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AN INQUIRY INTO ISSUES REGARDING THE PURCHASING OF SERVICES: TYPOLOGY, REQUIREMENTS DEFINITION, BUYER PERFORMANCE, AND COST ACCOUNTING

A Thesis in

Business Administration

by

David Petrillo

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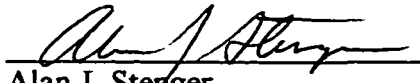
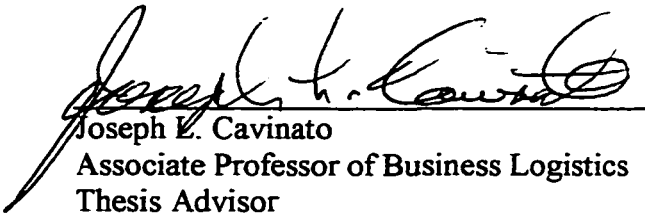
We approve the thesis of David Petrillo.

Date of Signature



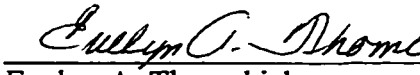
August 13, 1998

Alan J. Stenger
Professor of Business Logistics
Chair of Committee



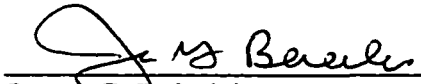
August 13, 1998

Joseph L. Cavinato
Associate Professor of Business Logistics
Thesis Advisor



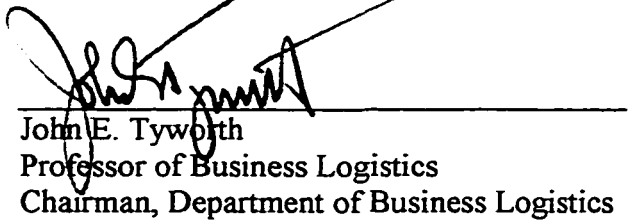
August 13, 1998

Evelyn A. Thomchick
Associate Professor of Business Logistics



August 13, 1998

James G. Beierlein
Professor of Agricultural Economics



August 14, 1998

John E. Tyworth
Professor of Business Logistics
Chairman, Department of Business Logistics

ABSTRACT

Companies are buying more services from suppliers for activities that traditionally were performed in-house. Additionally, many of the firm's input needs today are services as opposed to material goods. The competitive pressures of the global business environment have forced companies to target slimmer segments of the market through refinement of particular customer needs. The flexibility required to achieve such responsiveness makes it necessary for companies to focus their resources on their core technical competencies from which they derive their competitive advantage. Any activity that is not directly related to the company's core businesses is a candidate for outsourcing. Purchasing departments are called upon to purchase these services.

While it is known that services purchasing is increasing, there is little academic literature exploring the relevant issues. Among these issues are the types of services being purchased, definition of requirements, determination of prices, the skills required of the buyers of services, and the allocation of costs related to the purchasing of services. A proposition of this research is that services purchasing is adding to the overhead cost pool, further skewing actual product costs and threatening the competency of strategic decisions regarding product mix, resource allocation, and customer focus.

This research is a series of case studies of eight purchasing departments with an increasing responsibility to buy services. The findings are based on the perceptions of the purchasing managers interviewed. Significant findings emerged. The intangible nature of services makes requirements definition the single most problematic issue facing

buyers. Internal customers do not think of services in terms of statements of work, specifications, deliverables, or performance measurements. The internal relationship buyers forge with customers are the key to properly defining requirements. Volume leverage is obtained through standardization of requirements. Buyers must build bridges between internal customers to achieve standardization. These internal relationships are the prerequisite condition for attracting and developing the kinds of supplier relationships that are the essence of strategic purchasing. Buyers must win the trust of internal customers through sustained, consistent, performance, self-marketing, and constituency crosstalk. Finally, the increased purchasing of services has not significantly contributed to the overhead cost pools of the companies visited. Research limitations are presented, and recommendations for future research offered.

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While I am not at liberty to name the individuals or companies that participated in the case studies, I must thank them anonymously for their openness and hospitality. I am

hopeful that some of what has emerged from this research will be helpful to them in their continuing efforts to be on the cutting edge of world-class purchasing practices.

There are personal relationships that sustained me during this effort, also. One in particular is with Linda Miller, a colleague, friend, and kindred spirit. You have no idea how our discussions helped me through the dry spells. I hope I can be of equal assistance to you one day.

Finally, to the person who gives meaning to my efforts and brings joy to my life. Her sacrifice through this process was greater than mine; but so is her strength. Thank you.

As always, I wish to thank Our Lord and Our Lady, for they know the reasons why.

Chapter 1

INTRODUCTION

The view of purchasing as an element of corporate strategy has unlocked a gold mine of opportunities for companies seeking to increase profit margins and gain an advantage over their competitors. A significant product of this more sophisticated approach to purchasing has been the emergence of strategic costing and, specifically, the attempt to unlock the black boxes that are various managerial accounting overhead pools to more accurately assign purchasing costs directly to products. This has been a fertile initiative in the academic literature and is, in fact, being successfully employed in companies on the cutting-edge of strategic purchasing practices. Still, one area of purchasing that is dramatically growing, but remains unrecognizably dissolved in the purchasing cost stew, is that of the procurement of services. More and more, corporate purchasing departments are being called upon to purchase services for the entire company and for individual business units. While companies are increasing their insights into the direct costs associated with purchasing parts and materials required inside the factory walls, there is still a weak literature and even less practical application regarding the direct assignment of service purchasing costs. This research is undertaken to determine, among other things, if the purchasing of services has created new problems in the direct assignment of purchasing costs. To do this, it will explore issues regarding the purchasing of services and tease-out the constructs associated therein. Specifically, it will address a) what

services are being bought by purchasing departments, b) how service requirements are defined and services prices evaluated, c) the skills uniquely required of buyers for the purchasing of services and how those skills are perceived and evaluated, and d) whether service purchasing has generated a new pool of indirect costs that threaten the integrity of corporate strategic decisions.

The first step in any basic research framework is to formulate a problem statement. The literature has referred to this step alternatively as the problem genesis (Buckley et. al. 1976) and the idea generation (Mentzer and Kahn 1995). The remainder of this chapter will focus on this step, laying out the rationale leading to a problem statement and related research questions regarding the purchasing of services. Since this area is virtually untouched by the academic literature, these questions will be left somewhat vague and open to the findings of the proposed case studies. While a conceptual model will be proposed, it is expected that actual findings will alter this model and that issues not addressed by the research questions will reveal themselves. This is the normal outcome of theory building research such as this. Chapter 3 -- the methodology section -- will address the remaining steps of the research framework.

The Strategic Nature of Purchasing

Purchasing, or more correctly, an expanded definition of what was formerly known as purchasing, has taken on strategic significance in the global business environment.[1]

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[1] Terms appearing in the purchasing literature include *procurement*, *supply management*, and *supplier management*.

There is ample anecdotal evidence in industry to show that companies are competing on the distinctive competencies they've created for themselves with regard to purchasing practices. Further, there is a rich body of literature documenting the evolution of academic thought regarding the theoretical advantages of strategic purchasing (Ellram and Carr 1994). Product, price, and service, the traditional battlegrounds for control of the marketplace, have given way to the value companies can offer their customers by virtue of the relationships they've established with suppliers. These relationships manifest themselves in world class purchasing practices that use horizontal (across the firm) and vertical (up and down the value chain) innovation to bring optimum quality products in the right quantity to customers at a price they are willing to pay, and at the correct time and place (Cammish and Keough 1991). In short, firms recognize that world class purchasing practices, in and of themselves, can obtain and maintain market share, especially in the face of stiff competition.

Global Competition

The 1980s well established the need for a reevaluation of America's approach to competition. The world's markets would no longer be the exclusive playground of the big three U.S. automakers or a handful of chemical and biomedical conglomerates. The proliferation of scientific technology, the trend toward deregulation, and the stratification of markets enabled by the information revolution made it easy for low-cost competitors to enter all kinds of markets. Companies with long-established degrees of monopolistic power such as U.S. Steel, Chrysler, Ford, and General Motors, and Dow Chemical and

Union Carbide, were beginning to lose market share to smaller, more specialized companies. These companies were able to provide competitive products at fractions of the cost and with a higher degree of customer service and responsiveness. Comfortable paradigms from Swiss watch making to Grumman naval aircraft were regularly shattered, and the new paradigms that conquered and replaced them were victims of subsequent waves of technology and innovation. The competitive environment, which a handful of privileged corporations carefully transitioned from national to international in the 1950s, 60s, and 70s, exploded into a global marketplace seemingly overnight. The only certainty, it seemed, was constant change.

A management revolution emerged to make sense of and respond to the furious pace of change. Beginning with the long-time-in-coming embrace of the quality theories of Dr. W. Edwards Deming--notably his 14-points of continuous quality improvement--as summarized in his work, *Out of the Crisis* (1986), U.S. management began finding new ways to identify and capture ever-slimmer segments of the larger market. Business literature, industry conferences, and corporate seminars focused on coping with change in the global environment, as evidenced by the proliferation of management gurus like Tom Peters. The success and popularity of his best-selling books *In Search of Excellence* (Peters & Waterman 1982), *A Passion for Excellence* (Peters & Austin 1985), and *Thriving on Chaos* (Peters 1987) are testimony to the radically changing competitive environment with which managers were faced.

> ...there is no such thing as a "solid," or even substantial, lead over one's competitors. Too much is changing for anyone to be complacent. Moreover, the "champ to chump" cycles are growing ever shorter--a "commanding" advantage, such as Digital Equipment's current edge in

> networks that allow vast numbers of computers to interact with one another, is probably good for about eighteen months, at best...There are two ways to respond to the end of the era of sustainable excellence. One is frenzy: buying and selling businesses in the brave hope of staying out in front of the growth industry curve. The second strategy is paradoxical--meeting uncertainty by emphasizing a set of new basics: world-class quality and service, enhanced by responsiveness through greatly increased flexibility, and continuous short-cycle innovation and improvement aimed at creating new markets for both new and apparently mature products and services (Peters 1987, pp. 1-2).

Firms were forced to realize that there was no longer such a thing in the market as the lowest common denominator. They could no longer afford to shoot for the middle of the market with generic products or services and be assured of capturing enough of the meaty part of the bell-curve to meet profit objectives. Specialized competitors were shaving enough off the sides of that curve to squeeze the middle into a segment that was too small to maintain the firm's financial standing. Firms had to find ways of satisfying ever-smaller segments of the market to be competitive with lower cost specialty houses. To do so required not just technical expertise, but management innovation, new standards of customer service and responsiveness, and increased interaction with suppliers, all accomplished while slashing waste and cost from a bloated and unmanageable system. This became not just a goal for companies in the 1980s, but the very means of survival.

Purchasing and Corporate Strategy

To fully appreciate the strategic nature of purchasing in the contemporary business climate, one must first understand what is meant by strategy. Initially, in a prescriptive approach, strategy was viewed as the key mechanism for charting an organization's

direction, and determining the new direction's impact on structure and performance. In the view of Alfred Chandler, strategy refers to "the determination of the basic long-term goals and objectives of the enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals" (Chandler 1962, p. 13). Later, Kenneth Andrews broadened what was strategic in an organization in a modern classic work on the subject, *The Concept of Corporate Strategy*.

> Corporate strategy is the pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of the economic and noneconomic contribution it intends to make to its shareholders, employees, customers, and communities...Corporate strategy defines the businesses in which a company will compete, preferably in a way that focuses resources to convert distinctive competence into competitive advantage (Andrews 1971, pp. 13-14).

This view was supported by Henry Mintzberg who defined strategy as a "discernable pattern over time in a stream of corporate decisions" (Mintzberg 1978, p. 935).

The term *distinctive competence* (Selznick 1957) refers to those things an organization does especially well relative to its competitors, establishing them as a source of competitive advantage. Later authors show how distinctive competencies are the subject of strategic planning, the object of which is organizational performance (Snow and Hrebiniak 1980). Thus, anything that an organization does particularly well compared to its competitors can be strategically used to improve performance and generate an advantage over the competition.

The image of purchasing as an element of corporate strategy has been driven by purchasing's contribution to overall corporate performance and the performance of other

corporate functions (Carter and Narasimhan 1996b). In its traditional role, purchasing was looked upon by other corporate executives as a service function and evaluated according to its outputs and interactions with other functional areas (Cavinato 1987). Purchasing's strategic development complemented -- though slightly trailed -- the evolution of the organization as a strategic firm. The academic treatment of purchasing strategy evolved from a) specific strategies employed by purchasing, to b) purchasing's role in supporting the strategies of other functions and those of the firm as a whole and, finally, to c) the utilization of purchasing as a strategic function of the firm (Ellram & Carr 1994). Freeman and Cavinato show how the development of strategic purchasing is analogous to the company's overall development as a strategic firm (Freeman & Cavinato 1990). In fact, the authors assert that the development of strategic purchasing is an integral part of -- and should mirror -- the company's growth as a strategic firm.[2]

The view of purchasing as a strategic element of the firm is quite a paradigm shift for most organizations. Purchasing has traditionally been focused on the transaction -- that is, the individual purchase of a selected supply or service which the firm could not or would not provide on its own. At this level, the evaluation of alternative sources generally stopped at the criterion of price. The lowest bid won the contract for the purchase of the needed supply or service. Slowly, a more integrated view of purchasing developed characterized by a wider range of purchasing responsibilities. Activities typically associated with purchasing include selecting and qualifying suppliers; rating

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[2] The details of this piece are discussed further in Chapter 2.

supplier performance; negotiating contracts; comparing price, quality, and service; sourcing goods and services; timing purchases; setting terms of sale; evaluating the value received; measuring inbound quality (if not the responsibility of quality control); predicting price, service, and sometimes demand changes; and specifying the form in which goods are to be received (Ballou 1992, p. 545). Figure 1-1 schematically illustrates the main elements of the purchasing function.

The functional view of purchasing was prevalent from the 1890s, when purchasing departments began to appear in organizations, through the 1970s. Perceptions and practices took their first quantum change in reaction to the oil embargo of 1974. This was the first time the American economy faced a scarcity of critical resources at such crisis proportions. Suppliers were only able to provide 80% of the previous year's levels. Rather than purchase at this reduced level for all necessary uses, corporations learned to do Pareto analyses of these needs based on profitability (Heizer and Render 1988). The most profitable uses of oil were supplied at 100% capacity (or, in some cases, more), while other uses were supplied at diminishing levels commensurate with their decreasing profitability. The use of these kinds of heuristics became commonplace and helped firms minimize the economic effects of the oil shortage on the organization (Ballou 1989).

Even as the advantages of strategic purchasing practices became more prevalent, buyer activities were still viewed largely as support functions. In an influential book on obtaining and maintaining competitive advantage in the 1980s and beyond, Michael Porter developed the concept of the value chain, in which primary activities are only those which are directed at the physical transformation and handling of the final product

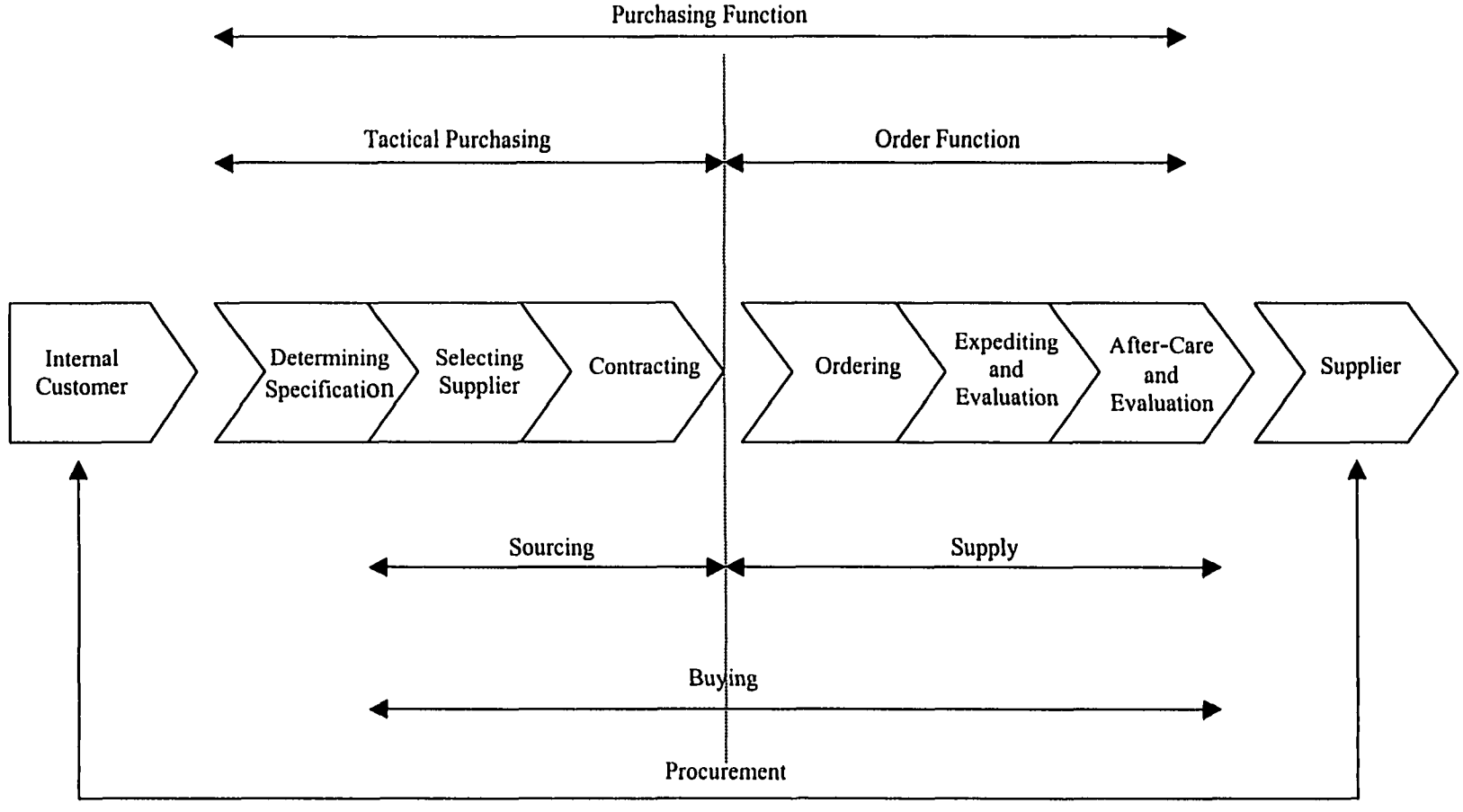

Figure 1-1: Purchasing Process Model (adapted from van Weele 1994)

(Porter 1985). These include inbound logistics, operations, outbound logistics, marketing and sales, and service. Support activities are those that are directed at supporting one of the primary activities as well as the whole primary process. One of these support activities is procurement, which relates to the purchasing of all inputs used in the firm's value chain. Figure 1-2 illustrates Porter's value chain.

There are two reasons to introduce Porter's value chain at this point in the rationale for this research. The first reason is to provide a background sketch of the evolution of purchasing as a strategic element of the corporation. At the time Porter introduced his model, which was to become widely accepted and an influential element of the management revolution of the 1980s and 1990s, purchasing was still regarded as no more than an important support activity. There was yet to emerge a realization that purchasing was not only strategic, but could be used as a distinctive competency to obtain competitive advantage.

The second reason to introduce the Porter model is of even greater significance to this research. In his development of the elements of his model, Porter describes purchasing as the acquisition of inputs necessary to the value chain. He defines those inputs as raw materials, supplies, and other consumable items, and assets such as machinery, laboratory equipment, office equipment, and buildings (Porter 1985, p.40). Thirteen years later, conspicuous by its absence, is any mention of the purchasing of services as an input to the value chain. Yet, as will be discussed shortly a) services are essential to an organization's ability to function, and b) purchasing departments are more and more being required to purchase those services for the corporation and for individual

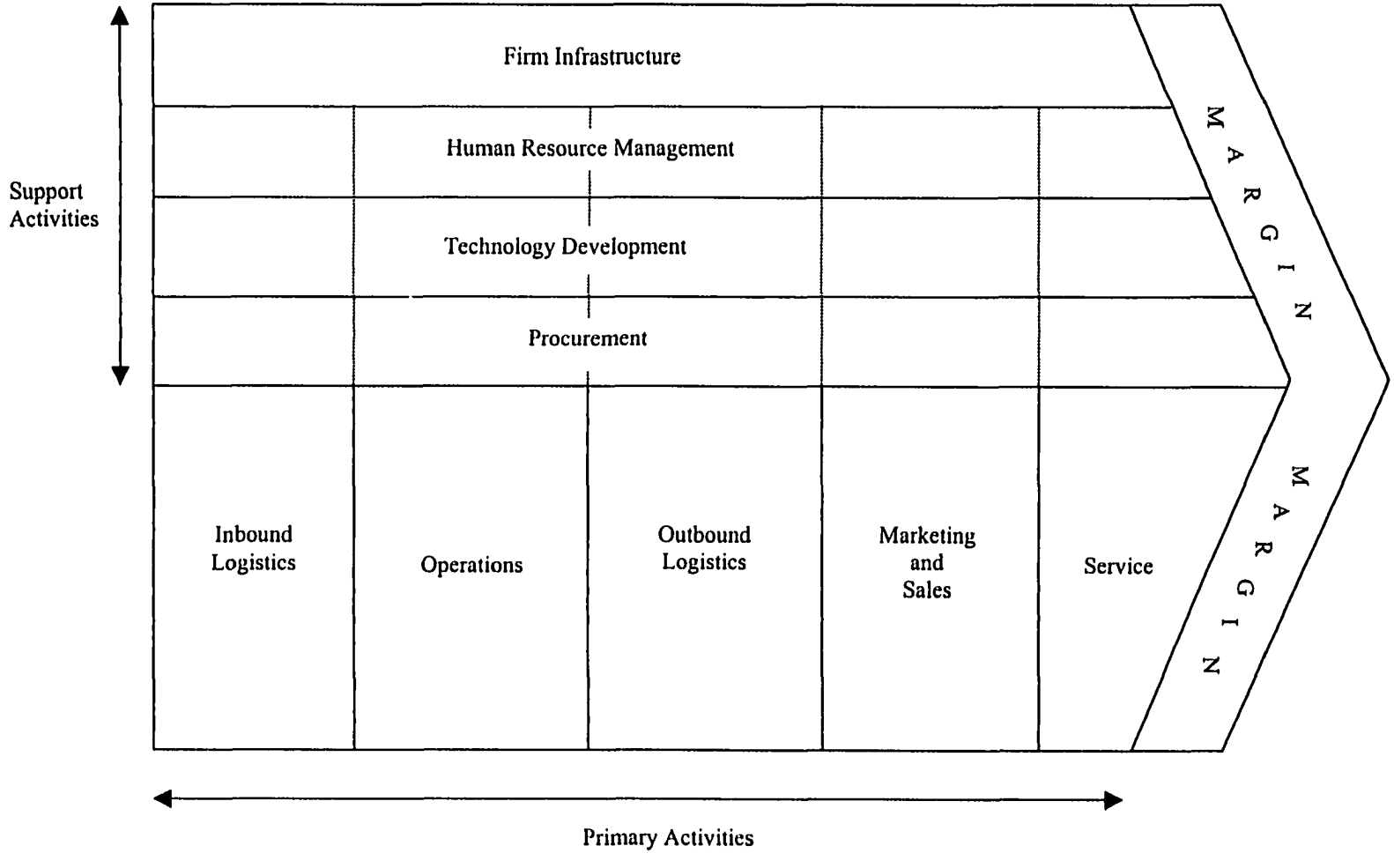

Figure 1-2: Purchasing and the Value Chain (Porter 1985)

business sectors. This research is undertaken to explore the issues regarding the purchasing of those services.

Throughout the 1980s, companies began to realize that there were additional advantages to be gained from looking beyond just price in choosing sources of critical supplies and services. They began working with suppliers to minimize supplier costs, thus reducing the price they had to pay to suppliers. Firms found that long-term commitments to suppliers and quantity buys allowed both the supplier and the firm to take advantage of economies of scale. The total cost/value model became the standard for supply chain competitiveness. As summarized by Cavinato,

> The supply chain view includes firms that cooperate in such areas as research and development and product design, and often conduct multiple firm joint analyses all with the quest of making the final product at overall lesser total cost and/or with a greater set of values than competing sets of supply chain firms (Cavinato 1992, p. 285).

Partnerships evolved that produced interfirm product teams created to identify user requirements and jointly design, development, and manufacture products or services targeted at ever more stratified customer segments. This approach led to a customer perceived value-set characterized by innovation, efficiency, quality, and service enhancement resulting in improved sales and customer loyalty.

Take, for instance, an example from Sony Corporation.[3] A customer approaches a Sony sales representative to return a cellular phone which no longer works because the customer dropped it into a swimming pool. Not only is the phone immediately replaced,

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[3] This anecdote is taken from research compiled by Cavinato and consultants from Arthur D. Little, Inc. between 1987 and 1992 (Cavinato 1992, p. 286). Although this example does not appear in the aforementioned citation, it was related directly to the author by Dr. Cavinato.

but in keeping with the Sony corporate vision to produce a continuous stream of customer necessities, the sales representative identifies a new customer need: a water-resistant, brightly colored cellular phone that floats! Immediately, the salesman notifies the supplier manager (previously known as a purchasing agent), who is able to energize a vast product team which includes supplier partners at the ready to work on the innovations necessary to meet the new demand. Within six months the same customer receives a phone call to come into the store to pick up a new water-resistant, brightly-colored phone that floats. This innovation, an organized effort to supply value to the customer (as defined by customer needs), quickly and efficiently, was only possible because of closely-tied, long standing supplier relationships founded on a clear and common vision of the customer. In essence, Sony shortens the proximity of the end-user and his needs to the supplier network, facilitates the process of satisfying those needs, becomes the integrator of the products or services to be rendered, and is the trustworthy and reliable face to the customer. Supplier relationships are the distinctive competency that make this type of customer responsiveness possible. The degree to which a company can manipulate and control the concentration of the supplier base and form rock-solid relationships within that base is the degree to which it can gain a competitive advantage in the industry. With this established, supplier relationships become the foundation for world-class purchasing practices and are the essential element of the strategic approach to purchasing. In short, the essence of strategic purchasing is supplier relationships.

Purchasing Partnerships

When one discusses supplier relationships in the context of strategic purchasing, the term most often used in the academic literature and in industry is partnerships.[4] This term can describe a myriad of relationships between buyers and sellers, often directly related to the type of product or service being procured. For more generic items -- that is, items of low value to the firm's central business and readily available on the open market -- it is most likely an arm's length, price-driven relationship. As procurement items become more critical to the firm's core business, and are more scarce in the marketplace, buyers are likely to develop more sophisticated relationships with their suppliers.[5] In some cases, the item may be so critical to the firm that it decides to procure the capability through vertical integration. In this way the firm attempts to reduce the risk associated with the availability of that item. In the present environment, however, vertical integration has become more problematic. As companies attempt to more precisely stratify market segments in order to win those segments from competitors, product variation has proliferated, as has the variation of the critical components necessary to make those different products. Companies have found it too costly to try to become experts in technical fields best reserved for competent suppliers. Vertical integration often means buying headaches in business areas in which the firm is not distinctly competent. Thus, the cost of vertical integration in terms of total value is prohibitive.

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[4] Partnership, as used here, refers to the cooperative relationship between the buyer and seller. As we will see in Chapter 2, this relationship may take on a number of forms, from distant and informal to close-knit and contractual. In this usage the term does not imply any legal or statutory definition of partnership.

[5] This model (Kraljic 1983) will be further developed in Chapter 2.

The trend in the latter half of the 1980s and in the 1990s has been for companies to divest themselves of all activities not directly related to their distinctive competencies, and to gain a competitive advantage based on those competencies. The issue of how to deal with the risk of obtaining critical resources not available inside the company is addressed through strategic purchasing. By forming long-term, highly developed relationships with a limited number of suppliers, companies reduce the uncertainty that they will be able to obtain a critical resource. Thus, the company secures the benefits of vertical integration while leaving these activities under the technical control of those who perform them best -- the suppliers.[6]

The experiences of companies, as presented for industry consideration at conferences and symposiums, more and more frequently focuses on the acute need for and dramatic benefits of complex and highly developed relationships between product manufacturers and their first-, second-, and third-tier suppliers. The effect has been to shorten the distance between customers and, more importantly, customer requirements, and the multiple tiers of suppliers to the product manufacturer. Two separate tracts at the 1997 Council of Logistics Management (CLM) Annual Conference focused on this phenomenon. The first, presented by Columbia Health Care Association (HCA) and the management consultant A.T. Kearney, showed how top tier suppliers account for only 8% of HCA's overall supply base, yet provide 41% of overall purchases (Louviere and Tevelson 1997). There is strong support in the literature that the trend toward supplier

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[6] This thesis (Harrigan 1986) is further developed in Chapter 2.

base reduction holds across most industries for the key reason that it frees time for firms to manage the remaining suppliers more effectively (Goffin, et. al., 1997).

In the other CLM conference presentation, a team of executives from Whirlpool and Mercer Management Consulting discussed how Whirlpool progressed through levels of procurement development and the corresponding transition in the nature of their supplier relationships at each phase of that development (Frisch et. al. 1997). Distinct in this presentation was the fact that Whirlpool did not pass through each procurement phase as it progressed to more sophisticated practices and supplier relationships. Rather, it added the more finely developed practices and relationships to its repertoire, using them for some buys, but maintaining the simpler practices and supplier relationships for other buys. The implication of Whirlpool's experience is that, on the path toward world-class strategic purchasing, they did not pass through successive phases of development so much as they maintained and built upon previous capabilities. Thus, Whirlpool can draw on multiple purchasing practices and varying supplier relationships as appropriate on a case-by-case basis.

This trend toward divestiture and partnership resulted in an unexpected consequence that purchasing costs grew relative to manufacturing costs. Finished product providers have become not so much traditional manufacturers as system integrators. Instead of buying a large percentage of raw materials and transforming them into the final product, these firms are buying major subsystems and providing final assembly according to specific customer requirements. This has resulted in shrinking manufacturing costs as a percentage of total costs and an ever-expanding percentage for procurement costs.

Traditional Management Accounting

As stated earlier, the single most important corporate strategy decision a company can make is to determine in which businesses it should compete. Crucial to that decision is information regarding profitability in any given business. A precise accounting of the costs associated with a particular business, and the revenue generated by that business is necessary to determine profitability. If cost or revenue data is in any way skewed, it could lead the company into incorrect strategies regarding capital investment, product mix, marketing focus, and customer service priorities. The increase in procurement costs as a percentage of total product cost has led to just those types of problems.

Traditional managerial accounting methods have attempted to assign costs to individual products or product types.[7] Costs that could be assigned directly such as design, engineering and manufacturing hours, and direct material are easily applied. Of greater concern has always been indirect costs -- "costs that cannot be identified specifically and exclusively with a given cost objective in an economically feasible way" (Horngren and Sundem 1990, p. 67).

Indirect costs take two forms that can distort the data used in making strategic decisions -- overhead costs, which are assigned to particular functions, or period costs. Period costs are deducted as expenses across the corporation without ever having been associated with a product or other cost objective (p. 70). They are collected over a given

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[7] As the author is not an expert in managerial accounting, he relied exclusively on a standard, widely used and recognized text in the field (Horngren and Sundem 1990). All managerial accounting references are to this text. Any inaccuracies, however, are the responsibility of the author.

period and deducted from total revenue on the financial statement. These "costs of doing business" are not associated with a product, and therefore are not considered in product decisions. Yet, there is growing concern that the degree to which these costs may be affected more or less by one product relative to another may skew overall corporate strategy decisions.

Regarding overhead costs, supervisory salaries are a good example of an indirect cost in a manufacturing division. A manufacturing overhead cost pool is designed to collect these kinds of indirect costs and allocate them to cost objectives in a reasonable and rational way. The manufacturing overhead rate is a percentage that is derived from these cost pools and applied to the direct manufacturing costs to obtain a manufacturing overhead cost for the product. This cost is then added to the direct cost of the product to produce an overall manufacturing product cost. The same accounting principles are used to collect the costs associated with other functions, such as product design and engineering, and with direct material and material handling overhead costs, to develop an overall product cost (see Fig. 1-3). The problem with these overhead costs is that, while we can be comfortable that a given product took a certain number of hours to design, engineer, and manufacture, and required a certain amount of raw materials and piece parts to produce, how can we know for sure what percentage of the shop supervisor's salary should be applied to that product? Is it possible that the supervisor spent far more critical hours working problems associated with the manufacture of another problematic product than the one being costed?

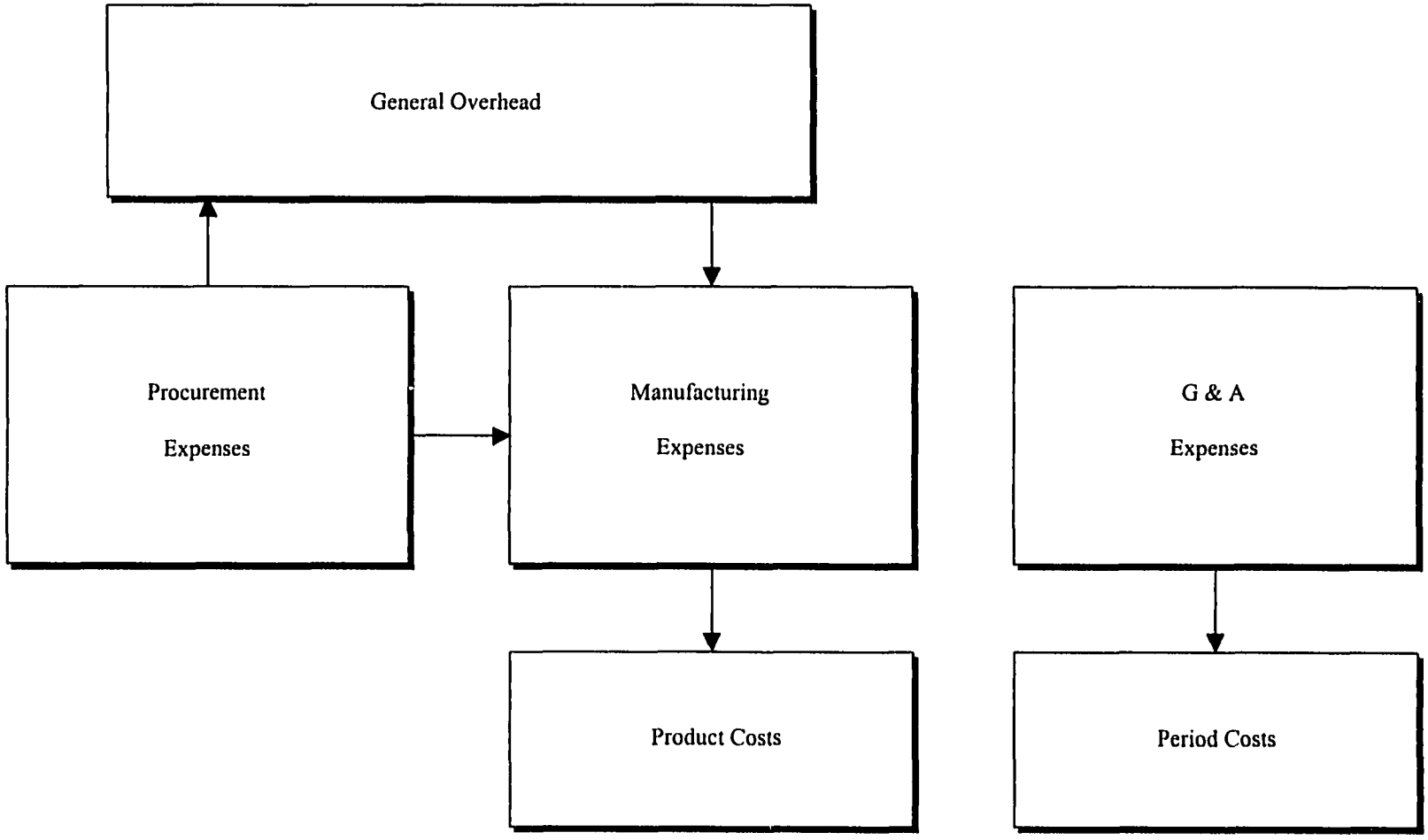

Figure 1-3: Traditional Management Accounting View of Costs (adapted from Cooper and Slagmulder 1998b)

Take the example of two products that compete for manufacturing time, both of which have demand that exceeds the company's production capacity. It may be that one product is virtually problem-free from a management perspective and, therefore, is more profitable than another product which requires a greater number of management hours to nurture through the manufacturing process. Yet, because both products receive the same overhead charge, this distinction in terms of actual cost goes unnoticed. Thus, it is possible that more profitable products are treated the same as less profitable products even though a strategic emphasis on one over the other would result in a financial benefit to the company.

The relative growth in major subsystems as a percentage of total costs has meant that procurement costs, *and the costs associated with the purchasing function*, have become a greater percentage of total costs. More sophisticated supplier relationships are more costly to develop and maintain, and the strategic imperatives associated with supply-base management, as opposed to simply supplier management, has meant that the managerial costs associated with purchasing -- both material overhead costs and period costs -- have also continued to grow. This means that there is an increasing possibility that the current means of accounting for costs associated with individual products is becoming more and more likely to yield misleading data and lead to incorrect and costly strategic decisions.

The significance of this problem is the subject of a popular book by Johnson and Kaplan called *Relevance Lost: The Rise and Fall of Management Accounting* (Johnson and Kaplan 1987). In this book, the authors shatter existing paradigms about the

sufficiency of traditional management accounting systems, particularly as they relate to the formulation of product costs.

> The management accounting system also fails to provide accurate product costs. Costs are distributed to products by simplistic and arbitrary measures, usually direct labor based, that do not represent the demands made by each product on the firm's resources. Although simplistic product costing methods are adequate for financial reporting requirements--the methods yield values for inventory auditing requirements--the methods systematically bias and distort costs of individual products. The standard product cost systems typical of most organizations usually lead to enormous cross subsidies across products. When such distorted information represents the only available data on "product costs," the danger exists for misguided decisions on product pricing, product sourcing, product mix, and responses to rival products. Many firms seem to be falling victim to the danger" (p. 2).

The book goes on to chronicle the historical and contextual development of management accounting systems and the corresponding evolution of the business environment which eventually led to those systems' lost relevance. It is only in the last two chapters that the authors eventually propose some new but largely theoretical systems for process control, product costing and performance measurement for the future. It would take a decade more of theoretical musings before some practical application of these ideas would begin to manifest themselves in industry. The current year, 1998, has seen a proliferation of popular writing on the subject of strategic cost management, which is the next subject in this problem genesis.

Strategic Cost Management

The most current definition of strategic cost management comes from a January 1998 issue of *Management Accounting*. "Strategic cost management is the application of cost

management techniques so that they simultaneously improve the strategic position of a firm and reduce costs" (Cooper and Slagmulder 1998a, p. 14). In order to do this, strategic cost management cannot, like traditional management accounting, limit itself to costs incurred inside the factory walls or within the boundaries of the firm. Rather than treating other potential cost objects such as suppliers and customers as general overhead or period costs, the costs associated with these segments must be untangled and transformed into direct costs. "To enable these costs to be managed strategically, they must be allocated causally" (Cooper and Slagmulder 1998b, p. 16). Figure 1-4 represents the attempt to directly assign to product costs what were previously indirect costs.

According to this literature, procurement costs are an example of costs that are often not managed strategically because they are arbitrarily allocated through overhead burdens (Fig. 1-3). This causes a major problem for purchasing managers. Measurements of a purchasing manager's performance are based on a cost accounting system that rewards lowest cost as opposed to best value. As we have seen, strategic purchasing has led to practices which no longer consider cost as the driving criteria. Quality, reliability, design flexibility, and delivery performance all play a role in achieving best value. While purchasing professionals generally behave according to these best practices, measures of their performance are still burdened with an antiquated managerial accounting system. This is illustrated in Figure 1-5. The shaded area represents the gap between how buyers perform at varying levels of strategic purchasing, and how their performance is measured by supervisors, or perceived by supervisors and the rest of the organization. The increasing weight of the shaded area puts growing pressure on purchasing managers to

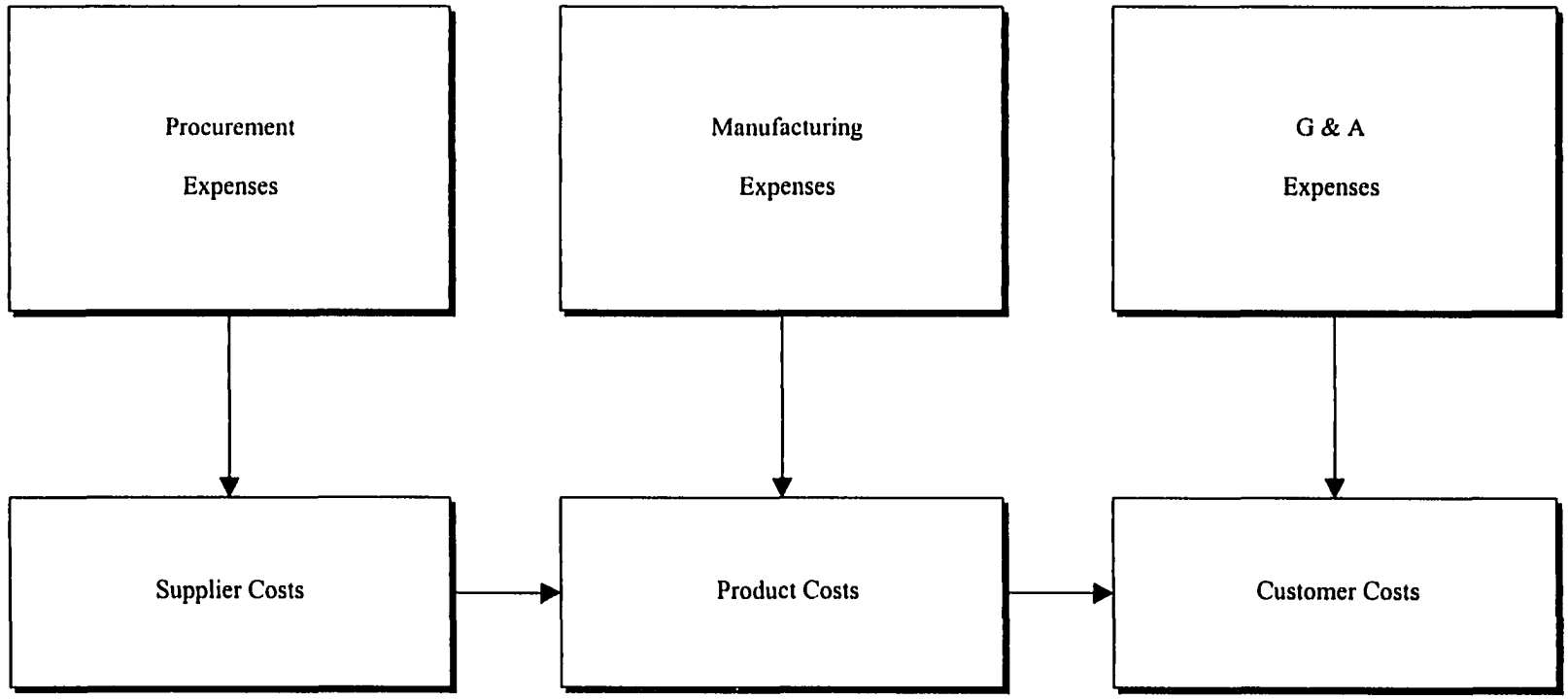

Figure 1-4: Strategic Cost Management View of Costs (from Cooper and Slagmulder 1998b)

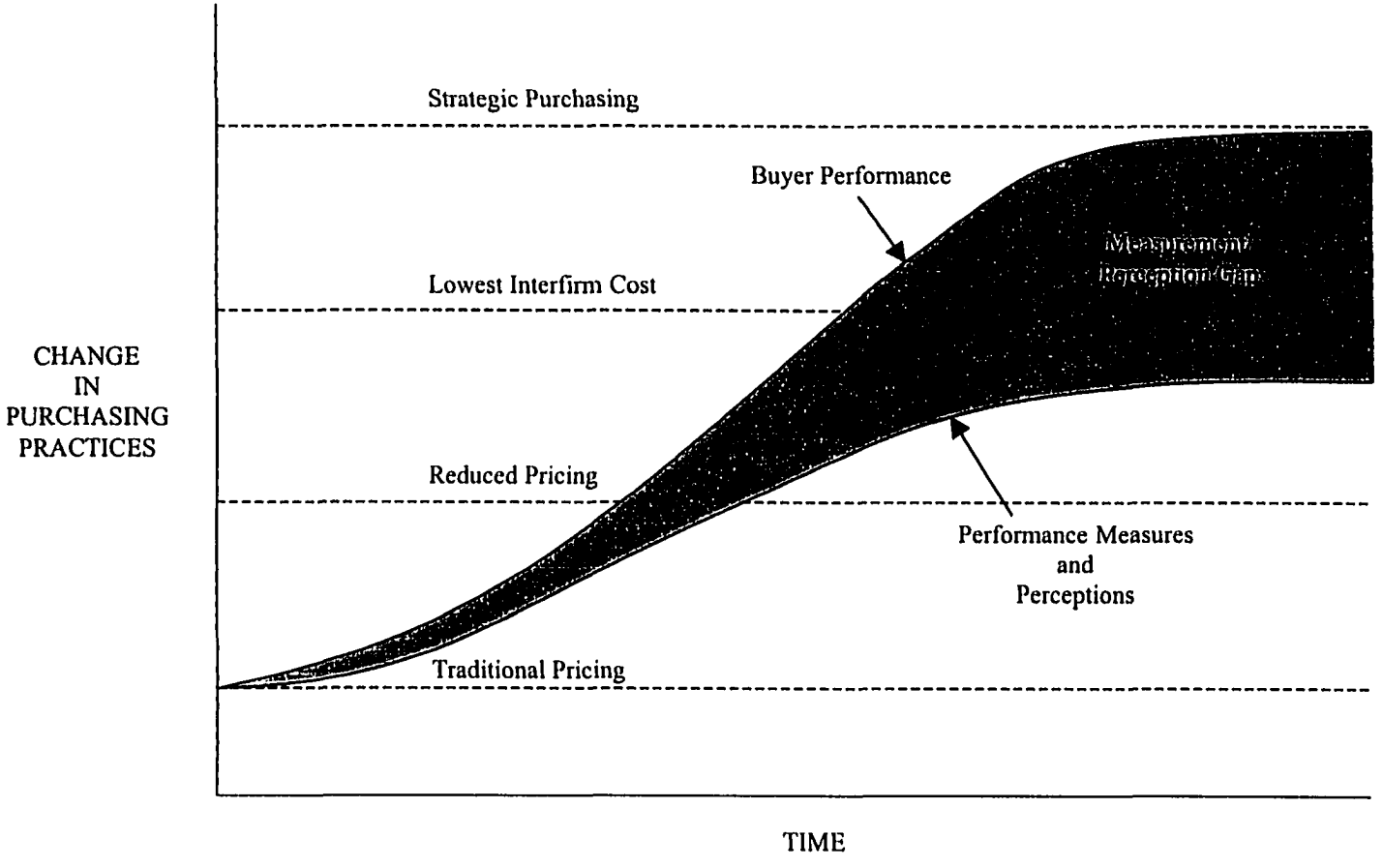

Figure 1-5: Gap Between Buyer Performance and Performance Measures and Perceptions (adapted from Cavinato, forthcoming)

resort to lowest price alternatives in contradiction to the established principles of best value. "This pattern leads to a number of suboptimal buying behaviors that weaken a firm's strategic position" (Cooper and Slagmulder 1998b, p. 16).

Strategic cost management assigns costs causally to overcome this problem. Using activity based costing (ABC) principles,[8] products are assigned their specific procurement costs, not simply an average cost for all products. Consequently, reported product costs are more accurate. A good example of the benefits of this is taken directly from Cooper and Slagmulder:

> ...products that contain large numbers of unique components that rely upon specialty suppliers now will be seen to be more expensive than products that contain only standard components. Product designers can better make the trade-off between functionality and cost as they design new products. If the specialty components add value to the product and it is reflected in its selling price, then the use of such components is justified. But if the selling price is not increased sufficiently, then the market is telling the designers that simpler products are preferable. Without strategic cost management to help them make this trade-off, the designers are forced to rely on their intuition. Thus assigning supplier costs to products generates a more accurate view of product profitability and provides better insights into the design of new products (1998b, p. 18).

This simple example illustrates the insufficiencies of traditional managerial accounting systems and highlights the relative advantages of strategic costing systems. Thus, the proliferation of literature on the subject is wholly justified and appropriate. Yet, even in the most recent publications on strategic costing systems, including a brand new text on the subject by Kaplan and Cooper (1998), there is an area of purchasing that is conspicuous by its absence -- the purchasing of services.

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[8] ABC costing and other strategic costing methods will be developed further in Chapter 2.

Services Purchasing

Inside the manufacturing walls it is necessary to purchase raw materials, piece parts, systems components of various complexities, and, in some cases, finished goods. In addition, capital investments include plants and equipment. The buying function also has the responsibility to purchase those items necessary to operate the business -- office furniture and supplies, office equipment such as telephones, computers, and copy machines, and utilities such as water and electricity. Strategic cost management principles are beginning to be applied to all of these areas of purchasing. What has yet to be addressed anywhere in the literature is the costs associated with the purchasing of services and the treatment of those costs. As firms outsource more and more of their business activities, services are becoming a larger part of the necessities for maintaining what remains internal. For example, as part and subsystem manufacturing decreases in final product firms, lost cost-volume efficiencies are requiring companies to divest themselves of manufacturing functions such as heat treatment, shot-peening, and spray painting. When a company needs these services for goods manufactured internally it must purchase them from third party providers. To be consistent with the principles of strategic cost management, these costs must also be assigned to products causally.

The problem gets more complicated when the services do not relate directly to manufacturing. Necessary services may include third-party logistics providers or after sale customer service and repair. Telecommunications services, computer support, office equipment service and repair, travel services, and management consulting services are all examples of services that are purchased by firms from marketplace providers.

For the purposes of this research, a service will be defined according to a definition proposed by Berry. "...a good is an object, a device, a thing, and a service a deed, a performance, an effort...it is whether the essence of what is being bought is tangible or intangible that determines its classification as a good or service" (Berry 1996, p. 42). Based on the criterion of tangibility, the list of service industries includes and is not limited to finance, insurance, real estate, transportation, communications, utilities, wholesale trade, retail trade, government employment (federal, state, and local), education, health, professional services, personal services, and food and lodging. As far back as 1986, service sector jobs were estimated to be 72% of all U.S. employment, and it has been increasing since (Heskett 1986, p. 3). Typically, the costs of these services are captured in whatever material overhead costs remain in a firm's cost allocation scheme or in general and administrative overheads (period costs). The size and scope of the services being purchased make it critical to unlock these costs in the same way and for the same reasons strategic costing practices are important in the allocation of other indirect costs.

Problem Statement, Research Questions, and the Conceptual Model

The problem statement of this research is formulated based on the following antecedents as they have been developed over the course of this chapter:

1) Strategic purchasing has become a distinctive competency upon which companies may obtain and maintain a competitive advantage.

2) The strategic choice for companies has been to focus on their core technical capabilities and divest themselves of all other activities which do not directly pertain to or support those capabilities.

3) The essence of strategic purchasing is supplier relationships in which a firm can gain the advantages of vertical integration--obtaining the resources and capabilities it requires which are no longer held internally--without being burdened with the risks and associated costs of those resources and capabilities.

4) This philosophy has increased the relative percentage of indirect material costs to direct costs and further exaggerated the misleading effects of what was already becoming an antiquated managerial accounting system.

5) Strategic cost management has attempted to correct the problems of traditional managerial accounting by assigning costs causally to product thereby giving management more accurate information upon which to base strategic decisions regarding product mix, capital investment, marketing focus, and customer service priorities.

6) The purchasing of services is a relatively new and expanding activity in most purchasing departments. It has yet to be addressed in the literature and there is no existing model for attempting to assign costs directly to product.

The problem statement resulting from this genesis is:

> What issues do corporate management and purchasing departments face associated with the purchasing of services?

Research questions generated from this problem statement are as follows:

1) What kinds of services are purchasing departments being called upon to procure for the company?

2) How are service requirements being defined by the internal customer and how do buyers evaluate proposed prices for those services?

3) What skills are required of buyers in the procurement of services and how are buyers perceived and measured relative to those skills?

4) How are service purchasing costs collected and assigned to cost objectives?

As stated at the beginning of this chapter, it was expected that issues not addressed by these research questions would reveal themselves. These were merely those *a priori* questions around which the investigation was structured.

It is the goal of this research to develop an analytic model from which hypotheses can be formed for more empirical testing in later research. The conceptual model proposed in Figure 1-6 attempts to stratify the supplier costs shown in Figure 1-4. Notice that this model retains the overhead and G&A blocks, though they've been pictorially reduced in size. The contention here is that this is a more realistic representation of strategic cost management in that it makes no claim to be able to eliminate indirect costs, but simply to reduce them as much as possible, or at least to the point where they no longer pose a significant threat to strategic decision making. The model depicts these overhead costs coming from the indirect cost components of both the procurement and manufacturing expenses. Though the dashed lines which divide these blocks appear to bisect them into two equal portions, it is not the intent of the model to make this claim. It will be left to the results of the research to determine the relative size of the direct and indirect portions of these expenses.

This model represents an *a priori* view of how to deal with the costs generated from the purchasing of services. It is expected that the research will result in the development of this model into a testable analytic model.

Figure 1-7 represents the author's concept of how costs are viewed through the eyes of managers. It is a two-by-two typology of costs according to visibility and

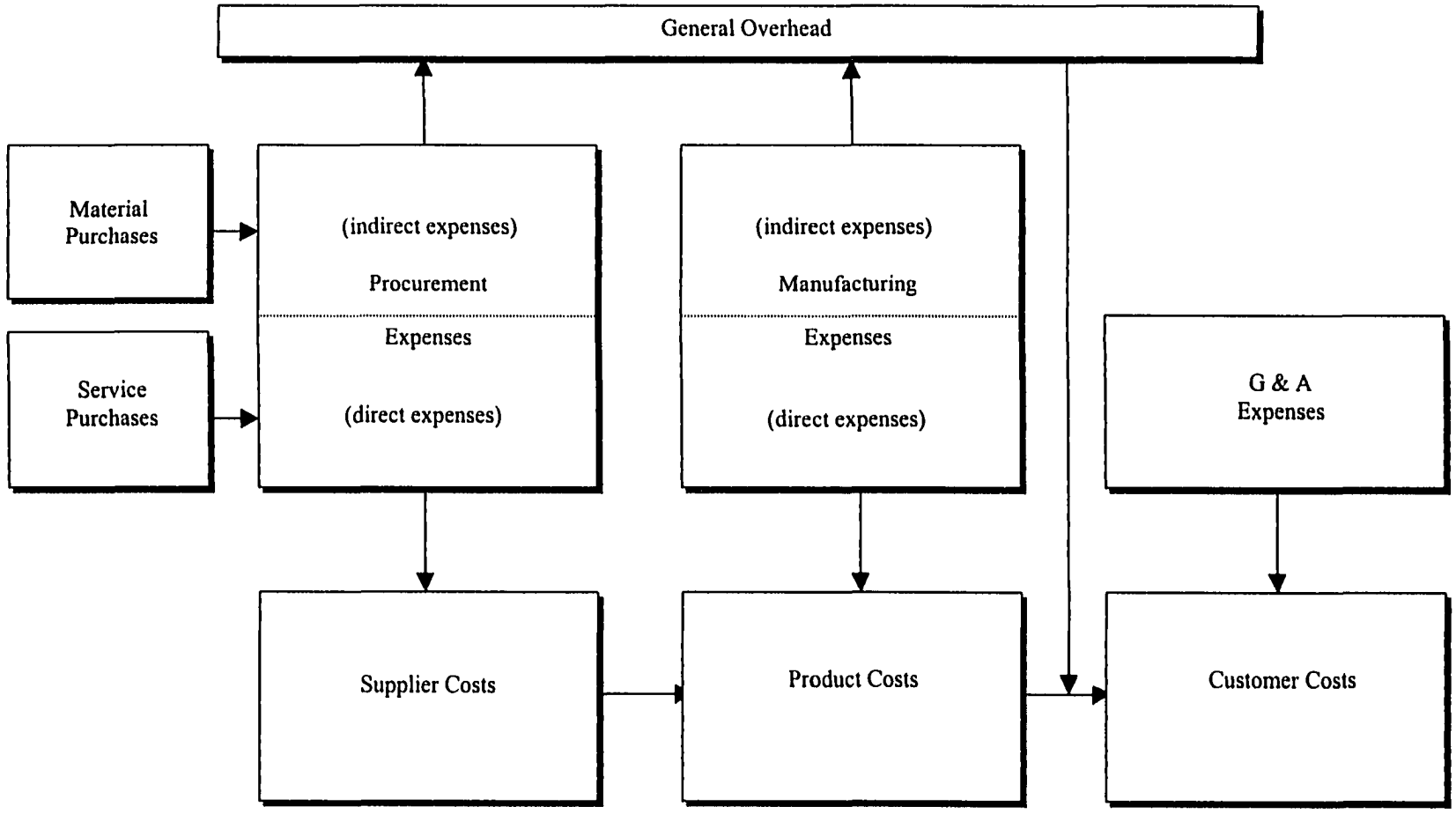

Figure 1-6: Conceptual Model--Strategic Cost Management with Service Purchasing Costs

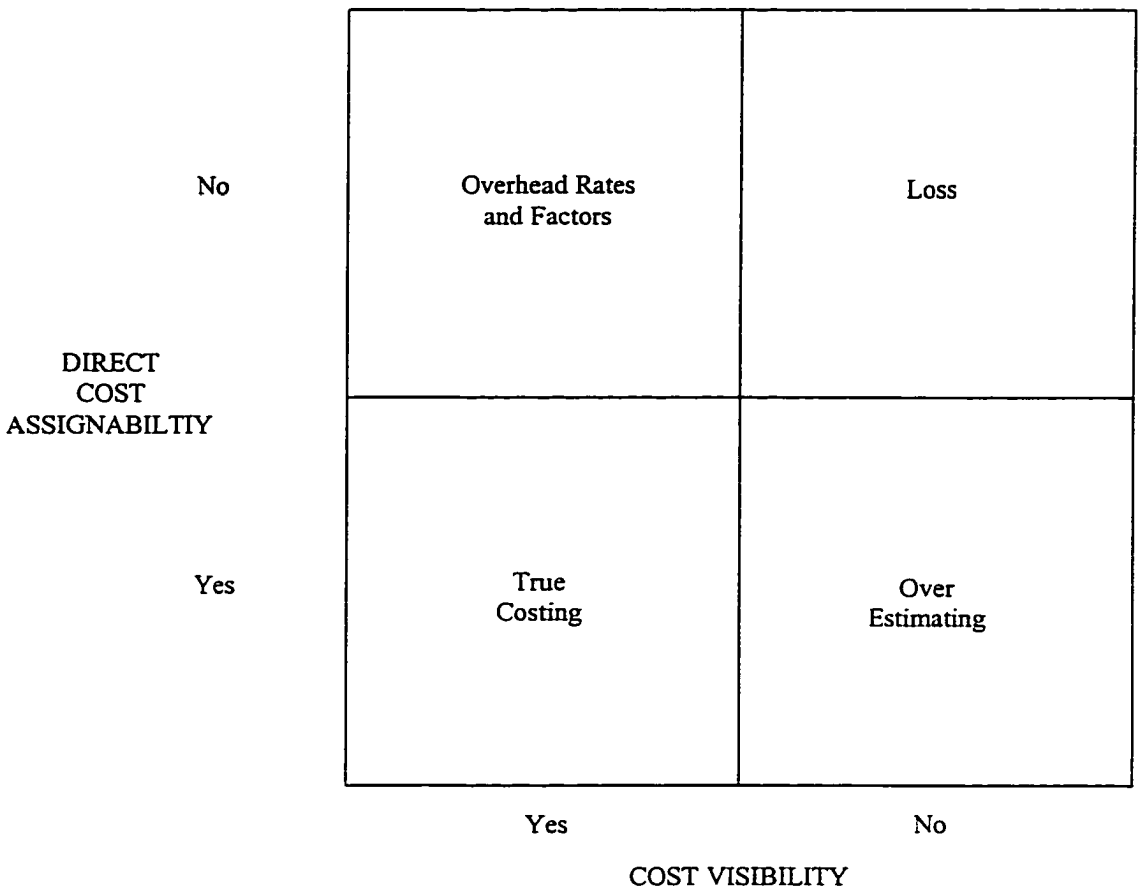

Figure 1-7: Management View of Cost Visibility and Assignability

assignability. Across the bottom the question is whether the cost is visible. Does the manager know the cost exists? Along the left side is whether the costs are assignable? That is, is there a place the manager can allocate the cost to tie it to a revenue stream?

The simplest block is in the lower-left quadrant. The cost is known and can be assigned. It is a true cost. Above that, the cost is known but cannot be directly assigned to a product or service. These are indirect costs that are accounted for by overhead and general and administrative (G&A) factors. The other two blocks are a bit more nebulous. They consist of costs that are invisible to the manager but which do exist and affect the firm's profitability. In the lower block, the manager cannot see the cost but is aware that there are costs out there that are invisible. Management tries to recover these costs by overestimating its direct costs, overhead rates, and G&A factors. Management hopes that by "rounding-up" on these costs, rates, and factors, it will at least recover any costs it does not see or account for by normal means. There are two problems with this. First, the firm can never be sure that it is adequately covering these invisible costs, so it may be losing money despite its best efforts. When this happens, those costs unaccounted for by the overestimates slip into the upper right quadrant and become an outright loss of profit. Second, the firm may very well be overestimating these invisible costs, thus losing an opportunity to win and maintain customers by offering the lowest possible price. The purpose of this simple typology is to show that strategic cost management attempts to push as much of a companies costs as possible into the lower left quadrant (Fig 1-8), thereby reducing its reliance on overhead rates and factors, minimizing its need to

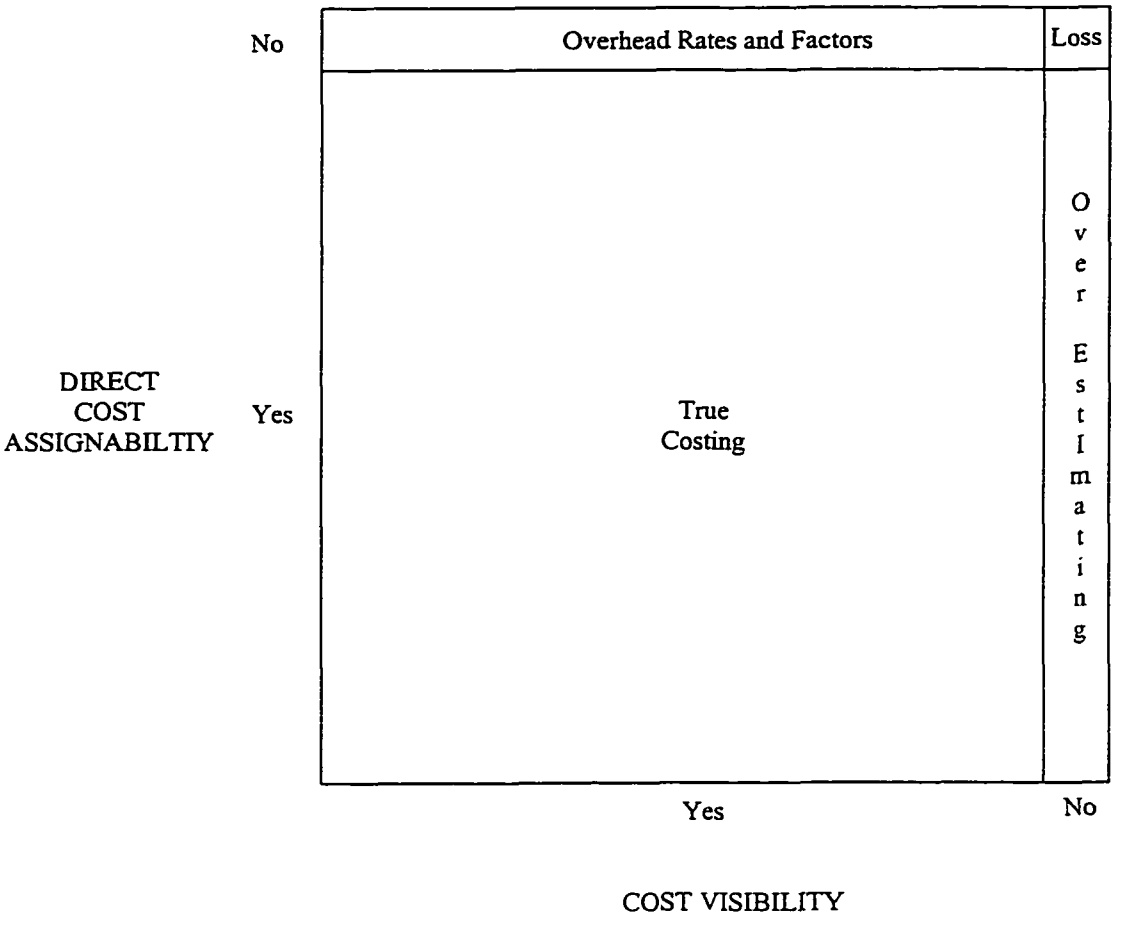

Figure 1-8: Desired View of Cost Visibility and Assignability

overestimate costs, and virtually eliminating the loss associated with invisible, unassignable costs. The more costs a company can causally assign directly to a product, the more accurate will be the information upon which it bases its strategic decisions. This research is an attempt to further that goal.

Advantages To Be Gained From This Research

There are three distinct advantages to be gained by performing this research. Two have already been stated but bear repeating. First, there is currently very little academic research regarding the purchasing of services. Research questions 1, 2, and 3, particularly, involve the "what" and the "how" of purchasing services. Little is known about what is being tried in industry and what is effective or ineffective. This research illuminates the issues regarding this growing area of purchasing responsibility. Further, in response to question 3, it proposes a way to bring the perceptions of and measurements for buyer performance in line with the execution of strategic purchasing principles.

Second, in response to question 4, this research provides a testable analytic model for the collection and direct assignment of costs associated with the purchasing of services. The discussion of the insufficiency of the traditional management accounting systems and the need to apply strategic cost principles to indirect costs justify the need to embark on this research.

Finally, the researcher hopes to use what has emerged from this research into commercial service purchasing to analyze, compare, and contrast what is happening in the government's procurement of services. As a major in the United States Air Force and

an acquisitions contracting manager, the author knows that the purchasing of commercial services by the military is ever increasing. The best practices in the commercial business world are frequently used to refine and streamline what are often burdensome and highly regulated practices in the government. While it is never easy to tame the federal bureaucracy, it is often easier to implement practices that have been tried and proven in industry. This research adds to the development of such commercial practices for eventual transition to the military environment.

The remainder of this dissertation is divided into five chapters. Chapter 2 is a more in-depth literature review of the important constructs such as strategic purchasing, partnerships, management accounting, and strategic cost management. Chapter 3 is a presentation of the research methodology to include a detailed discussion of the problem of induction and the way case studies deal with that problem. Chapter 4 is a presentation and within-site analysis of the findings at each of the companies visited. This information is then analyzed across the eight cases in Chapter 5 to reveal emergent themes and patterns of behavior. Chapter 5 also includes a proposed typology of purchased services and development of three analytic models resulting from the case studies. Finally, Chapter 6 contains the research conclusions, limitations, and recommendations for future research.

Chapter 2

LITERATURE REVIEW

The Evolution of Strategic Purchasing

Purchasing Strategy Mirrors Organizational Strategy

This evolution of strategic purchasing as a means of obtaining a competitive advantage is analogous to and consistent with the development of strategic management at the apex of the organization. A landmark study by Gluck, Kaufman, and Walleck shows that most corporations follow a standard path toward strategic management, slowly developing in complexity and sophistication (Gluck, et. al. 1980). In phase I, basic financial planning, the organization relies on its budgeting process as its means of financial planning. Operational control becomes the key to successfully executing the budgetary plan as the organization reacts to the variables in the environment and adjusts to deviations from the forecasts of revenues, costs, and capital expenditures. The key to this phase is that it is based primarily on budgetary forecasts and then reactive in nature. The organization's value system in this phase is *meet budget.*

As the organization grows in technical sophistication it is better able to engage in longer-term financial planning. The organization gradually shifts to phase II, forecast-

based planning, where the extended time-horizon requires the ability to anticipate the future impact of social, political, and economic forces. More sophisticated forecast models attempt to extrapolate past experiences to predict future trends. Notable here is that the organization is beginning to look ahead and anticipate changes in the landscape rather than simply waiting for them to occur and reacting to them. The value system here is *predict the future.*

In phase III, externally oriented planning, the organization becomes overtly proactive in its strategic approach. Now aware of the ever-changing nature of the marketplace, the organization is constantly scanning the horizon to find new opportunities and evaluate strategic alternatives. Its thinking has shifted from budgeting and planning to maintaining a dynamic allocation of resources to meet current opportunities. In phase III the value system is *think strategically.*

According to the authors, when a company reaches phase IV it has become a fully actualized strategic management company. Here, the planning processes themselves become creative and flexible. The corporate culture is to master and control the marketplace, not be subject to it. The organization no longer tries to predict the future and act accordingly. It now acts to influence future events and create an environment favorable to its interests. In this phase, the value system, *create the future* has become the corporate mantra at all levels of the organization.

Purchasing strategy mirrors organizational strategy (Freeman & Cavinato 1990). As companies evolve in their ability to *create the future*, purchasing functions have also evolved into a strategic element of the firm. In phase I (basic financial planning),

purchasing departments are viewed as a cost function required to provide necessary resources at costs consistent with budgetary goals. In most cases, firms have an arm's-length relationships with their suppliers and the acquisition process is based largely on product specifications and lowest price.

In phase II (forecast-based planning), as the company attempts to make long-term plans based on more sophisticated forecast modeling, purchasing departments begin to work with suppliers to establish multi-year commitments and realize the benefits of high quantity buys. They work with suppliers to reduce and avoid costs and together evaluate requirements to provide quality to the end-customer. Like the overall corporation, the purchasing department is becoming more proactive in its approach to suppliers.

As this proactive approach develops, the purchasing department, like the organization, transitions to phase III (externally oriented planning). In this phase, purchasing departments begin to focus on ways to provide value to the organization through collaborative efforts with suppliers. Long-term partnering relationships begin to develop characterized by the sharing of forecast information, working with performance rather than product specifications to reduce manufacturing costs, and cooperation to reduce total interfirm supply chain costs.

As the organization actualizes into a strategic firm in phase IV, so too does the purchasing activity, now known as supply management. Not only is the firm engaged in value relationships, joint ventures, and vertical integration strategies with its suppliers, it now works to control the entire supply base, working to concentrate first-tier and lower-tier suppliers into a friendly, reliable, long-term unit and eliminate or make non-

consequential all others. As the strategic firm works to create and control the future, so the purchasing strategy of the firm works to create the control the supply base.

Purchasing Partnerships

In this decade alone the literature has been rife with actual and theoretical applications of strategic purchasing. This literature is centered largely on the nature of supplier partnerships and their effects on the strategic firm.[1] A National Association of Purchasing Managers (NAPM) Center for Advanced Purchasing Studies (CAPS) purchasing futures research project did a comparison of North American and European future purchasing trends (Carter & Narasimhan 1996a). They concluded that on both continents purchasing would be focused on the creation of external customer value through innovation flexibility obtained through connections across organizational and company boundaries. These connections would be the product of long-term buyer-supplier relationships that are characterized by an open exchange of information, trust, and the sharing of cost savings. Empirical studies exist which propose and support the causes for the formation of such relationships (Stuart 1993), and the increasing benefits of such relationships over time (Graham, et. al., 1994).

In an NAPM award-winning article, Lisa Ellram offers a managerial guideline for the development and implementation of purchasing partnerships (Ellram 1991). In this

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[1] This literature defines partnering as a collaborative buyer-seller relationship. It does not imply a legal definition of partnership.

piece, the author synthesizes the previous literature and combines it with her extensive experience in corporate case studies of purchasing organizations to offer managers a normative route for seeking, developing, implementing, and evaluating purchasing partnerships. She correctly predicts that partnering will continue to expand and dominate the purchasing landscape throughout the 1990s and, more importantly, asserts that partnerships will be a source of competitive advantage in most industries.

In a November 1996 issue, *The International Journal of Purchasing and Materials Management* contrasts a case study by Ellram and Edis, which describes a successful partnering arrangement, with an essay by John Ramsay making the case against purchasing partnerships in small organizations. In the former piece, Eastman Kodak followed the normative prescription laid out by Ellram in the previously cited 1991 article (Ellram & Edis 1996). Kodak approached the partnership with the following objectives established:

for the supplier,

a) increase market share at Kodak, an industry leader;

b) secure long-term business; and

c) strengthen competitiveness in the marketplace;

and for Kodak,

a) achieve total life-cycle cost savings;

b) retain early supplier involvement for better solutions; and

c) reduce cycle times.

While both the supplier and Kodak realized all of these objectives to some degree, difficulties in the partnership led to lessons learned that confirmed the fundamental premises of partnering that Ellram and others earlier suggested. These fundamental premises are a) trust, b) communication, c) mutual benefit, d) long-term perspective, and e) top management support at both companies. Though the article specifically identifies these five building blocks as the foundation of successful partnerships, subsequent literature suggests that the issue of trust in the buyer-seller relationship is the cornerstone.

Smeltzer addresses the meaning and origin of trust in buyer-seller relationships (Smeltzer 1997). In doing so, he notes that there are two views of trust depending on one's perspective. In the sociological view, trust is based on confidence in another's goodwill. It emphasizes faith in another's moral integrity. On the other hand, the business view of trust is based on confidence or risk in the predictability of one's expectations. In this view, parties hedge against uncertain states of nature, adverse selections, and ethical hazard through formal contractual means such as guarantees, insurance mechanisms, and laws (Ring & Van de Ven 1994). These divergent views are integrated into one definition by Hosmer (1995):

> Trust is the expectation by one person, group, or firm of ethically justifiable behavior--that is, morally correct decisions and actions based upon ethical principles of analysis--on the part of the other person, group or firm in a joint endeavor or economic exchange (p. 383).

This definition, however, is only useful if purchasing professionals agree on the meaning of ethically justifiable behavior.

The question of defining common ethics among purchasing professionals prompted a study cosponsored by the NAPM to 1) identify the key ethical issues facing the

profession of purchasing and materials management, and 2) determine the extent to which purchasing professionals find various factors to be helpful or to present challenges to their efforts to act ethically (Cooper, et. al. 1997b). NAPM survey respondents were divided into two categories -- those certified as purchasing managers (CPM) and those non-certified. Of 44 ethical issues identified by respondents, the same three issues were rated first, second, and third in the same order by both groups:

1) showing partiality toward suppliers preferred by upper management;

2) allowing personalities to improperly influence the buying decision; and

3) failure to provide prompt, honest responses to customer inquiries and requests.

In addition, both groups ranked the following four issues in the top ten:

1) lack of knowledge or skills to competently perform one's duties;

2) failure to provide products and services of the highest quality in the eyes of the internal customer;

3) receiving gifts or entertainment that influence, or appear to influence, purchasing decisions; and

4) failure to identify the customer's needs and recommend products and services that meet those needs.

Of these seven issues, four deal with issues regarding the buyer's ability or proclivity to meet the needs of the internal customer. Only three address ethical matters that would affect buyer-seller relationship, and then only from the perspective of the purchasing professional.

Smeltzer's piece begins to focus more on the buyer-seller relationship by identifying trust-enhancing behaviors in that relationship and the attributes derived from them. The behaviors exhibited by one or both sides that develop trust between buyers and sellers are

follow-through, information exchange, receptivity to inputs from the other side, listening and reacting to the other side's problems, open communication, mutual respect, sharing of cost savings, honesty, product knowledge, organization, positive attitude, good history and past performance, priorities, effort, the sharing of technical advances, and supplier calls to check on status. From these behaviors, trusting relationships form which have the following four attributes as a common foundation:
1) consistency and follow-through; 2) sharing ideas, information, technology, and cost savings; 3) open communication and listening; and 4) mutual respect and honesty. In one form or another, these four attributes of trusting buyer-seller relationships are consistently addressed throughout the literature on purchasing partnerships.

Ramsay's rebuttal to the benefits of partnering acknowledges that there are benefits to be derived for the large company, but asserts that the costs and the risks for small companies (those that make up the bulk of an economy's business activity) far exceed whatever value may be derived (Ramsay 1996). According to the author, small companies do not possess the market power that will lead suppliers to seek-out their business. As suggested in Ellram's guidelines, supplier indifference will inevitably lead to a negative cost/benefit ratio. In the absence of a large business base, the small buyer may have to entice the supplier by committing itself to a sole-source relationship. While an excellent situation for the supplier, the small buyer severely tips the balance of power in favor of the supplier and puts itself and its customers at considerable risk without the mitigation of a larger business base available to a more diversified company. Such a risk,

coupled with the a problematic cost/benefit ratio, make partnerships for smaller companies inappropriate.

How does one respond to Ramsay's contentions? In order to address them, it is important to understand the theoretical foundation of external business relationships. The next section of this review addresses this background material.

The Nature of External Business Relationships

Organizational Theory

Organizational theory provides a fertile theoretical foundation upon which to plant the idea that supplier relationships can be used to gain competitive advantage. Resource dependence theory states that an organization can only be understood when it is viewed in terms of its context (Thompson 1967). The context is the environment within which the organization must operate. Since, in this view, the organization is adaptive, then organizational behavior may be explained by the organization adapting to its environment. Resource dependence theory argues that the organization's patterns of dependence on resources from the environment leads to external constraints and controls. Thus, the organization must develop ways of dealing with the firms that control the resources to minimize the uncertainty related to environmental dependence. Put another way, the organization acts to ensure the steady acquisition of vital resources according to the *value* it places on those resources and the *risk* associated with losing the supply.

Four factors affect the degree to which the focal firm (the one needing the resource) is at the mercy of the influencing firm (the one controlling the resource): 1) the importance of the resource to the focal firm; 2) the extent to which the influencing firm has control of the resource; 3) the availability of substitutes; and 4) the concentration of resource control in the influencing firm (Pfeffer and Salancik 1978). Each of these factors affects the degree to which the influencing firm has power over the focal firm. The key for the focal firm is to develop a countervailing power, which is built on a reciprocal dependence of the influencing firm on the focal firm. When the resource exchange is not equally important to both sides an asymmetric relationship exists. The objective of both sides is to be in control of this asymmetric relationship.

For strategic supply relationships, it is far more preferable to ensure that the relationship is mutually beneficial to both sides. This does not, however, contradict the need for control of the relationship. According to Thompson, there are three strategies to gain power with respect to those upon whom a firm is dependent. First, firms seek to gain power through *contracting* -- the negotiation of an agreement for the exchange of performance in the future. This corresponds to traditional buying practices, which are still used for commodity or generic items. Second, firms try to gain power through *coopting*; that is, absorbing the elements of the other party into the leadership or policy structure as a means of averting threats to the firm's stability or existence. In the business environment this commonly takes the form of vertical integration, where the firm buys the capability to produce the resource, thereby reducing the uncertainty that the resource will be available (Harrigan 1985, Williamson 1975 and 1985). The problem

with this is that in highly complex and uncertain environments, the transaction costs of vertical integration exceed the savings and certainties. There is evidence to show that in these environments, firms can derive the advantages of vertical integration (efficiency, surety of supply, responsiveness) without actually coopting the capability. This is achieved through control of a mutually beneficial, partnering relationship (Harrigan 1986).

Finally, firms seek to gain power with respect to those upon whom they are dependent through *coalescing*, which is indeed the principle of partnership, joint venture, or teaming to reach common, mutually beneficial goals. As indicated earlier, this is the current trend in strategic acquisition: to achieve market power through the formation of strategic partnership between buyers and sellers.

Strategic Purchasing as a Means of Competitive Advantage

In fact, buyer-seller relationships actually go one step beyond strategic partnerships to what Cooper, Ellram, Gardner, and Hanks call multiple alliances (Cooper, et. al. 1997). According to the authors, the image of a supply chain is too one-dimensional, leading some to think of the firm as a link between a single supplier and a customer. In fact, the firm is a tree trunk between multiple customers as roots and multiple suppliers as branches of diminishing size. This analogy better represents the multitude of relationships in the network and provides a more descriptive picture of the entire interfirm value chain. It is consistent with Cavinato's total interfirm cost model discussed in Chapter 1 (Cavinato 1992).

Every company's goal is to develop a sustainable competitive advantage (van Weele 1994, pg. 115). Porter (1985) describes three basic strategies for developing this advantage: cost leadership, differentiation, and focus strategy. The evolution of supplier relationships is based on these principles of competition. In the case of cost leadership, the firm competes on price. As the market matures, though, prices often become indistinguishable. In this case, the firm tries to distinguish itself from its competitors based on supplying products or services which the customer perceives to be unique and responsive to their particular needs. Again, though, as firms begin to copy one another these distinctions begin to dissolve. Firms then try to distinguish themselves again, this time on the basis of customer service standards such as order processing, delivery, and after-sale customer concerns. This too only works for awhile until competitors copy each others' successful strategies. The final battleground, then, is in market focus; that is, carving finer and finer segments of the market into customers with very particular needs and requirements, and to meet those needs in a way the competitors cannot. To do this, a firm must have a reliable and responsive supply base on which it can count to help innovate and quickly comply with these finely derived requirements. When this occurs, the firm is winning market share based on its distinctive competency in supplier partnerships. It has passed cost, product, and service and is now competing on relationships with customers and suppliers by linking customer requirements directly to supplier actions. This is the essence of strategic purchasing.

Supplier Development

To achieve the competitive capability described above, firms must engage in supplier development activities. It is not enough to hope that there are suppliers within the market that already have the understanding of the advantages of strategic purchasing partnerships, the management commitment to pursue such relationships, the organizational skills to work more closely with end-customers, and the technical and innovation capabilities to respond quickly to distinct customer specifications. No doubt such suppliers exist, but they are surely few and far between. In order to create a supplier network that can truly be a source of competitive advantage, firms must help suppliers along the often rocky road toward such insights and capabilities.

Supplier development is defined as any effort of a firm to increase performance and/or capabilities to meet the firm's short- and/or long-term supply needs (Krause 1997). Supplier development may range from limited efforts such as informal supplier evaluations, to much more comprehensive efforts such as employee training programs and capital investments. In a survey of over 1000 NAPM purchasing executives, Krause proposes 14 supplier development activities to determine their standing and relative ranking among the respondents. In a factor analysis of the responses it was found that the 14 activities could be divided into three distinct groups. In the first group were those activities which indicated direct firm involvement with supplier development such as training and education, and recognition, certification, and exchange programs. Next were those activities that would facilitate supplier performance or were positive incentives for suppliers to improve, such as larger volume and longer term contracts or promises of

such. In the third group were those activities which enforced competition, like the use of multiple suppliers, which encourages the supplier to perform for fear of losing business to a competitor. Rather than attempting to determine which group of activities has the greatest impact on supplier performance, Krause proposes that the Japanese strategy of an integrative approach of all three factors, applied judiciously, is the best way to develop and maintain a fertile supply base. This is not a lowest cost approach to purchasing. This integrated approach is intended to maximize quality and reliability at a competitive cost.

Many supplier development programs are results-oriented. They are characterized by processes that are standardized, buyer-driven, short in duration, require little follow-up, and are improved through primarily technical changes. While results-oriented supplier development is often successful, it only accomplishes one of the two objectives of supplier development programs; it makes immediate changes in supplier operations to reduce or eliminate problems. The second objective, that of increasing the supplier's ability to make its own improvements, is only accomplished by process-oriented supplier development (Hartley & Jones 1997). From a survey of best supplier development practices in industry, the authors propose a four-step process to effectively build the capability for improvement within the supplier's organization. These steps are for the buying firm to 1) assess the supplier's readiness for change, 2) build commitment to process improvement through collaboration up and down and across the organization, 3) implement changes system-wide, and 4) transition out of the supplier's organization. This is all much more easily stated than it is accomplished. The effort here by the buying

firm is considerable and requires the cooperation and commitment of the supplier. Thus, the supplier must foresee considerable benefits to be derived for its efforts. It also requires a major commitment of time and human resources by the buying firm. It is likely that such an endeavor would only be undertaken with suppliers that are strategically important to the firm and with which it envisions a long-term relationship. These are the suppliers with which the firm would likely want an intimate partnering relationship anyway; one conducive to the interaction necessary to accomplish process-oriented supplier development in the first place.

Types of Supplier Relationships

As stated in Chapter 1, there are many types of buyer-seller relationships commensurate with the degree to which a firm's purchasing activities are strategic. Further, the way one describes the range of these relationships often depends on perspective. For example, a recent article in the marketing literature defines the range of relationships as transactional, repeated transactional, long-term, partnership, strategic alliance, network, and vertically integrated (Fontenot & Wilson 1997). This spectrum should not be unfamiliar to purchasing professionals, though the specifics of each node might be described differently. Also, consistent with the purchasing literature, marketing views business-to-business relationships as improving as firms progress along this spectrum. These better relationships are characterized by more joint planning and performance reviews, communication, trust, and mutual interests (Paun 1997).

The spectrum of buyer-seller relationships as defined by the purchasing literature follows a similar path from transaction-oriented to highly strategic. A typical representative continuum of partnering relationships is shown in Figure 2-1 (Ellram & Birou 1995, pg. 106). From previously mentioned research conducted at 274 companies in the United States, Pacific Rim, Europe, Africa, and Latin America, Cavinato proposes a similar but more stratified breakout of buyer-seller relationships (Cavinato 1992):

1) Don't know supplier exists. Don't care.

2) Don't know supplier exits. Might use them if I did know, though.

3) Arm's length, price-oriented relationship: high value, low risk of obtaining in the marketplace, traditional (ie. taxicab ride).

4) Price relationship; cooperative from time to time (ie. returning pallets to the supplier to reduce the price of the next shipment).

5) Price relationship; collaborative over time (ie. sharing demand forecasts with suppliers so they can level their manufacturing; helps reduce costs).

6) Total cost relationship; cooperating on total supply chain to reduce total costs (ie. providing performance rather than product specifications to supplier so they can reduce manufacturing costs).

7) Value relationship; linking suppliers to customers to emphasize product/service value.

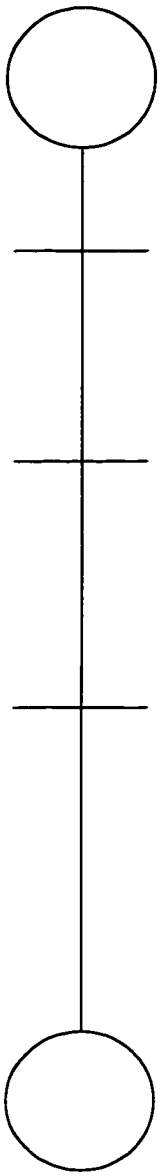
8) Joint ventures; complementary relationships uniting strong/weak attributes of companies.

9) Vertical integration strategies:

    a) purchasing capital assets for suppliers;

    b) buying supplier and treating as a subsidiary;

    c) complete vertical integration of the capability.



Arms-length/transactional exchange. Limited/no information sharing, deal with on a transaction to transaction basis. Often exists where close to "perfect competition" exists, as in commodity markets.

TYPE 1 ALLIANCE

Basic alliance, with information shared on "as needed" basis to ease transaction flows. Parties are aware of each other, may or may not have contractual or non contractual "understandings" related to future business.

TYPE 2 ALLIANCE

Operational alliance, with respect and mutual trust related to transaction flow of business. Some sharing of people and ideas related to joint problem solving, specific issues.

TYPE 3 ALLIANCE

Business alliance, with all elements of Type 2, plus increased recognition of mutual dependence. Buying firm has reduced supply base, intends to work with remaining suppliers over an extended time period if performance is satisfactory. May be doing limited concurrent engineering and joint technology development. May involve ad hoc teams, made up of parties from both firms, to solve specific problems.

TYPE 4 ALLIANCE

Strategic alliance, with all elements of Type 3, plus a sharing of long-term strategies. This includes early supplier involvement in new product, service, or process idea inception, concurrent engineering, and the mutual recognition of a long-term, ongoing relationship between the buying and selling firm. Supplier makes important contributions to the firm's competitive success/strategy. The contributions made by the supplier ally are not readily available from other suppliers. They involve ongoing, joint teams, top management support, contact, and visibility.

Figure 2-1: Types of Purchaser /Supplier Relationships
(Ellram & Birou 1995)

The first three relationships are based completely on price. Relationship types 4, 5, and 6 are an attempt to help the supplier reduce costs so the firm can derive the benefits of those reduced costs. In numbers 7 and 8, the relationships become tools of strategy to derive competitive advantage. Here the supplier, or more correctly, the team of suppliers, are being coalesced into an alliance not only with the buying firm, but with the customer. To ever-greater degrees they are intimate with the customer's definition of value and are left to design and develop that value which will then be integrated into the product or service by the focal firm. It becomes a teaming arrangement with the focal firm acting as the coordinator and prime contractor. As discussed earlier, the relationships described in number 9, those reflecting varying degrees of vertical integration, are problematic, especially in complex, uncertain environments.

Diversity in Acquisition Items

One thing that has not changed in the purchasing literature in the last twenty years is the notion that the type of purchasing strategy to be used should depend in-part or totally on the items to be acquired. As far back as 1976, Kisser made the case that purchasing strategies must be determined by the type of item and by nature of the supplier market (Kisser 1976). Since items and markets are different, different strategies may be used for different items. Van Weele later called this a purchasing product portfolio, stating that since suppliers represent a different interest to the firm, purchasing managers need to develop a differentiated purchasing strategy towards their supply markets (van Weele 1994).

Kraljic offers a specific way to classify items to be acquired (Kraljic 1983). Items can be categorized according to the value they supply to the firm and the risk the firm faces in acquiring them from the marketplace. A two-by-two typology of these two variables -- high and low value and high and low risk -- results in the matrix shown in Figure 2-2. Note that the high-low scales for each variable are continuous, not discrete. Theoretically, there are countless degrees of both value and risk. A given item, therefore can appear at any point within any of the four boxes and will likely have an entirely different value/risk assessment from another item in the same box. Given that caveat, this matrix is a useful tool to classify and define acquisition items as follows:

> Critical Items (high value, high risk). This is the product (or product component) or service for which the firm is in business; the items that are central to the firm's distinctive technical capability. While it is critical to the firm's profit margin, its loss, absence, or delay can drive the firm out of business. It is often a part with limited sources, subject to the complexities and uncertainties of the environment. We expect to see the most sophisticated partnering relationships, focused on customer value, associated with these items; relationships with the qualities of number 7 (value relationships) and number 8 (joint ventures), above.
>
> Commodities (high value, low risk). These products (or product components) or services are part of the high value items that the firm needs to stay in business. To this degree they are like the criticals, except they are readily available in the marketplace. We expect to see cost reduction relationships associated with these items, like those described in numbers 4, 5, and 6, above.
>
> Generics (low value, low risk). These are the items the firm needs to do business. They are readily available in the marketplace and have little or no distinctive qualities. There is little or no risk associated with these items, and not much value to be gained by distinguishing one from another. We expect firms to try to minimize the time spent acquiring these products through elimination, outsourcing, or long term resupply contracts. Firms will try to maintain arm's length, lowest price relationships for these items, like those described in number 3, above.

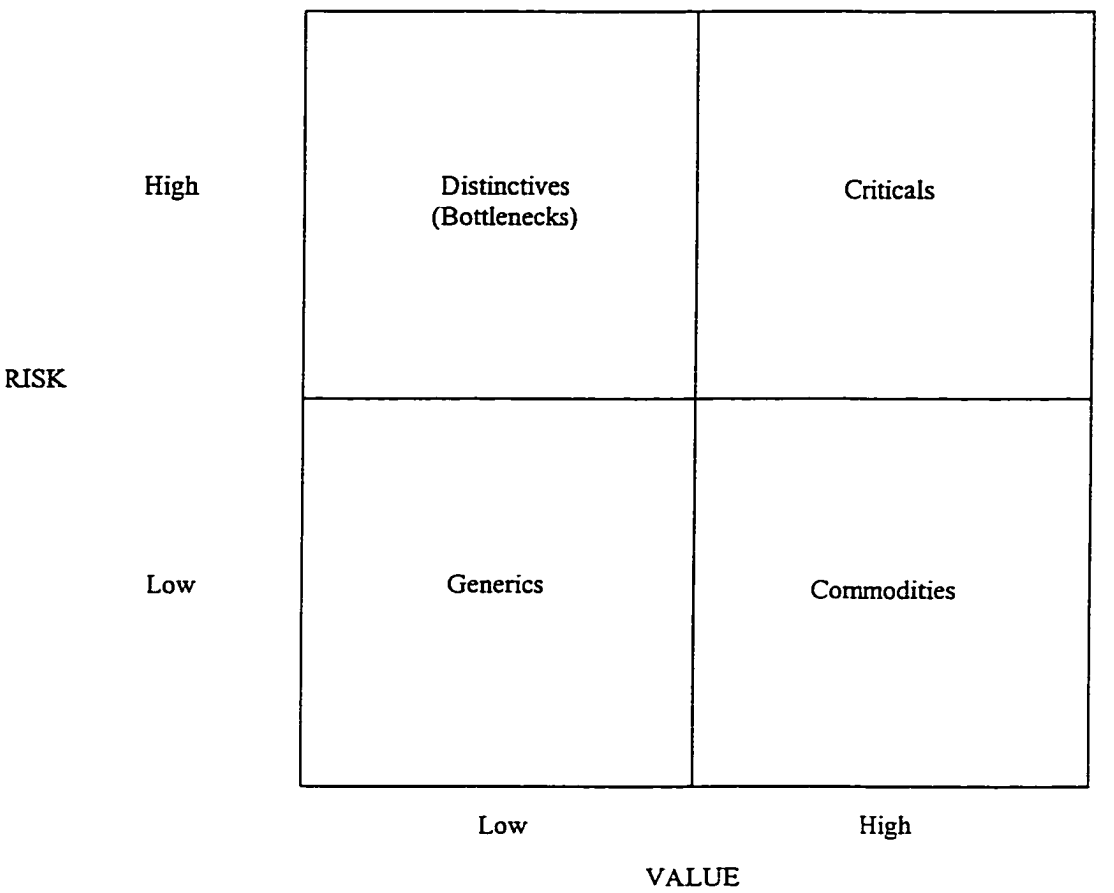


Figure 2-2: Typology of Acquisition Items Based on Value and Risk
(adapted form Kraljic 1983)

Distinctives (low value, high risk). These are items that have been overspecified. They offer no real value to the firm, but create risk due to their high cost and their unavailability in the marketplace. They are a bottleneck in the supply chain. We expect firms to be working to identify and eliminate these types of items.

Significance to the Purchasing of Services

With this model, Kraljic successfully provides a means for linking acquisition items to particular types of supplier relationships and buying processes. For the purposes of this study, it explains the dynamic and diverse world in which buyers and purchasing managers currently operate. Within this new paradigm of strategic purchasing, a significant amount of buyer energy, once spent on the rote mechanics of processing purchase orders, evaluating bids, and preparing distribution and payment forms in triplicate, is now spent on building and nurturing relationships; with suppliers and with both internal and external customers. The central question of this study is to examine this dynamic and diverse purchasing environment within the context of the purchasing of services. Specifically, this study seeks to determine what types of services buyers buy, how buyers buy them, at what level of strategic purchasing buyers are operating when they make such buys, how buyers are perceived and evaluated for such work, what costs are generated in the purchasing of services, and how the accounting for such costs affect strategic decisions.

This previous discussion of strategic purchasing and supplier partnerships was necessary to provide a context within which to explore these specific questions regarding

the purchasing of services. In the next section, the cost implications of strategic purchasing and its impact on the firm will be discussed.

Strategic Purchasing and Cost Management

The cost advantages of interfirm supply chain integration has been developing and well-documented throughout the 1990s. The fundamental concept is that the cost of bringing a product to market can only be fully minimized when every cost is considered, from product inception to after sale follow-up. This approach necessarily requires an analysis across all the firms in the supply chain. Rather than one firm competing against another in a given market, this is an interfirm total cost model that establishes a new paradigm of competing one supply chain against another to provide the best value to the customer. What makes this total cost model different from those that preceded it is its approach to the make or buy decision. Instead of comparing the cost of the buying firm producing the product with the price the firm can buy it for from the supplier, this model compares the cost of each step of production between the buyer and the seller to determine how both firms can combine to jointly produce the greatest customer value for the lowest cost (Cavinato 1991). Larson offers empirical evidence to show that inter-organizational functional integration -- as he calls it -- is indeed significantly related to improved cost performance (Larson 1994).

To attain this improved performance, though, one must capture all costs and factors that affect costs and create value, as Cavinato has done in Figure 2-3 (Cavinato 1992). The twenty cost and value factor categories enumerated on the left side of the figure

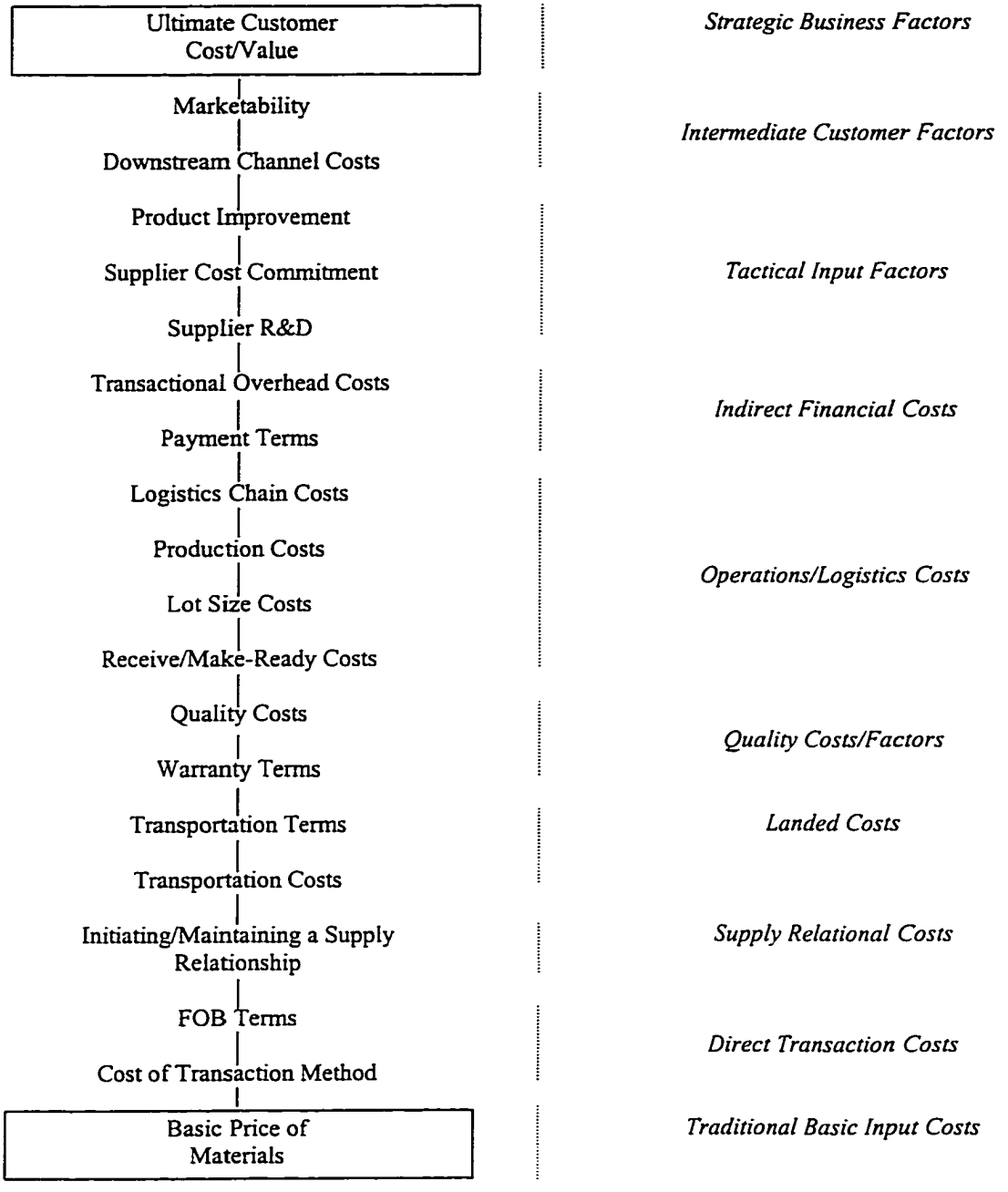


Figure 2-3: Total Cost/Value Hierarchy Model
(Cavinato 1992)

combine into the ten key strategic and management areas on the right. Notice as one proceeds up the figure that there is a hierarchy of costs and value factors that become more strategic in nature -- that is, more closely identified with actual customer cost/value attributes. With many of these costs and value factors, particularly those higher in the figure, management was always aware of their existence, but didn't account for them in an integrated way with other traditional costs to make fully rational strategic decisions regarding ultimate cost and value to the customer. For example, tactical input factors in supply chain partners, like their capacity for product improvement, commitment to future cost reductions, and research and development capabilities, each have tangible value associated with them and commensurate costs. To make a fully rational strategic decision -- be it make or buy, source selection, product/market focus, or some other -- a firm must include these value attributes and associated costs in the decision model. Prior to the advent of the interfirm total supply chain cost model, this was rarely the case.

Cavinato's model is fairly generic. It allows firms to delve more deeply into any area of cost or value generation to more fully refine the model. The literature is replete with studies by researchers who have examined large chunks or tiny slivers of cost/value factors to create greater accuracy in strategic decision-making. Examples include traditional areas like capital resources (Speh & Novack 1995), transportation (Carter & Ferrin 1995), and packaging (Rosenau, et. al., 1996), and less obvious areas like the disposition of industrial residuals (Young 1993). Topical to this research is a recent empirical study into the relative value and costs of relationship building and the

conclusion that there are market conditions where the cost of building a relationship may exceed the value derived from the relationship (Sharland 1997).

An awareness of the total interfirm cost model and subsequent analysis of cost and value factors is not enough to actualize greater profit margins through improved cost performance. A firm must have knowledge of and expertise using cost management tools. According to many, purchasing is the area of greatest impact from the correct application of cost management tools. "When the goal is boosting profits by dramatically lowering costs, a business should look first to what it buys" (Ellram 1996a, pg. 11). Ellram concluded early on in the development of the integrated supply chain cost paradigm that the purchasing function must assume a more aggressive, proactive role in initiating company-wide purchasing cost savings projects using the organizations volume leverage (Ellram 1992). As stated in Chapter 1, however, and implied by the previous discussion of Cavinato's total interfirm cost model, new costing techniques must fill the void left by the lost relevance of traditional management cost accounting.

In Chapter 1, it was stated that traditional management accounting has failed managers in their quest to make well-informed strategic decisions by insufficiently and inaccurately allocating costs to products. Popular and influential works on the subject were cited (Cooper & Slagmulder 1998a, 1998b; Kaplan & Cooper 1998; Johnson & Kaplan 1987). Calls by influential practitioners for relevant research to fill this void added credence to the early and widespread nature of these criticisms (Choudhury 1986; Whitt, et. al., 1991). These calls were met by a flurry of activity from both the management accounting and the supply chain management sides of the issue. Both sides

focused their attention on cost measurement and management of the integrated supply chain.

The managerial accountants typically use the term value chain for integrated supply chain and give as the stated objective maximizing the margin between the revenue generated by a product's value package and the costs of supplying it (Partridge and Perren 1994). In this lexicon, not unlike in Cavinato's model, value is defined by the product's attributes. Core attributes have the least margin. Margin is improved by adding differentiating attributes to the product at incremental costs. When incremental costs exceed margin generation then the additional attributes should be abandoned. Traditional management accounting does not provide the tools to measure these incremental costs. Though managerial accountants are becoming more adept at identifying this problem and have somewhat succeeded in convincing the majority of their colleagues to its reality, they are only recently undertaking the research necessary to develop management accounting practices that address supply chain relationships (Berry, et. al., 1997).

In the meantime, logistics and purchasing professionals have made themselves students of the work done by strategic cost management theorists in the last ten years, and have begun to make practical applications to the total interfirm supply chain model. Among the costing tools practically applied to the supply chain by logistics professionals has been direct product profitability (DPP), activity-based costing (ABC), and total cost of ownership (TCO). The next sections provide a description of each and their relative strengths and shortcomings.

Direct Product Profitability

DPP represented the first significant attempt to determine the exact profitability of a given product by attempting to precisely determine the costs of moving that product through the entire supply chain (LaLonde & Pohlen 1996). This effort was initiated by the grocery industry in the 1970s when it attempted to determine product profitability by taking into account costs that were either previously unaccounted for, or were captured collectively and were subtracted from gross revenue figures. Regarding costs previously unaccounted for, take the case of the space occupied by a product, whether in a warehouse or on a supermarket shelf. This space represents both a tangible cost and a lost opportunity cost from a potentially more profitable product. The space costs for cereal, for example, are significantly greater than for canned vegetables. Before companies began accounting for these costs, it was impossible to know exactly what the margin was on cereal compared to other products and, therefore, what the most profitable product proportions were for shelf-stock.

Warehousing, material handling, and distribution costs are examples of the latter category of costs captured collectively. Reliance on traditional performance measures like gross profit and margin ignores the cost variability of products for costs that are usually captured collectively and subtracted from gross revenue. The grocery industry immediately noticed that items which appeared to be performing well when measured by gross figures turned out to be marginal performers or even losers when costs when assigned directly and discretely to specific products. Knowing the margin on each product allows managers to make better decisions regarding the price of products, the

distribution of resources for products, the product mix to be marketed, and the markets to be targeted.

A limitation of DPP, though, is that it still continues to allocate equally to products fixed overhead costs such as supervision, facilities, management, detention, demurrage, inventory carrying costs, and purchasing. Referring back to Figure 1-7 (page 31), it still allows for a large block of costs associated with overhead rates and factors, leaving room for inaccurate product costing. Further, in actual practice, DPP was never fully integrated throughout the total supply chain because it required the creation and maintenance of extensive individual product databases; this prior to the advent of powerful information technology systems and the proliferation of the integrated supply chain paradigm.

Activity-Based Costing

Activity-based costing (ABC) is the next progressive step in the evolution of new cost management tools to deal with the integrated supply chain paradigm. ABC takes DPP one step further by attempting to causally assign the indirect as well as the direct costs of an organization to the activities consuming the organization's resources and, subsequently, the cost for these activities to the products, customers, or supply chain segments for which they are performed (Cooper, et. al., 1992).

The chief contribution of ABC is its recognition of the fact that most indirect costs do not vary in direct proportion to the cost base upon which they are allocated. Traditional cost accounting has typically relied on a few select cost bases, such as direct labor hours, and allocated overhead costs in direct proportion to those bases -- manufacturing

overhead, facilities capital cost of money, and G&A, for example. ABC looks for multiple costs drivers and for the link between those drivers and the resources they are consuming to assign the costs for those resources causally to the activities consuming them and, in turn, to the products which those activities produce. Purchasing activity, for example, is a company resource. There is usually no distinction between the activities which consume that resource, be they intensive supplier relationship building or processing a purchase order. Generally, they are treated the same and equally distributed across all products, customers, or supply chain segments by means of indirect allocation through the use of overhead rates and factors. ABC costing recognizes that relationship building is a far more consuming and costly purchasing activity than processing a purchase order, and attempts to causally assign that activity and its associated costs to the product, customer, or supply chain segment for which it is carried out. The difficult part of ABC is finding and properly defining these causal activity-product relationships throughout the supply chain and accurately enumerating their true costs.

A drawback of ABC systems is their own cost of implementation. The greater the number of cost driving activities that can be identified, the more sophisticated the ABC model, and the more accurate. However, the more sophisticated the model, the more costly. Firms have shown a willingness to increase the sophistication of their models as long as they perceive a continuing cost benefit. However, in most cases, firms have found a point of diminishing returns (Pohlen & LaLonde 1994). Most firms have found a moderate level of sophistication will improve margins by providing better cost rationale for strategic decisions, but that more complexity yields only marginal benefits. Further,

for ABC costing to yield truly accurate product costs, it must be implemented across the total integrated supply chain. This requires a tremendous commitment and like-minded thinking on the part of all interfirm participants, a phenomenon rarely found naturally and often difficult to create. Yet, the benefits of ABC will be limited by the member who cooperates least with its implementation.

Total Cost of Ownership

As a costing tool, TCO comes the closest to implementing the concepts established by Cavinato in his total interfirm cost model. It uses ABC techniques and applies them throughout the supply chain, and especially to the area of determining the total acquisition cost of an item (see Cavinato's supply relational costs, tactical input factors, and intermediate customer factors in Figure 2-3). Lisa Ellram, a purchasing professional and academic, in particular, has been an influential researcher and author in this area (Ellram 1993; Ellram & Siferd 1993; Ellram 1994; Ellram 1995; and Maltz & Ellram 1997). A significant contribution by Ellram has been her contention that there are costs generated even after a product is in service that must be considered in the total cost of ownership model. Examples of these are the cost of failure of a component part in the end-product or a service in the manufacturing process; downtime and maintenance costs of capital equipment; failure, downtime, and associated replacement costs for maintenance, repair, and operating (MRO) items. Of special interest to this research is the cost associated with the unsatisfactory performance of services either due to

nonconformance to the performance specification or an incomplete or to incorrect specification in the first place.

Ellram offers a framework for understanding the total cost of ownership model by identifying costs in the order they are generated (Ellram 1993). According to this framework, the total cost of ownership consists of pretransaction, transaction, and posttransaction component costs. Pretransaction components include identifying need, investigating sources, qualifying sources, adding suppliers to the internal system, and educating the firm and the supplier in each others' systems. Transaction components are price, order placement and preparation, delivery and transportation, tariffs and duties, billing and payment, inspection, return of parts, and follow-up and correction. Finally, posttransaction components, described above, consist of manufacturing line fallout, defective finished goods rejected before sale, field failures, repair and replacement in the field, customer goodwill and the reputation of firm, cost of repair parts, and cost of maintenance and repair.

As with the ABC model, the more complex the TCO model, the more accurate cost the information it yields about specific products. Conversely, the more complex the model, the more costly it is to implement. Since costs generally precede benefits, firms are often reluctant to implement complicated new systems with only a promise of positive results. Similarly, once new systems are implemented, firms are generally very sensitive to the point at which added complexity yields diminishing returns. Like ABC, it is often difficult to get firms to commit to a broad TCO cost management strategy.

The Relevance of TCO to this Research

There are three things which make the total cost of ownership model so important to the present research. First, TCO is a comprehensive means of implementing the total interfirm cost model. This model is tightly linked to the whole concept of strategic purchasing. As was stated earlier, strategic purchasing is important in providing a context within which to approach the subject of the purchasing of services. Second, TCO incorporates ABC techniques which essentially are used to transition costs from the three indirect cost blocks to the direct cost block in Figure 1-7 (page 31), hopefully creating a cost visibility/assignability model that looks more like Figure 1-8 (page 33). Finally, TCO recognizes the purchasing of services as an important element of cost. This notion is the subject of the fourth research question: How are service purchasing costs collected and assigned to cost objectives? The cases will use TCO as the functional paradigm against which to measure purchasing managers' attitudes and performance regarding this question.

The Purchasing of Services

Chapter 1 articulated the combined effects on organizations of the explosion of the service industry and industry's propensity to buy any services that are not centrally linked to its distinctive technical competency. Service providers are becoming ever more diverse in what they offer and are continually making breakthroughs in how they can satisfy the most unique and precise needs of individual customers at acceptable costs

(Heskett, et. al. 1990). The precept of this research is that, conversely, their progress has far exceeded the buying firm's understanding of what to buy, how to buy it, how to measure and evaluate what is bought and how it is bought, and how to collect and distribute costs for such purchases. Research regarding this presupposition has been scarce. One notable exception is a study which outlines the problems and risks in the purchasing of consultancy services (Mitchell 1994). The author's conclusions regarding the purchasing of consultancy services verify the concerns of this research regarding the purchasing of services, in general. That is, that firms rarely have a clear picture of what they specifically need when they hire a consultant. Internal customers do not know how to enumerate a statement of work, specifications, deliverables, or sufficient measurements of performance. Buyers have a hard time determining fair and reasonable prices for such services. Purchasing managers and internal customers do not know what to expect from buyers regarding these purchases and, therefore, do not always fairly evaluate their performance for this work. Cost managers are not sure how to collect the costs incurred in the purchasing of services, and are even less adept at how to properly assign such costs. All of these things identified as problems in the purchasing of consultancy services are the subject of the current research.

A purchased service can be thought of broadly as anything a company can do for itself, but chooses to have another source do for it for a price. The term relating to this practice over the last ten years has been outsourcing. From this perspective, any activity that is outsourced is, in fact, a purchased service.

Intuitively, there seems to be an obvious difference between at least two types of purchased services. Some purchased services involve the outsourcing of manufacturing functions such as heat treatment, shot-peening, or painting. These kinds of outsourced activities have been around as long as companies have been in the business of making things, though their proliferation across a wider range of manufacturing functions is confined to the last two decades. The make or buy decision at the core of the outsourcing explosion has been influenced by the forces of the global economy discussed in Chapter 1. The automobile manufacturer, for example, defines as its core business bringing cars to the market more profitably than its competitors. It no longer claims to build the best engine at the most affordable price. If an engine supplier can be found that offers the best value to the consumer, the company does not hesitate to outsource the manufacturing of its engines. In doing so, its rids itself of the costs and aggravations associated with maintaining that function in-house. According to a 1992 *Purchasing* article, whereas outsourcing might have begun with low risk activities such as landscaping, it is now being applied to critical activities throughout the company (Evans-Correia 1992). This has elevated the role of purchasing to a strategic level in the acquisition of these critical activities.

The other broad category of purchased services has been often referred to in the existing literature as professional services. A partial list of such services include legal, auditing, financial, advertising, management, accounting, engineering, architecture, medical, computer analysis and programming, and public relations. These are activities that until the last ten years had been maintained almost exclusively in-house. When

professional services such as these were outsourced in the past, the privilege of retaining a supplier was granted to the using organization without consulting the purchasing department. According to a San Diego Gas and Electric executive quoted in 1988, "Purchasing has not added professional service procurement to its area of job responsibility because this would potentially bring it into conflict with long-standing and cherished prerogatives of corporate management and in-house professionals at all levels. Assumption of this additional procurement responsibility could easily lead purchasing even further into the thicket of inter-organizational and inter-personal conflict that it otherwise finds itself from time to time" (Purchasing World 1988, pg. 54).

Purchasing's involvement in the buying of professional services was driven by the proliferation of non-competitive procurements. In-house professionals tended to be loyal to one supplier without regard for the advantages to be gained from competitive source selections. Further, without purchasing's inputs, it was never clear that the best value was being derived from the supplier based on optimal price, delivery, and terms and conditions. As the outsourcing of professional services grew, management became more aware of the acute need to incorporate the particular expertise of the purchasing function in procuring these services. Based on several articles in the professional purchasing journals, in the last decade the paradigm has been steadily shifting toward corporate purchasing's involvement in buying all types of professional services. Information technology is perhaps the largest area of outsourcing growth. It was estimated in 1992 that network outsourcing alone was a $2.3 billion a year industry, growing at an annual rate of 20% (Evans-Correia 1992). Eastman Kodak, for example, turned over its entire

data processing function to IBM and DEC. As a result, it cut over 1000 jobs and transferred the savings directly to its R&D department to focus on its core business, imaging.

Another more recent area of services purchasing is environmental services (Murphy 1996). With the rising criticality of environmental issues, and the proliferation of federal, state, and local ordinances protecting the environment, companies are no longer able to keep up with technical and administrative compliance requirements. Environmental service providers for the remediation and disposal of hazardous waste ensure that the company stays current on statutory requirements. Purchasing is in the best position to secure the kinds of terms and conditions that will establish relationships with environmental service suppliers that will not only reduce the overall cost of compliance, but create opportunities for innovation in environmental protection upon which companies can compete. For example, one environmental service provider works with the Environmental Protection Agency (EPA) to implement Project XL (Excellence and Leadership) at client companies. The program is designed to explore innovative solutions and non-conventional strategies to yield cleaner working environments. On its own, a company does not have the resources or expertise to initiate these kinds of activities, nor does it have the credibility and relationship with the EPA that has been earned by the supplier.

Although the practice of buying services is perhaps at a critical stage in its growth, there is still very little academic literature defining and addressing its issues. Day and Barksdale (1994) address the question of how to select professional service providers, but

their publication is largely theoretical and limited to distinguishing between pre-and post-selection evaluation of the supplier. To this point, while it is known that purchasing departments are spending more time buying services, there is still no workable typology of the types of services being bought, or prescriptions for the purchasing practices best suited for different types of services. Further, there are no studies regarding the costs generated by the purchasing of services and the allocation of those costs. This research is designed to address these areas and will hopefully be the impetus for a body of literature regarding these topics.

CHAPTER 3

METHODOLOGY

The first two chapters establish the foundation upon which to build the research methodology. From research collected through interviews of purchasing professionals from various companies in different industries, this work attempts to provide generalized answers to the four research questions presented in Chapter 1.

1) What kinds of services are purchasing departments being called upon to procure for the company?

2) How are service requirements being defined by the internal customer and how do buyers evaluate proposed prices for those services?

3) What skills are required of buyers in the procurement of services and how are buyers perceived and measured relative to those skills?

4) How are service purchasing costs collected and assigned to cost objectives?

The strategic purchasing paradigms and the total interfirm cost model discussed in Chapter 2, coupled with the total cost of ownership model provide a theoretical backdrop against which we will compare the observations of service purchasing practices which are the subject of these case studies. The latter part of this chapter will describe the methodology used to accomplish this research. First, however, it will diverge into a brief exploration of the fundamental problems of establishing scientific truth.

In Search of Scientific Truth

The Problem of Induction

All research must be concerned with the same fundamental problem -- that of generalizing conclusions from a set of specific observations. The quest for an acceptable solution to this problem has been the subject of a hundred-year long dialog conducted by logisticians in the field of the philosophy of science.[1] In their lexicon the dilemma is referred to as the problem of induction. The classic example of this problem most often used by logisticians is that of the white swan. The statement "all swans are white" can only be made by the observation of every swan ever in existence or ever to be in existence. Given the practical impossibility of such a complete set of observations, the possible existence of a single swan that is not white renders the universality of the statement doubtful. Further, the statement is completely falsified by the observation of one non-white swan.

Logisticians are much more comfortable with deductive processes. In these processes, specific conclusions are drawn for generalized truths. "All human beings require oxygen to live. This man is a human being, therefore he requires oxygen to live." The conclusion is logically deduced and it is scientifically rigorous. Scientists would be overjoyed if the answers to research problems were deducible from universal statements.

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[1] Here, the term logistician applies to those who study logic, not business logistics.

The problem is that there are far fewer universal statements of truth than there are research questions. For example, if we know of the existence of a particular swan, but are unable to directly observed it, we cannot positively conclude that it white because we cannot know with certainty that the statement "all swans are white" it always true. So, while the deductive method is preferable, seldom are there circumstances in which it can be applied, particularly in the social sciences.

The Flaws in Logical Positivism

The Case for Logical Simples is Circular

As this current century began, a group of logisticians who called themselves Logical Positivists attempted to prove that all propositions of existential import have an exclusively empirical reference. Most notable of this group was the brilliant academic, Ludwig Wittgenstein. At the foundation of Wittgenstein's argument is the existence of logical simples -- fundamental, empirical truths that are beyond all question of doubt. The more contemporary logistician, Julius Weinberg, makes a thorough and fair presentation of Wittgenstein and demonstrates how his case for logical simples is circular (Weinberg 1960).

Wittgenstein's case for logically simple objects begins with the statement that the world is the totality of independent atomic facts. A fact is a combination of objects, and atomic facts are logically simple objects in immediate, unique combinations. This is

Wittgenstein's reality. Atomic facts are not the combination of any other facts. They are basic and are uniquely composed of their logically simple objects, which cannot be further reduced. The way in which simples combine to form atomic facts is totally empirical. This form depends completely upon its being directly observed, thus making it an indisputable reality. Propositions, in Wittgenstein's construction, are pictures of facts. They allow for discourse about reality by providing common proper names for facts which are universally recognized and accepted. Elementary propositions describe atomic facts; complex propositions are combinations of elementary propositions. Thus, through complex propositions, the whole of reality can be described or "pictured," allowing for complete discourse about the empirical world (which is all of reality, since everything other than what is empirical is meaningless). In turn, any complex proposition used to describe this reality can be analyzed and broken down into its elementary propositions, which are exclusively concerned with empirical facts.

Herein lies the case for logical simples, for if there were not one and only one complete analysis of any proposition, then an alternative analysis might lead to an elementary proposition not founded in empirical reality. This would be meaningless. Further, without elementary propositions to terminate the analysis, there would be a never-ending continuation of analysis which would also ultimately prove to be meaningless. By Wittgenstein's analysis, the existence of logical simples is proven by the necessity of empirical reality, for without logical simples, the truth of an elementary proposition would always depend upon whether or not some other proposition were true,

and the truth of the alternative proposition could never be empirically demonstrated without logical simples.

Weinberg correctly shows this case for logical simples to be circular. Unless one wishes to intuitively accept the positivists' fundamental postulate that "propositions of existential import have an exclusively empirical reference," then this statement must be conclusively shown by logical analysis. It is the aim of Logical Positivism to do just that. Wittgenstein attempts this logical analysis by stating that the empirical nature of all propositions is proven by the existence of logical simples. Yet, as demonstrated above, he proves the existence of logical simples by stating that the empirical nature of reality depends upon them. Simply stated, according to Wittgenstein, logical simples exist because they are required by the empirical nature of reality; that reality has an empirical nature is proven by the existence of logical simples. Weinberg's analysis, reduced in this way, shows that Wittgenstein's case for logical simples is clearly circular.

Psychologism Refuted

Weinberg goes on to introduce us to Fries' trilemma which concerns itself with the problem of proving the empirical nature of statements of science. Fries believed that there are three approaches to attempt such a proof, all of which are problematic. The most obvious is to accept the statement as dogmatic, that is, as an unprovable but intuitively obvious principle or truth. Historically, this approach has been contrary to the whole aim of the philosophical debate, which has been to develop a rationale that proves, describes, or at least explains logically the nature of science. This aim leads to the

second leg of the trilemma -- the attempt to justify statements of science through logical analysis. To attempt to do so requires the analyst to use other statements in the justification which require still other statements to justify the statements used in the initial justification. This cycle clearly leads to an infinite regress from which there is no logical escape and, therefore, no ultimate proof for the initial statement. The third approach, then, is to use perceptual experience to justify the scientific statement. What is empirically true is only such if it is observed without question or ambiguity in terms that are universally understood and accepted. This leg of the trilemma is termed psychologism and is the foundation of the theories held by the Logical Positivists.

Wittgenstein's philosophy requires the use of this psychologism.[2] As described above, his theories rest on the principle that reality has a foundation of logical simples that are wholly empirical in nature by virtue of having been observed and universally accepted. Though the proof of the existence of simples has been shown to be circular, that they can be observed and thus empirically demonstrated is nevertheless central to Wittgenstein's work. By rejecting both of Wittgenstein's proofs for the existence of logical simples and for the empirical nature of reality because of their circularity, Weinberg cannot accept the notion that the empirical nature of logical simples is anything other than self-evident (intuitive). Without logical simples, statements cannot be proven through observation and description because of the inadequacy of the symbols or language used to describe them.

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[2] Psychologism is a pejorative term not used by Wittenstein, but later coined when the flaws of logical positivism were being advanced by its critics.

The Logic of Scientific Discovery

Weinberg's conclusions regarding Wittgenstein's work are consistent with the theories of Karl Popper (Popper 1992). Popper believes that basic statements of scientific import cannot be proven by the use of psychologism. A scientist, according to Popper, is incapable of purely reporting his own observations because of the uniqueness of each experience on the one hand, and the universality of the symbols or names used to describe that experience, on the other. Each observation is a singular experience. The repetition of that experience is not assured, and thus, cannot be described by some arbitrary universal language. Popper's conclusion is that no basic statement can ever be empirically proven or justified. He does not, however, reject their usefulness. Popper will go on to assert that basic statements of science can be accepted as true without ultimate justification as long as they are falsifiable, and until they are shown to be false.

Empirical Sciences and Metaphysical Systems

The problem of demarcation as iterated by Popper is the problem of finding a criterion to distinguish empirical sciences from metaphysical systems. In his quest to find this line of demarcation, Popper accepts the existence and meaningfulness of metaphysical things. By trying to annihilate metaphysics, the positivists try to justify all things non-metaphysical through psychologism which we have seen to be bogus. Without this justification of non-metaphysics (empiricism), metaphysics is not easily dismissed. Popper alleges that without psychologism, positivists are forced to resort to

judgments of perceptions (which he equates to inductive logic) to distinguish empirical statements from the rest. Since inductive logic always leads to an infinite regress, Popper dismisses it as a useful tool and thus rejects it as a criterion of demarcation between empiricism and metaphysics. Positivists fail to prove the meaninglessness of metaphysics because they cannot clearly distinguish it from empirical science.

Those who espoused the notion that statements of empirical science must be conclusively proven believed that it was possible to both verify and falsify the statement. While Popper rejects the condition of verifiability, he proposes that any empirical statement, if it is truly empirical, can be falsified. By his previous logic, though one can never absolutely prove a scientific statement to be true (for it is always on indefinite probation), as long as one has the means of testing the statement, one always has the means of proving the statement false. This concept of falsifiability is Popper's line of demarcation which distinguishes empirical statements of science from metaphysical systems.

Popper believes that basic statements of science are deducible from universal statements. A universal statement is one that is clearly falsifiable by a singular statement deduced from the universal that is shown to be not true. For example, the universal statement *all swans are white* is falsified by observing a single non-white swan. A singular statement deduced from the universal is similarly falsifiable by another singular statement of a lesser level of universality, and so on. The concept of falsifiability rests on the notion that the mere ability to test the statement characterizes it as empirical.

Objectivism vs. Relativism

For the last half century, the theoretical foil of Karl Popper has been Thomas Kuhn. Kuhn's concept of what is empirical science is wholly different from Popper's. Kuhn believes that scientific theories evolve within frameworks of accepted principles known as paradigms (Kuhn 1970). The paradigm provides a coherent scientific environment for scientists to study, understand, solve problems, and make predictions about their world. Kuhn calls these activities puzzle-solving, and characterizes this puzzle-solving as normal science. According to Kuhn, whatever statements fall within the realm of normal science are empirical science, for they are part of the puzzle-solving with which the scientific community concerns itself. A paradigm does not have to be an air-tight set of facts and conclusions. Inconsistencies within the paradigm are the fuel which fires normal science. These problems are at the heart of puzzle-solving and define, in Kuhn's mind, normal science.

Kuhn rejects Popper's absolute criteria for falsifiability. According to Kuhn, for as long as a theory works within a given paradigm, that it cannot be tested is of no concern to Kuhn regarding distinguishing it from metaphysics. For example, on the theory of the existence of another planet (Neptune) affecting the orbit of Uranus, prior to the ability to test such a theory, Kuhn would say that the theory is consistent within the paradigm of Newtonian physics and Kepler's equations. Therefore, it is science. Popper would characterize the theory as purely metaphysical because, in its time, there was no way to test it. Since it is not testable, it is not falsifiable, and it is certainly not empirical science.

Kuhn's position negates the possibility of any absolute scientific truths. Scientific knowledge is relative to the existing paradigm. Paradigms do and will always eventually change. Current paradigms are simply the ones most widely accepted because they best answer the problems most pressing to the scientific community at any given time. In the presence of a different priority of scientific questions, another paradigm more compatible with those priorities would quickly replace the existing one. That one paradigm is better or worse than another is based solely on its ability to respond to those priorities, and not on any objective relationship to truth.

Popper, on the other hand, acknowledges the existence of absolute truths and believes that science is on a constant march toward those truths, incrementally and cumulatively. But he holds those truths to a very high standard in that he asserts the statements will never be ultimately proven, but must continue to outlast the activities of science which may eventually disprove them in the course of scientific business. Objective truth can never be proven but, because it is the truth, nor can it ever be disproven.

Historically, Popper believes that current knowledge is the accumulation of all knowledge through the ages. It has evolved as scientists have proposed basic statements and tested those statements. As some are disproven, others replace them in an iterative process that adds refinement. Eventually, certain statements begin to survive from one scientific era to the next as the percentage of objective truth contained within modern science increases. Though this percentage cannot be measured since we cannot know for sure which statements are objective truth and which have merely yet to be disproven, it is assured that progress is being made as false statements are disproven and knowledge

grows. Thus, science has as its goal those ultimate truths, the progress toward which is as constant and unyielding as the tides.

Kuhn sees no such progress. His view of science is that paradigms replace each other as a matter of practicability to the scientific community. Clearly, within a given paradigm, and usually from one paradigm to another, both the list of mankind's problems solved by science, and the precision with which problems are solved continues to grow. Science, then, helps man adapt to his environment through problem-solving. This Darwinian view of science as an evolution does not propose that there are ultimate goals or truths for science to chase. Historically, science has not made progress, nor ultimately will it make progress, toward such a single, true account of nature. The value of science is in terms of the aforementioned evolution alone, which, according to Kuhn, is great value indeed, and quite enough.

Beyond Objectivism and Relativism

Given this extensive discussion of the philosophy of science regarding the problems associated with making generalized statements from specific observations, it is time to explore the practical realities of conducting research in the face of these vaunting philosophical questions. We can do this with the help of Richard J. Bernstein, whose thesis is that the central question concerning the philosophy of science has moved beyond objectivism and relativism (Bernstein 1983).

According to Bernstein, the powerful debate between objectivism and relativism is energized by mankind's need for an Archimedian Point -- a single, fundamental and

universal truth stable enough to support all knowledge.[3] From this innate human need for a secure grounding is born the insidious whisper of doubt that such a point truly exists, and with it the sprout of man's insecurity about what he knows, what is demonstrable, what is provable, and what is real. From this sprout flourishes the tree of philosophical inquiry into science, metaphysics, and even ontology -- the study of being. As philosophic debate begins to weigh-in heavily against the existence of the Archemedian Point, man becomes more desperate to prove the mere possibility of its existence -- hence, the work of the positivists, the justificationists, and the foundationalists. Bernstein describes this desperation as a Cartesian Anxiety, which is the fearful notion that, if there is no objectivity upon which to ground knowledge, and ultimately man's existence, then everything is purely relative and, therefore, arbitrary and perhaps even meaningless. It defines an opposition between objectivism and relativism that is extreme and absolute. Bernstein rejects this dichotomy as misleading and distortive. He contends that modern philosophy would necessarily move the debate toward just such an exorcism, and that in the post-empiricist era (defined by Popper's conventionalism and Kuhn's relativism, among others) philosophical discourse is engaged in just that in the form of hermeneutics, phronesis, and praxis.

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[3] The analogy is drawn from Archimedes' construct that given a single, stable, immovable point, one could design a fulcrum capable of moving the world.

Hermeneutics, Phronesis, and Praxis

Hermeneutics is the philosophical study of the problems associated with interpretation, specifically, interpretations which were the underpinnings of the practical rationality of Aristotle and Plato. This concept supposes that man is capable of using reason enriched by his knowledge of history as a living tradition to reach an entirely different notion of knowledge and truth -- a notion, Bernstein would say, that is beyond objectivism and relativism. But there are flaws inherent in this practical rationality which must be addressed, and the first is the problem of hermeneutics.

The problem of hermeneutics is the difficulty of interpretation without prejudice, and the notion that what you are determines how you interpret things. Understanding is just the first step in the process of the coming into being of meaning. For this understanding to be truly objective, we would have to abstract ourselves from our living tradition (ontologically speaking) in order to reach for the absolute meaning of that which we are trying to understand. This abstraction is impossible. Therefore, the interpretive process is laced with the prejudices of our living tradition. While this seems to imply a hopeless relativism, it is emphatically not. It is the recognition of the inherent prejudices, and a vital distinction between blind prejudices and enabling prejudices, that makes us able to test them critically in the course of empirical inquiry. Thus, a recognition of the hermeneutical problem is the first step toward overcoming it.

Still, according to Bernstein, we can only see what is visible from our vantage point. We have a unique horizon. But while a horizon may be limited by that vantage point, it is essentially open and moves as we move. Thus, we are free to change the horizon and

see from another perspective. In this way, horizons are limited and finite, while at the same time fluid and changing. In moving, though, we do not radically change our horizon, as if such movement were capable of rewriting our ontologies. Rather, movement of perspective allows us to enlarge and enrich our horizon by fusing it with others. It is through this fusion of horizons that we risk and test our prejudices. Thus, if we are intellectually honest, there is nothing that is beyond our understanding.

It is here that we may introduce the concept of phronesis -- a reasoned process of deciding matters of import based on the enlightened council of meaning coming into being through hermeneutics, practical rationality, and the three-step process of understanding, interpretation, and application. Thus, we decide what is right, or good, or true based on a thoughtful and reasonable analysis of what we already know and what we can interpret, the problem of hermeneutics notwithstanding. Finally, in exercising phronesis, we are able to move from practical rationality through hermeneutics to praxis -- the taking of action which leads to change. In short, we can get off the philosophical dime and move beyond objectivism and relativism. In fact, one of Bernstein's main supporting contentions is that hermeneutics is the heir to the older tradition of practical rationality and is the natural link to modern praxis. Bernstein contends that this modern praxis -- a virtue which brings some good where there was none before, and would not have been were it not for the action -- is what moves us beyond the opposition of objectivism and relativism.

Contemporary Research

Modern research methodology follows the prescription of phronesis and praxis offered by Bernstein by necessity, though few researchers actually think about it in the lexicon of the philosophy of science logisticians. Much of the reason for this necessity is that the social sciences are filled with concepts that are difficult to operationalize for scientific analysis. It is much easier to speak of purchasing partnerships, for example, than it is to observe their practical operation and measure their value to the organization. Often, there are factors that underlie the performance of such variables -- like trust -- that are unobservable and, therefore, difficult to test scientifically. These kinds of factors are called latent variables and are usually of greater interest to social scientists because they help to explain observable phenomena (Dunn, et. al. 1994). When working with latent variables, researchers often collect data from which they make inferences about those variables, but which are not statistically testable. Many view this as a weakness in social science research and call for methodologies which will test the inferences drawn from data collected about these kinds of variables (Seaker & Dunn 1993; Dunn, et. al. 1994).

Organizational researchers make the case that in the social sciences inductive research is the necessary first step toward reaching the standards set by the empiricists. Too often, the empiricists see scientific methodologies as the ends themselves instead of a means to advance discovery (Morgan and Smircich 1980). Prior to the application of such means, it is often necessary to risk propositions for which there is no prevailing evidence. Mintzberg proposes that induction involves two critical steps (Mintzberg 1979). The first step is the detective work -- observing patterns and consistencies in

phenomenon, looking for order and explanations where none seemed to exist before. The next step is the creative leap -- generalizing this order beyond the research data. These generalizations, often in the form of constructs or theoretical models, are really just hypotheses upon which statistical methodologies are applied in scientific testing. According to Mintzberg, "there would be no interesting hypotheses to test if no one ever generalized beyond his or her data" (pg. 584).

Research becomes more applicable to practitioners as it undergoes the emergent process of adhering to more and more rigorous scientific testing. Rarely does a theory follow a straight line toward such rigor. According to Mentzer and Flint, such research is inherently a process of induction, leading to deduction, leading to induction again, and so on.

> The first inductive step is one of observing real world examples (e.g., through case studies, interviews, observation, and other more qualitative methods), reading the literature of other pertinent research and from these specific examples inducing a theory that should have broader applicability. The next step is deducing from this broad theory specific relationships among the concepts within the theory so that they accurately reflect the constructs intended. Methods are often chosen to test the relationships among the constructs (e.g., surveys, experiments, simulations). If these hypotheses are supported by research tests, the last step is to generalize (i.e., induce) the results to the population form which the sample was taken. Normative procedures designed to assist business professionals are then developed based on this theoretical, and empirically supported, understanding (Mentzer and Flint 1997, pp. 199-200).

It follows that while practical application may be undertaken, thereby creating the ultimate test of the theory -- performance -- smaller and smaller bits of the concepts and relationships will be put to finer tests of their validity in subsequent rounds to empirical testing. Thus, the concepts are either refined, strengthened and proliferated, or vanish into obscurity.

Standard Conventions of Research Methodologies

Whatever research methodologies are undertaken in the pursuit of scientific truth, certain particular conventions are followed which allow researchers to make generalized statements based on particular observations. These conventions have been developed over time and carefully refined and improved so as to become acceptable to the academics of the day as a means of moving the state of knowledge of a given field forward despite the age old problem of induction. As a researcher follows these conventions, enumerating the assumptions required to proceed and the limitations on the conclusions, the generalized statements become acceptable. Though they are not necessarily proven as fact, they are available for scrutiny, testable, and, in deference to Popper, falsifiable. Further, the general statements derived through conventional research provide information that is useful on a practical level -- Bernstein's praxis -- even if they cannot withstand the philosophical challenges of the logisticians.

This research concerns itself with the first phase of the inductive-deductive-inductive research cycle proposed by Mentzer and Kahn and discussed above. It presents data in the form of observations and information collected through interviews of purchasing professionals and proposes an order to that data through inductive reasoning. The remainder of this chapter describes the conventions pertinent to the conduct of this research. Because it has adhered to these well-established conventions regarding inductive research, this research provides reasonable explanations for the four research questions proposed earlier, and establishes hypotheses that can be tested in subsequent research.

The Present Methodology

Type of Research

Contemporary logistics researchers have created useful frameworks for understanding logistics research paradigms. One such framework is based on two underlying tenants of methodology. The first is the rational/existential continuum which distinguishes between research that is independent of man's perspective (deductive) or relative to individual experiences (inductive). The other continuum -- natural/artificial -- describes whether the source of the information is objective or subjective. Each continuum is divided into three categories creating the matrix given in Figure 3-1.

This research is an inductive approach to subjective reality. It relies on structured interviews, historical analysis, and case study. By this combination of elements, it falls somewhere within the three shaded blocks in Figure 3-1. There is well-established precedent for the use of these methodologies in purchasing research. In an analysis of articles published in eight leading logistics and marketing journals from 1988 to 1992, over half employed the methodologies described in these three blocks (Dunn, et. al. 1992). When counting only the four logistics journals, the number jumps to 68%, and when just looking at the *International Journal of Purchasing and Materials Management*, these methods are used in more than 75% of the cases. Also, in that same time period, there were 24 doctoral dissertations (5.7% of all logistics-related dissertations) in purchasing and materials management using these methods (Stock & Luhrsen 1993).

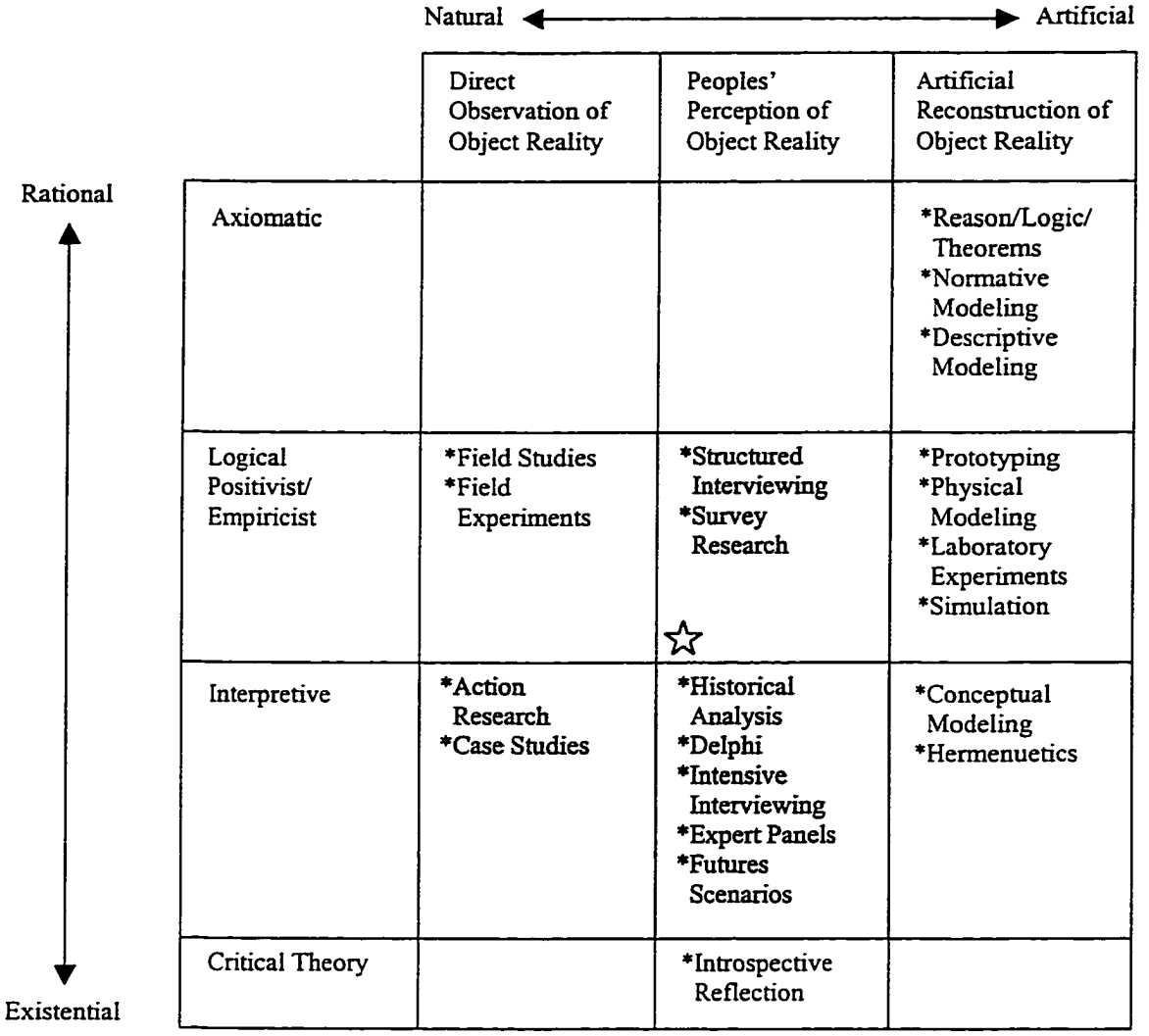

Figure 3-1: Framework for Research Methods
(adapted from Meredith, et. al. 19989)

Since the research depends primarily on data collected from structured interviews, it primarily falls in the center block of Meredith's model, that of the logical positivist/empiricist approach to other peoples' perception of reality. However, it also relies partly on the researcher's educated interpretation of his own and other peoples' perceptions by drawing on both a case study approach to the separate and distinct purchasing departments within which the interviews took place, and an historical analysis of the established literature in the field. Thus, given the two continuous scales in Figure 3-1, the methodology for this research tends toward the lower left corner of the block, in the location indicated by the white star.

Design of the Case Study

The case study methodology is often highly criticized for being purely a qualitative tool, for lacking academic rigor, and for creating results which are not generalizable. These contentions have been fully refuted repeatedly in social science literature (Ellram 1996b; Yin 1994; Eisenhardt 1989; and Morgan & Smircich 1980). Further, in the last two decades the literature has laid out a prescription by which case studies may be conducted in ways that result in the building of highly acceptable grounded theory; that is, theory that is derived from scientifically collected data (Glaser & Strauss 1967). These prescriptions were used in the design this case study.

The Use of *a priori* Constructs

Since this research focuses largely on the creation of new theory, one might be tempted to conclude that any preconceptions regarding what one is likely to find would introduce bias. This was defined earlier as the problem of hermeneutics. Bernstein disposes of this problem in his discussion of phronesis and praxis -- acknowledging ones particular perspective, even adjusting it according to various prescriptions, in order to move forward in the research. Beyond this philosophical approach, it has been widely held among researchers that *a priori* constructs are both helpful and appropriate. According to Eisenhardt, "*a priori* specification of constructs can also help to shape the initial design of theory-building research" (Eisenhardt 1989, pg. 536).

This research is shaped by four well-established constructs and two newly-proposed *a priori* constructs. The former are discussed in Chapter 2: the spectrum of buyer-seller relationships (Ellram & Birou 1995; Cavinato 1992), the typology of acquisition items (Kraljic 1983), the total cost/value hierarchy model (Cavinato 1991), and the total cost of ownership costing model (Ellram 1993). The latter *a priori* constructs are derived from the existing, established models and represent what the researcher expected to find in the data. These *a priori* constructs manifest themselves in the two proposed models of behavior offered in Chapter 1. The first is the gap between buyer performance and performance measures and perceptions (Figure 1-5, page 24), and the second is the strategic cost management model with service purchasing costs (Figure 1-6, page 30). These two *a priori* constructs do not propose an answer to each of the four research questions put forth in Chapter 1. That is not the intention of introducing them. Rather,

their introduction acknowledges the problem of hermeneutics, formalizes the researcher's unavoidable preconceptions, and provides a straw man against which to analyze the data collected in the interviews and case studies. Rather than detracting from validity through bias, the careful introduction of these *a priori* constructs provides a means of adding validity to the typology and analytic models proposed in Chapter 5 and the research conclusions offered in Chapter 6.

Construct Validity

"The process of constructing formal definitions of the concepts within a theory results in constructs" (Mentzer & Flint 1997, pg. 207). Stated another way, the definition of each concept within the theory is constructed from the theory. In this research, the four established constructs emerge from strategic purchasing theory and strategic cost management theory. The two *a priori* constructs are developed from the emerging theory of the purchasing of services.

Construct validity addresses establishment of the proper operational measures for the concepts being studied. When this occurs the measures are said to have empirical correspondence with the construct they are measuring. Of course, this is slightly more problematic in qualitative research than in quantitative, but still achievable. Three accepted techniques were used to achieve construct validity in this research (Ellram 1996b). First, the research relies on multiple sources of evidence -- interviews, practices, and documentation. Second, a chain of events has been established in each case study, from initial formulation of the research questions through collection of the data and its

analysis, to presentation of the findings and derivation of typologies, analytic models, and conclusions. Finally, the key informants from each company were asked to review the case study data as recorded by the researcher prior to final data analysis and incorporation into the study. The purpose of this review was to ensure that what was recorded by the researcher accurately represented what the informant was trying to say.

Selecting the Number of Cases

In a particularly pertinent article in the *Journal of Business Logistics*, Lisa Ellram prescribes a clear and easily defendable method for employing the case study method in logistics research (Ellram 1996b). Drawing largely on the work of Yin, and others, she synthesizes much of the work of her predecessors and applies it specifically to business logistics research.

In this work, Ellram addresses the question of single versus multiple case design. The first point she makes is to dispel the notion that a single case is equivalent to a single observation. On the contrary, a single case is more analogous to a single experiment. As such, it may stand on its own merit, most appropriately in situations where it is being used as a critical case to test an already well-formulated theory. On the other hand, multiple cases, like multiple experiments, are more suitable to situations where replication is required to allow for the initial development of a rich, theoretical framework. That is the situation here, where the research attempts to build a new framework of grounded theory regarding the purchasing of services. For this research, a multiple case design was chosen and executed. Multiple cases also provide external

validity, which reflects how accurately the results represent the phenomenon studied, establishing generalizability of results (Yin 1994).

In selecting the number of cases in a multiple case design, one must balance the minimum requirements for generalizability with practical considerations of cost, time, and diminishing returns. According to Yin, in most situations six to ten cases should provide enough data to build a robust grounded theory and compelling evidence to support or reject the *a priori* constructs. This research contains eight separate cases.

Firms Selected

According to Eisenhardt, as with defining a sample population, carefully selecting the cases controls extraneous variation, and helps define the limits for generalizing the findings. The degree to which specific cases are chosen depends upon the objectives of the research. For example, to isolate a specific set of variables, a researcher may wish to confine the cases to a single industry in a cross-sectional approach (Eisenhardt & Bourgeois 1988) or to a single firm with the same variables examined repeatedly over time (Mintzberg & McHugh 1985). If the objective is to observe the phenomenon is different environments, the researcher may choose to select firms from diverse organizations (Harris & Sutton 1986). The current research shares this objective.

Since this research is interested in the practices and perceptions of purchasing professionals regarding the buying of services, regardless of the size or type of organization, it was decided that it would be helpful to select diverse organizations. With that in mind, fifteen organizations were selected from the 1996-1997 Purchasing

Management Association Membership Roster representing different industries and sizes. These fifteen organizations were from the following industries: four light industry, three chemical companies, two heavy industry, two utilities, one food manufacturer, one bank, one airline, and one package delivery company. For each company the senior-most purchasing executive listed in the membership roster was selected as a point of contact.

Initial contact was made by facsimile. The letter was a personal introduction of the researcher and a brief (one paragraph) explanation of the research. It proposed a day-long visit by the researcher to the firm for interviews. It also requested access to bylaws, regulations, guidelines, operating instructions, measurement tools, evaluations, or other pertinent documentation regarding purchasing in general and the purchasing of services in particular. Contacts were told that follow-up phone calls would likely also be required after the field visit. Rather than requesting a response, the facsimile stated that the researcher would contact them by phone in three or four days.

Telephone contacts were initiated four days later. An initial telephone contact guideline was used by the researcher to ensure each contact was told the same thing in that first person-to-person conversation (Appendix A). In these initial telephone calls seven companies chose not to participate. Two of the reasons given were lack of time (three cases) and poor timing due to current reorganization of the purchasing function (two cases). In the other two cases, the companies did not feel that they would be of interest to the researcher because they did not buy services. In both cases the contacts

said that their function bought items for local use and that services were bought by a centralized buying function at the corporate level of the organization.

Eight companies did commit to participating in this initial telephone conversation. These companies represent diverse industries and sizes. A list of the companies and the primary point of contact is contained in Table 3-1.

Preparation and Use of the Interview Guide

The structured interviews were designed to ensure that each informant had the same opportunity to provide information on all subjects pertaining to the research questions. However, since the researcher was seeking any information regarding the central problem statement (What issues do corporate management and purchasing departments face associated with the purchasing of services?), conversations with informants were allowed to flow wherever the informants wished to take them (Alreck & Settle 1995).

In order to maintain some structure, however, a field visit and interview guide was developed by the researcher (Appendix B). This guide was designed with two purposes in mind. First, to prepare the informant for the interview. Guides were sent to informants by facsimile a few days prior to the field visit so informants knew exactly what information the researcher was pursuing and could begin thinking about the answers, lining-up additional interviews with other knowledgeable people, and retrieving whatever documentation they wished to share. The second purpose for the guide was to ensure the researcher covered all pertinent areas with each informant, whether or not the informant was able to provide useful information in all areas.

Table 3-1: Companies Visited

Company	Type of business	Primary Point of Contact
Company A	Chemical manufacturing	Manager, Capital Purchasing
Company B	Chemical manufacturing	Manager, Technical and Services Purchasing
Company C	Banking and financial services	Manager, Sourcing Programs
Company D	Light industry	Manager, Corporate Purchasing
Company E	Package delivery service	Manager, Corporate Purchasing
Company F	International airline	Manager, Strategic Purchasing
Company G	Heavy industry -- corporate	Manager, Strategic Purchasing
Company H	Heavy industry -- plant	Regional Purchasing Manager

The question arose as to whether or not the guide clearly covered the areas necessary for the researcher to obtain information pertinent to the research questions, in particular, and the overall problem statement, in general. It was suggested to the researcher that a review of the guide by one or more purchasing professionals other than those involved in the case studies would be valuable in ensuring the reliability of the data collection tool. To this end, the guide was submitted to the Director of Purchasing for the Pennsylvania State University. Both he and one of his top managers read through the guide in light of the problem statement and research questions. The researcher then met with these two individuals to discuss the research and receive feedback from them on how they perceived the questions. Slight changes were made in response to their inputs which made the guide clearer and more applicable to the research questions and problem statement.

Although the researcher followed this guide for each interview, conversations were allowed to take their natural course in order not to suppress or inhibit the exchange of information. As a result, after the first interview the researcher found that the informants tended to jump from one topic to another as they expressed their thoughts. Further, sometimes the informant mentioned something off the given topic that the researcher felt the need to pursue, thereby moving the conversation further out of sync with the chronology of the guide. To deal with this, beginning with the second interview, the researcher created ten questions with which to gauge the progress of the conversation. The ten questions mirror the information the researcher sought through the interview

guide and each pertains to one of the four original research questions. The ten questions are as follows:

1) What kinds of services are you buying?

2) Were you always buying these services? In not, when did you start and why?

3) How are the requirements for services defined and how are prices for these services evaluated?

4) Is buying services different from buying tangible materials? If so, how?

5) What difficulties are associated with buying services?

6) What skills are required of purchasing agents who buy services? Are they different from those who buy tangible materials?

7) Is there a gap between what buyers do and what they are perceived to be doing?

8) Is there a gap between what buyers are required to do and how they are evaluated?

9) How are purchasing costs collected? What portion is assigned directly to products and what portion is allocated as an overhead?

10) Has the overhead burden associated with purchasing increased or decreased as you've bought more services?

These questions were not necessarily put the informant directly, but were used by the researcher as a check sheet to ensure all the information being sought by the researcher from the informant was being addressed prior to the end of the interview.

In all cases the primary point of contact was the key interviewee (see Table 3-1). "The key interviewee provides the entry into the organization, and his or her insight greatly assists the researcher" (Woodside 1992, pg. 285). Prior to the field visit, the key interviewee was asked to identify anyone in the organization who might be available to

also be interviewed. The more individual informants interviewed, the greater the validity of the research findings. There were two limitations to achieving this form of validity: the key interviewee's willingness to identify and schedule the other interviews, and the time and schedule constraints of the other persons identified. In some cases there were multiple interviewees from the company. In other cases there was only one interview. The details of this are given in the eight case presentations in Chapter 4.

Other Data Sources

Objective, descriptive data was available from each of the firms. Preparatory analysis included a general market and firm financial analysis. The purpose of this preparatory analysis was for the researcher to simply familiarize himself with the general industry and the key businesses of the firm.

Although the interviews were the primary source of data, to the extent that they existed and were made available, written purchasing procedures, contract templates, and measurement and evaluation forms were also collected and reviewed.

Data Analysis and Presentation

Following the prescriptive method outlined by Ellram, a prestructured case outline was used to write-up the cases (Ellram 1996b). The eight case outlines are presented in Chapter 4. These outlines are useful for organizing an abundance of data in a way that is easy to review and comprehend both for the researcher and for the informants reviewing

the data for accuracy prior to incorporation into the study. These outlines also allow the researcher to quickly and accurately compare similar data across cases.

Data coding processes are used at different stages of the data analysis process (Strauss & Corbin 1990). Three types of coding processes are used. In the first stage, open coding is used to break down, examine, compare, contrast and categorize the data. It is analogous to developing and analyzing descriptive statistics in empirical studies. In the next stage, axial coding makes preliminary connections among the categories developed by the use of open coding. In the final stage, selective coding is used to integrate the new grounded theory into a cohesive whole.

To code the data, the researcher used a technique known as mind-mapping (Buzan & Buzan 1993). This technique is designed to encourage radiant thinking rather than linear and hierarchical thinking. In radiant thinking, ideas emerge in all directions from a central idea, with each new idea becoming the center of a new spore of ideas. In the psychological literature this technique is referred to as concept mapping and described as a metacognitive; that is, it is "cognition about cognition" (Novak 1990, page 29). According to Novak, metacognitive learning occurs whenever a person acquires some general strategy that facilitates learning or understanding of knowledge. Mind mapping (or concept-mapping) is just such a strategy. In this thesis the term mind-mapping will be used henceforth to describe this technique. This technique was especially useful in organizing each of the cases (open coding), discovering emerging phenomena across the cases (axial coding), and developing models to explain the phenomena (selective coding). The products of this mind-mapping will be discussed in some detail in Chapter 5.

Generalizability of Results

The generalizability of case study results tends to be qualitative. Two factors affect the credibility of generalizations drawn from case studies. The first is the clarity of the research methodology. If the methodology is sound across the cases, and if it allows for a range of activity while still providing a consistent explanation for the phenomena observed, then the results tend to be more generalizable and are recognized as valid. For this reason, multiple case studies like this one tend to produce results that are more generalizable than single case studies.

A second factor which affects the generalizability of case studies is whether or not a range of conditions are incorporated in the derived explanations (Yin 1994). Yin explains that, since case studies, like empirical studies, are only generalizable to the original theoretical propositions, and not to populations or universes, the researcher's goal is to generalize the theory, not simply enumerate statistical frequencies and likelihoods of occurrences. This is known as analytic generalization as opposed to statistical generalization. This research attempts to provide a grounded theory through analytic generalizations derived from these eight cases.

Chapter 4 is a presentation of the findings from the field visits to each of the eight companies. It presents a within-site analysis for each case (Young 1993). On the other hand, Chapter 5 is a cross-site analysis of the general findings. This chapter presents the emergent ideas from across all the cases. It also includes a development of the analytic models and the issues resulting from the case studies. Chapter 6 contains the conclusions, research limitations, and recommendations for future research.

Chapter 4

WITHIN-SITE ANALYSIS: FINDINGS FROM THE INDIVIDUAL CASE STUDIES

This chapter is a presentation of the information gathered from field visits and follow-up phone calls to the eight companies selected for analysis. Most of the information presented was derived from interviews with purchasing managers and buyers. Some information is taken from documentation offered by the companies, and from template contracts developed by the companies for the purchasing of various services.

This chapter is divided into eight major sections, one for each company. Each section addresses only the information obtained at that company. The last two sections -- Companies G and H -- are presented together. This is because these two purchasing departments are actually part of the same company. One is the corporate purchasing department and one is a remotely located field purchasing office with a great deal of autonomy. For the purposes of this research they were treated as separate cases.

The presentation of each of the cases follows a consistent, prescribed format. Each case is divided into a background section and a main ideas section. The former gives general information about the company's core business, size, organization, and the data sources used. The main ideas section is organized according to the four research questions -- types of services purchased, requirements definition and pricing, buyer performance, and cost allocation. There is also a fifth section for other information

obtained that is not directly related to the four research questions, but which the researcher believed was interesting and worthy of mention.

Company A: Chemical Manufacturer

Background on Company A

Core Business

Company A is a diversified producer of chemicals and plastics serving a large number of industrial and consumer product firms. Their core businesses are focused on two main products -- a liquid chemical and a plastic pellet -- which are supplied in various forms as intermediate commodities to other manufacturing firms.

History

Company A began as a separate chemical division of a large U.S. heavy commodity material manufacturer. In the 1980s the division was spun-off into a separate, publicly held company. Within five years it was bought by a large, multi-national corporation and currently exists intact as a private holding of that corporation.

Size

Company A has annual sales of roughly one billion dollars. It employs 1160 people. Only 27 employees are officially assigned to some part of the purchasing function. At least one purchasing employee resides at each of the company's ten plants in nine states, and the remainder are assigned to corporate headquarters.

Organization

Reporting lines. Most of the purchasing function resides under the chief financial officer (CFO). This includes capital purchasing and maintenance, repair, and operation (MRO). The purchasing of research, raw materials, and specific technical capabilities is under the control of the chief operating officer (COO). These latter purchases are centrally controlled by specific buyers for the entire organization.

Centralization. Capital purchases and MRO are handled either at the corporate level or at the plant depending on the nature of the requirements and the advantage to be derived from leveraging corporate volume. Plant requirements that are best derived from local vendors, such as facilities management, are left to local purchasing personnel. Plant specific requirements that are central to the organization's core businesses are also often handled by the plant buyer, though corporate purchasing personnel are more likely to be involved in source selections, supplier development, and actual negotiations. Buys in which volume can be leveraged across the organization are more likely to be purchased at

the corporate level through corporate commodity accounts. Contract administration is handled and the lowest logical operating level.

Contract standardization. Regarding the purchasing of services, based on a scale of low, medium, or high contract standardization, Company A rates low. Only two contract templates for services were made available. Most other contracts for services are developed by the purchasing entity for the specific buy within the guidelines established by the corporation. Efforts are underway to develop more standardized contract templates. Currently they are working on a standardized contract template for engineering services.

Data Sources

Personnel Interviewed. The primary point of contact was the key interviewee. The key interviewee was the only informant interviewed at Company A. This person is the manager of capital purchasing for the organization. He and the manager of MRO purchasing report to a director who reports to the CFO.

Documentation. In addition to some marketing publications, Company A provided an organizational chart, a functional overview of purchasing, a purchasing skills list, and a published description of their supplier program. They also supplied two contract templates -- work on purchaser's premises and contract maintenance services.

Main Ideas from Company A

The data sources from Company A described above yielded the following information. The information in each main ideas section throughout this chapter is organized in accordance with the four research questions. There is also a fifth category of information that does not directly pertain to the four research questions. The information in these sections was open-coded using mind mapping techniques (Strauss & Corbin 1990; Buzan & Buzan 1993). Figure 4-1 is the mind map for Company A.

Types of Services Purchased

The informant confirmed that the corporate trend over the past five years has been to outsource any activity that does not pertain specifically to the firm's core businesses in chemical manufacturing. This trend was necessitated by intense global competition in business-to-business marketing of intermediate chemical commodities. The company determined that it could no longer afford to maintain the technical and management infrastructure necessary to perform peripheral functions internally that could be more cheaply and efficiently procured from outside sources. In that period of time Company A has reduced its personnel from 1700 to 1160. Interestingly, the purchasing staff has remained relatively constant. The informant's perceptions of the reasons for this are discussed below.

Examples of activities that were once performed by company personnel and are now provided as services from suppliers are engineering services, general contracting

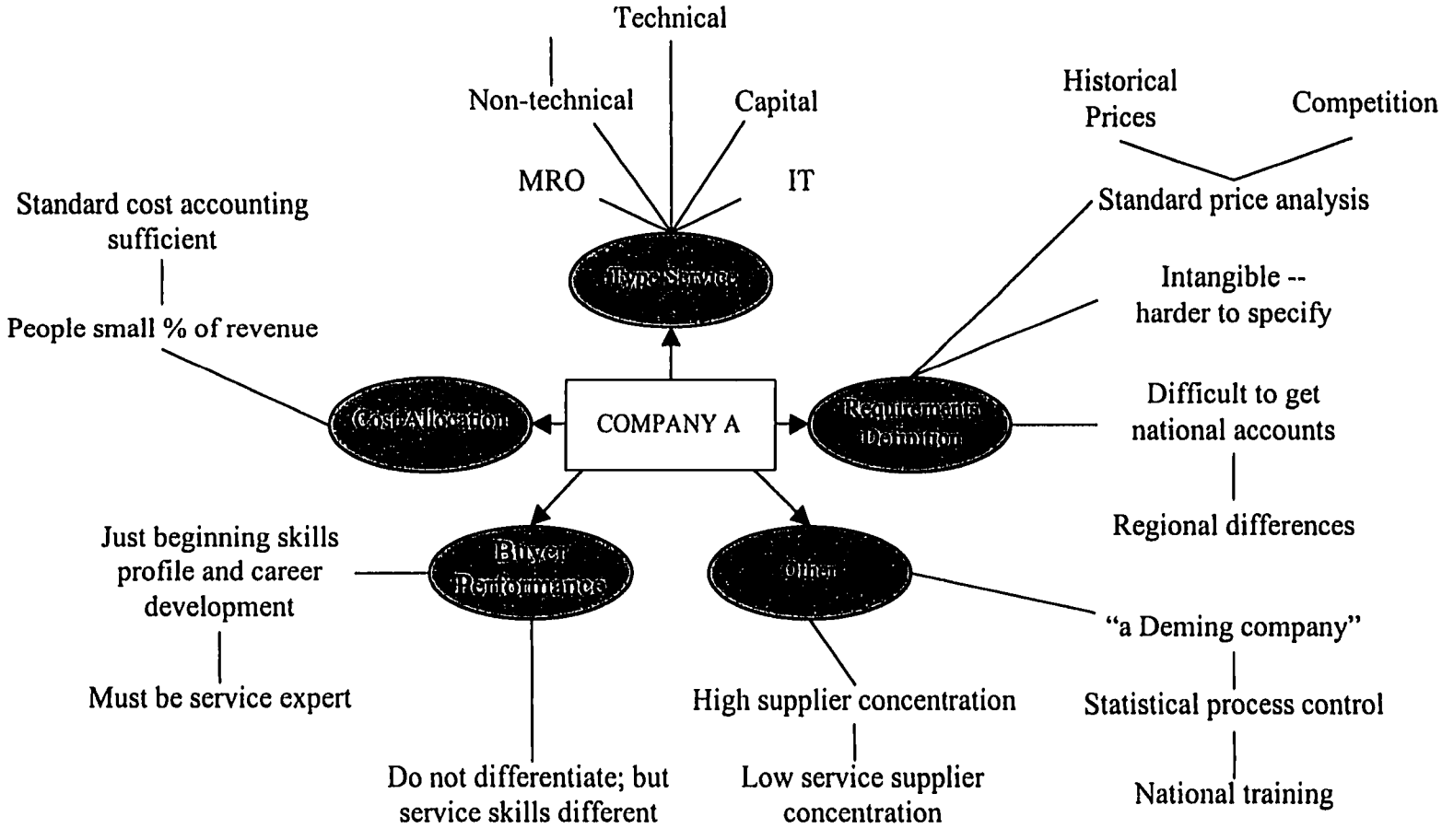

Figure 4-1: Mind Map of Main Ideas -- Company A

construction, plant maintenance, environmental services (i.e., remediation and waste minimization), training, human resources activities, travel services, medical services, security, janitorial services, and legal services. There has also been a proliferation of the use of consulting services both for management and technical functions. For example, the firm has sought to improve its management expertise through the use of consultants in such areas as project management, total quality management, and human resources management. It has also sharpened its technical capabilities through the temporary use of consultants in areas such as heat transfer processes and fuel consumption.

From the way Company A is organized, it is evident that they see purchased items as falling into four large categories. These are raw materials, capital equipment and projects, MRO, and research and technical services. Actual services may fall into any one of the last three categories. Capital projects take the form of small and large construction projects on Company A sites. MRO services include anything related to the maintenance, repair, and operation of the plants. Examples include maintenance contracts on machinery, repairs to equipment, and actual operation of the physical plant. An increasing percentage of the work done at plant sites is performed by non-employees of Company A, which saves the company employee benefit costs. Most of these employees are hired from international labor unions that are signatories to national maintenance agreements (see Table 4-1). Finally, research and technical services may include specific research projects, technical assistance on research projects, and engineering and design services.

Table 4-1: International Labor Unions

International Brotherhood of Electrical Workers
Bricklayers and Allied Craftsmen
International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers, and Helpers
International Brotherhood of Teamsters, Chauffeurs, Warehousemen, and Helpers of America
Laborers' International Union of North America
United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry
Sheet Metal Workers International Association
United Union of Roofers, Waterproofers, and Allied Workers
International Association of Bridge, Structural, and Ornamental Iron Workers
International Brotherhood of Painters and Allied Trades
International Union of Operating Engineers
Operative Plasterers' and Cement Masons' International Association
United Brotherhood of Carpenters and Joiners of America
International Association of Heat and Frost Insulators and Asbestos Workers

Requirements Definition and Pricing

According to the informant, by far the hardest thing about buying services is defining the requirements. Internal customers are accustomed to providing specific performance or design specifications for material items, but are less able to give the same information for services. For some reason they do not associate specifications with services. As a result, buyers are required to more intimately familiarize themselves with exactly what the customer wants in order to properly enumerate specifications, statements of work, deliverables, and performance measurement criteria.

Company A is aware of the benefits associated with standardizing service requirements, both for cost savings through leveraged volume throughout the company and for creating contract templates that would streamline the services acquisition process. However, with their ten plants located in nine states throughout the country, regional differences make it difficult to standardize service requirements. Janitorial and plant maintenance service requirements are different in different climates. Craft labor is largely unionized in the northeast, but usually non-unionized in the south. These differences and others make it difficult to standardize service requirements. This is why Company A currently has only two standardized contract templates. They are in the process of creating other contract templates, though, such as the one previously mentioned for engineering services.

Another problem associated with the procurement of services is evaluating the price of services. This problem is twofold. First, the buyer must ensure that the price quoted is

for the service required. Service requirements are not only hard to define internally, they are equally difficult to properly communicate to the supplier. The buyer must be the one to make sure the supplier understands exactly what the customer needs so that the supplier will quote a price for exactly the right service. Further, the buyer must evaluate the price quoted for that service. Traditional cost analysis is often difficult to perform on services because there is little material involved, and because there is often little wage history associated with the cost of the service provider's time. Thus, in lieu of traditional cost analysis, the buyer normally falls back on the less exacting method of price analysis. In evaluating the price of the service to be provided, the buyer usually relies on comparisons with competitive offers and on historical prices associated with like or similar services.

Buyer Performance

As a "dyed-in-the-wool Deming company," Company A has no formal evaluation process for its employees. Performance standards are based on corporate goals and specific projects. All employees are measured against the specific project and performance goals they set for themselves in regular meetings with their supervisors. Supervisors are expected to provide feedback to the subordinate in the course of their regular association while accomplishing the job.

Trained as an engineer, with experience in buying both goods and services, the informant perceives a definite difference in the skills required of buyers for purchasing each. Paramount in this difference is the buyer's need to become an expert in the service

to be procured. This need is associated with the difficulty in defining requirements. Since users are normally unable to translate their requirement into a workable specification, it becomes incumbent upon the buyer to do so. This requires a familiarity with the service that goes beyond the technical capabilities previously required of buyers procuring material items.

Though the informant perceives differences in the skill sets required of buyers of goods and services, Company A does not differentiate between the buyers of each. According to the informant, however, that is changing. Company A is just beginning to develop a skills profile for buyers of different services, and a commensurate training and career development program for buyers. Such training includes formal and continuing education, either provided by the company or sought independently by the employee, and a possible certification program.

Cost Allocation

According to the informant, the cost of people is such a small percentage of revenue that allocating a portion these costs over such a slim product line will have a negligible effect on product costing. This is especially true since the size of purchasing departments have effectively shrunk relative to the dollar amounts being purchased. In actuality, the size of Company A's purchasing department has been relatively constant since 1990. However, the amount they are procuring, particularly in the form of services has increased dramatically.

Company A actually began an investigation of what was then perceived as a potential cost allocation problem in the early 1990s. They concluded early on that the cost of investigating the problem far exceeded whatever cost might be associated with any actual problem. As a result, according to this informant, the management of Company A perceives that whatever inaccuracies standard cost accounting methods may cause are negligible, and such methods are sufficient to accurately enough capture and allocate the costs associated with the purchasing services.

Other Information

It has already been mentioned that Company A strives to manage itself according to the quality principles of Dr. W. Edwards Deming. This information is useful in that it is pertinent to the company's conduct of employee evaluations, and because it necessitates the purchasing of a management training service. Both these issues were discussed earlier.

The informant also provided statistics relevant to the concentration of the supplier base. Consistent with the current paradigm regarding number of suppliers, Company A has consolidated 75% of its purchases to less than 100 suppliers. 98% of its purchases goes to approximately 800 suppliers. The final 2% of company purchases goes to 5000 other suppliers, 4000 of which receive less than five thousand dollars annually from the company. Although there are no official statistics to confirm this, the informant declared definitively that a large portion of these 4000 transactions are for services. This means

that while the company has been fairly successful at consolidating its supply base for material items, it has been largely unsuccessful at doing the same for services.

Company B: Life Sciences, Chemical, and Imaging Technology Products

Background on Company B

Core Business

Company B provides retail and intermediate commodity products in heath care, life sciences, chemicals, and imaging technology. Examples of heath care and life science products include pharmaceuticals, biological and biotechnology products, analgesics, digestive care, cough and cold products, vitamins, women's health products, skin care products, diagnostics, and agriculture products. Chemical products include polyurethanes, plastics, industrial chemicals, fibers, organic and inorganic chemicals, and rubber. Finally, Company B offers imaging technology products in graphic systems, medical and technical imaging systems, and photo imaging systems.

History

Company B was established over one hundred years ago. Its history is marked by numerous acquisitions, mergers, and reorganizations. Its most recent major ownership

change and reorganization took place this decade. In many respects, it has a corporate culture that is accustomed to change and acclimation.

Size

Company B is a nine billion dollar company with 24,000 employees.

Organization

Reporting lines. The purchasing function falls under the senior vice president for materials management. This means that at Company B purchasing is controlled by the operational, rather than the financial, part of the organization. Two vice presidents (technical and services procurement and raw materials) and three directors (transportation procurement, strategic procurement, and logistics) report to the senior vice president. A large bulk of purchasing transactions takes place under the heading of technical and services procurement. This branch is divided into contracts and services, information technology and telecommunications, and capital purchases.

Centralization. Most purchasing transactions are handled by corporate purchasing personnel, most of whom physically reside at the corporate headquarters. However, Company B has created innovative ways of defining and standardizing requirements, and identifying and exploiting strategic opportunities in purchasing through the formalized cross flow of information up and down and across the organization. These initiatives are the Managed Acquisition Process for Services (MAPS), and the Strategic Procurement

Council (SPC) and strategic sourcing teams (SSTs). These initiatives are discussed further below.

Contract standardization. Regarding the purchasing of services, based on a scale of low, medium, or high contract standardization, Company B rates medium to high. They have a strong commitment to standardizing service requirements and developing template contracts that will make the procurement of those services more efficient. They have made fairly good progress in the development of such templates, but not suprisingly, because of the difficulty in defining service requirements, they have made more progress standardizing material contracts than service contracts. Still, they provided five service contract templates and a list of general terms and conditions.

Data Sources

Personnel Interviewed. Three people were interviewed from Company B. The primary point of contact was the key interviewee. This person was the manager of the capital procurement branch. Also interviewed were the managers of the information technology and telecommunications branch and the contracts and services branch.

Documentation. In addition to some marketing publications, Company B provided their annual report, an organizational chart, the material management vision statement, and charts from an information briefing on the MAPS program. They also provided contract templates for training and development services, construction (long and short forms), non-technical services, and standard technical services.

Main Ideas from Company B

The data sources from Company B described above yielded the following information. Figure 4-2 is the mind map for Company B.

Types of Services Purchased

The three Company B informants all reported that more activities are being outsourced through the procurement of services. Because it is a much larger corporation with a more varied product line, it has not streamlined to the degree Company A has; however its focus on maintaining only those activities central to the production of its product line is consistent with the philosophy adopted by Company A and with the purchasing paradigm established by the literature.

Unlike Company A, Company B's approach to service types is not made evident by its organization of the procurement function. Transportation procurement includes services, as do some of the strategic actions initiated by the SSTs through the SPC, which will be discussed in more detail below. Most services, however, are procured through the technical and services branch. Information technology and telecommunications are considered a separate set of services worthy of their own department. MRO services, craft labor, and consulting contracts primarily fall under the contracts and services department. Company B considers much of what it procures through this department to be engineering services. These services take the form of on site-technical services provided by personnel other than Company B employees. These services are specific and

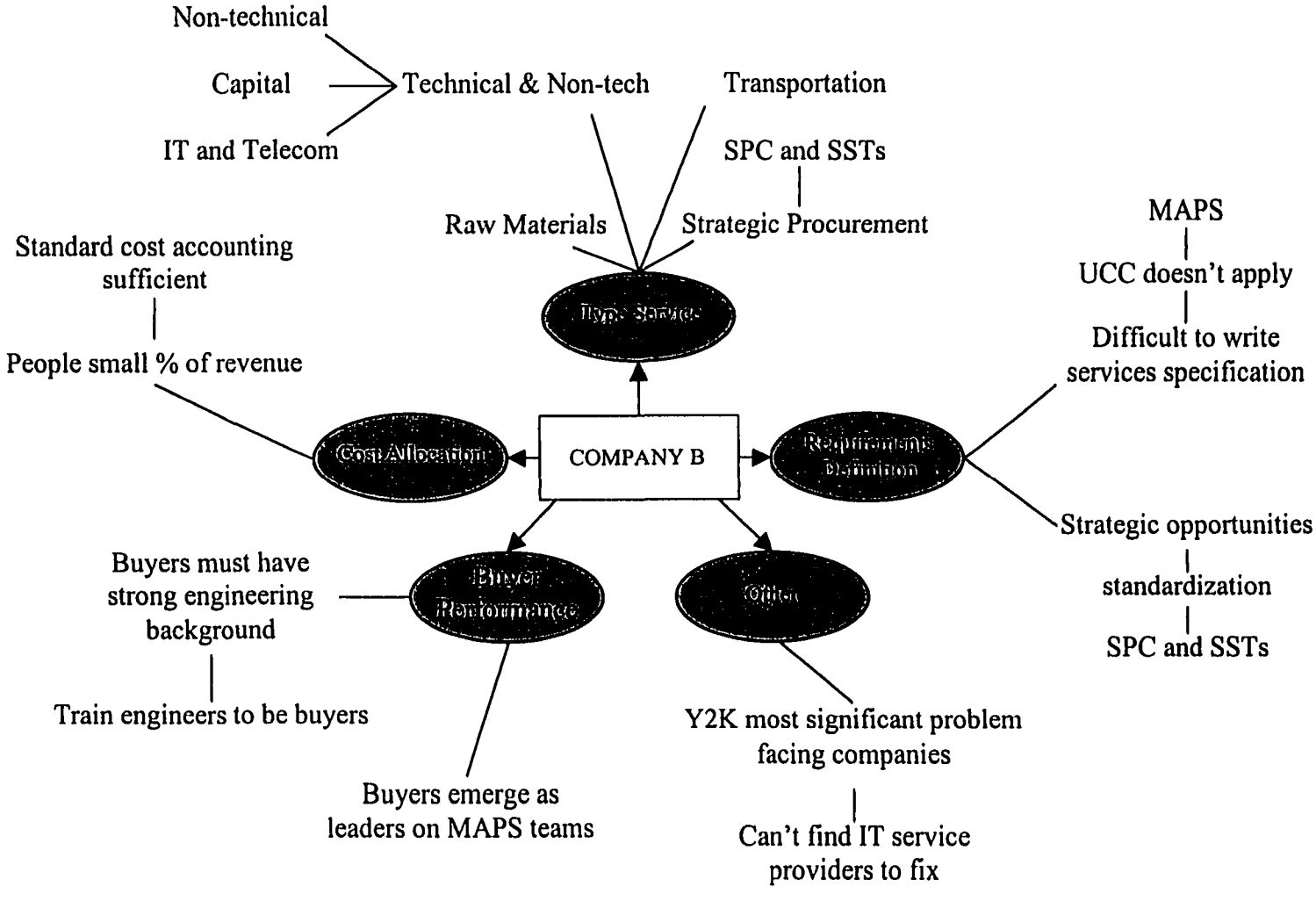

Figure 4-2: Mind Map of Main Ideas -- Company B

highly technical in nature. As such, they are a bit more tangible and easier to specify, however such specification requires not only a broad knowledge of the industry, but a deeper technical capability than that of most buyers.

Requirements Definition and Pricing

As with Company A, all three informants of Company B asserted that requirements definition is the most difficult and distinctive element of services procurement. Determining fair and reasonable prices for those services is a corollary issue. According to the informants, one of the root causes of this problem is the lack of technical expertise of the buyers. In the experience of this company, it is significantly more difficult for internal customers to adequately convey the technical requirements of the needed services to a non-technical buyer in a way that will ensure proper specification and procurement of those services. For this reason, Company B believes it is best to train experienced engineers who show some business acumen to be their buyers. This runs counter to the perceptions of the purchasing executives at the other seven companies in this study. Company B believes that, at least for the procurement of technical services, it is more effective to teach engineers to be buyers and price analysts than it is to hire buyers with broad business backgrounds and hope they can learn enough about the technology to get by.

Company B informants pointed out that services contracts are not covered by the Uniform Commercial Code (UCC). The UCC is a model code on a variety of commercial subjects regarding material goods, drafted by the National Conference of

Commissioners on Uniform State Laws and enacted into law by the individual states (Brody 1986). It gives statutory authority to common law principles regarding commercial practices through standardized clauses which are assumed to be a valid part of any individual contract for the purchase of material goods, whether explicitly stated in the contract or not. The self-proclaimed purpose is to, a) simplify, clarify, and modernize the law governing commercial transactions; b) permit the continued expansion of commercial practices through custom, usage, and agreement of the parties; and c) make uniform the law among the various jurisdictions (National Conference of Commissioners 1997, para. 1-102). The UCC affords protection to companies for the sale and purchase of material goods on such matters as fraud, unconscionability, and warranties. However, the code specifically states that it only applies to transactions in goods (para. 2-102). Thus, companies are not protected in the same way for the sale and purchase of services. Individual contracts for services must contain all terms and conditions required by and acceptable to both parties to be a valid part of the agreement. This puts an added burden on the purchasing of services, and makes a strong case for standardized contract templates for services so as to avoid omitting clauses appropriate to the contract.

Company B believes that the best way to take advantage of strategic opportunities in purchasing is to standardize requirements across the corporation. Being a highly matrixed organization with such a diversified product line makes standardization of items to be purchased difficult. For this reason, Company B has formalized a process and supporting infrastructure to identify areas where standardized specifications can lead to the leveraging of the corporation's volume across business units to obtain advantageous

terms in the purchasing of material goods and services. The Strategic Procurement Council (SPC) is made up of the president or other top executives from each of the corporations eight divisions. This council creates and empowers individual strategic sourcing teams (SSTs) to find ways to standardize requirements across divisions and improve the volume leverage of the entire corporation for specific purchases. Once chartered, these teams, which are made up of members from across and up and down the divisions that use the material or service, present recommendations to the SPC which must be accepted. There is a policy among members of the SPC of "no opting out." Thus, the perceived individual needs of the division will not supercede the overall corporate benefits to be derived from the strategic initiative. There are currently close to fifty SSTs in operation. They have documented successes in the standardization of the requirements for personal office computers, pipes, valves, and fittings, and the outsourcing of storeroom operations.

Company B has developed a second initiative for the unique problems associated with defining requirements for services. The managed acquisition process for services (MAPS) is a comprehensive, proactive approach to the acquisition of technical services. Its goal is the procurement of the best supplier for a particular project. They achieve this outcome with cross-functional, multi-site teams, using a general framework specifically modified for each project. The team is typically comprised of a project manager, a buyer, a production representative, a maintenance representative, and one or more engineers in the appropriate disciplines. This cross-functional team is capable of dealing with both technical and commercial issues using quantitative evaluation tools for source selection.

MAPS equips Company B with a well-defined requirement with which to approach the supplier, leads to the selections of the best supplier for the project, makes the source selection salable to Company B management, and leads to far fewer problems during the project.

Buyer Performance

As stated earlier, Company B generally feels that most of its buyer positions are best occupied by someone with a technical background -- generally, an engineer. However, in addition to this seemingly unique position, the informants did confirm the growing notion that any buyer, regardless of his or her technical capability, must also be not only well-trained in purchasing procedures, but have a broad-based business sense. In their experience, buyers with a technical background and appropriate purchasing training and business-sense, emerge as informal leaders on MAPS teams. Though the project manager is always the formal authority on these teams, he or she often looks to the buyer almost as a deputy team leader based on the common technical foundation they share and the buyer's particular purchasing and business expertise. The buyer is still the most well-rounded person in the group and, as such, has a more comprehensive perspective to offer that affords a view of the corporation as well as the division or individual project. This is a valuable asset to the project manager who tends to develop tunnel vision for the project.

Cost Allocation

Costs are collected in purchasing using standard cost accounting methods. Individual purchasing actions are directly assigned to specific jobs or divisions, and burdens are allocated to material management overhead and G&A pools. One informant acknowledged that overhead allocation could lead to a skewing of individual product costs, but perceived that such a skew across so many products would be negligible to the point of non-significance. Further, according to all three informants, the cost of studying the minute details of this cost phenomenon would far exceed the benefits to be derived.

Other Information

The manager of the IT and telecommunications branch stated categorically that the Year 2000 computer programming issue (Y2K) is by far the most serious and potentially damaging problem facing corporations today. Almost all software programs, from those on home personal computers to those on mainframes running major manufacturing or management processes, have been coded to require only the last two digits of a given year. For example, "98" is recognized as "1998." This was done primarily to save millions of megabytes of computer storage space that would have been used to endlessly repeat the digits "19" every time a year is entered. The problem is that these programs only recognize the last two digits for a year, always assuming the first two digits are the same, "19." In the year 2000, the digits "00" will be recognized by all these programs as "1900," not "2000." When these programs do calculations that require number of years

as a variable, they will naturally have incorrect numbers since they are using at least one number that is one hundred years off. For example, in a social security calculation, instead of subtracting a base year like 1940 from the current year of 2000 (60 years), it will subtract 1940 from 1900 (-40 years). The ramifications are too complicated for most experts to predict or envision.

The purchasing of IT services is becoming more and more focused on obtaining programmers who can solve these problems across corporations and industries, in government and the private sector, and for both corporate and personal home computing, all prior to December 31, 1999. As expected, demand for such services far exceeds supply, and trying to standardize such services at a time of such chaos and confusion is almost impossible. This manager stated that the price for consultants to simply advise companies on how to approach the Y2K problem is as much as $375 per hour. At the time of this interview Company B had yet to finalize a plan, much less implement one, to address this problem. To this manager's knowledge, most other corporations are in the same predicament.

Company C: Bank and Financial Services Company

Background on Company C

Core Business

Company C describes itself as a broad-based financial services company with a bank at its core. It engages principally in two core businesses for both consumer and corporate customers. Fee services include investment products, private asset management, discount brokerage and mortgage products and services for consumers; and master trusts, foreign exchange services, securities lending, cash management, investment management, and employee benefits consulting for corporations and institutions. Banking services offered by Company C are retail financial services, credit card, and small business banking for consumers; and products in corporate banking, capital markets, venture capital, middle market banking, insurance premium financing, asset-based lending, and leasing and real estate finance for corporations and institutions.

History

Company C started out as a small community bank over one hundred years ago. They have expanded in size and services offered, as well as principal businesses, through acquisition of smaller community banks and investment companies.

Size

Most of this growth has taken place in the last ten years. In 1987 Company C was a $500 million regional company primarily dealing in retail banking. After more than a dozen major acquisitions or newly established alliances in the 1990s, Company C now has over $44 billion in assets and 1600 facilities spread across all its business concerns. Forty purchasing employees are responsible for roughly $450 million worth of procurement.

Organization

Reporting lines. Up until five years ago purchasing reported through the organization to the CFO. The advantage of this was that purchasing always had direct access to the CEO through the CFO. However, its focus was almost entirely financial in nature and not at all oriented toward satisfaction of the internal customer. Today, what is now known as corporate sourcing is aligned to support specific supply chains. As such, it is entirely oriented toward the needs of the users. It now relies on building its reputation horizontally throughout the organization through both cost and customer service performance. With patience, it is felt, corporate management will come to appreciate the role of a strategic sourcing department through the satisfaction of internal customers.

Centralization. In 1993, corporate purchasing accounted for $14 million of the $750 million in goods and services procured by the company. That's less than two percent. However, these numbers are only an estimate. Purchasing at that time was so

decentralized that is was difficult to maintain an accurate accounting of what was being purchased and how much was spent. Although the company maintained roughly the same number of buyers then as now, their activities were limited to corporate commodities (like envelopes) for which they processed a separate purchase order every time a new request came in from a field location.

The new CEO at that time envisioned a sourcing department that would grow in influence and strategic effectiveness as the company pursued its growth initiatives. Today, the same size corporate purchasing department is responsible for $450 million of the 825 million total procurement dollars, or roughly 55%. Company C is not satisfied with this level of centralization. As the corporate culture changes, and customers become more comfortable and familiar with the services and advantages of centralized sourcing, Company C is hoping to further grow the percentage of procurement dollars spent by corporate sourcing, while maintaining the administration of those contracts at the organizational level closest to the customer. This follows the corporate sourcing adage, "centralize buying, decentralize administration."

Contract standardization. Regarding the purchasing of services, based on a scale of low, medium, or high contract standardization, Company C rates medium. While it values the merits of standardized contract templates, it uses a limited number of broadly written boilerplates and tailors them to specific purchases. Company C views procured items as falling into one of only three categories: material goods, software, and services. Based on this typology, Company C provided four contract templates which it attempts to apply to as many purchases as possible. While management acknowledges the value of

standardized contract templates, it believes that with this approach it can achieve the efficiencies of contracting with templates while still maintaining the flexibility needed to conform to individual customer and supplier needs.

Data Sources

Personnel Interviewed. Two people were interviewed at Company C. The primary point of contact, the manager of corporate sourcing programs, was the key interviewee. This person set up one other interview with the marketing communications coordinator. The sole job of the latter individual is to advertise the services offered by corporate sourcing, and to educate company personnel as to its advantages regarding the cost and service effectiveness and the ease and efficiency of employing its procedures.

Documentation. Company C provided its annual report as well as some of its marketing materials. It also provided organizational charts, a list of current sourcing projects, slide presentations on strategic sourcing initiatives, the procurement of indirect and non-traditional goods and services, technology sourcing initiatives, and information management sourcing. Of particular interest were documents developed under a special budget to the marketing communications coordinator. These documents are designed to teach Company C employees how to make use of the processes developed by corporate sourcing to make more efficient and cost effective buys. Among the documents supplied were *A Supplier's Guide to Company C*; *Using Contract Programmers at Company C*; *Using Accounting and Financial Temporaries at Company C; A Guide to Successful Supplier Relationship Management; A Requestor's Guide to Corporate Sourcing*, and *An*

Informative Guide to Consulting Services. Company C also supplied four contract templates: a product agreement, a services agreement, a contract for consulting services, and a contract for temporary labor.

Main Ideas from Company C

The data sources from Company C described above yielded the following information. Figure 4-3 is the mind map for Company C.

Types of Services Purchased

Like Company B, the organization of Company C's corporate sourcing department does not, nor do its contract templates, reveal how it typifies different kinds of services. The manager of corporate sourcing programs views procured items as falling into three categories -- material goods, software, and services. It is interesting to note that software is considered neither a material good nor a service. It is unique enough in its development and installation to not be called a material good, but tangible enough to fall outside the definition of a pure service. While software development has its own set of problems regarding requirements definition, it is still often easier for internal customers to enumerate software performance specifications and deliverables than it is with most services. The intangibles associated with information technology, however -- hardware maintenance, systems consulting, training -- are more likely to be perceived as falling into the services rather than the software category.

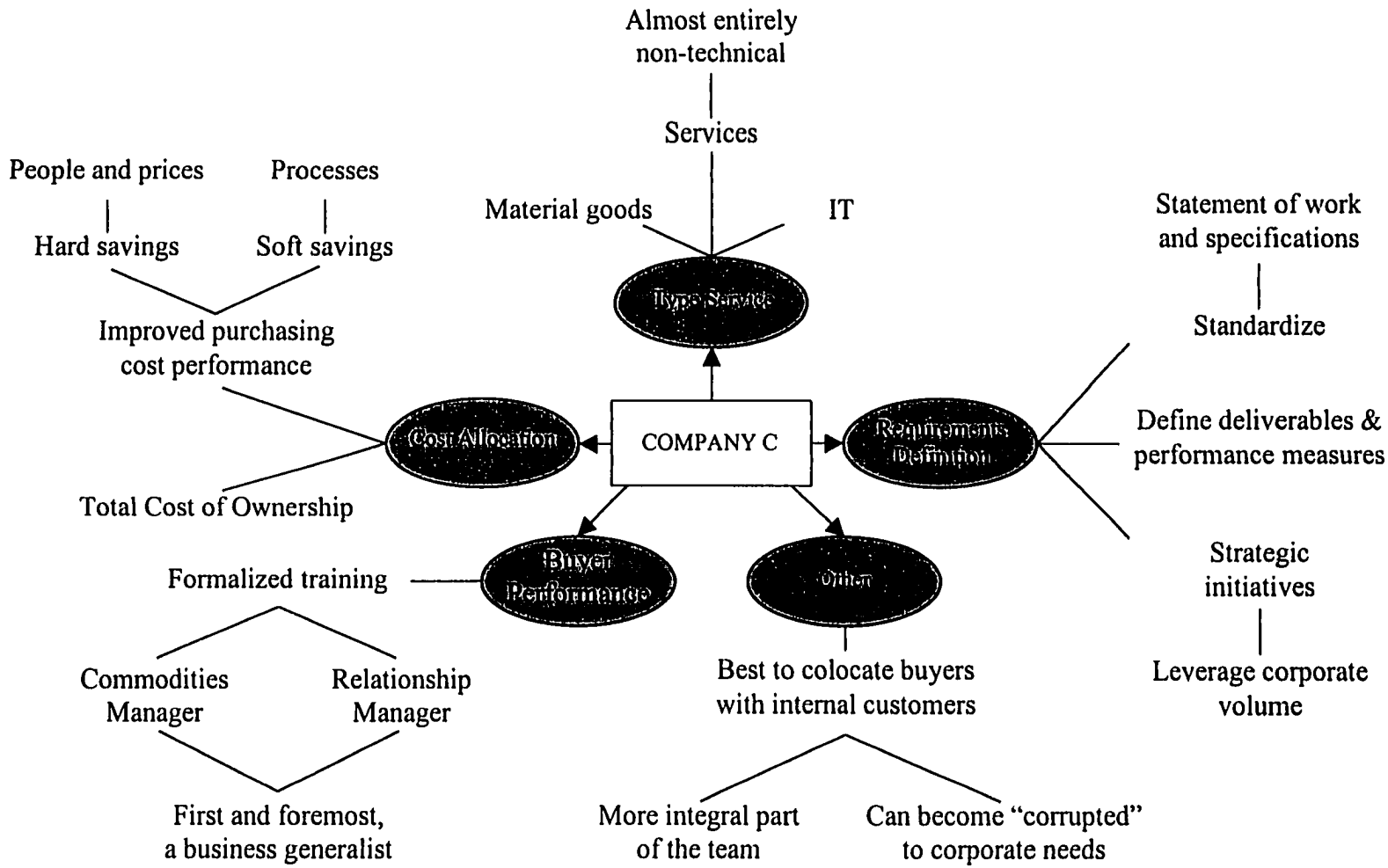

Figure 4-3: Mind Map of Main Ideas -- Company C

Because Company C is itself a service provider rather than a manufacturing company, the services it offers are largely non-technical. There are standard MRO services associated with the management of its 1600 facilities, and there are unique aspects to some of these facilities. For example, many of the facilities are unmanned automated teller machines (ATMs). Although these facilities give the retail customer access to Company C services, the machines are not maintained by Company C personnel. That task is outsourced to a third-party service provider. Safe and vault repair and maintenance, forms warehouse management, air courier services, archiving, confidential document destruction, and armored transport services can all be considered examples of maintenance, repair, and operational services outsourced by Company C.

The marketing literature provided by Company C discussed earlier gives some insight into other services it buys. There is a wide array of consulting services procured, falling generally into the categories of training, management consulting (finance, marketing, retail), and information technology. Company C also uses several different types of temporary labor, especially accounting and financial personnel. It has established an alliance of contract programmers and systems temporaries from which internal customers can draw to meet specific short term and long term needs.

Finally, Company C also outsources several of their core services. These services might be considered strategic in nature because they are an integral part of Company C's core businesses without which it could not provide its services to the retail customer. An excellent example of such a service is credit bureau reporting which is central to all the bank's loan programs both to consumers and corporate customers.

Requirements Definition and Pricing

About two years ago, Company C's management began to push hard for a strategic management approach to sourcing. They called it a strategic sourcing initiative. According to a 1996 briefing on the subject, a situation analysis of the company's procurement practices revealed little understanding of expenditures, weak purchasing organization, poor purchasing systems, many suppliers and little leverage, no purchasing strategy beyond price, non-competitive prices being paid, high transaction costs, and non-value added work from buyers. The vision of the strategic initiative was to "establish and implement a proven strategic sourcing process across all businesses that would use cross-functional teams combining professional sourcing leadership, operational technical expertise, and financial strengths to procure goods and services resulting in a) cost savings and reduced transaction time, b) a focus on increased people skill sets and value-adding work, and c) continuous improvement and innovation. This new strategy would be based on state-of-the-art purchasing analysis, consolidation of suppliers, implementation of a purchasing system, benchmarking and implementing best practices, simplifying transaction processes, new skills for procurement leaders, managing total supply streams, and preparing and changing the corporate culture regarding purchasing. It was at this time and as part of this initiative that Company C hired the marketing communications coordinator and granted this person a generous, multi-year operating budget.

The practical application of this initiative was threefold. First, to standardize requirements across business lines. Second, to better define deliverables and

performance measures, particularly regarding services and non-traditional material goods. Finally, to leverage corporate volume based on the merits of improved requirements definition and standardization. Company C offers the following material goods example. Prior to the strategic initiative, each retail branch of the company had its own specifications for envelopes, for which the corporation spends roughly three million dollars a year. It was estimated at the time that there were over 800 different types of envelopes being ordered from several suppliers. A single buyer spent the majority of his time processing separate purchase orders each time a field office ordered a new supply of envelopes. A sourcing team was chartered by the newly created strategic sourcing council to define and standardize the requirements for envelopes across all businesses and use the volume leverage created by that standardization to negotiate a long-term contract under a single supplier. The resulting contract reduced the number of types of envelopes by almost 300, saved over a million dollars per year, and now allows individual branches to place electronic orders for the envelopes directly with the supplier as requirements come due.

Company C believes they reap both hard and soft savings from such initiatives. Hard savings take the form of reduced costs and prices, as well as manpower savings to both the purchasing department and the customer. Soft savings come from improved processes that reduce transaction costs and create greater efficiencies and customer value. While the former are easy to quantify, it is often difficult to fully describe or appreciate the value of the latter. Both generate savings that translate directly to company profits

and create goodwill and confidence in corporate sourcing's ability to provide valuable services to the internal customer.

These principles are even more important in the procurement of services because of the growth of services purchasing and because requirements, specifications, deliverables, and performance measures are so much harder to define. As shall be documented below, Company C deals with this issue by the way it perceives the role of buyers in the strategic sourcing process.

Buyer Performance

Commensurate with their strategic sourcing initiative, Company C began a program to train purchasing professionals in a new set of skills they believed were more appropriate to the new strategic approach. Buyers and purchasing managers were now expected to be able to execute market industry analyses, have a total understanding of financial as well as cost issues, be able to do benchmarking against state-of-the-art purchasing processes and be able to implement best practices, and build supply chain strategies rather than simply looking for the best supplier for a given single purchase. In fact, the new lexicon went one step beyond the standard strategic purchasing moniker of *supplier management* to *supply stream management.*

At Company C, the career path for buyers has evolved into a dual tract. The traditional role of buyers was expanded to incorporate a deeper understanding of the commodity markets from which they purchased. This understanding is to include everything from the broad range of customer requirements and the intricacies of the

competitive market of the suppliers, to the intimate details of the suppliers' relationships with their suppliers. These buyers become *commodities managers*, responsible for proactively shaping and exploiting the markets from which he or she buys.

A parallel career path is reserved for buyers who demonstrate exceptional communication, persuasion, and negotiation skills. These buyers are given the task of identifying strategic opportunities to standardize requirements across the company, and bringing the responsible parties together to exploit those opportunities. These buyers must gain the confidence of internal customers by educating themselves on the customer's core needs and convincing them that those needs will be met even though the specification may have to adapt in ways that allow for standardization across the corporation. This often requires the delicate skills of a talented mediator, especially when a specification has been allowed to stand for years without question. These buyers become *relationship managers* because they must build relationships between parts of the organization in order to find the common ground that will allow the company to create and leverage corporate volume. By getting the suppliers involved, they forge a bridge between the supplier and the internal customer that allows direct communication of requirements to the supplier and direct assurances of satisfaction to the customer.

In both cases -- that of the commodities manager and of the relationship manager -- buyers are expected to be well equipped in general business acumen and far exceed the traditional tasks expected of past buying agents. In order to implement the principles of what Company C calls strategic sourcing, buyers must perform high up the strategic

purchasing curve depicted in Figure 1-5 (page 24). Purchasing managers at Company C are well aware of this and are taking the initiative to prepare buyers accordingly. Not only are these new skill standards a part of the criteria for hiring, but all buyers at Company C go through a nine day training program, spread out over nine months, designed to familiarize them with the company's strategic sourcing approach, and reinforce in them the skills that will make this approach successful. Further, more and more, they are measuring buyers according to these new standards. Much of the corporation is still unaware of what is required of buyers and what buyers have to offer internal customers. According to the perceptions of the two interviewees, corporate perceptions are changing one customer at a time as they witness firsthand what corporate purchasing and a strategic approach to purchasing can do and the tangible benefits it can reap.

Cost Allocation

Though the purchasing department at Company C has undergone dramatic changes in the last five years, both in organization and direction, the size of the department has remained essentially the same. Roughly 40 buyers account for $450 million in purchases, and this latter number continues to grow each year, though the number of buyers stays constant. So, the same number of buyers is able to account for more spent procurement dollars because sourcing processes have been streamlined and the number of suppliers has been reduced. More importantly, the tasks that buyers do perform can be more easily traced to the value they create to the customer. From an activities based costing

perspective, Company C is gaining the costing advantage of being able to assign many purchasing tasks and their associated costs directly to cost objectives and products. Not only has Company C's strategic sourcing initiative created improved cost performance for the company and the department through both hard and soft savings, it has facilitated the more accurate cost allocation methods associated with strategic cost management.

Part of the strategic sourcing initiative was establishing an awareness of the total cost of ownership model. Included in Company C's assessment of the total cost of ownership of material goods and services are costs associated with the supply stream (suppliers and suppliers' suppliers), acquisition costs, inventory costs, costs associated with cycle time to use, quality of processes and percent utilization costs, training costs, maintenance costs, environmental costs, and customer satisfaction (or dissatisfaction) costs. Using the TCO model, according to the 1996 briefing charts mentioned earlier, Company C management determined that acquisition costs make up 30 to 50% of the total cost of ownership of a material good, and 60 to 75% of the total cost of ownership of a service. So, Company C has been able to use the TCO model to benchmark the performance of the purchasing function and measure improvements based on both hard dollar savings and acquisition cost savings as a percentage of the total cost of ownership.

Other Information

One interesting comment made by the sourcing manager had to do with the physical location of the buyer. In some cases, particularly with high value, long-term projects to

which a buyer would be dedicated almost full-time, the manger felt it was better to co-locate the buyer with the internal customer. This would mean physically moving the buyer to that department, organization, or plant. The advantages of such a strategy is that the buyer becomes a more integral part of the team that is defining the requirements, developing statements of work, specifications, deliverables, and performance measures. The customer is more likely to feel that the buyer understands the needs of the department and witness the dedication of the buyer to the project. He or she, therefore, would be more likely to trust the buyer's judgements when they are given, as opposed to having the perception that he or she is being dictated to by someone from outside the project who doesn't understand his particular needs.

There are three problems associated with co-location. The first is that the buyer may lose contact with the organization that is the bedrock of his or her functional expertise. There is value in the sharing of experiences and the cross flow of information and ideas between buyers on different projects. There is a danger that not being in the daily physical presence of his or her peers can retard the growth of the buyer's functional expertise. The other two problems have to do with the notion that the buyer might become corrupted by his or her dedication to the project. One of the intrinsic attributes of strategic purchasing is its congruence with the total interfirm cost model. The buyer is the one who must have a broad view of the effect actions taken on the project have on the entire corporation. As has been discussed, customers take a parochial view of all actions, judging them based on their effect on the buying entity. The buyer's role is to transcend that parochialism and offer the corporate view, even if management ultimately decides in

favor of the project. Further, the buyer must make the project manager aware of the processes and regulations established by the corporation. While exceptions can and often are made when these regulations become overly burdensome, the buyer is still bound to enforce them, or follow the appropriate procedures to subordinate them. It is possible that the buyer can lose sight of these roles.

It was the feeling of the sourcing manager that, while these dangers are palpable, they can be minimized by establishing solid procedures and creating formal and informal communication processes that will keep the buyer connected with his or her functional support system. Further, the buyer's hard line supervisor is always in purchasing, giving the buyer a clear indication of where his or her priorities lie. This sometimes makes it difficult for the buyer to please both the purchasing supervisor and the project manager, but that is a burden for which he or she is well prepared in the role as a commodities or relationship manager in a highly developed strategic purchasing organization.

Company D: Light Industry Manufacturer

Background on Company D

Core Business

A leading global manufacturer, Company D supplies products for manufacturing, construction, automotive, chemical processing and numerous other world industries. It produces a host of diversified products from four key business areas: protective and decorative coatings and resins, flat glass and fabricated glass products, continuous-strand fiberglass products, and industrial and specialty chemicals.

History

Company D was founded over 100 years ago primarily as a plate glass manufacturer. They diversified into chemical operations to ensure a reliable supply of alkali for glassmaking. Soon afterward, they acquired a regional paint company which became the forerunner of their coatings and resins division. Glass and paint provided continued prosperity to the company during the early part of this century as the automobile boom and construction of skyscrapers transformed and modernized the national landscape. In the latter part of the century Company D has expanded and diversified within these industries through research and development, growth, and acquisition.

Size

Company D is a $7.5 billion company with over 31,000 employees operating in more than one hundred facilities worldwide. Purchasing dollars amount to 50 - 55% of company sales (roughly four billion dollars), executed by a corporate purchasing department of approximately 40 people.

Organization

Reporting lines. The purchasing organization is headed by a vice-president for purchasing and distribution. This person reports to the senior vice president for strategic planning and corporate services who, in turn, reports directly to the CEO. As such, the priorities of the purchasing organization are as much operational as financial, focusing on customer satisfaction as well as the bottom line. Their published quality commitment states, "The purchasing and distribution department is committed to the on-time delivery of error-free products and services to our clients. Those products and services will adhere exactly to requirements."

There are approximately six directorates in the purchasing organization: organic raw materials, energy, inorganic raw materials and packaging, facilities and field purchasing, distribution, and purchasing and distribution--Europe. Services are purchased throughout the organization, however the facilities and field purchasing directorate handles the lion's share of service procurement activities. Within this directorate one finds most of the MRO, systems, and consulting purchases most closely associated with services.

Centralization. Corporate purchasing has made great strides in putting in place national and regional service agreements through which field customers place orders. There are over one hundred national agreements in place throughout the organization. Many of these national agreements are required to be used in the absence of compelling reasons to the contrary. Others are optional. In the absence of national agreements, field locations are authorized to make purchases up to $500,000 before they are required to make requisitions through corporate purchasing. This privilege extends to five-year deals not in excess of $2.5 million.

Contract standardization. Regarding the purchasing of services, based on a scale of low, medium, or high contract standardization, Company D rates high. Of the companies visited, Company D has made the most progress in creating useable standardized contract templates for the purchasing of services. In all, nine contract templates for the purchasing of services were provided covering nearly all conceivable areas. In addition, two summary agreements were provided for energy and natural gas. The contracts are readily accessible to buyers on-line, which has greatly helped to streamline the physical process of contracting for services.

Data Sources

Personnel Interviewed. The primary point of contact was the key interviewee. This person was the manager of facilities and field purchasing -- chemicals. Through this person's efforts, interviews were also conducted with the manager of purchasing services, the energy purchasing specialist, the director of distribution services, and four buyers of

information systems, environmental services, facilities services, and printing and information storage and retrieval services.

Documentation. Company D provided by far the most documentation of their processes and initiatives. In addition to an annual report and some of their marketing publications, they provided organizational charts, various purchasing procedures for different service commodities (environmental, information systems, natural resources), a purchasing policies manual, contractor questionnaires and selection criteria (engineering services), supplier performance measurement guides, a performance and learning plan for buyers, and a company performance review form.

The contract templates provided by Company D were for consulting services, energy, temporary personnel, engineering services, engineering, procurement, and construction services, computer systems (hardware installation and maintenance), industrial waste management, environmental consulting, material management, and systems analysis, design, and programming (software).

Main Ideas from Company D

The data sources from Company D described above yielded the following information. Figure 4-4 is the mind map or Company D.

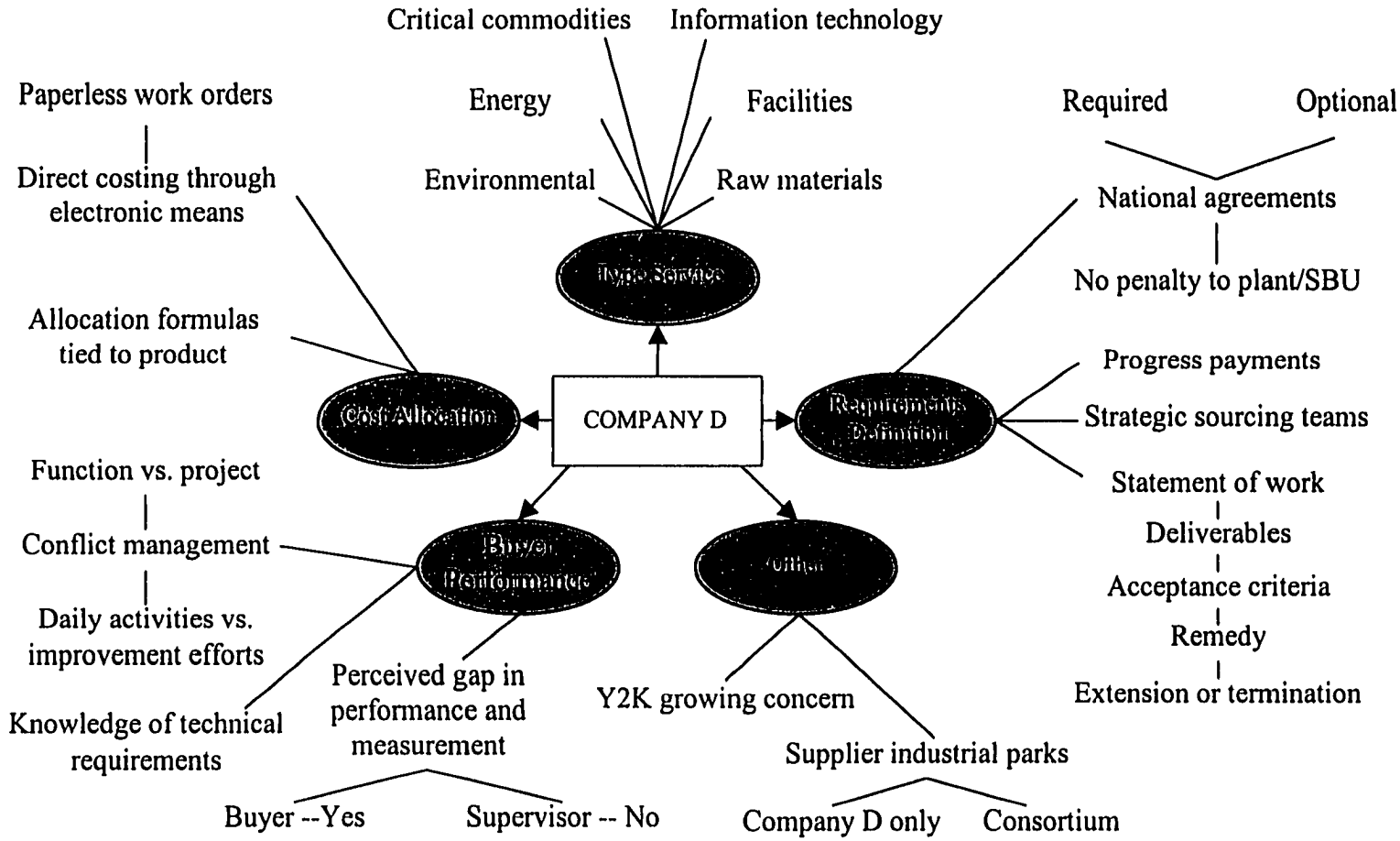

Figure 4-4: Mind Map of Main Ideas -- Company D

Types of Services Purchased

One can assess Company D's perceptions of the types of services they buy based on their organizational structure and on the template contracts they have developed. Among the directorates is one for energy purchasing. Company D needs a steady influx of electricity, coal, and natural gas for its manufacturing processes. Energy is also a critical commodity directly related to its core business. At one time, the company owned its own gas wells and was able to service many of its own processes. However, the pipeline network became too complicated to be managed internally, particularly with the growing variance in demand forecasts, and became an increasingly large drain on the company's manpower and financial resources. The company elected to put its gas supply needs in the hands of major gas suppliers and third party carriers who manage the natural gas network between the utility and its various customers. They are able to provide the best price because they can maintain steady volumes by counter-balancing the varying demands of many customers. In both hard savings (price of the gas and manpower reductions) and soft savings (management efficiencies), Company D has been able to slash one third from its annual outlays for natural gas. The risk is that the company no longer has control of a strategic resource, however it believes it mitigates that risk through the symbiotic relationships it has developed with the carriers and gas providers.

Within the area of environmental services, Company D purchases consulting and engineering and laboratory services for the remediation and disposal of hazardous materials (HAZMAT). Third party laboratory services are particularly important because

they provide data evaluation on the effectiveness of the company's compulsory environmental protection processes. Terms and conditions on these contracts are very well defined and in accordance with federal, state, and local regulation. Contrary to conventional purchasing wisdom, because of the conflicting interests and environmental sensitivities involved in HAZMAT issues, several suppliers of these services are necessary to fit the tasks and manpower requirements associated with environmental protection compliance. Company D maintains five preferred suppliers on disposal issues, and four to six preferred suppliers for remediation.

Most of what would be considered MRO purchasing falls within the facilities and field purchasing directorate. Company D's MRO services are similar to those of the other companies visited: facilities maintenance, construction, maintenance and repair of equipment, craft labor, temporary labor, engineering services, some types of consulting, and materials management. This latter case -- materials management -- is an example of an innovation in service purchasing for which Company D is justifiably proud.

Using five acres of land just outside the gate of its largest manufacturing facility containing more than 20% of its assets, Company D developed an industrial park for a dozen or so of its largest suppliers. In this area these suppliers leased space from the building contractor to supply, manage, and control inventory of all major MRO parts used at that Company D facility. Company D completely outsourced its material management function at that facility to its vendors, and created the ideal environment in which these vendors would be successful. Company D spends $20 million per year among these suppliers, but reduced its own inventory by $7 - $8 million, generating an annual savings

of over $1 million. The vendors have become so successful there that they've been able to win business from other customers, and now Company D makes up only 10 - 15% of each vendor's business in this area. All interested parties have benefited.

What made the success of this industrial park possible was the enormous volume of business Company D was able to offer at one facility. That condition rarely exists. In the absence of that condition, Company D is exploring the possibility of forming a consortium of companies with facilities in proximity of each other. Where they can standardize requirements between companies enough to offer profitable volumes to common vendors, they hope to recreate the successes of the original supplier industrial park. While this is a much more complex and problematic undertaking, these initiatives are ongoing.

Also within the facilities and field purchasing directorate is an information technology purchasing specialist. Without hesitation, this buyer stated that the biggest problem in purchasing information technology services is lack of diversified IT consulting companies. In most cases, demand is so high for these services that companies have specialized into specific IT service providers. Since a typical large manufacturing company's IT demands are diversified, such a company must retain a myriad of IT service suppliers. Thus, it is difficult for a company to gain the advantages of a concentrated supplier base for information technology.

The buyer also stated that the problem is greatly exacerbated by the year 2000 (Y2K) problem addressed in such strong terms by the buyer at Company B. According to this buyer, demand is so high for Y2K services that the problem goes beyond high prices. In some cases, Y2K services are so scarce as to be simply unavailable.

Requirements Definition and Pricing

Consistent with the first three companies visited, Company D informants universally testified that understanding and articulating requirements is the definitive difference between purchasing services and purchasing tangible material goods. Still, Company D seems to have made the most progress in establishing processes for properly defining requirements and translating them into standards that make the purchasing activity more efficient and effective. With over one hundred national agreements in place for both material goods and services, buyers and customers have a well-established template with which to begin. A clear point made by one of the managers though, was that use of a national agreement should never result in a penalty to a plant or strategic business unit. In other words, exceptions to the use of a national agreement would be granted if the buying customer demonstrates that it could attain the same product or service for less, or that its legitimate requirement went beyond the scope of the national agreement. In either case, purchasing would work with the buyer to meet the new requirement through use of a different supplier, or in some other way mitigate any tangible loss sustained by the customer from using the national agreement.

Many of the national agreements were developed by strategic sourcing teams. These multi-functional teams were established to look for opportunities across the global organization to standardize requirements to create volume leverage. Strategic sourcing teams helped create standardized requirements for the buying of maintenance services for chemicals, for glass, and for coatings and resins, and for the buying of engineering services, energy, and environmental services. Many of the materials management

contracts at the industrial park were established through the work of strategic sourcing teams.

Company D has also standardized the process with which it buys services. One buyer of facilities maintenance services for field locations and for the corporate headquarters demonstrated the five steps used to ensure all aspects of the requirement are addressed: 1) define the statement of work, 2) define the deliverables, 3) define the acceptance criteria of performance, 4) define adequate remedies in the event of unacceptable performance, and 5) establish criteria for either extension of termination of performance. While these steps may seem intuitive, this buyer confirmed what was found at the first three companies visited. That is, that customers who are adept at defining requirements for material goods, do not think in those terms when requisitioning services. Through the coordinated efforts of the purchasing department, Company D has made strides in remedying this problem by training customers to think through these five simple steps each time they must define a service requirement.

Buyer Performance

Company D has a formalized buyer performance and learning plan and a process for evaluating buyer performance. All managers interviewed believed that services purchasing stretched buyer performance beyond what were once considered typical buying tasks, mostly due to the subtleties of service requirement definition. Service buyers, especially buyers of technical services, are called upon to be more and more knowledgeable of the specific tasks and requirements. However, the buyer's

performance and learning plan reflects this. In one case, the learning plan of a buyer of environmental services called for specific training in a HAZMAT disposal quality initiative. This training was designed to give the buyer a greater understanding of HAZMAT disposal processes and initiatives so that he or she would be better able to identify, define, and articulate customer requirements for this service when necessary.

All the managers interviewed were shown Figure 1-5 (page 24) illustrating the possible gap between buyer performance standards and how buyer performance is perceived and measured. Each manager stated that he or she understood the chart and believed that such a gap in perception exists to one degree or another from outside the purchasing organization, but that within the organization buyer performance is perceived and measured generally to the expected standard. In other words, among purchasing supervisors, no gap exists. The buyers interviewed had a different perspective. While they showed confidence that they were being rated fairly by department supervisors, they showed less confidence that supervisors knew exactly to what extent peripheral business skills and talents were required to fully satisfy internal customers. One buyer said that services purchasing required a completely different mindset than that of buying material goods. It is not enough to simply identify a service requirement; a buyer must gently derive the totality of the customer's expectations for the service, even when those expectations are unspoken or subconscious. Most times customers do not articulate those expectations because of their subconscious preconception of how the job should and will be done. Since they know of no other way, they have no expectation that another way will be attempted. It is not until after or during performance that the problem surfaces,

usually too late to correct without conflict or financial waste. A buyer can avoid this by ascertaining those expectations up front and, to some degree, positively influencing the requirement by guiding and cajoling the customer into fully demonstrating those expectations in a way that is consistent with other standardized requirements. Of course, when the buyer is truly skilled, anything suggested will always appear to be the customer's idea.

The buyers interviewed did not seem to think management fully understands the complexity of the buyer's position. Not only must the buyer bridge whatever gap may exist between customer expectation and corporate regulation, buyers must also find a balance between executing the daily functions of the job, and participating in quality improvement efforts which are often the initiatives of upper management. Take as a fictional example a buyer who is a participant on a strategic sourcing team to standardize requirements for the purchase of printing services. This SST will result in the selection of two suppliers, each to be awarded multiyear, high volume contracts. These contracts must satisfy an immediate requirement and should save the company time and money when compared to the provisions of the current myriad of printing contracts. So, the SST is a priority not only of the printing customers, but of the buyer's immediate purchasing supervisor. At the same time, the buyer is also assigned to a multifunctional quality action team which has been formed to improve the way meetings are scheduled and held in the company. This quality action team is part of the company's overall global quality initiative and thus has the support and attention of higher levels of management. The buyer is in no position to prioritize his or her commitment to these two teams. Both must

be satisfied. Neither can be compromised. In organizations striving to make the transition to total quality management through continuous process improvement, this conflict exists all the time. Often, the people it falls hardest on are the workers, or in this case the buyers.

The perceptions of the buyers interviewed at Company D is that performance measures do not, and probably cannot, fully account for the buyer skills necessary to manage (actually, to avoid) these two potential sources of conflict -- functional versus project needs and daily activities versus continuous process improvement activities. Further, sometimes even purchasing supervisors do not fully appreciate what buyers go through in attempting to simultaneously satisfy the expectations of customers, supervisors, and corporate management. Thus, among buyers, there is the perception that some gap does exist between buyer performance standards and the perceptions and measurements of that performance.

Cost Allocation

Company D is using some of the techniques of activities based costing to more efficiently and effectively assign purchasing costs directly to products and cost centers. Almost every action accomplished by buyers is assigned electronically to a job number or work order. Of course, these techniques are more easily accomplished for material goods than for services. Material goods are usually easy to connect to a product or strategic business unit. Services can sometimes be so connected, but are more often purchased for multiple products or SBUs. When this is the case, Company D uses two techniques to

assign costs as accurately as possible. For the actual cost of the service, the cost is allocated across products or SBUs according to formulas that are derived for each individual cost center as it relates to that particular service. So, though a particular environmental laboratory service may be purchased for the remediation of HAZMAT associated with multiple products, products that produce more waste are assigned more of the cost of the service. Costs for the service are assigned proportionally to the products based on empirical cost allocation formulas.

As for the cost of the purchasing effort to procure the service, if no single product can be identified, which is normally the case for the purchasing function, standard cost accounting overhead pools are available to allocate the cost across all products. Again, the feeling among Company D managers interviewed is that the effect of these overhead burdens on product costing is too small to adversely affect strategic decisions, and that the costs associated with empirically proving that contention far exceeds any perceived potential benefit.

Other Information

Figure D-1 shows two areas of other information that surfaced at Company D. One was the growing concern of the information technology buyer over the Y2K issue. The other regarded Company D's unique and successful initiative in purchasing material management services through its development of a supplier industrial park. Both of these areas were discussed above in the section on types of services purchased.

Company E: Package Delivery Service

Background on Company E

Core Business

Company E offers a single service as its core business. It is a business-to-business small package delivery service. This service is available to all business addresses in the continental United States through a hub and spoke system which has the country segmented into sixteen regions and serviced through 24 hub facilities and over 300 terminals and non-facility substations. It also serves Hawaii and Alaska, Canada, and has international gateways and partnerships that extend its service to Mexico and Europe.

History

The company began service in the 1980s in response to business demand for an alternative small package carrier. Their entry into the market helped stabilize prices and gave them an immediate sustainable market share. Company E began with just 33 terminals all east of the Mississippi River. In roughly ten years it grew into an influential force in the market and established its expertise in the small package, business-to-business segment. That expertise became attractive to one of the larger, more diversified market players. Recently, that company acquired Company E and maintains it as a

separate, independent business unit which continues to serve the small package, business-to-business segment of the market.

Size

Company E does approximately $1.5 billion each year in small package delivery services. Its annual spending in 1997 was just under $500 million, 80% of which is in some way affected by the corporate purchasing organization, which is made up of only fifteen purchasing professionals. By way of contrast, the new parent company has over 400 people in its purchasing department and has initiated formal efforts to benchmark itself against Company E in order to streamline its purchasing practices.

Organization

Reporting lines. The purchasing organization is headed by a director who reports directly to the senior vice president. Since the organization is relatively small, and far less bureaucratic than other companies visited, there is no obvious distinction between operational and financial goals. Since the company's success depends almost exclusively on its ability to perform a single service, operational and financial objectives are more closely linked. Therefore, the question of whether the purchasing organization reports through one or the other is not an issue at Company E.

Five branches within the directorate organize company purchases along supply streams. Each branch is headed by a purchasing manager. These groups are information

technology and reproduction, printed materials and uniforms, energy transportation and logistics, revenue equipment, rental, and fleet graphics (under which falls field supplies and purchasing card use), and facilities and material handling. Many service purchases fall within the energy, transportation, and logistics branch including warehouse and supply services, telecommunications, travel services, and receiving and traffic services.

Centralization. There is a firm belief at Company E that a strong, centralized policy group is needed to guide purchasing practices for the organization. Thus, corporate purchasing does affect most of the transactions that occur through the company. In many cases it is the contracting authority for a particular purchase, or has established a national contract which field locations are required to use. In other cases it has established procedures to allow regions and locations to handle their own purchases, particularly truck rentals (Company E does not own any of the trucks in its delivery fleet), allowing them to take advantage of local market conditions that offer better terms and prices than can be secured by the corporate office.

In an effort to decentralized smaller purchases and reduce the number of transactions flowing through corporate purchasing, the company has approved use of a purchasing card (P-card) for field managers. There are three different types of P-cards which give managers varying levels of purchasing authority in both dollar value and type of purchase. The average P-card value threshold is approximately $1000 per transaction and is used for MRO type items and services. In 1997, between 60 and 70 thousand transactions occurred through the P-card totaling roughly $12 million.

Contract standardization. Regarding the purchasing of services, based on a scale of low, medium, or high contract standardization, Company E rates medium to high. This is largely due to the concentrated focus the company has on its sole core business. Almost everything bought at Company E is purchased on a repetitive basis. These procurements are done with the P-card or with a standard purchase order. For special purchases, such as information technology for package tracking, contracts are written and terms and conditions specified on a case-by-case basis, but there are far fewer of these types of transactions. Its only contract templates are a standard contract for services and its purchase order.

Data Sources

Personnel Interviewed. The primary point of contact was also the key informant and the only person interviewed at Company E. This person is the director of corporate purchasing for the organization. In this particular case, other interviews were not scheduled because of a shortage of time and the unavailability of persons in the time period the company was able to set aside for the research.

Documentation. In addition to some marketing material, Company E supplied organizational charts and a confidential annual spending plan. It also supplied a standard contract for services and a blank purchase order which contains general terms and conditions.

Main Ideas from Company E

The data sources from Company E described above yielded the following information. Figure 4-5 is the mind map for Company E.

Types of Services Purchased

Of all the companies visited, Company E has the least diversified set of services purchased. Again, this is because it is a company completely focused on a single core business -- the delivery of small packages from one business to another. The relative homogeneity in the overall objectives and particular functions across all its 350 locations, combined with the fact that its single product is a service and not something manufactured or produced, limits the variety of the material goods and services it needs to procure.

Equipment rentals -- that is, trucks -- account for one million dollars per month in procurement spending. Though the physical truck is not actually a service, the maintenance and repair services that are provided with the truck rental are certainly activities that Company E could perform but chooses to outsource so it can focus its resources on the job of moving packages. In fact, Company E actually purchases the vehicles brand new, to order, so that it can ensure that vehicle specifications, package handling equipment, and package tracking electronics are standardized in all vehicles. Then it sells the vehicles to a leasing company who, in turn, leases the vehicles to local rental companies that provide the maintenance and repair services Company E requires.

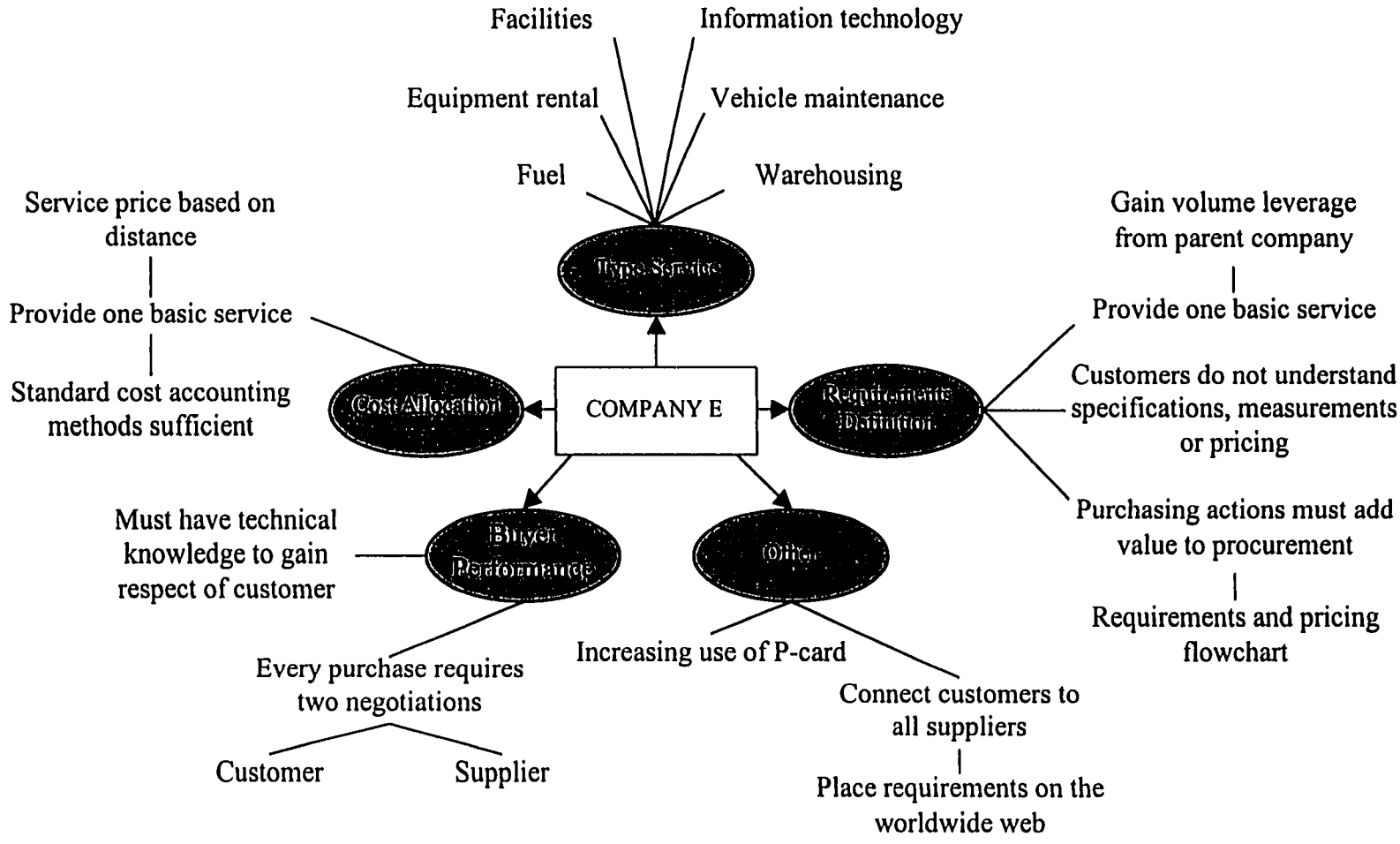

Figure 4-5: Mind Map of Main Ideas -- Company E

As convoluted as this sounds, the informant is vehement that this is the most efficient and least costly way for Company E to obtain and maintain the truck fleet it needs to perform its service.

Packages do no sit anywhere very long while in Company E's possession. If they did, customer satisfaction would plummet and market share would surely be lost. However, warehousing space is needed, particularly at hubs and terminals, for cross-docking operations which transfer the packages from interstate tractor-trailers to smaller delivery trucks. Though most hub and terminal locations are owned by the company, much of the extra space needed and some of the package handling operations and services that take place in that space are outsourced.

Facilities and field purchasing account for many of the MRO services necessary to maintain the 350 hubs, terminals, and substations. Company E believes in maintaining the leanest possible workforce, related directly to the handling, movement, and tracking of packages. Even driver contracts are outsourced. Neither the truck nor the driver used by Company E to provide the service of moving packages is a Company E resource. Anything that can be outsourced at facilities is outsourced. For example, truck-washing services are bought locally by hub facilities using either the P-card or the standard contract for services. Also, office products, company cars, and the services required for their maintenance and repair are all outsourced.

As is being demonstrated at each company visited, information technology is a separate category of services purchasing. At Company E, this technology usually involves software that can improve the tracking of packages from the time they are

placed in the care of the company until the time they are delivered to the customer's specified destination. These systems usually have the characteristics of a capital purchase in that they are investments that determine the way the entire company will do business. These purchases are always handled by IT purchasing specialists at the corporate office, as part of a cross-functional team of system users who provide important inputs regarding requirements and specifications.

Requirements Definition and Pricing

According to the director, purchasing should only be taking an action if that action adds some value to the procurement process. One key value procurement can add is seeking out opportunities for leveraging corporate volume by standardizing requirements. Because Company E is relatively small and highly focused, most purchases do not involve the volume that lends itself to advantageous prices and terms. Since it has been acquired by a much larger company, though, the director has initiated efforts to create volume by seeking out opportunities for standardizing requirements between companies. For example, a newly developed, software driven, piece of electronics for tracking packages can be used at either company. Company E has had this developed for its use and is now hoping to persuade the parent company that they too can use it, thereby creating demand for the product that will dramatically reduce production costs for the supplier. In that case, all three companies benefit -- the supplier by larger margins on greater volume, and the two buying companies on reduced costs. The director said he believes similar opportunities are available for outsourced services, though the companies

are just beginning to work together on such initiatives and need to demonstrate some successes before multiple projects can be initiated.

The director stated outright that, while internal customers do an adequate job of specifying material goods, and usually have a strong sense of what they want done regarding service requisitions, with services they simply do not apply the principles of establishing a statement of work, specifying requirements, developing quantifiable measurements that ensure work is progressing properly, and determining fair and reasonable prices for what is being procured. This is probably even truer in a service organization like this one because far fewer customer employees have a technical background through which one often learns those principles and associated techniques. A second key value that the purchasing department adds to the procurement process is in the definition of such requirements, particularly when it involves helping the customer separate what is actually necessary from what is unnecessary, costly, and potentially burdensome to getting the job done (as with overspecified "bottlenecks," presented in Figure 2-2 on page 55).

As an example of this, the director was excited about the execution of a contract that was signed the morning of the interview. Because neither party to the contract was ready to release the details of the agreement, the director was unwilling to talk about its specifics. However, the reason for the excitement was that the purchasing department had saved the company almost one million dollars on the purchase of a particular service by helping the customer step through the process of determining, describing, and pricing the service prior to ever making contact with potential suppliers. They did this by

breaking the service down into smaller, more tangible components that were easier to understand, define, and measure, and for which reasonable prices could be more easily estimated. Also, material requirements for the service were completely separated and specified separately, aiding in the simplification of the overall service components. According to the director, the key is to identify and separate the cost drivers in the service and build a separate service component around each one. After specifying each, the separate components can be put back together along with the material requirements to ensure a seamless and complete requirement has been addressed. This occurred in the procurement process which culminated in the contract executed that morning and, to the degree he was able to, the director was proud of the effort and excited to talk about it.

Buyer Performance

According to the director, one way that a buyer gains the respect of the internal customer is by demonstrating a knowledge of the requirement. This is particularly true when the buyer is attempting to influence the requirement for the sake of standardization, or when the buyer is trying to help the customer create specifications. This is not quite as imperative when material goods are being purchased because customers generally have a good sense for what is required and how it should be specified. Since these things are always more difficult in the purchasing of services, though, to be effective in dealing with a customer, buyers especially need to become intimately familiar with the service the customer is seeking since the customer himself is going to be less capable of articulating those requirements.

The director then made the point that, from the buyer's perspective, every purchase involves two negotiations -- one with the internal customer and one with the supplier. One of the most dramatic changes in the field of purchasing has been the growing emphasis placed on the expectations of buyer performance to be effective in dealing with the internal customer. Not only is this effectiveness an essential ingredient of the overall Deming quality paradigm established in the 1980s, by virtue of the effects it has on strategic purchasing initiatives, consolidation of the supply-base, supplier partnerships, and securing the advantages of world-class purchasing practices, it has become a vital element in establishing the competitive advantages available to companies through strategic purchasing. The director makes the point that, in many ways, this first negotiation -- the one with the internal customer -- is the foundation upon which success in the second negotiation -- with the supplier -- is built.

According to the director, purchasing supervisors at Company E are aware of the expectations of buyer performance and measure buyer performance, accordingly. Buyers are fully aware of what is expected of them and are given the tools, training, and management support to be successful. So among purchasing executives, a gap between buyer performance and expectations and measurement of that performance does not exist.

If a gap does exist, it exists among those outside the purchasing organization. For actual customers of purchasing, the gap closes a little bit each time they work with a buyer and are satisfied by the experience. Thus, the gap is closed one customer at a time, one transaction at a time. For senior management, the gap is closed each time purchasing managers demonstrate tangible savings derived by the actions of purchasing

professionals. Finally, for the rest of the organization, the gap is closed more slowly, only through the reputation that is slowly developed by the testimony of satisfied customers of the purchasing organization.

Cost Allocation

Since the company offers one basic service as its core business, allocation of overheads across products is not a problem at Company E. Therefore, the inaccuracies that may or may not occur in product costing due to increased cost allocation burdens associated with services procurement are not perceived to be a problem. Prices for the delivery service are determined primarily by the distance a package must move. Fuel costs are a far more influential variable on the cost equation than any minor expansions in overhead or G&A cost bases, or in a negligible fluctuation in rates or factors. So, as with the other four companies thus far visited, there is the perception that standard cost accounting methods for assigning the costs associated with the purchasing of services, and determining rates and factors for allocated costs are sufficient to accurately determine the cost of the service product offered to the customer (business-to-business small package delivery) and create corresponding prices that optimize the total profit equation.

Other Information

Increasing use of the P-card has already been discussed above. Another interesting initiative being contemplated by the director of purchasing is to more closely link

customer requirements to any and all potential suppliers through use of the Internet. Among the ideas being considered is to post customer requirements on the company's worldwide web site in an effort to reach any interested supplier. According to the director, this accomplishes three things. First, it opens the requirement to suppliers that Company E may not even know exist. Even though the objective is to consolidate the supplier base, that base is fluid. There is always room for new suppliers who may offer simpler, more innovative and cost effective ways to satisfy the requirement. Second, it encourages innovation among current suppliers because they know that potential replacement suppliers always have access to the requirement on the Internet. Finally, it fosters the practice among internal customers of first articulating the requirement with the help of a purchasing professional, and then maintaining or updating the requirement as conditions change.

Company F: International Airline

Background on Company F

Core Business

Company F is a U.S. airline servicing both domestic and international passengers. In addition, it operates a network of regional express airline service companies and a major northeastern daily shuttle service.

History

Company F is a product of airline deregulation in 1978 and the resulting consolidation of airlines throughout the 1980s. The genesis of the company can be traced back more than fifty years to a small regional airline that specialized in airmail delivery prior to entering into the passenger service market. The regional airline slowly expanded its routing network through the years until deregulation permitted even greater freedom in this area. It survived consolidation by merging with other airlines through the 1980s and eventually went international. At the same time, its regional network and shuttle service continued to grow, making Company F one of the top ten passenger airlines in the world. The last three years have seen dramatic investments in modernizing the airline fleet and the corporate image of the company in preparation for the 21st century.

Size

Company F has almost 5000 daily departures serving over 200 airports worldwide. Its 400 aircraft and 41,000 employees served almost 60 million passengers in 1997. In that year it had an operations revenue of over $8 billion. The company is serviced by a purchasing organization of roughly 140 people spread throughout the company. These people spent $1.6 billion in normal purchases in 1997, which was more than half of the company's purchasing budget of $3 billion. This latter figure is misleading, however, because the remainder for that year was spent in large capital purchases (aircraft) which is not indicative of regular annual spending.

Organization

Reporting lines. Corporate purchasing is headed by a vice president who reports directly to the CEO. The organization is divided into five directorates -- fuel, aircraft and technical services, customer services, strategic programs, and corporate purchasing. The current vice president has a financial background, and in the delicate balance between financial and operational priorities, purchasing's focus recently has been slightly more financial. However, purchasing is organized to support each individual plant (aircraft) and facility (airport terminal) in order to give the internal customers at each location the opportunity to fully satisfy the external customer, or passenger.

Centralization. According to the informant, a long-time purchasing professional, the concentration on purchasing centralization swings along a pendulum. Company F is currently experiencing a period of high centralization of purchasing actions, but also believes in the lowest level of decentralization for administration of those contracts. Once national contracts are definitized, aircraft and terminal managers generally deal directly with suppliers without the interference of corporate purchasing personnel. For example, once a contract is put in place for catering transportation at a given terminal (moving on-board food and catering supplies directly to the aircraft on the flight-line), the end-users -- those managing the terminal and the aircraft -- and the suppliers are responsible for ordering, scheduling, receiving, and stocking the aircraft appropriately. Purchasing professionals do not get involved in the user-supplier relationship again until a new contract is needed or a problem develops that cannot be solved by the two principal parties.

Contract standardization. Regarding the purchasing of services, based on a scale of low, medium, or high contract standardization, Company F rates medium. On the one hand, like Company E, since they provide only one basic service -- airline travel -- the services they are required to buy in support of that are standard and repetitive. That repetition fosters standardized requirements and stable contract types. However, since Company F is in the midst of the same outsourcing revolution that is gripping the rest of business, they are still buying many services for the first time and have not yet made great progress in defining standardized requirements for services or the complementary standard contract templates that would soon thereafter follow. What contract templates for services they have developed they were reluctant to supply for proprietary reasons.

Data Sources

Personnel Interviewed. The primary point of contact was the key interviewee at Company F. This person is the manager of strategic program systems within the strategic purchasing directorate and has held several other positions throughout the purchasing organization in a twenty-plus year purchasing career. Other interviews were not scheduled because of a shortage of time and the unavailability of persons in the time period the company was able to set aside for the research.

Documentation. In addition to their annual report and organizational charts, Company F provided strong documentation of its career development program for purchasing professionals. Included were an employee career development plan and the company's performance evaluation form. They also provided a manual describing the

career development program which included a description of their 4-level purchasing career progression. Each level has a description of the execution authority associated with that level, job scope, responsibilities, accountabilities, education and experience prerequisites, equipment use requirements, physical demands, working conditions, and specific interpersonal, business, and technical skills required. It was by far the most detailed purchasing career development program description offered by any of the companies visited for this research.

Main Ideas from Company F

The data sources from Company F described above yielded the following information. Figure 4-6 is the mind map for Company F.

Types of Services Purchased

It is not an exaggeration to state that Company F is currently in the midst of an outsourcing revolution. Any activity that is not directly associated with the on-time operational performance of its flight schedule, which is the central function of its core business -- passenger travel -- is subject to being outsourced. This can include everything from engine maintenance and repair to on-board cleaning services and business communication systems to employee drug testing. The manager being interviewed gave three reasons for this relentless scouring of activities in search of outsourcing opportunities. First, it almost always costs less to buy the service than to have it

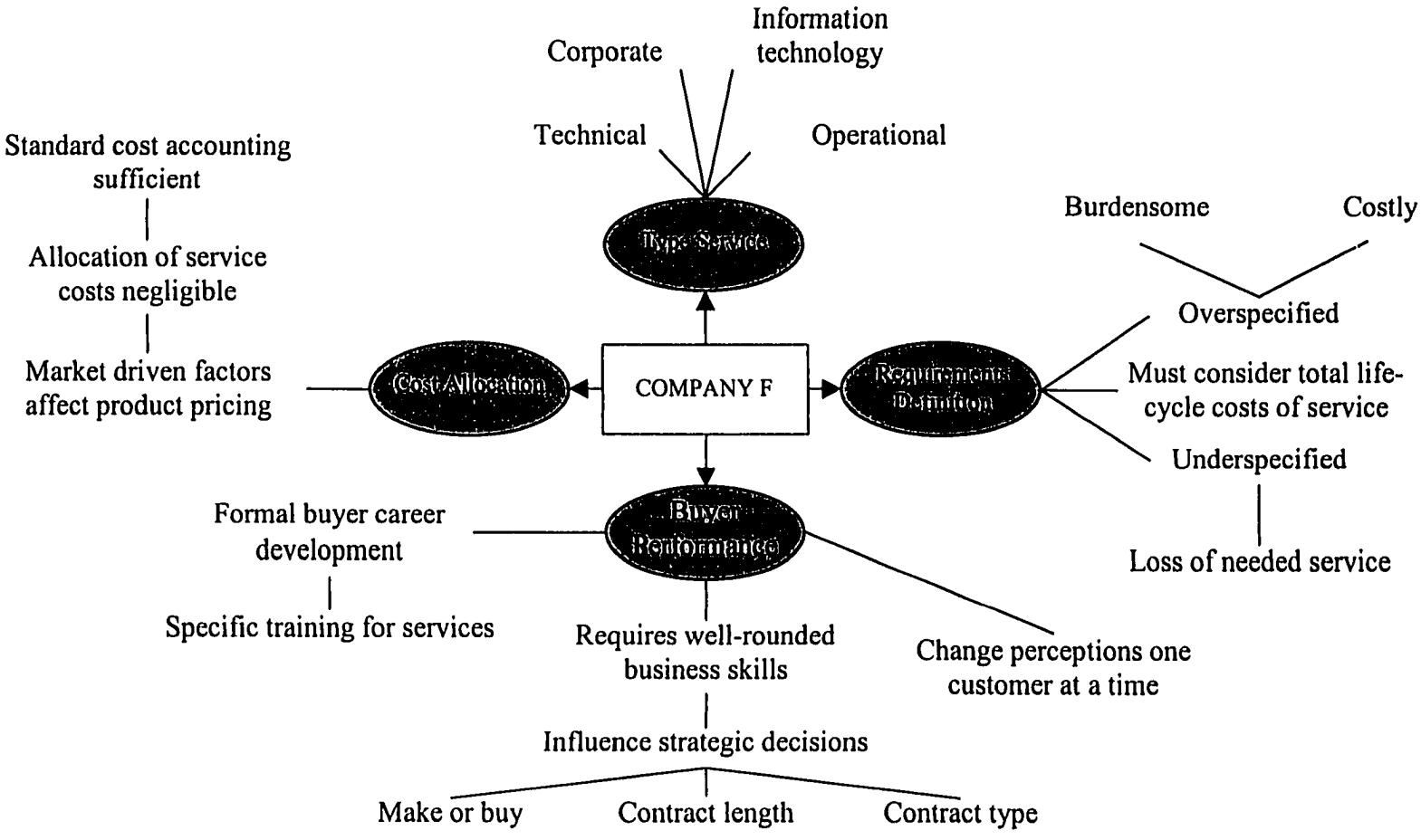

Figure 4-6: Mind Map of Main Ideas -- Company F

performed by company employees. Because of its size and commensurate overhead burdens, Company F's hourly wage will almost always be higher than that paid to the employees of the supplier for the same job. Also, once the activity is outsourced, Company F no longer needs to supply the personnel, equipment, or management infrastructure necessary to support the activity. There can be dramatic direct savings associated with outsourcing an activity. Second, company resources -- money, personnel, equipment, management expertise -- can be more acutely focused on the central functions of the company, which combine to establish the core expertise from which it derives its competitive advantage. Anything that diverts resources from the flawless pursuit of those functions weakens the company in its most vital competitive area. Finally, by outsourcing, the company turns over these other activities to suppliers who have the same focus on them as Company F has on its core functions. The suppliers focus their money, their equipment, and their technical and management expertise on the activities from which they derive their competitive advantage.

For the most part, one can categorize purchased services based on the way the purchasing department is organized. However, as has been found with all the companies visited, since some service purchases do not fall neatly into such compartments, types of services purchased are more clearly defined according to Figure 4-6.

Technical services are focused primarily on anything to due with the air operations of the aircraft, such as aircraft maintenance and repair. These activities include regular, between flight maintenance, periodic comprehensive refurbishment, and repair and replacement activities, as needed. These are not functions that the company surrendered

to outsourcing easily. There is a strong rationale that these functions and the expertise required to properly perform them are best maintained within the company. In fact, in the case of older aircraft, they are still performed by Company F employees. However, the trend has been to outsource these activities as newer aircraft come into the inventory. The reason is that the technology advances on the newer aircraft are outpacing Company F's ability to modernize the infrastructure necessary to perform these functions adequately. The time and expense in financial and personnel resources required to develop and maintain an expertise in this newer technology is not worth the potential benefit. So, as the percentage of newer aircraft grows, the amount of maintenance and repair activities maintained within the company will continue to decrease.

Operational services include those things that keep the company running every day. A list of these outsourced activities includes catering transportation, cargo service (except passenger luggage), warehousing and distribution of in-flight supplies, on-board cleaning services, consignment inventories of Company F spare parts, temporary personnel services, line maintenance services at terminals, and janitorial and cafeteria services.

Corporate services are those that affect the entire company. Examples include drug-testing services, employee assistance plan (EAP) services, and management training and other management consulting-type services. As an example of outsourced training, purchasing employees have eight recurring training days scheduled each year covering both purchasing specific skills and general management, business, communications, and interpersonal topics. These days also cover such things as sexual harassment training,

and EAP service awareness training. Much of this training, though not all of it, is handled by third party suppliers who specialize in such things.

Though Figure 4-6 makes it a separate category of services, the corporate purchasing directorate also buys most of the company's information technology. This of course is a vital element of any airline's core business because it involves flight scheduling and the passenger reservation system. At one time the activities associated with development and implementation of such systems were maintained internally. However the technology has grown far too complex and sophisticated to be trusted to the care of anyone other than information technology specialists. Now, the equipment and the network is maintained by an IT supplier, as is the training required for its use. As an interesting aside, the most recent passenger reservation system incorporated by the company was developed to address the Year 2000 issue. Company F was the only company visited that demonstrated a positive, tangible, forward step regarding the Y2K problem.

Requirements Definition and Pricing

According to the manager, requirements definition for services is so important and difficult that special training is required for buyers who must purchase services for the company. There are two problems associated with properly defining requirements -- overspecifying them and underspecifying them. If requirements are overspecified, they become unnecessarily costly and burdensome to the performance of the activity, and can damage the overall profitability of the company's core business. These requirements fall into the category of process bottlenecks described in Figure 2-2 (page 55). A key focus

of the buyer is to question every requirement and every specification to ensure the requirement is valid and that the specification does not exceed the requirement. This issue was addressed by every informant at every company visited.

On the other hand, buyers must also ensure every requirement is addressed when outsourcing a function. Among the eight companies visited, the manager interviewed at Company F was the only one to point out that sometimes, especially in large companies, managers do not always know everything that is being accomplished by company personnel. When an activity is outsourced, the specified service provided might not cover some other activity that was previously provided by the eliminated in-house person or group. For example, in one particular instance, Company F outsourced a portion of its IT training and dissolved the group that previously provided it. When the next cycle of a specific management training course came due, the company realized that the dissolved group that previously performed the since outsourced IT training also provided this particular management training. By outsourcing one activity, they lost their internal ability to perform another activity. In this case the problem was relatively easy solve. In other cases the problem may be more critical, such as in outsourcing engine maintenance activities or managing inventories.

Another item that came up regarding the pricing of outsourced activities was the notion of considering total life-cycle costs of the service rather than simply the transaction costs. Although the manager did not describe it this way, Company F's focus on this concept is an example of the application of the total cost of ownership model also discussed in Chapter 2 (pg. 65). This is important because it is at the heart of whether it

is profitable to outsource the activity in the first place. According to the manager, life cycle cost analysis also affects the length of a contract and the type contract used. It may be that an outsourcing action is not profitable unless it is longer. For example, Company F determined that a ten-year contract was required for engine repair services in order for Company F to fully reap the benefits of such an action. Also, in some cases, life-cycle costs affect whether a fixed-price contract, cost contract, time and materials contract, or some other contracting devise is appropriate for the activity being outsourced. A combination of these contracting types was used for the engine repair services.

Buyer Performance

As was mentioned earlier, Company F has a well-developed buyer career development program. It includes steady progression through a combination of experience building, education, and training. It is also beginning to acknowledge the need for separate training for services purchasing. There are two reasons for this. First, as described above, services purchasing requires extraordinary skills at defining requirements and properly specifying those requirements. An error in requirements definition, and under- or overspecifying requirements can be extremely costly to the company. Secondly, outsourcing decisions and activities generally have more strategic implications. For this reason, the buyers of services must have a more well-rounded business acumen than what was previously necessary for the purchasing of material goods or for more traditional buying activities. For example, the manager noted that service buyers need more training in contract law in order to execute a contract for

services since the provisions of the Uniformed Commercial Code (UCC) do not apply. They also need a greater knowledge of contracting methods, since few service purchases can be accomplished by purchase order and often require more sophisticated contracting terms and conditions. The manager also acknowledged what has often been stated in these interviews. That is that service buyers, particularly, need exceptional interpersonal, communication, and negotiation skills in order to effectively deal with both internal and external customers.

The manager stated categorically that purchasing supervisors at Company F are well-aware of the skills required of and exhibited by buyers, and measure and evaluate them accordingly. Thus, within the purchasing organization, no gap exists between buyer performance, and perceptions and measurements of that performance. The levels of buyer progression, printed skill sets, education and training requirements, and evaluation forms all seem to confirm this. The manager does believe that a gap between performance and expectations or perceptions of buyer performance exists everywhere else in the company, especially among first-time customers. However, each time a customer works with a buyer, the gap is incrementally but steadily closed. The manager confirmed what has often been stated by other interviewees at the companies visited for this research. That is that changing such perceptions among the rest of the organization is accomplished one customer at a time.

Cost Allocation

Consistent with what has been universally stated thus far by informants at all the companies visited, this informant perceives that streamlined purchasing procedures and whittled-down purchasing organizations have reduced the overhead burden associated with purchasing departments, even with the increased dollar amounts being spent. Product costs at Company F are the price of airline tickets against which overhead costs are applied universally across the entire company. Purchasing's contribution to that overhead pool is so small as to be virtually non-existent.

Assigning the costs of outsourced services directly to products is a marginal concern to Company F because there are so many complicated market-driven variables --such as demand and competition -- that effect the pricing of airline tickets for particular routes. Also, there are so many individual products (routes) that allocating the cost of an outsourced service like engine repair equally across all products will have very little effect on the relative price of one route to another. So, standard cost accounting methods of cost allocation are deemed sufficient, and the cost of investigating any potential problem not worth any perceived potential gain.

Other Information

Everything discussed with the informant at Company F was related to the four basic areas of inquiry and has been discussed above.

Company G/H: Heavy Industry Commodity Manufacturer

The last two companies visited, Company G and Company H, are actually part of the same overall purchasing department in a major, heavy industry commodity manufacturer. Since the company is the largest of all those visited as part of this research, and since there is a great deal of autonomy between corporate purchasing (Company G), and plant (regional) purchasing (Company H), the findings at each are being presented as separate cases. This is justified by their unique purchasing environments, their autonomy, and by the differing issues they face. When referring to the overall company to which both of these parts of the purchasing organization belong, the term "Company G/H" will be used. When referring to each part of the organization separately, the corporate portion will be addressed as Company G, and the plant portion will be addressed as "Company H."

It should be noted here that treating them as separate cases is merely an organized and logical way of presenting the findings gleaned from this large, diversified, and highly decentralized purchasing organization. It does not imply that they are separate companies, or independent companies operating under the same parent company. Nor does it imply that there is a parochialism that exists among these two parts of the organization, or that either is sub-optimizing their individual goals to the detriment of the corporation. In fact, they are cooperating elements of the same corporate structure, and are each driven by the same strategic objectives and corporate goals. Further, the plant purchasing organization is subordinate to corporate purchasing when such issues arise, and is bound to applicable corporate purchasing policy.

The following background section outlining core businesses, history, size, organization, and data sources, will address both Companies G and H. Then the main ideas from Company G will be presented, followed by the main ideas from Company H.

Background on Companies G and H

Core Business

The core business at Company G/H is the production and sale of a fundamental manufacturing commodity (and one of its major components) which it supplies to customers in several different physical forms. These commodities are not for sale to the customer at the end of the supply chain, but rather are produced primarily for sale to thousands of other manufacturers who use them in the production of an endless stream of products. This core business lends itself to several other activities which include the management of mineral resources, domestic mining operations, and engineering and consulting services. The company has also diversified into some areas of real estate development and management, and leasing and financing activities. Company G/H is part of a larger corporation which consists of one other separate entity in the energy and oil supply industry.

History

Company G/H was formed at the turn of the century through the acquisition of several smaller commodity producers. At the time, it was the largest business enterprise ever launched, and accounted for 67% of the nation's production of the commodity in its first year of operation. The early part of the century witnessed tremendous growth in the demand for this commodity, followed by a dramatic downturn beginning in the 1970s. In the 1980s, several major consolidations and reorganizations in response to the changing financial conditions in the industry allowed the company to remain viable. This included a restructuring of its manufacturing operations to reduce production by nearly two-thirds. It has since divested itself of many of its peripheral business activities and updated its production technology to remain the country's largest and cleanest commodity producer.

Size

Company G/H had almost $7 billion in revenue in 1997, which continued a pattern of steady growth throughout the 1990s. They employed roughly 21,000 people, a number that has stabilized since the radical downsizing that has reduced the labor base from an all-time high of 100,000 in the mid-1960s. Much of this downsizing occurred through divestiture of ancillary business ventures such as railroad operation and chemical production, but some of it has occurred through a) reduced commodity production, b) improved production operations, and c) outsourcing of non-core activities.

The purchasing organization that supports Company G/H is roughly 65 individuals who spend roughly $600 for every ton of the commodity produced. Twenty years ago it took more that 200 buyers to spend $ .50 per ton of commodity.

Organization

Reporting lines. Purchasing operations are organized mostly along operational lines. There are three different vice-presidents responsible for some type of procurement. They are for environmental affairs, raw materials, and technical and management services. Two of the VPs each have purchasing professionals that specialize in those particular areas -- environmental and raw materials. The bulk of the purchasing organization, however, falls under the third vice president. This purchasing organization is headed by a general manager who reports directly to the VP.

There are nine branch managers who work for the general manager, each with a staff of purchasing professionals. Six of the nine branches are actually regional purchasing offices responsible for Company G/H's five major production sites. In fact, what this research is referring to as Company H is the regional purchasing organization represented by one of these branches. The other three branches represent energy and headquarters purchasing, strategic materials and processes purchasing, and special projects purchasing. Company G is the branch that purchases strategic materials and processes for the entire company.

Centralization. Company G/H is the most decentralized of the seven individual companies visited for this research. Decentralization is appropriate because of the unique

mission and requirements at each of the company's five major manufacturing facilities. Decentralization of purchasing activities to the regional facilities primarily applies to those types of buys that are higher in the number of transactions but relatively smaller in dollar amount. These types of buys include MRO, some construction at the plants, and craft labor services. The company's volume leverage is maintained on higher dollar procurements by maintaining those purchasing activities at the corporate level. These areas include strategic materials and processes, environmental services, energy, raw materials, and some engineering services.

Contract standardization. Regarding the purchasing of services, based on a scale of low, medium, or high contract standardization, Company G (corporate purchasing) rates medium and Company H (purchasing at one of the company's five major production facilities) rates low to medium.

At the corporate level, Company G is struggling to develop standardized requirements for engineering services, environmental and other professional services, and plant operating services that are not within the authority of the regional purchasing staffs. It has also made an effort to create a year 2000 compliance clause for every contract that forces suppliers to address the transition of information technology into the new century. Requirement standardization and the development of complementary standardized contract templates is a major objective at the corporate level of purchasing because they are dealing with requirements for the entire company.

While Company H, on the other hand, also benefits from the advantages of standardizing requirements and developing complementary, standardized contract

templates, their requirements are more dynamic and variable over the short-term. Contract templates are desirable, as long as they can be adapted to specific and immediate conditions. For example, Company H has one basic standard service agreement that it uses to purchase whatever services it needs. Terms and conditions specific to a particular buy are developed as requirements dictate. This makes purchasing at the plant level slightly more fluid and responsive to a dynamic environment.

Data Sources

Personnel Interviewed. The primary point of contact at both Company G and Company H was the key interviewee at each place. At Company G this person was the manager of strategic materials purchasing for the corporation, an organization of seventeen people. At the recommendation of this manager a contract attorney associated with corporate purchasing was also interviewed.

At Company H, the key interviewee was the manager of purchasing for the regional facility, an organization of nine people. Like the manager interviewed at the corporate office, this manager reports to the general manager of purchasing for the corporation. It is also important to note, however, that the Company H purchasing manager is also on the staff of the plant manager, who heads the entire regional manufacturing facility. Thus, the purchasing manager at Company H, the regional facility, actually works for two bosses and must please both.

Documentation. At the corporate office, Company G provided the annual report for Company G/H, organizational charts, and contracting templates for environmental and

professional services, engineering services, and operating services. They also provided the recently composed Y2K clause that will be part of all Company G/H contracts.

Company H, the regional facility, provided their local organizational charts, a complete list of purchased commodities, flowcharts of two of their contracting processes, the section of their local guidelines covering source selections, slides from a briefing on integrating supply, an internal scorecard of their 1997 performance, and an example of an individual buyer training record. They also provided their standard service agreement and a list of terms and conditions that are required in all contracts definitized by their organization.

Main Ideas from Company G

The data sources from Company G -- corporate purchasing -- described above yielded the following information. Figure 4-7 is the mind map for Company G.

Types of Services Purchased

The types of services purchased by Company G are reflected by their organization. As stated above, separate vice presidents head environmental affairs and raw materials departments. These departments have their own purchasing specialists who procure not only actual raw materials and the material goods required to perform hazardous waste remediation and disposal, but the outsourced services that support these activities. In the

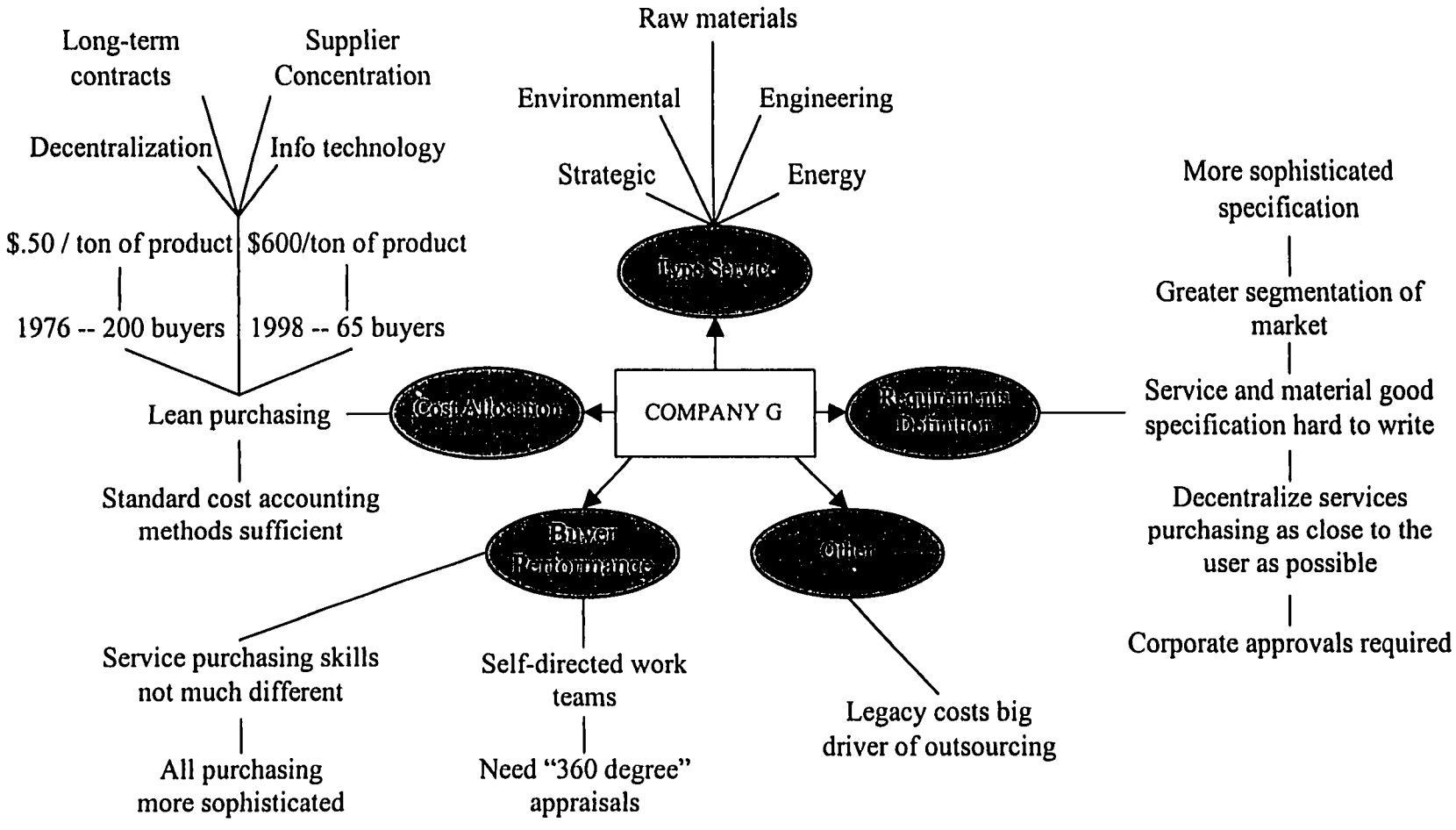

Figure 4-7: Mind Map of Main Ideas -- Company G

case of raw materials, this means purchasing material handling services such as warehousing and distribution. For environmental affairs it requires purchasing the actual HAZMAT services themselves, or the consulting expertise necessary to assist the company with the activities.

There are actually two general managers under the vice president of technical and management services. One is responsible for the procurement of engineering services for the corporation. Since the commodity being produced requires an extremely technical manufacturing process, engineering services are at a premium in the company, both at the corporate office and throughout the regional manufacturing facilities. Since the demand for these services is high and widespread, the corporate office maintains the authority over purchasing these services in order to standardize the requirements and exploit the company's volume leverage. Since, Company G is primarily a manufacturing organization, though, and not an engineering company, they choose to obtain these services from outside suppliers rather than retaining that engineering expertise in-house.

The other purchasing general manager is in charge of the nine branches discussed earlier. While six of the branches are highly decentralized, the other three purchase for the entire corporation. Other services purchased at this level fall into two remaining categories -- energy and strategic materials and processes. Energy requirements are particularly high for all the manufacturing processes conducted by the company. Since energy costs are highly subject to market strength, the company believes it is in the strongest negotiating position when it purchases energy with the full force of the corporation behind it. In this way, it makes the greatest use of its vast volume leverage.

For this reason, corporate purchasing maintains the responsibility for purchasing all the corporation's energy requirements.

Because of their resounding influence on production operations, environmental affairs, energy, raw materials, and engineering services all have strategic significance for the corporation. Company G has a separate category of purchasing for strategic materials and processes, though, which it defines as anything that is vital to the uninterrupted commodity manufacturing process.

The manager sited an example of a strategic process that is so central to the direct manufacturing of the commodity that it could be considered part of the core business and maintained in-house. Indeed, without this process, the production of the commodity would grind to a halt. However, the process had become so sophisticated and costly that it requires the expertise of a specialized outside supplier in order to be performed efficiently and profitably. In the last five years Company G has made a 15-year, $100 million investment in the supplier who will perform this process for them, and there is an option on the contract for a 15-year extension. Unless some other technology makes this process obsolete, it is currently so vitally strategic to the company that they have, in essence, committed to a 30-year relationship with a single supplier.

The manager provided two other examples of such strategic processes, each absolutely imperative to daily operations, and each associated with commensurate long-term, high-dollar value contracts. In one case, that of the separation of on-site industrial gases, the function was at one time performed by Company G. However, conditions dictated that they sell the entire operation to a knowledgeable supplier and turn over

operations at the plant to that supplier. Although there was now different ownership, very little changed in terms of the interactions of the function of that plant with the overall Company G commodity production process. Almost an entirely new management team came in to take over the plant, however many of the Company G workers there simply switched employers and continued doing the same job. In the meantime, Company G was able to eliminate all those employees from their payroll with its excessive burdens, and slash the infrastructure that was required to support the activity. To fully appreciate the savings, consider that in this particular industry a commodity worker averages $35 per hour. By outsourcing the work, Company G is able to acquire it for $20 per hour and relieve itself of its associated management burdens.

Requirements Definition and Pricing

According to this manager, while services requirements and specifications are generally more difficult to write, greater segmentation of the customer base and more sophistication in manufacturing processes has made even the specifications for material goods more difficult. Trying to meet the unique needs of finely sliced segments of the market generates product variety and makes supply requirements to support that variety more complex. Complicated and highly technical manufacturing processes also make requirements definition and specification writing, even for material goods, more difficult and critical than it has ever been.

Still, according to the manager, requirements definition for services is difficult for all the reasons that have been stated by informants at the other companies. The intangibility

of a service, combined with preconceptions of what is to be accomplished, and how, make it difficult for customers to think of the service in terms of a statement of work, specifications, deliverables, and evaluation criteria. Many of the services are newly outsourced, and customers are unfamiliar with articulating exactly what they expect in specific terms. These are some of the reasons why services that are not in some way strategic in nature, as described above, services which can be classified as maintenance, repair, and operation (MRO), are decentralized to the lowest logical level closest to the customer. This is why Company G/H has decentralized purchasing operations at regional manufacturing facilities down to the plant level.

There is the concern with such decentralization that the company may lose control of the purchasing process altogether. Lack of financial control is the reason some company's have worked so hard at centralizing purchasing. Recall that this was the case with Company C. The manager believes, however, that this risk is mitigated in two ways. First, corporate purchasing can mandate universal terms and conditions for all contracts, when appropriate. An excellent example of this is the Y2K contract clause discussed earlier. Second, corporate purchasing should establish strong administrative controls scaled according to contract variables such as dollar threshold, length of contract, and strategic nature of the purchase. Company G has a purchasing board at the corporate level that sets policy regarding approval levels, and also is the highest approval level for plant purchasing actions when any of the threshold variables for that level are exceeded.

Buyer Performance

According to the manager, because purchasing actions of both types -- material goods and services -- have become much more sophisticated and strategic in nature, there is not much distinction between the skills required of buyers to perform one or the other. As has been universally stated at all the companies visited, general business acumen and strong communication and negotiation skills are fundamental ingredients for any purchasing professional.

Purchasing supervisors recognize the skills required of a buyer, but are not always in a position to witness how the buyer manifests these skills, according to the manager. Self-directed, multi-functional work teams in which buyers participate (otherwise known as process action teams, project teams, or quality action teams), sometimes make their performance invisible to supervisors. The team leader or project manager, fellow team members, and buying peers all have more insight into a particular buyer's performance than his or her direct supervisor. Often, a supervisor informally seeks out the opinions of these groups in order to keep abreast of the buyer's professional development and write fair and accurate performance appraisals. However, this manager believes that such a system needs to be formalized into what was termed "360 degree" appraisals. In this way, individuals all around the buyer would have input into assessing the buyers performance from the perspective most appropriate to their particular contact with the buyer -- supervisor, project manager, fellow team member, peer, customer. This would make for a more accurate appraisal of buyer performance, cover a broader range of the

skills a buyer uses in dealing with all these people, and give the supervisor responsible for the appraisal greater visibility into the buyer's all-around performance.

Cost Allocation

According to this manager, Company G's purchasing organization is so lean compared to the dollar amounts it spends, that any allocated costs generated by the proliferation of services purchasing will not have any discernable effect on product costing. Although commodity production has been reduced by two-thirds since the mid-1970s, the amount purchased per ton has gone from fifty cents to nearly $600, while the size of the entire purchasing organization has shrunk from 200 to 65. The costs generated at the plants is easily assigned to plant production, so there is likely no allocation problem there. Much of the large dollar items purchased by the corporate office can also be directly assigned, and what is not is easily blanketed over the entire company with little or no strategic impact. According to this manager, standard cost accounting methods of collecting and assigning service purchasing costs are sufficient at Company G.

The manager went on to enumerate four reasons the purchasing organization has been able to shrink down so dramatically while accomplishing so much more. First, information technology has streamlined all business processes all over the company. The inexpensive use of the personal computer means that buyers can now quickly do for themselves what teams of administrators had to do for them as recently as twenty years ago. Second, decentralization has pushed the buying function to the most reasonable level closest to the customer. Once contracts are put into place, transactions can be

accomplished directly by customers. This has significantly reduced the number of transactions that flow through the purchasing organization, even though procurement dollars continue to rise. Third, consolidation of the supply base has made supplier management easier, even though the nature of the supplier relationship is much more detailed and maintenance intensive. However, the fourth reason for more valuable productivity from purchasing, greater use on long-term contracts, makes managing even sophisticated supplier relationships easier because the parties have developed trust and a knowledge of one another that makes supply chain management functions more efficient. Long-term contracts also reduce the number of source selections a company must perform, one of the more labor intensive parts of the purchasing function.

Other Information

The manager gave another reason why the outsourcing of services is so critical at Company G. It bears mentioning because it involves a condition that doesn't exist at all companies, and that did not come up at any of the other companies visited.

Legacy costs are the benefits extended to former employees of the company and their families. The burden of these costs became so critical at Company G that it was projected that if not addressed quickly they could eventually bankrupt the company. Company G has been around for so long, and was so large at one time, that the size of its retired workforce continued to get larger even as economic conditions drove the company to begin shrinking. At one time the pensioner to employee ratio was as high as 4 to 1, and there was a real danger that company revenues would not be able to support the

continued growth of that pensioner force. Company G was forced to downsize to arrest the growth of the pensioner force so that the company could remain financially viable ten, twenty, and thirty years down the road. Divestiture alone, though, was not enough. Not only did the company have to rid itself of businesses that were not directly part of the commodity production (i.e., railroad management), it had to outsource whatever activities it could that were part of commodity production (i.e., separation of industrial gases). This is how the company has been able to reduce itself from 100,000 to 21,000 employees. Recently, the size of the pensioner force has stabilized, and the manager predicts that it will begin to shrink in the next few years as older pensioners die off and the size of the retiring force continues to grow smaller.

Main Ideas from Company H

The data sources from Company H -- the regional manufacturing facility -- described above yielded the following information. Figure H-1 is the mind map for Company H.

Types of Services Purchased

Services purchased at the manufacturing plants fall into three basic categories: maintenance, repair, and operations (MRO), information technology, and strategic processes. While it was stated earlier that strategic services were maintained at the corporate level, some services with strategic significance to a particular plant may be purchased at the local level with approval of the corporate office. Some might consider

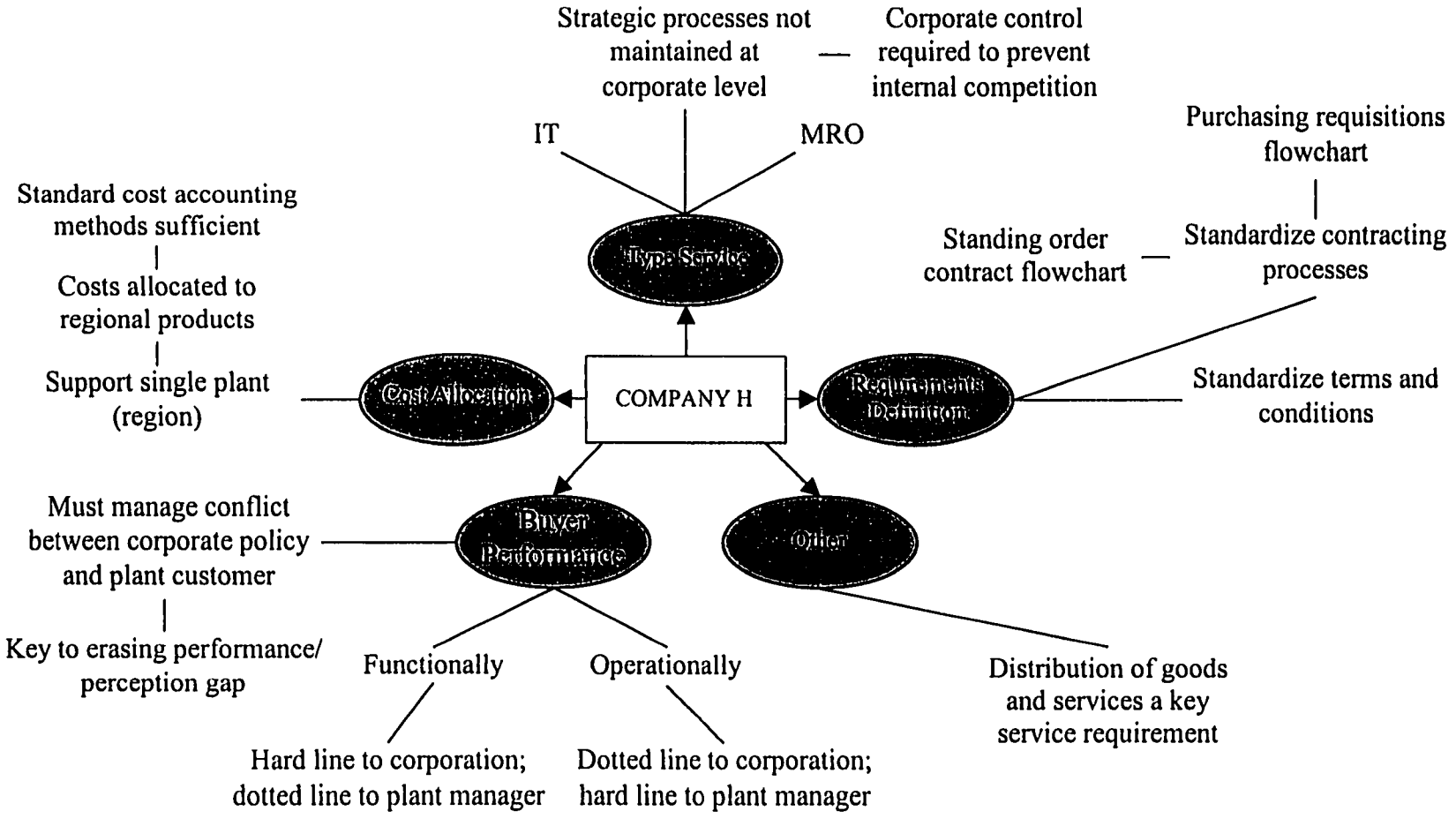

Figure 4-8: Mind Map of Main Ideas -- Company H

these services to be operational -- such as the processing of a by-product which forms when the commodity is produced -- and therefore part of MRO services. However, because it is central to the manufacturing process and treated with critical significance by the plant manager and the purchasing staff, it should be classified separately from typical MRO services. For this reason it is appropriate to classify such services as strategic.

It has become clear from all the companies visited that information technology services are a separate category because of their unique requirements and problems. Telecommunications, office computers, operating systems and software, and the development and maintenance contracts required to ensure the right systems are in place and operating correctly are common to almost all business environments. Moreover, these services require a particular technical expertise among buyers of those systems that warrant a separate category for the purchasing of services associated with information technology.

Most services bought at the plant fall into the MRO category. Maintenance services can refer to facilities maintenance activities such as office cleaning, landscaping, and janitorial services, or they can be equipment maintenance services for the machinery used in the manufacturing processes. Similarly, repair services can be for physical plant or for machinery and equipment. Operational services are anything that support the core functions in the plant. Most operational services purchased are directly related to the manufacturing process like painting and milling services, heat treatment, ball-peening, and desulphurization. However, it can also refer to such things as cafeteria, medical, and

laundry services. Thus, in the terminology used by the plant purchasing manager, almost everything the regional purchasing office is responsible for is MRO.

This manager made one other point about strategic services that bears mentioning here. Another reason that corporate purchasing maintains such tight controls over what it deems to be strategic services is that it seeks to prevent competition for those services between different parts of the company. As potentially separate customers for the same strategic service, given the opportunity to buy those services from the supplier directly, individual plants might feel the pressure to underbid one another for the service, or offer favorable terms to the supplier for preferential treatment on price or schedule. This might be profitable for one plant, but it may cause damage to the other plant and weaken the company's overall profitability. Only a corporate perspective can provide the necessary insight to make well-informed decisions regarding such issues, thus making corporate purchasing the best arbiter of strategic services. It is interesting that this plant purchasing manager had that perspective, and that it was not mentioned by the corporate manager.

Requirements Definition and Pricing

This manager was quick to point out the obvious difficulties in contracting for services. To combat the difficulty of determining requirements, and writing clear, complete, and understandable specifications that describe the requirement, a key is to focus on the contracting process in addition to the specific requirement. It was stated earlier how much more difficult it is to standardize requirements at the plant because of the dynamic nature of the environment. A core set of standardized terms and conditions

do ensure that contracts are complete and represent the best interests of the company. The purchasing manager provided such a list of standard terms and conditions which is reprinted in Table 4-2. However, according to the manager, the best way to ensure that requirements are properly defined and specifications well-written is to establish contracting processes that lead the buyers and customers to consider all aspects of the requirement. The manager shared two such standardized purchasing process flowcharts, one for simple purchase requisitions and the other for MRO contracts. The latter, especially, is a detailed, step-by-step description of the process for buyers, customers, and suppliers that is designed to ensure that every step is taken and no significant issue is left unconsidered. The flowchart also provides timelines as a guide to the number of days each step or action in the process should take. Such a process is not a substitute for the skills required of a buyer to glean the requirement from the customer, or for the necessary level of technical expertise regarding the service requirement. It is, though, a valuable tool for ensuring that all appropriate parties to the requirement are contacted, all applicable issues are considered, and all necessary steps are taken to properly define the requirement and write an adequate specification for it.

Buyer Performance

It was stated earlier, in the discussion of the organization of the purchasing department, that the plant purchasing manager actually works for two bosses. His or her formal superior is the general manager for purchasing. This is the functional superior to whom the manager is connected by a solid or "hard" line on the organizational chart.

Table 4-2: Standard Terms and Conditions at Company H

Scope of work
Product or service specification
Quality requirements
Delivery instructions/Freight terms
Shipping and packaging instructions
Pricing/Discounts
Payment terms
Audit requirements
Title - Risk of loss
Warranty and remedies
Performance guarantee
Waiver of breach- Failure to perform
Most favored customer
Method for release
Substitution
Use of goods and services
Liability for inventories
Indemnity and hold harmless
Insurance
State and local taxes/Direct pay permit
Force majeuere
Safety requirements
Assignment of contract
Termination and cancellation

The plant purchasing manager also works for the overall plant manager, to whom he is matrixed by the purchasing organization. This relationship is represented by a dotted line on the organizational chart.

The manager made the point that functionally, in terms of purchasing practices, indeed the system works just that way. In executing a contract the plant purchasing organization is responsible to corporate purchasing and ensures the compulsory purchasing procedures established by them are correctly followed. In terms of understanding the requirement, however, and satisfying all the customers expectations for that requirement -- that is, operationally instead of functionally -- the purchasing manager and, by extension, all the buyers in his or her organization, behaves as if he is "hard line" to the plant manager and "dotted line" to the corporate purchasing general manager. This is in no way unusual and, according the manager, is expected behavior of plant purchasing professionals. From an operational perspective, they must be members of the plant team and be cognizant of and loyal to the mission of the plant and plant goals and objectives. This is the "what" of the contracting equation. However, these buyers are also responsible for the proper execution of the contract -- the "how" of the contracting equation. In executing the buy they are the functional expert and must be loyal to corporate standards and regulations.

According to the manager, a buyer's ability to manage this potential conflict is not only necessary to effectively meet customer requirements within corporate guidelines, it is the key to erasing whatever gap may exist between buyer performance and the way that performance is perceived and measured by those outside the purchasing organization. It

is also the key element of the trusting relationship that must develop between customers and buyers, a relationship that will only facilitate the buying process.

Cost Allocation

This manager also believes that there is no significant problem with the use of standard cost accounting methods for collecting the costs associated with the purchasing of services and assigning those costs to appropriate products. Many purchasing actions accomplished at the plant can be associated with specific products. Therefore, the costs generated by the actions are easily assigned to those products. Costs that cannot be directly assigned to a product are allocated across all products at that plant through overhead and G&A burdens that are specifically developed for that plant or region. The potential level of additional accuracy to be gained from trying to assign these costs more directly to products as opposed to allocating them across all products is perceived to be too small to be worth the enormous cost of trying to develop and implement such a cost accounting system.

Other Information

The manager made an interesting point that bears noting here. With MRO purchasing at the regional facilities, the focus of the purchasing organization is not only on the material good or service that is being purchased, but on the distribution of the goods or services throughout the region. With MRO purchases for material goods, timely and

efficient distribution of the purchased goods is a vital service often assumed but unspecified by the customer. It is up to the buyer to recognize the need for distribution and material handling terms in the contract to ensure that the customer's need for the goods at the time and place he needs it is satisfied. Often these distribution and material handling services are offered as a separate package by the supplier for all the material goods they supply to the customer, and for similar items supplied by the supplier's competitors.

The manager gave as example of this Company H's purchase of electrical parts distribution services for the entire region from a leading electrical parts manufacturer. This manufacturer handles the distribution of not only their own electrical parts, but of the electrical parts supplied by its competitors to any of the Company H facilities in the region. This is an example of a situation where a buyer must be knowledgeable of the specific requirements requested by the customer, and of the more general business processes necessary to maintain and support a manufacturing organization.

This concludes the within site analysis of the eight cases. The next chapter -- Chapter 5 -- is a cross-site analysis of the general findings of this research. It presents the emergent ideas from across all the cases. It also includes a development of the analytic models and the issues resulting from the case studies. Chapter 6 contains the conclusions, research limitations, and recommendations for future research.

Chapter 5

CROSS-SITE ANALYSIS: EMERGENT IDEAS FROM THE CASE STUDIES

The purpose of this chapter is to consolidate the emergent ideas regarding the purchasing of services from across all eight cases. These ideas are organized according to the basic framework established by the four research questions.

1) What kinds of services are purchasing departments being called upon to procure for the company?

2) How are service requirements being defined by the internal customer and how do buyers evaluate proposed prices for those services?

3) What skills are required of buyers in the procurement of services and how are buyers perceived and measured relative to those skills?

4) How are service purchasing costs collected and assigned to cost objectives?

In Chapter 4 these questions were addressed within the context of the individual cases. In this chapter the emergent ideas from across all the cases are synthesized into detailed descriptions of the phenomena which take place in industry (or, at least, at these eight companies) regarding each of these questions. Answers to these questions are presented in the form of a typology (question 1) and three analytic models (questions 2-4).

In Chapter 4, open data coding was accomplished using mind mapping techniques (Figures 4-1 through 4-8). Axial coding -- that is, comparing ideas across cases -- was also accomplished using mind maps. In this phase, the four main ideas (types of services, defining requirements, buyer performance, and cost allocation) were placed at the center

of the map, and the main ideas for that point taken from each of the eight mind maps from the individual companies radiated from that center point. This technique of facilitated radial thinking (as opposed to hierarchical thinking) allowed the researcher to organize the main ideas without being prejudiced by the sequence of those ideas, or the relative passion with which they were put forth by different informants.

The number of ideas sketched onto these mind maps makes them even more complex that those in Chapter 4. For the first question, type services, after several iterations a higher level mind map emerged that is not as complex and, therefore, appropriate for presentation. That mind map is presented in the next section of this chapter in the form of a typology of purchased services. The mind maps for the other three main ideas, though invaluable for the analysis of the data, became too complex and burdensome for presentation purposes. Using selective coding -- the application of selected parts of the data to model building -- the main ideas from the mind maps were developed into analytic models which describe the respective phenomena regarding each of the questions. These models are offered in later sections of this chapter.

It was still felt, though, that some summary of the data across the eight cases was necessary for presentation purposes. Table 5-1 is such a summary. It cross lists the main ideas regarding each of the four key areas of inquiry from the eight mind maps in Chapter 4 and presents them in tabular form according to company. The purpose of this table is to present factors for each question across all eight companies. In this table, one can readily see the strongly emergent ideas. For example, with regard to buyer performance, the universal notion that buyers must be experts in the services they buy is easily evident

Table 5-1: Summary of Findings Regarding the Key Areas of Inquiry

	Company A	Company B	Company C	Company D
Types of services	IT and telecommunications MRO Capital Technical Non-technical	IT and telecommunications Capital Non-technical Transportation Strategic	IT and telecommunications Non-technical	IT and telecommunications Facilities Energy Environmental Critical
Requirements definition	Difficult to define requirement Difficult to write SOW, spec, deliverables, measures Price analysis required Regional differences in requirements	Difficult to define requirements UCC does not apply Strategic opportunities through standardization	Difficult to define requirement Strategic initiatives through standardization SOW, spec, deliverables, performance measures	Difficult to define requirement National agreements Strategic sourcing teams SOW, deliverables, acceptance criteria, remedy, extension or termination criteria
Buyer performance	Buyer must be service expert Do not yet differentiate service buyers, but should Need service purchasing skills profile and career development No gap in purchasing; gap outside of purchasing	Buyer must be service expert Buyers need strong engineering background Buyers emerge at leaders on project teams No gap in purchasing; gap outside of purchasing	Buyer must be service expert Buyers have strong general business acumen Dual career paths: commodities manager -- relationship manager No gap in purchasing; gap outside of purchasing	Buyer must be service expert Buyer must manage conflict: function vs. project; daily duties vs. process improvement efforts Purch supervisors -- no gap, buyer -- gap, gap outside of purchasing

Table 5-1: Summary of Findings Regarding the Key Areas of Inquiry (continued)

	Company E	Company F	Company G	Company H
Types of services	IT and telecommunications Facilities Equip rental Vehicle mnx Warehousing Fuel	IT and telecommunications Corporate Technical Operational	Environment Engineering Strategic Energy	IT and telecommunications MRO Strategic
Requirements definition	Difficult to define requirement Customers do not understand specs, measurements, pricing Purchasing actions must add value Gain volume leverage from standardization with parent company	Difficult to define requirement Must consider total life-cycle costs Overspecified service requirements: bottlenecks Underspecified service requirements: loss of service	Difficult to define requirement Both service and material goods specs hard to write Services intangible Material goods increasingly complex due to market segmentation	Difficult to define requirement Must standardize terms and conditions Must standardize contracting processes
Buyer performance	Buyer must be service expert Two negotiations in every buy: one with the customer -- one with the supplier No gap in purchasing, gap outside of purchasing	Buyer must be service expert Must have well-rounded business skills Buyers influence strategic decisions No gap in purchasing, gap outside of purchasing	Buyer must be service expert Service purchasing skills not much different because all buyer skills more sophisticated Self-directed work teams require "360 degree" evals No gap in purchasing, gap outside of purchasing	Buyer must be service expert Must manage conflict between plant customer and corporate policy Functional organization and actual operations different No gap in purchasing, gap outside of purchasing

Table 5-1: Summary of Findings Regarding the Key Areas of Inquiry (continued)

	Company A	Company B	Company C	Company D
Cost allocation	Some evidence of ABC Direct costing through electronic means Personnel cost small percentage of revenue Standard cost accounting methods sufficient	Some evidence of ABC Direct costing through electronic means Personnel cost small percentage of revenue Standard cost accounting methods sufficient	Some evidence of ABC Direct costing through electronic means Improved purchasing cost performance Some use of the total cost of ownership model	Some evidence of ABC Direct costing through electronic means Allocation formulas tied to product Standard cost accounting methods sufficient
Other information	High supplier concentration in general, but low supplier concentration for services	Y2K problem highly significant -- Y2K suppliers scarce	Best to colocate buyers with internal customers: more integral part of team; can become corrupted by proximity	Y2K growing concern -- scarcity of suppliers Leverage volume through creation of supplier industrial park

Table 5-1: Summary of Findings Regarding the Key Areas of Inquiry (continued)

	Company E	Company F	Company G	Company H
Cost allocation	Some evidence of ABC Direct costing through electronic means Provide one basic service Standard cost accounting methods sufficient	Some evidence of ABC Direct costing through electronic means Market driven factors affect product price Allocation costs negligible Standard cost accounting methods sufficient	Some evidence of ABC Direct costing through electronic means Purchasing department lean Standard cost accounting methods sufficient	Some evidence of ABC Direct costing through electronic means Cost allocated by plant Costs assigned to regional products Standard cost accounting methods sufficient
Other information	Increasing use of P-card Connect customer requirements to potential suppliers through the worldwide web		Legacy costs a big driver of outsourcing	Distribution of purchased goods and services a key service requirement

across all eight cases. Also, with respect to cost allocation, the informants' perception that standard cost accounting procedures are sufficient is easily seen in seven of the eight cases.

Types of Services Purchased

A major contribution of this research is the establishment of a typology for the kinds of services purchasing departments are buying. This typology appears in Figure 5-1. Four inputs were used to create this typology. Three of the four come directly from the cases and were used to build the type services leg of the eight mind maps in Figures 4-1 through 4-8. The first input is the direct testimony of the informants. Every informant was asked, "what kinds of services are you buying?" Informants generally responded with a verbal list of services, though in some cases they referred to briefing charts or summary reports that actually listed all their current purchasing projects (Company C and Company H). In most cases, the purchasing managers' replies to this question were framed by their own intuitive service typology, though no formal typology was ever offered. For example, they might say that they bought numerous services related to facilities management, like landscaping and janitorial services, or consulting type services or IT services.

The second input into the typology is the organizational structure of the company. The rationale here is that the purchasing department is logically structured according to the kinds of items it needs to buy, and that services are more likely to fall into one category than another. For example, it is easier to imagine services related to an IT

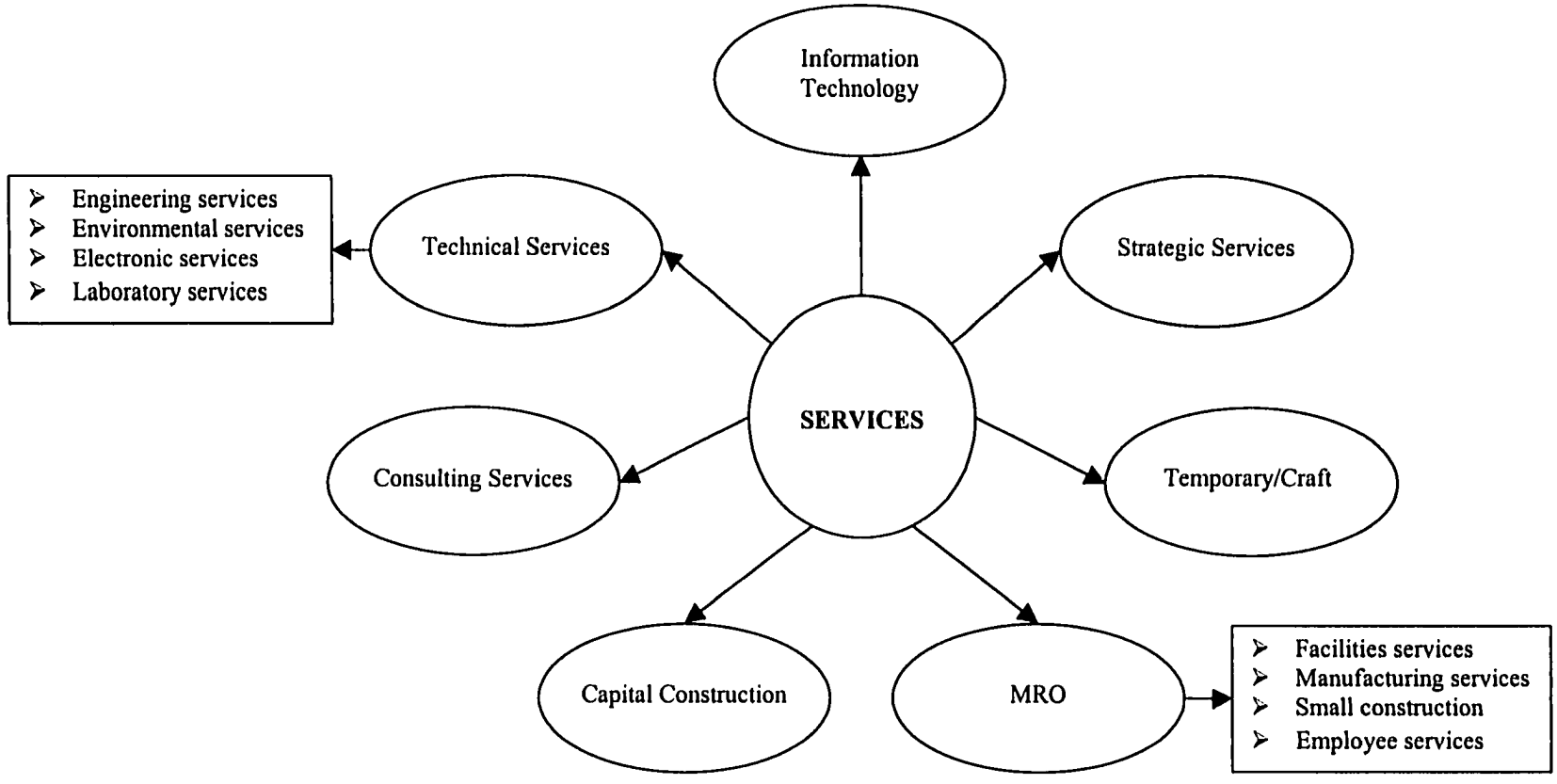

Figure 5-1: Typology of Services Procured by Purchasing Departments

purchasing branch than to a raw materials branch. At highly centralized purchasing companies this is often the case. In more decentralized departments, though, like Company H which is a regional purchasing office, the function is organized generally according to customer groups (the facilities within the region). In these cases, services are bought at multiple levels within many branches and trying to typify the services along organizational lines is less fruitful.

The third input used to create this typology is the contract templates developed by the companies (Table 5-2). The variety of these templates, or their lack of variety, is a clear indicator of management's perceptions of whether there are significant differences between services. By definition, typologies are created not based on the similarities between elements of the typology, but on their significant differences. In some cases this was not very helpful because management believes a basic service contract is sufficient to buy all services and can be tailored as necessary. One can see this to some degree for Companies B, C, E, and H in Table 5-2. On the other hand, Companies A, D, and G seem to believe the differences between service types warrant separate contract templates and have either made great progress in creating them, as with Company D, or are striving to create more of them.

The difficulty, of course, is in specifically defining meaningful differences between types of services that warrant separate contract templates. Specifically, what contractual clauses are particular to one type of service as opposed to another. A complete listing of all the clauses in the 24 contract templates provided offers no clear distinction between

Table 5-2: Service Contract Templates

Company	Contract Template	Type Contract/*Comment*
Company A	Work on purchaser's premises	MRO/Technical services
	Contract maintenance service agreement	Temporary/craft labor services
	General conditions of purchase	*All purchase agreements*
Company B	Training and development service agreement	Consulting services
	Construction agreement (short form)	Construction services
	Construction agreement	Construction services
	Non-technical services agreement	MRO services
	Standard service agreement	*Tailored to meet need*
	General terms and conditions	*All purchase agreements*
Company C	Consulting agreement	Consulting service
	Temporary labor	Temporary/craft labor services
	General service agreement	*Tailored to meet need*
Company D	Consulting agreement	Consulting services
	Temporary personnel	Temporary/craft labor services
	Engineering services	Technical services
	Engineering, procurement, and construction	Technical/Construction services
	Computer systems	IT services
	System analysis, design and programming	IT services
	Industrial waste management	Technical services
	Environmental consulting agreement	Technical services
	Material management	*Vendor city project*

Table 5-2: Service Contract Templates (continued)

Company	Contract Template	Type Contract/*Comment*
Company E	Standard contract for services	*Tailored to meet need*
Company F	No contract templates made available	*Proprietary concerns*
Company G	Environmental and professional services	Technical services
	Engineering service agreement	Technical services
	Operating services agreement	MRO services
	Year 2000 clause	*All contracts*
Company H	Standard service agreement	*Tailored to meet need*

services based on contractual requirements. Most clauses are common to all contracts, though they may sometimes be called by different names from contract to contract or from company to company. Further, the actual wording of similar clauses is usually different and subject to negotiations from one purchase to the next. Still, no clear distinction between contract templates arose based on identification of unique clauses. A fairly complete list of the clauses appearing in most contracts was provided in Table 4-2 (page 202).

An example of a clause not on that list but which is becoming more and more common in all contracts is some Year 2000 (Y2K) provision. However, one can not conclude that this provision sets IT services contracts apart from any others because most companies that have adopted Y2K clauses mandate them in all contracts to cover even the remotest connection with software.

Though some companies clearly believe in the use of diverse contract templates, they could explain why different templates were required for different services. It may be that once a contract is written for a specific service, particularly if it is the first time that service has been outsourced, or if several similar transactions are anticipated, the purchasing organization believes it wise to keep the contract as a model for future transactions. While it is always a wise idea to see how something has been accomplished previously to avoid redoing work that has already been done, the department formalizes this action by scrubbing a contract clean of its particulars and making it available as a template for buyers to refer to when accomplishing similar actions. It may be that the template for that service is not significantly different from the templates for other

services, but they are maintained as separate because, intuitively, the services seem different. For example, Company D, a manufacturing company, provided nine separate contract templates for services. While the contracts themselves explicitly state they are for different things, an analysis of the clauses in each does not reveal obvious differences. At the same time companies A, B, G and H, also manufacturing companies, accomplish essentially the same contractual actions using standard purchase orders and service agreements.

Ultimately, the contract templates were used as one input to typify services because they were available at most of the companies. Their very existence, however, can probably be traced back to the same intuition that makes up the direct testimony input discussed earlier. Still, they are useful because they provide hard, documented support for the typology developed in Figure 5-1.

Finally, the last input used to develop this typology was the intuition of the researcher. With no real tangible evidence to show differences between the types of services, there is no rationale for offering a prescriptive model of service types that enumerates the unique characteristics of each. The value of such a model is that it would also describe the problems associated with purchasing each kind of service and provide methods of dealing with such problems. In the absence of that tangible evidence, all that is left is to create some summary of the way these eight organizations distinguish services. At some point, simple intuitive judgements were required of the researcher to create a logical typology that accurately reflected the behavior of each of the companies. The result is that the typology offered in Figure 5-1 is simply one logical arrangement of

the purchased services encountered at these eight companies. There are likely other logical arrangements of these same services that would result in a different typologies.

The typology offered here distinguishes seven types of purchases services: technical services; consulting services; capital construction; maintenance, repair, and operations services (MRO); temporary or craft labor services; strategic services; and information technology services. Each of these services was discussed in the Chapter 4 case write-ups. As was demonstrated in Chapter 4, each of the eight companies buys services that fall into one of the seven categories, and there is no purchased service encountered at any of these companies that cannot be placed into one of these categories.

Two of the seven services required subdivisions. These subdivisions are a way of establishing the universality of the model across all eight cases. For example, not every company demonstrated that it buys environmental services. However, every company demonstrated the need to buy some technical services that fall within the four subdivisions of engineering services, environmental services, electronic services, or laboratory services. Similarly, not every company buys manufacturing services, but every company needs to buy some MRO services related to facilities, manufacturing, small construction projects (not capital construction), or employee services. This last category pertains to things like cafeteria services, medical services, and employee assistance program services (i.e., counseling, financial aide, drug and alcohol abuse).

Requirements Definition

The difficulty of defining service requirements was the single most talked about issue at each of the companies regarding the purchasing of services. As can be seen in Table 5-1, every company made this statement. The specific problem regarding this issue is getting the customer to think through exactly what it is he or she needs accomplished, and defining those outcomes in terms of a statement of work, specifications, deliverables, and measurement criteria. A related problem is the difficulty in determining fair and reasonable prices for these services -- first because it is unclear what needs to be bought, and second because the intangible nature of service performance is not readily associated with known, quantifiable costs.

As outsourcing activities have continued to rise, the percentage of services that purchasing departments are buying, as opposed to material goods, has also grown. This has not so much created new challenges for buyers, as much as it has made familiar challenges more acute and of greater significance to the organization. These intensified challenges take three forms. First, buyers have been required to become more and more familiar with the internal customer's actual operations. This is because internal customers are unable to translate what they have always done internally into a coherent requirement that is defined in terms appropriate for solicitation of suppliers. In order for purchasing to step-in and offer its particular expertise in requirements definition, it must know the requirement almost as well as the customer does.

This leads to the second more intensified challenge. Buyers must become familiar with outsourcing requirements from all over the organization in order to see the potential

opportunities for creating volume leverage through standardized requirements. Long-term, sustainable volume is a key ingredient in establishing leverage with suppliers. Volume is generated not just from a single purchase, but from standardizing the requirements of several similar purchases from different parts of the organization. Moreover, even greater volumes are created when the requirements of seemingly different purchases are reduced to levels that reveal common parts that can be grouped into a single purchase. As a simple example, take the case of two different parts of an organization that need office computer systems. It may be that one part of the organization -- engineering and design -- will be running computer-aided drafting (CAD) programs on their system, while the other part of the organization -- human resources management -- needs a simple business program suite consisting of a word processor, spreadsheets, database manager, and chart maker. Between these two requirements there is clearly an opportunity for standardization. Both customers have hardware requirements. Both need an underlying software operating system. Each requires installation, adaptation to local processes, and user training. Finally, each requires some on-going maintenance contract and user help desk services. If these requirements are handled separately, these opportunities for volume leverage will be missed. Buyers occupy a vantage point that provides them a view of these opportunities and a means for exploiting them.

The third more intensified challenge for buyers regarding service requirements is created by the first two. Once buyers are familiar with the requirement and have determined that volume opportunities exist across several buys, they must work closely

with customers in order to standardize requirements across those separate purchase requisitions. This requires the buyer to overcome two potential problems. The first is the inability of the customer to either know and/or express the requirement. The second is the attachment the customer may have either to the requirement as he or she originally perceives it, or to a supplier that may not be the best one for the overall volume purchase. These are the areas in which buyers must demonstrate exceptional interpersonal communication, problem solving, mediation, negotiation, and influencing skills. The goal is to satisfy multiple customers from across the organization according to their individual needs, while at the same time creating and exploiting volume leverage generated by standardizing the specifications that represent those needs.

An analytic model is required for dealing with the issues of defining and standardizing service requirements and determining fair and reasonable prices for those requirements. For such a model to be valuable it would have to recognize three elements of effective services purchasing. The first element is that service requirements usually have some tangible material associated with them that can be separated from the service portion of the requirement and specified and price analyzed separately. Since materials are easier to specify and price, that portion of the process is simplified and facilitated. Also, removing the material may also simplify the remaining service portion of the requirement and make it easier to conceptualize and define.

The second element upon which the model should be based is the segmentation of the service into its component tasks. Each task should be reduced to its simplest form so one can clearly discern its starting point, its completion point, and whatever outcome or

product is required of that task. The summation of all the tasks, plus the material, is the entire service requirement.

The third and most important element upon which the model should be based is the constant and steady communication between the buyer and all the customers involved in achieving a standardized requirement. The buyer's ability to reach common ground among all interested parties is the substantive value the buyer offers to the process, and the key to exploiting the company's purchasing advantage.

Figure 5-2 is an analytic model for defining, standardizing, and performing fair price analysis for services based on these three elements. It begins on the left side with the customer's perceived requirement. It is important at this point for the buyer to discern what outcome the customer expects from the service. It may be that the customer's perception of the requirement does not support the desired outcome. If it does not, the buyer must get the customer to express the requirement in terms of the outcome, and then return to the requirement again until the requirement supports the outcome.

Once the requirement supports the outcome, whatever materials are present in the requirement should be separated out. Further, the service can then be segmented into its component tasks, as discussed above. At the point the service requirement is separated into its materials and component tasks, the buyer must view all these pieces to determine if volume opportunities exist with other purchasing actions. If they do, or if opportunities can be created by modifying the requirements of any of the pending purchasing actions, the buyer must contact the other customers and return to the beginning of the process. Now the buyer is bringing multiple customers through the process simultaneously in

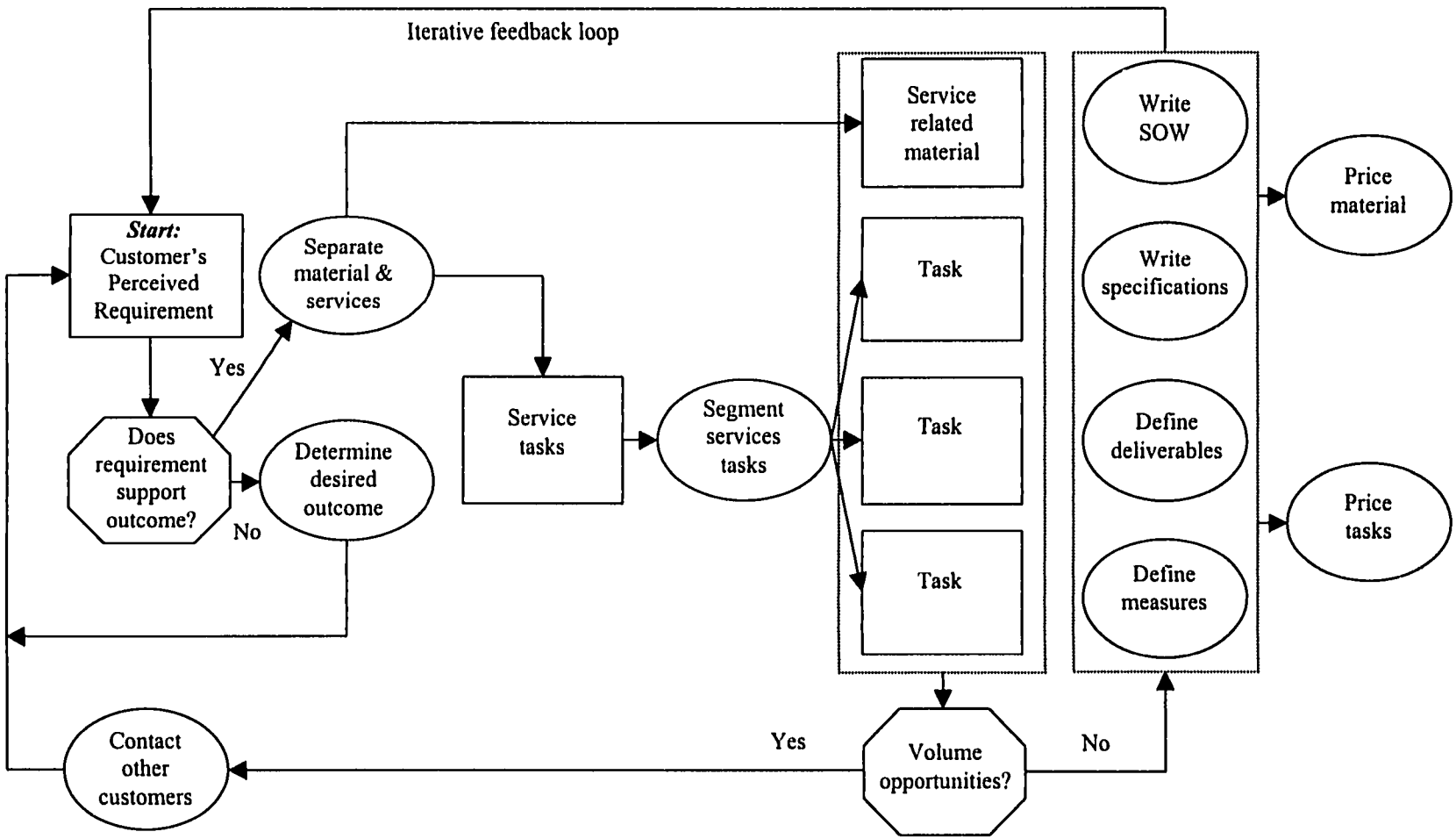

Figure 5-2: Analytic Model for Defining, Standardizing, and Pricing Customer Service Requirements

order to create a standardized requirement that will offer the benefits associated with volume leverage.

Once all the tasks and materials that are to be standardized are brought to the point where no other volume opportunities are available, the customer and the buyer can begin the iterative process of writing the statement of work and specifications, and defining the deliverables and the performance measures for each piece of material and each task segment, separately. The iterative loop at the top of Figure 5-2 is not meant to represent a sequential process. These iterations are envisioned to be continuous work between the buyer and all the constituent customers to the standardized requirements. With a statement of work, specifications, deliverables, and performance measures for all the material and each separate task, the buyer can proceed to do a price analysis of each to determine an overall fair and reasonable price for the service based on the following conceptual equations:

$$\Sigma Task\ prices = Service\ price$$

$$Material\ price + Service\ price = Fair\ and\ reasonable\ price\ to\ supplier$$

This "fair and reasonable price to the supplier" gives the buyer a basic negotiating position to start from when receiving proposals and price quotations from potential suppliers. The actual price paid for the service, of course, is subject to the outcome of the particular negotiation.

What is outlined in Figure 5-2 all takes place without the influence of the supplier. It is very probable that the supplier will have some valuable input into the process in a later phase of developing the requirement. In fact, the buyer will likely be trying to

standardize requirements across the organization in accordance with what he or she knows to be available from a given supplier or suppliers. However, it is always best to approach suppliers with a well thought out requirement prior to receiving their input. This model intentionally omits the suppliers' involvement to foster that thought process prior to contacting suppliers. Supplier involvement in requirements definition is assumed and recommended once the organization has gone through this first, prerequisite phase of the process.

Buyer Performance

Much of the strategic purchasing literature in the last two decades has focused on the role the buyer plays in establishing and maintaining intimate and mutually advantageous relationships with suppliers. In fact, it was demonstrated quite clearly in Chapter 2 that supplier relationships are the essence of strategic purchasing. What has emerged from this research, however, is that the buyers and purchasing managers contacted at these eight companies are far more preoccupied with internal relationships than with supplier relationships. This is not to diminish the obvious value of strong supplier relationships. However this research does seem to indicate that the amount of time a buyer spends developing and nurturing internal relationships far exceeds the same efforts expended on suppliers. Moreover, the strategic purchasing literature overwhelmingly focuses on the correlation between effective strategic purchasing and supplier relationships and does not readily address the effect internal relationships have on strategic purchasing.

The discussion in the previous section regarding standardizing requirements clearly demonstrates that the purchasing department's ability to develop and maintain close, strong, trusting, and communicative relationships with internal customers is a key element in exploiting strategic purchasing opportunities. Moreover, the buyer is the catalyst for cooperation within organizations when he or she builds bridges between departments to get customers to work together to standardize requirements. This is evidenced at Company C where certain buyers are specifically assigned to work with various customers to standardize requirements between their departments. These buyers are even called relationship managers. They manage the internal relationships between themselves and their customers and, more importantly, between customers.

Based on this view, one can say that the success of strategic purchasing built on supplier relationships is dependent upon well-developed internal relationships between buyers and customers and between customers. Successful supplier relationships depend in large amount on the buying organization's purchasing strength relative to the supplier. When the buying organization can guarantee a large volume of business sustained over an extended period of time, it is in a better position to obtain advantageous terms from a supplier, terms another company may be unable to attract, and forge a lasting partnership that is beneficial to both parties. These partnerships become the distinctive competency that allows the pair (or group) to be responsive to external customers, thereby creating a competitive advantage that wins market share. This research has demonstrated that, for services especially, those volumes are achieved through strong internal relationships, the catalyst for which is the services buyer.

Returning to Figure 1-5 (page 24), it is clear that buyers of services are called to operate high up along the buyer performance curve toward strategic purchasing. By definition of what is required of them at this point on the curve, relationship building, they must have the trust of the constituencies with which they deal -- their own supervisors, multiple internal customers, and management from across the organization. In order to give that trust, these constituents must have a clear sense of what is required of the buyer, what the buyer is capable of offering, and how the buyer's actions can benefit the customer and the organization. Thus, for the buyer to be successful, there can be no gap between how he or she is expected to perform and how he or she is perceived and measured for that performance.

The consensus among all the purchasing supervisors interviewed is that there is no gap between buyer performance and how that performance is perceived and evaluated within the purchasing department and among purchasing professionals. However, outside the purchasing department some gap does exist. Table 5-1 confirms that every company expressed this general theme. The only exception to this was at Company D where buyers were also interviewed. These buyers felt that, although they believed they were being fairly evaluated, purchasing supervisors do not fully appreciate the range of skills they must use in dealing with internal customers. Exposure to more buyers from the other companies would have been necessary to validate the generality of this finding.

Figure 5-3 represents the perceptions and measurements of buyer performance by constituent groups. These constituencies are the purchasing supervisor, the internal

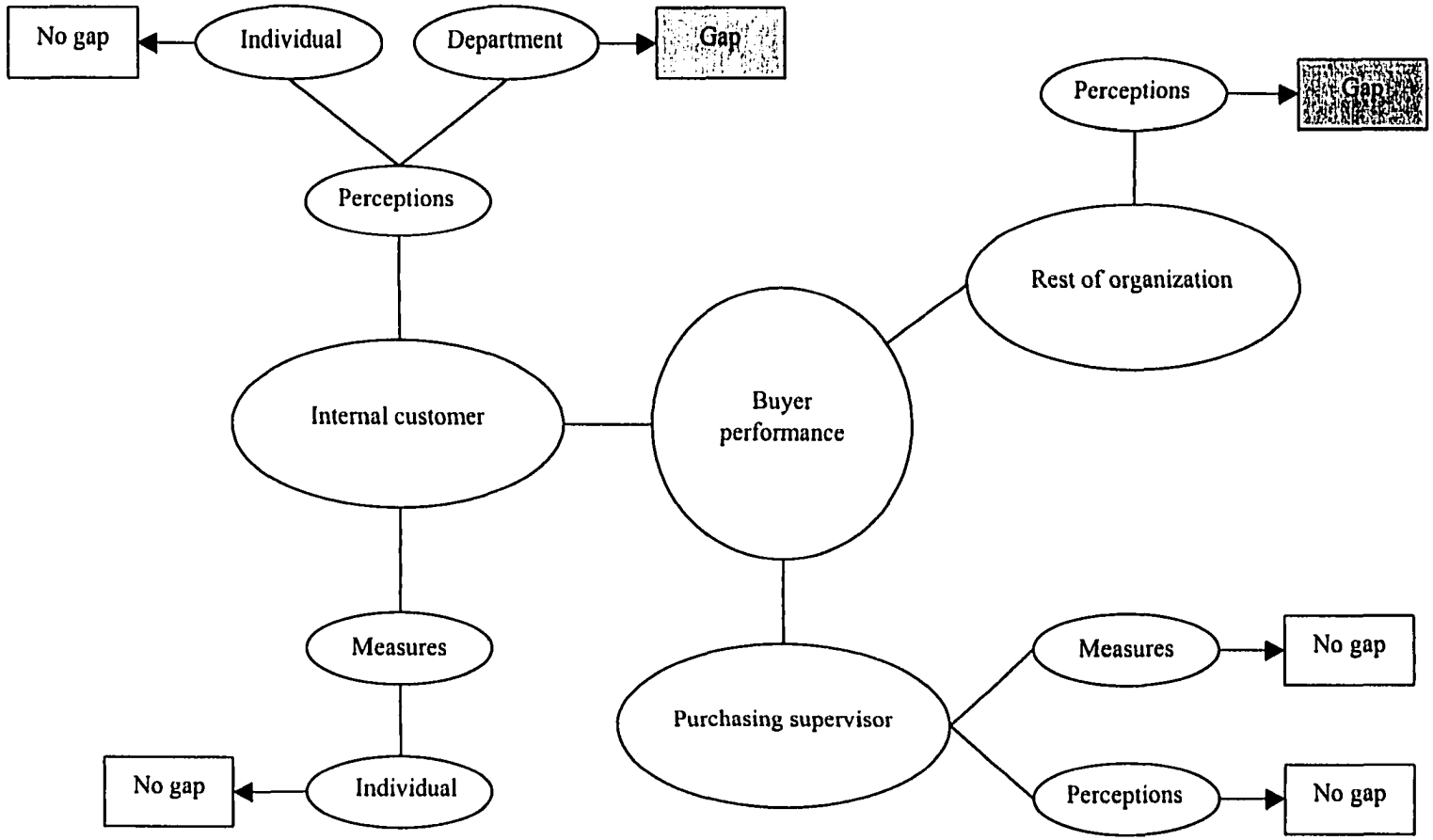

Figure 5-3: Organizational Perceptions and Measurements of Buyer Performance

customer, and the managers and employees from the rest of the organization, all of whom are potential purchasing customers. Each constituency has a perception of what buyers actually do. Purchasing supervisors also have a formal role to play in buyer evaluations. Therefore, their measurement of buyer performance is also of interest. According to this research, and not withstanding the comments of the buyers at Company D, there is no gap among purchasing supervisors in either their perception or measurements of buyer performance.

In addition to their perceptions of what a buyer does, the internal customer also has a role to play in buyer evaluations. Sometimes this input is formalized, but usually it is informally given to the purchasing supervisor. According to the purchasing professionals interviewed, internal customers have an inconsistent view of the purchasing department in general, and of particular buyers. Among customers that have worked with buyers there is little or no gap between buyer performance and customer perception of that performance. Customers become well aware of what buyers can do for them and the skills required of buyers to meet customer requirements. Whatever gap might have existed regarding buyer performance is quickly closed as the customer works with the buyer. This is evidenced by the inputs purchasing supervisors receive from customers regarding evaluations of buyer performance. Customers are quick to notice the range of skills displayed by buyers and are generous in their evaluations of those skills in their inputs to purchasing supervisor. So, among customers, where individual buyer performance is concerned, there seems to be no gap in either perceptions or measurements of that performance.

However, these same customers will at first attribute positive buyer performance to the individual, while still maintaining an incorrect perception of the skill level of the purchasing department in general. They are likely to believe that the purchasing department is generally transaction oriented and does not have much else to offer by way of truly value-added services. They will still view having to deal with the purchasing department as a burden on the system that does not add or create any real value. When they work with a buyer who does add value, they figure they just got lucky to draw an exceptional individual. So, in terms of the customer's perceptions of the purchasing department, a significant gap still exists between departmental performance and customer perceptions of that performance. This gap is indicated by one of the two shaded boxes in Figure 5-3.

This situation tends to improve as the customer has more experiences with the purchasing department, and works with several different buyers. In time, the customer realizes that the value offered by purchasing is not particular to the buyer, but is systemic to the processes established by the purchasing department. Thus, most purchasing managers said that they must win the trust of the company one customer at a time.

The rest of the organization, those who have not worked with purchasing but are potential customers of the purchasing department, tend to view purchasing the way the inexperienced customer does -- transaction oriented without offering much in the way of true value. Among this constituency group there is still a significant gap between buyer performance and the perceptions of that performance.

Based on the experiences of the purchasing professionals interviewed for this research, the best way to combat and eliminate these gaps is through performance and communication. This is illustrated in the analytic model offered in Figure 5-4. As previously mentioned, sustained performance wins customers over one at a time, not only in terms of the individual buyer, but eventually for the whole department, and to the merits of the strategic purchasing process in its entirety. In the model, sustained and consistent performance is depicted by adding the star to the center circle, implying that this kind of performance will radiate out from the purchasing organization to all parts and levels of the company as purchasing successes accumulate. The feeling among managers that sustained, consistent performance is indispensable to establishing the value of purchasing's role in the procurement process was universal.

Of course, sustained performance could be helped along by some timely and appropriate communication about what buyers are able to offer internal customers. Company C is so committed to this idea that they hired a marketing communications coordinator to tout the attributes of the purchasing organization. Self-marketing also includes providing materials that educate the customer on how to access purchasing processes and use the tools created by purchasing to define requirements and initiate the procurement cycle. It is of no use to the company if purchasing creates outstanding procurement processes that no one in the organization knows about or uses. Part of their charter is to make these processes known and to reach out to customers to teach them how to make effective use of them.

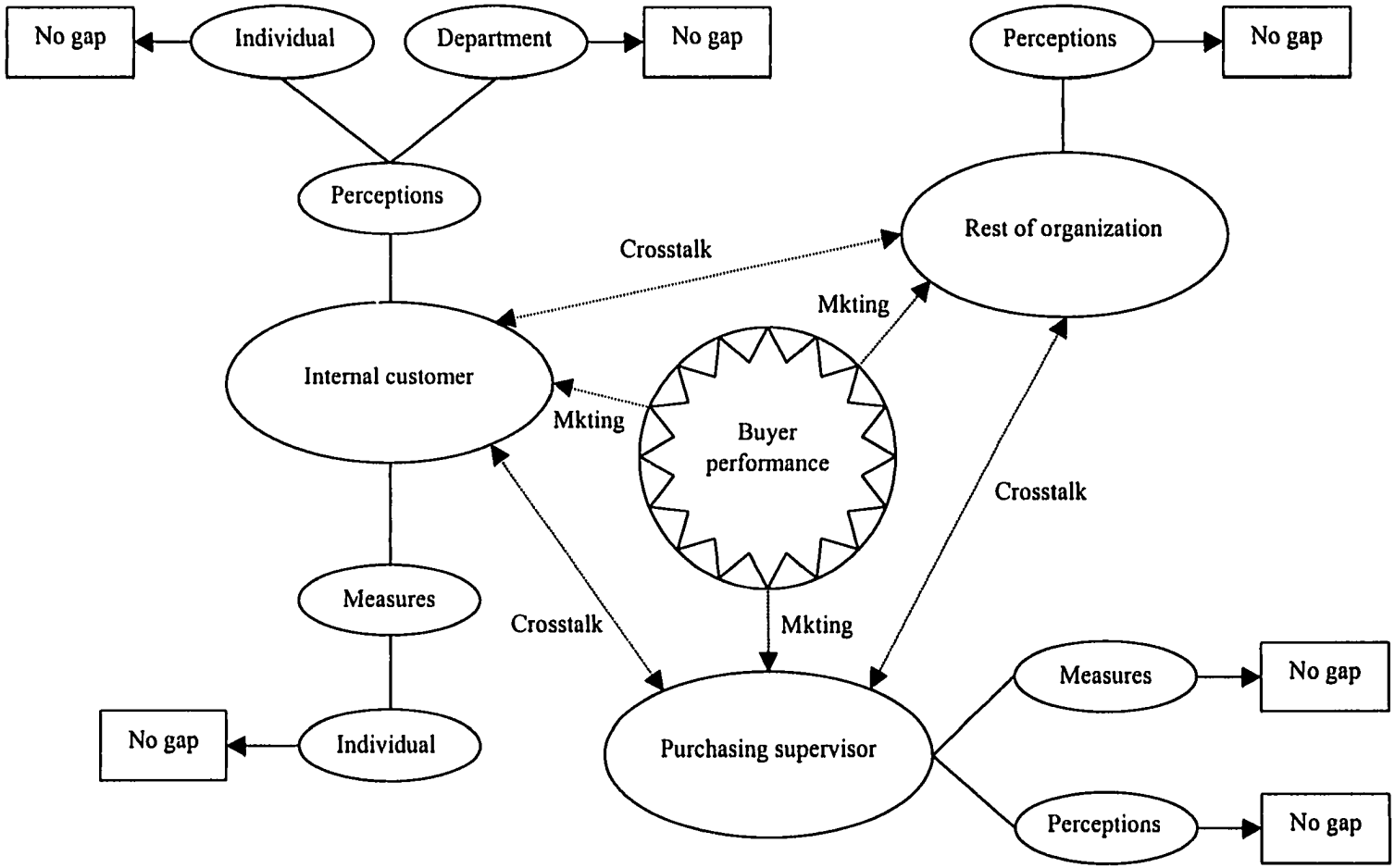

Figure 5-4: Analytic Model for Improving Perceptions and Measurements of Buyer Performance with Marketing and Constituency Crosstalk

The final way to eliminate the gap between buyer performance and the perceptions of that performance is through word-of-mouth. In organizations that have good horizontal information flows, customers will talk to each other regarding all aspects of their

operations. If one customer has a positive experience dealing with purchasing, it is likely he or she will provide both positive feedback to the purchasing manager, and good publicity regarding purchasing to colleagues in other parts of the organization. For their part, purchasing managers have access to managers from other parts of the organization. They need to use that access to find out what other departments are involved in and offer purchasing's services to support them. This is especially true when so many parts of the organization are looking for ways to outsource their activities. Purchasing managers often are privy to these initiatives and can directly offer the expertise of their department and demonstrate the value they can lend to the project. As demonstrated in Figure 5-4, this kind of crosstalk, combined with self-marketing efforts and sustained performance will eliminate any gap between buyer performance and the perceptions people may have of that performance.

Cost Allocation

This research began with three preconceptions regarding cost allocation and the purchasing of services. The first was that cost allocation in general is an inaccurate method of assigning costs to products. It creates misconceptions about the actual cost of producing a product and can lead to incorrect strategic choices regarding product

selection, resource allocation, and market focus. It is part of an antiquated system of traditional cost management that has lost its relevance in the modern business environment. Some form of strategic cost management is necessary to operate in this environment. The second preconception was that the growth of outsourcing would drive up the cost of purchasing as an indirect expense and require greater allocation of purchasing function costs across products. Finally, it was believed that the actual costs associated with purchased services were harder to assign to a given product and would also have to be allocated.

A conceptual model (Figure 1-6, page 30) was offered in Chapter 1 that expanded on a previously published strategic cost management model by Cooper and Slagmulder (1998b). The conceptual model introduced service purchases as a component of total procurement expenses, along with material purchases. It also retained overhead expenses as an element of total customer costs, theorizing that a company never fully eliminates overheads even with the most sophisticated strategic cost models. The best it can hope to do is minimize indirect costs. Procurement and manufacturing expenses are divided into their direct and indirect cost components, suggesting that some percentage of each of these expenses contributes to overhead, while the remaining percentage is directly assigned to supplier costs and product costs, respectively. The dotted line divisions of these expense categories in Figure 1-6 into direct and indirect are conceptual divisions and are intended to show only that *some* costs are direct and *some* costs are indirect. There is no empirical evidence offered to quantify an amount for either.

These preconceptions are now addressed in light of the case analysis for these eight companies. There is a general consensus among those interviewed that it is far better to assign costs directly and to minimize overhead allocations. Most of those interviewed, particularly the managers, believe their company is successful in doing just that. In the first place, despite the growth of outsourcing responsibilities that have been thrust upon purchasing departments, the size of the purchasing departments in this study all underwent some downsizing throughout the 1980s and early 1990s, and have stabilized in the years since. Yet, in all eight cases, the size of the purchasing budget throughout the 1990s has grown, as has the total sales revenue for each of the companies. So far, fewer buyers are spending more procurement dollars per buyer, and accounting for a greater piece of sales revenue with those dollars spent.

Second, even though the number of activities outsourced has grown, the number of total transactions accomplished by purchasing has also been reduced. This is due to the concentration of the supplier base and the increased use of longer-term contracts with the existing suppliers. So, each transaction can be associated with a larger piece of total revenue. However, there is a distinction worth noting between material goods and services on this point. Among this reduced number of transactions, the percentage associated with services as opposed to material goods has dramatically risen in that time period. There is the notion among respondents that companies have been less successful at reducing the supplier base and number of transactions for some services (i.e., IT and consulting), than they have for material goods. Therefore, the amount spent per transaction for services is generally smaller and less efficient than for material goods.

Moreover, service purchasing actions are more time consuming that those of material goods, particularly in the requirements definition phase. Therefore, among the indirect procurement expenses that are allocated as overheads, is it likely that services purchases are a greater contributor to the allocation base than are material goods purchases. As time goes on, and companies become more adept at standardizing service requirements, it is expected that service suppliers and the number of purchased service transactions will also be reduced, even as more activities continue to be outsourced. Time spent on service purchases will also be reduced as companies standardize and streamline service purchasing processes.

Finally, counter to all intuition to the contrary, managers across the eight companies generally believe that most actions within their purchasing organizations, be they for material goods or for services, can be directly assigned to some product or cost center and not simply tossed into overhead pools. There is evidence in all the organizations that activity-based costing (ABC) techniques -- assigning costs directly to the activities consuming the organization's resources -- are used. The costs associated with buyer actions for a particular purchase are assigned to the customer's cost center for that purchase and, in turn, directly assigned to the products for which the purchase is being made. When services are purchased that are related to many products, the costs are shared among only those products, usually through more specific allocation formulas that attempt to properly portion the costs according to the cost consumption of each product. The costs are not added to the overall overhead pool and blanketed across all products in the company. There was even evidence at one organization (Company C) that the total

cost of ownership (TCO) model was being used to further segregate the costs of a given purchase into pretransaction, transaction, and posttransaction costs, and to assign each of these smaller pieces of the cost to the activities which generated them, and then directly to the product or cost center for which that activity was performed.

Of course, the drawback of both ABC and TCO models is that the cost of implementing them grows as their sophistication grows. Most purchasing departments used these techniques sparingly, theorizing that the cost of further implementation far exceeded any benefits to be derived. According to the managers interviewed, the effect on overhead allocation of the indirect expenses associated with services purchasing was so negligible that trying to identify, address, of correct the problem would likely drive up purchasing's contribution to the overhead pool rather than reduce it.

Referring back to Figure 1-8 (page 33), for the most part these manager's perceive that through the use of standard cost accounting methods, with some ABC techniques incorporated, they were already sufficiently maximizing the true costing of their activities, and minimizing those costs associated with overhead rates and factors. Thus, these activities are not significantly contributing to the need to overestimate rates and factors, or to the loss associated with not sufficiently accounting for all existing costs.

Figure 5-5 is an analytic model representing the perceptions of the managers interviewed regarding cost management at these eight companies. It resembles the conceptual model in Figure 1-6, but incorporates the use of some ABC techniques, and the managers' perceptions that most procurement expenses are direct. Again, the division

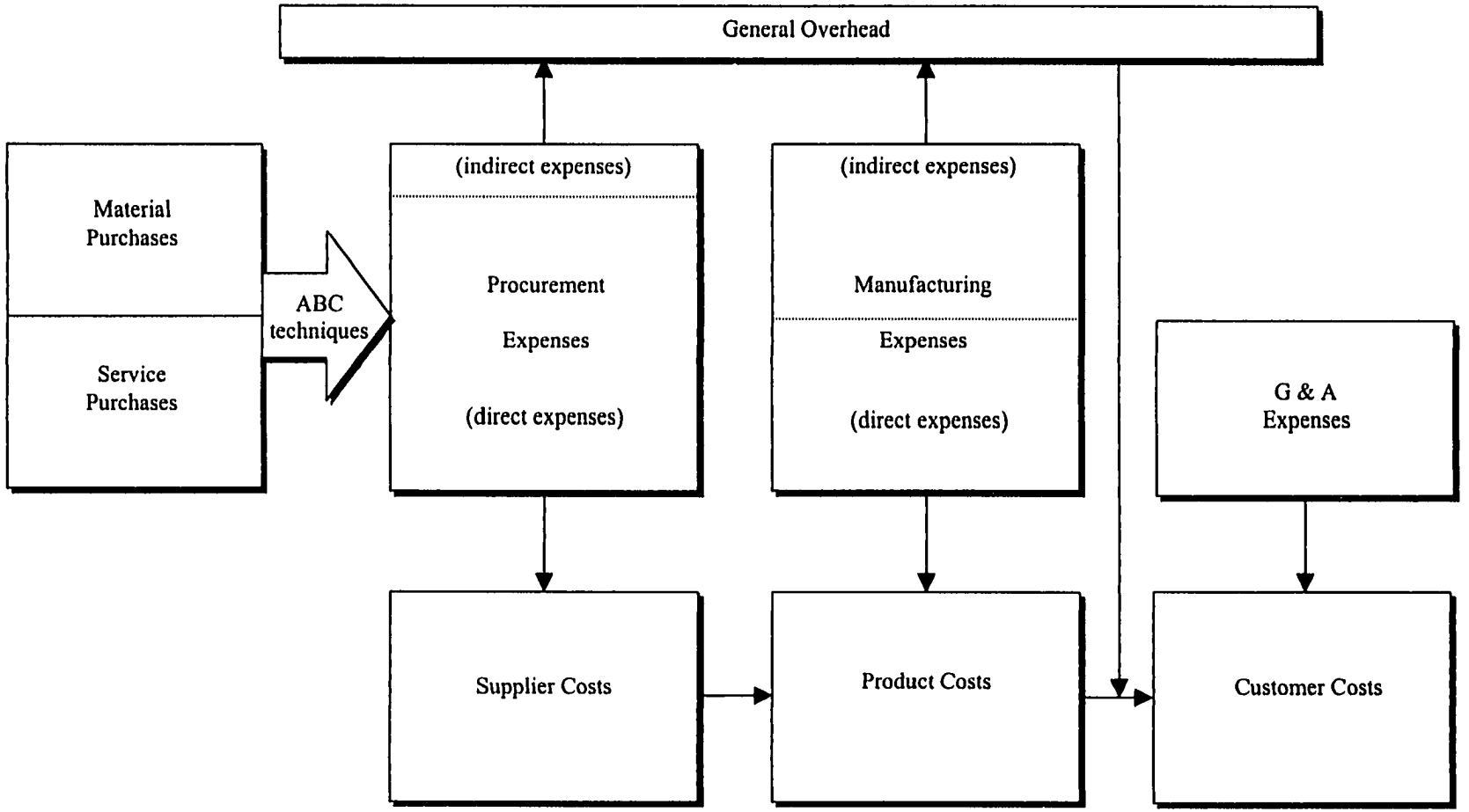

Figure 5-5: Analytic Model of Strategic Cost Management Using ABC Techniques

of procurement expenses into direct and indirect is not quantitative. The dotted line is place to represent the managers' perceptions that *most* procurement expenses are direct. In this figure, the larger size of the direct portion of the procurement expense block is attributable to the reduced size and efficient operation of the purchasing organization, and to the use of the ABC techniques. While it can be assumed that similar factors would also reduce the relative size of the indirect portion of the manufacturing expenses block, that part of the analytic model is left unchanged from the conceptual model since this research did not address manufacturing.

This chapter has been a cross-site analysis of the emergent ideas from this research. Chapter 6 presents the significant conclusions drawn from this analysis, the limitations of this research, and recommendations for future research.

Chapter 6

CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

Conclusions Derived from this Research

This research is primarily a broad survey of the area of services purchasing. It was undertaken in response to the problem statement, "What issues do corporate management and purchasing departments face associated with the purchasing of services?" The objective was to illuminate and define the issues, and to create the foundation for continuing streams of research through the formulation of hypothesis statements related to these issues. The framework for the case studies was built around four research questions that were derived from an in-depth review of the purchasing literature. Five useful conclusions emerge from this study.

1. There are numerous ways to subdivide the area of services purchasing in order to perform a deeper, more quantitative analysis. No matter what typology one creates for purchased services, each identified area has its own set of circumstances, problems, and issues that require specific actions and attention. The clearest example of this is the area of information technology services. Defining IT requirements, developing systems, and establishing on-going systems maintenance contracts, are all factors that make IT purchasing distinct from other purchasing areas. Moreover, the Year 2000 problem

(Y2K) is a singularly unique dilemma that requires a buyer to be especially knowledgeable of IT systems.

There are at least two other ways to subdivide the area in order to perform more specific, in-depth research. First, one can focus on either manufacturing organizations or service organizations. The types of services these two groups buy are somewhat different, and the commensurate issues faced by each type company will probably be different. One can take this subdivision one step further by focusing on a specific industry, like the oil industry, or banking, or the airlines. The conclusions drawn will not be as generalizable, but they will have more validity in their application to the specific industry.

The other way to focus the analysis of services purchasing is by concentrating on one of the four problem areas of this research -- type services, requirements definition, buyer performance, or cost allocation. As is evident from the write-ups in Chapter 4, any one of these areas can be expanded upon and approached with a more quantitative research approach aimed at more specific research objectives.

2. The purchased services typology established by this research is purely intuitive. Though a logical rationale is presented for the way it is segmented and organized, it is not clear that there are tangible, quantifiable factors upon which to base a more empirically based differentiation. Some companies do establish separate contract templates for certain service types, but a cursory examination of those contracts does not reveal substantive differences. It was just stated that certain service types have their own set of unique issues and problems, but, except only slightly with IT services, most companies

do not formally differentiate purchased services based on a clear enumeration of those differences. The significance of finding such differentiation is that, if they exist, their specific issues (i.e., Y2K) can be illuminated and addressed by buyers with specific training and experience in those areas.

3. Strategic purchasing is highly dependent upon the proper management of internal relationships. This became quite evident by the amount of emphasis placed on the importance of internal relationships by all the purchasing professionals interviewed for this research. These relationships are those between buyers and customers, and between buyers. The catalyst for these relationships is the buyer, who is in the unique position to observe the potential opportunities for volume leverage that can be created through the standardization of requirements. This is especially true regarding the purchasing of services because a) more and more services are being purchased as the emphasis on outsourcing increases, b) most services have only recently begun to be purchased and are having requirements defined for them for the first time, and c) the intangible nature of services makes defining and standardizing their requirements difficult, but flexible and, therefore, subject to the manipulations required to get them in line with similar requirements across the organization.

As stated in Chapter 4, if the essence of strategic purchasing is supplier relationships, the requisite condition for establishing those relationships is strong internal relationships. This is because those internal relationships are the means for establishing standardized requirements, which are the key to building volume leverage with suppliers. Volume leverage is one of the factors that put buying companies in a position to elicit favorable

terms from suppliers and give suppliers the incentive to prioritize their dealings with one buying company over another. These internal relationships, then, are the roots from which strong supplier relationships grow to produce the fruits of competitive advantage.

4. Buyers assume an informal leadership role within the project teams to which they are assigned. This occurs because the mandates of strategic purchasing have required buyers to become well-rounded business professionals and technical experts regarding the services they must buy, as well as functional specialists in the area of purchasing. The more the so-called "gap" closes between the buyer's performance and the customer's perceptions of that performance, the more likely it is that the customer and will rely on the buyer as a kind of deputy project manager. The buyer's general business acumen, combined with intimate knowledge of the requirement, grant him or her legitimate claim to this informal title. Further, the buyer's detached approach to the project offsets the project manager's parochialism, providing a check on the team's actions that will keep it aligned with company regulations and overall corporate goals.

5. The increased purchasing of services has not significantly contributed to the overhead cost pools of the companies visited. In fact, as outsourcing has increased, purchasing departments have become leaner and more productive. Further, the incorporation of some ABC techniques has allowed these companies to trace more of these costs to the activities from which they were generated, and assign them to the products or cost centers for which the activities were accomplished. In general, standard cost accounting methods are still used at these companies, but their growing irrelevance has not been manifested through the increased purchasing of services.

Limitations of this Research

1. This research is limited by its general nature and broad-based approach to the subject area. While this is necessary because it is a first approach to the subject, it does not allow an in-depth analysis of any of the issues identified. It does not, for example, go into great detail on each of the service types identified. This is because each area is so vast and unique. IT services, for example, are a complex subject area in themselves, and probably require the skills of a researcher with a formidable background in the information technology area. Nor does this research stratify the sample by type of organization (manufacturing or services), or by industry. Each of these approaches will strengthen further research efforts in the area of services purchasing.

2. The typology for purchased services is not based on tangible, quantifiable factors. It is purely intuitive and, as such, not prescriptive or helpful in providing empirical differentiation upon which companies can define and address issues or train and prepare services buyers. The typology is supported by a logical rationale and can be used by companies to at least take inventory of their purchased services and better organize themselves for control, reporting, and performance evaluation purposes.

3. All the conclusions drawn are based purely on the perceptions of purchasing professionals. The internal customers' perceptions were not pursued. These perceptions are especially applicable to issues regarding requirements definition, the nature of internal relationships, buyer performance, and the role buyers play on project teams. The conclusions drawn about the customer's inability to determine and define requirements, the importance of internal relationships, the "gap" between buyer performance and

perceptions of that performance, and the buyer's emergence as a deputy project manager are all based on the perceptions of purchasing professionals. It would be interesting to note how these conclusions would change based on interviews with the customers.

4. All the conclusions drawn are based primarily on the perceptions of purchasing supervisors and managers. Only two buyers were interviewed at only one of the companies visited. Moreover, this limited sampling revealed a contradiction to the perceptions of the supervisors regarding the gap between buyer performance and perceptions of that performance within the purchasing organization. Buyer perceptions are also applicable to issues regarding requirements definition, management of internal relationships, and the buyer's informal leadership role on project teams.

5. Conclusions regarding the collection and allocation of purchasing costs were based solely on the perceptions of purchasing managers. This is not, by itself, an unimportant conclusion. It is of some value to know that these managers do not perceive a strategic problem associated with the growth of overhead allocation due to the increased purchasing of services. Given that there is no perception of a problem, it means that there are no actions being taken to address the issue or improve the situation, whether the actual problem exists or not. If the problem is discovered through more quantitative means, one will know that the problem had been neglected prior to its discovery. However, their testimony that no problem exists is insufficient upon which to draw a definitive conclusion. More quantitative means of analysis are required by

researchers with cost accounting experience and training to give any conclusion on this issue greater validity.

Recommendations for Future Research

1. Future research regarding the purchasing of services should be segmented by type of organization (manufacturing and services) in order to determine if there is a difference between the type of services purchased by these organizations and the issues each type of organization faces regarding the purchasing of services. Prospective hypotheses statements for this kind of research are:

> H_0: There are no differences between the type of services bought by manufacturing organizations and the type of services bought by service organizations.
>
> H_0: There are no differences in the issues faced by manufacturing and service organizations regarding the purchasing of services.

2. Future research should undertake a more quantitative means of distinguishing between types of services. One method of doing this might be to gain access to actual contracts for services rather than blank templates. Actual contracts may have the distinguishing features in them that are absent from the template but incorporated for a particular purchase. Also, clauses for each contract should be entered into a database so that statistical analyses can be performed on them to determine if a) the clauses group together around particular factors, and b) the service types cluster into empirical groupings. Factor analysis and cluster analysis are the two statistical tools best suited for

this type of empirical analysis. A prospective hypothesis statement for such an analysis might be:

> H_0: There are no differences between types of services based on differentiation of contract clauses.

3. A separate analysis of these issues should be performed based on the perceptions of the customers. These customers should be surveyed regarding the types of services they are outsourcing, how they go about establishing requirements for those services, what their perceptions are of buyer performance and the value offered by the purchasing department to the procurement process, the role of buyers on project teams, and how their organizations are charged for the services they procure and the actions taken by purchasing personnel.

4. Buyers should be surveyed regarding the nature of their relationship with the customer, how they work with customers to define requirements, how they are treated on project teams, and how purchasing supervisors measure their performance as buyers. Regarding this last question, a prospective hypothesis statement is:

> H_0: There is no gap between buyer performance standards and the criteria used to measure that performance.

5. Either an in-depth, single case analysis is required, or a multiple case empirical survey, to determine exactly how purchasing departments collect the costs associated with their activities and assign those costs to products and costs centers. Such an analysis would have to be conducted by a research team that has extensive training and experience in cost accounting matters.

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Appendix A

FIRST TELEPHONE CONTACT WITH PRIMARY POINT OF CONTACT

Introduction

Dave Petrillo
Doctoral student at Penn State in State College
Also a Major in the U.S. Air Force in the field of acquisitions and logistics.

Last Week's Fax

...regarding research I'm conducting on the purchasing of services

"If you have the time now, I'd like to tell you a little more about my research and ask if you'd be willing to allow me to visit your company, talk with you and some of your people, and use the information as part of my dissertation research."

Prof. Joe Cavinato, research advisor -- National Association of Purchasing Managers -- we got your name and number from the 1996/1997 directory.

About the research

Both the academic research and industry examples show that purchasing is becoming more essential and recognizable as a key to corporate performance.

As companies focus on their own distinctive competencies, they are outsourcing more and more activities that are necessary for, but not central to, their core competency.

If there's risk associated with no longer having the activity, it is mitigated by the closeness of the relationship with the supplier to ensure consistent, affordable access to that activity (i.e., auto-makers have become product integrators).

% of costs associated with purchasing--both direct and indirect--continues to rise.

Academic and industry research has studied this phenomenon with regard to non-service purchasing, but conspicuous by its absence is any study related to the purchasing of services.

Research Objective

To illuminate the issues faced by corporate management and purchasing department executives associated with the purchasing of services.

Among my questions:

a) What kinds of services are purchasing departments being called upon to procure for the company?
b) How are service requirements being defined by the internal customer?
c) How is the job performance of the buyers of services perceived and evaluated?
d) How are service purchasing costs collected and assigned to cost objectives?

As a stipulation of allowing me to do so, I would send a complete write-up of our visit to you for your review prior to publication.

I look to you to line-up whatever other interviews with knowledgeable people in your organization you deem appropriate for to this research.

What I'll Require

(I'll fax a confirmation and an interview guideline that will include all of this).

To meet with you and others and to review pertinent information and documents (i.e., operating instructions, manuals, model contracts, evaluations) regarding

a) background info (company mission statements, org charts, size)
b) growth of service purchasing
c) kinds of services being purchased
d) how service requirements are defined
e) how the prices for services are evaluated
f) skills profile on service buyers
g) how buyer performance is perceived and evaluated
h) how service purchasing department is evaluated
i) how purchasing costs are collected and allocated to products

I expect that we'll spend some time talking, followed by me reading documents or reviewing my notes, then some more time for follow-up and clarification questions.

Particulars

Date and time of visit.

Location (directions).

Appendix B

FIELD VISIT AND INTERVIEW GUIDE

Purpose of Research

The purpose of this research is to illuminate the issues regarding the purchasing of services (both manufacturing related and those less tangible--ie. consulting services).

Interview Questions

1. Of specific interest is the following:

   a) How has the responsibility for the purchasing of services changed in the last five years (or more)? Has it become more centralized?

   b) What services is the purchasing department being asked to buy?

   c) How are service requirements being defined by the internal customer?

   d) How are prices for these services analyzed by buyers?

   e) How are service suppliers evaluated?

   f) Have you created template contracts for services? What clauses are common/unique to different types of service contracts?

   g) What is the skills profile for service buyers? Is this profile different from that of buyers of tangible items?

   h) How are service buyers perceived by the organization? Are these perceptions consistent with the tasks they must perform to satify internal customer needs?

   i) How are service buyers evaluated? Are the evaluation criteria consistent with what service buyers routinely do to perform their jobs successfully?

   j) How are purchasing costs for services collected and assigned to cost objectives (ie. products)?

2. Background Information

   a) What is the mission statement of the firm or part of the firm with which you are associated?

   b) What is the mission statement of the purchasing department and how does it support the overall mission of the firm?

   c) What is the organization of the firm and the purchasing department (organizational chart)?

   d) How large is the purchasing department in personnel and dollar amount of purchases? What has been its trend in size over the last five years (or more)?

   e) How large is the part of the purchasing department related to services in personnel and dollar amount of purchases? What has been its trend in size over the last five years (or more)?

Method of Data Collection

In addition to discussions with lead purchasing managers, I will review whatever documentation you can provide such as operating instructions, manuals, and/or other written procedures or guidelines related to the above questions.

I will set aside a full day for the visit. After an initial round of discussions, I will review whatever written materials you can provide. Follow-on discussions will address questions that may arise from this review.

For the validity and reliability of this research, I must address all of the above questions. However, discussions will be allowed to take their natural course according to the availability of respondents, information, and documentation.

Follow-up

It will likely be necessary for me to make follow-up calls to respondents to clarify information during the data analysis process. In some cases, a second visit to the company may be necessary.

To ensure accuracy on the part of the researcher, once the case is written-up it will be sent to the respondents for review prior to publication.

Proprietary Information

It is the hope of the researcher that the company can share all information regarding the research questions listed above. Proprietary information will be held in strict confidence.

Upon review of the case write-up by the respondents prior to publication, any issues regarding proprietary data will be addressed. The document may be sanitized at that time at the request of the respondent.

Regulatory Compliance

In accordance with Pennsylvania State University regulations, you will be asked to sign an Informed Consent document. This document outlines all the objectives and procedures to be used in this research and any risks to the informants and the company that may be associated therein.

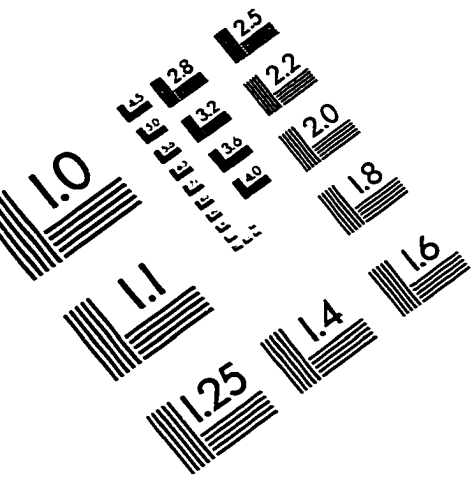
After reading and completely understanding the Informed Consent document, your signature on it formalizes your agreement to take part in this research, and protects both you and Penn State from any willful or inadvertent injury.

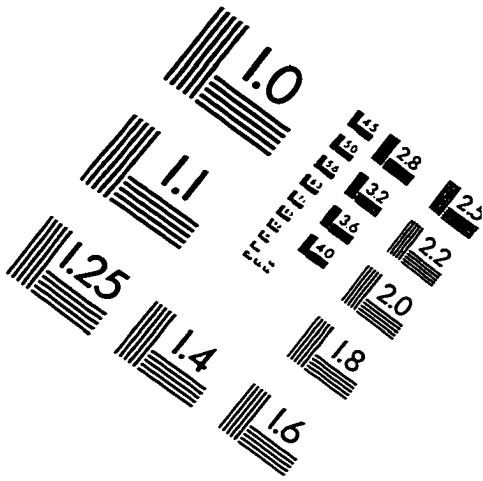
VITA

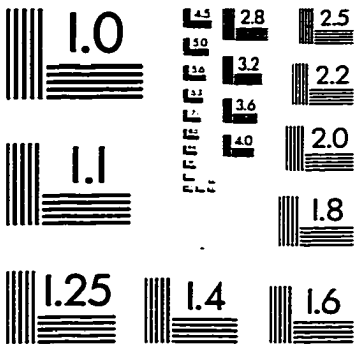
Major David Petrillo, USAF

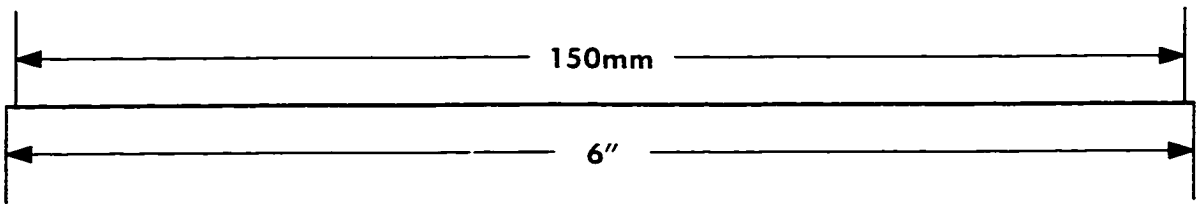
Major David Petrillo is an acquisitions and contracting professional for the United States Air Force. A graduate of the University of Notre Dame in 1982, he began his career as a missile launch officer working with both Minuteman II and Ground Launched Cruise Missiles. In 1988, he was selected for the Education with Industry program and spent nine months working at the Grumman Corporation in Bethpage, NY. From there he was assigned to the Defense Plant Representative Office at Eaton-AIL Corporation in Deer Park, NY. There he was a price analyst and contract administrator for defensive avionics contracts for the B-1 bomber. After receiving a master's degree from the Air Force Institute of Technology in acquisitions contract management in 1992, he became a buyer of research and development for Wright Laboratories at Wright-Patterson Air Force Base in Dayton, OH. In 1993 he was assigned to the systems program office in charge of purchasing the Tri-Service Standoff Attack Missile at the Aeronautical Systems Center, Wright-Patterson AFB, where he became chief of the weapon systems contracting branch. In 1995 he was selected by the Air Force to receive a doctorate in Business Logistics from the Pennsylvania State University. Upon completion of his program in August 1998, Major Petrillo will take a position as an assistant professor at the Air Force Institute of Technology in the School of Systems and Logistics. Major Petrillo is a member of the National Contract Management Association and the National Association of Purchasing Managers.

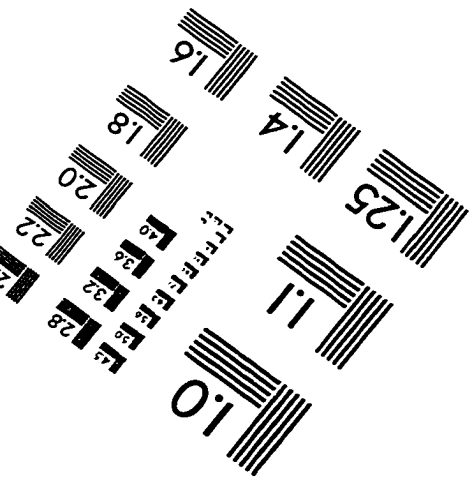
IMAGE EVALUATION TEST TARGET (QA-3)

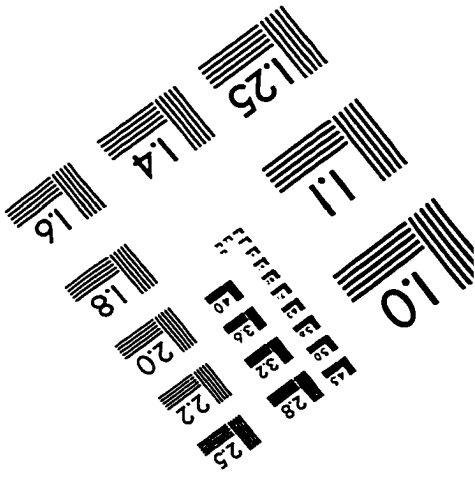












APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989