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PURCHASING AND PROCUREMENT

Purchasing and procurement is used to denote the function of and the responsibility for procuring materials, supplies, and services. Recently, the term "supply management" has increasingly come to describe this process as it pertains to a professional capacity. Employees who serve in this function are known as buyers, purchasing agents, or supply managers. Depending on the size of the organization, buyers may further be ranked as senior buyers or junior buyers.

HISTORY

Prior to 1900, there were few separate and distinct purchasing departments in U.S. business. Most pre-twentieth-century purchasing departments existed in the railroad industry. The first book specifically addressing institutionalized purchasing within this industry was *The Handling of Railway Supplies—Their Purchase and Disposition,* written by Marshall M. Kirkman in 1887.

Early in the twentieth century, several books on purchasing were published, while discussion of purchasing practices and concerns were tailored to specific industries in technical trade publications. The year 1915 saw the founding of The National Association of Purchasing Agents. This organization eventually became known as the National Association of Purchasing Management (NAPM) and is still active today under the name The Institute for Supply Management (ISM).

Harvard University offered a course in purchasing as early as 1917. Purchasing as an academic discipline was furthered with the printing of the first college textbook on the subject, authored by Howard T. Lewis of Harvard, in 1933.

Early buyers were responsible for ensuring a reasonable purchase price and maintaining operations (avoiding shutdowns due to stockouts). Both World Wars brought more attention to the profession due to the shortage of materials and the

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alterations in the market. Still, up until the 1960s, purchasing agents were basically order-placing clerical personnel serving in a staff-support position.

In the late 1960s and early 1970s, purchasing personnel became more integrated with a materials system. As materials became a part of strategic planning, the importance of the purchasing department increased.

In the 1970s the oil embargo and the shortage of almost all basic raw materials brought much of business world's focus to the purchasing arena. The advent of just-in-time purchasing techniques in the 1980s, with its emphasis on inventory control and supplier quality, quantity, timing, and dependability, made purchasing a cornerstone of competitive strategy.

By the 1990s the term "supply chain management" had replaced the terms "purchasing," "transportation," and "operations," and purchasing had assumed a position in organizational development and management. In other words, purchasing had become responsible for acquiring the right materials, services, and technology from the right source, at the right time, in the right quantity.

Only in small firms is purchasing still viewed as a clerical position. When one notes that, on average, purchasing accounts for over half of most organizations' total monetary expenditures, it is no wonder that purchasing is marked as an increasingly pivotal position.

FACTORS FOR PURCHASING

The importance of purchasing in any firm is largely determined the four factors: availability of materials, absolute dollar volume of purchases, percent of product cost represented by materials, and the types of materials purchased. Purchasing must concern itself with whether or not the materials used by the firm are readily available in a competitive market or whether some are bought in volatile markets

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that are subject to shortages and price instability. If the latter condition prevails, creative analysis by top-level purchasing professionals is required.

If a firm spends a large percentage of its available capital on materials, the sheer magnitude of expense means that efficient purchasing can produce a significant savings. Even small unit savings add up quickly when purchased in large volumes. When a firm's materials costs are 40 percent or more of its product cost (or its total operating budget), small reductions in material costs can increase profit margins significantly. In this situation, efficient purchasing and purchasing management again can make or break a business.

Perhaps the most important of the four factors is the amount of control purchasing and supply personnel actually have over materials availability, quality, costs, and services. Large companies tend to use a wide range of materials, yielding a greater chance that price and service arrangements can be influenced significantly by creative purchasing performance. Some firms, on the other hand, use a fairly small number of standard production and supply materials, from which even the most seasoned purchasing personnel produce little profit, despite creative management, pricing, and supplier selection activities.

THE ROLE OF PURCHASING

There are two basic types of purchasing: purchasing for resale and purchasing for consumption or transformation. The former is generally associated with retailers and wholesalers. The latter is defined as industrial purchasing.

Purchasing can also be seen as either strategic or transactional. Also, the words "direct" and "indirect" have been used to distinguish the two types. Strategic (direct) buying involves the establishment of mutually beneficial long-term relationship relationships between buyers and suppliers. Usually strategic buying involves purchase of materials that are crucial to the support of the firm's distinctive competence. This could include raw material and components normally used in the production process. Transactional (indirect) buying involves repetitive purchases, from the same vendor, probably through a blanket purchase order. These orders could include products and services not listed on the bill of materials, such as MRO goods, but are used indirectly in producing the item.

Some experts relate that the purchasing function is responsible for determining the organization's requirements, selecting an optimal source of supply, ensuring a fair and reasonable price (for both the purchasing organization and the supplier), and establishing and maintaining mutually beneficial relationships with the most desirable suppliers. In other words, purchasing departments determine what to buy, where to buy it, how much to pay, and ensure its availability by managing the contract and maintaining strong relationships with suppliers.

In more specific terms, today's purchasing departments are responsible for:

- coordinating purchase needs with user departments
- identifying potential suppliers
- conducting market studies for material purchases
- proposal analysis
- supplier selection
- issuing purchase orders
- meeting with sales representatives
- negotiating
- contract administration
- resolving purchasing-related problems
- maintenance of purchasing records

These functions obviously entail no insignificant amount of responsibility.

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As the role of purchasing grows in importance, purchasing departments are being charged with even more responsibilities. Newer responsibilities for purchasing personnel, in addition to all purchasing functions, include participation in the development of material and service requirements and related specifications, conducting material and value-analysis studies, inbound transportation, and even management of recovery activities such as surplus and scrap salvage, as well as its implications for environmental management.

In the 1970s and 1980s purchasing fell under the rubric of "materials management." Many corporations and individual facilities employed executives who held the title "materials manager," responsible for purchasing and supply management, inventory management, receiving, stores, warehousing, materials handling, production planning, scheduling and control, and traffic/transportation. Today, the term materials management has expanded to include all activities from raw material procurement to final delivery to the customer, to management of returns; hence, the newer title supply chain management.

As purchasing personnel became even more central to the firm's operations they became known as "supply managers." As supply managers, they are active in the strategic-planning process, including such activities as securing partnering arrangements and strategic alliances with suppliers; identification of threats and opportunities in the supply environment; strategic, long-term acquisition plans; and monitoring continuous improvement in the supply chain.

A study by found that strategic purchasing enables firms to foster close working relationships with a limited number of suppliers, promotes open communication among supply chain partners, and develops a long-term strategic relationship orientation for achievement of mutual goals. This implies that strategic purchasing plays a synergistic role in fostering value-enhancing relationships and knowledge exchange between the firm and its suppliers, thereby creating value. In addition, supply managers are heavily involved in cross-functional teams charged with determining supplier qualification and selection, as well ensuring early supplier involvement in product design and specification development.

A comprehensive list of objectives for purchasing and supply management personnel would include:

- to support the firm's operations with an uninterrupted flow of materials and services:
- to buy competitively and wisely (achieve the best combination of price, quality and service);
- to minimize inventory investment and loss;
- to develop reliable and effective supply sources;
- to develop and maintain healthy relations with active suppliers and the supplier community;
- to achieve maximum integration with other departments, while achieving and maintaining effective working relationships with them;
- to take advantage of standardization and simplification;
- to keep up with market trends;
- to train, develop and motivate professionally competent personnel;
- to avoid duplication, waste, and obsolescence;
- to analyze and report on long-range availability and costs of major purchased items;
- to continually search for new and alternative ideas, products, and materials to improve efficiency and profitability; and
- to administer the purchasing and supply management function proactively, ethically, and efficiently.

DETERMINING REQUIREMENTS

In progressive firms, purchasing has a hand in new product development. As a part of a product development team, purchasing representatives have the opportunity to help determine the optimal materials to be used in a new product, propose alternative or substitute materials, and assist in making the final decision based on cost and material availability. Purchasing representatives may also participate in a make-or-buy analysis at this point. The design stage is the point at which the vast majority of the cost of making an item can be reduced or controlled.

Whether or not purchasing had an impact on a product's design, the purchasing agent's input may certainly be needed when defining the materials-purchase specifications. Specifications are detailed explanations of what the firm intends to buy in order to get its product to market.

Generally specified is the product itself, the material from which it is to be made, the process for making it, minimum levels of quality, tolerances (a range in which a specified characteristic is acceptable, e.g., an outer diameter must be a certain size, ±25 millimeters), inspection and test standards, and a specific function the product must perform.

If the product requires a standardized component, the specifications are easily communicated by specifying a trade or brand name. However, a custom part can complicate the situation considerably; if incorrectly manufactured, such a product can severely damage a relationship, resulting in unnecessary costs and possible legal action. It is the buyer's responsibility to adequately communicate the specifications to the supplier so that there is no misunderstanding.

SUPPLY SOURCING

Part of the sourcing decision involves determining whether to purchase a part from an outside supplier or produce the part internally. This is typically known as a make-or-buy decision. If the buyer chooses to purchase the part externally, then he must find qualified suppliers who are willing to make and sell the product to his or her firm under the specified conditions.

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Buyers have a number of places to go to locate sources of supply, some obvious and some indirect. The most obvious sources would include the Yellow

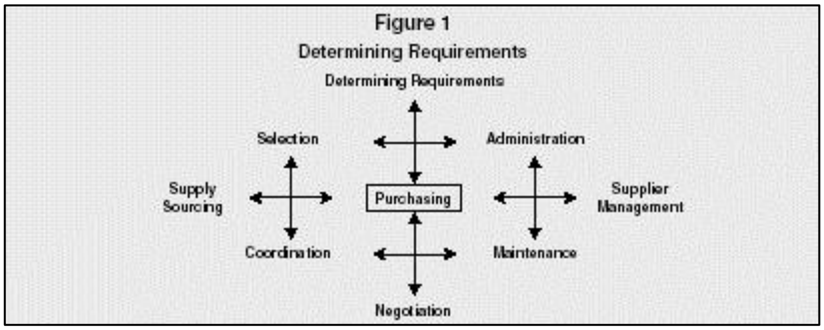

Figure 1

Determining Requirements

Pages, other purchasing departments, and direct marketing. Purchasing departments typically have a number of trade publications to which they subscribe, such as *Purchasing, Iron Age,* and *Purchasing World,* which are filled with advertisements for a multitude of suppliers. Also, being a subscriber usually puts the buyer's name on a mailing list so that flyers, postcards, and other varieties of direct marketing find their way into the purchasing department's hands.

Other sources of supply include manufacturer directories and trade registers. The best known of these is *Thomas' Register of American Manufacturers,* frequently referred to simply as the *Thomas Register*. With 125,000 trade and brand names, 151,000 U.S. and Canadian company listings, and 6,000 catalogs, it is a valuable tool for buyers. Practically every purchasing department has access to this source, either through the 34-volume book series or CD-ROMs.

Suppliers also may be found at trade exhibits, in supplier catalogs, or via recommendations from other knowledgeable sources, such as salesmen and engineers. Probably the most important and frequently used source will soon be the

World Wide Web; countless firms maintain Web pages and are listed in online catalogs and directories.

Many firms find themselves in a situation where a suitable supplier cannot be found. In this situation, the firm is forced to develop a supplier. Supplier development is sometimes referred to as "reverse marketing," which entails finding the supplier with the most potential for success and providing the resources necessary for the supplier to manufacture the needed product. This could include training in production processes, quality, and management assistance, as well as providing temporary personnel, tooling, and even financing.

When the product being purchased is fairly standard and readily available, most firms choose to utilize the competitive bidding process of supplier selection. This involves little or no negotiation. A request for bids is sent to a limited number of qualified suppliers asking for a price quote for the product, given the terms and conditions of the contract. The contract generally goes to the lowest bidder. For government bid requests, the contract legally must go to the lowest bidder qualified to fulfill the contract.

NEGOTIATION

When competitive bidding is not the appropriate mechanism for reaching the purchasing department's objectives, the buyer turns to the process of negotiation. This does not indicate a second-choice alternative, since the negotiation process is more likely to lead to a complete understanding of all issues involved between the supplier and the purchasing firm. This improved understanding can greatly reduce the number and impact of unseen problems that may arise later.

A number of circumstances dictate the use of negotiation. When a thorough analysis is required to solve a difficult make-or-buy decision, or when the risks and costs involved cannot be accurately predetermined, negotiation should be used.

Also, when a buyer is contracting for a portion of the seller's production capacity rather than a product, negotiation is typically appropriate.

Other circumstances where negotiation is favored include: when early supplier involvement is employed, when tooling and setup costs represent a large percentage of the supplier's costs, when production is interrupted frequently for change orders, or when a long time is required to produce the purchased products.

If successful negotiation is to occur, the buyer must have a reasonable knowledge of what is being purchased, the process involved, and any factors that may affect cost, quality, delivery, and service. A thorough cost and/or price analysis is essential. The negotiating buyer must also know the strengths and weaknesses of the negotiating supplier, as well as his own. Also, in light of today's global marketplace, strong cultural awareness is a must. Through proper preparation and some negotiating skill, the purchasing agent should be able to secure a contract that fulfills his/her company's needs and is adequately beneficial to the supplier as well.

SUPPLIER MANAGEMENT

After locating proper suppliers and securing contracts, it then falls to the purchasing function to monitor and control the suppliers' performance until the contracts are fulfilled—and beyond, if further business is to be conducted. All purchasing organizations need some vehicle for assessing supplier performance. Many firms have formal supplier-evaluation programs that effectively monitor supplier performance in a number of areas, including quality, quantity delivery, on-time delivery, early delivery (just-in-time users do not like early deliveries), cost, and intangibles.

For some firms, consistent supplier performance results in certification. Supplier certification generally implies (or in some cases formally asserts) that the supplier has been a part of a formal education program, has demonstrated commitment to quality and delivery, and has proven consistency in his processes. Frequently, organizations are able to take delivery from certified suppliers and completely bypass the receiving inspection process.

The buyer is also responsible for maintaining a congenial relationship with the firm's suppliers. If the buyer is an unreasonable negotiator, and does not allow the supplier to make an adequate profit, future dealings may be endangered. The supplier may refuse to deal with the buyer in the future, or the supplier may greatly increase the price of a product the buyer could not obtain elsewhere. Also, relations can become strained when the buyer consistently asks for favored treatment such as expediting or constantly changing a particular order's delivery schedule.

E-PURCHASING AND E-PROCUREMENT

The Internet and e-commerce is drastically changing the way purchasing is done. Internet use in buying has led to the terms "e-purchasing" or "e-procurement." Certainly, communication needed in competitive bidding, purchase order placement, order tracking, and follow-up are enhanced by the speed and ease afforded by establishing online systems. In addition, negotiation may be enhanced and reverse auctions facilitated. Reverse auctions allow buying firms to specify a requirement and receive bids from suppliers, with the lowest bid winning.

E-procurement is considered one of the characteristics of a world-class purchasing organization. The use of e-procurement technologies in some firms has resulted in reduced prices for goods and services, shortened order-processing and fulfillment cycles, reduced administrative burdens and costs, improved control over off-contract spending, and better inventory control. It allows firms to expand into trading networks and virtual corporations.

Criteria for e-purchasing include:

- Supporting complete requirements of production (direct) and non-production (indirect) purchasing through a single, internet-based, self-service system.
- Delivering a flexible catalog strategy.
- Providing tools for extensive reporting and analysis.
- Supporting strategic sourcing.
- Enhancing supply-chain collaboration and coordination with partners.

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