on value-added that firm would retain if activities are performed internally
Duplication of efforts may increase total cost

transaction; it is the entire relationship that has been established. Further, as uncertainty increases, or if the potential risk is high, a firm may want its contract to include more explicit terms and contingencies. While specificity has high initial costs, there may be long-term savings.

Obligational contracts may also be important where there is a concentration at one node of the supply chain. Supply chain members may need to co-operate and seek out long-term relationships in order to gain access to the goods or services in the concentrated channel node. Obligational contracts may also help firms adapt in very competitive, recently deregulated markets. Obligational contractual relationships can further allow firms to respond better to shifting customer demand patterns (Ellram, 1991). The next section presents a summary of current practices and issues of a number of firms involved in outsourcing purchasing across a number of industries. This is followed by an assessment and recommendations.

4. Case analysis

The following provides an overview of the approaches that a number of organizations are taking to address the issue of "the potential loss of purchasing leverage" when outsourcing. The data were gathered based on personal/telephone interviews conducted by the researchers. Some organizations were willing to share more than others. Results achieved and approaches used were mixed. The industries of the organizations who contributed are revealed; the individual company names are not, for reasons of confidentiality.

In all of the cases, a decision was made to outsource or not outsource independent of the leverage issue. The issue addressed here is thus the governance of the price/leverage of inputs used in the manufacture of outsourced items. For purposes of the following presentation, the customer/buying organization refers to the company that is outsourcing an item. The supplier refers to the provider of inputs such as raw materials or components, for an outsourced item. The contractor refers to the contract manufacturer that is actually manufacturing/assembling the outsourced item.

5. Unsatisfactory current/previous attempts

The first group, buying organizations with unsatisfactory experience in leveraging outsourcing, are classified as such for one of two reasons. First, they may have tried to gain leverage and found that they could not. Second, they may have found that they have lost leverage in outsourcing, and have not yet found a satisfactory way to regain it.

5.1. Motivational training/products company (MTPC)

The first organization is a leader in the field of personal motivation, specializing in public and in-company training, and selling accompanying printed material, videotapes and audiotapes. It began its business by manufacturing and selling its own audiotapes. It soon discovered that "manufacturing" was not its core competency, and sought to outsource this business. In order to continue to get good prices from the suppliers of the tapes and tape cases, MTPC purchased all of the parts that went into production. These parts were drop-shipped directly to the contractor from the suppliers. However, the buying organization received and paid the invoices for all of these items and kept track of all of the inventory on its books.

This created some accounting problems for a number of reasons. If any of the inputs were unusable or unaccounted for, inventory counts had to be adjusted accordingly. There was a greater danger of being out-of-stock on something due to the physical distance and separation of accountability. Unexpected out-of-stock situations might require a rush order, premium transportation, and higher overall supply chain costs.

When renegotiating its labor contract with this contractor this year, these problems were discussed extensively. Clearly, such problems were raising transaction costs, creating excess paper work and inefficiency, and duplicating the efforts of parties involved in the supply chain. The discussion and negotiation revealed that the contractor was buying similar parts for other customers. By combining the volumes, the contractor was able to negotiate LOWER materials costs than MTPC! Thus, all of the excess work and hassles were actually increasing the buying organization's out-of-pocket materials prices, as well as its transaction costs. The buying organization now has the contractor negotiate prices and buy the raw material directly. It pays cost when the finished goods are received, based on actual materials invoices. It also pays a slight mark-up to reflect the fact that the contractor now carries the materials, and uses its own capital, rather than the buying organization's capital. While this scenario had a satisfactory resolution, it serves to illustrate that organizations may over-estimate their leverage in the market place, and in doing so, create unnecessary additional out-of-pocket and transaction cost.

5.2. Heavy manufacturing

This heavy manufacturing company (Heavy) is a leader in the manufacture and sales of farm, lawn and earthmoving equipment. As with many similar US-based manufacturing operations that are located in the rust-belt and heavily unionized, it has been outsourcing an increasing number of its components and operations for the past five years or so. This is particularly true in the

areas of machining, tooling, and other metal operations that are relatively labor intense.

Most of the shops to which Heavy outsources are small in comparison to Heavy. As a result of all of this outsourcing, it has seen a phenomenal, albeit gradual, downward shift in the tonnage of steel that it purchases and uses in its internal operations. As a result, it is paying comparatively higher prices for steel used in its internal operations. In addition, because most of its contractors are relatively small, the contractors are also paying high steel prices, even higher than this company is paying for its internal uses.

This situation of higher steel prices has snowballed into an avalanche. Given the hundreds of millions of dollars of steel used directly and indirectly each year by this company, it estimates that there are "tens of millions of dollars on the table" in terms of potential savings from volume leverage. The company is currently undergoing a study/benchmarking with other companies regarding how to best manage this situation.

6. Successful leverage

Four examples of successful leverage are illustrated below. These are defined as successful based on the organization's own assessment.

6.1. *Automotive industry* (*Auto*)

The automotive industry provides an excellent example of how to successfully manage and leverage purchases with second tier suppliers. While only one of the major auto manufacturers was interviewed, we learned that two other automakers were using an identical process based on benchmarking the two had done with the case study company. The two areas that it leverages are both raw materials: steel and plastic resin.

The leverage relationship is managed the same way in both cases. The contractor (first tier supplier) places its order for steel or resin electronically via EDI or the Internet with Auto. Auto in turns transmits the order electronically to its steel or resin supplier(s). This supplier drop ships the order to the contractor, who placed the order with Auto, and then invoices Auto electronically at the going price. Auto turns around and electronically invoices the contractor at a "masked" price. This relationship is illustrated in Fig. 1. The "masked" price is a fixed price that Auto determines for the year, so that price stability is provided to the contractor, and Auto absorbs all of the variances. More importantly, that "masked" price does not allow the contractor to see what Auto is really paying for steel. That eliminates any temptation of the contractor to "share" price information with competitors of Auto who also use that contractor, or to try to get that same price from the supplier of inputs for other buys. If the latter were the case, the supplier would be extremely reluctant to provide Auto this favorable leverage.

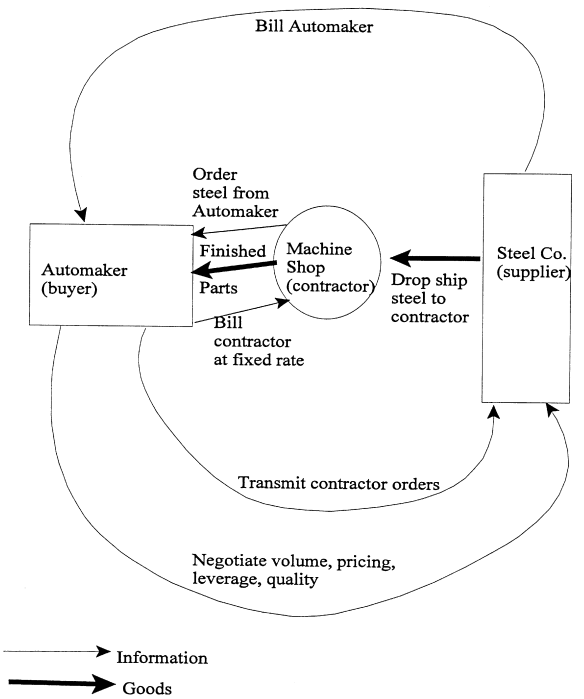

Fig. 1. "Collective procurement" in the automotive industry.

Auto says that the biggest benefits of this approach are that it has the ability to control the quality of raw materials used by its contractors. It also takes on the burden of managing and resolving quality and other raw material problems of these suppliers. Since Auto has the contract and the relationship with the steel supplier, Auto will deal with the steel supplier directly. When asked whether Auto is concerned that its contractors may order extra raw materials to get a better price, it responded that was not an issue. Auto has a firm schedule which it shares with its contractors, so has a very good feel for what that contractor "should" be buying.

6.2. *High-tech office equipment* (*IM*)

This success story is an organization in the imaging industry (IM). It learned its lessons about purchasing leverage from the Japanese, when the Japanese entered the US market as fierce competitors at significantly lower prices in the late 1970s/early 1980s. It discovered that one of its competitors was paying about 6% less for resin, although it was using only one fourth as much! There were two reasons behind that. First, IM was using well over 100 types of resins, while its competitor was using under 20. Thus, the competitor gained considerable leverage through standardization. Second, its competitor contracted directly with the second tier resin suppliers,

while IM did not. After standardizing its resins, consolidating its supply base and negotiating directly with its resin suppliers, IM enjoyed an 11% cost savings over the competitor, worth about $5 million a year in bottom line savings.

In administering the resin contract, IM negotiates with the supplier on behalf of the contract molders. The contractors then order directly from the resin suppliers and IM is out of the loop. When asked whether they do not care that their contractors know their price, the response was, why should we? What about the contractor pressuring the resin supplier for a lower price? That is between the supplier and the contractor. If the contractor can get a better price and thus be more competitive, IM felt it was a win–win situation, and helped build a stronger supply base.

IM uses this same approach on a number of standard electrical components. However, IM does have contractors use some components/parts that are proprietary to IM. These are often manufactured by OEM's, and the technology may be patented or proprietary to either IM or the supplier. In those instances, IM actually purchases all of the needed component parts and has them shipped to IM. These parts are then drop-shipped to the contractor as needed. IM pays for the parts and manages all of the inventory. When asked why the high degree of protectiveness with these items, it was due to their proprietary nature and their relative importance to IM's core competencies. These were items for which IM did not generally outsource the assembly to a contractor unless it had capacity issues. In these situations, it did not want the contractor to have access to any price information or any extra parts.

IM is very satisfied with the process it uses to manage these outsourced items. It believes that it is leveraging its purchasing power to the full extent possible, without creating an undue administrative burden, or unnecessary breaches of core technologies.

6.3. *Industrial/consumer chemicals* (*Chem*)

This organization, a major producer of industrial and consumer chemicals, polymers and fibers (Chem) views the outsourcing decision, including leverage aspects, very strategically. One area that it has decided to outsource, while maintaining its leverage, is logistics services. While it sees these services as providing some competitive advantage, it believes that it retains competitive advantage and control by choosing all of the service providers: transportation companies, warehousers and so on. The third party contractor manages these relationships.

Chem is able to retain its leverage by choosing and negotiating contracts with the suppliers of service. Chem actually pays all the bills, which are matched via its sophisticated EDI system. Thus, it receives two logistic-related charges, one related to the management fee it pays the contractor who manage its logistics services, the other related to the actual transportation or warehousing service performed by the service supplier.

Each year, it re-evaluates whether the contractors who provide management should start paying the bills and negotiating the contracts with the suppliers. It continues to perform these tasks inhouse for two reasons:

1. It gets better information on actual movement patterns from its own sophisticated internal information system.
2. It wants to ensure its leverage/not let others know its contractual prices.

6.4. *Electronics manufacturer* (*Elec*)

This organization (Elec) is a leading manufacturer of high-technology components and products. It is a supplier to H-P. The philosophy of this organization is "do not out source any purchasing activity beyond MRO". As the VP of Materials and Supplies pointed out, materials are over 50% of this organization's cost of sales. As such, materials purchases have the potential to be a source of competitive advantage.

This organization avoids outsourcing because it believes contractors make money on other firm's inefficiencies. Elec strongly believes that contract manufacturers such as SCI and Selectron are "giving away" the manufacturing and making their money by marking up raw materials and components on which they have significant purchasing leverage. Elec believes that purchasing is essentially the source of competitive advantage for these contractors, so manufacturers should be able to leverage it as well.

Elec is quite satisfied with its purchasing leverage strategy of keeping all significant purchases internal. This philosophy was also confirmed in a conversation with this firm's CEO.

7. Mixed success

The next group of organizations have had mixed success, meaning that there are aspects of their management and control of purchasing leverage that they are very satisfied with, and other aspects that they would like to improve.

7.1. *Oil*

The first mixed success organization is a leading domestic producer of oil and gas. Its situation in outsourcing purchasing leverage is a bit unique. First, it decided to outsource the purchasing and management of its pipes, valves and fittings to key distributors. It found that because these key distributors (suppliers) serve a number of customers, they can provide better in-stock service and

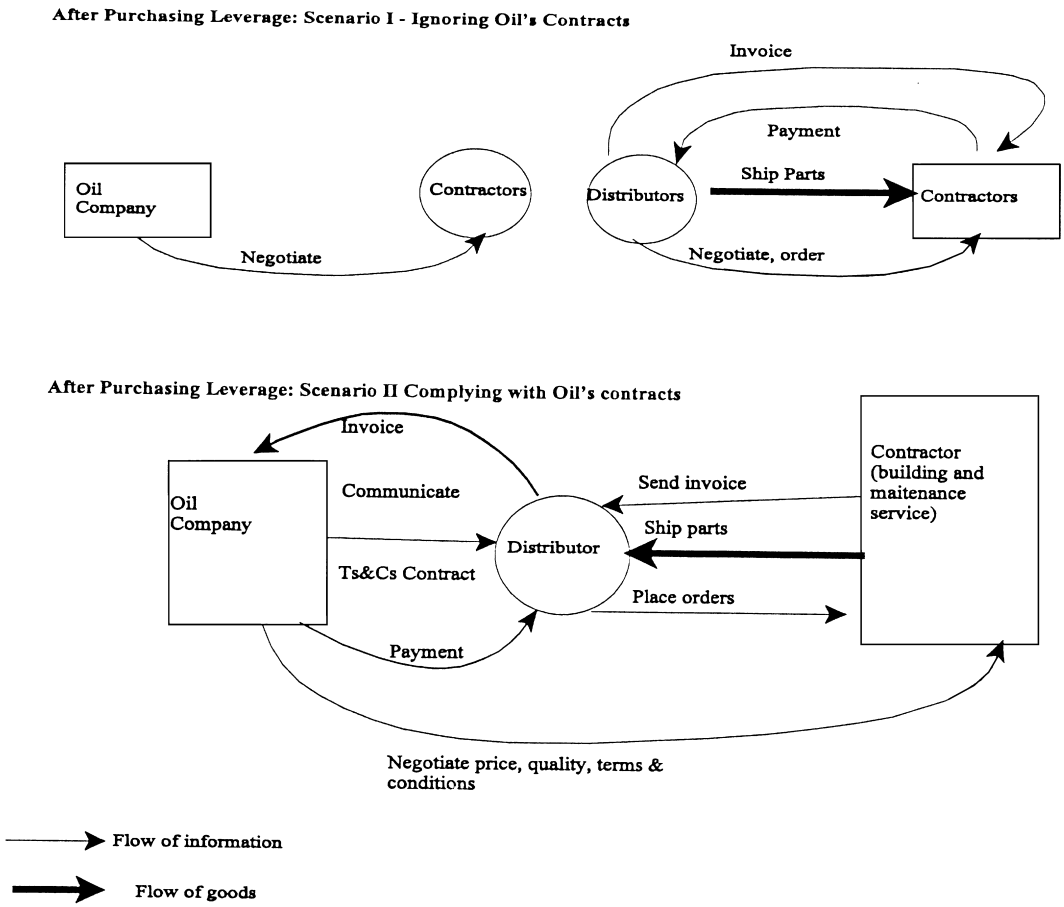

Fig. 2. Purchasing leverage in oil industry with distributors.

response from the manufacturers than Oil can. Since these suppliers/distributors serve a number of oil producers, they also get better volume leverage with the manufacturers than can Oil.

For example, Shell, Exxon, Texaco and Chevron all use the same supplier/distributor, and let this supplier/distributor negotiate with the original equipment manufacturer (OEM) to utilize the combined leverage of all these oil companies. Where volume is different among these firms, the supplier/distributor reflects that in differential pricing. Oil also feels that it wins because going direct to the OEM as it had done in the past was more work and coordination for Oil. The supplier/distributor now gains a good deal of expertise on the purchased items, and Oil receives the benefit of that.

While this sounds like a success, a the problem is occurring at the next level. Oil outsources the building and maintenance of many of its refineries and pipelines to contractors. It has made arrangements with its suppliers/distributors for these third party contractors to have access to its contracts. In addition, it has assumed in the negotiation process that items used by these contractors will be part of its annual buy, and has negotiated its pricing structure with its supplier/distributors accordingly. The problem is, it is having a difficult time getting its contractors to utilize those supplier/distributor contracts. Fig. 2 illustrates this situation. Scenario I shows the contractors ignoring the supplier/distributor contracts and Scenario II shows the contractors properly utilizing Oil's supplier/distributor contracts.

The lack of contractor compliance with Oil's supplier contracts is creating a number of problems. First, it is making it difficult for oil to achieve its annual volume commitments with suppliers. It is hampering its efforts to standardize pipes, valves and fittings for ease of maintenance and training. It is also creating higher costs in construction for Oil, although the contractors deny this. Oil does write the requirement of using its suppliers/distributors into the contracts. However, this approach is not a tradition in the industry. Up to this point, the contractors have been allowed to utilize another supplier/distributor on the grounds of faster service, lower price in that region, better quality, etc. This is an issue that Oil is struggling with, and needs to resolve/manage if its outsourcing leverage efforts are to succeed.

7.2. Personal computer industry (PC)

In many ways, this is the richest example due to the wide variety of outsourcing leverage options which this organization uses. By all accounts, this organization does *not* have a sophisticated, managed outsourcing leverage program. Things have just kind of "evolved", not all in a manner which pleases PC. Each of PC's approaches and where they apply are summarized below.

7.2.1. Approach for contract manufacturers

PC treats contractors very similarly to its own assembly operations in terms of management. It negotiates prices with all of PC's part/component suppliers, leveraging PC's total volume. It then actually orders all of the parts, and has them shipped to its own facilities where it kits them. It pays for all of the parts and keeps the value of the kits in its inventory. It ships the kits to the contractors, who assemble them into finished product and ship them back to PC. It then adds the labor/subassembly cost to the parts cost for valuing the finished product in inventory. (Fig. 3, Scenario I).

When asked why it was done that way, PC replied that these contractors were supposed to temporarily fill-in for shortages of manufacturing capacity. The kitting process is extremely expensive in terms of transportation time, inventory management/holding costs, and delays in cycle time to market. If it appears that these contractors will be used in long-term, PC will get out of the kitting and have the contractors receive components directly. PC believes that there is no reason that these should not be turnkey operations. However, this approach has been going on for years in this organization in some areas, with no sign of moving toward turnkey.

There is an exception to the desire for turnkey operations. The exception is when there is proprietary technology/components involved. Then PC wants to stay in the loop to ensure these assets are being properly managed and not "slipping away". As with others in this industry, they have been the victims of disappearing shipments/hijacked trucks.

7.2.2. Parts on allocation

PC's policy for parts on allocation is to negotiate the contract directly with suppliers for all parts used to get PC's volume leverage. It then purchases and pays for all of the parts and has them shipped directly to PC. It then determines the allocation of these parts to contractors. These parts are shipped out, but PC retains the parts on its books, also shown in Fig. 3, Scenario I.

When asked why PC follows this procedure of excessive handling, the reply was that it wanted to ensure that its contractors did not order parts in PC's name, and then use them in another customer's product. Recall that Auto's sophisticated system could handle this. Thus, PC adds excessive cost and time delays in actually bringing the components in house, to have tighter management.

7.2.3. Turnkey operations

PC would like to have as many of its contractors act as turnkey operations as possible, because that reduces the cost, management and time delays to PC. PC manages its turnkey suppliers as follows. First, it negotiates the contract price for all parts/components directly with the supplier. Then it follows one of three strategies.

In the first strategy, where PC is a major part of the contractor's business, it lets the contractor place orders directly with the supplier, receive shipment and pay its own bills. It does not worry about whether the contractor passes PC's price savings on to other customers, or gets a lower price from the suppliers and absorbs the savings. In its opinion, that would just make the contractor a stronger, more viable long-term competitor. This is by far PC's preferred alternative in terms of ease of management, speed and overall cost of doing business.

The second strategy focuses on situations where PC is not the major source of business to a contractor, and some of the items are "on allocation". Here, PC negotiates the contracts with parts suppliers based on its full volume. It has the contractors order from PC, and it passes the orders on to the parts suppliers. The suppliers drop-ship the items to the contractor, and bill PC directly. This scenario creates a much greater management issue in terms of inventory reconciliation, payment and so forth, similar to that faced by MTPC before it outsourced purchasing to its contract tape assembler. In some circumstances, as mentioned above, PC will even take delivery of critical parts and then drop-ship them to contractors. It has done this because it finds that, despite the delays and added costs, it is actually easier for PC to keep track of what happened to the inventory that it has paid for if the inventory passes through its facility at some point. This seems highly inefficient, and is shown in Scenario II.

Yet another scenario is one where the contractor buys parts/components directly from suppliers, and pays whatever that contractor's normal prices are. At the time of order placement, the contractor must identify that those orders are to support PC. The supplier then gives PC a rebate directly, to get the price paid down to PC's negotiated price. This approach is common where PC relies both on internal manufacturing and contractor outsourcing of the same items. Note the similarity between this approach and the one used by Auto. In Auto's approach, it took responsibility for billing reconciliations. In PC's approach, that burden is shifted to the supplier of inputs.

PC uses the rebate approach under a number of circumstances. First, it is used when PC does not want the contractor to have access to its pricing information for whatever reason. Second, it used when the supplier does not want the contractor to know the prices that PC is paying. This latter scenario is actually fairly common with OEMs, and was depicted in Fig. 1.

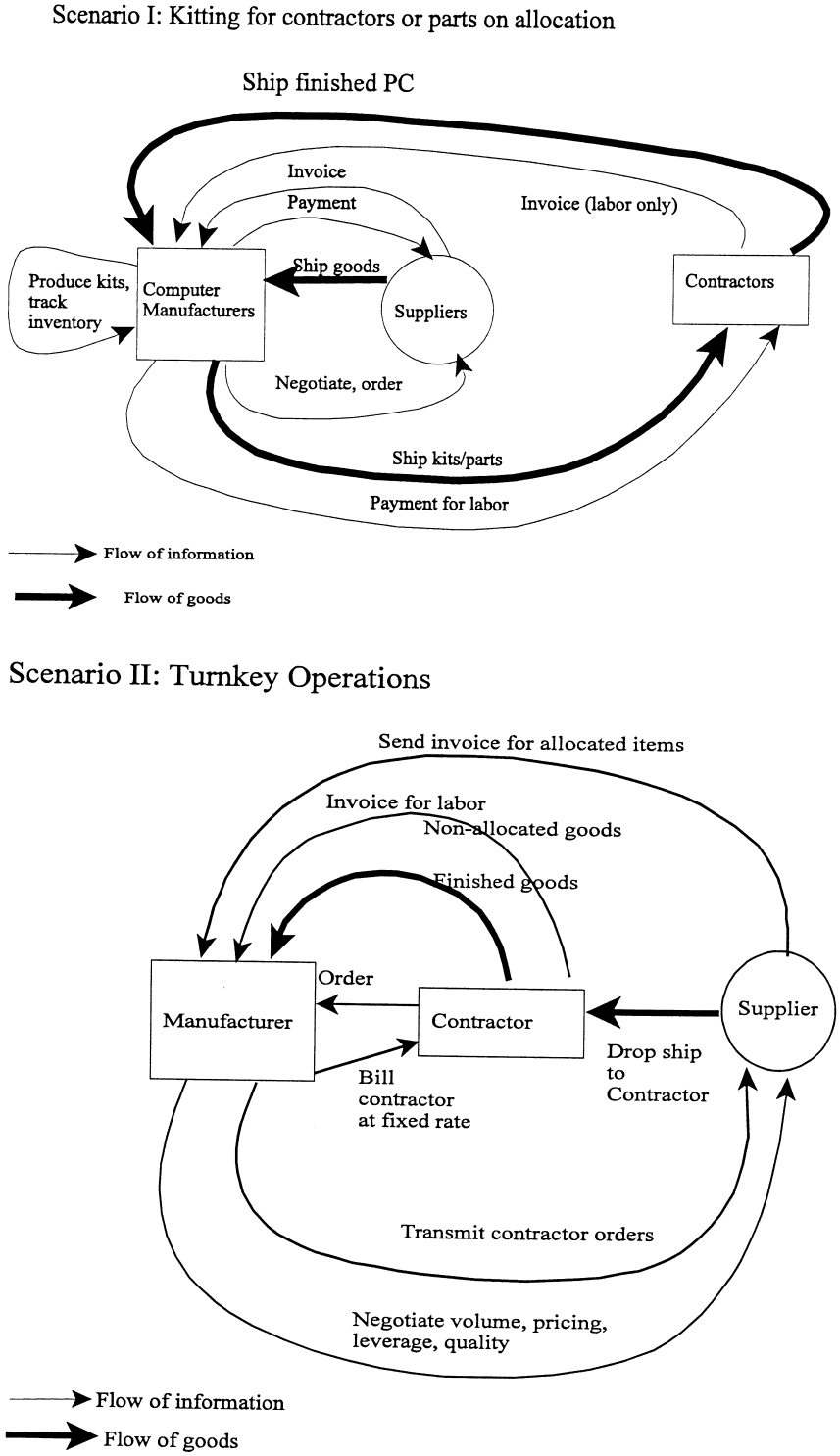

Fig. 3. Leverage in the personal computer industry.

PC is somewhat dissatisfied with its current approach, as it has evolved rather haphazardly rather than as a result of strategical planning and execution. Some of the changes that PC would like to make are: less physical possession of inventory/handling of items that will go to contractors; less paying for/keeping on its books materials/components to be used by contractors, less involvement in the management of materials to be used by the contractor overall, beyond some price negotiations. There are some internal political factions that believes that PC needs to touch/own many of these components which may make it difficult to implement these changes.

8. Summary

All of the organizations used as case studies above are extremely successful firms with a history of growth, profitability and market leadership. Yet many different approaches to outsourcing purchasing leverage are used. The sections below present the recommended approaches for managing purchasing leverage while outsourcing manufacturing based on combining transaction cost theory with the case study findings.

8.1. Translating findings into purchasing leverage issues

Extensive literature searches did not reveal any studies performed which look specifically at how to best manage the potential loss of purchasing leverage on inputs when the manufacture of the end items is outsourced. The literature focuses on the role of the purchasing function in ousourcing (Ellram and Maltz, 1997; Purchasing, 1998a). The analysis below assumes that a fundamental discussion has already been made to outsource manufacturing. The question addressed is how to manage (governance structure) the purchase price of inputs used in the production of the outsourced item. The decision of whether to be actively involved in the selection and management of suppliers used by the subcontractor is not specifically explored here, as it may or may not be a separate issue.

8.2. Transaction frequency

Based on TCA, purchasing leverage is only possible for recurrent transactions conducted with the same supplier. If the buying organization does not place significant business with one supplier, there is no leverage to be gained. For recurrent transactions, the buying organization must realistically view its purchasing leverage versus that of the contractor. This is shown on the first node of the decision tree in Fig. 4. If a contractor performs similar operations and purchases similar materials on behalf of a number of customers, it may be able to get better leverage and service than the buying organization. On the other hand, if the contractor is relatively small, or uses the materials/components only to support this particular customer, the customer (buying organization) may be able to get greater leverage.

8.3. Asset specificity/purchase specificity

The second major factor in the TCA focuses on the specificity of assets involved, which can also relate to the specificity of the purchase in question. If the item

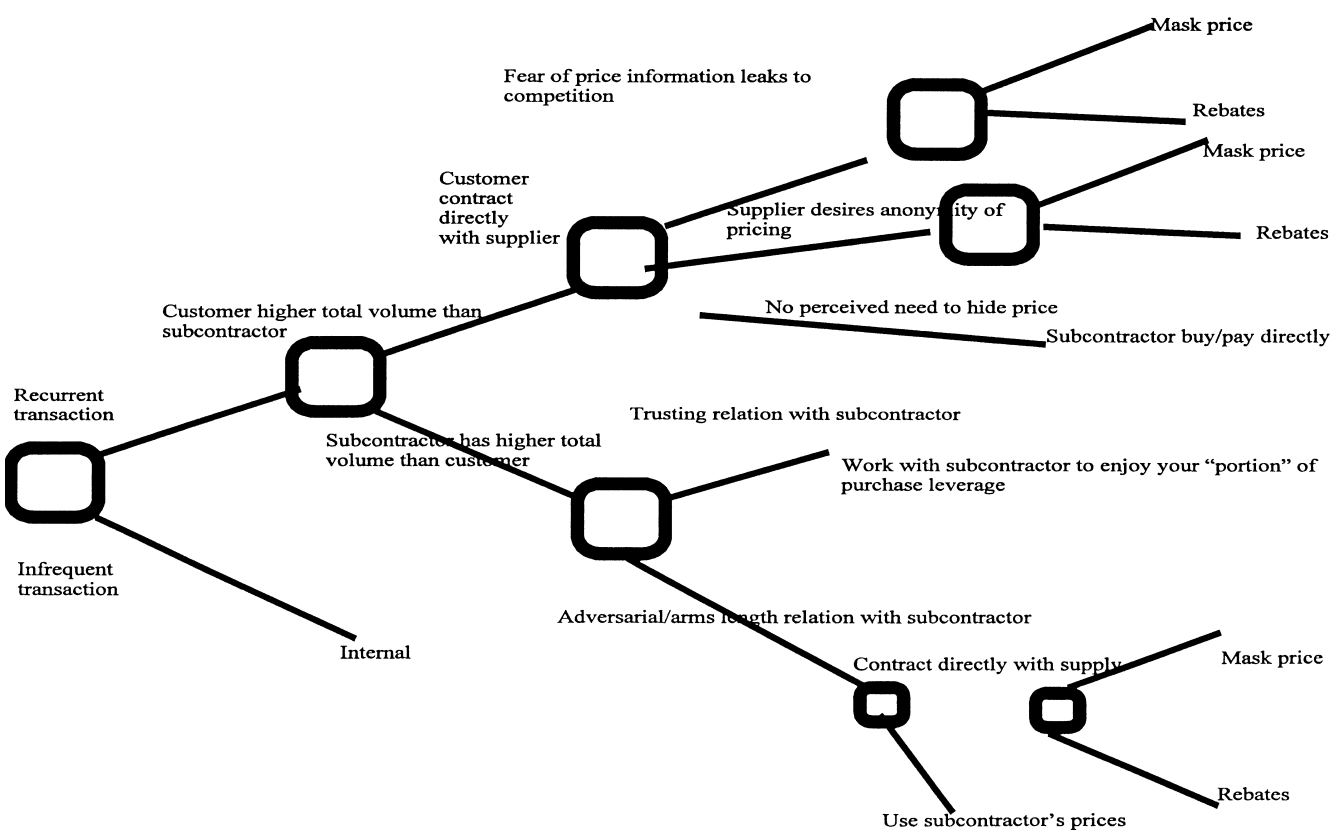

Fig. 4. Decision process for managing leverage of input purchases when end item is outsourced.

purchased is a unique, non-standard item, there is no reason to conclude that either the contractor or the buying organization could do better in terms of price. On the other hand, the buying organization or the supplier may not want interference in its relationship with the supplier of this specific component, so may contract directly rather than working through the contractor. This increases transaction costs as both the contractor and the buying organization become involved with the supplier. These additional governance costs must be weighed against the potential reduction in the risk of opportunism in uncertain markets. This could also be referred to as economies of scope in purchasing.

If the buying organization believes that it has superior talent in the purchasing department in terms of negotiating contracts with suppliers, versus the contractor, it may want to be involved in the contract negotiation as well. In cases where the contractor has higher total volume than the customer, the customer may want to utilize the contractor's leverage. This issue is shown in the second node of the decision tree in Fig. 4. Whether it is possible to leverage this is explored in the next section.

8.4. Economies of scale

Based on TCA, economies of scale also have an affect on whether an item should be made internally or purchased from the outside. According to TCA, if the organization is buying a standard item from a contractor who supplies like items to other customers, the contractor should be able to achieve the lowest material/component costs based on its total leverage. This was the situation in the first case study MTPC. On the other hand, if the buying organization is spreading its volume for like items across a number of contractors, none of whom purchase as much as the buying organization purchases in total, the buying organization can likely get the best leverage. Thus, the buying organization should negotiate directly with the raw material/component suppliers, retaining governance over the price relationship with the supplier. This was the case for both Auto and IM. This is shown in Fig. 4 as "customer contract directly with supplier". If, for some reason the company does not want the contractor to know prices, it can either mask prices, as was the case of Auto, in Fig. 1, or use as rebate scheme, as used by PC. Both of these options require a computer system that is able to reconcile actual usage with the contractor's order, to make sure that the customer (buying organization) is paying for the proper quantity of materials/components (masked price) or getting the proper rebate (rebate structure). The implications of the leverage aspect of the outsourcing decision are further detailed in Fig. 5. Fig. 5 provides another way of looking at the key issues that affect the decision of how to best manage purchasing leverage when outsourcing.

If there is no concern with contractor knowledge of the price negotiated for materials/ components, by far the most efficient approach is to let the contractor order directly from the supplier. IM followed this approach for resins and standard electrical components.

Does it ever make sense to pay for the goods directly, "owning them" while the contractor manufactures? From an efficiency, accounting and control standpoint, the authors believes it makes little sense. Unless a company's accounting and control systems are so poor that this is the only way to monitor usage and payment, it is a waste of resources. If this is the case, a better investment could be made in improving the accounting systems. Yet this approach was used by IM for proprietary parts/components and by PC in allocated parts (Fig. 3, Scenario I) and some turnkey operations (Fig. 3, Scenario II). If contractors are so untrustworthy that they may divert parts to other customers, does the fact that the customer (buying organization) has paid for those parts deter this practice?

Perhaps the most inefficient of all practices is to physically take possession of the goods from the supplier before shipping them to the contractor. This creates delays in time, potential errors, damage, wasted handling cost and so on. It can be justified if kitting is truly necessary, as in the case of PC (Fig. 3, Scenario I). Yet PC also did this for parts on allocation. Why should physically touching the parts improve control over a "mask" or "rebate" situation, where the supplier notifies the customer (buying organization) of contractor activity? It seems extremely inefficient, and implies a very tight governance system, beyond simply supplier price management.

8.5. Uncertainty

As posited in TCA, in situations where external and behavioral uncertainty is low, the market provides the most efficient alternative. For purposes of this paper, behavioral uncertainty is a function of relative trust and power, i.e., will the contractor try to take advantage of us? As market uncertainty increases, some type of obligational contract is preferred, protecting both parties from market contingencies. As uncertainties become extreme and unpredictable, so that they cannot be anticipated in contracts, and the risk of opportunism is high, the buying organization may want to protect itself by being directly involved in the buying. However, as Williamson (1979) points out, sometimes the third party/contractor is actually better able to absorb uncertainty because it can spread its risk over a number of customers. Thus, if the uncertainty in the market comes from customer demand rather than the suppliers or contractors, then the buying organization may want to leave the buying of materials/components to the contractor.

In practice, it seems that uncertainty regarding how trustworthy the contractor is plays a greater role in

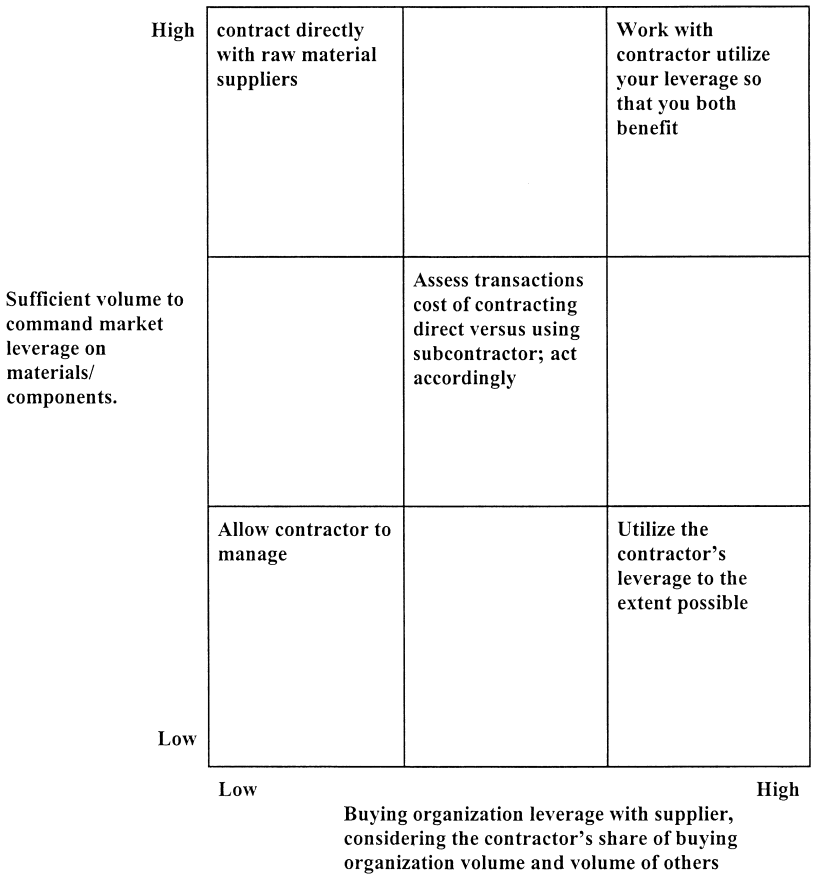

Fig. 5. Relative leverage of customer firm versus contractor.

outsourcing purchasing leverage than does market uncertainty. In a trusting relationship with a contractor, the best approach is to work directly with the contractor to enjoy that contractor's lower "volume price" if the contractor has more volume than the buying organization. This was the approach pursued by MTPC, who pays the supplier cost plus a markup and Oil, for purchases from distributors (Fig. 2, Scenario II). The latter pays a lower price based on its relative prices than low-volume customers of its suppliers/distributors, and higher prices than higher volume competitors. Thus, it still enjoys its "relative" leverage, but even more so because of the supplier's/distributor's greater overall leverage.

In a non-trusting relationship with a contractor, the organization still has options. It can potentially lose its leverage by just allowing the contractor to handle the negotiations with the supplier, and hoping it is getting a fair deal. If the contractor has great enough total leverage by combining all of its customer's volume, this may actually be a "better" deal for the customer than negotiating with the supplier directly. However, as Elec warned, this may be where the contractors are making all of their money. Does it really matter if the money is made here, if the customer is getting a "better" deal than it would with direct suppliers negotiations? In this case, purchasing leverage is no longer a source of competitive advantage, because the contractor may pass similar savings onto all customers, unrelated to relative volume. The researchers were unable to document any situations where this was actually the case.

On the other hand, as shown in Fig. 4, the customer could negotiate with the supplier directly for pricing, and then use a masked price or rebate structure. Whether this makes sense depends on the relative leverage of the customer, and the comparison of the contractor's willingness to share leverage benefits of pricing, versus the customer's leverage price plus associated transaction costs of still being involved in the purchasing aspect transaction.

9. Conclusions

With the continued growth in outsourcing manufacturing, concern over the loss of leverage on purchases used in outsourced manufacturing will continue to grow. Clearly, the decision of how to handle the outsourcing of purchasing leverage is a complex, multi-criteria decision. Applying TCA to the case studies, it is clear that the preferred options for managing purchasing leverage as

part of the outsourcing decision depends on: whether the transaction is recurrent; how unique/specific the purchased item is; the relative economies of scale of the buying organization versus the contractor; and the level of trust between the buying organization and the contractor.

The biggest issue appears to relate to trust/the nature of the relationship with the supplier and even more so with the contractor. As organizations come to recognize the high level of mutual dependence and benefits of cooperation, purchasing will need less direct involvement in the transactional aspects of outsourcing purchasing leverage.

Further research is needed to address several issues related to outsourcing leverage of purchased inputs for outsourced items. These include:

- How important is leveraging prices of inputs to the overall profitability of contract manufacturers? If purchasing organizations insist upon negotiating their own prices for purchased inputs, might they end up paying more in the long run in terms of
  - higher prices for manufacturing expenses from the contractors;
  - higher transactions costs due to managing the input contracts;
  - higher input prices than the contractor would have paid;
- When competitors are outsourcing manufacturing to the same set of contract manufacturers, are price and quality still relevant competitive issues, or is the field "leveled" on those factors?
- When negotiating with contractors, does the buying organization consider its relative cash flow and financial position, tax, and other issues in determining which firm is in the best position to "own" the production inputs? Related to this, how do contractors decide what the markup should be for be for holding and managing inventory?
- The nature of relationships and issues between buying organizations and the contract manufacturers continues to evolve. These relationships will provide a fertile field for research far into the future.

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