

CREATING LOGISTICS CUSTOMER VALUE¹

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In their quest for new ways to establish a competitive edge, many companies are recognizing the unique types of customer value that can be created through logistics management. While such firms as Xerox, L. L. Bean, Frito-Lay, and McDonald's would surely agree that product quality and consistency are important, they would argue that the elements of logistical service also create significant value for customers.

In recognition of the new emphasis on providing the "best comparative net value" for the customers,² logistics represents a key bundle of resources that can be applied successfully to this end. Customer value can be created through product availability, timeliness and consistency of delivery and ease of placing orders, and other elements of customer service. The net impact is that logistical service is becoming recognized as an essential element of customer satisfaction in a growing number of product markets today.³

A fundamental premise of this article is that logistics is one of the "strategic suprasystems" that are responsible for creating customer value.⁴ Although this premise should be of interest to people who are involved with logistics on a daily basis, it also will serve to highlight some of the value-creating properties of logistics for the benefit of others in such areas as marketing, finance, and manufacturing.

To focus attention on the new role of logistics management, the following four propositions have been formulated around key issues that need to be addressed:

1. Logistics represents a *comprehensive process*, one which not only incorporates a wide range of activities, but which evidences key linkages with other strategic suprasystems. The logistics function is changing rapidly as firms apply significant resources to effective management in this important area.

2. Logistics provides unique and meaningful opportunities for achieving *best comparative net value to the customer*. A high priority also is placed on satisfying needs of customers that are both internal and external to the firm.
3. A number of *new tools and approaches* have emerged as proactive elements of the logistics response to the task of creating value for the customer. Included are supply chain management, the provision of logistical customer service, development of strategic alliances, commitment to a formal quality process, and service response logistics.
4. Logistics is well-positioned to take advantage of *new strategic management processes*. A significant area of research priority in the 1990s will focus on how to take maximum advantage of this concept in the logistics area.

DIMENSIONS OF CONTEMPORARY LOGISTICS PROCESSES

In order to provide a springboard for the remainder of this article, this section confirms what is meant by logistics in today's business world, and discusses the types of activities that are normally associated with logistics. Following the identification of several trends that are emerging with respect to logistics, the section concludes with a commentary on how logistics creates value for the customer.

The Logistics Concept

As recommended by the Council of Logistics Management, logistics may be thought of as "the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to" point of consumption for the purpose of conforming to customer requirements.⁵ This definition represents a revision of the Council's definition of logistics as approved by its executive committee in July 1991. It should be noted that the current definition specifically acknowledges the importance of "services" to the logistics process, as well as product and information.

The essence of this concept is captured in Exhibit 1, which illustrates the comprehensive nature of the logistics process. Representative logistics activities include supply chain management (including inventory and materials management), transportation, and customer service. Linkages with other areas of the firm such

as marketing and production operations management are prevalent and meaningful. Issues related to cross-functional coordination and integration will be dealt with specifically at a later point in this paper.

The logistics process has several unique characteristics. First, it is comprehensive, extending from the original source of raw materials to the location of the final customer. In fact, the logistics process spans organizational boundaries in terms of encompassing industry-wide channels of supply and distribution. The second characteristic is that it pertains to the flows of both product and information, and considers each as essential to the value-creating process. This concept has received broad acceptance, and acknowledges the critical role of logistics in the overall area of information processing and management. Third, logistics represents a viable means to satisfy and create value for the external customer(s) of the firm and/or the channel of distribution. It is this dimension that truly justifies the recent attention directed toward the new role of logistics management.

Representative Logistics Activities

Based on a study of 100 U.S. business firms across a broad range of industries, Exhibit 2 provides data concerning the specific activities included within the firms' logistics areas.⁶ Of particular note is that logistics activities center around the "move-store" functions of transportation, inventory, and warehousing. Recently, however, there have been noticeable trends toward the greater involvement of logistics in the areas of production scheduling (evidencing a broader "move-make-store" orientation), order processing, and purchasing. Finally, as evidenced by the attention being directed to the area of customer service, it is clear that logistics is being recognized more and more as an essential element in the overall process of creating customer value. This topic is discussed in much greater detail at a later point in this paper.

Emerging Trends in Logistics

The first, and perhaps most significant trend, is the growing recognition of logistics as a means of creating customer value. Whereas the concept of logistics was still unfamiliar in the early and middle 1980s, it is now better understood and more frequently acknowledged. While the logistics literature certainly lends substance to this statement, there are an increasing number of initiatives being taken by business firms to capitalize on the customer value created by logistics.

EXHIBIT 1
LOGISTICS PROCESS

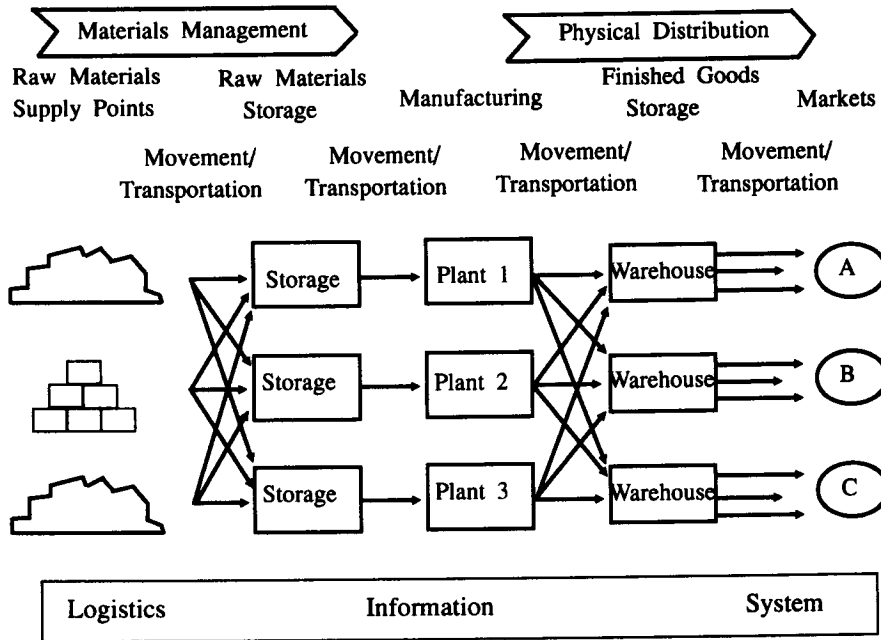


EXHIBIT 2

ACTIVITIES INCLUDED IN LOGISTICS ORGANIZATIONS

<u>Activity</u>	<u>Percentage of Respondents Indicating Inclusion of Each Activity*</u>
Outbound traffic	93
Finished goods warehousing	84
Inbound traffic	90
Plant warehousing	73
Finished goods inventory management	68
Proprietary transportation	75
Customer service	64
Order processing	65
Purchasing	52
Production planning	50
Raw material in-process inventory management	36
Packaging	40
Sales forecasting	41

*Percentages indicate the proportion of study respondents who included each activity in their firms' logistics functions.

Source: C. John Langley, Jr., Stephen B. Probst, and Roy E. Cail, "Microcomputers in Logistics: 1987," a presentation at the Annual Conference of the Council of Logistics Management, September 1987.

Industries where considerable progress has been made include chemicals, pharmaceuticals, and food products.

Also, it is useful to note that the Council of Logistics Management's definition of logistics encompasses this broader context, and to acknowledge that the logistics process pertains directly to the requirements of the customer. The net effect of this change assists the process of shifting logistics from a "reactive" to a "proactive" mode, and to do so in full consistency with the needs of the customer.⁷ So far, the results in this direction have been encouraging.

A second observation is that firms are directing greater resources toward logistics, and that the senior logistics executive is becoming more visible and involved on a firm-wide basis. It is not unusual today, for example, to identify vice-presidential level logistics executives in such major firms as Quaker Oats, Dow Chemical, Xerox, Bergen Brunswig, Limited Stores, Campbell Soup, and Land O'Lakes.

Third, considerable attention has been directed toward the integrative aspects of logistics, and the fact that the length and consistency of the customer "order cycle" is emerging as a key concern of firm-wide interest. In effect, the integrative aspects of logistics (to be discussed subsequently) have qualified this area to be a major contributor to the creation of customer value. As a result, logistics managers have been repositioning their efforts in order to facilitate cross-functional coordination as a means of serving the customer. It is encouraging to see logistics managers work closely and consistently with their counterparts in such areas as marketing, manufacturing, finance, and general management. This type of activity is helping to eliminate the so-called "functional-silo" syndrome that has been so negative and characteristic of the past.

A fourth emerging trend, and one to be discussed in more detail later, is the development of partnership arrangements with suppliers, customers, other channel members, and external third parties in the interest of achieving desired results in logistics. It has become apparent that a "wholistic" view must be adopted, one where the "win-win" paradigm is recognized as being valid. Logistics has become a frontrunner in this regard among the various corporate functions. The overall impact of this trend is that customer service policies, as well as the wide range of logistics sourcing and procurement suprasystems, have been overhauled and modernized in meaningful and productive ways.

Logistics as a Value-Creating Function

Although the next section addresses the topic of customer value in greater detail, it is useful at this point to recognize the three generic ways through which logistics creates customer value: effectiveness, efficiency, and differentiation.

Effectiveness refers to the issue of performance, and whether the logistics function meets customer requirements in certain critical result areas. The focus on effectiveness is evidenced at L. L. Bean, which has identified seven customer service "key result areas."⁸ The specific KRA's include product guarantee, in-stock availability, fulfillment time (turnaround), convenience, retail service, innovation, and market standing (image).

Efficiency refers to the organization's ability to provide the desired product/service mix at a level of cost that is acceptable to the customer. Also, this concept implicitly identifies the need for logistics to manage its resources wisely, and to leverage expense into customer value whenever possible. The interests of efficiency are well-served, for example, by the current trend toward the use of activity-based cost management systems.

Differentiation manifests itself in the ability of logistics to create value for the customer through the uniqueness and distinctiveness of logistical service. For example, the ability of the Limited Stores distribution division to mark and tag all merchandise prior to store delivery creates value for the company-owned retail stores within its overall system. The unique ability of the Frito-Lay driver/salesman to provide product integrity at the store level translates to value-added for the independently-owned retail stores. A final example of uniqueness through differentiation is exemplified by Federal Express's PartsBank operation in Memphis, which maintains inventories of repair and emergency parts for firms that may have an immediate need for shipment of such items to locations throughout the world.

LOGISTICS AND THE CREATION OF CUSTOMER VALUE

The decade of the 1980s introduced a significant amount of technological and environmental change in logistics systems. Yet through all these changes, the focus in logistics has remained on customers and the firm's need to provide best comparative net value through effectiveness, efficiency, and/or differentiation of services.

This has not always been the case. Just a few decades ago, most managers involved in logistics had operational responsibility for a single function such as inventory, order placement, or transportation. As customer requirements became more complex, however, the integration of physical distribution and materials management took place. The coordination of activities under the logistics umbrella resulted in increased organizational effectiveness and responsiveness to customer needs and requirements.

The traditional concept of value created by logistics has been viewed as that of cost efficiency versus competitive service levels. This tradeoff reflects a customer-oriented philosophy that integrates all elements of the customer interface with a pre-determined optimum cost service mix.⁹

The scope and role of logistics has evolved to the extent that many firms now believe that a strategic logistics orientation is required to create customer value and sustainable competitive advantage.¹⁰ The proposition that logistics can create value relative to a firm's product and service offerings is a simple and intuitively appealing statement that firms have increasingly come to accept. However, implementation of a value-added logistics process can be challenging because it involves a changing and repositioning of perspective and strategic outlook. Based on the premise that value is created when customer satisfaction is achieved, logistics has evolved to mean much more than simply having the "right product at the right place at the right time in the right condition for the right cost."¹¹

Strategic logistics distinguishes itself from the traditional perspective through its ability to coordinate, as well as integrate, a number of interdependent activities in a simultaneous fashion across major functional areas, thereby providing various additional dimensions and ways in which logistics can create further customer value. Within this context, customer value is enhanced by adopting a total channel perspective of the logistics function. The integration of attributes such as customization, flexibility, innovation, and responsiveness results in highly valued and expected levels of service that become the new standard for competitive advantage.

Value can be created externally and internally. External value creation can be planned for by conducting customer surveys—preferably using a third-party, blind survey method. Survey results can be used as a basis for determining the values which customers seek. Business reviews, or "previews," should then be developed

to identify and specify ways in which the firm can meet or exceed customer requirements.¹²

Emphasis should be placed on having a specific understanding of the needs and requirements of the many and varied customers of the logistics function. An implied and essential part of creating external value involves the willingness and capability of the firm to become a "better" supplier in the coming period. Aside from achieving a one-time understanding of customer needs and requirements, some mechanism to regularly monitor and be aware of the changing priorities of the customer should be instituted. While internal resources may be directed to such a task, this is the type of activity that may justify the use of an outside consultant or service to provide objective information on a regular basis.

While significant attention is usually focused on the customer service needs of the firm's external customers, it is equally important to identify the needs of the firm's internal customers/users as well. Internal value creation, alternatively, involves concentrating on how the organization can function more effectively and efficiently for all of its constituents, both internal and external to the firm. A first step is to get employees to understand whether the next customer in the pipeline is internal or external to the organization, even though this distinction should make no difference in terms of the quality of service offered.

For example, the business needs of those involved in production/operations, marketing, and financial management should be recognized by those in the logistics area, and suitable initiatives should be taken to facilitate accomplishment of those needs. At companies such as Land O'Lakes, the issue of internal value creation is dealt with through the institution of interdivisional task forces that identify problems from customer service surveys, customer inquiries/complaints, and day-to-day operations. The task force is a cross-functional group spanning all relevant areas.¹³ Although the task force approach has been successful at Land O'Lakes, experience at other firms sometimes has evidenced a number of limitations as well as advantages to this type of initiative. Also, the notion that "task-forcing" should be a principal responsibility of managers all the time is worthy of scholarly as well as pragmatic deliberation.

The task of needs identification is not always straightforward and obvious. It is often complicated by issues surrounding "perceived" versus "real" value, and basic needs versus value added expectations. To this end, customers can be surveyed to validate their perception. In addition, by ranking various aspects of the defined

logistics service, it will be possible to distinguish basic needs from value-added expectations. More often than not, however, the process of needs identification entails considerable scrutiny and judgment as logistics searches for new and innovative ways to serve the needs of the firm's internal and external customers.

Management focus in logistics is expanding beyond the existing company structure to involve suppliers and vendors. Progressive firms regard the role of suppliers and vendors as essential to achieving satisfaction for the firm's external customers. Historically, however, many firms treated their customers with respect and dignity, while simultaneously bearing down hard (and frequently unmercifully) on their suppliers and vendors. This type of action is counter-productive to a truly value-added perspective. By spending more time interfacing with suppliers and vendors, interorganizational alliances/partnerships are evolving that enable a firm to willingly commit performance capabilities to customers in advance, and then perform to expectations.

Specific case studies can be used to further clarify the value added through integrated and strategic logistics management. For example, a chemical manufacturer found that its customers did not view the corporation's product offerings the way the organization had assumed. To correct this perceptual difference, a corporate-level function was created to handle customer service and orders. This group was supported by a highly sophisticated information system. The resulting change in service level focus from plant to customer provided the firm with the information necessary to increase control over shipments and performance. Also, it provided the necessary basis for integrating transportation and production scheduling.

Some companies have found that by reevaluating logistics activities, improved efficiencies can be gained by outsourcing essential services. In particular, an industrial equipment manufacturer converting to just-in-time found that by using a third-party provider for regional cross-dock operations, both dock congestion and inventory in the system could be reduced. The benefits of integrating resources through supply chain management help to produce total pipeline efficiency, which translates to creation of customer value. Properly planned and implemented, this type of approach can produce desirable results without losing competitive capabilities.

In general, there are three related areas of focus for the firm with regard to value creation. First, objectives should be set to achieve customer satisfaction. This involves finding out exactly how customers perceive the organization as a whole, and not just the perspective of a single product or product line. Second, the firm

must determine and assign responsibility for systems and processes that are necessary for creating and sustaining customer value. In many instances, the responsibility will span traditional functional boundaries. Third, the basics of marketing must be incorporated into the process of logistics delivery, transforming these basics into benefits that yield value.

Thus, the concept of value added requires training ourselves not to focus on the individual business firm or its functional components. Rather, it involves addressing the entire supply chain and enhancing efficiency, effectiveness, and differentiation throughout the entire pipeline. This can range from refining internal operations to developing new information systems. The key to successful management of the logistics function as a value creating operation is to recognize that a firm is viewed from many different perspectives, and that each of these perspectives must be taken into account if logistics is going to contribute to achieving best comparative net value for the customer.

NEW LOGISTICS TOOLS AND APPROACHES

In its continuing quest for new ways to create customer value, logistics has developed a wide range of tools and approaches. Among the more prominent and comprehensive are emphasis on logistical customer service, management of the supply chain, and the development of strategic alliances.

Emphasis on Customer Service

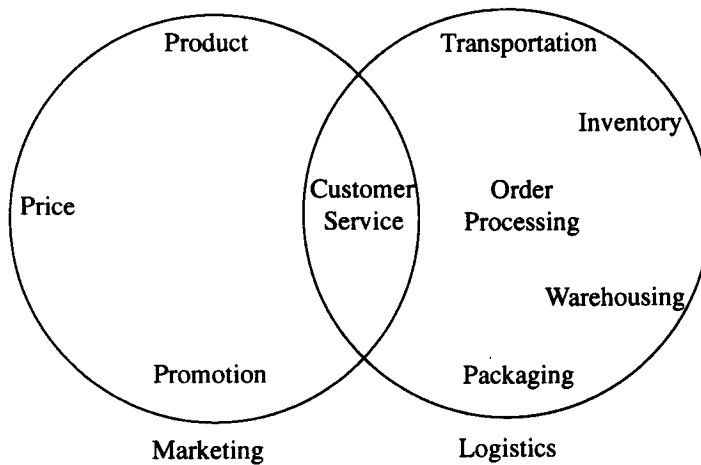
As defined in a recent study for the Council of Logistics Management, customer service may be thought of as "a process for providing significant value-added benefits to the supply chain in a cost-effective way." In effect, this definition encompasses the notion that customer service in a logistical sense creates value for the entire supply chain, and in so doing, for the end customer as well.¹⁴ This same study identified a number of representative measures of logistical customer service. Included were product availability, order cycle time, distribution system flexibility, distribution system information, distribution system malfunction, and post-sale product support.

Customer service represents a key link between the traditionally-defined marketing function and the logistics area of the firm. Exhibit 3 helps to show how the marketing and logistics areas of the firm are related in a traditional, functional

manner. This diagram suggests that customer service can be an effective link between these two important areas of the firm. A high priority should be attached to assuring that the focus of both marketing and logistics efforts is the creation of value for the customer.

EXHIBIT 3

RELATIONSHIP BETWEEN MARKETING AND LOGISTICS



The following are representative of the types of trends in customer service, several of which were recognized in the recent Council of Logistics Management study.¹⁵

- Firms are becoming very proactive in how they approach the area of customer service. Considerable attention is focused on how to provide the customer with value-creating service prior to, during, and after the product itself is delivered.

- Much of the change is in response to aggressive customers who are beginning to insist that suppliers take formal steps to identify the customer's needs and to provide the value which is desired.
- The ability to effectively manage information flow is viewed as a key to providing breakthrough levels of customer service.
- There has been a significant trend from transactural to contractual-driven systems. Buyers are valuing the longer-term relationships with fewer suppliers, rather than treating each purchase or acquisition as a discrete event.
- Pressures to create value through enhanced customer service are increasing, and as a result, capable firms are evidencing an ability to achieve sustainable competitive advantage.

An encouraging observation relating to customer service is that firms are enhancing their understanding of specific logistics attributes such as on-time delivery, damage-free shipments, and in-stock availability, and also are moving toward the development of more wholistic and comprehensive measures of customer satisfaction. Actually, this represents a key area in which research is needed to identify critical issues and appropriate logistical responses.¹⁶

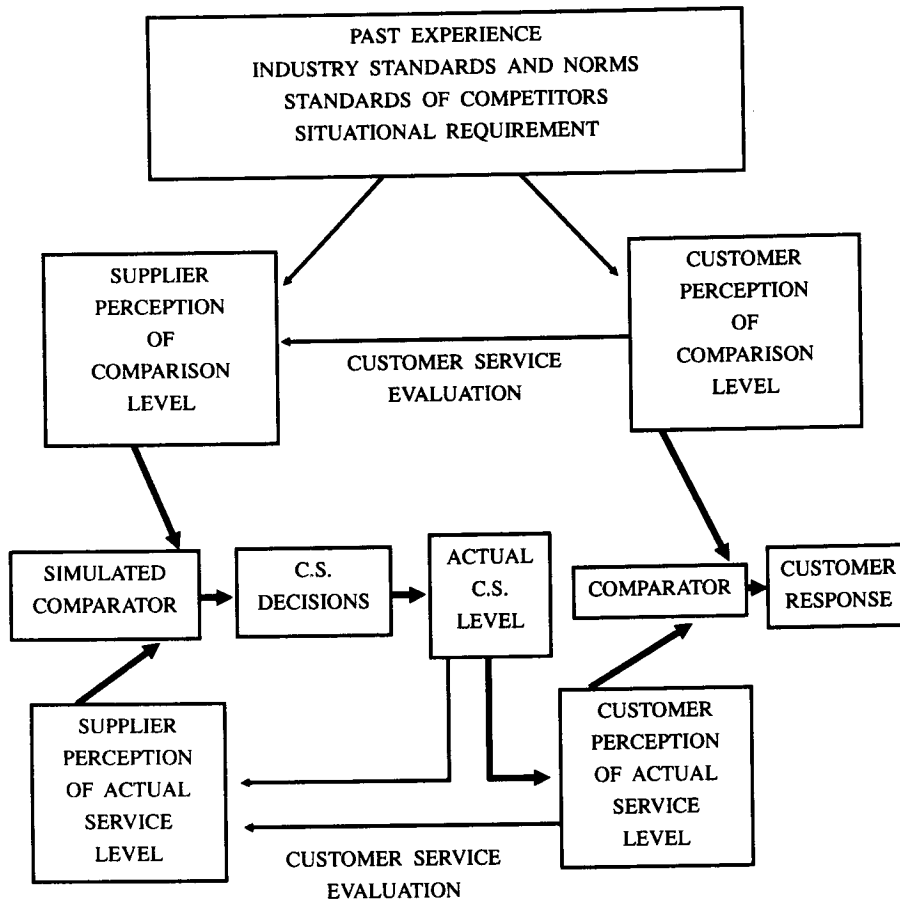
Recent research has suggested a perceptual process model that can be used to enhance understanding of customer service. Shown in Exhibit 4, the model explains customer response in terms of the industry comparison levels and the actual levels of customer service as perceived by both buyers and sellers in a channel of distribution. The basic premise is that customer response is related not only to the actual customer service levels and those identified as norms for the industry, but also on the gaps between the perceptions of buyers and sellers with respect to these levels. Testing and evaluation of this approach performed to date by Pisharodi has produced promising results.¹⁷

Supply Chain Management

Although its evolution has spanned a number of years, the concept of supply chain management focuses attention on the interactions of channel members to product an end product/service that will provide best comparative net value for the end customer.

EXHIBIT 4

A PERCEPTUAL PROCESS MODEL OF CUSTOMER SERVICE



Source: R. Mohan Pisharodi and C. John Langley, Jr., "A Perceptual Process Model of Customer Service Based on Cybernetic/Control Theory," *Journal of Business Logistics* 11, no. 1 (1990): 35.

Perhaps a useful example would be that of the U.S. cotton industry, in which the key channel members include the producers (i.e., growers), warehousemen, transporters, merchants, and mills. The cotton is grown in the field, warehoused, sold by the merchants, and transported to the mills. In effect, the mill (e.g., Greenwood Mills, Burlington Mills, Milliken & Co., etc.) represents the customer, and the other channel members comprise the additional elements of the supply chain.

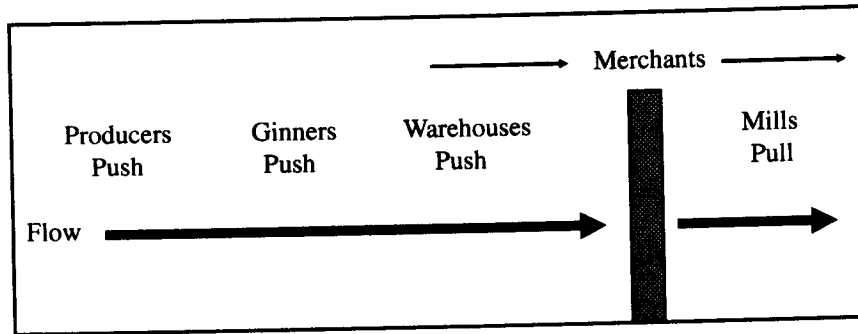
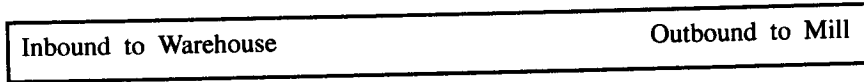
Exhibit 5 is a picture of the supply chain as it pertains to the logistics of cotton flow. As a practical matter, each bale of cotton produced in the U.S. has its own identity, and logistical value is created for the customer when the specified bales of cotton arrive at the requested location in the exact quantity at the time desired. Also shown in Exhibit 5 are the primary objectives associated with each of the major players in the channel of cotton flow.

Traditionally there have been a number of impediments to the smooth, effective movement of cotton throughout the supply chain, and some of the principal root causes include the following: (1) conflicting objectives among members of the channel of cotton flow; (2) incentives for good service are insufficient throughout the supply chain; (3) inadequate facilities, material handling techniques, and information processing capabilities; (4) general lack of information exchange between key supply chain members; (5) excessive shipping orders at certain peak times; (6) focus on cost minimization rather than service improvement; and (7) emphasis on responding to just-in-time and quick response procurement initiatives by customers.

Based on an analysis of causes such as these, which tend to produce "bottlenecks" in cotton distribution, the various trade organizations in the U.S. cotton industry have been working for the past few years in a concerted effort to confirm the identity of the suspected causes, and to take steps to assure their removal. This type of teamwork effort is indicative of a total supply chain commitment to creating value for the end customer, and the results to date confirm the fact that excellent progress is being made.

Another interesting dimension of the concept of supply chain management is the popular interest in the topic of just-in-time or quick response approaches to inventory management and product availability. Whereas some feel that the objective of such programs is to reduce or eliminate inventory, the real goal should be the "synchronization of all channel activities in a manner which will create the greatest net comparative value for the customer." When such a global perspective is achieved

EXHIBIT 5
CHANNEL OF COTTON FLOW



Primary Objectives				
<u>Producers</u>	<u>Ginners</u>	<u>Warehouses</u>	<u>Merchants</u>	<u>Mills</u>
High price	High price	Attract cotton and hold it	Buy low	Low price
			Sell high	Right quality
			Minimize overhead	On-time delivery

Source: C. John Langley, Jr.

by all members of the supply chain, the end result is likely to be a degree of coordination and synchronization that assures that the needs of the end customer are met. A by-product of a well-coordinated system of channel members will place far less reliance on large inventories that ostensibly are needed to smooth out flows of product. Thus, it is likely that the more narrow objective relating to inventory reduction will likely be achieved as well.

Development of Strategic Alliances

One of the widely discussed logistics initiatives is that of forming strategic alliances with channel partners such as suppliers, customers, or intermediaries such as providers of transportation and/or warehousing services.¹⁸ Effectively, this type of relationship leverages a true "win-win" relationship into a strategic alignment of the capabilities of both firms. Additional benefits to both parties typically include asset productivity, operational effectiveness, and cost efficiencies. Also, it is not unusual for one channel member to promote the existence of a meaningful relationship with some prestigious firm with which a strategic alliance has been developed.

A very interesting example of a strategic alliance that centers around logistical capabilities is that of the relationship between Ryder System, Inc., and Xerox Corporation.¹⁹ Faced with a declining market share due to increased offshore competition, it was clear that Xerox needed to consider some set of innovative logistical initiatives in order to achieve customer satisfaction. While Xerox targeted the high end of the market, its offshore competition was targeting the lower end. In order to attack the low end successfully, Xerox needed to rethink and rationalize its overall delivery system.

As a result, and with the assistance of Ryder, Xerox trimmed its logistics network from 10 to 2 equipment logistics centers. Third-party logistics providers, including Ryder, performed a number of activities such as supplying warehouse equipment, performing pre-installation assembly tasks, delivering and installing product, training Xerox customers on the use of the equipment, and removal of old equipment and preparation for shipping to specific Xerox locations.

As a direct consequence of its involvement in third-party relationships, Xerox has improved its ability to meet its customers' needs. The delivery process has been streamlined and overall costs have been reduced. Xerox sales personnel, no longer needed to train customers, can concentrate on selling and customer

requirements. Logistics is used to gain competitive advantage as its complements, rather than obstructs Xerox's marketing objectives.

Ryder's role as a third-party provider of logistics services is evidence that a well-managed logistics operation can create value for a customer regardless of whether logistics is performed internally or externally to the firm. The actual degree of value added is dependent on how a company leverages its logistics resources and the ability to recognize the effect a third-party relationship can have.

Logistics Quality Process

In their search for innovative ways to reduce cost, enhance service, and increase customer satisfaction, many firms have taken a significant step forward in terms of identifying and implementing quality improvement processes in the logistics area.²⁰ While some of these processes are consistent with corporate-wide quality initiatives, it is not unusual for logistics to assume a leadership role in this area. For those firms having embraced the quality initiative in a formal manner, four sequential phases occur in the evolution of the overall effort: quality control (QC), quality assurance (QA), total quality control (TQC), and customer value.²¹

Generally, logistics quality may be defined as "anticipating and exceeding customer requirements and expectations."²² While individual companies will search for variations on this common theme to characterize their particular commitments to quality, there are a number of elements that seem to be common to many formally-stated quality processes. They included:²³

- Emphasis on customer requirements and expectations;
- Concern for the logistics process, in addition to the measurable results of the process;
- Continuous improvement;
- Elimination of waste and rework;
- Measurement and concern for variability;
- Total organizational commitment; and
- Dedication to a formal quality process.

While some firms have maintained an excellent reputation for product and service quality in the eyes of the customer, it is agreed generally that adherence to a formal quality process will be accompanied by a greater likelihood of long-term, sustainable improvement. This observation is applicable on a firm-wide basis, as well as to the logistics area specifically.

In recent years, a number of experts and/or visionaries have emerged in the area of quality. Sometimes referred to as "quality gurus," the list is an impressive one and includes W. Edwards Deming, Joseph Juran, Philip Crosby, Genichi Taguchi, and Kaoru Ishikawa. Recent studies of logistics quality have indicated quality processes on the basis of the philosophies and approaches of one or more quality experts.

Exhibit 6 shows the six major steps in the development of a logistics quality process. While each of these steps is important, the objective of continuous improvement will be advanced most through the changing of marketing and operating strategies as the firm's quality process takes hold.

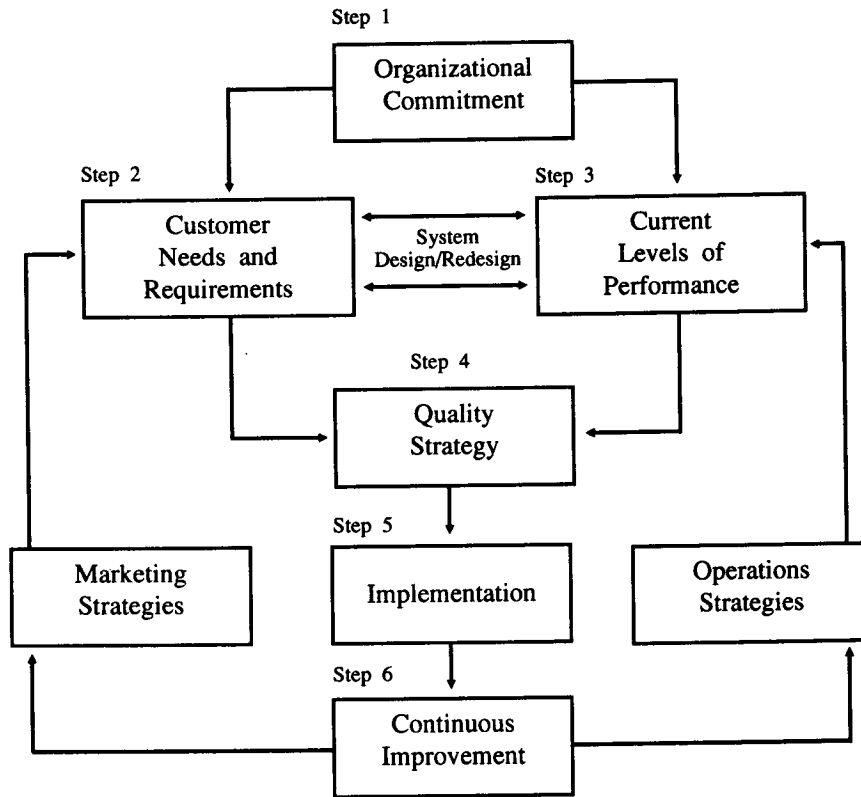
As firms progress in the area of quality, new techniques and approaches must be considered. Among the more promising of these are the basic tools and techniques of quality analysis (e.g., flow chart, cause and effect diagram, Pareto analysis, and control chart), benchmarking,²⁴ quality function deployment (QFD),²⁵ and customer research.

Service Response Logistics²⁶

Another area in which significant change is occurring involves thinking of logistics as the "management of capacity and the coordination of service delivery to the customer." Also described as the management of responsive organizations, service response logistics involves "immediate-run" response to customer requests, rather than accepting the more extended time frames of the short, intermediate, or long-term.

As shown in Exhibit 7, the service response model begins with a specific customer request. The organization thus assesses its ability to respond, and schedules its response. The mechanisms for response include in-house capacity or through a network of delivery partners. The role of responsive management is to increase the value of the benefits delivered and to increase organizational yield. Rather than plan for the ability to respond on a general basis, service response logistics implies that plans to respond are designed on a customer-by-customer, request-by-request

EXHIBIT 6
LOGISTICS QUALITY PROCESS

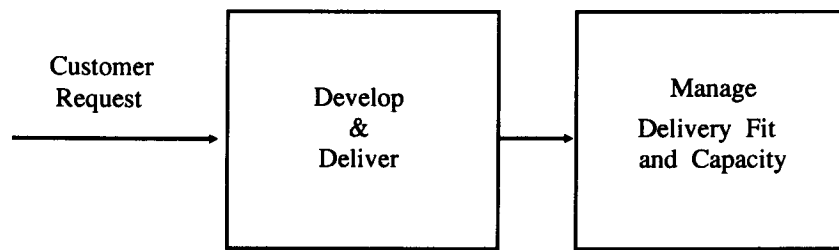


Source: C. John Langley, Jr., "Quality in Logistics: A Competitive Advantage," *Proceedings—R. Hadly Waters Logistics and Transportation Symposium* (University Park, Pa: Pennsylvania State University, The Center for Logistics Research, 1990).

basis. Responsive organizations place great emphasis on developing the ability of a firm and its people to perform during the “moment of truth”²⁷ when the customer interacts with the delivering organization.

EXHIBIT 7

RESPONSIVE SERVICE MODEL



Source: Frank W. Davis and Karl B. Manrodt, “Teaching Service Response Logistics,” *Proceedings of the 1991 Transportation and Logistics Educators Conference* (Columbus, Ohio: Ohio State University, 1991).

Service response logistics emphasizes the network model and relationship building as means to the creation of customer value. The logistics mission begins with the customer’s request and ends with the completion of delivery and the fulfillment of the customer’s needs. Our concept of logistics planning must be oriented toward developing the capacity to respond, not the defining of the response.

LOGISTICS AND THE NEW STRATEGIC MANAGEMENT PROCESS

This article has validated the premise that customer value can be created by logistics, and that logistics should be included among the strategic suprasystems that are responsible for creating value for the customer.²⁸ As this realization continues to take hold, organizations will rely more and more on the ways in which logistics can help to achieve best comparative net value for the customer.

Also, one of the major propositions advanced early in this paper is that logistics is well-positioned to take advantage of the new strategic management process that has been advanced. This process represents an excellent opportunity for logistics managers to begin viewing their responsibilities on a much different plane than traditionally, one that truly represents a "paradigm-shift" in terms of overall impact and significance.

Even though logistics is regarded as one of the organization's strategic suprasystems, it also is true that each element of the new strategic management process has applicability to logistics. A key task is to complete the transformation and interpretation of the new process specifically to logistics. To this end, Exhibit 8 identifies the five principal steps in the alternative strategic management process, and suggests parallel subprocesses that have applicability to logistics.

Referring to the portion of Exhibit 8 that deals with strategic suprasystems, it is interesting to note that recent research has identified interactions, infrastructure, and resource management as likely candidates for inclusion in this category.²⁹ Interestingly, the interactions management suprasystem has been further subdivided into strategy and structure, the infrastructure management suprasystem into capacity and movement issues, and the resource management suprasystem into facilities, people, and financial.

Also of particular interest is the step relating to the tasks of confirm, correct, and change. In the logistics area, it appears that measurement and control systems such as statistical methods (SPC), quality function deployment (QFD), and/or the use of Taguchi methods represent productive initiatives.

Further research is needed into the applicability of the new process to logistics, but the progress to date is encouraging. In addition to additional exploratory research into the conceptual development itself, the issue of implementation is certain to raise meaningful questions. Efforts in areas such as these will assist greatly in

EXHIBIT 8

**NEW STRATEGIC MANAGEMENT PROCESS
APPLIED TO LOGISTICS**

- Determination of Responsibility
- Environmental Analysis
- Strategic Suprasystems Determination
- Strategic Suprasystems Management
- Confirm, Correct, and Change
- Value-Maximization Analysis
 - Creation of product/service attributes
 - Identify customers' value expectations and perceptions
- Customer Satisfaction and Competitive Analyses
 - Identification/determination of customer needs and requirements
 - Comparative perceived net value (competitive analysis)
- System and Process Identification and Description
 - Translate customer value expectations into logistics operational priorities
 - Identify coordination needed with other strategic suprasystems
- Logistics System Management
 - Interactions
 - Infrastructure
 - Resource management
- Measurement and Control Systems
 - Statistical methods
 - Quality function deployment
 - Taguchi methods

Source: G. Harlan Carothers, Jr. and Mel Adams, "Competitive Advantage Through Customer Value: The Role of Value-Based Strategies," in Michael J. Stahl and Gregory M. Bounds, eds., *Competing Globally Through Customer Value* (New York: Quorum Books, 1991), pp. 32-66.

taking maximum advantage of the leading-edge work that has been done to date on the new strategic management paradigm.

SUMMARY

The preceding pages have addressed issues relating to the creation of customer value through logistics management. A case was made for the legitimacy of the overall logistics mission and the fact that logistics can bear a principal responsibility in the task of creating value for the customer. In fact, there are many untapped advantages to targeting the logistics area as an important one for emphasis in the future. As a result, there is considerable justification to think of logistics as a strategic suprasystem from the perspective of the firm as a whole.

Also, the logistics area has taken advantage of a wide range of contemporary tools and approaches in order to take a proactive stance toward the task of creating value for the customer. Included in the discussion were the topics of customer service, management of the supply chain, development of strategic alliances, dedication to formal quality processes, and service response logistics.

Finally, and perhaps of greatest significance, is the direct applicability of the new strategic management paradigm to the logistics area. Although there are areas of research priority associated with this topic, it certainly represents a productive and interesting one to receive attention in the future.

NOTES

¹An earlier version of this paper was written by C. John Langley, Jr. and Mary C. Holcomb, and appeared as "Achieving Customer Value Through Logistics Management," in Michael J. Stahl and Gregory M. Bounds, eds., *Competing Globally Through Customer Value* (New York: Quorum Book, 1991).

²The concept of "best comparative net value" for customers is introduced and developed further in various chapters included in the same reference as Note 1. Of particular interest would be Michael J. Stahl and Gregory M. Bounds, "Global Competition: The Need for Educational and Business Responses," pp. 3-13; G. Harlan Carothers, Jr., and Mel Adams, "Competitive Advantage Through Customer Value: The Role of Value-Based Strategies," pp. 32-66; and G. Harlan Carothers,

Jr., and Gregory M. Bounds, "Customer Value Determination and System Improvement Cycles," pp. 98-116.

³Bernard J. LaLonde, Martha C. Cooper, and Thomas G. Noordeweier, *Customer Service: A Management Perspective* (Oak Brook, Ill: Council of Logistics Management, 1988).

⁴Carothers and Adams reference in Note 2, at pp. 32-66.

⁵Council of Logistics Management, 1991. See also, C. John Langley, Jr., "The Evolution of the Logistics Concept," *Journal of Business Logistics* 7, no. 2 (1986): 1-13.

⁶John J. Coyle, Edward J. Bardi, and C. John Langley, Jr., *The Management of Business Logistics* (St. Paul, Minn.: West Publishing Co., 1988), p. 530.

⁷Same reference as Note 4, at p. 5.

⁸Same reference as Note 4, at pp. 117-121.

⁹Bernard J. LaLonde and Paul H. Zinszer, *Customer Service: Meaning and Measurement* (Chicago, Ill.: Council of Logistics Management, 1976).

¹⁰Donald J. Bowersox and Robert E. Murray, "Logistics Strategic Planning for the 1990s," in *Annual Conference Proceedings* (Oak Brook, Ill.: Council of Logistics Management, 1987), pp. 231-243.

¹¹These are the five "rights" of a logistics system referred to by Dr. E. Grosvenor Plowman, a distribution consultant and former vice president of traffic for the U.S. Steel Corporation (now USX Corporation). They are referred to by George A. Gecowets, "Physical Distribution Management," *Defense Transportation Journal* 35 (August 1979): 11.

¹²C. John Langley, Jr., Deborah Rosen, Howard S. Gochberg, Robert A. Dickinson, and Robert J. Quinn, "Logistics and the Concept of Value-Added," *Annual Conference Proceedings* (Oak Brook, Ill.: Council of Logistics Management, 1989), pp. 157-166.

¹³Same reference as Note 13.

¹⁴Same reference as Note 4, at pp. 11-23.

¹⁵This list is adapted from information contained in the same reference as Note 4.

¹⁶R. Mohan Pisharodi and C. John Langley, Jr., "A Perceptual Process Model of Customer Service Based on Cybernetic/Control Theory," *Journal of Business Logistics* 11, no. 1 (1990): 26-46.

¹⁷R. Mohan Pisharodi and C. John Langley, Jr., "Measures of Customer Service and Market Response: An Exploration of Interest Association," in *Proceedings of the 1990 Transportation and Logistics Educators Conference* (Columbus, Ohio: Ohio State University, 1990).

¹⁸Significant research into the topics of strategic alliances and partnership relationships is documented in Bernard J. LaLonde and Martha C. Cooper, *Partnerships in Providing Customer Service: A Third Party Perspective* (Oak Brook, Ill.: Council of Logistics Management, 1989).

¹⁹Same reference as Note 13, at pp. 161-162.

²⁰The most recent study in logistics quality is A. T. Kearney, Inc., *Improving Quality and Productivity in the Logistics Process—Achieving Customer Satisfaction Breakthroughs* (Oak Brook, Ill.: Council of Logistics Management, 1992).

²¹John J. Coyle, Edward J. Bardi, and C. John Langley, Jr., "Logistics Quality," in *The Management of Business Logistics* (St. Paul, Minn.: West Publishing Co., 1992), Chapter 13.

²²C. John Langley, Jr., "Logistics Quality: Challenge for the 1990's," paper read at the Health and Personal Care Distribution Conference—1991 Educational Program, Longboat Key, Fla., 22 October 1991.

²³Same reference as Note 21, and C. John Langley, Jr., "Quality in Logistics: A Competitive Advantage," *Proceedings—R. Hadly Waters Logistics and Transportation Symposium* (University Park, Pa.: Pennsylvania State University, The Center for Logistics Research, 1990); and C. John Langley, Jr., Mary C. Holcomb, Joel Baudouin, Alexander Donnan, and Paul Caruso, "Approaches to Logistics Quality," in *Annual Conference Proceedings* (Oak Brook, Ill.: Council of Logistics Management, 1989), pp. 73-78.

²⁴Robert C. Camp, *Benchmarking* (Milwaukee, Wis.: ASQC Quality Press, 1989), p. 10.

²⁵James H. Foggin, "Closing the Gaps in Services Marketing: Designing to Satisfy Customer Expectations," in Michael J. Stahl and Gregory M. Bounds, eds., *Competing Globally Through Customer Value* (New York: Quorum Books, 1991), pp. 510-530.

²⁶Frank W. Davis, Jr., and Karl B. Manrodt, "Teaching Service Response Logistics," in *Proceedings of the 1991 Transportation and Logistics Educators Conference* (Columbus, Ohio: Ohio State University, 1991).

²⁷Karl Albrecht and Ron Zemke, *Service America: Doing Business in the New Economy* (Homewood, Ill.: Dow-Jones Irwin, 1985), p. 31.

²⁸Same reference as Note 5.

²⁹Lloyd M. Rinehart, Robert A. Novack, David J. Closs, and John J. Coyle, "Rethinking Curriculum Issues in Logistics Management for the Next Century," in *Proceedings of the 1990 Transportation and Logistics Educators Conference* (Columbus, Ohio: Ohio State University, 1990).

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