

# Purchasing Decisions and Business Strategy

## 2



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National Medico has been a manufacturer of quality, low-cost blood pressure monitors since 2010. The company has based its business strategy on automation, fast delivery, and reliable service. National is one of the first low-cost monitor manufacturers still producing and selling blood pressure monitors in the United States. Competition, especially from China, has made this an increasingly difficult business. The manufacturing process is highly dependent on timely delivery, low cost, and high-quality materials as a means of staying competitive. In the third quarter of 2019 there was a drop in sales due largely to the cost of plastic components increasing. What decisions might the management at National Medico be facing as they strategically plan for the upcoming year? How should Medico plan for their 5 year strategic plan?

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### LEARNING OBJECTIVES

Upon completion of this chapter, the reader should be able to:

- 2.1 Explain the relationship between purchasing and competitive strategy.
- 2.2 Describe the impact of competitive strategy and purchasing strategy on the supply chain and supplier relationships.
- 2.3 Discuss the competitive ranking system used to control quality relationships between suppliers and buyers.
- 2.4 State the decision-making factors that impact a buying decision.
- 2.5 Demonstrate how to develop a strategic sourcing plan.
- 2.6 Identify the continuing trends of purchasing and supply chain management.

## INTRODUCTION

Purchasing can play a significant role in making a firm competitive. Purchased inputs constitute a large portion of the company's resources. In most industrial firms, materials constitute 60% to 80% of total revenue. Purchased inputs offer a potential source for helping a company develop leverage against its competitors. Purchasing actions designed to reinforce the firm's competitive priorities can give the firm advantages over its competitors. In essence, firms must design their purchasing actions to emphasize the competitive strategy.

In this chapter, a framework for linking purchasing decisions with the firm's competitive strategy is presented. Alternate purchasing strategies can be formulated by selecting a unique combination of purchasing actions. The framework in Table 2.1 offers a systematic approach for designing purchasing strategies consistent with a firm's competitive strategy. As can be seen in Table 2.1, an effective purchasing framework includes four important decision areas: (1) supply management, (2) buying, (3) supplier development, and (4) the scope of manufacturing.

**TABLE 2.1**  
Purchasing Strategy Framework

Decision Areas	Decisions	Alternatives
Supply management	Number Location Size Managerial expertise Financial health Amount of purchase Engineering Length of contract Relationship Extent of computerization Extent of communication Value engineering	Single or multiple source  Close or geographically dispersed  Small versus large  High or low  Restrict to a certain percentage of supplier's output or no constraint  Developmental versus experienced supplier  Long term (annual or larger) or short term  Strategic versus commodity focused  Manual versus information systems  Share production plan versus nonsharing (integration)  Active program versus no program
Buying	Criteria  Purchasing scale  Ordering policy	Cost, quality, delivery or lead time, perceived reliability or reputation  Economies of scale (cost/volume) or economies of scope (joint replenishment)  Integrated with supplier information system or nonintegration
Supplier development	New product or development	Develop supplier or look for new substitute product sources
Scope of manufacturing activity	Degree of integration	Make versus buy, outsourcing

Some of the tactical tools used for implementation of the strategic framework include total cost ownership (TCO) and SWOT analysis. This chapter also shows how decision-makers can operationalize the linkages between competitive strategy and purchasing decisions.

## THE RELATIONSHIP BETWEEN PURCHASING AND COMPETITIVE STRATEGY

**LO 2.1** Explain the relationship between purchasing and competitive strategy.

In today's turbulent supply markets, purchasing professionals are expected to develop options that can help business units remain competitive. In doing so, purchasing managers need to devise purchasing actions such that they are consistent with each other and with the firm's **competitive strategy**. The framework for purchasing strategy given in Table 2.1 proposes a way of linking the competitive strategy with the purchasing policy. The components and linkages for purchasing strategy are given in Figure 2.1.

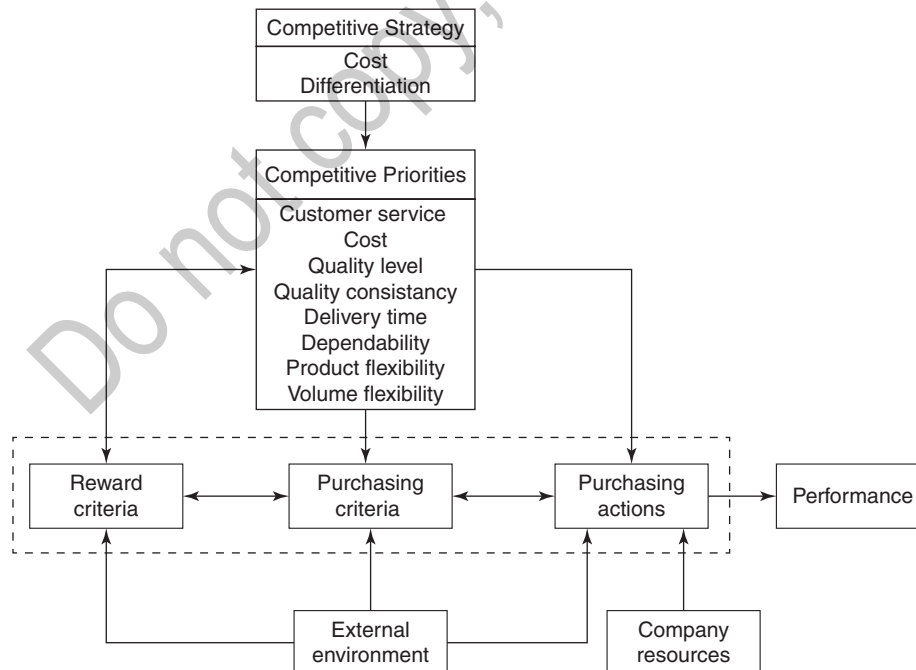
**Competitive strategy** The plan created to implement a company's unique advantages over competitors in a specific industry.

The purchasing decisions or actions that constitute purchasing strategy are determined by the firm's competitive priorities, its resource capabilities, and the environment. In the formulation of purchasing strategy, the organization's competitive priorities, the organization's strengths and weaknesses, and the competitive environment must be considered.

### Competitive Strategy

A firm can compete in two broad alternate ways. It can either seek competitive advantages on cost or choose to differentiate itself from its competitors on some attributes of the product

**FIGURE 2.1**  
Components of Purchasing Strategy



**TABLE 2.2**  
Cost and Differentiation Strategies

	Cost	Differentiation
Purchasing criteria	Low cost/unit Consistent quality Short lead time Dependable delivery	High quality Short lead time Dependable delivery Unit cost based on freight rates
Bargaining basis supplier	Economies of scale	Economies of scope
Number of suppliers	Multiple suppliers	One or few suppliers
Supplier size	Suppliers with moderate/ large capacities	Suppliers with moderate/ small capacities

or in the way it markets its product (see Table 2.2). The notion of two generic competitive advantages—cost and differentiation—is important but too broad to be useful for management faced with day-to-day decision-making. The competitive strategy is articulated in terms of competitive priorities. Key environmental factors also must be considered.

As an example, low-cost strategies generally imply more product standardization, less flexibility in responding to customer demands, fewer options, acceptable quality, and continuous process technology. A low-cost strategy is mostly concerned with market penetration with a high-volume, low-cost product. On the other hand, a product differentiation strategy is concerned with providing the customer with more selection, which implies higher costs and prices. The higher costs are a result of higher material costs and skilled labor costs. The higher service levels expected also lead to increased finished goods inventories.

### Competitive Priorities

Competitive priorities are one means of articulating a firm's competitive strategy. The **competitive priority** is a key determinant of the importance given to different criteria in purchasing material. However, the **purchasing criteria** also are influenced by individual buyer performance and reward criteria. The competitive priorities define the intended or desired purchase criteria, and the **reward criteria** determine how closely the objectives are met.

The competitive priorities operationalize the firm's competitive strategy. The two generic competitive advantages—delivery speed and reliability—are operationalized in terms of cost, quality level, quality consistency, delivery time, dependability, product flexibility, volume flexibility, and customer service. By assigning priorities to these dimensions, the firm operationalizes its strategy. The priorities can then be used to generate alternatives consistent with the firm's competitive strategy. A company competing on cost should drive the overall costs down. On the other hand, a firm competing on differentiation must devise its actions to enhance its uniqueness on quality, flexibility, customer service, or any combination of the three. Expertise and understanding of the buying organization to cost differentiation and environmental factors usually lead to a competitive advantage.

**Competitive priority**

A key determinant of the importance given to different criteria in purchasing material.

**Purchasing criteria**

Price, quality, and delivery speed.

**Reward criteria**

Determine how closely the objectives are met.

## Purchasing Criteria and Purchasing Actions

The criteria in buying material must reflect the firm's competitive priorities. A firm competing on cost must give high priority to purchasing costs. A firm competing on flexibility must give high priority to lead time in buying material. With short lead times, the company can be more flexible; it can develop the ability to respond to changing situations quickly. Lead times are also important in achieving superior customer service. Suppliers with short lead times and who are reliable in meeting their due dates minimize the problem of material shortages for the manufacturer; as a result, the company's production can be more dependable in meeting the customers' due dates. A company emphasizing customer service will need to carry more inventory to buffer against uncertainties, if the supplier is unreliable. Inventory is an expensive alternative. Purchasing decision-makers must consider the firm's competitive priorities in choosing the criteria on which the material is purchased. The impact of purchasing/manufacturing on inventory is given in Table 2.3.

The criteria on which the buyer's performance is evaluated can influence the effectiveness of purchasing actions and effectiveness in making the firm competitive. Cost variance seems to be the dominant criterion in evaluating performance of purchasing decision-makers. This emphasis on cost can drive purchasing decision-makers to take actions that keep material costs low, but other criteria may be neglected, and the purchasing actions may end up being inconsistent with the competitive strategy.

### Reward Criteria

The reward criteria determine the firm's actual priorities. The closer the reward criteria reflect the performance on the competitive priorities, the narrower the gap will be between intended and realized objectives. If reward criteria emphasize cost, purchasing decision-makers will emphasize cost in making decisions, irrespective of the competitive priority.

**TABLE 2.3**  
Purchasing Strategy and Inventory Investment

Inventory Classification	Raw Materials and Parts	Work in Process	Finished Goods	Spare Parts
<b>STRATEGY</b>				
Low cost make-to-stock	Low	Low	Medium	Low
Narrow product line make-to-stock	Low	Low	Medium	Medium
Wide product line make-to-stock	Medium/High	Medium	Medium	High
Rapid customer response with customized product	High	Low	None	Low
Level production for seasonal demand	Low	Low	High/Low	High/Low
Quick spare parts response	Low	Low	—	High

**FIGURE 2.2**  
Environmental Factors

Environmental Factors
1. Inflation rate
2. Monetary policy
3. Fiscal policies
4. Technological development
5. Industry capacity
6. Market growth
7. Global stability
8. Cultural differences
9. Recently implemented trade policies

### External Environment

For suppliers in emerging economies, recent environmental factors are altering the competitive landscape (see Figure 2.2). First, many manufacturers in advanced economies are reevaluating their global outsourcing relationships due to the hidden costs of outsourcing, such as intellectual property (IP) theft and quality problems. Second, as the ability to innovate within a supply chain is becoming increasingly more important, many firms in emerging economies are attempting to shift from a cost focus to an innovation focus.

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## SUPPLY CHAIN STRATEGY

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**LO 2.2** Describe the impact of competitive strategy and purchasing strategy on the supply chain and supplier relationships.

As competitive forces increase, customers demand better products, faster delivery, increased service, and decreased costs. As firms become more competitive, a rippling effect is experienced by the suppliers. As a result of increased competition, deregulation, and relaxed anti-trust requirements, the supplier partnership concept has emerged as a competitive weapon. Other secondary reasons for partnerships are the increased use of electronic data interchange (EDI) and just-in-time (JIT) manufacturing. In theory, the newly developed “partnership concept” is adequate; however, in practice, partnerships may result in one-way power moves. One partner usually gains the flexibility and efficiency of quickly responding to the changing marketplace; the weaker partner is left with higher inventories and unstable schedules. As inventory levels are reduced throughout the supply chain, each member becomes less insulated from demand variation. As defined by Maloni and Benton (2000),

Power may be defined as the ability of one firm (the *source*) to influence the intentions and actions of another firm (the *target*). The power of a supply chain member [is] the ability to control the decision variables in the supply strategy of another

member in a given chain at a different level of the supply chain. It should be different from the influenced member's original level of control over their own supply strategy. (p. 53)

Thus, supplier partnerships are not always beneficial for both buyer and seller. These new supplier–customer relationships require trust and commitment by both parties, which is in direct contrast to their historical relationships that have been far from cooperative. Traditional purchasing attitudes have always encouraged arm's-length relationships with price as the dominant buying factor. Today, supplier partnerships look for a more cooperative attitude between parties. Companies participate in a variety of supplier relationships and take on a variety of roles. Each company can be a supplier, customer, or end user of products. As presented in Table 2.4, supplier partnerships can be categorized using four factors: (1) degree of risk/reward, (2) information, (3) planning, and (4) asset ownership.

The characteristics of buyer–seller relationships exist on a continuum beginning with the traditional approach of *open market*, with a single short-term contract that presents minimal risk to both parties. The opposite extreme is *vertical integration*, where the parties are fully integrated as one unit. *Partnerships* are a hybrid of these extremes with each party retaining an individual identity. A long-term relationship provides the ability to share assets and information and integrate planning, technology, and processes. In theory, partnership members equally share risks and rewards.

Since supplier–customer relationships have historically been categorized by open-market characteristics, this often-adversarial relationship may be difficult to circumvent when developing a partnership. The movement from one extreme to another requires great trust and cooperation of the parties. This comfort level can be more easily obtained by understanding the dynamics of the relationship, being aware of the inherent risks and benefits to each party, and safeguarding the individual partners from undue burdens or compensation. Example 2.1 provides a real-world example.

**TABLE 2.4**  
Major Characteristics of Industrial Buyer–Seller Relationships

Factor	Open Market	Partnership	Vertical Integration
Degree of risk/reward relationship	Minimize risk, maximize rewards, Single contract between firms	Manage/share Risk and reward Multiple contracts/levels	Absorb or manage risk and reward internally Multiple contract levels
Information	Limited only as needed for transaction	As required for planned output, processes, and technology	Fully integrated
Planning	Short-term transaction	Long-term, ongoing	Long-term, ongoing
Asset ownership	Completely separate	May be shared, with some financial commitment	Fully owned

Source: Ellram, Lisa M. "Life Cycle Patterns in Industrial Buyer Seller Partnerships." *International Journal of Physical Distribution and Logistics Management* 21, no. 9 (1991), pp. 12–21.

## Example 2.1

### A PARTNERSHIP

PPG Industries established what came to be known as “Supply City” in Lake Charles, Louisiana, next to its chemical plant. This complex consists of nine noncompeting suppliers who supply the plant on a just-in-time (JIT) basis with high-use maintenance, repair, and operating (MRO) inventory items.

Before Supply City, the Lake Charles facility operated a warehouse for spare parts and MRO items. This warehouse was linked throughout the plant by computers with item users. Users would order supplies needed through the computer. Orders were printed out in the warehouse and stock pickers would pick the material, load it onto a truck, and deliver it on a prescheduled basis throughout the plant. This system operated effectively; however, operating cost and inventory levels were high. To reduce costs and lower inventory levels, the Supply City idea was executed. This new system would set up a supplier stocking program and establish a supplier complex in one location next to the Lake Charles plant.

Supply City is an industrial park created by PPG next to the Lake Charles chemical plant. The suppliers in the facility signed 5-year agreements ensuring continuity of supply and minimum levels of performance. PPG’s side of the contract outlines commodity groups for each supplier, stock levels, pricing, and delivery schedules. These contracts ensure a full scope of commitment from both sides while guaranteeing sales volumes for each supplier.

The Supply City stocking program operates within the existing plant stock-picking warehousing systems. Each supplier is connected to the plant computer system. When plant personnel place an order for an item supplied from Supply City, the order is printed out in the supplier’s office instead of the plant warehouse. The supplying firm then retrieves the item and places it on the dock to be delivered to the plant with the next scheduled shipment. The item is then delivered to the plant receiving dock and is immediately transferred to the end user. This system eliminates duplicate stock storage and handling from middleman stock pickers. Each supplier is paid electronically every two weeks, eliminating invoicing.

In the first two years of operation, Supply City allowed the Lake Charles plant to eliminate 45% to 50% of its plant inventory, resulting in a savings of \$3 million. Stock-outs were reduced to 3%. In addition, administrative costs were reduced through elimination of POs and invoices, procurement time was reduced, quality was improved through the reduction of suppliers, and the proximity of technical personnel improved supplier technical and material application support. These savings and improvements can be transferred directly to PPG customers in the form of improved product quality, reduced cycle time to market allowing for quick adjustment to customer demands, and reduced costs for the final products.

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### SUPPLIER RELATIONSHIP QUALITY (SRQ)

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**LO 2.3** Discuss the competitive ranking system used to control quality relationships between suppliers and buyers.

#### **Supplier relationship quality indexing (SRQ)**

A methodology that may provide the manufacturer with the information needed to make the hard decisions about balancing the needs of the buying organization and the needs of the supply chain itself.

**Supplier relationship quality indexing (SRQ)** is a methodology that may provide the manufacturer with the information needed to make the hard decisions about balancing the needs of the buying organization and the needs of the supply chain itself. The ultimate customer’s expectations of performance may not be consistent with the manufacturer’s or supplier’s expectations. The customer is interested in cost, quality, satisfaction, service, and delivery performance. The customer will engage competing manufacturers and supply chains if their expectations are not met. On the other hand, supplying firms may be just as critical for the manufacturer’s survival as the ultimate customer. There is a trend toward outsourcing a larger share of the sales dollars to suppliers. Thus, it is not easy to replace a strategic supplier. In a



supply chain environment, changing suppliers can have an adverse effect on the value creation process. More importantly, the supplier may choose to service manufacturer B and sever the relationship with manufacturer A (see Figure 2.3). The change in suppliers could easily have a negative impact on the desires and expectations of the ultimate customer. As shown in Figure 2.3, in a supply chain environment, the manufacturer is the suppliers' customer.

Because of the increasing importance of supplier relationship management, many buying firms are implementing supplier relationship management strategies in their business plans to ensure they maintain their competitive edge. This is especially true in an oligopolistic environment where supplying firms are members of competing supply chain networks. This supply chain relationship disparity is the motivation for the current supplier relationship quality (SRQ) indexing. SRQ indexing seeks to assess the supplier–buyer relationship from the supplier's point of view. Specifically, SRQ indexing is concerned with the extent to which cooperation, trust, commitment, satisfaction, and performance expectations influence the relationship between supplying and buying firms competing in the same industry. Critical issues addressed by SRQ indexing will provide the purchasing manager with answers to the following questions:

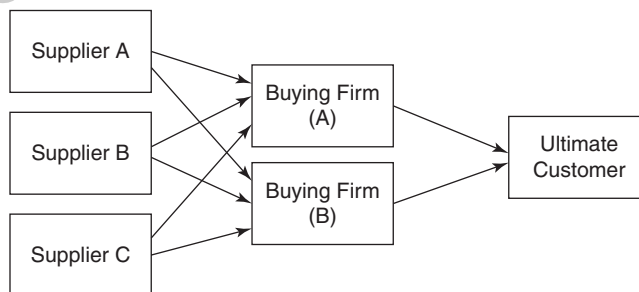
- How does commitment influence the SRQ index of the supplier–buyer relationship?
- How does trust influence the SRQ index of the supplier–buyer relationship?
- How does cooperation influence the SRQ index of the supplier–buyer relationship?
- How does satisfaction influence the SRQ index of the supplier–buyer relationship?
- How does performance influence the SRQ index of the supplier–buyer relationship?

The supplier relationship quality (SRQ) concept focuses on strategically planning for and managing the perceived quality of the buyer–seller relationship to maximize value and minimize the risk of those interactions.

### The Evolution of Supplier Relationships in the Automobile Industry

In the early 1900s, automobile manufacturers transformed the entire manufacturing industry from a craft orientation to mass manufacturing. Half a century later, the same industry revolutionized manufacturing again, steering manufacturing from mass production to lean production. Now these same producers offer the next revolution, e-manufacturing.

**FIGURE 2.3**  
Typical Supply Chain Network



These automotive giants were not the first to embrace the information economy. However, over the past several years, they have contributed to its development. This development has experienced difficulties and roadblocks at every stage. Nevertheless, the automobile industry can be a leading indicator of what lies ahead for the application of networking and information technology to manufacturing and supply chain management.

In 1999, General Motors, Ford, and Chrysler joined together in a venture that attempted to take advantage of the promises of e-manufacturing. The venture was given the name Covisint (COmmunication VISion INTegration). This online marketplace was expected to connect more than 35,000 suppliers, partners, and manufacturers worldwide in a virtual market that would process over \$300 billion worth of transactions annually. Covisint, as it was originally envisioned, did not work for at least two reasons:

1. A majority of the suppliers were skeptical and did not sign up.
2. The manufacturers themselves did not appear to trust sharing information among themselves.

A result of the major automakers sharing the same supply chain is the creation of a “free-rider” situation in which the automakers lack the incentives to invest adequately in their supply bases. That is, if an automaker helps its suppliers develop a new technology (such as Covisint), the supplier’s other customers will enjoy the same improvements without having contributed.

However, with the increase in globalization, driven in part by IT, competition has increased at accelerated rates. Increased competition has led to firms focusing more on their core competencies and less and less on vertical integration. This focus has led to increased specialization within the firm, which drives the need for firms to outsource more of their noncore functions. The result is that a firm must build more collaborative business relationships with constituencies beyond its formal boundaries. Moreover, tightly integrated sharing of information facilitates these relationships. As competition increases, the range of integration expands and the need to manage information becomes increasingly critical. The rise of MRP, MRP2, CRM, SRM, and ERP is evidence of the need for information sharing and the fact that e-manufacturing is becoming a reality.

Five automobile manufacturers (Chrysler, Ford, General Motors, Honda, and Toyota) participated in a research project. Telephone interviews were conducted with Ford and Toyota. Field visits were conducted with General Motors, Chrysler, and Honda at their facilities. The manufacturer meetings, as well as other industry research, showed that the manufacturers had achieved different levels of success in implementing supply chain management. Some manufacturers, such as Chrysler and Honda, were already capitalizing on integrated supply relationships in order to gain competitive advantage in the industry. Others, like General Motors, still struggle, however, to implement effective supply chain integration strategies. Given this disparity, the SRQ indexing methodology was implemented (see appendix).

The automobile industry is used to set the stage for the SRQ indexing methodology. The import of high-quality, fuel-efficient, and competitively priced automobiles from Japan in the 1970s and 1980s forced American automobile manufacturers to become more competitive or go out of business. Subsequently, one critical success factor in the industry has proved to be effective supplier partnering. Furthermore, the industry retains a fertile climate for technological integration.

Table 2.5 shows the relative state of competition in the U.S. automobile industry. One impression is that relatively few manufacturers account for most of the automobile production for the U.S. market. The Big Three, along with the three Japanese transplant manufacturers (Toyota, Honda, and Nissan) sell more than 75% of new automobiles in the U.S. market. Given the high price of automobiles and the fact that over 17.2 million vehicles were sold in the United States in 2018, a tremendous amount of revenue is associated with just six manufacturers. This indicates a significant supply chain power advantage in favor of the automobile manufacturers because they are an oligopoly.

Given the market share of the larger automobile manufacturers, there are many critical industry-wide issues that affect supply chain processes in the United States. This has implications for manufacturer–supplier integration. First, both the U.S. and Japanese transplant firms are attempting to use supply chain management as a source of competitive advantage within the industry. Effective supply chain management involves the coordination of suppliers and manufacturers to decrease costs, increase quality, and accept more product design responsibilities.

In the management of an effective and coordinated supply chain relationship between suppliers and manufacturers, there must be a way to assess what constitutes success from the suppliers' and buyers' vantage points. The suppliers' perception is important despite the

**TABLE 2.5**  
Cumulative Market Share of Automobile Manufacturers in 2018

Manufacturer	Vehicles Sold in the U.S. Market	Percentage of Total	Cumulative Percentage
GM	2,954,037	17.1%	17.1%
Ford	2,485,222	14.4%	31.5%
Toyota	2,426,672	14.0%	45.5%
Fiat Chrysler	2,235,204	12.9%	58.5%
Honda	1,604,828	9.3%	67.8%
Nissan	1,493,877	8.6%	76.4%
Subaru	680,135	3.9%	80.4%
Hyundai	677,946	3.9%	84.3%
Kia	589,673	3.4%	87.7%
Mercedes	354,144	2.1%	89.7%
VW	354,064	2.0%	91.8%
BMW	311,014	1.8%	93.6%
Mazda	300,325	1.7%	95.3%
Audi	223,323	1.3%	96.6%
Tesla	191,627	1.1%	97.7%
Mitsubishi	118,074	0.7%	98.4%
Other	274,085	1.6%	100.0%
Total	17,274,250	100.0%	100.0%

Sources: Mark lines, the *Wall Street Journal*, Tesla; January 4, 2019.

relative difference in power between supply chain partners. One way to assess how suppliers view success is to peg the supply chain relationship on the appropriate criteria.

### A Practical Example of the Use of SRQ Indexing

On March 31, 2012, there was a fatal explosion at a chemical plant in Germany. That plant was responsible for producing roughly half of the world's supply of a chemical used to produce a specific plastic resin—Nylon-12—critical in fuel lines and other auto parts. The chemical plant was expected to take more than 6 months to repair the damage and resume full production. This meant the world's automakers were suddenly facing a crisis that threatened to slow vehicle production around the world.

When it became clear that the whole industry was affected, more than 200 auto executives met in Detroit to deal with the looming parts shortage. Each was assigned a task, such as finding a replacement material or identifying new firms to produce it. Chemical manufacturers assembled teams to work with the automakers on increasing production of replacement materials. Ultimately, the industry's teamwork paid off, and they managed to get other companies to make the chemical. This is an excellent example of the importance of the concept of supplier relationship quality (SRQ).

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## THE INTEGRATED BUYING MODEL

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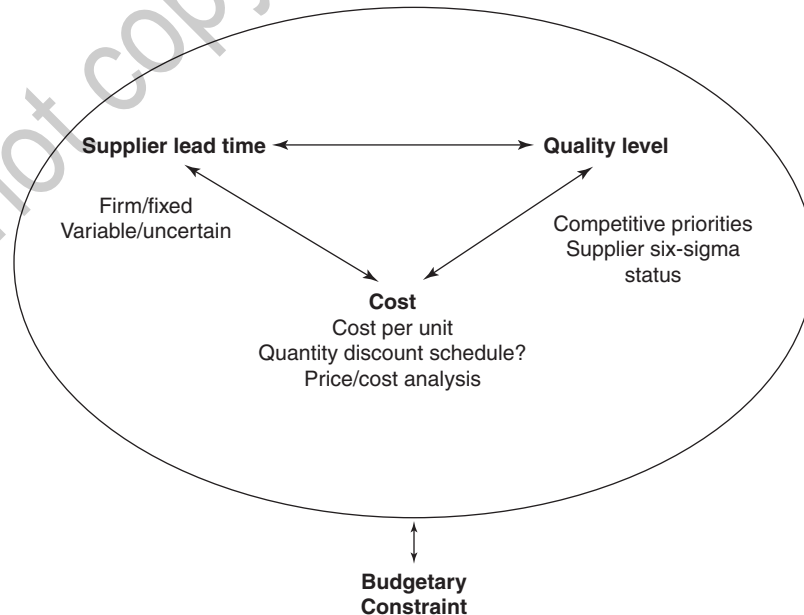
**LO 2.4** State the decision-making factors that impact a buying decision.

The **integrated buying model** is shown in Figure 2.4. The decision-maker faces multiple goals in making the buying decision. The cost per unit, quality, and lead time are some of the issues a decision-maker faces in making the buying decision.

**Integrated buying model** A model used by the buyer organization in making purchasing decisions; buying the right material at an acceptable cost and quality level within a reasonable lead time.

**FIGURE 2.4**  
Integrated Buying Model

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In most cases, the purchasing decision calls for buying the right material as specified at an acceptable cost and quality level within a reasonable lead time. The acceptable levels will vary depending on the firm's competitive position. The decision-maker has to contend not only with multiple goals but also with several constraints. Firms often have limited resources. Inventory budgets may be limited, or storage space may constrain the quantity that may be purchased at any instant. The multiple goals must be satisfied within the constraints.

### **Cost**

The cost per unit of material depends on the volume or amount purchased, the quality level desired, and the desired lead time. Material procured in larger volume enables the firm to buy at discounts. The discounts drive down the material cost. Higher quality level expressed in terms of lower defect rate usually pushes the purchase price higher. Since the supplier ensures higher quality by absorbing or preventing more defects, it usually charges a premium. To procure material at less-than-normal lead times, a premium price may have to be paid by the buyer. Thus, cost per unit is composed of material volume, quality level, and response time.

### **Quality Level**

The quality level of material purchased must meet the desired objective as defined by the firm's competitive priorities. The lower the acceptable defect rate, the higher the quality level of the material purchased. A firm emphasizing quality may give more importance to achieving quality goals than cost objectives. Six sigma is a way to measure supplier quality (see Chapter 12 for a more detailed discussion). Supplying firms that follow the core philosophy of six sigma will make excellent strategic partners. Six-sigma suppliers focus on (1) defects per million units as a standard metric, (2) provision of extensive employee training, and (3) the reduction of non-value-added activities.

### **Supplier Lead Time**

Supplier lead time affects a firm's flexibility and service to its own customers. Firms that compete in volatile markets and face rapidly changing product or technology require greater flexibility than firms competing in stable markets. With short lead times, the company can be responsive to external changes. In these circumstances, firms may desire to pay a premium for quick delivery to maintain their competitive edge. The more uncertainty there is in a supplier's lead times, the more difficult it is to manage the production process.

### **Budgetary Constraints**

A buyer must not only satisfy cost, quality, and lead-time goals but also stay within quantity and budgetary constraints. The buyer must ensure that the right quantity of material is purchased to satisfy the demand; otherwise, shortages may occur, resulting in poor customer service. The budget limitations may constrain the amount of material that can be purchased at any instant. The buyer may have to give up quantity discounts if the storage or budget resource is not available.

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## THE STRATEGIC SOURCING PLAN

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**LO 2.5** Demonstrate how to develop a strategic sourcing plan.

A number of important challenges face supply managers and executives in the future. Perhaps the most significant changes will occur in the purchasing area. More and more firms will be competing for limited supplies of materials. At the same time, stockholders will demand more profitability. In addition, the internationalization of supply markets, manufacturing, and market segments will bring the purchasing function into clear focus. The opportunities, if pursued, will be unlimited; if not pursued, it could be devastating to the firm's survival. To take full advantage of the challenges, the purchasing function must be integrated into the firm's overall strategic plan.

### Developing a Strategic Sourcing Plan

The development of a strategic sourcing plan requires the following:

1. A complete understanding of corporate strategies and marketing plans in order to provide well-integrated purchasing systems
2. An extensive evaluation/study of current suppliers, how performance is measured, and the expectation of suppliers relative to the industry
3. Study of the degree of global purchasing opportunities
4. Identification of total costs associated with current purchasing department function, budgets, staffing, and so forth

Management must devise a data collection instrument to respond to these four issues. The strategic purchasing plan must answer questions related to specific sources of supply, technological changes, and the extrapolated costing structure. The four phases of the strategic sourcing plan are outlined here.

#### Phase 1. Sourcing Audit

The sourcing audit is used as a diagnostic process that identifies opportunities for increased profitability. The audit should be broad and systematic and will serve to reaffirm company objectives, determine how well the current sourcing strategy is performing, and identify the areas that need immediate managerial attention. Some of the issues relating to the organization, policies, and procedures that should be addressed are listed here:

1. Evaluation by senior management of the increased profits and benefits from an effective sourcing system
2. Interdepartmental communication on the benefits from the joint sourcing requirement
3. Effective participation in long-range planning by the supply management/purchasing department
4. Evaluation of the efficiency and cost-effectiveness of existing sourcing policies

5. Exploration of the cost-effectiveness of the present purchasing organization
6. Examination of the advantages and disadvantages of a centralized versus decentralized organization
7. Review of the strategic plans of the purchasing department to determine if they have been carefully developed and documented
8. Senior management support of the purchasing manager
9. Assessment as to whether procedures for small purchases are cost-effective
10. Review of the current purchasing manual to determine whether it is understood and followed in current purchasing decisions
11. The role of senior management in promoting compliance with the purchasing manual throughout the company

In addition, questions relating to the requirements process, the selection of the right sources, getting the right price, subcontract administration, and other important issues will be thoroughly investigated.

### **Phase 2. Organizational Development**

This phase involves developing sourcing strategies, setting clearly outlined areas to cut costs and improve profitability, establishing a sourcing control system based on frequent analysis and systematic approach, formulating incentive programs, and making provisions for training by taking advantage of local ISM seminars and in-house sessions on how to establish the purchase of monitoring systems.

### **Phase 3. Implementation and Evaluation**

In this phase, a thorough indoctrination of the company with sourcing strategy, implementation of new procedures, monitoring of sourcing activities, feedback mechanism for evaluation, and refinement of sourcing processes is conducted. The implementation and evaluation plan includes the following:

1. Thorough indoctrination of the company with the sourcing strategies
2. Implementation of new procedures
3. Monitoring of sourcing activities
4. Development of a feedback mechanism
5. Refinement of sourcing processes

### **Phase 4. In-House Training Sessions**

Classes should be conducted in groups of approximately 15 individuals. Appropriate purchasing and other management personnel from the company will attend these sessions to learn state-of-the-art purchasing techniques, negotiation strategies, and cost-containment methods.

## Program Objectives by Phase

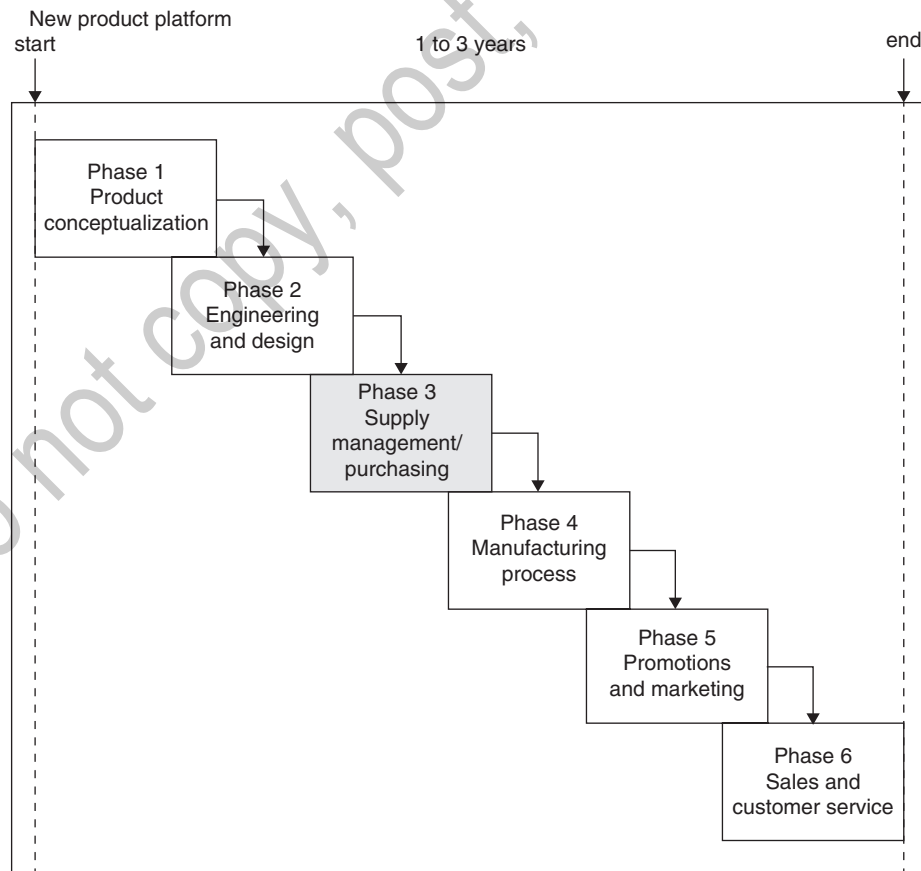
From work done during Phase 1 of the project, the company can expect to gain valuable insight into the present sourcing system and discover paths that can lead to new opportunities as the company enters the next decade. Information on the relationship with suppliers during the current period compared with the next decade will help chart the course for the future. In addition, the present systems for the control of the sourcing process should be evaluated, as should the compliance with the purchasing manual.

In addition, sourcing objectives should be refined to take advantage of insights gained from Phase 1 of the project. Buyers should be exposed to a reinforcement of the basic skills of their profession, refinement of the technical knowledge required, and a system of effective time management that are necessary to take advantage of sourcing opportunities. Finally, control devices for monitoring and reassuring sourcing activity will be created for ensuring consistency and effectiveness.

During and following Phase 2, “management by objective” systems should be implemented that enable the purchasing department to clearly set cost-savings goals. These savings will go straight to the bottom line.

**FIGURE 2.5**

Purchasing's Role in the New Product Development Process





After Phase 3 has been completed, the company can expect to be operating with a more developed organization capable of producing more cost-effective purchases with more profit from the savings. In short, more efficiency from planning and controlling the sourcing operation can be expected. The necessary tools also will be in place for effectively monitoring and refining the sourcing processes and conducting in-house sourcing audits in the future.

Purchasing and supply management has evolved into a strategic business activity and thus also is a potential contributor to the successful development of new products. However, the involvement of purchasing in new product development (NPD) is for the most part informal in most firms. Firms differ in the extent to which they involve purchasing in NPD. Purchasing specialists can be especially useful at the design and engineering phase of the NPD process (see Figure 2.5).

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## PURCHASING STRATEGY TRENDS

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**LO 2.6** Identify the continuing trends of purchasing and supply chain management.

An article titled “Research Opportunities in Purchasing and Supply Management” was published in the August 2012 issue of the *International Journal of Production Research*. Panels of eight leading scholars in the purchasing and supply management (PSM) field were the contributors for the study. Among them were several journal editors of highly respected peer-reviewed academic journals publishing PSM research, as well as authors of some of the most successful PSM textbooks. These distinguished individuals provide an opportunity to tap the knowledge of a group of experts with extensive experience in the academic and practical aspects of PSM.

The purchasing and supply management function is crucial for effective business strategy and operations excellence. The PSM function has evolved from being a routine transactional function to a dominant function that delivers true competitive advantage to the business organization. The environment of increased globalization and outsourcing has led to an increased reliance on supplying organizations. This change in status has significantly enhanced the importance of PSM’s role in the business strategy process. It is therefore crucial to highlight continuing trends in industry practice. The findings are given here.

1. *Increases in global purchasing with China and India.* Outsourcing from India and China will continue to be important to businesses throughout the world. The products and services that are outsourced will become more sophisticated. Examples include health care, tax consulting services, engineering and design, and high-tech manufacturing.
2. *The strong relationship management between buying and selling organizations.* While the development (creation) of buyer–supplier relationships is well understood (e.g., influence of trust, dependence, communication), the ending or termination of these relationships warrants additional understanding. Specifically, when do buyers end a relationship, and when do they switch to an alternative supplier? Why do buyers resist switching to an alternative supplier even when there is a “better” alternate supplier? Given the costs involved in forming and maintaining supplier relationships, it is critical to understand factors that influence the termination of a buyer–supplier relationship.

3. *Buyer–supplier relationship life cycles.* It is critical that buyer–supplier relationships consider the life cycle of the relationship to assess new productive relationship insights. For example, supplier development in early versus late relationship phases needs to be understood. The goals and results of supplier development efforts might be quite different depending on the stage of the relationship.
4. *Purchasing function as a key driver of business strategy.* Supply chain management must be seen as a strategic element, instead of merely a means to managing the flow of products. A fundamental rethinking must occur to leverage the supply base to its fullest potential. Supply chain leverages organizational transformation and strategic change, focusing on the issues of strategic procurement, supply chain competence, and supply chain integration.
5. *Supply chain culture as a key resource and component of corporate strategy.* A firm's supply chain culture and its influence on corporate strategy and performance will increase in the coming years. Aspects of supply chain culture include service to customers, attitudes toward suppliers, adherence to established processes, readiness for and adaption to change, communication styles, and level of respect for members of the extended supply chain team.
6. *Monitoring buyer or supplier ethical conduct in the supply chain.* The relationship between ethics and the law can be described as complex. Many violators of ethical conduct maintain that their actions are perfectly legal under the law.
7. *Developments in electronic purchasing.* As the market for electronic PSM offerings expands, the selection of the most appropriate solution is becoming increasingly challenging. Buying organizations can choose between dedicated software residing on their servers to hosted software-as-a-service (SaaS) solutions. Costs and benefits of these two extreme options may depend on firm and industry characteristics, and need to be carefully considered in choosing an electronic PSM execution strategy.
8. *Determining the appropriate electronic purchasing structures.* The notion that electronic procurement is only suited for indirect or maintenance, repair, and operating (MRO) supplies needs reevaluation. Recent developments in electronic procurement solution offerings enable procurement professionals to address management of quality and delivery beyond price-related aspects. These developments are changing the role of electronic procurement systems from a purely cost-based, transactional processing tool to a decision support system. To harness this potential, maintaining an alignment between the system capabilities and the practices it supports is critical. For example, a distinction between MRO I and MRO II items depending on their criticality, and subsequent choice of the structure for electronic reverse auctions, is necessary for the successful use of this tool, enabling increased value appropriation from the electronic procurement system. Critical MRO items and suppliers may not be suitable candidates for reverse auctions.
9. *The supplier's perspective of reverse auctions.* The use of reverse auctions represents one of the major components of an electronic procurement strategy. From a supplier's perspective, two pressing questions pertain to the relational implications and the supplier's response to, for example, a reverse auction invitation, which

is often perceived by suppliers as an antagonistic way of doing business. Within this context, a supplier's perspective of a buying firm's intentions and efforts can significantly influence its level of satisfaction, which in turn has implications for the buying firm's performance. The supplier's potential retaliation after having been "pressured" to participate in an auction should be expected.

10. *Long-term relationship risk of continuous reverse auction purchasing.* Reverse auctions are a great tool to obtain market price visibility and to obtain the most competitive bids. However, the mechanism has also been criticized for promoting sharp business practices and hurting the relationship. As such, reverse auctions should be used to gain market information but should probably not be used as a routine sourcing method. To maintain trust and cooperation between buying and supplying firms, reverse auctions should be used carefully. While certain mechanisms can help in preventing the buyer-supplier relationship from deteriorating, negative effects are not unavoidable in all instances. For instance, while suppliers may be willing to bid competitive prices, they may have to achieve these by cutting back on quality, service, or delivery reliability. While this seems likely, no research has been found that empirically or quantitatively investigates this issue.
11. *The role of decision support systems in purchasing and supply management.* While most companies have transitioned to an integrated enterprise resource planning (ERP) system, or are in the process of doing so, the true potential for PSM to leverage the wealth of data available for better decision-making is likely untapped to a large extent. The presence of a strategy is therefore not sufficient; it also requires effective execution, implementation, and adoption of practices. The value of decision support systems (DSS) and enterprise resource planning (ERP) systems for PSM is, however, well accepted.

Purchasing and supply management will continue to become more relational focused, rather than transactional with key suppliers. Of course, for commodities, automation will remain the primary focus.

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## SUMMARY

### **LO 2.1 Explain the relationship between purchasing and competitive strategy.**

Purchasing managers need to devise purchasing actions such that they are consistent with each other and with the firm's competitive strategy. The purchasing decisions or actions that constitute purchasing strategy are determined by the firm's competitive priorities, its resource capabilities, and the environment. A firm can seek competitive advantages on cost or choose to differentiate itself from its competitors on some attributes of the product or in the way it markets its product.

### **LO 2.2 Describe the impact of competitive strategy and purchasing strategy on the supply chain and supplier relationships.**

As competitive forces increase, customers demand better products, faster delivery, increased service, and decreased costs. As firms become more competitive, a rippling effect is experienced by the suppliers. As a result of increased competition, deregulation, and relaxed antitrust requirements, the supplier partnerships concept has emerged as a competitive weapon. Today, supplier partnerships look for a more cooperative attitude between

parties. Companies participate in a variety of supplier relationships and take on a variety of roles. Each company can be a supplier, customer, or end user of products.

**LO 2.3 Discuss the competitive ranking system used to control quality relationships between suppliers and buyers.**

The advent of supply chain management has led to a more complicated operating environment. Not only does the individual firm have to maintain its competitive edge; the entire supply chain must be competitive. Supply chain relationship quality indexing can be used to drive continuous improvement in competitive supply chains. The individual members of the supply chain cannot function without the economic, quality, and service performance of the other supply chain members. The quality of the relationships between each supply chain member will determine which firms survive in a competitive environment. Many manufacturing firms consider the relationship between themselves and their ultimate customers more important than the relationship between themselves and their suppliers.

**LO 2.4 State the decision-making factors that impact a buying decision.**

The decision-maker faces multiple goals in making the buying decision. The integrated buying model is used by the buyer organization in making purchasing decisions. Purchasing decisions require buying the right material at an acceptable cost and quality level within a reasonable lead time. The decision-maker has to contend not only with multiple goals but also with several constraints. Firms often have limited resources. Inventory budgets may be limited, or storage space may constrain the quantity that may be purchased at any instant.

**LO 2.5 Demonstrate how to develop a strategic sourcing plan.**

A number of important challenges face supply managers and executives in the future. Perhaps the most significant changes will occur in the purchasing area. More and more firms will be competing for limited supplies of materials. At the same time, stockholders will demand more profitability. In addition, the internationalization of supply markets, manufacturing, and market segments will bring the purchasing function into clear focus. The opportunities, if pursued, will be unlimited; if not

pursued, it could be devastating to the firm's survival. To take full advantage of the challenges, the purchasing function must be integrated into the firm's overall strategic plan. The four phases of the strategic sourcing plan are these:

- Phase 1. Sourcing audit
- Phase 2. Organizational development
- Phase 3. Implementation and evaluation
- Phase 4. In-house training sessions

**LO 2.6 Identify the continuing trends of purchasing and supply chain management.**

The purchasing and supply management function is crucial for effective business strategy and operations excellence. The PSM function has evolved from being a routine transactional function to a dominant function that delivers true competitive advantage to the business organization. The environment of increased globalization and outsourcing has led to an increased reliance on supplying organizations. This change in status has significantly enhanced the importance of PSM's role in the business strategy process. Some of the trends continuing to impact purchasing and supply chain management are the following:

1. Increased global purchasing with China and India
2. The strong relationship management between buying and selling organizations
3. Buyer-supplier relationship life cycles
4. Purchasing function as a key driver of business strategy
5. Supply chain culture as a key resource and component of corporate strategy
6. Monitoring buyer or supplier ethical conduct in the supply chain
7. Developments in electronic purchasing
8. Determining the appropriate electronic purchasing structures
9. The supplier's perspective on reverse auctions
10. Long-term relationship risk of continuous reverse auction purchasing
11. The role of decision support systems in purchasing and supply management

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## KEY TERMS

Competitive priority 28  
Competitive strategy 27  
Integrated buying model 36

Purchasing criteria 28  
Reward criteria 28

Supplier relationship quality  
indexing (SRQ) 32

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## DISCUSSION QUESTIONS

1. Why should the purchasing professional be concerned with strategic planning?
  2. How does purchasing fit into a firm's overall strategic plans? Give a specific framework for the linkage between purchasing and competitive strategy.
  3. What are the components of purchasing strategy?
  4. What decision areas are associated with purchasing strategy?
  5. What is the impact of purchasing strategy on manufacturing inventory?
  6. What is meant by "partnership"? Please categorize the four factors of partnerships.
  7. Discuss the elements of the proposed buying model mentioned in this chapter.
  8. Describe the elements of a strategic purchasing plan.
  9. Describe the supply chain relationship quality indexing process.
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## SUGGESTED CASES

Case 2: The Art and Science of Bidding Not to Get a Job  
Case 14: Industrial Heating Systems

Case 17: McGruder Pavers, Inc.  
Case 29: Worldwide Auto Manufacturers, Inc.

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## APPENDIX: SUPPLY CHAIN RELATIONSHIP QUALITY STUDY

An example of the SRQ indexing process for the automobile industry offers insight into the development processes of effective SRQ supplier-buyer relationships.

### Phase I. Assessment

The assessment phase is represented by the observations during the plant visits.

### Phase II. Data Collection and Questionnaire Development

A mailing list for 548 of the most critical tier 1 suppliers in the automobile industry was used as the sample for the study. This list consisted of individuals with high-level, strategically oriented positions, having titles such as president, CEO, and chairman. The data were

entered into spreadsheet format and verified twice for entry accuracy. The data were then filtered for problems. Some companies also were removed from the Honda list because they were Honda subsidiaries. Given a total of 548 contact names supplied, 130 were considered usable for the quality analysis study after data cleansing. The response rate for the supply chain quality study was 23.7%. This sample allowed for suitable testing of the research question.

### Demographics of Respondents

Several standard demographic measures including products/services supplied, percentage and value of sales to the manufacturer, quality certification, and number of employees were taken to obtain a general

understanding of respondent attitudes. The ranked frequencies of the products and/or services provided by the suppliers are displayed in Table 2.6. Bearing in mind that a respondent may select more than one category, chassis and power train components were found to be the most frequently marked categories. Most of the remaining categories were relatively evenly distributed in frequency, indicating that each of the categories was well represented in the data.

Next, the suppliers were asked to estimate the average percentage of their total sales as well as the total dollar amount of sales purchased by the manufacturer of interest (see Table 2.7). The average percentage was 23.52%, indicating that manufacturers accounted for a relatively large proportion of the suppliers' sales. The average dollar amount of sales was found to lie between \$5 million and

\$50 million. The number of employees per firm averaged approximately 7,000.

Finally, information about quality certification with specific regard to ISO9000 and QS9000 was collected. *ISO9000* (International Organization for Standardization) seeks to offer standardization of quality management issues. Firms attempting to register for certification must meticulously map and refine the control of processes such as inspection, purchasing, distribution, and training. One hundred twelve of the respondents reported that they currently have or will soon qualify for ISO9000 certification. The steep cost of certification may prevent small suppliers from achieving such certification. Related to ISO9000, *QS9000* was developed by the Big Three U.S. manufacturers (General Motors, Ford, and Chrysler) specifically for the automotive industry.

**TABLE 2.6**  
Categories of Products/Services of Respondents

Category	Count	Percentage
Chassis components	54	23.6
Power train components	54	23.6
Interior components	33	14.4
Exterior components	32	14.0
Stamping components	28	12.2
Electrical components	27	11.8
Other	24	10.5
Transportation/logistics	24	10.5
Tooling/equipment/construction	12	5.2
Nonproduction services	6	2.6

**TABLE 2.7**  
Demographics of Respondents

Category	Percentage of sales	Value	QS9000 Certified	ISO9000 Certified	Number of Employees
Mean	23.52	3.39	125 yes	112 yes	6,949.11
Standard deviation	26.28	1.50			

### Supplier Relations Data Collection

This section serves to establish an assessment of supplier relations in the U.S. automotive industry. This understanding of industry best practice will help the reader to focus on the importance and relevance of the summary statistics to be presented later. Specifically, a segment of the survey given below sought to establish a comparison of supplier opinions about the different major manufacturers in the automobile industry. The statement read, “In considering your relationships with the following firms, please allocate a total of 100 points among them based on their quality as a customer”; Chrysler, Ford, General Motors, Honda, and Toyota were among the e-manufacturers listed. These five manufacturers accounted for over 85% of U.S new vehicle sales in 1999.

An assessment of the relative quality of the manufacturers through the eyes of the suppliers was measured with the point allocation. If all the manufacturers supplied by the particular respondent have perceived quality as a customer, the score for each should be equal to 100 divided by the number of firms supplied. Scores differing from this average score would indicate above- or below-average perceived quality. This allowed suppliers to rate their customers, thus offering an *industry relationship standard* of the results of supplier relationship efforts. To gain insight into the factors affecting supplier relations pegging responses, respondents also were asked to select important factors influencing their rating of customer quality. They selected one or more among *commitment, cooperation, trust, satisfaction, performance*, and other.

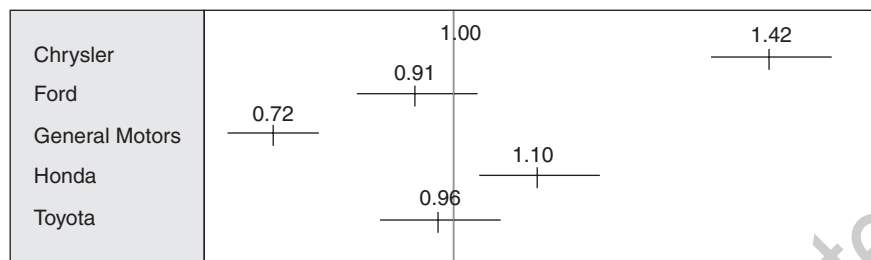
### Phase III. The Classification and Analysis

The scores for each response were examined. Any score sets that failed to total to 100 were removed from consideration, as were responses that indicated the respondent supplied only one of the five listed manufacturers. This left 130 usable supplier responses. The score sets for response were taken as a percentage of the expected response given the supplier considered all its manufacturer customers as equals. For instance, if a respondent supplied four manufacturers, the expected score for each would be 25. If a manufacturer achieved its expected score of 25, its resulting indices would be 25 divided by 25, equaling one. Thus, the quality indices would assume a value of one if the supplier considered the manufacturer to retain average quality as a customer. Subsequently, indices greater than one would indicate an above-average rating for customer quality while a below-average score would be below one. Table 2.8 shows summary statistics for these customer quality indices. With an average overall rating of 1.42, Chrysler retained the strongest reputation among the suppliers, while Honda ranked second with a mean score of 1.10. The ranks of the remaining three manufacturers were found to be Toyota (mean of 0.96), Ford (0.91), and General Motors (0.72). Ninety-five percent confidence intervals were constructed for each score and are displayed in Figure 2.6 to offer a visual representation of the scores. The scores also were tested for significance in difference from the average value of one. Both Chrysler and Honda showed evidence of significant above-average ratings while Ford and General Motors demonstrated significant below-average ratings. Toyota demonstrated no significant difference from one.

**TABLE 2.8**  
Index Scores for Usable ( $n=130$ ) Responses

	Chrysler	Ford	General Motors	Honda	Toyota
Mean	1.42	0.91	0.72	1.10	0.96
Std Dev	0.467	0.428	0.405	0.545	0.398
t-stat	8.84	-2.14	-7.25	1.76	-0.86
p-value	<0.1	0.03	<0.1	0.08	>0.10
Count	97	108	113	98	69

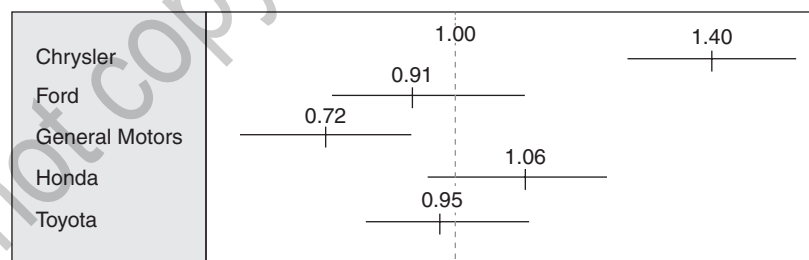
**FIGURE 2.6**  
95% Confidence Intervals for Index Scores ( $n=130$ )



**TABLE 2.9**  
Index Scores for Suppliers of All Five Manufacturers ( $n=41$ )

	Chrysler	Ford	General Motors	Honda	Toyota
Mean	1.40	0.87	0.72	1.06	0.95
Std Dev	0.561	0.427	0.445	0.565	0.392
t-stat	4.51	-2.01	-3.98	0.72	-0.78
p-value	<0.01	0.04	<0.01	>0.10	>0.10
Count	41	41	41	41	41

**FIGURE 2.7**  
95% Confidence Intervals for Index Scores for Suppliers of All Five Manufacturers



To gain further insight regarding suppliers' opinions of their customers, this same analysis was conducted for the 41 respondents who indicated they supplied all five manufacturers. These results (see Table 2.9) were similar to the previous ones, finding Chrysler with the highest average rating at 1.40. Honda followed with 1.06, then Toyota with 0.95, Ford with 0.87, and General Motors with 0.72. Figure 2.7 displays 95% confidence intervals for the mean score for each firm. Also, t-tests

run for significance in difference from the average value of one revealed that Chrysler retained a significant above-average rating while Ford and General Motors demonstrated significant below-average ratings. Both Honda and Toyota demonstrated no significant difference from one. The above relationship assessment verifies this best practice, indicating that these two firms set the industry best practice for fostering relationships with their suppliers.



**TABLE 2.10**Basis for Allocation of Points in Pegging Assessment ( $n=130$ )

	Commitment	Cooperation	Trust	Satisfaction	Performance
Count	98	107	93	33	56
Frequency	0.754	0.823	0.715	0.254	0.431
z-stat	5.79	7.37	4.91	-5.61	-1.58
p-value	<0.01	<0.01	<0.01	<0.01	>0.10

### Important Factors in Customer Assessment

The customer assessment results were tallied for the 130 suppliers providing responses to the relationship assessment (see Table 2.9). Of these factors, commitment (98 out of 130 responses, 75.4%), cooperation (107, 82.3%), and trust (93, 71.5%) were checked most frequently. Both satisfaction (33, 25.4%) and performance (56, 43.1%) were chosen less, by fewer than half of the respondents, and no consensus replies were provided for the “other” category. These proportions were examined for significance in difference from 0.50 (50% of respondents). Commitment, trust, and cooperation were significantly greater than 0.50. Furthermore, satisfaction was found to be significantly less than 0.50, while performance demonstrated no significant difference.

The respondents also were asked to indicate the relationship factors that were most important in evaluating the quality of the automotive manufacturers as customers. The most important relationship factors—cooperation (107, 0.823%), commitment (98, 0.754%), and trust (93, 0.715%)—were selected more frequently. Both performance (56, 0.431%) and satisfaction (33, 0.254%) were chosen by less than half of the respondents. There were no consensus replies chosen for the “other” category. These proportions were examined for significance in difference from 0.5 (50% of the respondents), and *cooperation*, *commitment*, and *trust* retained significance greater than 0.50. There is less than 0.50 significance for *performance* and *satisfaction*. An explanation for this finding is the comfort level the respondents had with defining some of the concepts. Cooperation, commitment, and trust can be perceived to be more easily defined. On the other hand, the performance and satisfaction definitions are less clear. Performance and satisfaction may be confounded with financial and relational elements. Perhaps in future

studies, performance and satisfaction can be more clearly defined.

Another explanation for the lack of significance of performance and satisfaction as indicators of customer assessment may be derived from supplier expectations. Because the primary performance measures in the industry are associated with the manufacturer, the suppliers may accept their own performance measures through the manufacturer. Thus, these suppliers seek to maintain their relationships with the best-practice manufacturers as they figure their own success will be inevitable because of their alignment with these manufacturers. This would be especially true over the last few years, as the manufacturers have enjoyed great profitability.

These results show that in judging the quality of the manufacturers as customers, the suppliers are more focused on relational elements such as commitment, cooperation, and trust. Satisfaction and performance seem to carry less weight in such an assessment. This is not to say that the suppliers are not concerned about performance and satisfaction. It merely indicates that the suppliers seem to be more relationally oriented and value those customers that seek to foster sincere and mutual business partnerships.

Overall, the assessment reveals the importance of *manufacturer strategy* toward supplier management. The suppliers value those manufacturers that foster relational exchanges. This indicates that those manufacturers focused on building strong supplier partnerships should emphasize enhancing the relationship itself. This yields direct implications for supply chain strategy in practice.

### Phase IV Conclusions

The purpose of this study was to develop an objective supply chain relationship quality indexing system. The

U.S. automobile industry was used as the test industry for a supply chain relationship quality indexing system. In general, the respondents believed that Chrysler and Honda are higher-quality customers than the other three manufacturers. The respondents ranked the automotive manufacturers from the highest quality to the lowest as Chrysler, Honda, Toyota, Ford, and General Motors.

These results clearly show that in judging the quality of the manufacturers as customers, the suppliers are more

focused on relational elements such as commitment, cooperation, and trust. Satisfaction and performance seem to carry less weight in such an assessment. This is not to say that the suppliers are not concerned about performance and satisfaction. It merely indicates that the suppliers seem to be more relationally oriented and value those customers that seek to foster sincere and mutual business partnerships.

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