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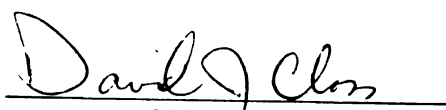


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LOCAL MARKET PRESENCE:
A PRELIMINARY INVESTIGATION

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ANN RENEE' CROOKS COOPER

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**LOCAL MARKET PRESENCE:
A PRELIMINARY INVESTIGATION**

By

Ann Ren   Crooks Cooper

A DISSERTATION

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

Department of Marketing and Logistics

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ABSTRACT

LOCAL MARKET PRESENCE: A PRELIMINARY INVESTIGATION

**By
Ann René Crooks Cooper**

Local market presence is a logistics strategy which integrates the vendor-customer relationship and provides value-added benefits to the distribution channel in a cost-effective manner. Local market presence creates a perception of physical proximity and develops a relational proximity with the vendor. This research examines how customers perceive local market presence and its relative importance. More specifically, the research objectives are to identify the impact of local market presence on the vendor-customer relationship, determine the importance of local market presence factors in vendor selection and logistics service quality, and develop managerial guidelines for defining and implementing a local market presence strategy.

A mail questionnaire was sent to selected persons responsible for purchasing uncoated paper for printing firms within the United States. Seventy-seven responses were received and analyzed. Multiple regression and factor analysis were the primary statistical procedures used to identify the benefits of a local market presence.

Dependent variables were drawn from previous customer service research and measured perceived dimensions of time and distance. These variables identified the benefits and importance of a local market presence strategy in vendor selection and logistics service quality.

Additional dependent variables considered the vendor-customer relationship based upon the vendor's degree of local market presence.

Independent variables include the importance of local market presence benefits and strategy, local market presence perception, and the preference to patronize a vendor.

The major research findings were:

- 1) The key elements of a local market presence are divided into three benefit categories: a) availability of product in a timely and reliable manner, b) vendor accessibility and interaction convenience; and c) geographic location and proximity.
- 2) Vendor-customer relationships differ in areas such as trust, cooperation, and information sharing based upon the degree of the vendor's local market presence.
- 3) Delivery time is most critical to local market presence perceptions.
- 4) Local market presence is a highly desired logistics strategy.
- 5) The perception of a local market presence can be enhanced without committing additional resources to physical facilities through careful attention to the design of product delivery and communication systems.

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1995

DEDICATION

To Michael--Your smile each morning
makes the day worthwhile.
It reminds me that
"Every day is springtime."

ACKNOWLEDGMENTS

I would like to thank the members of my dissertation committee--Dr. David J. Closs, Dr. Donald J. Bowersox, Dr. Roger J. Calatone, and Dr. Robert W. Nason--for their considerable assistance and insightful guidance during the research process. Their integral contributions to this research are sincerely appreciated.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	xi
LIST OF FIGURES.....	xii
 I. CHAPTER I: INTRODUCTION	 1
INTRODUCTION.....	1
LOGISTICS DEFINITION AND ROLE.....	1
THE LOCAL MARKET PRESENCE STRATEGY	5
BACKGROUND.....	6
THE ROLE OF CUSTOMER SERVICE	6
THE ROLE OF A DISTRIBUTION CENTER	13
FUNCTIONS PERFORMED BY A DISTRIBUTION CENTER	13
TRENDS IMPACTING THE DISTRIBUTION CENTER.....	15
RESEARCH MODEL.....	17
RESEARCH OBJECTIVES	25
RESEARCH QUESTIONS.....	26
SCOPE OF RESEARCH	28
PAPER INDUSTRY	28
CONTRIBUTIONS: MARKETING THEORY AND MANAGEMENT PRACTICE..	31
RESEARCH ORGANIZATION.....	32
 II. CHAPTER II: LITERATURE REVIEW.....	 34
INTRODUCTION.....	34
SPATIAL ECONOMICS/LOCATION ANALYSIS.....	37
THE LOCATION DECISION: ITS IMPORTANCE AND COMPLEXITY.....	37
THE IMPORTANCE OF THE LOCATION DECISION	37
THE COMPLEXITY SURROUNDING THE LOCATION DECISION	38
HISTORICAL FOUNDATIONS OF SPATIAL ECONOMIC THEORY	41
RATIONAL ECONOMIC DETERMINANTS OF LOCATION	41
DEMAND GIVEN	45
VARIABLES UTILIZED IN TRADITIONAL LOCATION ANALYSIS.....	46

	Page
CUSTOMER SERVICE INFLUENCES ON LOCATION	51
SERVICE OUTPUTS OF A DISTRIBUTION SYSTEM	52
CUSTOMER SERVICE ELEMENTS MEASURING TIME AND DISTANCE	55
TIME ELEMENTS	55
DISTANCE ELEMENTS	60
CUSTOMER EXPECTATIONS OF TIME AND DISTANCE SERVICE ELEMENTS	65
DELIVERY RELIABILITY EXPECTED	65
TIME AS A DISCRIMINATING FACTOR	66
DISTANCE/PROXIMITY CRITICAL TO CUSTOMER SERVICE	67
ADVANTAGES OF LOCAL MARKET PRESENCE	68
CUSTOMER SERVICE ELEMENTS MEASURING PRODUCT AVAILABILITY, PRODUCT SUPPORT, AND MARKETING GOODWILL	70
PRODUCT AVAILABILITY	71
PRODUCT SUPPORT	71
MARKETING GOODWILL	71
RATIONALIZATION: DISTRIBUTION AND LOCAL MARKET PRESENCE	81
CONSOLIDATION OF DISTRIBUTION NETWORKS	81
RATIONALES DISCOURAGING CONSOLIDATION	82
 SERVICE QUALITY	85
DEFINITION AND OUTPUT OF A LOGISTICS SERVICE DELIVERY SYSTEM	86
SERVICE QUALITY MEASUREMENT	91
DIFFICULTIES OF SERVICE QUALITY MEASUREMENT	91
MEASUREMENT CRITERIA DIFFER PER CUSTOMER GROUP	98
A CLASSIFICATION OF A LOGISTICS SERVICE DELIVERY SYSTEM	98
 SYNTHESIS	101
 CONCLUSION	105
 III. CHAPTER III: RESEARCH DESIGN AND HYPOTHESES	106
INTRODUCTION	106
RESEARCH OVERVIEW	106
RESEARCH OBJECTIVES	107
OPERATIONAL DEFINITIONS	108
FRAMEWORK FOR DATA COLLECTION	108
MARKET SEGMENTS	108
ROLLED PAPER MARKET SEGMENT	110
UNCOATED PAPER MARKET SEGMENT	111
INTERVIEWS AND QUESTIONNAIRE DEVELOPMENT	111
MAIL SURVEY	113
SAMPLE AND SAMPLE SIZE	113
RESPONSE RATE	114
NONRESPONSE BIAS	115
RESEARCH QUESTIONS AND ANALYSIS APPROACH	116
MARKET PRESENCE ELEMENTS AND RELATIVE IMPORTANCE	119
LOCAL MARKET PRESENCE IMPACT ON CUSTOMER PERCEPTIONS	120
RELATIVE IMPORTANCE OF LOCAL MARKET PRESENCE FACTORS	123

	Page
COMPARISON OF MARKET SEGMENTS.....	124
MANAGEMENT GUIDELINES	125
CONCLUSION.....	127
 IV. STATISTICAL ANALYSIS.....	 128
INTRODUCTION.....	128
RESPONSE RATE AND NONRESPONSE BIAS	128
RESPONSE RATE	128
NONRESPONSE BIAS	130
RESEARCH QUESTIONS AND STATISTICAL ANALYSIS	131
MARKET PRESENCE ELEMENTS AND RELATIVE IMPORTANCE	131
KEY LOCAL MARKET PRESENCE ELEMENTS (Q1A)	131
RELATIVE IMPORTANCE OF LOCAL MARKET PRESENCE ELEMENTS (Q1B)	 138
LOCAL MARKET PRESENCE IMPACT ON CUSTOMER PERCEPTIONS.....	145
RELATIONSHIP WITH A LOCAL MARKET PRESENCE VENDOR (Q2A)...	146
PHYSICAL DISTANCE VERSUS DELIVERY TIME (Q2B)	152
RELATIVE IMPORTANCE OF LOCAL MARKET PRESENCE FACTORS	153
LOCAL MARKET PRESENCE FACTORS (Q3A)	154
IMPORTANCE OF LOCAL MARKET PRESENCE FACTORS IN VENDOR SELECTION PROCESS (Q3B)	 159
IMPORTANCE OF LOCAL MARKET PRESENCE FACTORS IN LOGISTICS SERVICE QUALITY (Q3C).....	 165
COMPARISON OF MARKET SEGMENTS.....	169
MANAGEMENT GUIDELINES	171
ATTRACTIVENESS OF LOCAL MARKET PRESENCE (Q5A)	171
CUSTOMER TRADE-OFFS (Q5B)	172
THE IMPACT OF LOCAL MARKET PRESENCE ON MARKET SHARE (Q5C)	 174
NECESSITY OF A PHYSICAL FACILITY COMMITMENT (Q5D)	176
CONCLUSION	177
 V. CHAPTER V: CONCLUSIONS AND IMPLICATIONS.....	 181
INTRODUCTION.....	181
THEORETICAL CONTRIBUTIONS	181
HISTORICAL POSITIONING OF RESEARCH.....	181
SUGGESTIONS FOR DEFINITION CHANGES	186
THEORETICAL SYNTHESIS.....	188
MANAGERIAL IMPLICATIONS.....	191
GENERAL IMPLICATIONS.....	191
PHYSICAL PROXIMITY REQUIREMENTS	191
VENDOR RELATIONSHIP	194
SEGMENTATION	195

	Page
PRICE PREMIUM.....	196
CONCLUSION.....	197
IMPLICATIONS FOR THE PAPER INDUSTRY	199
SEGMENTATION	200
PERCEPTIONS	201
INTERNAL COST EVALUATION	203
PRODUCT DELIVERY SYSTEM	203
CUSTOMER COMMUNICATION SYSTEM	204
LIMITATIONS	204
DIRECTIONS FOR FUTURE RESEARCH	206
APPENDIX	209
BIBLIOGRAPHY	214

CHAPTER I: INTRODUCTION

INTRODUCTION

This research investigated the concept of a local market presence and its role in marketing and logistics strategy development and implementation. Local market presence is the staging of inventory and/or the maintenance of a customer contact point within a local market. Prior to discussing the research model, the definition and role of logistics are reviewed and a local market presence strategy is introduced. The roles of customer service and distribution centers are reviewed to establish a foundation for the introduction and development of the research model. The model positions local market presence within an overall marketing and logistics strategy. This chapter presents the research objectives, questions, scope, and limitations. The chapter also outlines contributions of this research to marketing theory and management practice.

LOGISTICS DEFINITION AND ROLE

Logistics activities support the firm's marketing strategy. Figure 1.1 presents a conceptual framework of the marketing and logistics interface (Rinehart, et al., 1989). The firm's marketing and logistics activities are tied together through channel system issues of institutions and behavior. These activities constitute the place element of the marketing mix and the facilities used for logistics activities. The firm jointly considers marketing and logistics activities to develop a unified customer service strategy based upon its characteristics, competitors, and customers. "This strategy is implemented by the firm to

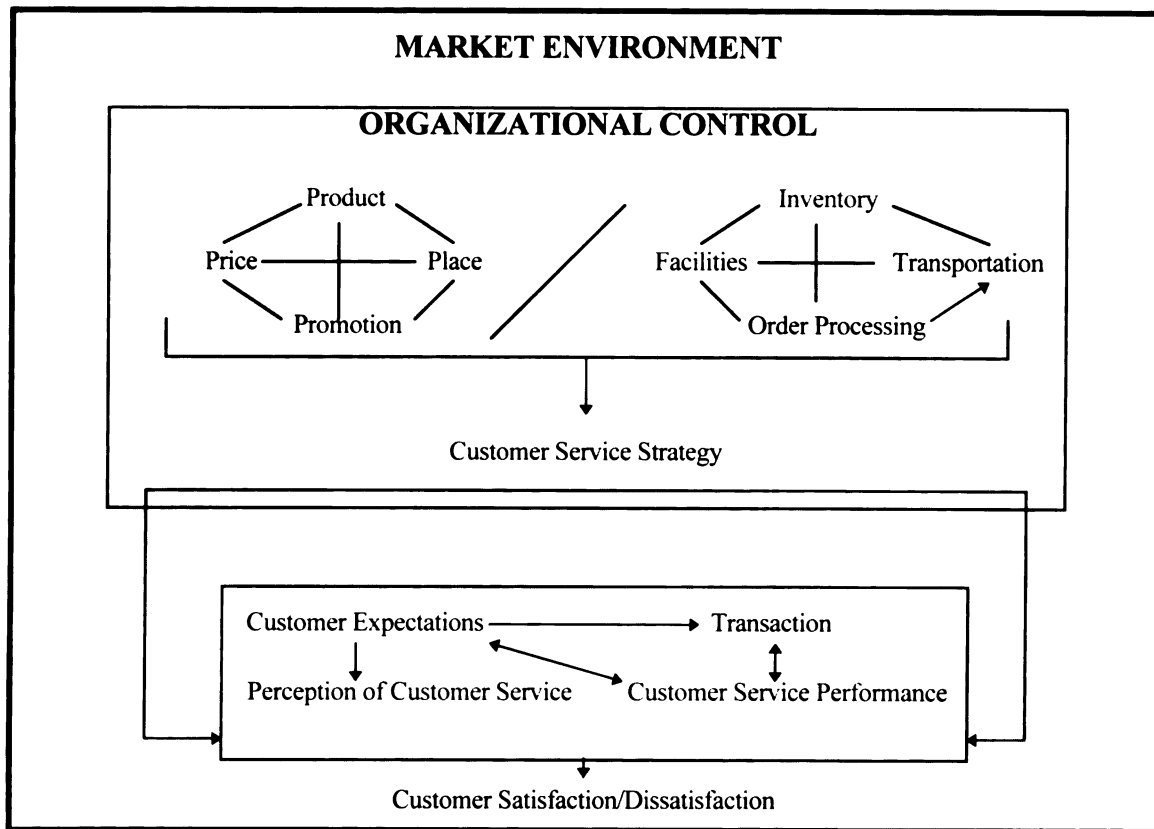


Figure 1.1 Relationship of Logistics to Marketing Strategy (Rinehart, et al., 1989)

initiate interaction with the customer. It leads to the completion of the transaction and the resulting service provided by the firm which is necessary to create the possession utility" (Rinehart, et al., 1989: 68). Logistics operationalizes the marketing strategy element of providing service to customers. The prominence of customer service within the firm's competitive strategy is operationalized through the logistics objectives and activities as the firm interacts with customers.

Logistics performs a broad array of activities that integrates the firm functions to effectively serve customers. Specifically, the Council of Logistics Management defines logistics 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 (Council of Logistics Management, 1992).

These activities include but are not limited to forecasting and order management, transportation, inventory, warehousing, and customer service. These activities are configured to support the strategic and tactical logistical objectives of the firm.

The strategic logistical objective of the firm is to create a sustainable competitive advantage. The present research investigated the use of a local market presence strategy as a method of tailoring logistics services to individual customers and creating a sustainable competitive advantage. Specifically, this research considered the ability of logistics, operationalized through a local market presence, to stimulate the firm's demand and operate as a revenue center.

A logistics department or division is appropriately evaluated as a revenue center. "Revenue centers exist in order to organize marketing activities. Typically, a revenue center acquires finished goods from a manufacturing division and is responsible for selling and distributing these goods" (Kaplan, 1982: 437). A revenue center is the appropriate unit for managerial evaluation as logistics has no control over product manufacture or sales. Whereas, a profit center has managerial discretion in product manufacture (selection,

quantity, and quality), pricing, selling, and distribution decisions (Kaplan, 1982). In profit centers, "managers must make product-mix decisions and determine how production resources are to be allocated among the various products. They are then in a position to optimize the performance of their centers by making trade-offs among price, volume, quantity, and costs" (Kaplan, 1982: 439). The responsibilities of a logistics department or division are confined to product distribution, making a revenue center the more appropriate managerial evaluation unit. The objective of a revenue center is to maximize the contribution margin in conjunction with sales revenue. "If evaluated solely on sales revenue, managers may be motivated to cut prices to increase total sales, spend excessive amounts on advertising and promotion, or promote low-profit products. Each of these actions could increase total sales revenue but decrease overall corporate profitability" (Kaplan, 1982: 437).

Logistics activities and resources combine to create time and place utility for a particular product. Consequently, the tactical objective of the logistics organization is to ensure that the right quantity of the right product is available in the right condition at the right place, time, and cost as defined by the customer. Each logistics component must be designed and implemented congruent with this objective if customer needs and expectations are to be met in a cost-efficient and service-effective manner. The logistics activities are the interface through which the distribution component of the marketing strategy is ultimately experienced by customers.

THE LOCAL MARKET PRESENCE STRATEGY

Local market presence is the staging of inventory and/or the maintenance of a customer contact point within a firm's local markets. A customer contact point is a geographic location leased or owned by the vendor where the customer may physically meet with a representative of the vendor (e.g., sales office, cross-dock facility). The local market is defined by the customer's perceptions. The present research investigated the role and benefits of a local market presence strategy from the perspective of the customer's vendor selection and service quality evaluations.

Despite the potential of more cost-efficient and service-effective distribution systems offered by advanced transportation and communications capabilities, some firms choose to maintain or expand their local market presence. For example, the customer service commitment of the Grainger Division of W.W. Grainger illustrates a local market presence strategy when it states: "With a firm commitment to providing local service, the Grainger Division has established a comprehensive network of branch locations. Today, there is at least one branch in every state and within a 20 minute drive for a large percentage of customers" (W.W. Grainger, Inc., 1991: VI). This research investigated the considerations, benefits, and risks associated with the decision to pursue local market presence as a key component of a firm's logistics strategy.

The following section discusses the roles of customer service and distribution centers within the firm's logistics strategy. This develops the foundation for the discussion of the research model.

BACKGROUND

Customer satisfaction and customer service are increasingly important to firms as they attempt to secure competitive advantage. "Today, in an era of shrinking product life cycles, proliferating product lines, shifting distribution chains, and changing technology, mastery of logistics has become an essential ingredient of competitive success" (Sharman, 1984: 71). Although this statement was written a decade ago, its validity remains. Effective implementation of a logistics strategy addressing customer needs and expectations is essential to secure and maintain a competitive advantage.

A discussion of the role of customer service in the vendor-customer relationship and the considerations for a local market presence strategy are presented.

THE ROLE OF CUSTOMER SERVICE

Customer service has increasingly captured management attention as:

- 1) Product life cycles have shortened, decreasing any competitive advantage resulting from product differentiation;
- 2) Global competition for domestic markets has intensified;
- 3) Global supply lines have become prevalent; and
- 4) Information processing technology has rapidly advanced, allowing greater accuracy in a broader range of management decisions (LaLonde, et al., 1988).

Customer service has increased in sophistication and importance as:

- 1) Technology is bringing customer service on-line and making it proactive;
- 2) Performance below minimum standards may result in punitive actions; while performance above the expected level may not result in increased market share;
- 3) A significant amount of change in logistics systems is customer-driven;

- 4) Customer service performance is being negotiated between vendor and customer, potentially resulting in "tailored" customer service for an individual customer; and
- 5) Customer service is an important way of strategically differentiating the product or service for many firms (LaLonde, et al., 1988).

Vendors are sensitive to the service desires of the customer, realizing that the customer is more apt to decrease or discontinue purchasing if these desires are ignored. However, greater attention to the customer's service desires may suggest more costly distribution systems. The evolution of the customer service concept and the friction between customer service and distribution efficiency are examined.

Many firms are refocusing their activities to acknowledge and service the needs and desires of the customer, enhancing the role of customer service within their organizations. The definition of customer service has evolved from a listing of performed functions (e.g., order entry) and/or performance standards (e.g., deliver 95% of orders in 5 days) to a process that takes place between the buyer, seller, and a third party. "Many forces, including an emerging buyer/seller relationship which emphasizes closeness and understanding, increased communication and information, organizational specialization, and alternative production/distribution techniques have in part instigated this evolution" (Rinehart, et al., 1989: 63).

Customer service is permeating the entire organization within those firms on the cutting edge and is enhancing channel effectiveness. According to LaLonde, Cooper, and Noordewier, customer service is "an important process which spans the functional relationships inside the firm and integrates the relationship with the suppliers and customers

outside the firm" (1988: 5). "Customer service is a pervasive, boundary-spanning activity that takes place from within and beyond the firm. The key to creating a unified perspective is integration from within the firm and between the firm and the other channel members" (Rinehart, et al., 1989: 64). According to Langley and Holcomb (1992), (s)trategic logistics distinguishes itself:

. . .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 (8).

As this integration across functional areas within the firm and between the firm and other channel members occurs, "(c)ustomer service is a process for providing significant value-added benefits to the supply chain in a cost effective way" (LaLonde, et al., 1988: 5).

The firm's perception of its role is shifting from that of a single entity within a supply chain to a member of an "extended enterprise" coordinating efforts to effectively meet customer needs in a cost-efficient manner. The extended enterprise is shown in Figure 1.2. The supply chain incorporates customers, service suppliers, and material suppliers. The prior relationship between channel members was adversarial; the present relationship favors cooperation. According to Langley (1986), logisticians are recognizing the opportunity to manage relationships between suppliers, customers, and third-party members of the channel.

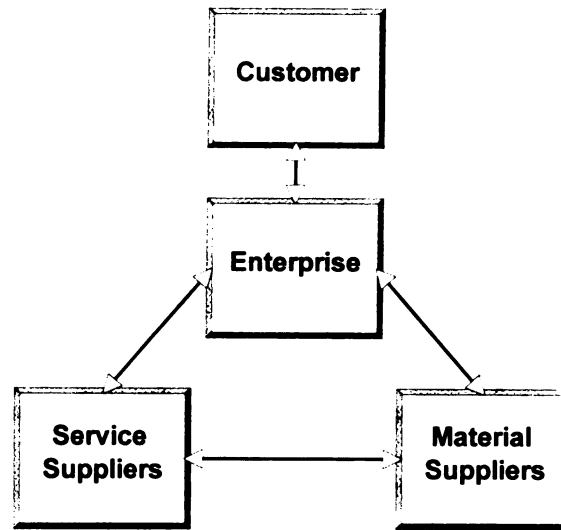


Figure 1.2 The Extended Enterprise (Bowersox and Cooper, 1992)

"Supply chain management encompasses the planning and execution of internal and external logistics activities as a single process that transcends procurement, manufacturing, and finished-product distribution. . .It is a comprehensive concept of logistics which captures the objectives of functional integration and strategic deployment as a single managerial process" (Bowersox and Frayer, 1994: 2.6).

Managed channel relationships highlight the interaction occurring between marketing and logistics as the transaction process unfolds. The firm's understanding of and response to customer service expectations and perceptions are central to successful managed relationships. "The idea of managed relationships between suppliers and customers is based on the expectations of supplier performance by the purchasing firm and differing levels of customer service provided by the selling firm. This tie between the expectations created and

the service provided illustrates the interaction which takes place between marketing and logistics" (Rinehart, et al., 1989: 64). Marketing creates expectations within the purchasing firm; these expectations are fulfilled or unmet based upon the logistics service provided by the selling firm. The marketing and logistics of the selling firm directly impact the inbound logistics of the purchasing firm, and subsequently, indirectly impact its outbound logistics and the service provided to its customers. Therefore, the attractiveness of managed channel relationships is enhanced as the purchasing firm considers the implications for its own customer service policies. "The rationale for development of the extended enterprise is to coordinate the overall value-added process in an effort to improve product and service quality while achieving superior financial performance for that industry" (Bowersox and Cooper, 1992: 308). The supply chain members are attempting "to combine and coordinate the activities of all parties involved in the value-added process" (Bowersox and Cooper, 1992: 308) with the goal of satisfying customer expectations. "The focus of supply chain management is customer success. . .In essence, the supply chain seeks total integration of the exchange process in an effort to achieve maximum operational efficiency and effectiveness" (Bowersox and Frayer, 1994: 2.6).

As the relationships of vendors and customers are integrated within the supply chain, significant value-added benefits are provided through customer service. "Customer value can be created through product availability, timeliness and consistency of delivery and ease of placing orders, and other elements of customer service" (Langley and Holcomb, 1992: 1).

These benefits are derivative of numerous strategies tied to customer expectations. For

example, customers may place a high value on timely and accurate information concerning inventory availability and order status. The supply chain may share information concerning inventory availability and delivery quantities and dates with one another and compile this information in a form relevant and accessible to the customer. Likewise, if the customer values the benefits accruing from a local market presence, the supply chain may be configured to provide this presence, satisfying customer expectations.

Local market presence provides benefits categorized as product availability, product support, and marketing goodwill. Product availability ensures the customer of prompt product delivery at the time and location he desires. Its focus is to keep the customer's operations functioning normally. Product support assures the customer of prompt service should the product malfunction or other assistance be required. Its focus is to return the customer's operations to normal functioning as quickly as possible. Marketing goodwill provides the customer with a "warm, fuzzy" feeling of goodwill towards the vendor. Its focus is to develop a bond between the vendor and customer as they work together to improve the effectiveness and efficiency of the supply chain. Through the provision of these benefit categories, local market presence is one logistics strategy available to integrate the relationships between vendors and customers, enhancing the effectiveness of the supply chain and creating a sustainable competitive advantage. "The strategic potential of logistics lies in the ability to offer selected customers enhanced and unique services beyond the basic services provided all customers of the enterprise" (Bowersox and Frayer, 1994: 2.8).

High customer service has become the goal of corporate America in the 1990s as firms attempt to strategically differentiate themselves from the competition (Hart, et al., 1990; Daugherty, et al., 1992; LaLonde, et al., 1988). Firms are using a number of tactics to differentiate their customer service offerings. For example, firms are scrambling to provide more timely service to customers demanding shorter order cycle times. Simultaneously, more firms are being squeezed by lower profits, causing distribution systems to be subjected to greater scrutiny and rationalization than in previous years. One result of this rationalization process is that some firms have chosen to reduce the number of distribution facilities and consolidate service areas. Other firms are adding customized distribution centers which specialize in providing specific services to particular customers. Generally, the number of distribution centers in a given logistics system is contracting as the area serviced by a distribution center is expanding (Arthur Andersen, 1992). These various defensive tactics will lack long-term effectiveness if they are not derived from a logistics strategy congruent with customer needs and expectations. Only then will strategic differentiation through customer service be sustainable.

The geographic locations of distribution centers and customer contact points are central to a local market presence strategy. Given the trend of downsizing distribution systems to reduce costs, it is important to examine the functions performed by a distribution center and the trends impacting it.

THE ROLE OF A DISTRIBUTION CENTER

This section discusses warehouse and distribution center functions and trends impacting their development.

Functions Performed by a Distribution Center

A distribution center serves a variety of functions which may be succinctly summarized as availability (Jenkins, 1990) or movement and storage (Bowersox, et al., 1986). Alternatively, these functions may be elaborately delineated.

Ackerman (1990) presents six functions of a distribution center:

- 1) Stockpiling,
- 2) Product Mixing,
- 3) Production Logistics,
- 4) Consolidation,
- 5) Distribution, and
- 6) Customer Service.

A distribution center may serve a stockpiling function so as to accommodate production overflows, particularly when the product is characterized by seasonal production and level demand or level production and seasonal demand. A distribution center may provide a product mixing function as a full product line is constructed from products manufactured at several locations and inventoried at the distribution center. Production logistics may be accomplished at a distribution center by storing semi-finished products. A distribution center may perform consolidation as it gathers products to be shipped to a final destination, staging those products closer to the market. Conversely, the distribution function may be provided by a distribution center.

Like consolidation, (distribution) is justified primarily by the freight savings achieved in higher volume shipments. Distribution involves the push of finished products by the manufacturer to the market, whereas consolidation involves the pull of supplies by the customer. . .Both consolidation and distribution provide service improvements by positioning merchandise at a convenient location. Both involve cost tradeoffs that balance warehousing expense against transportation savings. Both provide improved time and place utility for inventories (Ackerman, 1990: 21, 22).

Finally, a distribution center may perform a customer service function. "(A)t times a warehouse stock is justified only by the demands of the customer, which may be far from frivolous" (Ackerman, 1990: 22).

Stock and Lambert (1987) include the following objectives within the role of a distribution center:

- 1) Achieve transportation economies;
- 2) Achieve production economies;
- 3) Take advantage of quantity purchase discounts;
- 4) Maintain a source of supply;
- 5) Support the firm's customer service policies;
- 6) Meet changing market conditions;
- 7) Overcome the time and space differentials that exist between vendors and customers; and
- 8) Accomplish least total cost logistics commensurate with a desired level of customer service.

A distribution center may perform a variety of functions dependent upon management objectives and the needs of the customers served. Trends in distribution center operation should reflect evolving customer expectations and management objectives. These trends influence the functions of a distribution center and their performance.

Trends Impacting the Distribution Center

As competition has intensified and customer satisfaction has become paramount to a firm's success, the distribution center has evolved and will continue to do so in response to these pressures. Numerous trends impacting the functions and operations of the distribution center have been identified by Jenkins (1990) and Arthur Anderson (1992).

Jenkins (1990) has identified seven trends within warehousing:

- 1) Less inventory: There is a greater emphasis on flowthrough rather than storage;
- 2) High-velocity inventories: Orders are smaller and more frequent, prompting an increase in consolidated and pooled shipments. Greater accuracy is required;
- 3) Higher quality;
- 4) More responsive service;
- 5) Better equipment and facilities;
- 6) Greater utilization of bar coding; and
- 7) Improved communications.

Arthur Andersen (1992) surveyed a broad cross-section of industry experts, generating a list of trends within wholesaling. These trends are:

- 1) Customer's power to dictate terms and conditions of purchase is increasing;
- 2) Alternative channels are growing at a faster rate than traditional merchant wholesaler-distributors, resulting in a loss in market share to alternative channels;
- 3) Completeness and reliability of deliveries will continue to be the most important factor in customer satisfaction according to distributors;
- 4) Greater utilization of strategic alliances and partnerships so that products and transactions flow faster and more efficiently through the channel;
- 5) Consolidation among wholesale distribution firms;
- 6) Wholesalers-distributors intend to cover larger geographic areas;
- 7) Wholesaler-distributor inventories as a percent of total assets will decrease due to more efficient purchasing and inventory management;

- 8) Wholesalers-distributors are expected to focus on increased penetration of existing customer bases;
- 9) Increasing number of distribution centers stocking more limited lines; and
- 10) Increase in number of "stockless warehouses" to address local customer needs.

Six of these trends are of particular interest in the examination of the role and utility of a local market presence: 1) the increasing power of the customer; 2) the greater management of channel relationships facilitating the speed and efficiency of products and transactions within the channel; 3) the larger geographic areas serviced by a distribution center; 4) the increased penetration of existing customer bases; 5) the increasing number of DCs stocking more limited lines; and 6) the increase in the number of stockless warehouses to address local customer needs.

These trends highlight the importance of investigating the role of local market presence in the customer's assessment of a vendor's customer service strategy: Vendors are attempting to service customers from fewer distribution centers at greater geographical distances as customers are gaining bargaining power and demanding higher service standards. At the same time, marketers cite local presence as a key element of competitive strategy. It is important to investigate these differing trends to obtain a realistic perspective on the value of a local market presence strategy.

RESEARCH MODEL

This section introduces, develops, and discusses the research model.

The research model is the firm's logistics process and the customer's perception of it.

Figure 1.3 illustrates the model. The logistics service concept incorporates the corporate customer service philosophy. It guides the development of the logistics service delivery system. The logistics service delivery system operationalizes the logistics service concept, integrating order processing, warehousing, inventory, transportation, and customer service functions to meet customer needs. The integrated logistics functions result in the service level experienced by the customer.

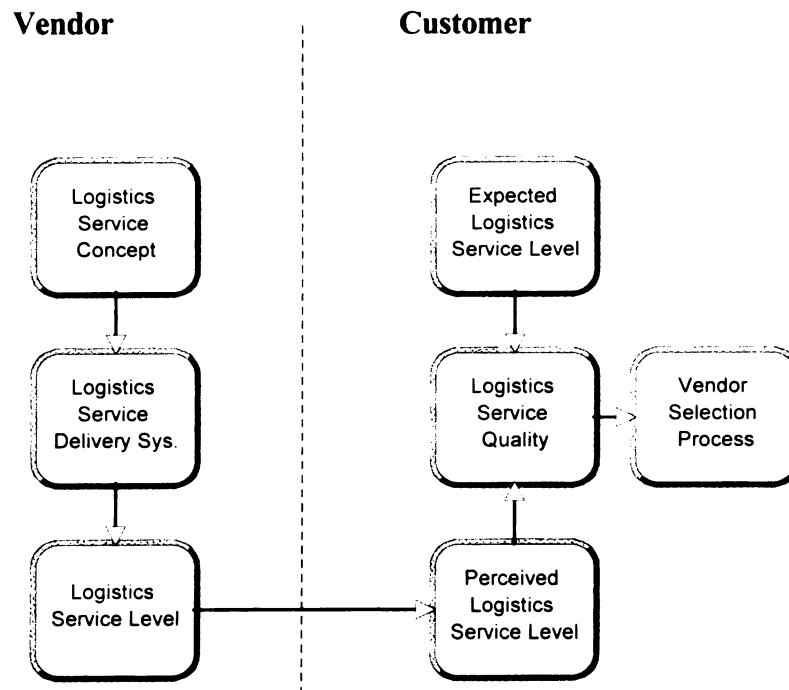


Figure 1.3 Research Model

Customer service evolves through at least three stages as it becomes an integral part of the marketing mix (Bowersox and Closs, 1992). These stages are shown in Figure 1.4. Initially, service means meeting industry standards, focusing on variables such as order fill rate, backorder level, and order cycle time. This basic service is acceptable to customers concerned with stable order cycles and adequate product supply. The vendor establishes internally generated standards and measures actual performance against those standards. Table 1.1 presents examples of customer service measures associated with this and subsequent levels.

Stage Two evolves as customers become dissatisfied with Stage One performance and establish service standards which vendors must meet. Quality principles are applied to all basic processes and focus on service failures. "Customer satisfaction goes beyond basic service and ensures that customers receive desired benefits from logistical performance"

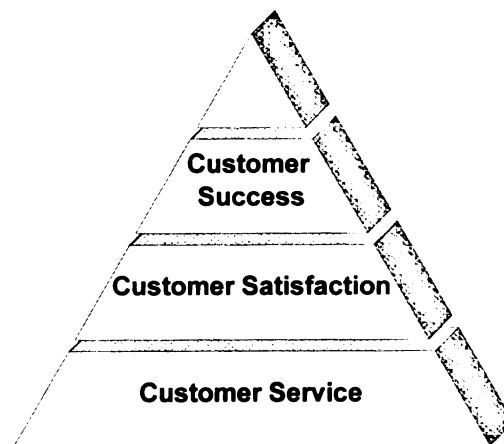


Figure 1.4 Hierarchy of Customer Service Standards (Bowersox and Closs, 1992)

Table 1.1 Customer Service Measures of Hierarchy Stages

Stage	Example of Customer Service Measure
1: Customer Service	Internal Customer Service Standards: Fill Rate, Cycle Time, Picking Accuracy, Backorder Level, and other quantitative measures.
2: Customer Satisfaction	Customer-Established Service Standards: Fill Rate, Cycle Time, Product Quality, Service Failures, Information Flows, and other quantitative and qualitative measures.
3: Customer Success	Value-Added Logistics: Quality Enhancement, Packaging Assortment, Rapid Response, Transportation Coordination, Flexible Invoicing, and other value-added logistics.

(Bowersox and Frayer, 1994: 2.13). In addition to customer requirements regarding fill rate, cycle time, product quality, service failures, and other quantitative measures, customer-generated service levels also include qualitative measures such as information flows. Some customers require vendor performance to be evaluated against a near-zero-defect performance level.

Select vendors are creating a service niche with key customers in Stage Three. First, customers are segmented into groups which justify superior service based on purchase commitments. Second, resources are allocated to assure satisfaction among key customer groups. The goal is to delight these select customers, achieving 100 percent performance. In addition to providing basic service and customer satisfaction, logistics service is evaluated on its ability to aid the customer in achieving his objectives.

The focus is the success of a customer's basic business. The logic is simple--if you are a primary supplier to a customer who is able to grow above industry average, your growth in

turn will outstrip competition.

Thus, among leading edge firms, attention focuses on doing whatever necessary to help key customers gain overall competitiveness. Such extensive customer commitment embodies all aspects of a supplier's performance from research and development to promotional strategy. Distribution performance can enhance customer success. Logistical performance can be leveraged to a new level of competency (Bowersox and Closs, 1992: 218).

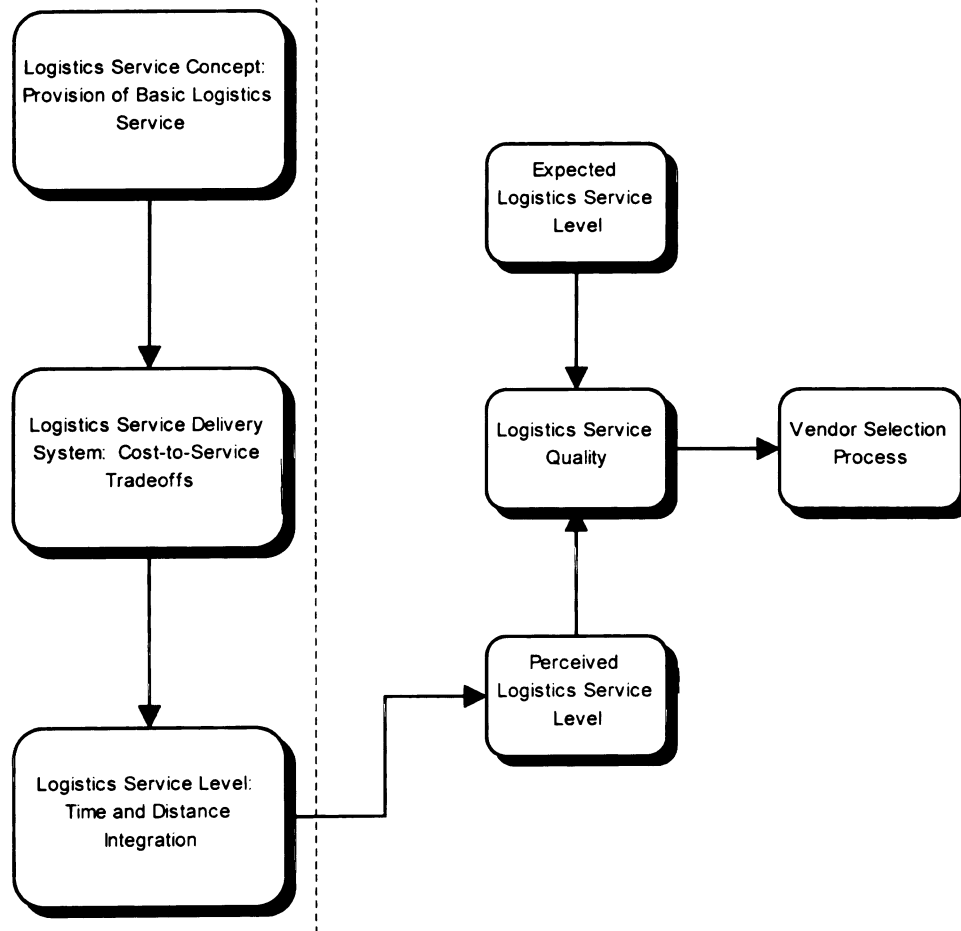
Measures evaluating customer success include sales, market share, profit margin, and ROI.

Customer success is enhanced through value-added logistics such as quality enhancement, packaging assortment, rapid response, transportation coordination, and flexible invoicing (Bowersox and Closs, 1992).

(B)y offering services that make customers successful, the firm can help ensure long-term survival and profitability for the entire supply chain. It should be noted that customer success is not a general strategy, which can or should be made available to all customers. It should be targeted toward selected customers with whom the enterprise can establish strategic and operational synergies through an extended relationship. Customer success strategies are one part of a complete logistics service package" (Bowersox and Frayer, 1994: 2.13, 2.14).

The firm must competently meet customer service standards at Stages One and Two before it can secure a competitive advantage at Stage Three. This competitive advantage can be leveraged "if such outstanding performance is integrated into a customer's supply chain in a way that eliminates waste, duplication, and variance" (Bowersox and Closs, 1992: 219).

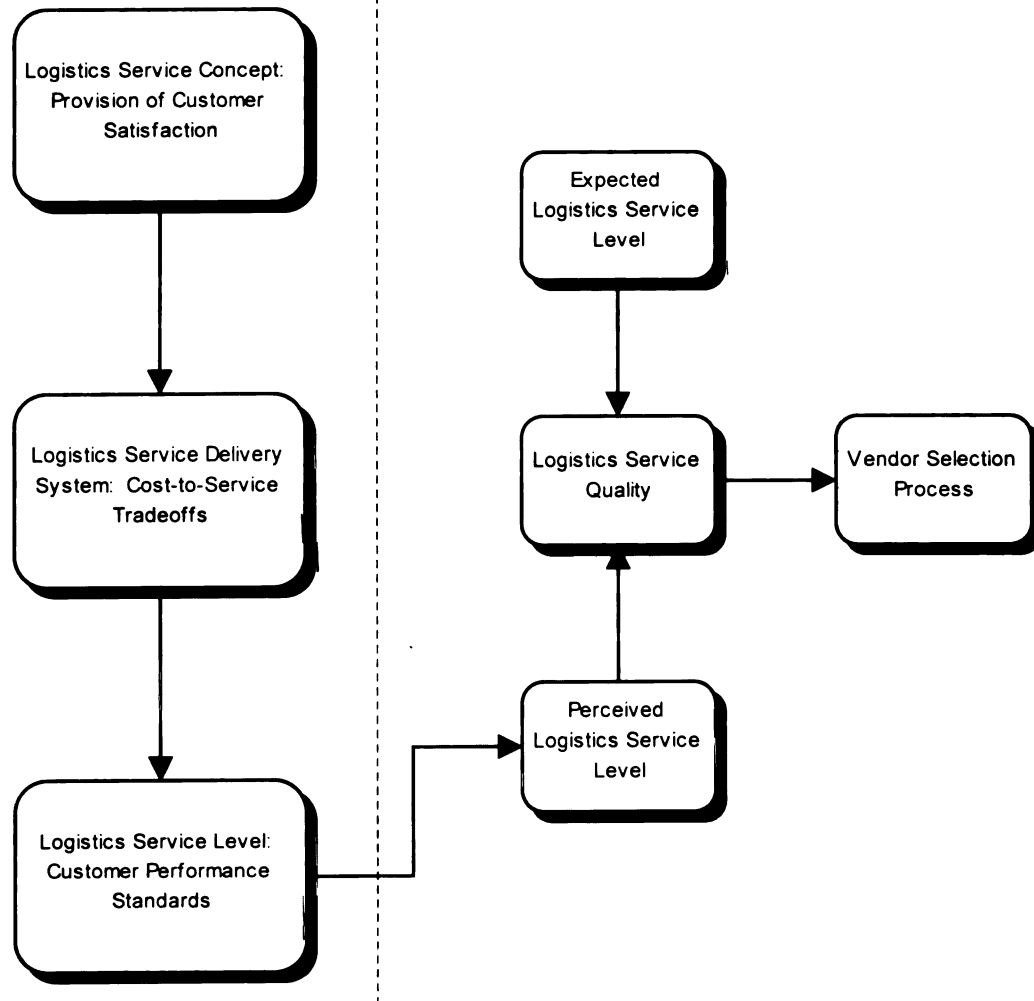
The logistics service level is evaluated based upon this evolving hierarchy of customer service standards. Figure 1.5 presents the research model of the customer service stage. The logistics service concept at this stage is the provision of basic logistics service.

Vendor**Customer****Figure 1.5 Research Model: Customer Service Stage**

The logistics service delivery system is developed from an economic perspective as management trades off the costs of performing logistics functions with the customer service level provided. These tradeoffs consider the time and distance required to reach customers, resulting in a level of inventory commitment. The logistics service level reflects this inventory commitment level and is experienced by customers.

As the firm focuses on meeting service standards established by customers, evolution to Stage Two occurs. Figure 1.6 presents the research model of the customer satisfaction stage. The logistics service concept focuses on providing customer satisfaction. Cost-to-service tradeoffs determine the configuration of the logistics service delivery system from an economic perspective. The logistics service level reflects the customer performance service standards established. "While satisfaction is a much better performance focus, it tends to ignore the greater goals of the overall channel environment" (Bowersox and Frayer, 1994: 2.13).

Customer success is becoming a primary logistics goal within leading edge firms operating at Stage Three (Bowersox and Frayer, 1994). Figure 1.7 presents the corresponding research model. The logistics service concept emphasizes enhancement of the customer's success. The logistics service delivery system is developed by maximizing the contribution margin received from each individual customer's logistics service level package. The logistics service level is experienced by the customer as product availability, product support, and marketing goodwill.

Vendor**Customer****Figure 1.6 Research Model: Customer Satisfaction Stage**

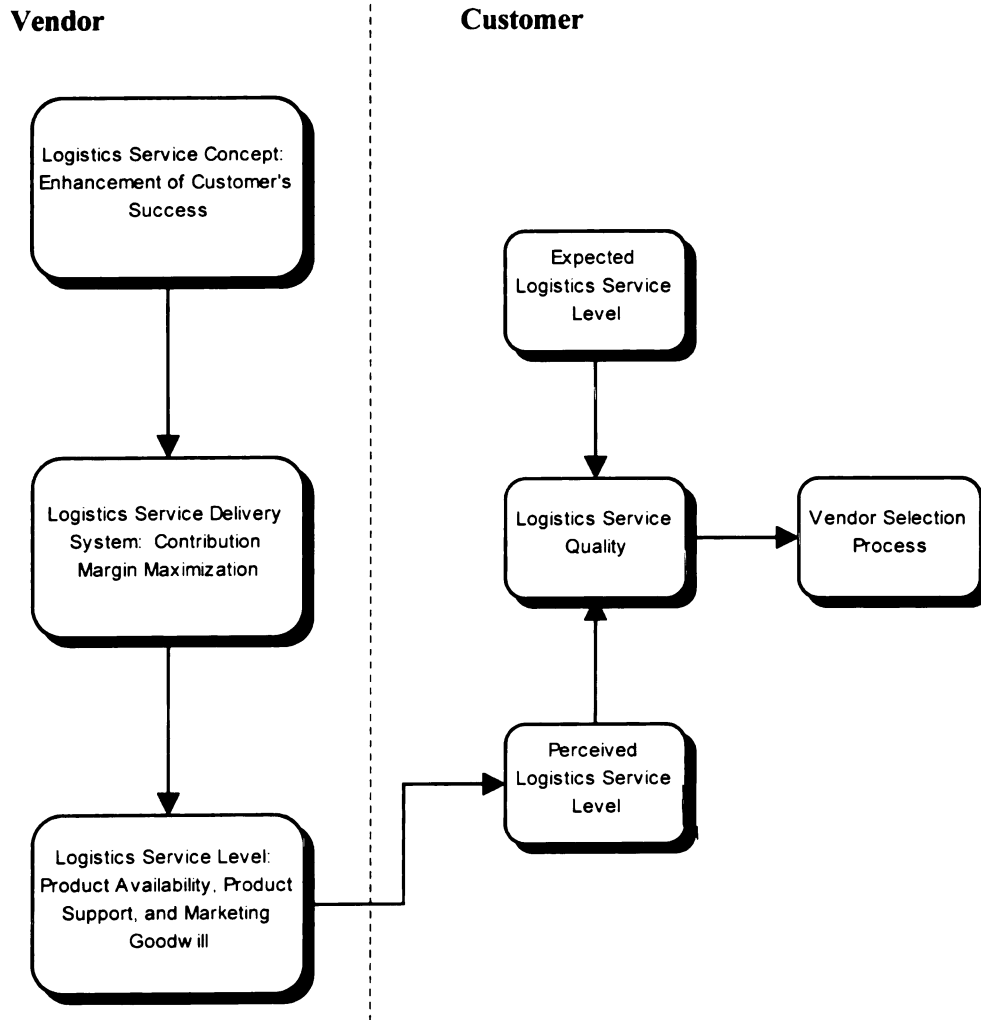


Figure 1.7 Research Model: Customer Success Stage

The customer perceives the logistics service level and compares this perception to his logistics service level expectations. This comparison results in an assessment of logistics service quality and influences the selection of a vendor for future purchase situations.

The present research focused on the logistics service level perceptions relating to local market presence and their importance. It characterized customer perceptions of the vendor-customer relationship in the presence and absence of a local market presence. Finally, the research examined the role of customer perceptions of local market presence in selecting a vendor and evaluating logistics service quality.

RESEARCH OBJECTIVES

This research investigated a local market presence strategy. The investigation developed an operational definition, refined the definition through management surveys, compared various elements of local market presence, and suggested management guidelines for implementing a local market presence strategy. The five specific research objectives were:

- 1) To define local market presence from the customer's perspective and determine the relative importance of its key elements;
- 2) To identify the impact that local market presence has upon the customer's perception of his relationship with the vendor;
- 3) To determine the importance of local market presence factors in vendor selection and logistics service quality;
- 4) To determine how purchase volume influences the relative importance of local market presence benefits; and

- 5) To develop managerial guidelines for defining and implementing a local market presence strategy.

RESEARCH QUESTIONS

The proposed research answered the following research questions which are outlined in Figure 1.8. Table 1.2 pairs these question groupings with the research model components which they measure.

- A. Local Market Presence Elements and Relative Importance
 1. What are the key elements of local market presence?
 2. What is the relative importance of the various elements comprising local market presence?
- B. Local Market Presence Impact on Customer Perceptions
 1. How does the customer describe his relationship with a vendor pursuing a local market presence strategy?
 2. How do physical distance and delivery time contribute to the customer's perception of local market presence?
- C. The Importance of Local Market Presence Factors in Vendor Selection and Logistics Service Quality
 1. What are the factors of local market presence?
 2. What is the relative importance of local market presence factors in the vendor selection process?
 3. What is the relative importance of local market presence factors in determining logistics service quality?
- D. Comparison of Market Segments
 1. What impact does the percentage of total purchases accounted for by this product class have upon the relative importance of the local market presence benefits?
- E. Management Guidelines
 1. Is local market presence attractive to a significant group of customers?
 2. Are customers willing to pay a premium to receive the benefits of local market presence?
 3. Will local market presence increase market share?

4. Can the benefits of local market presence be achieved short of locating a facility in close proximity to customers?

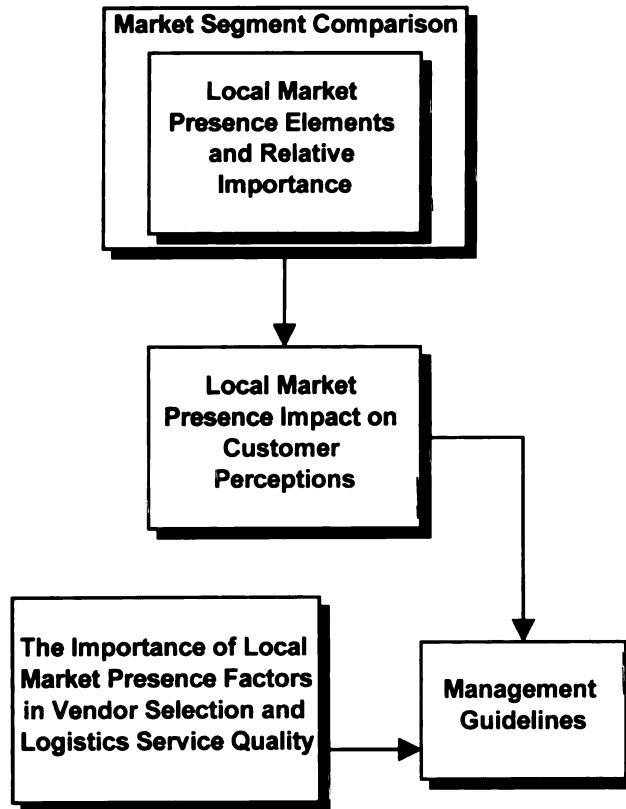


Figure 1.8 Research Questions

Table 1.2 Research Questions and the Research Model Components Measured

Research Question/Grouping	Research Model Component
Group A: Local Market Presence Elements and Relative Importance	Logistics Service Level
Group B: Local Market Presence Impact on Customer Perceptions	Perceived Logistics Service Level
Group C: The Importance of Local Market Presence Factors in Vendor Selection and Logistics Service Quality	Vendor Selection Process and Logistics Service Quality
Group D: Comparison of Market Segments	Logistics Service Quality
Group E: Management Guidelines	

SCOPE OF RESEARCH

It was the intent of this research to evaluate and compare the use of local market presence as a component of marketing strategy across two market segments within the paper industry. This industry is very competitive and quite sensitive to customer service differences. This research focused on paper.

PAPER INDUSTRY

U.S. paper companies continued to experience overcapacity and weak pricing through much of 1993 (Standard & Poor's, 1993). The economic outlook is improved for 1994; however, "financial results depend largely on product mix, since each grade of paper has its own markets and its own supply and demand situation" (Standard & Poor's, 1993:

B86). Fixed costs have increased as a percentage of total costs. Consequently, each incremental ton of output increases profits by spreading high overhead costs across a greater production volume. Excess production is inventoried, temporarily transforming a portion of fixed costs into an asset. Companies are forced "to produce paper that might not be profitable based on operating costs alone; the machine was too expensive to let it sit idle" (Standard & Poor's, 1993: B87). Pressure exists to improve market shares which would allow greater capacity utilization and improve net profit margins. A marketing strategy incorporating local market presence may improve market share, decreasing fixed costs per production unit and lowering inventory to stock.

The marketplace for paper products is increasingly sophisticated due to improvements in office technology.

The proliferation and ongoing evolution of office equipment has spawned a variety of new copy machines and printers, including those sophisticated enough for color graphics and desktop publishing. These machines require an array of different papers and often have narrow tolerances for variations in paper content or quality. . . paper companies have had to rise to the challenge of meeting the exacting standards for numerous, specialized market niches, while remaining flexible enough to ride with any changes in those specifications. The upshoot: there are more paper products on the market than ever before, and the life cycle of the average product is considerably shorter (Standard & Poor's, 1993: B90).

Over 500 new product entries have been introduced since 1992 when over 500 types of paper were available (HOW, 1994). Each product entry is described by its grade, basic weights, range and quantity of colors, finishes, cotton content, flocking, recycled content, pH, availability of matching envelopes, and production capabilities. Table 1.3 presents a

sampling of paper grades and their common uses and characteristics. Additional grades include index, tag, bristol, newsprint, and lightweight papers (Horton, 1994).

In this market, customers are looking for assurances that the next batch of paper they order will be the same as the last. Paper quality must be consistent in order to ensure that it will function properly on a particular customer's equipment. Paper is exposed to varying temperatures and moisture levels during shipment and storage, which must be taken in to consideration. It is then subjected to pressure and heat when it passes through a copier, laser printer, printing press. . . If the paper. . . twists, curls, crumples, or tears, it can jam the copier, (or) splay printed paper everywhere (Standard & Poor's, 1993: B90).

Consequently, paper is quite complex in terms of its user features and functional evaluation.

Table 1.3 Paper Grades: Common Uses and Characteristics

Grade	Common Uses	Characteristics
Bond	Letterhead, Business Forms	Accepts ink easily; Usually erasable.
Coated	High-Quality Printing	Ink applied evenly; Smooth, glossily coating.
Text	Announcements, Booklets, Brochures	Many textures and colors.
Book	Trade Books, General Printing	Less expensive than text; Available in wider range of weights and bulks.
Offset	Offset Printing	Sizing added to resist moisture in offset printing.
Cover	Covers	Heavier weights and many textures; Durable; Withstands scoring, folding, embossing, and diecutting.

The research surveyed customers who are served by distributors in the paper industry. The survey focused on the person responsible for purchasing uncoated paper as identified by customer. Each respondent was asked his perception and evaluation of the local market presence strategy used by his vendors.

CONTRIBUTIONS: MARKETING THEORY AND MANAGEMENT PRACTICE

The competitive environment in which U.S. firms operate has changed dramatically in the last thirty years, expanding to a global marketplace where service differentiation rather than product differentiation defines a vendor's competitive advantage. Customers are not only expecting, but demanding quality products supported by high quality services. Vendors are scrambling to tailor their service offerings to match the expectations and desires of their customers as they attempt to delight those customers and build a customer franchise.

As customer expectations and demands have increased, heightened financial pressures have prompted a more exhaustive rationalization of distribution networks, forcing vendors to close some distribution centers and increase the market areas served by others. However, in the wake of these elements of change, some vendors are committed to pursuing local market presence strategies to the delight of their customers.

Pockets of customers are voicing a desire for greater local market presence on the part of their vendors. This research examined how selected paper customers perceive local market presence and its relative importance.

Historically, research has investigated various location decisions from a spatial economic theoretical perspective, grounding its analysis in concrete measures of time, space or distance, and cost. It was generally assumed that a firm's demand was static with respect to location. This logic implies that altering the location of inventories or a customer contact point would have no effect upon a firm's demand. However, observation of the market appears to contradict this assumption in certain instances. Many marketers argue that local market presence can actually increase a firm's demand. This research contributes to marketing theory by examining how location impacts a firm's demand through local market presence. In addition, this research contributes to location theory by illustrating how customer perceptions may be incorporated into the location decision.

Management guidelines for firms attempting to enhance customer perceptions of local market presence are suggested. This research identified how a perception of local market presence facilitates the purchase transaction and the relationship between the customer and vendor. It investigated the strategy of local market presence from the customer's perspective and established its relevance and importance to segments of customers. This research outlined a method of enhancing customer success in market segments desiring to be served via a local market presence strategy.

RESEARCH ORGANIZATION

The remainder of this research is organized into Chapters Two, Three, Four, and Five. Chapter Two examines the relevant research streams of spatial economics/location

analysis, customer service influences on location, and service quality. Chapter Three presents an overview of the research methodology, reviewing research objectives, presenting operational definitions, and outlining data collection. It discusses the research questions and identifies the analytical methods applied. Chapter Four presents the research results. It presents each research question, the statistical analysis, and an interpretation of the results. Chapter Five presents the research conclusions and implications. It discusses the theoretical contributions and managerial implications. Finally, it outlines future research directions.

CHAPTER II: LITERATURE REVIEW

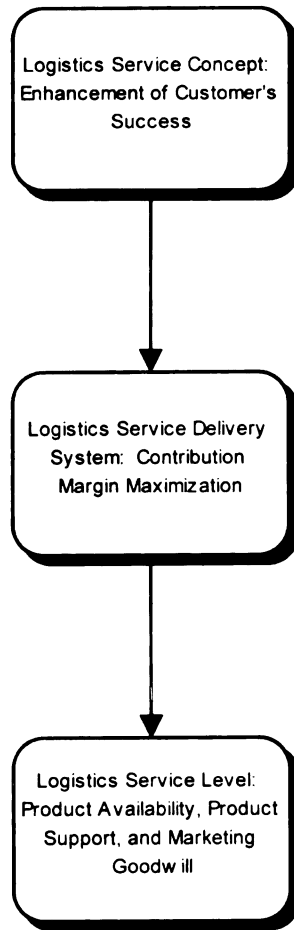
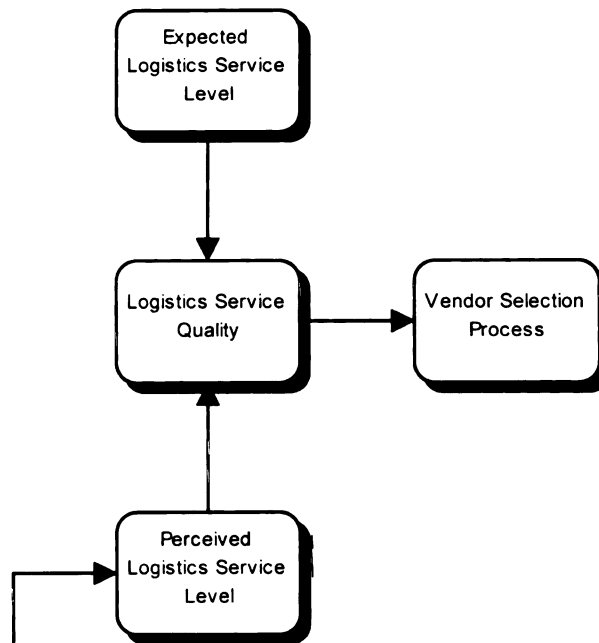
INTRODUCTION

Chapter Two presents and synthesizes the research streams relevant to the investigation of the role and utility of local market presence in the service quality evaluation and vendor selection process. Appropriate research streams include spatial economics/location analysis, customer service influences on location, and service quality formation. These research streams, as they relate to local market presence, influence the service quality evaluation and the vendor selection process of the customer.

The research model is comprised of two basic parts: 1) The logistics process designed and implemented by the vendor; and 2) the customer perceptions of this logistics process and subsequent assessment of logistics service quality and vendor selection process. The customer success research model is depicted in Figure 2.1.

The customer success stage of the research model is derived from a perceptual as well as an economic basis. This stage recognizes the importance to the customer of the logistics process in addition to the logistics outputs received. Consequently, the logistics service concept espoused by the vendor focuses on enhancing the customer's success as defined by the customer.

This logistics service concept drives the design of the logistics service delivery system. At the customer service and customer satisfaction stages this system is designed based on tradeoffs between logistics costs and customer service levels. The vendor

Vendor**Customer****Figure 2.1 Research Model: Customer Success Stage**

minimizes the costs of providing a specified level of service. However, the vendor's perspective is changed at the customer success stage. Once the vendor decides to work with a customer to facilitate his success, the design of the logistics service delivery system is driven by the maximization of the contribution margin associated with that customer. As the vendor establishes the logistics service level and designs the logistics system to deliver that service, he analyzes the relevant costs and the resulting revenues to determine the contribution margin associated with a particular level of service. The relevant costs are those which are variable with sales to a particular customer and those non-variable costs which would be eliminated if the customer is eliminated (Lambert, 1992). If the contribution margin increases, the proposed service level is provided; if the contribution margin is not improved, the proposed service is not provided. Evaluating the contribution margin recognizes that logistics policies impact revenues through market share and margin increases and, therefore, market demand (Lambert, 1992).

The logistics service level as experienced through a local market presence provides the customer with product availability, product support, and marketing goodwill. These are experienced by the customer and internalized as perceptions of the logistics service level. The customer's perceptions are compared to his expectations of the logistics service level so that the customer forms an assessment of logistics service quality. This assessment influences his future selection of a vendor to fulfill his product and service needs.

Each of the research streams relevant to the research model is discussed in turn, beginning with spatial economics/location analysis as it provides the historical context for the geographic layout of distribution sites and establishes their importance.

SPATIAL ECONOMICS/LOCATION ANALYSIS

This section examines the importance and complexity surrounding the location decision. The historical foundations of spatial economics theory are presented and the contributions of the present research to this literature stream are identified. Finally, the variables traditionally utilized in location analysis are specified.

THE LOCATION DECISION: ITS IMPORTANCE AND COMPLEXITY

The importance of location is examined, highlighting the need to critically investigate and evaluate the variables affecting the location decision. The distribution costs affected by the location decision are presented. Finally, the complexity surrounding the location decision and the variables which may impact the stability of this decision are discussed.

The Importance of the Location Decision

The location of distribution centers plays a critical role in the delivery of customer service to a firm's internal and/or external customers. These locations determine the speed and cost with which customers may be served (Glaskowsky, et al., 1992). Distribution center locations are integral to the success of a firm's logistics service delivery system.

The choice of locations for Distribution Centers (DCs) is among the most critical elements of logistics system design. Both the cost of the system and the level of customer service that can be provided are significantly affected by the number, size, and locations of the DCs and by the decisions on which customers to serve from each DC (customer allocation) (Perl and Daskin, 1984: 92).

Consequently, significant effort should be expended to thoroughly investigate the variables affecting the location decision so that the most appropriate site is selected.

The selection of distribution sites affects distribution costs based on geographic proximity to customers and regional cost differences. These distribution costs include transportation, warehousing, inventory carrying, lot quantity, and order processing and information (Stock and Lambert, 1987). Distribution site selection has a direct impact on the effectiveness and efficiency of the logistics service delivery system. This impact is formally analyzed as the vendor makes tradeoffs between these distribution costs and the customer service level provided. These tradeoffs are shown in Figure 2.2.

Cost-to-service tradeoffs determine the configuration of the logistics service delivery system at the customer service and customer satisfaction stages of the research model. These tradeoffs are still important at the customer success stage; however, they are tempered by the revenues which may be stimulated by the logistics service level.

The Complexity Surrounding the Location Decision

Location decisions have grown increasingly complex in recent decades as "many firms have greatly expanded their markets geographically, expanded their product lines to include much larger numbers of SKUs (many thousands in some cases), and have responded to strong competitive pressures to locate inventory so as to provide even higher levels of customer service" (Glaskowsky, et al., 1992: 482). In addition to these internal actions, external pressure has complicated the firm's location decision. Transportation-rate locational advantages and disadvantages for many firms, both absolutely and with respect to competi-

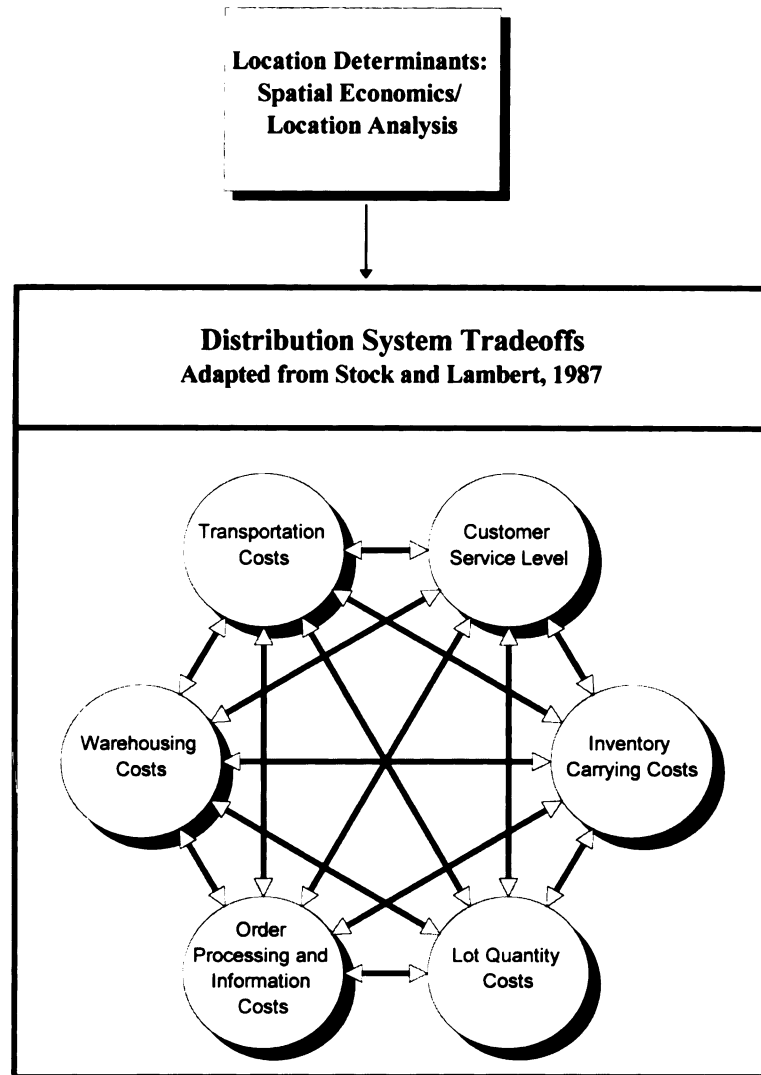


Figure 2.2 Influence of Location Determinants on Distribution System Tradeoffs

tion, have been altered by deregulation (Glaskowsky, et al., 1992). Geographical market expansion, product proliferation, increasingly higher demands on customer service, and changing transportation locational advantages have wrecked havoc on former distribution site rationales.

The distribution site selection decision is complicated further by the intercorrelation of the site selection variables. Altering the value of one of these variables is likely to impact the value of another, resulting in a chain of events which disrupts the rationalization of a distribution site scheme. For example, the market boundary is a function of production and transportation costs. Consequently,

decreases in transportation costs in relation to competition allow a firm to expand its market territory. Increased sales allow more production at a given location. This may offer economies of scale in the production operation. These economies, in turn, may allow a company to expand further the market territory served from the plant. In cases such as this, transport cost advantages can create a self-reinforcing chain of events (Glaskowsky, et al., 1992: 490).

Market areas are also impacted as population migrations occur. Artman and Clancy (1990) linked the increase or decrease in distribution centers within a geographic region in part to population migration.

Given the intercorrelation of site selection variables and dynamic sales patterns and market areas, an assessment of a firm's distribution scheme is likely to suggest the closure of specific distribution sites and the establishment of others. "(T)he resulting combination of tapering cost/distance factors and changing multiple manufacturing/inventory locations can produce extremely complex movement patterns" (Glaskowsky, et al., 1992: 490).

Consequently, location decisions are not formed in a static environment. A myriad of dynamic variables impact this extremely complex decision, which if poorly made is often very costly to correct.

HISTORICAL FOUNDATIONS OF SPATIAL ECONOMIC THEORY

Investigations into the rationales underlying location patterns began to appear in the early eighteenth century. Table 2.1 presents an overview of the assumptions, variables, and contributions of many of the prominent theorists within this research stream. Theorists list and categorize variables determining location. These variables include transportation costs, the locations of raw materials and markets, and the availability of capital, labor, and energy sources. Two similarities exist throughout a majority of spatial economics research:

1) Location variables or determinants are rational and economic in nature and 2) demand is assumed to be given.

Rational Economic Determinants of Location

A common characteristic of each determinant is its rational economic nature. Location is quantitatively expressed as a function of various input costs and the resultant product price. Thus, each of these analyses is a simplification of reality, examining only the supply side of the equation in rational economic terms and ignoring the impact of location on customer perceptions of the logistics service level.

Table 2.1 Prominent Contributors to Spatial Economic Theory

<i>Theorist</i>	<i>Assumptions</i>	<i>Variables</i>	<i>Contribution</i>
Cantillon, 1725	Social organization is subordinated to fertility of land.	Price Differentials = $f(\text{Distance or Transportation Costs, Comparative Costs, Interregional Inequality of Revenue})$	Develops a general explanation of the functioning of the economic system integrating the spatial factor.
Steuart, 1767	Manufactures serve a national market.	Location = $f(\text{Energy and Raw Material Sources, Low Wages and Subsistence Prices, Transport Routes})$	Spatial effects on location of population and manufactures, Development of urban areas and transportation routes, and Division of labor between urban and rural areas.
Condillac, 1776	—	—	Scarcity of goods varies with location; Location becomes central to theory of value and trade.
von Thunen, 1826	Continuous, isolated plain uniform in fertility and transport facilities. City in center of plain. Single market price for each product.	Optimal Location of Agricultural Activities = $f(\text{Rent})$; Rent = $f(\text{Relative Price})$; Relative Prices = $f(\text{Transportation Costs})$; Transportation Costs = $f(\text{Weight, Distance to Market})$	Marginalist theory of price applied to location of production.
Roscher, 1865	—	If Division of Labor is poorly developed: Location = $f(\text{Location of Consumption})$ If Division of Labor Developed: Location = $f(\text{Raw Materials, Power Sources, Capital, Climate, Other Advantageous Factors})$	Attempts to develop an inductive theory encompassing the natural factors of location.
Schaffle, 1873	Thunen's basic hypothesis: Essential factor in model is distance from the market.	If Labor is the predominant factor of Production: Location = $f(\text{Location of Labor})$; Otherwise: Location = $f(\text{Location of Raw Materials, Capital, Labor, and Energy Sources})$	Systematizes Roscher's analysis. Classifies industries and factors of production according to centralizing or decentralizing tendencies.
Launhardt, 1882	—	Optimum Location Point = $f(\text{Transportation Costs, Raw Materials, Consumer Markets})$; Minimum Transportation Point = $f(\text{Transportation Costs})$; Transportation Costs = $f(\text{Weight, Distance})$	Analyzes firm rather than industrial sector. Defines optimum location point and minimum transportation point. Analyzes the size of market areas and the supply to each.

Table 2.1 (cont'd).

<i>Theorist</i>	<i>Assumptions</i>	<i>Variables</i>	<i>Contribution</i>
Marshall, 1890	—	—	Introduces the possibility of estimating in monetary terms the advantages of location; Relationship between the cost of transportation and the distance to market.
Hall, 1900	If transportation costs are high, they determine location. Otherwise, another factor will determine location.	Location = $f(\text{High Transportation Costs, Nearness of Raw Materials or Markets, Availability of Capital, Climate, etc.})$	Analyzes those industries where one factor plays a dominant role.
Weber, 1909	Locations of raw materials and places of consumption; Immobility and unlimited supply of labor at fixed wages; Transportability of raw materials; Isolated country which is homogeneous as to physical conditions, technological development, political authority, and race; Perfect competition.	Transportation Costs = $f(\text{Weight, Distance})$; Point of Minimum Transport Cost = $f(\text{Freight Index})$ where Freight Index = Units of Weight Lost by the Localized Materials/Units of Weight of the Ubiquitous Materials;	Projects pure economics into spatial theory. Mechanical theory of location for a closed system. Least-cost theory.
Englander, 1924	—	Location = $f(\text{"Local Conditionality"})$ where Local Conditionality is the Interrelationships between Input Prices, Output Prices, and Influence of Producer on these Prices.	Analyzes the general equilibrium of a spatial model.
Fetter, 1924	Prices known and determinant in influence on market size.	Transportation Rate per Unit of Distance; Price of Good	Demonstrates that the boundary between the market areas of two competitive sellers (A and B) separated by a given distance is the locus of points for which transportation cost (A) + price (A) = transportation cost (B) + price (B).
Predohl, 1925	Level of technology given; Continuity of space; All locations fixed except that of one enterprise.	All Changes in Location of Firm = $f(\text{Substitution of Various Factors of Production Located at Various Sites})$	Introduces microeconomics analysis methods into location theory—primary substitution.
Weigmann, 1926	Markets viewed as surfaces; Relates theory of spatial economics to monopolistic competition.	—	Attempts to model the totality of the spatial structure of the economic process. Introduces time into spatial economic theory.
Hotelling, 1929	Demand rigidity which allows for the coexistence of several prices and the maintenance of a stable equilibrium; Buyers characterized by inelastic demand; Buyers are uniformly distributed; Zero cost; Constant rate of transportation per unit.	Point of Indifference: Transportation costs (A) + Price (A) = Transportation Cost (B) + Price (B); Location = $f(\text{Price, Output, Profit})$	Determines optimal price, output, and location of each seller; Demonstrates that locational equilibrium implies the concentration of sellers at one point.

Table 2.1 (cont'd).

<i>Theorist</i>	<i>Assumptions</i>	<i>Variables</i>	<i>Contribution</i>
Chamberlin, 1933	Advantageous for competitors to be located in close proximity to one another; Uneven population distribution; Variable market length.	Location = $f(\text{Population Distribution, Shopping Behavior of Buyers})$	Locational equilibrium implies the concentration of sellers at one point.
Christaller, 1933	Range of Good = Maximum Distance a Dispersed Population is willing to cover in order to procure a good supplied at a commercial center.	Economic Distance = $f(\text{Time, Cost})$; Range of Good = $f(\text{Center Size, Spatial Distribution of Population, Price Buyers are willing to pay, Subjective Economic Distance, Price and Quantity of Goods at Commercial Center})$	Adopts a deductive method to formulate a theory of location of retail outlets and urban institutions; Hierarchy of commercial centers and goods available at each center.
Ohlin, 1935	—	Transfer Costs	Initiates the integration of location theory into modern price theory framework.
Palander, 1935	Labor is a fixed factor; Local differences in economic conditions, technology and demand variability; Inelastic consumer demand; Variation in transportation rates due to volume, distance, nature of goods shipped, volume of shipment, formal and informal contracts, and supply and demand.	Time; Location = $f(\text{Transportation Costs, Local Cost Differences, Local Markets})$; Transportation Costs = $f(\text{Loss of Time, Loss in the Value of the goods, Shipment Costs})$	Provides first generalization of location problem—Framework of a general theory of spatial interdependence of units in economic system.
Losch, 1940	Given: Demand, location of raw materials, location of markets, factory price, average production cost, rural and city population, freight rate, number of products, and total surface area; Monopolistic competition characterizes economy.	Location = $f(\text{Production Cost, Transportation Cost, Number of Buyers, Purchasing Power})$	Elaborates a general equilibrium theory of location—spatial interrelationships of an interdependent economic system. First modern and systematic integration of various earlier theories into a unified analytic structure. Significant methodological progress in spatial analysis made as consistently ties abstract analysis to reality.
Hoover, 1948	—	—	Develops model of relationship between spatial demand and marginal revenue. Synthesizes theoretical contributions of predecessors and links them to practical studies. Introduces time into location analysis.

Table 2.1 (cont'd).

<i>Theorist</i>	<i>Assumptions</i>	<i>Variables</i>	<i>Contribution</i>
Greenhut, 1956	Site selection offers monopolistic advantages. Homogeneous consumers evenly dispersed over line from factory to point where freight cost exceeds maximum price consumer will pay for product; Exclude distortive types of man-made forces (e.g., freight rate zones, discriminatory pricing, tax incentives, state and federal laws); Freight costs are proportional to distance; Negative sloping demand curve; Marginal costs of production are constant.	Demand = $f(\text{Freight Costs, Contacts, Location of other Producers})$; Location = $f(\text{Demand, Cost, Personal Considerations})$	Attempts to synthesize Weber's least-cost theory and Losch's greatest profit or market area theory.
Isard, 1956	---	Market Area, Supply Area	Completes Losch's model of a general theory of location based upon substitution principle.
Webber, 1972	Assumes uncertainty as to the behavior of other firms (locations), the environment state (production decision problems), and the techniques of production.	Location = $f(\text{Labor, Agglomeration})$; Agglomeration = $f(\text{Distance costs, External economies, Economies and Diseconomies of Scale within the Firm})$	Introduces uncertainty into spatial models.

Demand Given

Another notable abstraction made by these prominent contributors to spatial economic theory involves the determinants of the market demand level. Generally, each theorist assumes demand to be given. According to Losch (1967), demand may influence location through price which impacts the geographic location of the market; however, location never directly stimulates nor discourages demand. Greenhut (1956) is among the first to note the variable nature of demand.

Most reflections on plant location overemphasized the locational importance of the transport and processing cost factors. This failure has been noted and fought by recent writers, so that no longer is the Weberian assumption of a given price and constant demand a valid one for locational analysis. Rather, the demand has become a variable, dependent upon freight costs,

contacts, and the location of other producers. Site-selection offers monopolistic advantages (279).

It is now generally accepted that location or a local market presence may stimulate a firm's demand levels (Canning, 1982; Closs and Thompson, 1992).

The site selection variables have multiplied over the years, adding to the many facets considered in the location decision. These variables are presented in the following discussion.

VARIABLES UTILIZED IN TRADITIONAL LOCATION ANALYSIS

Examination of inventory, transportation, customer service, and various other factors have resulted in numerous studies and model configurations which have attempted to capture the essence of the facility location decision confronting the researcher. Theoretically, facility locations should be configured so that each location yields an identical marginal return (Lilien and Kotler, 1983). However, other decision variables often impose themselves upon the analytical process, convoluting an economically rational solution and creating a network of locations that in retrospect may be difficult to justify through an economic analysis.

Numerous factors are considered in the physical facility location decision for finished products. These include the transportation charges associated with inbound and outbound products; market factors such as the importance of product availability and the impact of stockouts upon sales and customer loyalty; government industrial policy to facilitate regional development through investment grants, tax breaks, rent rebatements, or other incentive vehicles; and idiosyncrasies of a particular business such as seasonal demand. Table 2.2 provides a list of site selection variables and identifies the source

mentioning each. This is not an exhaustive listing, but merely illustrates the variety of variables employed in location analysis.

After the relevant site selection variables are identified and information concerning each is gathered, the various costs associated with each location are quantified. However, as certain market costs (e.g., stockout costs, increased sales due to improved customer service) are difficult to quantify, they are often ignored in location models. Management proceeds to select the location with the lowest total cost or selects by trading-off attribute levels characterizing particular locations to reach the most satisficing alternative.

A number of computer models have been developed to aid in the location decision.

Facility location models have addressed the following decision categories:

- 1) number of inventory stocking facilities,
- 2) location of these facilities,
- 3) the supply of these facilities, and
- 4) the demand points each facility should serve

(Mentzer and Schuster, 1982; Ballou and Masters, 1993). As the early spatial economic theorists assumed demand to be given, contemporary location modeling has generally assumed that demand is given and unstimulated by facility location.

The present research addresses two abstractions from reality characterizing research streams of past spatial economics/location analyses: 1) Location is determined by rational economic variables without reference to the impact of location on customer perceptions of the logistic service level, and 2) Location does not stimulate demand.

Table 2.2 Site Selection Variables

<i>Variable</i>	<i>Stock and Lambert, 1987</i>	<i>Bowersox, et al., 1986</i>	<i>Jenkins, 1990</i>	<i>Glaskowsky, et al., 1992</i>	<i>Artman and Clancey, 1990</i>
Markets	X				
Customer Needs	X				
Location of raw materials, component parts, and sub- assemblies	X				
Labor Rates/ Supply	X		X	X	X
Transportation Services	X		X	X	X
Taxes	X		X	X	X
Security	X				
Legal Concerns	X				
Local Factors/ Community Resources	X		X	X	
Land Cost/ Quality	X			X	X
Availability of Resources	X	X	X	X	X
Procurement Costs		X			
Setup Costs		X			
Operating Expenses		X	X		
Room for Expansion		X			
Land—Physical Characteristics		X			

Table 2.2 (cont'd).

<i>Variable</i>	<i>Stock and Lambert, 1987</i>	<i>Bowersox, et al., 1986</i>	<i>Jenkins, 1990</i>	<i>Glaskowsky, et al., 1992</i>	<i>Artman and Clancey, 1990</i>
Main Objective of Warehouse			X		
Real Estate Considerations			X		
Physical Proximity to Customers			X		X
Proximity to Other Warehouses			X		
Facility Cost and Value			X		
Company Image-High or Low Profile			X		
Vehicle Access		X		X	X
Location Risks				X	
J-I-T Requirements					X
State Incentives /Laws					X
Union Environments					X

As spatial economics research evolves, a greater number of variables are considered and those variables become increasingly complex. Location models are more closely reflecting reality. The present research pushes spatial economic research closer to reality by examining the impact of location on customer perceptions of the logistics service level. This assumes that demand is stimulated by location. The impact of location on customer perceptions and demand is examined through a local market presence strategy. Figure 2.3 illustrates the contribution of the present research to the spatial economic/location analysis literature.

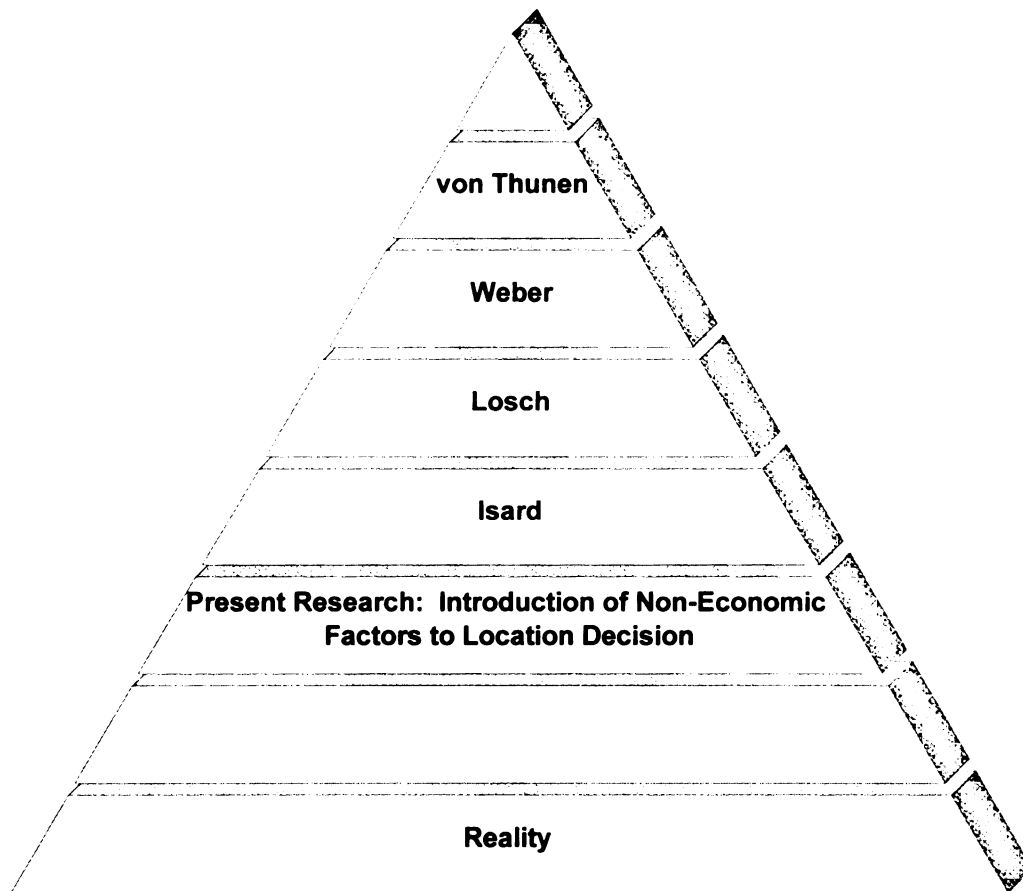


Figure 2.3 Contribution of Present Research to Spatial Economic Literature

This discussion of spatial economics/location analysis has examined the importance of the location decision within the logistics service delivery system and the complexity surrounding this decision. The historical evolution of the location decision and the variables utilized were presented. Having laid an economic foundation of spatial economics/location analysis, the following section discusses the customer service influences on location.

CUSTOMER SERVICE INFLUENCES ON LOCATION

This section presents the customer service influences on location. First, the service outputs of a distribution system are identified to provide a framework to examine the customer desires which may be satisfied by the logistics service delivery system. Second, the customer service elements measuring time and distance as identified in previous research are presented. This review establishes the manner and extent that these service outputs have been previously investigated. Third, customer expectations with respect to time and distance are examined. Fourth, previously identified customer service elements measuring product availability, product support, and marketing goodwill are reviewed. This shifts the orientation of the research 180 degrees from the firm's perspective to the customer's perspective: Customer service elements measuring time and distance focus on the outputs of the logistics service delivery system. Those elements related to product availability, product support, and marketing goodwill focus on the benefits received by the customer from the logistics service delivery system. Finally, the rationalization of distribution networks and local market presence are discussed to expose current rationales influencing management decisions regarding geographic proximity.

SERVICE OUTPUTS OF A DISTRIBUTION SYSTEM

Bucklin (1972) delineates the service outputs of a distribution system as lot size, waiting time, market decentralization, and product variety. Lot size enables the customer to purchase small quantities of a product. Waiting time represents any delay following purchase which occurs before the customer may actually possess the product. Market decentralization is the proximity of the products to the customer and the associated convenience. Finally, product variety represents the product combinations that most closely match the customer's desired assortments. The service outputs of a distribution system resulting from various cost-to-service tradeoffs are shown in Figure 2.4.

The service outputs of importance in the present research are waiting time and market decentralization as shown in Figure 2.5. Researchers have frequently combined these two outputs representing time and distance into a customer service element representing time such as order cycle time. Prior to the tremendous technological advances which have occurred in the transportation and communication areas, the combining of these two service outputs into one customer service element probably resulted in little harm. When the transportation of products was characterized by waterways and rails, distance and time were relatively synonymous. If a product required delivery in two days, that time requirement dictated the distance that the product could be shipped or, in other terms, the degree of market decentralization required of the vendor. However, advances in transportation and communication technology have made possible the delivery of many products anywhere in the continental United States within a 24-hour period and to many parts of the world within three business days (UPS, 1992). Time and distance are no longer

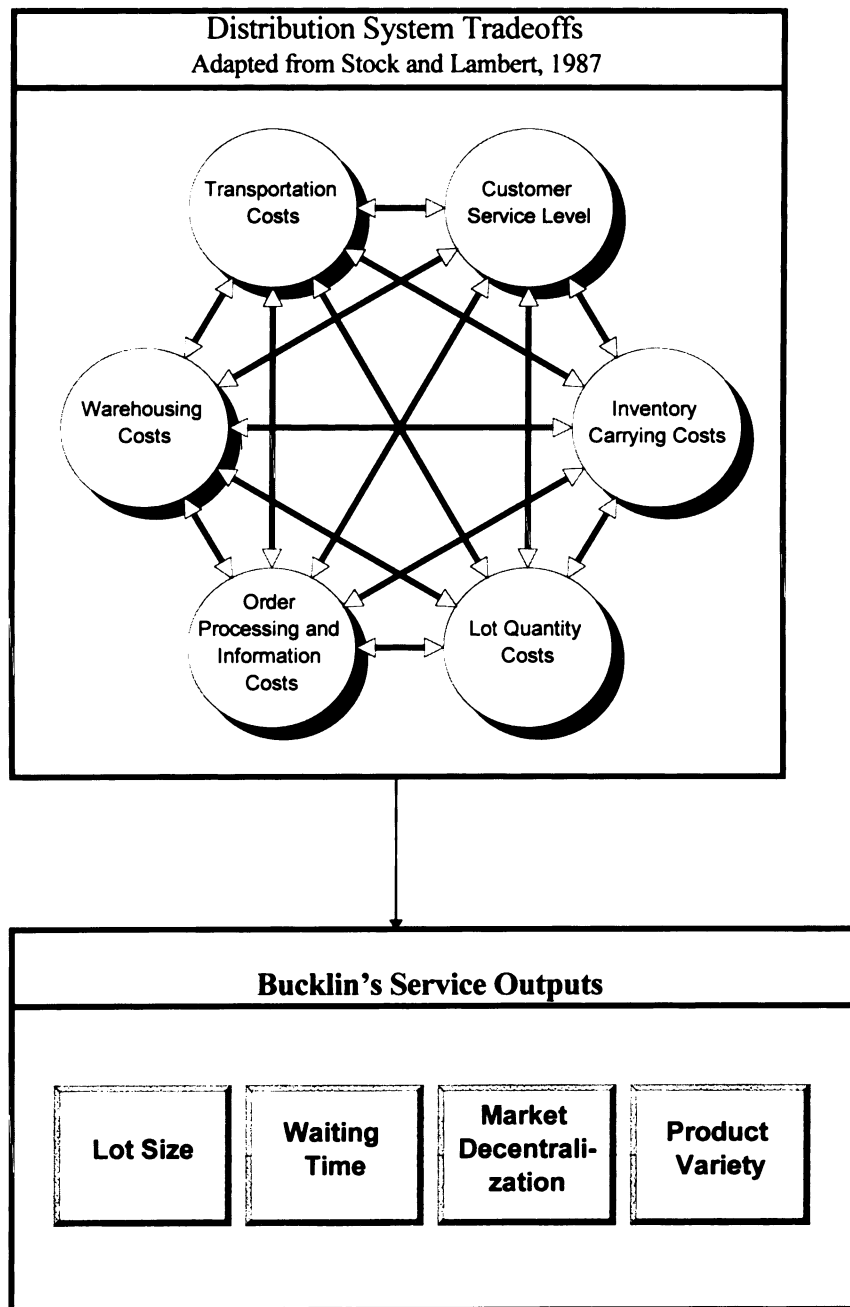


Figure 2.4 Service Outputs of a Distribution System

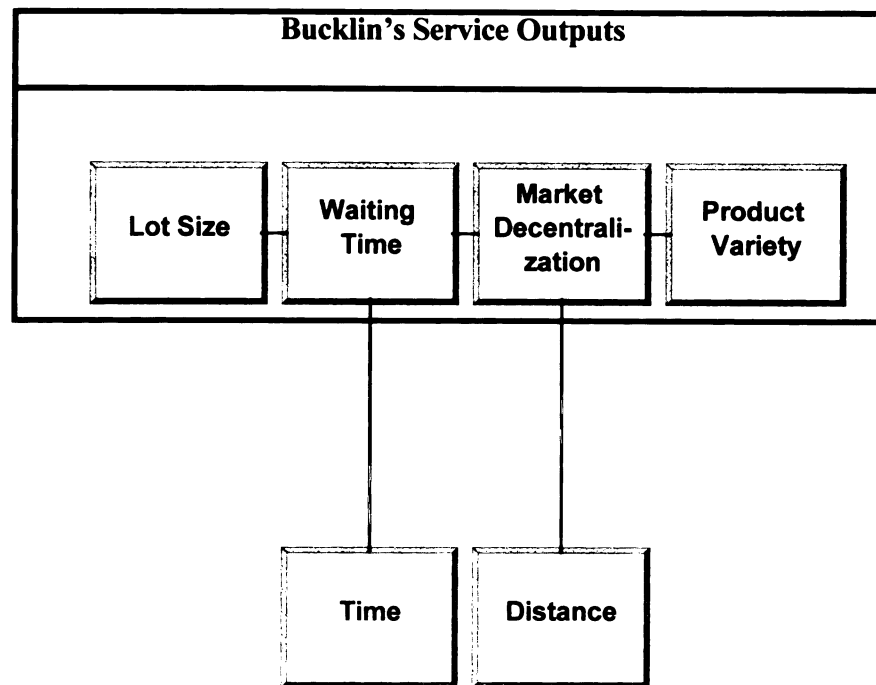


Figure 2.5 Service Outputs Relevant to Local Market Presence

synonymous. It can no longer be assumed that because a vendor has met customer requirements for order cycle time or another customer service element representing time that requirements regarding market decentralization or distance between the vendor and customer have also been met. For example, the customer's desires for convenient local pick-up, emergency inventory availability, immediate product support, or other desires necessitating geographic proximity may not be met.

The service outputs of a distribution system have been identified. The next section presents the customer service elements utilized in vendor selection and logistics service evaluations which are identified in the literature and measure time and distance.

CUSTOMER SERVICE ELEMENTS MEASURING TIME AND DISTANCE

Time and distance are the two service outputs of a distribution system which influence the perception of local market presence as shown in Figure 2.6. This section examines the customer service elements measuring time and distance which have been identified in previous empirical research. These customer service elements are compared to the vendor selection criteria relating to time and distance.

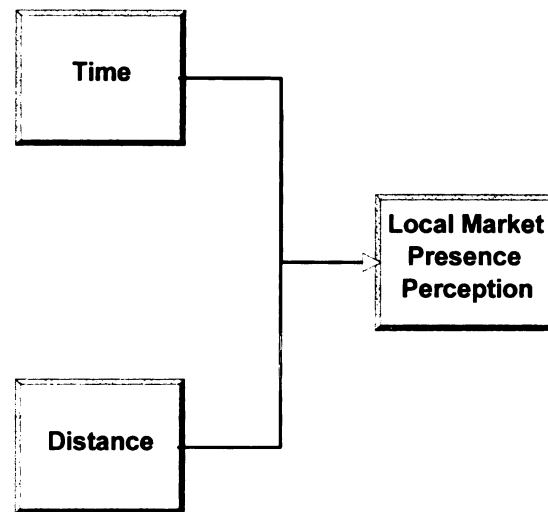


Figure 2.6 Time and Distance Influences on Local Market Presence Perceptions

Time Elements

Time elements are critical in the measurement of customer service as evidenced by numerous empirical research studies. Table 2.3 provides an extensive listing of research studies measuring customer service via order cycle time, delivery time, consistency or

Table 2.3 Previous Empirical Research: Customer Service Time Elements

<i>Citation</i>	<i>Order Cycle Time</i>	<i>Delivery Time</i>	<i>Lead Time Consistency/ Variability</i>	<i>Delivery Frequency</i>	<i>Ability to Expedite Orders</i>	<i>Ability to Receive Orders Electronically</i>
Hutchison and Stolle, 1968	X	X	X			
Stephenson and Willett, 1968	X		X			
Perreault, 1973	X		X		X	
Perreault and Russ, 1977	X	X	X			
Wilson, 1974	X		X			
LaLonde and Zinszer, 1976	X	X			X	
Gilmour, 1977	X		X	X		
LaLonde and Levy, 1977	X			X	X	
Levy, 1978	X			X		X
Marr, 1980	X					X
Tucker, 1980	X				X	
Gilmour, 1982		X	X			
Christopher, 1983	X		X		X	
Sterling, 1985	X	X	X	X	X	X

Table 2.3 (cont'd).

<i>Citation</i>	<i>Order Cycle Time</i>	<i>Delivery Time</i>	<i>Lead Time Consistency/ Variability</i>	<i>Delivery Frequency</i>	<i>Ability to Expedite Orders</i>	<i>Ability to Receive Orders Electronically</i>
Jackson, et al., 1986	X		X			
Lambert and Harrington, 1989	X		X		X	

variability in lead time, frequency of delivery, ability to rush or expedite orders, and/or ability to receive orders electronically.

A survey of previous empirical research regarding vendor selection criteria also reveals the importance of time elements in the vendor-customer relationship. Table 2.4 provides a listing of research studies examining the time elements of order cycle time, ability to deliver quickly, reliable delivery, frequent delivery service, and/or delivery capability.

A comparison of the time elements considered in these two research streams is presented in Figure 2.7. Many of these elements or criteria representing time are similar. However, the emphasis on a particular element or criteria differs within the two research streams based upon its frequency of mention. Greater emphasis is placed upon order cycle time, consistency or variability in lead time, and ability to rush or expedite orders within the customer service research. Alternatively, reliable delivery receives the greatest emphasis in the vendor selection research.

Table 2.4 Previous Empirical Research: Time-Related Vendor Selection Criteria

<i>Citation</i>	<i>Order Cycle Time</i>	<i>Ability to Deliver Quickly</i>	<i>Reliable Delivery</i>	<i>Frequent Delivery Service</i>	<i>Delivery Capability</i>
Duncan (in Lee and Dobler, 1965)		X	X		
Dickson, 1966			X		
Wind, et al., 1968			X		
Banville and Dornoff, 1973					
Cunningham and White, 1973			X		X
Kiser, et al., 1974		X	X	X	
Wieters, 1976					X
Dempsey, 1978					X
Farmer, 1985	X		X	X	
Heinritz, et al., 1991			X		

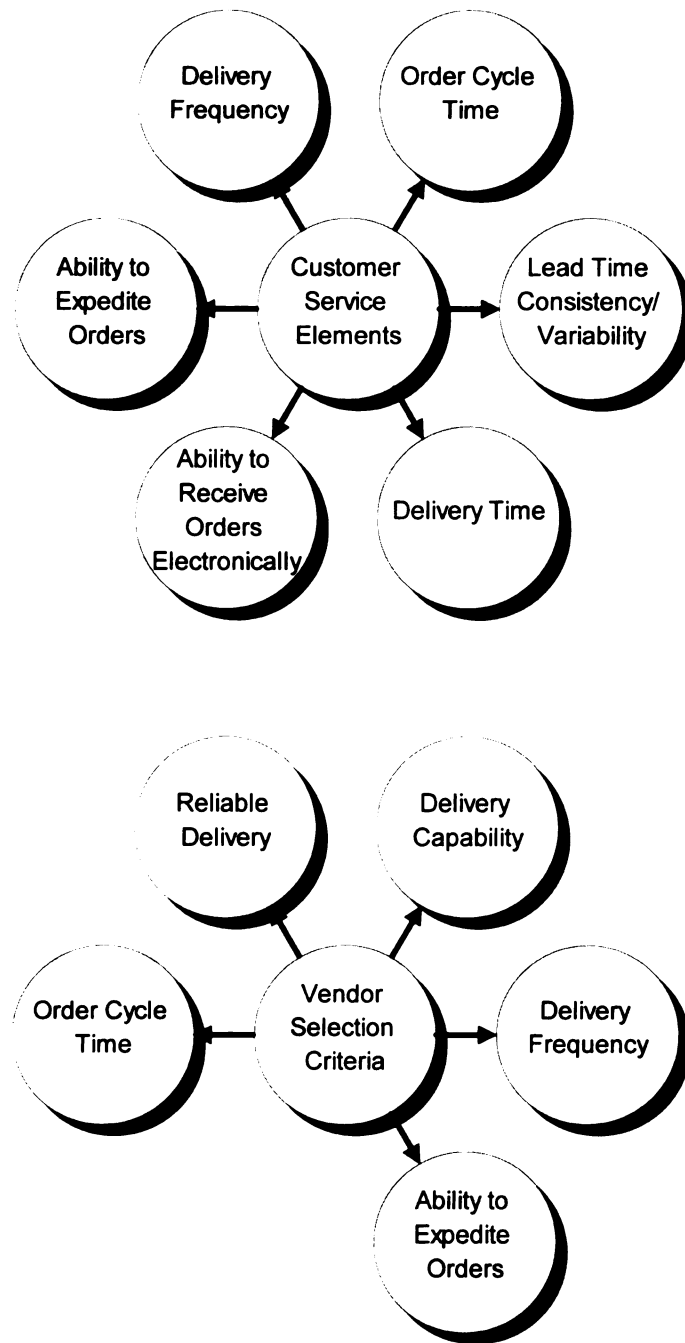


Figure 2.7 A Comparison of Elements and Criteria Representing Time

Distance Elements

Distance elements receive very limited attention within customer service research as revealed by Table 2.5. Both elements measure an aspect of ordering, which may be viewed as a type of accessibility.

Vendor selection research places a greater emphasis on distance elements as shown in Table 2.6, measuring distance in terms of geographic location, close proximity, and accessibility of the seller.

A comparison of the customer service and vendor selection research streams reveals little similarity and is presented in Figure 2.8. The vendor selection research stream focuses upon geographic location, proximity, and seller accessibility. The customer service research stream focuses upon a limited aspect of accessibility.

Figures 2.9 and 2.10 aggregate those customer service elements and vendor selection criteria modifying the time or distance construct which have been previously measured and reported in the literature.

Table 2.5 Previous Empirical Research: Distance-Related Customer Service Elements

<i>Citation</i>	<i>Ordering Convenience</i>	<i>Order Processing Personnel Located in Market Area</i>
Gilmour, 1982	X	
Lambert and Harrington, 1989		X

Table 2.6 Previous Empirical Research: Distance-Related Vendor Selection Criteria

<i>Citation</i>	<i>Geographic Location</i>	<i>Located in Close Proximity</i>	<i>Accessibility of Seller</i>
Duncan (in Lee and Dobler, 1965)			X
Dickson, 1966	X		
Wind, et al., 1968	X		
Banville and Dronoff, 1973		X	
Cunningham and White, 1973			
Kiser, et al., 1974		X	
Wieters, 1976	X		
Dempsey, 1978	X		
Farmer, 1985			
Heinritz, et al., 1991	X		

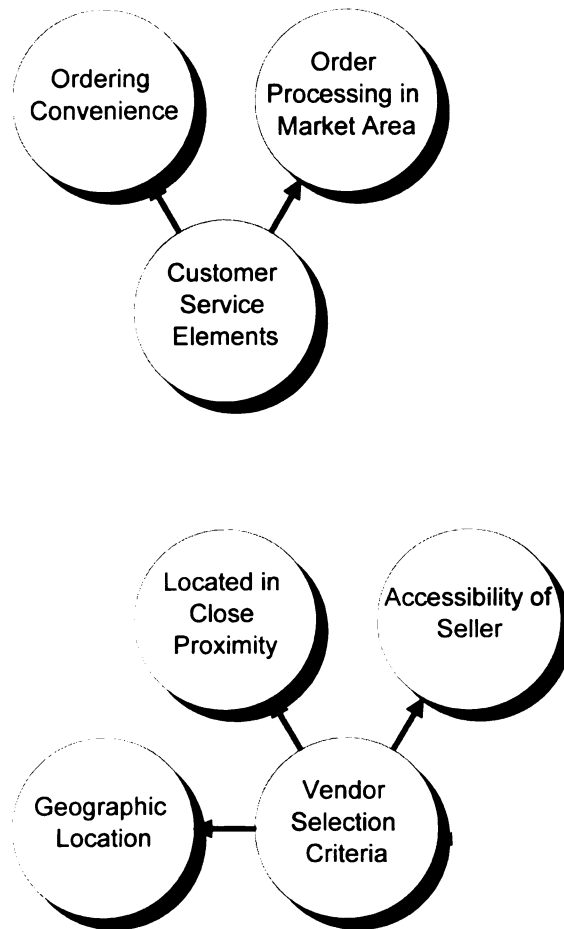


Figure 2.8 A Comparison of Elements and Criteria Representing Distance

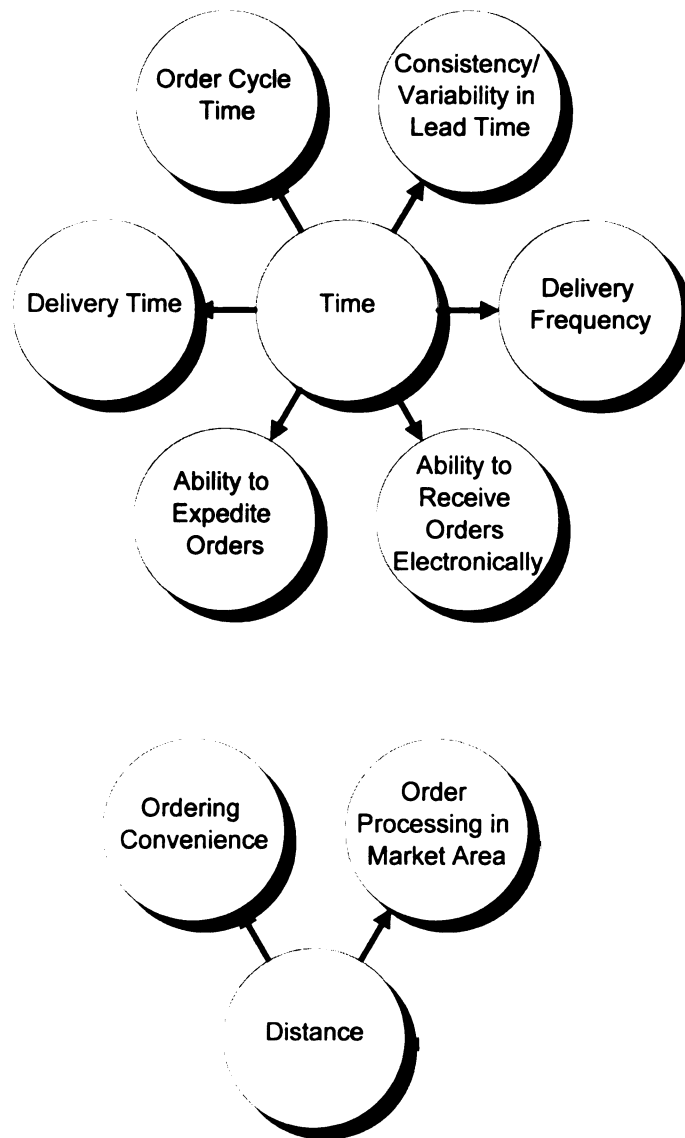


Figure 2.9 Previously Measured and Reported Customer Service Elements

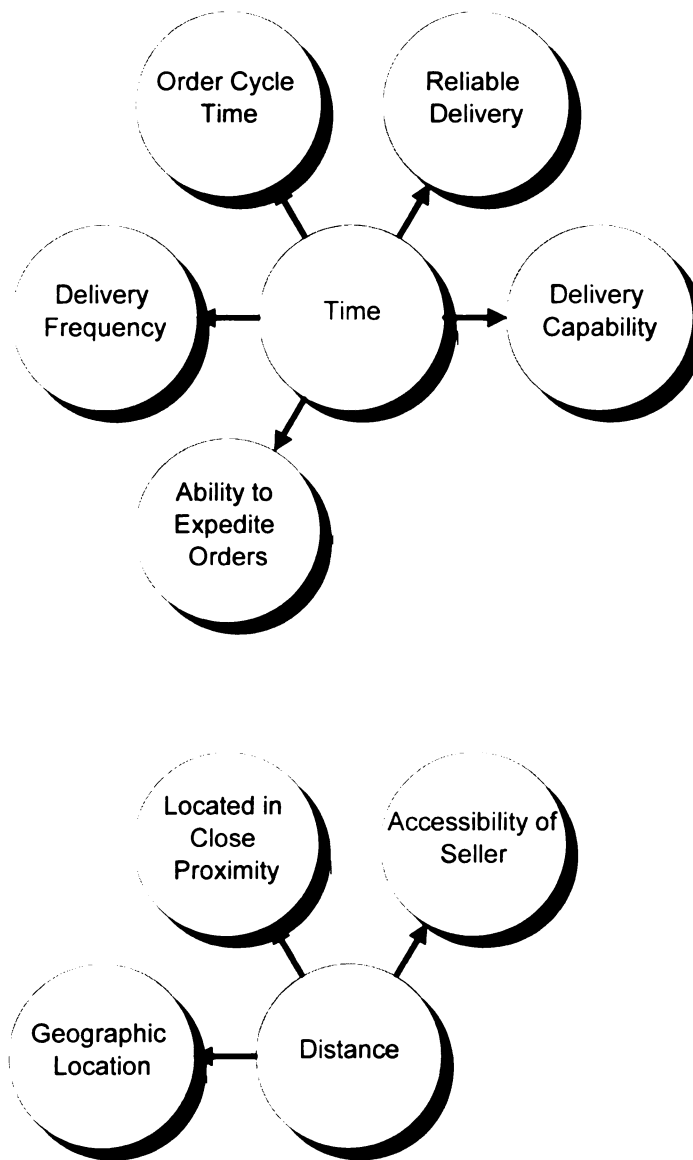


Figure 2.10 Previously Measured and Reported Vendor Selection Criteria

CUSTOMER EXPECTATIONS OF TIME AND DISTANCE SERVICE ELEMENTS

A discussion of customer expectations regarding time and distance and the ramifications for logistics strategy is presented. First, expectations regarding delivery reliability are investigated. Second, the potential to create a competitive advantage based upon time is discussed. Third, the importance of proximity in providing customer service is addressed. Finally, the advantages of local market presence from the customer's perspective are presented.

Delivery Reliability Expected

Traditionally, speed of delivery was not excessively emphasized in the distance and time factors of location decisions (Glaskowsky, et al., 1992). It was sufficient that a delivery be dependable. However, dependability or reliability is no longer enough to excite the customer. Reliability has not deteriorated in importance to the customer, neither does it guarantee a satisfied customer; rather, it is now expected. Reliable product delivery is part of the service a firm is suppose to provide. Research by Parasuraman, Berry, and Zeithaml:

suggests that although reliability is the most important dimension in meeting customer expectations, the process dimensions (especially assurance, responsiveness, and empathy) are most important in exceeding customer expectations. . .In effect, companies are supposed to be accurate and dependable and provide the service they promised to provide. . .With the process dimensions, however, the opportunity is present to surprise customers with uncommon swiftness, grace, courtesy, competence, commitment, or understanding, and go beyond what is expected (1991: 41, 42).

Performance must rise above the level that the customer believes he is due if the firm hopes to delight the customer and begin to build a customer franchise through enhancing a customer's success.

The customer is discriminating between vendors based upon their ability to deliver with "uncommon swiftness." This element of time is providing the opportunity for a vendor to create a competitive advantage.

Time as a Discriminating Factor

Competitive market pressures are prompting customer demands for shorter delivery times. The speed of product delivery is a discriminating factor in vendor selection as the customer attempts to provide his own customers with a superior product and service package. Consequently, the time factor is emerging as a strategic variable in the vendor's location decision. How quickly and accurately can customer needs and desires be met from this location?

Many customers are currently pushing fast delivery time to its limit by requiring vendors to deliver on a just-in-time basis. This necessitates the use of premium transportation, a "pipeline" of goods in transit to the customer, or warehousing goods in close proximity to customer locations (Glaskowsky, et al., 1992). Premium transportation serves as a substitute for facility proximity to customers in terms of satisfying customer delivery lead time requirements (Robinson and Satterfield, 1990). However, premium transportation is usually not economically viable for the delivery of significant quantities. This leaves simultaneous in-transit shipments and locating a distribution center in proximity to customer receiving as viable options to a just-in-time vendor.

Consequently, as time elements become a discriminating factor in vendor selection, location becomes critical to the successful execution of a customer service strategy designed to fulfill customer expectations and desires. Location's critical role in the provision of customer service is examined next.

Distance/Proximity Critical to Customer Service

The customer service provided by a firm is highly dependent upon its distribution network. "Location is a major factor in determining how quickly and at what costs customer orders can be filled" (Glaskowsky, et al., 1992: 482). Market access or proximity has a direct impact on the level of customer service provided, determining delivery time and cost. Therefore, the level of desired customer service should be considered in the distribution center location decision. "Delivery time to customers directly affects where to locate the warehouse. The following factors affect delivery time.

- * The required times to meet the warehouse company's service objectives.
- * The availability and costs of transportation to make possible these required times.
- * The travel distance to customers.
- * The actual travel time to customers"

(Jenkins, 1990: 69, 70). Consequently, given the requisite time to stage and load an order and the availability of transportation, the shorter the travel distance and actual travel time to the customer, the shorter the delivery time.

According to Stafford (1980), access to a firm's markets is usually the most critical location factor. This access or proximity is critical to the provision of superior customer

service. "The principle of proximity states that the specialized intermediary should be located close to the marketplace. Close proximity provides better positioning to render final assortments in a manner most satisfactory and timely to market demand" (Bowersox, et al., 1986: 506). It is anticipated that proximity or local market presence has the potential to significantly impact market demand.

Advantages of Local Market Presence

The numerous advantages of local market presence are described and presented from the customer's perspective. The subsequent benefits accruing to the vendor are also identified.

Advantages to the Customer

Lee and Dobler (1965) enumerate the advantages from a customer's perspective of local market presence:

- 1) Closer cooperation exists between the vendor and customer;
- 2) Lower risk is associated with delivery dates because transportation is a minor factor in delivery;
- 3) Lower prices may result from consolidated transportation and insurance charges;
- 4) Shorter lead times may allow reductions in inventory;
- 5) Greater probability exists that rush orders will be filled faster;
- 6) Disputes are usually more easily resolved; and
- 7) Implied social responsibilities to the community are fulfilled.

Jenkins (1990) identifies two main reasons prompting local market presence.

The two main reasons to locate close to the customers served are psychological and physical. Customers generally "feel" that if a supplier is close by they are better off to deal with it rather than other suppliers that are more distant. The physical part of this is that it is normally the shortest distance between need and supply that results in the least travel time. . .A major factor that should not be overlooked is whether customers want to make their own pickups. This will involve taking into con-

sideration the customer's as well as the warehouse's travel distances and times (70).

The customer service desires fulfilled by local market presence are not merely a shorter delivery time; they also include psychological needs (e.g., security and understanding). A vendor in close proximity may represent assurance of assistance if the product malfunctions, assurance of emergency product supply, or an understanding of the customer's business.

Benefits Accruing to the Vendor

The fulfillment of the customer's physical and psychological needs by a vendor establishing local market presence will favorably impact that vendor's market demand. Greenhut (1956) conceptualizes location as a function of demand, cost, and personal considerations. Demand factors include:

- 1) the shape of the demand curve for the specified product;
- 2) the location of competitors;
- 3) the significance of proximity, type of service, and speed of service and customer prejudices;
- 4) the relationship between personal contacts and sales;
- 5) the extent of the market area; and
- 6) the competitiveness of the industry in location and price.

The cost factors include:

- 1) those costs associated with the land (e.g., taxes, cost of capital);
- 2) labor and management costs;
- 3) the cost of materials and equipment; and
- 4) transportation costs.

Finally, the factors of personal considerations include:

- 1) the importance of psychic income;
- 2) environmental preferences; and
- 3) the security motive.

Greenhut recognizes the significance of proximity, the level and speed of service, and customer prejudices or desires regarding proximity and service as factors influencing the demand level which in turn is one of the determinants of location. Greenhut also identifies the psychological component of location by specifying the impact of customer prejudices and motives of security upon the location decision.

The customer reaps various benefits arising from local market presence. Likewise, the vendor will often experience an increase in the firm's market demand and may achieve a higher degree of market penetration. Thus, an appropriately situated distribution center or customer contact point should improve customer service and market share. This higher degree of market penetration in conjunction with a price reflecting the provision of higher customer service may be sufficient to offset the higher costs of establishing a local market presence.

CUSTOMER SERVICE ELEMENTS MEASURING PRODUCT AVAILABILITY, PRODUCT SUPPORT, AND MARKETING GOODWILL

Product availability, product support, and marketing goodwill are hypothesized factors of benefits received by the customer from a logistics service delivery system. These benefits result in customer perceptions of the processes and outputs of this system, providing the opportunity for the vendor to establish himself as an integral component of a customer's success. The focus expands from the outputs of the logistics service delivery system to include the logistics processes that are integral to customer perceptions of logistics service quality.

The empirical research measuring aspects of product availability, product support, and marketing goodwill are reviewed.

Product Availability

A survey of previous empirical research regarding customer service elements of product availability is presented in Table 2.7. These elements are divided into categories of timeliness, accuracy, and inventory status as shown in Figure 2.11. Product availability from the customer's perspective requires timeliness, accuracy, and sufficient inventory in product deliveries; otherwise, the customer's operations will not continue to function normally.

Product Support

A survey of the literature regarding customer service elements of product support is presented in Table 2.8. Figure 2.12 divides these elements into categories of technical expertise, timeliness, and user friendliness. Product support from the customer's perspective requires technical expertise, timeliness, and user friendliness if his operations are to return to normal functioning as quickly as possible.

Marketing Goodwill

A survey of previous empirical research regarding customer service elements of marketing goodwill is presented in Table 2.9. These elements are divided into categories of assistance/convenience, information/communication, customer requests, and long-term relationship as shown in Figure 2.13. If the customer is to develop a bond with a vendor, the vendor must provide assistance and information, communicate, respond to individual customer requests, and establish an environment where long-term relationships can thrive.

Table 2.7 Previous Research of Customer Service Product Availability Elements

<i>Customer Service Product Availability Element</i>	<i>Hutchison and Stolle, 1968</i>	<i>Stephenson and Willett, 1968</i>	<i>Perreault, 1973</i>	<i>Perreault and Russ, 1974</i>	<i>Cunningham and Roberts, 1974</i>	<i>Wilson, 1974</i>	<i>LaLonde and Zinszer, 1976</i>
Order Assembly/ Time	X	X	X	X		X	X
Delivery Time	X			X			X
Lead Time Variability	X	X	X	X		X	
Ability to Meet Promised Delivery Date					X	X	
Delivery Frequency				X			
Ability to Expedite Orders			X				X
Order Processing/ Picking Accuracy		X	X				X
Inventory Reliability/ Availability	X			X			X
Fill Rate							
Order Completeness							
Inventory Status Information Available							X
Condition of Order on Arrival		X		X			X

Table 2.7 (cont'd).

<i>Customer Service Product Availability Element</i>	<i>Gilmour, 1977</i>	<i>LaLonde and Levy, 1977</i>	<i>Levy, 1978</i>	<i>Marr, 1980</i>	<i>Tucker, 1980</i>	<i>Christopher, 1983</i>	<i>Sterling, 1985</i>
Order Assembly/ Time	X	X	X	X	X	X	X
Delivery Time							X
Lead Time Variability	X					X	X
Ability to Meet Promised Delivery Date	X	X	X				X
Delivery Frequency						X	X
Ability to Expedite Orders		X			X	X	X
Order Processing/ Picking Accuracy		X	X		X		X
Inventory Reliability/ Availability				X		X	X
Fill Rate		X	X				X
Order Completeness		X	X				X
Inventory Status Information		X	X				
Condition of Order on Arrival				X			

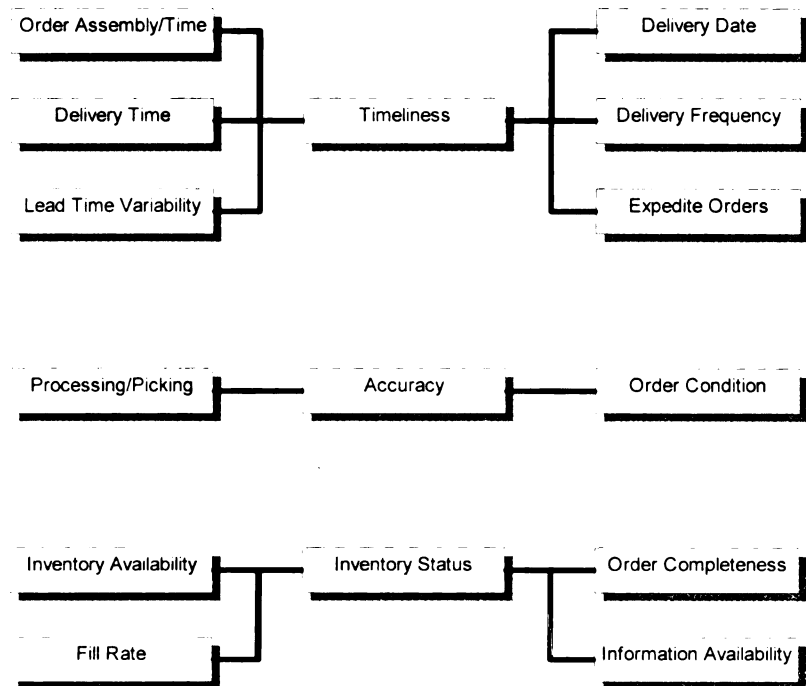


Figure 2.11 Product Availability Categories

Table 2.8 Previous Research of Customer Service Product Support Elements

<i>Customer Service Product Support Elements</i>	<i>LaLonde and Zinszer, 1976</i>	<i>Sterling, 1985</i>
Repair Service	X	
Repair Parts Availability	X	X
Availability of Obsolete Replacement Parts		X
Timely Response to Assistance Requests		X
Technical Advice	X	
Ability to Inspect/Diagnose Problem Areas		X
Ease, Simplicity, and Time Required to Set Up Product		X

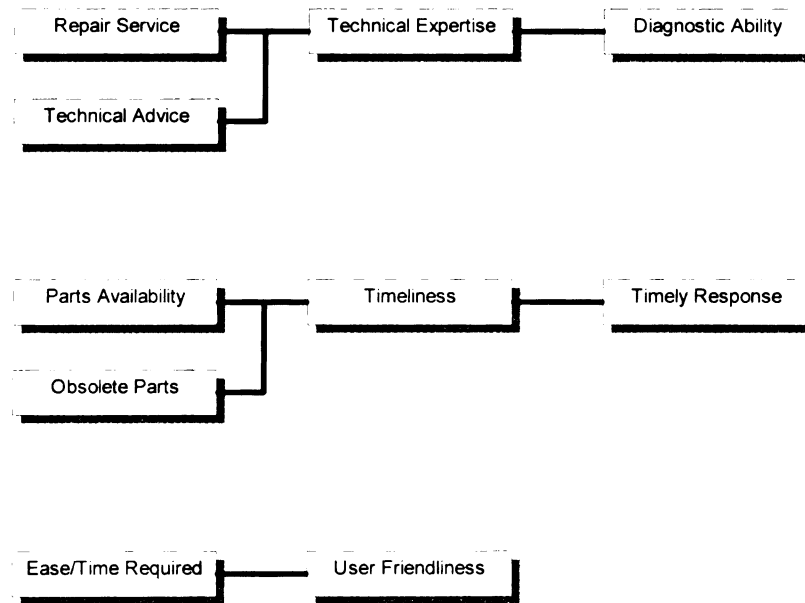


Figure 2.12 Product Support Categories

Table 2.9 Previous Research of Customer Service Marketing Goodwill Elements

<i>Customer Service Marketing Goodwill Elements</i>	<i>Hutchison and Stolle, 1968</i>	<i>Stephenson and Willett, 1968</i>	<i>Perreault, 1973</i>	<i>Perreault and Russ, 1974</i>	<i>Cunningham and Roberts, 1974</i>	<i>Wilson, 1974</i>	<i>LaLonde and Zinszer, 1976</i>
Assistance by Mfr. in Order Prep.							
Order Prep. Convenience/ Efficiency	X	X	X	X			
Assistance from Mfr. in Handling Carrier Loss and Damage Claims							
Proper Carton Identification							
Procedures for Returned Merchandise						X	
Mfr.'s Willingness to Accept Returns of Product Damaged and/or Shipped in Error			X				X
Order Progress/Status Information	X		X	X			X
Advance Information-Shipping Delays							
Advance Information-Order Deletions and Substitutions							
Communication Channel/ Action Re Complaints			X				

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Table 2.9 (cont'd).

<i>Customer Service Marketing Goodwill Elements</i>	<i>Hutchison and Stolle, 1968</i>	<i>Stephenson and Willett, 1968</i>	<i>Perreault, 1973</i>	<i>Perreault and Russ, 1974</i>	<i>Cunningham and Roberts, 1974</i>	<i>Wilson, 1974</i>	<i>LaLonde and Zinszer, 1976</i>
Analyze/Correct Reasons for Complaints/Returns							
Ability of Customer to Select Carrier						X	
Ability to Meet Specific and/ or Unique Customer Service and Delivery Needs of Individual Customers							
Adherence to Special Packaging Instructions							
Adherence to Special Shipping Instructions							X
Long-term Contractual Relationship Available							

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<i>Customer Service Marketing Goodwill Elements</i>	<i>Gilmour, 1977</i>	<i>LaLonde and Levy, 1977</i>	<i>Levy, 1978</i>	<i>Marr, 1980</i>	<i>Tucker, 1980</i>	<i>Christopher, 1983</i>	<i>Sterling, 1985</i>
Assistance by Mfr. in Order Preparation		X	X				X
Order Prep. Convenience/ Efficiency	X	X			X	X	
Assistance from Mfr. in Handling Carrier Loss and Damage Claims							X
Proper Carton Identification		X	X	X		X	X
Procedures for Returned Merchandise		X	X				
Mfr.'s Willingness to Accept Returns of Product Damaged and/or Shipped in Error			X		X		X
Order Progress/Status Information		X	X		X	X	X
Advance Information—Shipping Delays		X	X			X	X
Advance Information—Order Deletions and Substitutions		X	X				X

Table 2.9 (cont'd).

<i>Customer Service Marketing Goodwill Elements</i>	<i>Gilmour, 1977</i>	<i>LaLonde and Levy, 1977</i>	<i>Levy, 1978</i>	<i>Marr, 1980</i>	<i>Tucker, 1980</i>	<i>Christopher, 1983</i>	<i>Sterling, 1985</i>
Communication Channel/ Action Re Complaints			X	X	X	X	X
Analyze/ Correct Reasons for Complaints/ Returns					X		
Ability of Customer to Select Carrier			X				X
Ability to Meet Specific and/ or Unique Customer Service and Delivery Needs of Individual Customers							X
Adherence to Special Packaging Instructions		X					
Adherence to Special Shipping Instructions		X	X				X
Long-term Contractual Relationship Available							X

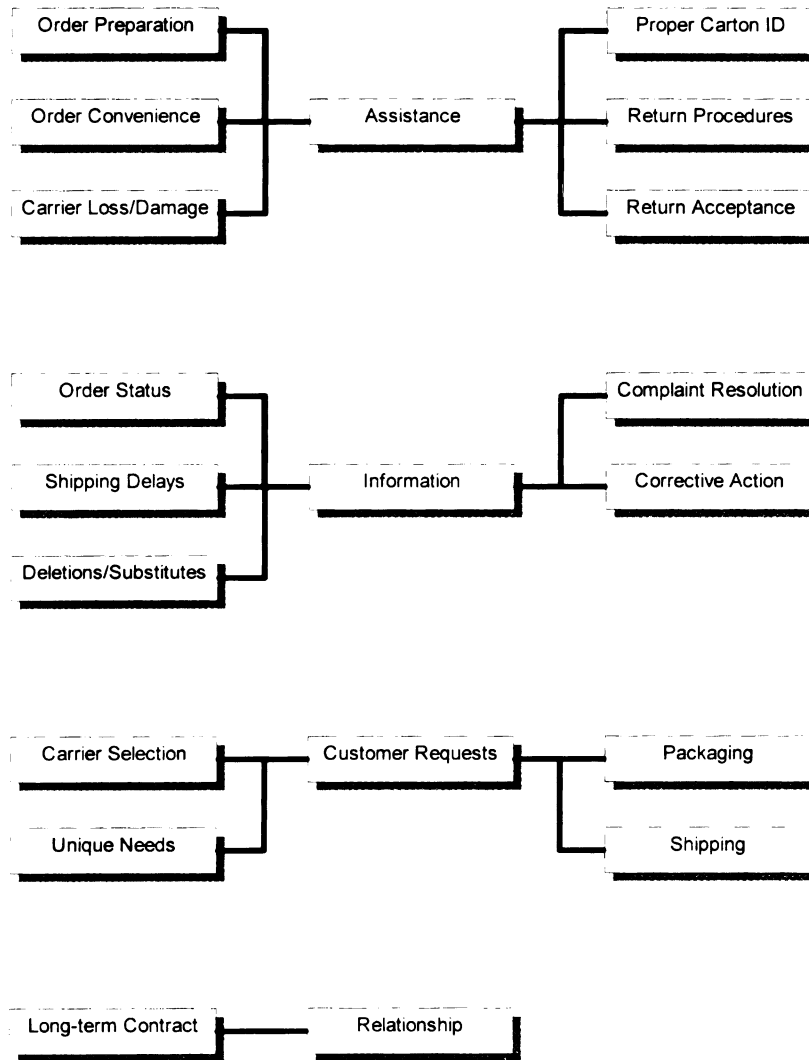


Figure 2.13 Marketing Goodwill Categories

The present research defined the impact of product availability, product support, and marketing goodwill on the customer's perception of a local market presence.

RATIONALIZATION: DISTRIBUTION AND LOCAL MARKET PRESENCE

The rationalization of distribution networks prompted by a focus on cost reduction is examined in the following paragraphs. Vendors are tending to consolidate their operations, servicing larger geographic markets from fewer distribution centers. The rationales which attempt to discourage consolidation are also presented.

Consolidation of Distribution Networks

Responding to intensifying pressure to reduce costs and improve return on asset performance while maintaining high customer service levels, vendors are reducing the size of their distribution networks.

"Many companies downsize the number of facilities in their distribution networks as they rationalize the trade-offs between cost and service. Often, certain locations cannot be justified because marginal service improvements cannot overcome significant fixed and inventory carrying cost penalties. Or, it may be possible to maintain, or even improve service by spending more on premium transportation and less on facilities and inventory" (Artman and Clancy, 1990: 18).

Vendors have discovered that a multitude of distribution centers located across the United States is not necessary to stay competitive; indeed, such an extensive network may undermine the very competitiveness it hopes to engender. Rather, many vendors are finding that a few strategically located distribution centers, providing the required services at a reasonable price, are sufficient to maintain competitiveness.

Rationales Discouraging Consolidation

Despite at least a token acknowledgment of this rationalization process, specific distribution sites may be maintained by a vendor even though it does not appear to be an economically-sound judgment.

"There may be instances when, for reasons of advertising value, public relations, or service to a particular customer, it is determined by management that the company will stage an inventory in a particular location. . . Customer service policy serves as the greatest single determinant of the number and location of inventories" (Glaskowsky, et al., 1992: 516).

Once inventories are staged at a particular site it may be quite difficult to relocate these stocks.

"In addition to the public relations value of having a company operate a facility in a locality, there are important sales and promotion considerations. Customers may become familiar with an inventory location and may be satisfied and accustomed to doing business with the firm there. Further, transportation arrangements may have become stabilized, and carriers may have so adjusted their local operations as to give very good service to a particular existing location. A move to another location may well require repeating the process of getting one's operations smoothly integrated with the operations of servicing agencies (carriers) and customers, all this with an interim loss of efficiency and customer service" (Glaskowsky, et al., 1992: 517).

Not wanting to disrupt customers, inertia is often a powerful force preventing greater rationalization of a vendor's distribution network.

This discussion suggests that intangibles such as marketing goodwill (e.g., security and understanding) which are difficult or impossible to quantify should be an important input into the rationalization process. Their exclusion may result in economically-rational

distribution networks which fail to excite the customer or compromised distribution networks which are economically inefficient and marginally effective as they attempt to appease customers.

In addition to customer service, transportation, and marketing considerations, several rationales for continued local market presence of inventories have been voiced by management. Jones and Riley (1987) have identified seven beliefs concerning inventory.

These beliefs are:

- 1) "Sophisticated techniques and organizational discipline will provide more accurate sales forecasts."
- 2) "Japanese techniques, such as Just-In-Time, will all but eliminate inventory problems."
- 3) "Inventory provides the necessary buffer to protect manufacturing from seasonal and business cycle variations."
- 4) "Local presence is a key element of our service--you can't sell from an empty wagon."
- 5) "Distributors, as independent businessmen, provide local availability and entrepreneurial inventory management."
- 6) "Local dealers need to be backed up by readily available regional stocks."
- 7) "Modern information systems and control methods will all but eliminate obsolete and slow-moving inventories."

Three of these beliefs (4, 5, and 6) are used to justify local market presence of inventories.

Subsequently, Jones and Riley expose each as a myth by observing tendencies in reality.

Local Presence Myth #1: "Local presence is a key element of our service--you can't sell from an empty wagon." Local inventories are typically less extensive and more out-of-

balance than centralized inventories. Often the local order entry-to-shipment cycle time is excessive, evaporating purported time advantages associated with local presence. Local market inventories usually require higher levels of safety stock due to greater demand uncertainty at the local market level. Consequently, local inventories are often characterized by limited offerings, slow response, and imbalanced stocks (Jones and Riley, 1987).

Local Presence Myth #2: "Distributors, as independent businessmen, provide local availability and entrepreneurial inventory management." Often independent distributors act primarily as sales agents. As these distributors often lack rudimentary inventory management skills, inventory control is usually performed by the manufacturer. In addition, many independent distributors are financially unable to stock a full product line, necessitating an even greater understanding of the needs of the served market segments in order to properly maintain inventory (Jones and Riley, 1987).

Local Presence Myth #3: "Local dealers need to be backed up by readily available regional stocks." Large retailers have vertically integrated backwards in many industries so that by achieving scale economies in warehousing, inventories, and advertising they can increase their respective market shares. This vertical integration duplicates and overlaps levels of the manufacturer's supply chain. Therefore, extensive distribution networks established by manufacturers can often interfere with the business strategy of a large retailer and fail to efficiently supply smaller retailers (Jones and Riley, 1987).

In the vast majority of instances, Jones and Riley (1987) claim that the arguments forwarded in favor of local market presence of inventories fail to maintain their integrity under closer examination.

A discussion of customer service influences on location has been presented, highlighting the interactions between these two components of logistics strategy. Decisions concerning the level of customer service to provide influence the number and locations of distribution centers. Consequently, the extent of geographic proximity establishes limits to customer service levels which may be provided. Location is a potential source of competitive advantage depending on the importance of product availability, product support, and marketing goodwill to the customer. A survey of the literature revealed customer service elements measuring product availability, product support, and marketing goodwill. The present research investigated customer desires in these three areas, furthering an appreciation for the role a local market presence strategy can play in fulfilling these desires.

The following section addresses the logistics service delivery system and its relationship to local market presence.

SERVICE QUALITY

This section discusses the logistics service delivery system: its definition and output, service quality measurement, and a classification scheme. Local market presence is one potential configuration of a logistics service delivery system. Successful execution of any logistics service delivery system configuration requires coordination of objectives and operations among the system components.

DEFINITION AND OUTPUT OF A LOGISTICS SERVICE DELIVERY SYSTEM

Magrath (1986) expands the components of the marketing mix to include personnel, physical facilities, and process management when a service such as logistics or customer service is marketed. These peripheral features of a service comprise the service delivery system. A logistics service delivery system operationalizes this concept when logistics services are provided as presented in Figure 2.14.

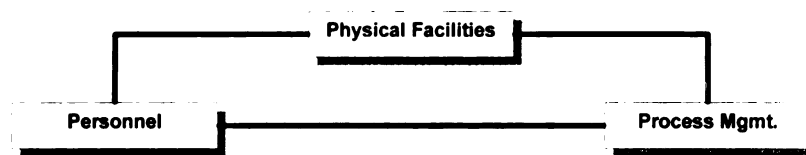


Figure 2.14 Logistical Service Delivery System

Sasser, et al. (1978) have demonstrated the interrelationships between the service concept, the service delivery system, and the service level. Paraphrasing for the provision of logistics services, the logistics service concept determines and is defined by the logistics service delivery system. These two components are utilized by management to create logistics service levels which are communicated to customers and influence logistics service level perceptions. These interrelationships are presented in Figure 2.15.

The inventory flow outputs of a logistics service delivery system, which comprise product availability, are velocity, volume, consistency, and timeliness. These are presented in Figure 2.16. Velocity is the speed of inventory movement from the vendor to the customer via vendor, third-party, or customer transportation. Volume is the quantity of

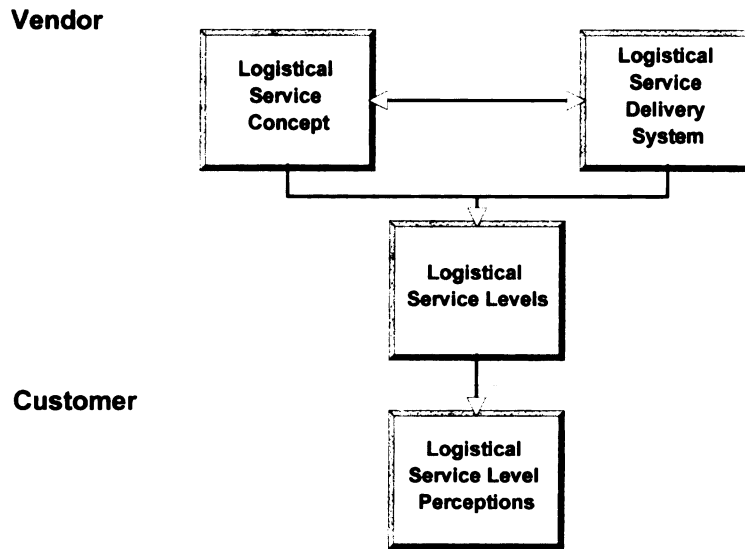


Figure 2.15 Interrelationships in the Provision of Logistics Service

product which may be moved at one time. Consistency is the variation in the volumes moved from one time period to another. Lastly, timeliness is the ability of the product to arrive when it is needed and in the required condition. These inventory flows impact the customer's perception of local market presence. If a product is received quickly in large quantities on a frequent basis from a vendor and it arrives when it is needed and in the required condition, the customer's perception of local market presence will be enhanced.

The other components enhancing a perception of local market presence are product support and marketing goodwill. These are also presented in Figure 2.16. The greater the technical expertise and user sensitivity provided by the vendor in a timely manner to return the customer's work environment to effective, efficient operation, the more favorable the

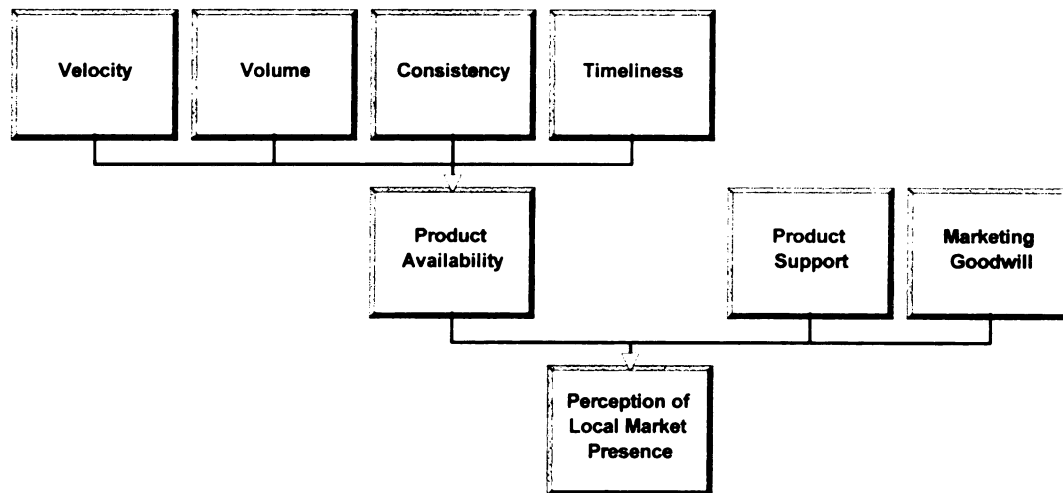


Figure 2.16 Influences on Local Market Presence Perceptions

customer's perceptions of local market presence. Likewise, the more the customer believes that the vendor understands the customer's business, is willing to assist the customer in improving operations, respects and cares for the customer, and is on the customer's team, the more favorable his local market presence perceptions. These three components, product availability, product support, and marketing goodwill, interact to support the customer's perception of local market presence. This perception modifies the customer's logistics service level perception.

The comparison of the perceived logistics service level to logistics service level expectations results in an assessment of logistics service quality. This relationship is depicted in Figure 2.17. Lewis and Booms (1983) define service quality as a measure of how well the service level delivered matches customer expectations. Zeithaml, et al. hypothesize that "the quality that a (customer) perceives in a service is a function of the magnitude and direction of the gap between expected service and perceived service" (1985a:

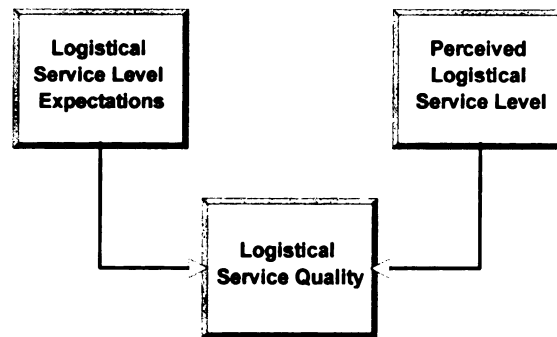


Figure 2.17 Determinants of Logistical Service Quality

46). Delivering quality service means conforming to customer expectations on a consistent basis.

According to Lehtinen (1983), service quality is comprised of process quality and output quality as shown in Figure 2.18. Logistics process quality is judged by the customer during the performance of the logistics service; logistics output quality is determined at the completion of the logistics service.

Rhea and Shrock (1987) present two definitions of physical distribution effectiveness or logistics service quality. The conceptual definition of physical distribution effectiveness is the extent to which distribution programs satisfy customers. The operational definition defines effectiveness as the extent to which product flows and distribution-related information flows satisfy the customer. As a result, logistics service quality is a function of the perceived gaps between the actual product flows and the customer's product flow expectations and between the actual information flows and the customer's information flow expectations as shown in Figure 2.19. Attempting to increase customer satisfaction with

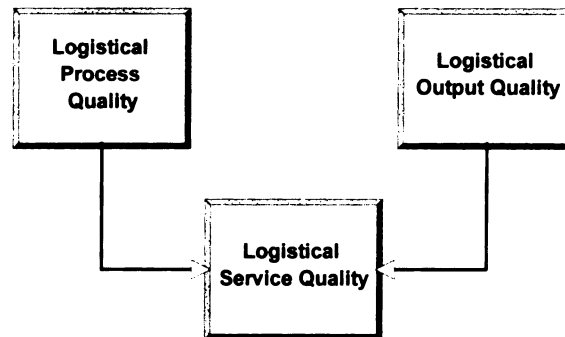


Figure 2.18 Components of Logistical Service Quality

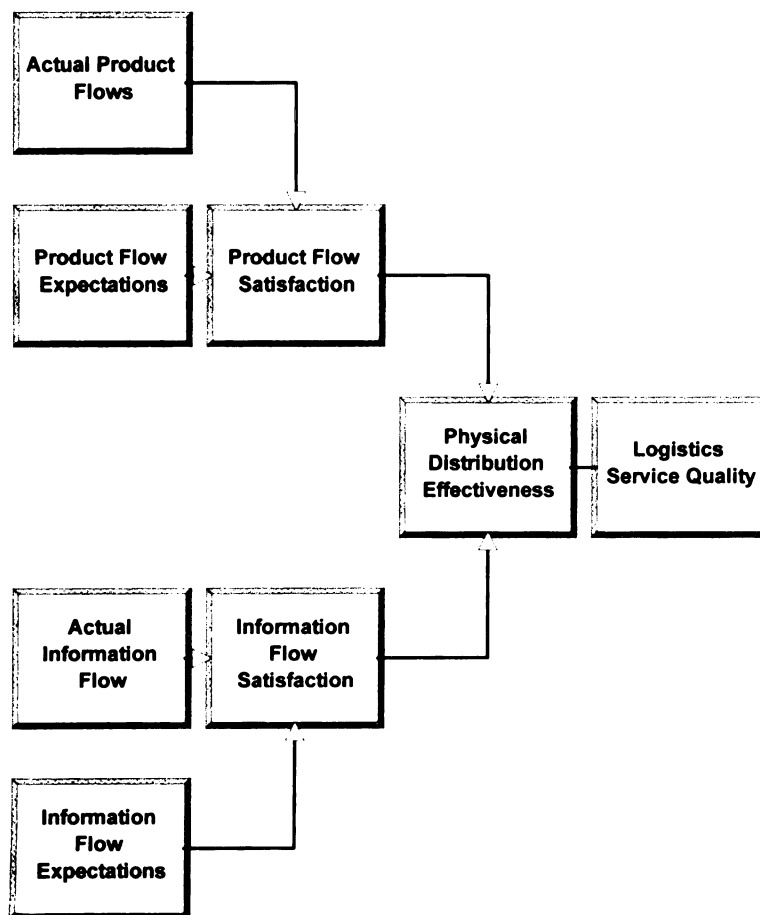


Figure 2.19 Operational Definition of Physical Distribution Effectiveness

logistics services, the vendor should begin to identify customer expectations relative to product and information flows. Frequently used measures are the direction, amount, and variability of resource flows and direction, quality, and frequency of information flows (Rhea and Shrock, 1987). The present research defined similar measures of product or inventory flows: velocity, volume, consistency, and timeliness. The design of the logistics service delivery system should reflect customer needs and desires. The logistics service level is the output of the logistics service delivery system and the logistics service concept. Its perception is compared to the customer's logistics service level expectations and an assessment of logistics service quality results.

The customer's logistics service quality assessment will impact future transactions with the vendor. Consequently, if significant dissonance occurs between expectations and perceptions, current logistics services may have to be altered to achieve greater congruence. However, as these service levels are adjusted, the logistics service delivery system and the logistics service concept will also be redefined.

SERVICE QUALITY MEASUREMENT

The various difficulties surrounding service quality measurement are discussed and the differences in measurement criteria among customer groups are addressed.

Difficulties of Service Quality Measurement

Service quality is more difficult to measure and monitor than product quality because of multiple influences (Zeithaml, et al., 1985b). These difficulties/influences include the service characteristics, communication gaps within the vendor-customer relationship, service

proliferation and complexity, the degree of individualized service provided by the vendor, and the vendor's emphasis on short-term results.

Service Characteristics

Several characteristics differentiate services from products. Services tend to be intangible. Consequently, quality expectations and perceptions may be based more on subjective than objective factors. The high labor content in the production of many services increases the heterogeneity within a single service offering of a given vendor. Finally, typical services are inseparable into production and consumption phases, making it more difficult to control and inspect quality prior to consumption. The elusiveness of concrete factors to describe service quality expectations of a standard service, and of a tangible product which may be examined and consumed outside of the production environment makes service quality somewhat more difficult to judge.

Communication Gaps Within the Vendor-Customer Relationship

Problems with service quality may result from communication gaps between the vendor and its customer. The vendor may overpromise concerning what it can do for the customer or the time frame within which the service will be performed. The vendor may fail to stay in touch with the customer until a resolution to the problem has been reached. Alternatively, the customer may not understand the vendor's communications. Or, the vendor may not listen to the customer. Misunderstandings and misrepresentations in either direction between the vendor and customer will ultimately affect the customer's perception of service quality.

Zeithaml, et al. (1985a, 1985c) have designed a service quality model, Figure 2.20, which traces the provision of the service from the vendor's perceptions of customer expectations through delivery of the designed service to the customer who evaluates it based upon expectations formed from numerous influences. The model also identifies discrepancies which may exist regarding vendor perceptions of service quality and the tasks associated with service delivery, resulting in misguided efforts in the design of the service and/or in the service delivery system. As illustrated in Figure 2.20, "a set of key discrepancies or gaps exists regarding executive perceptions of service quality and the tasks associated with service delivery to (customers). These gaps can be major hurdles in attempting to deliver a service which (customers) would perceive as being of high quality" (Zeithaml, et al., 1985a: 44). The first discrepancy or gap is between customer expectations and the vendor's perceptions of those expectations. "In essence, service (vendors) may not always understand what features connote high quality to (customers) in advance, what features a service must have in order to meet (customer) needs, and what levels of performance on these features are needed to deliver high quality service" (Zeithaml, et al., 1985a: 44). The vendor may misdirect its efforts and miss opportunities if it fails to understand the service features desired by the customer and the quality level demanded.

A gap may also exist between vendor perceptions and service quality specifications. Several influences may contribute to the development of this gap. The vendor may be less than totally committed to service quality. In addition, ". . . resource constraints, market conditions, and/or (vendor) indifference, (plus other factors) may result in a discrepancy between (vendor) perceptions of (customer) expectations and the actual specifications

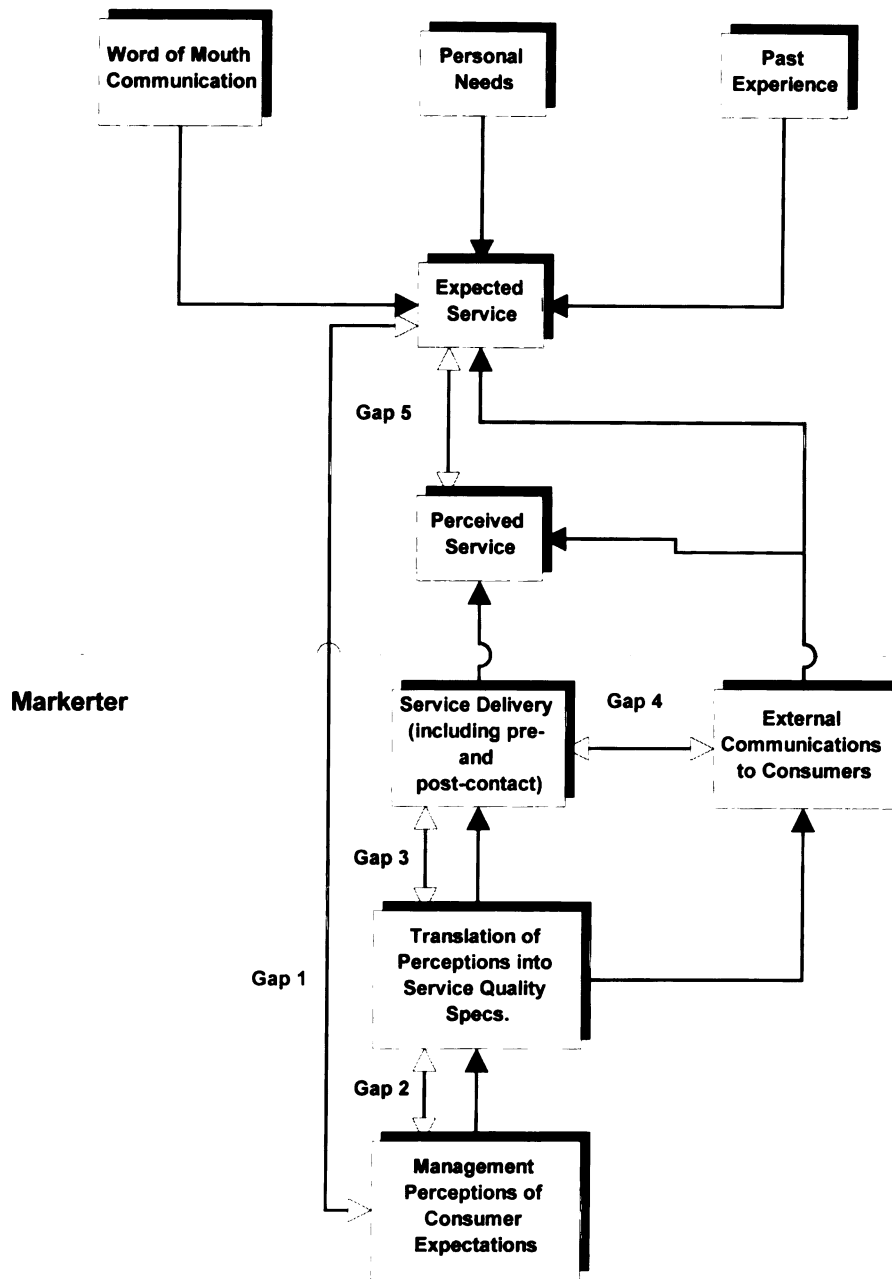
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Figure 2.20 Conceptual Model of Service Quality (Zeithaml, et al., 1985)

established for a service. This discrepancy is predicted to affect quality perceptions of (customers)" (Zeithaml, et al., 1985a: 45).

A third discrepancy suggested by the model may arise between service quality specifications and service delivery. The source of this gap may be attributable to the heterogeneity of services derived from the relatively high personal content of services.

Discrepancies between service delivery and external communications may constitute a fourth gap. Zeithaml, et al. (1985a) describe how reducing this gap may enhance customers' perceptions of service quality. "Making customers aware of not readily apparent service related standards. . .could improve service quality perceptions. (Customers) who are aware that a (vendor) is taking concrete steps to serve their best interests are likely to perceive a delivered service in a more favorable way" (Zeithaml, et al., 1985a: 46). External communications with subsequent reinforcement from service delivery can improve customers' assessments of a vendor's level of service quality. This is accomplished as a vendor uses this tool to shape perceptions. However, the long-term success of the vendor requires supportive follow-up, lest customers become disenchanted with the vendor's ability to adequately fulfill its promises. Appropriately utilized, external communication can be a potent tool in the marketing of services. "In short, external communications can affect not only (customer) expectations about a service but also (customer) perceptions of the delivered service. Alternatively, discrepancies between service delivery and external communications --in the form of exaggerated promises and/or the absence of information about service delivery aspects intended to serve (customers) well--can affect (customer) perceptions of service quality" (Zeithaml, et al., 1985a: 46). In addition, educating customers through

external communications can help bridge the gap between expected service and perceived service as "more knowledgeable customers are likely to make better decisions, leading to greater satisfaction" (Zeithaml, et al., 1985b: 50). Thus, a vendor can improve perceptions of its service quality by providing the customer with information enabling him to select a service level congruent with his expectations.

The final gap which may exist is between the service expected by the customer and his perceptions of the service received. Zeithaml, et al. (1985a) propose that this gap is a function of the four prior discrepancies such that the magnitude and direction of each gap will have an impact on service quality.

Service Proliferation and Complexity

The third influence which causes service quality to be more difficult to measure and monitor is that service proliferation and complexity may influence service quality if the vendor does not have sufficient capacity to handle the changes. "Clearly, new products are vital to a (vendor's) long-term success. However, our research underscores the importance of service (vendors) being prepared to provide the service before marketing it. New service --or enhanced existing services--offer both additional marketing opportunity and additional opportunity for things to go wrong. Too much newness can do more harm than good" (Zeithaml, et al., 1985b: 49). A service inadequately supported will in all likelihood be perceived as of lower quality. This negative perception may spill over to other contracted services from the vendor, lowering the customer's overall quality assessment.

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Degree of Individualized Service

A vendor which begins to view its customers as statistics may experience a decline in its actual and perceived service quality. Individualized service may be a critical success factor for a service vendor. "When a service (vendor) has many customers, there is a tendency to view them as statistics, foregoing the opportunities that are sometimes present to individualize the service. However, many customers desire a personalized and tailored approach to the service" (Zeithaml, et al., 1985b: 49). This lack of personalized service will tend to erode the perception of high service quality. On the other hand, a number of factors may contribute to a decline in actual service quality and indirectly influence the customer's perceptions. "Repetitive tasks, more problems to solve than staff to solve them, sheer size and magnitude of operations, improper selection, training, compensation, and supervision of service workers--all contribute to a service insensitivity" (Zeithaml, et al., 1985b: 49). This insensitivity affects the actual quality level of performed services.

Emphasis on Short-term Results

Too much emphasis on short-term results may encourage lower service quality assessments from customers. Although the vendor may win in the short-run as evidenced in financial reports and/or market share, it will lose in the long-run if it prioritizes short-term results over those factors determining service quality.

How a vendor addresses these influences upon actual and perceived service quality significantly impacts its ability to adequately meet its customers' needs and remain economically viable in the long-run.

Measurement Criteria Differ Per Customer Group

LaLonde and Zinszer (1976) show that different industries value the various components of customer service differently. In addition, several target markets may exist within an industry which base evaluations of logistics service quality on different criteria. Consequently, some customers will highly value specified time dimensions of the distribution system's service outputs and place a lower value on distance dimensions. Other customers will derive value from both distance and time outputs. Another group of customers will value other configurations of the logistics service outputs.

Rhea and Shrock (1987) state that a vendor's operations are designed to serve different purposes for different customer groups. Gilmour (1982) concludes that vendors could "reduce customer service costs and/or improve the level of customer service provided by recognizing differential customer service requirements for individual customer segments" (44). Consequently, the relevant indicators of operational effectiveness or logistics service quality will often differ among customer groups.

A Classification of a Logistics Service Delivery System

A classification scheme of service delivery systems is presented. Many of the principles governing operations are applicable to logistics services and facilitate the operationalization of meeting customer needs and desires in an effective, efficient manner.

Chase (1978) classifies individual services based upon the extent of contact between the customer and vendor. The level of contact influences such system design decisions as facility location and layout, the design of the product and process, scheduling, quality control, and forecasting. Chase recommends realigning present operations to reduce

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unnecessary direct customer contact as efficiencies are offered by low-contact operations. The customer contact that remains can be enhanced, providing a higher quality service with less expenditure of manpower. In addition, parts of the service operation may be relocated to lower facility costs. However, if a vendor is attempting to increase its service quality by redesigning the delivery system into low-contact and high-contact operations, it must also concern itself with managing demand.

Northcraft and Chase (1985) suggest that service industries control demand at the point of service delivery to increase service production and delivery efficiency as shown in Figure 2.21. This is accomplished by matching service demands and service operation resources. First, the vendor identifies the delivery modes, the services offered, and the customer types. Second, delivery modes are matched to the offered services and the customers are segmented by the services desired. Finally, the vendor channels the customer to the delivery mode that best meets his requirements. Efficiency is achieved as service delivery and production are matched to the minimally qualified service resource.

Accurate and timely information is integral to the performance of the logistics function, both as an input into the system and as an output. Mills and Turk (1986) state that because information is the raw material of service organizations, how it is processed will have a direct bearing on productivity. The production of complex services involves more face-to-face contact between the service provider and the customer because there is a greater need to process information, especially information which may be ambiguous or uncertain and suggests a variety of solutions. In this situation, the vendor must create structures and climates that encourage interaction between the customer and service provider. Conversely,

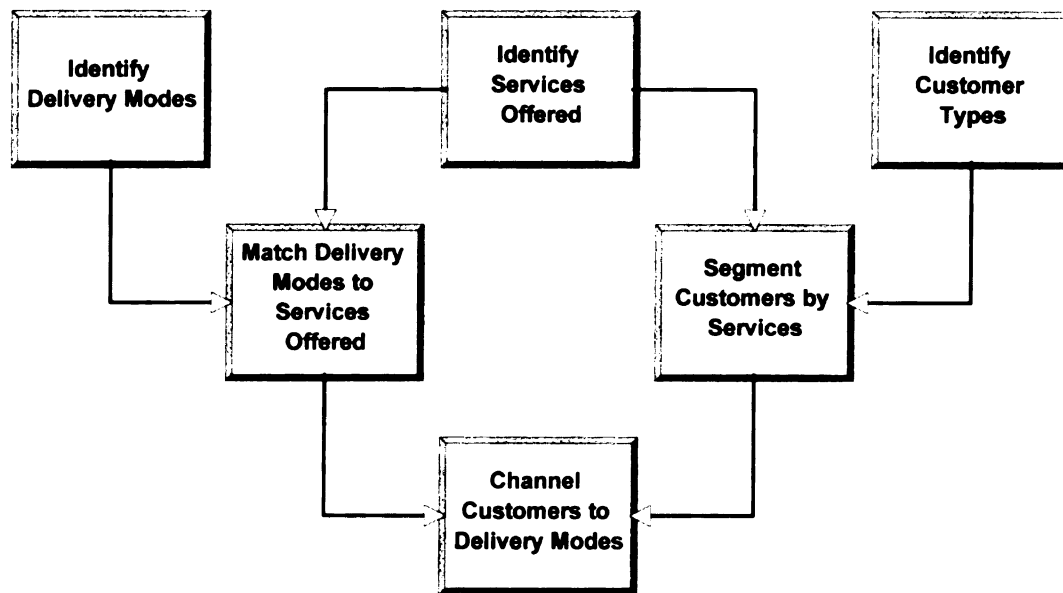


Figure 2.21 The Processes of Managing Demand at Service Delivery Point

it is possible to predict and plan task activities and establish systems in the production of simple services. Here the vendor needs to restrict, limit, or control face-to-face contact between the service provider and customer because such exchanges have the potential to disrupt the system flows. Although the provision of logistical services may not always necessitate face-to-face contact, other intimate communication/information links may be desired.

Along a similar vein, Chase (1981) has classified services based upon the customer contact time relative to the service creation time. A service may be either a pure service, a mixed service, or quasi-manufacturing. The potential facility efficiency is a function of $1 - (\text{customer contact time} / \text{service creation time})$. Thus, the closer a service is to quasi-manufacturing, the more efficient the facility. Chase suggests the following procedure to increase a facility's efficiency. First, identify those points in the service system where

decoupling is possible and desirable. Tradeoffs between the cost savings from operations improvement and marketing losses resulting from the changes in the nature of the services provided may have to be made. Second, contact reduction strategies should be employed where appropriate. Third, contact enhancement strategies should be utilized where appropriate. Finally, traditional efficiency improvement techniques should be used to improve low contact operations. These techniques enable the logistics service delivery system to meet customer expectations more effectively and efficiently.

Identification of the importance of logistics service output dimensions for a given vendor-customer relationship enables the vendor to enhance that relationship by designing logistics services which adequately meet the customer's needs and desires.

Key to local market presence is determining the extent and nature of vendor contact desired by the customer. The operationalization of these desires requires a logistics service delivery system and logistics service concept which will meet customer needs and enhance the relationship between customer and vendor. The vendor may select specific logistics functions to exhibit local market presence and, conversely, gain scale economies in logistics functions provided on a decentralized basis.

SYNTHESIS

This chapter discussed the research streams relevant to the investigation of the role and utility of local market presence in the vendor selection process and service quality evaluation. The research synthesizes the interrelationships of these streams as follows.

First, customers experience the logistics process as well as logistics outputs in their interactions with the logistics service delivery system. These experiences are internalized as perceptions. These perceptions directly impact logistics service quality evaluations, which in turn impact market demand and, consequently, market revenues.

Second, location directly impacts the effectiveness and efficiency of the logistics service delivery system, enhancing the vendor's ability to favorably impact a customer's success. The greater this effectiveness and efficiency, the more favorable customer experiences, perceptions, and logistics service quality evaluations. Thus, location indirectly impacts market demand and revenues.

Third, vendors have traditionally designed their distribution systems in terms of physical capabilities relative to distance and time. As it became possible to service customers in equal or less time from more distant locations, distribution systems were rationalized and warehouses/distribution centers were often eliminated. However, such rationalization often ignored any psychological benefits received by the customer, assuming purchase decisions and logistic service quality evaluations to be based upon concrete economic variables. Contrarily, psychological benefits may be the discriminating factor among identical vendors with identical products and customer service levels.

Fourth, previous research examining the impact of location upon market demand is limited to physical logistics service outputs. However, the customer's psychological desires regarding his logistics experiences are fulfilled to a greater or lesser extent as he interacts with a vendor's logistics process. The impact of these subjective process components upon the perceived logistics service level, logistics service quality, and vendor selection criteria

are examined in the present research. The results reveal how a distribution system may be configured to more effectively and efficiently meet customer needs regarding local market presence, highlighting opportunities for the vendor to work together with customers to increase their success in the marketplace.

Fifth, customer segments within an industry evaluate logistics service quality on different criteria. In addition, customer groups represent differing levels of value to the vendor. Therefore, the vendor should structure its distribution system to offer different levels of service to customer groups in accordance with the value generated. The vendor may desire to demarket to unprofitable customer groups, while enhancing its service menu to select groups representing higher profits and the opportunity for future growth.

Sixth, local market presence is not a panacea for dissatisfied customers, anemic market share, or lackluster customer loyalty. It may provide the opportunity to enhance the effectiveness of a coherent marketing and logistics strategy which anticipates customers' desires and is genuinely interested in facilitating customer success.

Seventh, the present research drew upon the customer service and service quality literature streams. Its application was the logistics process experienced by customers and a method, local market presence, of enhancing the effectiveness of the distribution system as it facilitates customer success.

Numerous customer service and service quality studies are reported based upon case studies, experimental designs, and survey research methods. For example, Zeithaml, Berry, and Parasuraman's (1993, 1986) service quality models are based upon case studies. A large number of customer service studies are based on survey methods (e.g., Christopher, 1983;

Gilmour, 1982; Lambert and Harrington, 1989; Levy, 1981). A seminal customer service study conducted by LaLonde and Zinszer (1976) reports the relative importance of service attributes by industry based upon survey data.

The present research was exploratory as little has been reported regarding local market presence. However, due to the anchoring of this research within the customer service and service quality literatures and the respective development of each, a survey approach was used.

Eighth, a definition of local market presence was suggested based upon references to "local presence" or "market presence" in the literature. This research examined and refined this definition.

Definitions of product availability and product support are presented from a customer rather than a vendor perspective. Each deviates from traditional usage and is used to represent a benefit component experienced by the customer.

This research synthesized several distinct areas of inquiry, introducing and affirming the application of customer perceptions to location analysis. Traditionally, location was driven by the economics of demand and technological capabilities; however, these factors no longer establish the definitive rules governing the location of distribution facilities. Introducing customer perceptions to the facility location decision enables the vendor to create a competitive advantage and enhance the success of select customers. Although this potential exists, minimal research is available which details customer perceptions of location and customer service elements as they relate to location. The present research filled this void.

CONCLUSION

This chapter presented and synthesized the research streams relevant to the investigation of the role and utility of local market presence in the service quality evaluation and vendor selection process. These research streams include spatial economics/location analysis, customer service influences on location, and service quality formation.

The customer success stage of the research model incorporates perceptual and economic bases. The logistics process and outputs of the logistics service delivery system comprise the logistics service level. The customer perceives this service level and these perceptions impact his assessment of logistics service quality and vendor selection process. The logistics service level may be experienced through the product availability, product support, and marketing goodwill factors of a local market presence. This research investigated the potential of utilizing a local market presence to secure a competitive advantage and facilitate customer success.

The research model provided a framework to guide this investigation and suggested relationships between the components. However, the testing of the model is reserved for future research.

CHAPTER III: RESEARCH DESIGN AND HYPOTHESES

INTRODUCTION

This chapter presents an overview of the research methodology. The first section reviews research objectives and presents operational definitions. The second section outlines the sampling process and data collection. Finally, the third section describes the research questions and identifies the statistical techniques which were applied.

RESEARCH OVERVIEW

This research examined logistics service from the customer's perspective. It recognized the importance of the customer's evaluation of logistics service quality as well as the logistics process. The logistics process includes psychological attributes which are perceived by customers. The vendor's location influences these perceptions. The location of distribution sites is an integral factor in the effectiveness and efficiency of the vendor's logistics service delivery system and, consequently, his market share. With a goal of improving effectiveness of logistics delivery service, this research examined the perceived benefits attributed by the customer to a local market presence.

This research investigated the strategy of local market presence. A local market presence strategy is a configuration of customer service elements supporting a distribution facility or customer contact point located within a vendor's local market. These elements are categorized into local market presence components (e.g., product availability, product

support, and marketing goodwill). They provide specific logistical benefits to customers such as delivery frequency, response to assistance requests, and order status information. Ideally, these customer service elements are strategically configured to enhance the customer's success.

The research evaluated this definition of local market presence and examined its components. The research measured the impact of local market presence on the customer-vendor relationship, the customer's vendor selection process, and customer evaluations of logistics service quality. The research investigated the influence of paper purchases (as a proportion of total purchases) on the relative importance of local market presence elements. Finally, the research developed managerial guidelines to aid in strategic implementation of a local market presence strategy and suggested opportunities for future research.

RESEARCH OBJECTIVES

To review, the research objectives were:

- 1) To define local market presence from the customer's perspective and determine the relative importance of its key elements;
- 2) To identify the impact that local market presence has upon the customer's perception of his relationship with the vendor;
- 3) To determine the importance of local market presence factors in vendor selection and logistics service quality;
- 4) To determine how purchase volume influences the relative importance of local market presence benefits; and
- 5) To develop managerial guidelines for defining and implementing a local market presence strategy.

OPERATIONAL DEFINITIONS

Operational definitions interpret theoretical propositions and link them to observable entities or events in the real world (Hunt, 1983). "(T)he requirement that theories be empirically testable shall be construed as being satisfied when a theory is capable (at least in principle) of generating predictive-type statements (hypotheses) whose descriptive terms have empirical referents, thus ensuring that the statements are amenable to a direct confrontation with real-world data" (Hunt, 1983: 248). The empirical referents or operational definitions are presented in Table 3.1

This section provided an overview of the research, reviewing the research objectives and defining operational variables. The next section outlines data collection.

FRAMEWORK FOR DATA COLLECTION

This section addresses the components of the data collection framework, their sequence, and the targeted market segments. It discusses the development of the questionnaire. Data was collected through a mail survey. Related issues of sample and sample size, response rate, and nonresponse bias are discussed.

MARKET SEGMENTS

This research investigated local market presence in the context of the rolled and uncoated paper market segments.

Table 3.1 Operational Definitions

	Definition
Local Market Presence Element	An element that describes a potential benefit of local market presence based upon the customer's beliefs. Each is measured on a 5-point Likert scale anchored by "Strongly Agree" and "Strongly Disagree."
Importance of Local Market Presence Benefit	The importance of a local market presence benefit to the customer's business operations. Each is measured on a 5-point Likert scale anchored by "Strongly Agree" and "Strongly Disagree."
Local Market Presence Importance	The importance of local market presence to the success of the customer's firm. It is measured on a 5-point Likert scale anchored by "Strongly Agree" and "Strongly Disagree."
Perception of Local Market Presence	A customer's perception that a vendor provides the logistical benefits associated with a local market presence. It is measured on a 5-point Likert scale anchored by "Strongly Agree" and "Strongly Disagree."
Evaluation of the Vendor-Customer Relationship	Attributes which describe interactions between a customer and vendor such as trust, cooperation, and helpfulness. Each is measured on a 5-point Likert scale anchored by "Strongly Agree" and "Strongly Disagree."
Importance of Physical Distance	The importance of a customer service element to local market presence. This element is a measure of physical distance. It is measured on a 5-point Likert scale anchored by "Very Important" and "Not Very Important."
Importance of Delivery Time	The importance of a customer service element to local market presence. This element is a measure of delivery time. It is measured on a 5-point Likert scale anchored by "Very Important" and "Not Very Important."
Vendor Selection Criteria	An evaluation of the importance of local market presence elements in selecting a vendor. Each is measured on a 5-point Likert scale anchored by "Very Important" and "Not Very Important."

Table 3.1 (cont'd).

Preference to Patronize a Vendor	An evaluation of the customer's preference to purchase uncoated paper products from a vendor with a local market presence. It is measured on a 5-point Likert scale anchored by "Strongly Agree" and "Strongly Disagree."
Logistics Service Quality Attributes	An evaluation of the importance of local market presence elements in assessing a vendor's logistics service quality. Each is measured on a 5-point Likert scale anchored by "Very Important" and "Not Very Important."
Importance of Customer Service Variables	The importance of five customer service variables (local market presence, price, delivery consistency, fill rate, and order cycle time) to a customer's loyalty to a vendor of uncoated paper products. Each variable is measured on a 5-point Likert scale anchored by "Strongly Agree" and "Strongly Disagree."

Rolled Paper Market Segment

Rolls of paper are used in the web offset printing of labels, magazines, and catalogs. Approximately eighty-five percent of rolls are distributed through a direct channel from the manufacturer to the customer who receives truckloads of paper rolls. The customer typically utilizes good production planning and forecasting procedures, alleviating the need for emergency shipments to meet unexpected demand. The remaining fifteen percent of paper rolls are distributed through distributors. These distributors enhance their value added services by cutting the paper rolls to customer specifications and orders, shipping sheets of paper to customers. These customers order in large quantities due to their ability to forecast demand and efficiently plan production. Emergency shipments of paper are seldom required. As a result, local market presence is not an issue within the rolled paper market

segment. Consequently, the rolled paper market segment was dropped from further analysis in the present research.

Uncoated Paper Market Segment

Sheets of uncoated paper are used for a variety of printing purposes, including Xerox, covers, brochures, and announcements. Uncoated paper is distributed primarily through distributors. The customer generally requires a just-in-time inventory, receiving emergency shipments in one to two hours. Demand is difficult to forecast, making production scheduling and inventory planning difficult. Local market presence is an important issue within this market segment, providing the customer with security and assurance of product availability through emergency shipments.

INTERVIEWS AND QUESTIONNAIRE DEVELOPMENT

Preliminary qualitative research collected information through in-depth interviews with individuals associated with the paper industry. The interview guide is provided as Table 3.2. Information gathered from these interviews directed the questionnaire development.

The original intention was to pre-test the questionnaire with a small group of persons responsible for purchasing paper within printing firms. However, paper distributors were unwilling to provide access to their customer mailing lists as they desired not to sensitize customers to the local market presence issue. The data collection process was undertaken as detailed in the following section. Time pressures of completing the research and the time associated with questionnaire return did not allow for an initial mailing serving as a pre-test and a subsequent mailing to generate responses for the regular statistical analysis.

Table 3.2 Personal Interview Guide

- I. Market Segments
 - A. Roll Only Paper Products
 - 1. Product Description: Labels
 - 2. Product Sophistication (printing):
 - 3. Customer Description
 - a. Industry:
 - b. Expenditure Type (percentage of purchases):
 - B. Uncoated Paper Products
 - 1. Product Description: Xerox, text and cover
 - 2. Product Sophistication (printing):
 - 3. Customer Description
 - a. Industry:
 - b. Expenditure Type (percentage of purchases):
- II. Distribution System Structure: Relationship Dynamics
 - A. Roll Only Paper Products:
 - Manufacturer → Customer
 - B. Uncoated Paper Products:
 - Manufacturer → Merchant → Customer
- III. Elements of Local Market Presence
 - A. Roll Only Paper Products:
 - B. Uncoated Paper Products:
- IV. Importance of Time and Distance in Local Market Presence
 - A. Roll Only Paper Products:
 - B. Uncoated Paper Products:
- V. Attractiveness of Local Market Presence: Willingness to pay a price premium; Impact on market share/customer loyalty.
 - A. Roll Only Paper Products:
 - B. Uncoated Paper Products:

MAIL SURVEY

A mail survey was used to solicit input from persons responsible for purchasing uncoated paper. This input addressed the relative importance of local market presence elements across two purchase volume situations and one market segment within the paper industry.

SAMPLE AND SAMPLE SIZE

Printers were selected from two types of sources: compact disc telephone directories and an industry association membership list. The telephone directories were from "Selectphone" by Prophone and "PhoneDisc USA" by Digital Directory Assistance. Printers were selected by the Standard Industrial Code (SIC) for commercial printing not classified elsewhere (2759). The population of this group is estimated at 55,000. Printers were also selected from the membership list of the National Association of Quick Printers. The population of this association is estimated at 4,000.

The sample was drawn by systematically selecting every twelfth listing. However, as there was little response from instant printers, the sampling process was adjusted to select a smaller percentage of these printers. This adjustment was accomplished by selecting the next appropriate printer on the list.

Telephone calls were placed to each potential respondent which requested participation and offered to mail or fax the questionnaire. A cover letter explaining the research and requesting participation was sent with the questionnaire to each potential respondent agreeing to participate.

Follow-up with non-respondents consisted of a second cover letter and another copy of the questionnaire. These were mailed approximately four weeks after the last phone calls were completed.

RESPONSE RATE

Initially, it was estimated that 125 completed questionnaires were needed to provide statistical reliability and validity within the various measures. The two primary methods of data analysis are multiple regression and factor analysis. According to Hair, et al. (1992), there are several rules of thumb regarding sample size within multiple regression analysis. These range “from 10 to 15 observations per predictor to an absolute minimum of 4 observations per predictor” (46). Observations in or beneath the lower range deem an adjusted R^2 to be the appropriate measure of the coefficient of determination. The maximum number of possible predictor variables in any multiple regression model is 30, resulting in sample sizes of 300 to 450. However, the highest number of predictor variables included in any regression model is 20, suggesting sample sizes of 200 to 300. A minimum of four observations per predictor variables indicates a sample size of 80.

A general, conservative rule regarding sample size in factor analysis is “there should be four or five times as many observations as there are variables to be analyzed” (Hair, et al., 1992: 227). Thirty variables are the maximum included in the analysis, suggesting a sample size of 120 to 150. The researcher may be forced to accept an observations-to-variables of 2:1, or sixty observations. “When dealing with smaller sample sizes and a lower ratio, the analyst should interpret any findings cautiously” (Hair, et al., 1992: 227).

The coefficient of variation was computed for a sampling of twelve variables from approximately fifty-five questionnaires, resulting in a value of 0.33 (standard deviation = 1.00; mean = 3.00). Based upon a relative allowable error of 10 percent, a 95 percent level of confidence indicates an approximate sample size of 42; a 99 percent level of confidence indicates an approximate sample size of 72. Consequently, sample size requirements were revised downward to a range of 70 to 75.

NONRESPONSE BIAS

Nonresponse bias is always a concern in mail surveys. "The seriousness of nonresponse error is magnified by the fact that the direction of the error is often unknown and. . .it is difficult to estimate the actual magnitude of the error" (Green and Tull, 1978: 111).

A number of techniques are available to improve response rates.

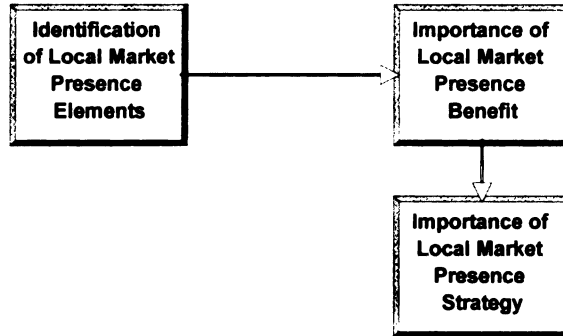
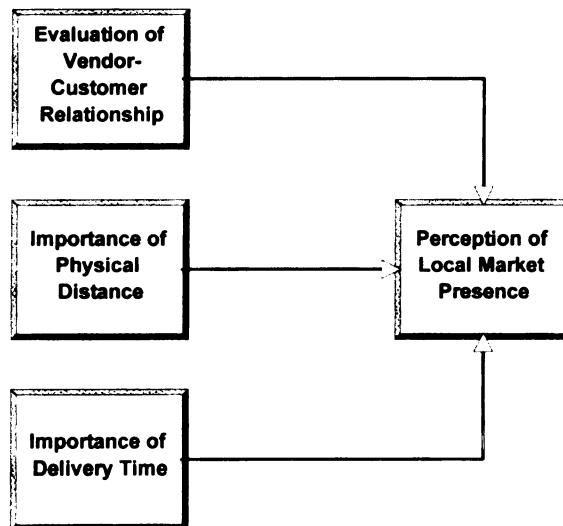
The best methods to get high response rates include advance letters or telephone calls, first-class outgoing mail and hand-stamped return envelopes, monetary incentives, personalization of material for nonsensitive issues, assurance of confidentiality for sensitive issues, noncommercial sponsorship, incorporation of the cover letter into the questionnaire, follow-up questionnaires/letters, and the addition of a handwritten postscript urging reply (Lambert and Harrington, 1990: 6).

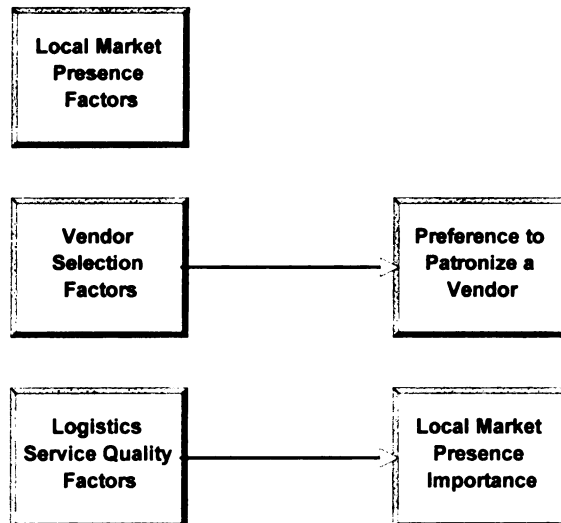
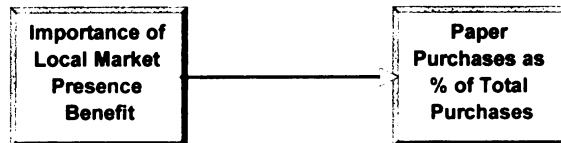
The present study utilized advance telephone calls, first-class outgoing mail and hand-stamped return envelopes, personalization of materials, assurance of confidentiality, noncommercial sponsorship, incorporation of the cover letter into the questionnaire, and a follow-up letter and questionnaire to encourage a healthy response rate.

Lambert and Harrington (1990) recommend the following procedure when budget and time constraints exist. Based upon their experience with customer service research using a mail survey methodology, they suggest that researchers balance budget and time constraints with a desire to eliminate nonresponse bias by "budgeting and planning for two mailings of the questionnaire, followed by a third mailing to a sample of the nonrespondents" (20). The mailing to nonrespondents is a condensed questionnaire focusing on key variables as identified from the analysis of the first two groups of questionnaires. "Use an appropriate experimental design to determine if there is a significant difference between the respondent population. . .and the nonrespondent population. . .If there is a significant difference, the investigator should at least address the bias. . .in any research conclusions. It would of course be more appropriate to adjust the estimate of population parameters in recognition of the nonresponse bias" (Lambert and Harrington, 1990: 21).

RESEARCH QUESTIONS AND ANALYSIS APPROACH

First, each research question is stated and the rationale for its inclusion is presented. Second, the statistical technique testing its validity is presented. The specific research question categories include: 1) local market presence elements and their relative importance; 2) the impact of local market presence on customer perceptions; 3) the relative importance of local market presence factors in vendor selection and the evaluation of logistics service quality; 4) a comparison of market segments; and 5) managerial guidelines. Figure 3.1 identifies the relationship of each variable to the research.

Research Question Group A**Local Market Presence Elements and Relative Importance****Research Question Group B****Local Market Presence Impact on Customer Perceptions****Figure 3.1 Relationships of Variables to Research**

Research Question Group C**The Importance of Local Market Presence Factors in Vendor Selection and Logistics Service Quality****Research Question Group D****Comparison of Market Segments****Figure 3.1 (cont'd).**

Research Question Group E Management Guidelines

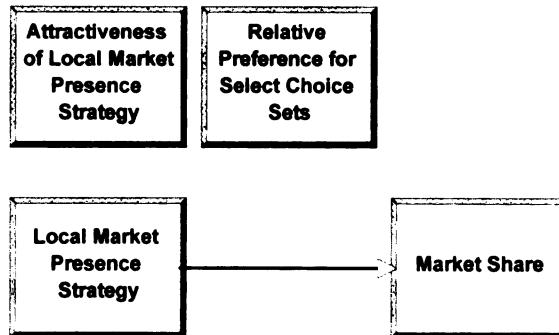


Figure 3.1 (cont'd).

MARKET PRESENCE ELEMENTS AND RELATIVE IMPORTANCE

These research questions investigated the relative importance of local market presence elements.

Q1A: What are the key elements of local market presence?
(What are customers' beliefs regarding specified logistical benefits and their relationship to local market presence?)

Q1B: What is the relative importance of the various elements comprising local market presence? (How important to the customer's operations are the logistical benefits associated with local market presence?)

The objective of these questions was to determine the relative importance of specified customer service elements in the customer's perception of local market presence. Identifying elements of higher importance facilitates the improvement of customer perceptions by indicating to the vendor the most effective means of improving a local market presence strategy.

These questions were addressed through a two-step procedure: 1) Respondents stated their beliefs concerning potential local market presence benefits and 2) indicated the importance of each benefit to their business operations. These benefits were derived from customer service elements evaluated in previous empirical customer service studies and are presented in Table 3.3. First, respondents were presented with numerous belief statements regarding customer service elements and their relationship to local market presence. An example of a belief statement is "Local market presence results in a shorter delivery time." Respondents indicated the strength of their agreement with each statement on a 5-point Likert scale.

Second, respondents rated the importance of each logistical benefit to their business operations. Research question Q1B was evaluated via multiple regression analysis. The metric dependent variable reflected the importance of local market presence to the customer. The metric independent variables were the importance ratings of the local market presence elements. "The objective of multiple regression analysis is to use the several independent variables whose values are known to predict the single dependent value the researcher wishes to know" (Hair, et al., 1987: 20).

LOCAL MARKET PRESENCE IMPACT ON CUSTOMER PERCEPTIONS

This research question evaluated the impact of local market presence on customer perceptions of the customer-vendor relationship.

Q2A: How does the customer describe his relationship with a vendor pursuing a local market presence strategy?

Table 3.3 Customer Service Elements

Product Availability	
◆ Order Assembly/Time	◆ Delivery Time
◆ Consistency/Variability--Lead Time	◆ Ability to Meet Promised Delivery Date
◆ Delivery Frequency	◆ Ability to Rush/Expedite Orders
◆ Order Processing/Picking Accuracy	◆ Inventory Reliability/Availability
◆ Fill Rate	◆ Order Completeness
◆ Inventory Status Information Available	◆ Condition of Order on Arrival
<hr/>	
Product Support	
◆ Repair Service	◆ Repair Parts Availability
◆ Availability of Obsolete Replacement Parts	◆ Timely Response to Assistance Requests
◆ Technical Advice	◆ Ability to Inspect/Diagnose Problem Areas
◆ Ease, Simplicity, and Time Required to Set Up Product	

Table 3.3 (cont'd).

Marketing Capabilities	
◆ Assistance by Manufacturer in Order Preparation	◆ Order Preparation Convenience/Efficiency
◆ Assistance from Manufacturer in Handling Carrier Loss and Damage Claims	◆ Proper Carton Identification
◆ Procedures for Returned Merchandise	◆ Manufacturer's Willingness to Accept Returns of Product Damaged and/or Shipped in Error
◆ Ability of Customer to Select Carrier	◆ Ability to Meet Specific and/or Unique Customer Service and Delivery Needs of Individual Customers
◆ Adherence to Special Shipping Instructions	◆ Adherence to Special Packaging Instructions
◆ Order Progress/Status Information	◆ Advance Information--Order Deletions and Substitutions
◆ Advance Information--Shipping Delays	◆ Communication Channel/Action Re Complaints
◆ Analyze/Correct Reasons for Complaints/Returns	◆ Long-term Contractual Relationship Available

This question revealed customer perceptions regarding relationships with vendors pursuing a local market presence. It investigated the possibility that differences in customer-vendor relationships were due to the presence or absence of a local market presence strategy.

This research question was evaluated through multiple regression analysis. The metric dependent variable reflected the customer's perceptions of the degree of local market presence exhibited by the vendor. The metric independent variables were the customer evaluations of the relationship attributes.

The next research question examined the contribution of distance and time to a customer's perception of local market presence.

Q2B: How do physical distance and delivery time contribute to the customer's perception of local market presence?

This question began to define "local market" from the customer's perspective. It indicated the feasibility of implementing a local market presence strategy from a more remote location.

This question was evaluated via rankings of logistical service benefits on their importance to a local market presence strategy.

RELATIVE IMPORTANCE OF LOCAL MARKET PRESENCE FACTORS

The relative importance of local market presence factors in the vendor selection decision and the logistics service quality evaluation was addressed in the next three research questions. Product availability, product support, and marketing goodwill were hypothesized to be factors of local market presence.

Q3A: What are the factors of local market presence?

Q3B: What is the relative importance of local market presence factors in the vendor selection process?

Q3C: What is the relative importance of local market presence factors in determining logistics service quality?

The objective of these questions was to identify and measure the relative importance of local market presence factors in the vendor selection decision and logistics service quality evaluation. This indicated the priority the vendor should place on a specific component.

Research question Q3A was tested through factor analysis. Factor analysis reduces and summarizes data, "analyzing the interrelationships among a large number of variables. . .and then explaining these variables in terms of their common underlying dimensions (factors)" (Hair, et al., 1987: 235). "(E)ach of the observed (original) variables is considered

as a dependent variable that is a function of some underlying, latent, and hypothetical set of factors (dimensions)" (Hair, et al., 1987: 235).

Factor analysis and multiple regression were utilized to test research questions Q3B and Q3C. Thirty logistics attributes were rated in their importance in vendor selection and logistics service quality evaluation. These ratings were factor analyzed to reveal the vendor selection factors and logistics service quality factors, respectively. The independent metric variables were the vendor selection factors and logistics service quality factors. The dependent metric variable was the customer's preference to patronize a vendor exhibiting a local market presence in Q3B and the criticalness of a vendor's local market presence to a customer's success in Q3C.

COMPARISON OF MARKET SEGMENTS

This research question compared two market segments differing in the percentage of total purchases accounted for by uncoated paper.

Q4: What impact does the percentage of total purchases accounted for by this product class have upon the relative importance of the local market presence benefits?

Research question Q4 examined the influence of the percentages of paper purchases on the relative importance of local market presence benefits. This identified the need to tailor a local market presence strategy to customers segmented by their paper purchases as a percentage of total purchases. Each customer was placed in a high or low purchase volume category as indicated by their paper purchases as a percentage of total purchases (High: 51 percent and above and Low: 50 percent and below).

Multiple discriminant analysis was used to test this research question.

Discriminant analysis involves deriving the linear combination of the two (or more) independent variables that will discriminate best between the a priori defined groups. This is achieved by the statistical decision rule of maximizing the between-group variance relative to the within-group variance; this relationship is expressed as the ratio of between-group to within-group variance (Hair, et al., 1987: 75).

The categorical dependent variables were the two purchase volume categories. The metric independent variables were the importance rankings of local market presence benefits.

MANAGEMENT GUIDELINES

These research questions addressed issues concerning the attractiveness of a local market presence to customers and vendors and the feasibility of securing the benefits of a local market presence without establishing a physical facility in close proximity to customers.

Q5A: Is local market presence attractive to a significant group of customers?

The objective of this question was to quantify those customers who find local market presence an attractive distribution alternative. This question was evaluated by assessing respondents' agreement with the statement, "A vendor's local market presence is critical to the success of my firm."

Q5B: Are customers willing to pay a premium to receive the benefits of local market presence?

This research question examined the trade-offs made by customers when selecting a service package that most closely matches their needs and budget.

Conjoint analysis was used to evaluate this question. "(T)he purpose of conjoint analysis is to determine the contributions of variables (and each level of the variables) to the choice order over combinations of variables that represent realistic choice sets. . .the prediction is not of an absolute preference but of a relative preference within a defined set" (Hair, et al., 1987: 411). The dependent metric variable was the preference for a particular choice set. The independent categorical variables were specified levels of price and facility proximity. Based upon the result of conjoint analysis, market segments may be formed. "(C)ustomers with similar physical distribution needs can be grouped together, and different service-cost mixes may be developed for each market segment" (Perreault and Russ, 1973: 126).

Q5C: Will local market presence increase market share?

This question addressed a potential benefit of pursuing a local market presence strategy from a vendor's perspective.

This research is evaluated by examining the percentage of respondents indicating a preference to purchase uncoated paper products from a vendor with a local market presence.

In addition, the importance of five variables (local market presence, price, delivery consistency, fill rate, and order cycle time) in determining vendor loyalty were examined.

Q5D: Can the benefits of local market presence be achieved short of locating a facility in close proximity to customers?

This research question examined the feasibility of obtaining the benefits of a local market presence without making a physical facility commitment. The importance of thirteen logistical service benefits to a local market presence strategy are examined.

CONCLUSION

Chapter Three presented an overview of the research, reviewing the research objectives and presenting the operational definitions. The data collection framework was presented. Finally, the rationale for the inclusion of each research question and the statistical techniques were discussed.

Chapter Four presents the findings of the empirical research.

CHAPTER IV: STATISTICAL ANALYSIS

INTRODUCTION

This chapter presents the research results. The first section discusses the response rate and nonresponse bias. The second section presents the research questions, the statistical analysis, and an interpretation of the results.

RESPONSE RATE AND NONRESPONSE BIAS

This section addresses the response rate and the resulting sample size. Concerns regarding nonresponse bias are discussed.

RESPONSE RATE

As discussed in Chapter III, potential respondents were solicited by Standard Industrial Classification code from compact disc telephone directories and the membership list of the National Association of Quick Printers. The resulting population was estimated at 59,000 printers.

Potential respondents were first contacted by telephone to solicit their participation in the research. As a result, 246 questionnaires were mailed or faxed. Approximately 55 completed questionnaires were received from this first mailing. A second mailing resulted in an additional 22 questionnaires. Consequently, 77 useable questionnaires were received, resulting in a 31.3 percent response rate.

Returns of completed questionnaires were not as high as required by initial sample size estimates. Therefore, twelve variables were systematically selected; every

tenth variable was chosen, ignoring the trade-off analysis tables as respondents were having difficulty with this section. The standard deviations were computed and analyzed across 56 respondents. The coefficient of variation was estimated at 0.33 (standard deviation = 1.00, mean = 3.00). The relative allowable error was set at 10 percent. A 95% confidence interval resulted in an approximate sample size of 42; a 99% confidence interval resulted in an approximation of 72. This analysis suggested that a sample size of 70 to 75 respondents would be adequate to provide reliable estimates.

Table 4.1 presents the twelve variables which were analyzed and the associated differences in required sample sizes resulting from varying the precision level and the actual precision levels. Precision estimates were computed based upon a 95 percent confidence interval. Estimated sample sizes at a 5 and 10 percent precision are provided. A sample size of 70 to 75 respondents would result in precision between 5 and 10 percent. Finally, the actual standard deviation, sample size, and associated precision level for each variable is presented. Variables 7 and 9 have the highest precision; however, these variables were not analyzed in the following research questions. The average precision for the remaining ten variables was 5.61 percent, indicating that the actual sample size of 77 was adequate to provide reliable estimates.

Table 4.1 Sample Size Estimation

Variable	Estimated Std. Dev.	Est. Sample Size: 10% Precision	Est. Sample Size: 5% Precision	Actual Std. Dev.	Actual Sample Size	Precision %
1	0.7852	16	62	0.8083	70	4.8308%
2	1.3001	43	170	1.2918	68	7.8328%
3	1.2826	42	165	1.2563	71	7.4547%
4	0.8722	20	77	0.8066	76	4.6259%
5	1.2048	37	146	1.1838	76	6.7896%
6	0.7744	15	60	0.8292	75	4.7874%
7	1.4771	55	219	1.6211	31	9.7053%
8	1.1894	36	142	1.0840	74	6.3008%
9	0.7133	13	51	1.5285	27	9.8051%
10	0.5808	9	34	0.5511	76	3.1607%
11	0.7796	16	61	0.8306	76	4.7636%
12	1.0263	27	106	0.9729	76	5.5799%

NONRESPONSE BIAS

Nonresponse bias is always a concern in mail surveys. The present study utilized a number of techniques suggested by Lambert and Harrington (1990) to improve response rates. These techniques were: advance telephone calls, first-class outgoing mail and hand-stamped return envelopes, personalization of materials, assurance of confidentiality, noncommercial sponsorship, and a follow-up letter and questionnaire.

Two factors contributed to nonresponse in the present research. First, a few questionnaires were returned uncompleted as the firms were not part of the desired market segment. Some firms were no longer printing as part of their business operations. Other firms acted primarily as print brokers or farmed out their printing requirements. These firms were usually not involved in the actual paper purchases.

Second, several returned questionnaires and phone calls indicated that the potential respondent was unable to complete the questionnaire because he was unfamiliar

with basic logistics terms such as picking accuracy. In addition, a number of respondents had difficulty understanding trade-off analysis as indicated by telephone calls for clarification and skipping that section of the questionnaire.

The variance in printer sophistication appeared to be the greatest factor in any nonresponse bias. The length of the questionnaire and unfamiliarity with logistics terms and data gathering techniques probably accounted for a major portion of nonresponse.

RESEARCH QUESTIONS AND STATISTICAL ANALYSIS

First, each research question is stated. Second, the statistical technique testing its validity and the statistical results are presented. Finally, the statistical results are discussed and interpreted. The specific research question categories include: 1) local market presence elements and their relative importance; 2) the impact of local market presence on customer perceptions; 3) the relative importance of local market presence factors in vendor selection and the evaluation of logistics service quality; 4) a comparison of market segments; and 5) managerial implications.

MARKET PRESENCE ELEMENTS AND RELATIVE IMPORTANCE

These research questions identified the key elements of a local market presence and their relative importance in defining a local market presence strategy and contributing to the success of a printer's business operations.

Key Local Market Presence Elements (Q1A)

Q1A: What are the key elements of local market presence?
(What are customers' beliefs regarding specified logistical benefits and their relationship to local market presence?)

Research question Q1A identified the key elements of a local market presence from the customer's perspective. Respondents stated their beliefs concerning the relationship between thirty customer service elements and a local market presence. These beliefs were measured by a 5-point Likert scale anchored with "Strongly Disagree" and "Strongly Agree." The scales of ten belief statements were reversed to ensure careful consideration of each statement. It appeared that a number of respondents failed to recognize the reversal. The average variance among the thirty variables was 1.23; nine of the ten statements with reversed scales had a variance exceeding the average. Consequently, these ten variables required cautious analysis.

Respondents were also offered a "NR" option indicating that a particular element was not relevant to a local market presence. It appeared that respondents consistently chose either "NR" or some level of disagreement to indicate that elements were not important to a local market presence. Low levels of agreement and "NR" responses did not appear on the same questionnaire. Each type of response received a unique code.

All thirty customer service elements were associated at least somewhat with a local market presence. Table 4.2 presents these elements and the intensity of respondents' beliefs that each was a benefit of a local market presence. The elements generating the strongest beliefs focus on delivery reliability, a short order cycle time, and a short communication channel with the vendor.

This analysis identified those customer service elements which were benefits of a local market presence. If a vendor has a local market presence, what type of benefits did

Table 4.2 Customer Benefits of a Local Market Presence

Ranking	Benefit	Mean (Scale =5)
1	The Vendor's Consistent Ability to Meet Promised Delivery Dates	4.5455
2	A Short Delivery Time	4.4416
3	The Consistent Ability to Expedite Orders	4.2237
4	A Short Order Assembly Time	4.0986
5	Shorter Communication Channel and Quicker Action to Resolve Complaints	4.0548
6	The Vendor's Increased Willingness to Accept Returns of Product Damaged or Shipped in Error	3.8533
7	A Timely Response to Assistance Requests	3.8514
8	Efficient Assistance from the Vendor in Handling Carrier Loss and Damage Claims	3.8333
9	Timely Inventory Status Information	3.8235
10	Efficient Assistance by the Vendor in Order Preparation	3.8000
11	High Inventory Availability	3.7867
12	A High Fill Rate	3.7101
13	Timely Order Status Information	3.6986
14	An Improved Ability to Inspect or Diagnose Problem Areas	3.6389
15	More Accurate Advance Information Concerning Shipping Delays	3.6232
16	Proper Carton Identification	3.5362
17	More Accurate Information Concerning Order Deletions and Substitutions	3.5143
18	High Quality Technical Advice	3.4861
19	Adherence to Special Shipping Instructions	3.4000
20	Adherence to Special Packaging Instructions	3.3824
21	High Variability in Lead Times (scale reversed)	3.1486
22	Low Order Completeness (scale reversed)	2.8551
23	Low Order Processing Accuracy (scale reversed)	2.6857

Table 4.2 (cont'd).

Ranking	Benefit	Mean (Scale =5)
24	A Decrease in the Customer's Ability to Consistently Select the Carrier (scale reversed)	2.5789
25	Low Picking Accuracy (scale reversed)	2.4462
26	Inefficient Procedures for Returned Merchandise (scale reversed)	2.3472
27	Low Delivery Frequency (scale reversed)	2.3380
28	Decreased Order Preparation Convenience and Efficiency (scale reversed)	2.2676
29	A Decrease in the Vendor's Ability to Meet Specific or Unique Customer Service and Delivery Needs of Individual Customers (scale reversed)	2.1081
30	The Order Arriving in Poor Condition (scale reversed)	1.7887
Scale: 1 = Strongly Disagree, 5 = Strongly Agree		

the printer associate with this? The importance of these various benefits within a local market presence strategy will be addressed shortly.

Importance focused on the criticalness of the printer receiving these customer benefits if the vendor was attempting to provide a local market presence. It began to define the factors which differentiate this logistics service configuration from other distribution strategies.

In a separate question, respondents indicated the importance of thirteen logistical service benefits to a local market presence strategy. Importance was measured on a 5-point Likert scale anchored by "Not Very Important" and "Very Important." Table 4.3 presents these importance rankings by descending mean order. These rankings were somewhat similar to the customer benefits of a local market presence presented in Table 4.2. The thirteen logistical service benefits are divided into three categories based on importance ranking and relationship to a basic underlying construct such as time or

distance. The resulting benefit categories are: 1) The availability of product in a timely and reliable manner which was critical within a local market presence strategy; 2) The accessibility and convenience of interacting with the vendor which was also quite important; 3) Geographic location and proximity to the customer which was important, but less so; and 4) Other which included a logistical service benefit which was not important to a local market presence strategy.

The printing environment is characterized by high fixed costs due to equipment leases and/or depreciation of large capital investments. These high fixed costs create pressure to minimize downtime. Printers attempt to minimize their fixed costs per unit of output by operating at high levels of press capacity utilization. The relatively high number of printers in a specific market and the desire to minimize press downtime results in competitive pricing.

Printers generally maintain relatively low inventory levels. It is extremely difficult to forecast demand accurately given customer profiles and the proliferation of paper products. Due to high fixed costs and competitive pricing, profit margins are tight. Consequently, printers attempt to minimize other costs such as inventory carrying costs. The printer generally orders paper when he receives a print order. The competitive environment creates pressure on the delivery time of the printed product to the customer. As a result, the printer requires prompt delivery from the vendor.

Respondents indicated that the timeliness of product delivery was the most critical benefit of a local market presence. The various "time" benefits were rated as important to very important. The printer requires the vendor to fill the service gap

Table 4.3 Importance of Benefits to a Local Market Presence Strategy

<i>Ranking</i>	<i>Benefit</i>	<i>Mean (Scale = 5)</i>
Benefit Category: Availability of Product in a Timely and Reliable Manner		
1	Short Delivery Time	4.5844
2	Reliable Delivery	4.5584
3	Short Order Cycle Time	4.4416
4	Ability to Expedite Orders	4.3377
5	Delivery Capability	4.2987
6	Frequent Delivery	4.2078
7	Low Lead Time Variability	4.1216
Benefit Category: Accessibility and Convenience of Interacting with the Vendor		
8	Ordering Convenience	4.0260
9	Accessibility of Seller	3.8831
Benefit Category: Distance		
10	Order Processing Personnel Located in Market Area	3.8158
11	Located in Close Proximity	3.7500
12	Geographic Location	3.6623
Benefit Category: Other		
13	Ability to Receive Orders Electronically	2.8701
Scale: 1 = Not Very Important, 5 = Very Important		

because he is unable to forecast demand and cost pressures make it difficult for him to provide width and depth of inventory. The printer relies upon the vendor to provide an acceptable level of inventory and prompt delivery, allowing him to provide an acceptable level of customer service to his print customers. The printer's success is highly dependent upon the service provided by the vendor. Consequently, timely delivery from vendors is critical.

The accessibility and convenience of interacting with the vendor were important, though less critical, benefits of a local market presence strategy. First, because the printer is so dependent upon the vendor for his success, a direct communication channel becomes very important. This is critical not only in placing orders, but also in checking on order status and inventory availability. Due to the proliferation of paper products in recent years, the printer may require more input from the vendor as to the appropriate paper for a specific job or a substitute for a paper in low stock. Second, due to the tight service window through which printers serve their customers, it is imperative that their vendors be accessible and provide a convenient working relationship should orders require expediting or problems resulting from picking errors or printing problems need to be resolved.

Finally, the distance benefit category comprised the less important benefits of a local market presence. This category included order processing personnel located in the market area, the vendor located in close proximity, and geographic location. These were rated as important to a local market presence strategy. The proximity of a vendor provides the printer with a level of security. There may be two facets to this security.

First, the printer may pick-up an order if the vendor is unable to expedite shipment or the printer may return unneeded product resulting from picking errors or unused product ordered as a margin for error. Second, the printer may believe that the vendor cannot provide the requisite prompt, reliable service from a more distant location.

The competitive environment forces printers to depend upon their vendors for prompt delivery of the required product. This tight service window and the proliferation of paper products encourages the development of a direct communication channel which allows convenient access to the vendor. The distance benefit category becomes important in this logistics service configuration as a tangible cue to the vendor's ability to provide prompt service and to his accessibility. The vendor may be quite capable of timely, reliable delivery from a more distant location. He may be more accessible to the printer at a distant location due to advanced communications technologies. However, the printer may be wary of the vendor's capabilities because cues are less tangible. The benefits of a local market presence focus on providing a particular service menu of prompt delivery and vendor accessibility. Geographic proximity creates the perceptual plausibility of receiving this menu.

The results indicated that the key elements of a local market presence may be categorized as: 1) product availability in a timely and reliable manner; 2) vendor accessibility and interaction convenience; and 3) geographic location and proximity. The key elements are driven by the dynamics of the competitive environment.

Relative Importance of Local Market Presence Elements (Q1B)

Q1B: What is the relative importance of the various elements comprising local market presence? (How important to the customer's operations are the logistical benefits

associated with local market presence?)

Research question Q1B examined the importance of local market presence benefits to a customer's business operations. Forward stepwise multiple regression predicted the criticalness of a vendor's local market presence to the success of a customer's firm. It examined the customer's evaluation of the criticalness of thirty customer service elements to business operations. The dependent variable was the respondent's level of agreement with the statement, "A vendor's local market presence is critical to the success of my firm." The agreement level was measured on a 5-point Likert scale anchored by "Strongly Disagree" and "Strongly Agree." The independent variables were the respondents' levels of agreement with statements concerning the criticalness of thirty local market presence benefits to business operations (e.g., "I believe that a short order assembly time is critical to my business operations"). Agreement was measured via a 5-point Likert scale anchored by "Strongly Disagree" and "Strongly Agree."

Forward stepwise multiple regression selected twenty logistical service attributes which partially explain the criticalness of a vendor's local market presence to a customer. These attributes explained approximately 54 percent of the variance within responses at a statistically significant level ($p < .0002$). The statistical results are presented in Table 4.4. Fifteen variables were significant at the .05 p-level; seven are significant at the .01 p-level.

The seven variables most significant in predicting the dependent variable based upon descending beta coefficient values were: 1) picking accuracy; 2) order processing

Table 4.4 Forward Stepwise Multiple Regression Results

Dependent Variable: A vendor's local market presence is critical to the success of my firm. Independent Variables: I believe that _____ is critical to my business operations. R = .844045 Multiple R² = .712412 Adjusted R² = .538117 F(20, 33) = 4.087378 Standard Error of Estimate: .814723 p < .000176 Minimum Pairwise N = 54					
Variable	BETA	Standard Error of BETA	t(33)	p-level	Valid N
Intercept			2.5867	.0143	
Inefficient procedures for returned merchandise	.7402	.1486	4.9807	.0000	62
A short delivery time	.5207	.1316	3.9557	.0004	63
Efficient assistance from the vendor in handling loss and damage claims	-.4894	.1300	-3.7641	.0007	61
Low order processing accuracy	-.7854	.2199	-3.5716	.0011	62
A high fill rate	-.5165	.1302	-3.9662	.0004	58
More accurate advance information concerning order deletions and substitutions	.5024	.1279	3.9287	.0004	61
Low picking accuracy	.9973	.2654	3.7569	.0007	61
A decrease in the vendor's ability to meet specific or unique customer service and delivery needs	-.2992	.1298	-2.3061	.0275	64
The vendor's consistent ability to meet promised delivery dates	-.2923	.1259	-2.3211	.0266	63
High quality technical advice	.2345	.1376	1.7043	.0977	61
A timely response to assistance requests	-.2848	.1364	-2.0883	.0446	61
The order arriving in poor condition	-.4166	.1701	-2.4482	.0198	61
Low order completion	-.3238	.1394	-2.3222	.0265	59
Timely inventory status information	.2799	.1166	2.4002	.0222	61
Adherence to special packaging instructions	-.3034	.1310	-2.3169	.0269	61
Efficient assistance by the vendor in order preparation	-.3206	.1392	-2.3037	.0277	62
A decrease in customer's ability to consistently select the carrier	.1528	.1246	1.2262	.2288	58
An improved ability to inspect or diagnose problem areas	.2782	.1692	1.6448	.1095	60
Decreased order preparation convenience and efficiency	.2372	.1486	1.5969	.1198	61
Timely order status information	.1550	.1306	1.1865	.2439	64

accuracy; 3) procedures for returned merchandise; 4) delivery time; 5) fill rate; 6) advance information concerning order deletions and substitutions; and 7) vendor assistance in handling carrier loss and damage claims. Data was collected for the first three variables on reversed scales, necessitating cautious analysis as previously discussed.

Variables Exhibiting a Positive Relationship

Four of the most significant prediction variables exhibited a positive relationship with the criticalness of a local market presence to a respondent's business operations. These were: 1) picking accuracy; 2) procedures for returned merchandise; 3) delivery time; and 4) advance information on order deletions and substitutions.

First, picking accuracy was positively related to the criticalness of a local market presence to a printer's business operations. This service element was important because the short service window does not usually allow sufficient time for a second corrective shipment. However, this variable requires very cautious analysis due to the reversed scale.

Second, procedures for returned merchandise were important in prediction because of the short service window through which the printer serves his customer and the proliferation of paper products. The printer may desire to return product for several reasons: 1) extra product may have been ordered to cover any printing errors; 2) a paper order may be received too late to meet the final customer's requirements; 3) a substitution may be unacceptable to the final customer; or 4) the order may have been inaccurately picked. In addition, ease of shipping may account for the importance of procedures to

return merchandise. If part of an order needs to be returned, the printer may be able to drop it off on the vendor's dock if the vendor is located in close proximity. The short service window prompts the printer to generously forecast requirements to cover any printing errors and/or customer changes as time does not usually allow for placement and delivery of a second order. In addition, product not received in a timely manner may necessitate a return to the vendor as the printer may not experience consistent demand for the ordered paper. Consequently, the procedures for returning excess inventory were critical to a printer's success as he is attempting to minimize his inventory carrying costs. This variable requires cautious analysis due to its reversed scale.

Third, delivery time was important in predicting the criticalness of a local market presence to a printer's business operations because of the final customer's service requirements and the printing environment. Specifically, printers are unable to forecast demand. This inability combined with their cost structure discourages the stocking of high inventory levels. The competitive environment requires the printer to provide quick, reliable order delivery to the final customer.

Finally, advance information on order deletions and substitutions was also important in prediction. The final customer's service requirements and the product's nature (i.e., printing to a specific customer's order) accentuate the importance of this element. If a paper substitution is required, the printer will need approval from the customer prior to printing. If the substitution is not acceptable, the printer needs adequate time to locate the required paper or an acceptable substitute from a different vendor.

Variables Exhibiting a Negative Relationship

Three of the most significant prediction variables exhibited a negative relationship with the criticalness of a local market presence to a printer's business operations. These were: 1) order processing accuracy; 2) fill rate; and 3) vendor assistance in handling carrier loss and damage claims.

First, order processing accuracy exhibited a negative relationship with the criticalness of a local market presence. This variable was measured via a reversed scale; consequently, it required cautious analysis. Although order processing accuracy is desirable, it is not critical to a printer's success. This relationship is somewhat curious as order processing accuracy has a direct influence on picking accuracy which exhibited a positive relationship. This may reflect a number of respondents apparently missing the scale reversal. Alternatively, printers may not have completely understood the two concepts. Order processing accuracy may have been interpreted as invoicing accuracy. This interpretation suggests that if invoicing accuracy requires additional vendor time and effort which results negatively on expeditious delivery, it is counterproductive to desired local market presence benefits. This interpretation is feasible given the strength of the negative relationship versus an indifferent relationship.

Second, fill rate also exhibited a negative relationship with the criticalness of a local market presence to a printer's business operations. The printer may order extra product to fulfill minimum order requirements or to avoid placing a second order at a later time. These extra items are not critical to completing the customer's print order. Consequently, fill rate may not be critical to the printer's success. The availability of

acceptable substitutes may be more critical than a high fill rate on specific SKUs. The expeditious delivery of those critical paper products or acceptable substitutes is critical to his success. Alternatively, printers may have secondary sources of exotic papers which are more apt to experience low fill rates. Any higher acquisition costs may be passed on to the customer who insists upon a specific paper rather than accept a less exotic substitute. This customer is also more willing to wait for the paper to become available. Consequently, a high fill rate may not be critical to a printer's business operations.

Finally, vendor assistance in handling carrier loss and damage claims was negatively related to the criticalness of a local market presence to a printer's business operations. Respondents indicated that vendor assistance of this type was not critical to their business operations. However, a number of respondents reported that a local market presence was critical to the success of their firms. The critical success factors in the uncoated paper print shop business are quick, reliable delivery; accurate information concerning substitutions and deletions; and picking accuracy. Product damaged in-transit may not be a significant problem for respondents indicating that a local market presence was critical to their business success. These respondents may be selecting their primary vendors based upon the existence of a local market presence and; consequently, are not experiencing significant levels of in-transit damage. If these respondents began to experience a higher level of in-transit damage, the vendor's assistance in this area would probably become more critical to their business operations. Respondents indicating that a local market presence is not critical to their business success are probably using different criteria to select their primary vendors; these respondents may be experiencing a

higher level of in-transit damage and, therefore, it has become more critical to their business success. In addition, if the vendor is located in close proximity, the printer may pick up a majority of orders, eliminating any carrier loss and damage claims.

Appropriateness of Statistical Technique

There was some concern over the potential for multicollinearity due to the number of variables measuring customer service elements. Examination of the standard errors and redundancy of the regression coefficients indicated that multicollinearity was not an issue.

The data was evaluated and deemed to be appropriate for multiple regression analysis.

The relative importance of the logistical benefits associated with a local market presence were as follows: 1) picking accuracy; 2) order processing accuracy; 3) procedures for returning merchandise; 4) delivery time; 5) fill rate; 6) accurate advance information concerning order deletions and substitutions; and 7) assistance with carrier loss and damage claims. This forward stepwise multiple regression analysis should be interpreted very cautiously due to the reversed scales. The most important elements of a local market presence are delivery time and accurate advance information concerning order deletions and substitutions. The importance of these elements was confirmed by the analysis of additional research questions.

LOCAL MARKET PRESENCE IMPACT ON CUSTOMER PERCEPTIONS

This research question evaluated the impact of a local market presence on customer perceptions of the customer-vendor relationship.

Relationship with a Local Market Presence Vendor (Q2A)

Q2A: How does the customer describe his relationship with a vendor pursuing a local market presence strategy?

Respondents evaluated their relationships with two self-selected vendors, one who exhibited a high degree of local market presence and one who exhibited a relatively low degree of local market presence. Level of agreement was measured on a 5-point Likert scale anchored by "Strongly Disagree" and "Strongly Agree." A t-test compared the relationship attribute means for the two types of vendors and the results are presented in Table 4.5. Each attribute rating of a vendor exhibiting a high degree of local market presence was statistically different from the rating of the corresponding attribute when a vendor with a relatively low degree of local market presence was evaluated. Each relationship attribute was rated more favorably when considering a vendor with a high degree of local market presence.

Table 4.5 also presents rankings of the attribute means for the two types of vendors. There was some variation in the attribute order between lists; however, both lists followed a similar pattern. All vendor relationships, regardless of the level of a local market presence, were rated more highly on cooperation, trust, and commitment. They were rated most poorly on participatory planning and goal setting, interdependence, and a focus on a common goal; shying away from a more integrative channel structure.

Printers view themselves as members of a traditional channel structure. Characteristics of more integrative channel relationships, such as information sharing, focusing on a common goal, interdependence, and participatory planning and goal

Table 4.5 Comparison of Vendor Relationships

<i>Variable</i>	<i>Local Presence: Existence and Rank</i>	<i>Mean</i>	<i>t-value</i>	<i>p-value</i>
Cooperation	Yes: 1 No: 2	4.3816 3.1711	8.8505	.0000
Trusting	Yes: 2 No: 3	4.2267 3.0533	8.8869	.0000
Commitment	Yes: 2 No: 1	4.2267 3.1733	7.1698	.0000
Problem-solving	Yes: 4 No: 6	3.9733 2.9200	6.4550	.0000
Coordination	Yes: 4 No: 3	3.9733 3.0533	6.3223	.0000
Communication	Yes: 6 No: 5	3.9595 3.0405	5.8894	.0000
Information Sharing	Yes: 7 No: 7	3.9315 2.9178	6.2791	.0000
Focus on Common Goal	Yes: 8 No: 9	3.8933 2.7600	7.6233	.0000
Interdependent	Yes: 9 No: 8	3.7671 2.8356	5.8634	.0000
Participatory in Planning and Goal Setting	Yes: 10 No: 10	3.0946 2.3919	4.8066	.0000
Scale: 1 = Strongly Disagree, 5 = Strongly Agree				

setting, are not readily perceived by printers within their channel relationships. The research did not indicate the attractiveness of these characteristics to printers; however, cultivating these characteristics could enhance the printer's perception of a local market presence. Delivery of accurately picked product must still be timely and reliable, providing the foundation of a local market presence. The characteristics of an integrative channel provide a complementary depth in the relationship, addressing the printer's desire for information sharing. If these characteristics are attractive to printers, successful cultivation will encourage vendor loyalty and enhance vendor market share. The printer will enjoy a relationship with a vendor more attune and responsive to his needs.

Vendor Exhibits High Local Market Presence

Forward stepwise multiple regression was used to evaluate the customer's relationship with each type of vendor. The various relationship attributes were used to predict the level of local market presence perceived by the customer. Based upon beta coefficient values, those attributes most important in predicting a vendor's high degree of local market presence were: 1) cooperation, 2) problem-solving, 3) information sharing, and 4) coordination. The regression model accounted for 38.61 percent of the variance in the dependent variable at a statistically significant level ($p < .0000$). The results of the statistical analysis is presented in Table 4.6.

Variables Exhibiting a Positive Relationship

First, cooperation exhibited a positive relationship with a high degree of local market presence. Printers feel these vendors are much more cooperative and willing to

Table 4.6 Forward Stepwise Multiple Regression Results

Dependent Variable: This vendor has a high degree of local market presence. Independent Variables: Relationship Attributes $R = .666440$ $\text{Multiple } R^2 = .444142$ $\text{Adjusted } R^2 = .386067$ $F(7, 67) = 7.6478$ $\text{Standard Error of Estimate} = .49087$ $p < .00000$ $N = 75$					
Variable	BETA	Standard Error of BETA	t(67)	p-level	Valid N
Intercept			4.1503	.0001	
Trust	-.0721	.1710	-.4216	.6747	76
Information Sharing	.3824	.1581	2.4183	.0183	75
Cooperation	.5585	.1576	3.5429	.0007	77
Problem-solving	-.5281	.1546	-3.4164	.0011	76
Coordination	.3598	.1525	2.3602	.0212	76
Communication	-.2146	.1674	-1.2820	.2043	76
Interdependence	.1470	.1341	1.0965	.2768	76

work with them to make their business a success. These vendors are willing to make the extra effort to expedite shipments and locate the closest substitutes.

Second, information sharing exhibited a positive relationship with a vendor's high degree of local market presence. Vendors exhibiting a local market presence were much more responsive in sharing information (e.g., new product, order deletions and substitutions) which enables the printer to operate his business more effectively and efficiently while creating greater satisfaction within the final customer.

Finally, coordination was positively related to a vendor's high degree of local market presence. This vendor received higher ratings in his efforts to coordinate his channel activities and goals with those of his customer, the printer. This vendor-customer relationship is closer to integrating the concept of a managed channel relationship than vendor-customer relationships where the customer perceives the vendor to exhibit a low degree of local market presence.

Variable Exhibiting a Negative Relationship

Problem-solving was negatively related to a high degree of local market presence; however, these vendors were rated higher (3.97 versus 2.92) on this relationship attribute at a statistically significant level ($p < .0000$) than vendors described as exhibiting a low degree of local market presence. Consequently, vendors with a high degree of local market presence were more interested in working with printers to solve problems and facilitate the effectiveness and efficiency of the channel. However, problem-solving exhibited a negative relationship to vendors possessing a high degree of local market presence as well as to those possessing a low degree of local market presence, as will be

presented shortly. The average evaluation for problem-solving and the perception of a vendor's local market presence was fairly high in the present analysis; however, there was apparently an inverse relationship between these two variables at the individual respondent level. Printers may be interpreting problem-solving within a vendor relationship as an indication of the level of problems which exist. The more problem-solving activity within the relationship, the more problems that require solving. Consequently, printers may be indicating that the higher their perception of a vendor's local market presence, the lower the need for problem-solving within the relationship.

Appropriateness of Statistical Technique

Examination of the standard errors of the regression coefficients indicated that multicollinearity was not a problem. Multiple regression appeared to be the appropriate statistical tool to evaluate the data.

The customer described his relationship with a vendor exhibiting a high degree of local market presence as cooperative, information-sharing, and coordinated, with minimal problem-solving required.

Vendor Exhibits Low Local Market Presence

Forward stepwise multiple regression revealed that the attributes most important in predicting a vendor's relatively low degree of local market presence were: 1) trust and 2) problem-solving. The regression model accounted for 21.80 percent of the variance in the dependent variable at a statistically significant level ($p < .0004$). Due to the low adjusted R^2 value, this multiple regression model did not exhibit strong predictive powers. Table 4.7 presents the results of the statistical analysis. Trust was the only

Table 4.7 Forward Stepwise Multiple Regression Results

Dependent Variable: This vendor has a high degree of local market presence. Independent Variables: Relationship Attributes R = .511935 Multiple R² = .262077 Adjusted R² = .218022 F(4, 67) = 5.9489 Standard Error of Estimate: .98743 p < .00037 N = 72					
Variable	BETA	Standard Error of BETA	t(67)	p-level	Valid N
Intercept			1.9249	.0585	
Trust	.5181	.1646	3.1477	.0025	75
Interdependence	.2582	.1542	1.6741	.0988	73
Problem-solving	-.3941	.1902	-2.0723	.0421	75
Participatory in Planning and Goal Setting	.1458	.1370	1.0642	.2911	74

variable that was significant at the .01 p-level and it exhibited the strongest predictive power in the regression model.

Variable Exhibiting a Positive Relationship

Trust exhibited a positive relationship with the vendor's low level of local market presence, indicating that respondents did not characterize this relationship as trusting. Printers felt a lower level of trust with this vendor. They may feel that the vendor cannot be trusted to deliver product in a timely manner without persistent prodding. Alternatively, this vendor may do an unacceptable job of suggesting substitutes for out-of-stock items. Or, the vendor may not inform the printer of order deletions or substitutions in a timely and consistent manner.

Variable Exhibiting a Negative Relationship

Problem-solving was negatively related to a low degree of local market presence, indicating that this relationship was characterized by greater problem-solving. Printers may encounter more problems in their relationships with vendors exhibiting a low degree

of local market presence. While problem-solving is often characterized as a positive, healthy occurrence within a channel relationship, it appeared that printers may view it as a negative requirement of doing business with specific vendors. They would prefer any problem-solving to be unnecessary because they prefer problems not to arise.

These were printers' perceptions of the vendor-customer relationship. Vendors may have responded very differently as to their objectives within the channel and their desires for the vendor-customer relationship. If this is the situation, printers are not perceiving vendors' intentions and those intentions were ineffective.

Appropriateness of Statistical Technique

Examination of the standard errors of the regression coefficients indicated that multicollinearity was not a problem.

The data was evaluated and deemed appropriate for multiple regression; however, the present model failed to adequately explain the variance in the dependent variable.

The customer described his relationship with a vendor exhibiting a low degree of local market presence as lacking trust and requiring problem-solving.

Physical Distance versus Delivery Time (Q2B)

The following research question examined the contribution of distance and time to a customer's perception of local market presence.

Q2B: How do physical distance and delivery time contribute to the customer's perception of local market presence?

Respondents evaluated thirteen logistical service benefits on their importance to a local market presence strategy. The seven highest rankings were given to benefits related

to the availability of product in a timely and reliable manner as shown in Table 4.3. Short delivery time was ranked first in importance. Benefits related to physical distance were ranked tenth, eleventh, and twelfth in importance.

Delivery time was critical to the successful execution of a local market presence strategy within this market segment. In addition, it was a critical component contributing to a printer's successful operation. The competitive structure of the uncoated paper print industry results in tight margins and low stock inventory levels. These factors accentuate the importance of vendor delivery time as printers compete on price and delivery time of the printed product to the final customer.

Physical distance was rated as important to a local market presence strategy. However, it was a tertiary contributor behind availability of product in a timely and reliable manner and the accessibility and convenience of interacting with the vendor. If a vendor is unable to deliver product in a timely, reliable manner, his location is not particularly relevant.

While physical distance and delivery time both contributed to a customer's perception of local market presence, delivery time was the most critical factor in that perception.

RELATIVE IMPORTANCE OF LOCAL MARKET PRESENCE FACTORS

The next three research questions addressed the relative importance of local market presence factors in the vendor selection decision and the logistics service quality evaluation.

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Local Market Presence Factors (Q3A)

Q3A: What are the factors of local market presence?

Principal Components Factor Analysis

Principal components factor analysis was used to define the data structure of the thirty customer service elements. Principal components analysis assumes all variability of an element should be used in the analysis. It is often the preferred method for data reduction (Statistica, 1994). A varimax rotation simplified the columns of the factor matrix, attempting to clearly separate the factors. The statistical analysis results are presented in Table 4.8. Only those variables with loadings of 0.7 and higher are provided. Only loadings of 0.7 and higher are listed. Nine factors were extracted, explaining 74.57 percent of the variance within the data. These factors were extracted based upon the Kaiser criterion of retaining only those factors with eigenvalues greater than one. Table 4.9 presents the eigenvalues for these nine factors.

Additional Analysis

The data from thirty customer service elements was analyzed by two additional methods to verify the results. As ten of the thirty variables were measured via reversed scales and it appeared that some respondents failed to detect this; analysis of these variables must be interpreted cautiously. Therefore, the data structure of the importance ratings of thirteen customer service elements to a local market presence strategy was analyzed for comparison purposes.

Table 4.8 Principal Components Factor Analysis Results

Variable	Product Support (Factor 1)	Frequency and Accuracy in Product Shipments (Factor 2)	Timely Information and Response (Factor 3)	Convenience to Customer (Factor 4)	Vendor Delivery Consistency (Factor 5)
A short order assembly time					
The vendor's con. ability to meet prom. del. dates					.7759
Low delivery frequency		.7373			
The con. ability to expedite orders					.7980
Low order proc. accuracy		.7872			
Low picking accuracy		.9020			
High inventory availability					
A high fill rate					
The order arriving in poor condition				.8256	
High quality technical advice	.7623				
Decreased order prep. convenience and efficiency				.7384	
Proper carton identification	.7178				
A decrease in the customer's ability to consistently select the carrier					
Adherence to special shipping instructions					
Adherence to special packaging instructions					
More accurate advance information concerning order deletions and substitutions			.8768		
More accurate advance information concerning shipping delays			.8760		
Shorter communication channel and quicker action to resolve complaints			.7838		
Proportion of Total Variance Explained	.1237	.0896	.1030	.0724	.0641

Table 4.8 (cont'd).

Variable	Adherence to Special Instructions (Factor 6)	Inventory Availability (Factor 7)	Order Assembly Time (Factor 8)	Carrier Selection (Factor 9)
A short order assembly time			.7783	
The vendor's con. ability to meet prom. del. dates				
Low delivery frequency				
The con. ability to expedite orders				
Low order proc. accuracy				
Low picking accuracy				
High inventory availability		.8192		
A high fill rate		.8056		
The order arriving in poor condition				
High quality technical advice				
Decreased order preparation convenience and efficiency				
Proper carton identification				
A decrease in the customer's ability to consistently select the carrier				.7124
Adherence to special shipping instructions	.9207			
Adherence to special packaging instructions	.8736			
More accurate advance information concerning order deletions and substitutions				
More accurate advance information concerning shipping delays				
Shorter communication channel and quicker action to resolve complaints				
Proportion of Total Variance Explained	.0916	.0864	.0488	.0661

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Table 4.9 Eigenvalues

Factor	Eigenvalue	% Total Variance	Cumulative Eigenvalue	Cumulative %
1	7.8162	26.0541	7.8162	26.0541
2	3.9628	13.2092	11.7790	39.2633
3	2.2755	7.5849	14.0545	46.8482
4	1.5975	5.3251	15.6520	52.1733
5	1.5896	5.2986	17.2416	57.4719
6	1.4944	4.9812	18.7359	62.4531
7	1.4212	4.7373	20.1571	67.1904
8	1.1441	3.8136	21.3012	71.0040
9	1.0696	3.5655	22.3709	74.5695

The thirty customer service elements were factor analyzed based upon the extraction of four factors as indicated by a scree plot of the eigenvalues. This analysis explained approximately 52 percent of the variance within the data compared with 75 percent when nine factors were extracted. The four factors were more difficult to interpret individually as well as corporately. Therefore, it seemed most appropriate to extract nine factors.

The data was also analyzed by principal factors analysis which uses only the variability in an element that is common to the other elements in data analysis. This method is preferred when the objective of the analysis is to detect the structure of the data (Statistica, 1994). The statistical analysis extracted seven factors which explain 61.97 percent of the variability within the data. The results were fairly similar to those generated by principal components factor analysis.

Principal components factor analysis was used to investigate the data structure within the thirteen customer service elements. The statistical analysis results are

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presented in Table 4.10. Only those variables with loadings of 0.7 and higher are provided. Only loadings of 0.7 and higher are listed. A varimax rotation extracted four

Table 4.10 Principal Components Factor Analysis Results

Variable	Delivery Reliability (Factor 1)	Geographic Proximity (Factor 2)	Quick Response to Product Need (Factor 3)	Ordering Ease (Factor 4)
Short order cycle time			.8859	
Low lead time variability			.8567	
Reliable delivery	.8501			
Delivery capability	.8748			
Ordering convenience				.7010
Order processing personnel located in market area				.8293
Geographic location		.8676		
Located in close proximity		.9384		
Accessibility of seller		.8160		
Proportion of Total Variance Explained	.2166	.2023	.1476	.1225

factors, explaining 68.90 percent of the variance within the data. The Kaiser criterion was used to determine the appropriate number of factors.

A scree plot of eigenvalues indicated that the appropriate number of factors to extract was four or five, validating the Kaiser method.

Based upon this analysis, the factors of a local market presence strategy were: 1) delivery reliability, 2) geographic proximity, 3) quick response to product need, and 4) ordering ease. These factors corresponded to the local market presence benefit categories presented in the Q1A analysis. Those benefit categories were: 1) availability of product

in a timely and reliable manner, 2) accessibility and convenience of interacting with the vendor, and 3) distance. As previously discussed, these factors were important in executing a local market presence strategy.

The thirteen customer service elements were also analyzed by principal factors analysis. The statistical results extracted three factors which explain 51.88 percent of the variability within that data. The results were fairly similar to those generated by principal components factor analysis.

Due to the difficulties in interpreting the analysis of the thirty variables and the similarities between the results of the various analyses, the analysis of the thirteen customer service variables was selected for interpretation.

The factors of a local market presence were: 1) delivery reliability, 2) geographic proximity, 3) quick response to product need, and 4) ordering ease.

Importance of Local Market Presence Factors in Vendor Selection Process (Q3B)

The next research question investigated those local market presence factors which were most important in the vendor selection process.

Q3B: What is the relative importance of local market presence factors in the vendor selection process?

Principal Components Factor Analysis

Principal components factor analysis defined the data structure of the thirty vendor selection criteria. A varimax rotation simplified the data into eight factors which explained 74.67 percent of the variance within the data. These factors were extracted based upon the Kaiser criterion of retaining only those factors with eigenvalues greater than one. The statistical analysis results are presented in Table 4.11. Only those

Table 4.11 Principal Components Factor Analysis Results

Variable	Vendor Assistance (Factor 1)	Inventory Availability (Factor 2)	Delivery Time/ Reliability (Factor 3)	Response to Customer Requests (Factor 4)
Short delivery time			.8286	
Consistent ability to meet promised delivery dates			.7431	
High delivery frequency				
High inventory availability		.8708		
High fill rate		.8459		
High quality technical advice	.8260			
Order preparation convenience and efficiency				
Efficient assistance in handling carrier loss and damage claims	.7192			
Efficient procedures for returned merch.	.7229			
Ability to meet specific or unique customer service and delivery needs				.7144
Adherence to special shipping instructions				.8011
Adherence to special packaging instructions				.8667
Timely order status information				.7431
Accurate advance info. concerning order deletions and substitutions				
Accurate advance info. concerning order deletions and substitutions				
Accurate advance info. concerning shipping delays				
Proportion of Total Variance Exp.	.1449	.1161	.0837	.1266

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Table 4.11 (cont'd).

Variable	Accurate Information (Factor 5)	Delivery Frequency (Factor 6)	Convenience to Customer (Factor 7)	Carrier Selection (Factor 8)
Short delivery time				
Consistent ability to meet promised delivery dates				
High delivery frequency		.7498		
High inventory availability				
High fill rate				
High quality technical advice				
Order preparation convenience and efficiency			.7577	
Efficient assistance in handling carrier loss and damage claims				
Efficient procedures for returned merch.				
Ability to meet specific or unique customer service and delivery needs				
Adherence to special shipping instructions				
Adherence to special packaging instructions				
Timely order status information				
Accurate advance info. concerning order deletions and substitutions	.7226			
Accurate advance info. concerning shipping delays	.7104			
Proportion of Total Variance Exp.	.1230	.0494	.0580	.0450

variables with loadings of 0.7 and higher are provided. Only loadings of 0.7 and higher are listed.

A scree plot of eigenvalues indicated that extracting three factors was most appropriate. The resulting factor analysis explained approximately 53 percent of the variance within the data versus almost 75 percent in the extraction based upon the Kaiser method. The factors were easier to interpret; however, Factor 1 (Problem-solving Expertise/Response to Customer Requests) measured two similar categories that would more appropriately be split. Therefore, the analysis was performed based upon an extraction of four factors. The statistical analysis results are presented in Table 4.12. Only those variables with loadings of 0.7 and higher are provided. Only loadings of 0.7 and higher are listed.

Based upon this analysis, the factors of a local market presence which are most relevant in vendor selection are: 1) inventory availability/picking accuracy (16.79% of variance explained); 2) problem-solving expertise (16.46%); 3) response to customer requests (14.98%); and 4) delivery time/reliability (9.96%). These factors are similar to the first two benefit categories presented in the Q1A analysis: Availability of product in a timely and reliable manner and accessibility and convenience of interacting with the vendor.

Multiple Regression

The factor scores from the varimax rotation presented in Table 4.12 were regressed against the printer's preference to patronize a vendor with a local market presence. A forward stepwise multiple regression model was used. The independent

variables were the four factor scores derived from the thirty vendor selection criteria. The dependent variable was the respondent's agreement with the statement, "I prefer to buy uncoated paper products from a vendor with a local market presence." Responses were gathered on a 5-point Likert scale anchored by "Strongly Disagree" and "Strongly Agree."

Table 4.12 Principal Components Factor Analysis Results

Variable	Problem-solving Expertise (Factor 1)	Inventory Availability/ Picking Accuracy (Factor 2)	Delivery Time/ Reliability (Factor 3)	Response to Customer Requests (Factor 4)
Short delivery time			.8480	
Consistent ability to meet promised delivery dates			.7206	
High picking accuracy		.8630		
High inventory availability		.7451		
High fill rate		.7670		
High quality technical advice	.8072			
Ability to inspect or diagnose problem areas	.7802			
Efficient assistance in handling carrier loss and damage claims	.7489			
Efficient procedures for returned merchandise	.7123			
Adherence to special shipping instructions				.7766
Adherence to special packaging instructions				.7820
Timely order status information				.7493
Proportion of Variance Exp.	.1646	.1679	.0996	.1498

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Table 4.13 Forward Stepwise Multiple Regression Results

Dependent Variable: I prefer to buy uncoated paper products from a vendor with a local market presence. Independent Variables: Factor scores derived from vendor selection criteria R = .349455 Multiple R² = .122119 Adjusted R² = .109016 F(1, 67) = 9.3201 Standard Error of Estimate: .8905 p < .00325 N = 69					
Variable	BETA	Standard Error of BETA	t(65)	p-level	Valid N
Intercept			40.5611	0.0000	
Delivery Time/Reliability (Factor 3)	.3495	.1145	3.0529	.0032	69

The regression model accounted for 10.90 percent of the variance in the dependent variable at a statistically significant level ($p < .0033$). Table 4.13 presents the results of the statistical analysis.

Variable Exhibiting a Positive Relationship

Delivery time/reliability was the only factor included in the model and it was statistically significant ($p < .0032$). This factor was positively related to the printer's preference to purchase from a vendor with a local market presence. As previously discussed, delivery reliability was critical to the printer's successful operation. Consequently, its importance in vendor selection is indicative of the printer's preference to patronize a local market presence vendor.

Appropriateness of Statistical Technique

Evaluation of the data indicated that it is appropriate for multiple regression. However, it appeared that a positive linear relationship between one or more unknown variables and the dependent variable existed which is unexplained by the model. This was not surprising given the low adjusted R² value (.11) of the model.

The local market presence factor most important in the vendor selection process was delivery time/reliability which encompasses a short delivery time and the ability to consistently meet promised delivery dates.

Importance of Local Market Presence Factors in Logistics Service Quality (Q3C)

The next research question examined those local market presence factors that were most important in the customer's assessment of logistics service quality.

Q3C: What is the relative importance of local market presence factors in determining logistics service quality?

Principal Components Factor Analysis

Principal components factor analysis defined the data structure of the thirty logistics service quality attributes. A varimax rotation simplified the data into five factors which explain 73.13 percent of the variance within the data. The statistical analysis results are presented in Table 4.14. Only those variables with loadings of 0.7 and higher are provided. Only loadings of 0.7 and higher are listed.

Additional Analysis

The data was analyzed via two additional methods to verify the results of the analysis.

A scree plot of eigenvalues indicated that extracting two or possibly three factors was most appropriate. The resulting factor analysis explained approximately 60 percent of the variance within the data versus over 73 percent in the extraction based upon the Kaiser method. The factors were relatively easy to interpret, representing aspects of: 1) inventory availability and accuracy and 2) technical expertise and customer responsiveness. Again, the Kaiser extraction method provided a richer description of

Table 4.14 Principal Components Factor Analysis Results

Variable	Short Communica- tion Channel (Factor 1)	Problem- solving Expertise (Factor 2)	Picking Accuracy (Factor 3)	Delivery Reliability/ Time (Factor 4)	Response to Customer Requests (Factor 5)
Short delivery time				.7882	
High picking accuracy			.7403		
Timely response to assistance request		.7484			
Ability to inspect or diagnose problem areas		.7890			
Efficient assistance in handling carrier loss and damage claims		.8393			
Timely order status information					.7410
Short communication channel and quick action to resolve complaints	.7373				
Proportion of Total Variance Explained	.1422	.1853	.1460	.1281	.1297

factors influencing logistics service quality assessment while explaining a greater proportion of the total variance.

The data was also analyzed using principal factors analysis, resulting in the extraction of three factors. The results bore little similarity to the principal components factor analysis results. In addition, the factors were not as clearly delineated between the three categories in the principal factors analysis. Therefore, due to greater specificity

within the factors and the proportion of explained variance, 73.13 percent versus 63.55 percent, the principal components factor analysis was preferred.

Multiple Regression

Forward stepwise multiple regression evaluated the relative importance of the logistics service quality factors in predicting the criticalness of a local market presence to the printer's success. The independent variables were the factor scores derived from the thirty logistics service quality attributes used by a respondent when evaluating a vendor's logistics service quality. The dependent variable was the respondent's assessment of the criticalness of a vendor's local market presence to his own firm's success. This assessment was made via a 5-point Likert scale anchored by "Strongly Disagree" and "Strongly Agree."

Table 4.15 presents the results of the statistical analysis. The regression model accounted for 18.96 percent of the variance in the dependent variable at a statistically significant level ($p < .0010$).

Table 4.15 Forward Stepwise Multiple Regression Results

Dependent Variable: A vendor's local market presence is critical to the success of my firm. Independent Variables: Factor scores derived from logistics service quality attributes $R = .466403$ $\text{Multiple } R^2 = .217532$ $\text{Adjusted } R^2 = .189587$ $F(2, 56) = 7.7842$ $\text{Standard Error of Estimate: } 1.0783$ $p < .00104$ $N = 59$					
Variable	BETA	Standard Error of BETA	t(56)	p-level	Valid N
Intercept			25.7292	.0000	
Delivery Reliability/Time (Factor 4)	.4021	.1182	3.4018	.0012	60
Picking Accuracy (Factor 3)	.2419	.1182	2.0466	.0454	60

Variable Exhibiting a Positive Relationship

Two factors were included in the model. Delivery reliability/time (Factor 4) and picking accuracy (Factor 3) were statistically significant ($p < .0012$ and $p < .0454$, respectively). Delivery reliability/time was positively related to the criticalness of a local market presence to a printer's business operations. The importance of delivery reliability/time given the short service delivery window characterizing uncoated paper printing has been previously discussed. Picking accuracy also exhibited a positive relationship to the criticalness of a local market presence to printers. If the appropriate paper or an acceptable substitute is not received by a printer, there is generally insufficient time to correct the situation without violating the promised delivery date of the printed product. Consequently, delivery reliability/time and picking accuracy were crucial logistics service quality factors in predicting the criticalness of local market presence to a printer's business operations.

Appropriateness of Statistical Technique

Examination of the standard errors of the regression coefficients indicated that multicollinearity was not a problem.

The data seemed to be appropriate for multiple regression; however, it appeared that a positive linear relationship between one or more unknown variables and the dependent variable existed which is unexplained by the model. This lack of fit was evident in the adjusted R^2 value of 0.19.

The local market presence factors most important in determining logistics service quality were delivery reliability/time and picking accuracy.

COMPARISON OF MARKET SEGMENTS

This research question compared two market segments based upon the percentage of total purchases accounted for by uncoated paper.

Q4: What impact does the percentage of total purchases accounted for by this product class have upon the relative importance of the local market presence benefits?

Customers were divided into two groups based upon the percentage of total purchases accounted for by uncoated paper. Group One included those respondents indicating that uncoated paper accounted for one to fifty percent of their cost of goods sold; Group Two included those indicating 51 to 100 percent. T-tests of the means of each pair of local market presence benefits indicated that the two groups did not respond differently in evaluating the importance of each benefit to a local market presence strategy except when evaluating a short delivery time. This benefit was rated 4.75 in importance by Group One and 4.48 by Group Two. The associated p-level was 0.049156. A short delivery time was more important to respondents indicating a lower percentage of uncoated paper within cost of goods sold. The statistical results of the t-test is presented in Table 4.16.

Forward stepwise multiple discriminant analysis was used to test this research question. Five variables were included in the statistical analysis. Table 4.17 presents the results of the statistical analysis. Wilks' Lambda was 0.85, indicating that there was essentially no discrimination between the two groups in their importance ratings of local

Table 4.16 T-test Results

Variable	Group 1 Mean (Scale = 5)	Group 2 Mean (Scale = 5)	t-value	p-level	Group 1 Valid N	Group 2 Valid N
Short delivery time	4.7500	4.4773	2.0020	.0492	28	44
Short order cycle time	4.6071	4.4091	1.1534	.2527	28	44
Ability to receive orders electronically	3.0714	2.7500	1.0067	.3175	28	44
Order processing personnel located in market area	3.6667	3.9318	-1.0023	.3197	27	44
Accessibility of seller	4.0000	3.7500	.9540	.3434	28	44
Low lead time variability	4.1852	4.1429	.2044	.8387	27	42
Reliable delivery	4.5357	4.5455	-.0534	.9576	28	44
Delivery capability	4.2857	4.2727	.0588	.9533	28	44
Frequent delivery	4.2500	4.1136	.6325	.5292	28	44
Ability to expedite orders	4.4286	4.2500	.8178	.4162	28	44
Ordering convenience	3.8571	4.0682	-.8843	.3796	28	44
Geographic location	3.6429	3.6818	-.1335	.8942	28	44
Located in close proximity	3.8889	3.6591	.8924	.3753	27	44

Table 4.17 Forward Stepwise Multiple Discriminant Results

Grouping: Uncoated paper as a percentage of total purchases (2 groups) Number of variables in model: 5 N= 68 Wilks' Lambda: .85473 Approx. F(5, 62) = 2.1075 p < .0763						
Variable	Wilks' Lambda	Partial Lambda	F-remove (1, 62)	p-level	Tolerance	1 - Tolerance
Short delivery time	.8951	.9549	2.9311	.0919	.8136	.1864
Ordering convenience	.9164	.9327	4.4766	.0384	.7713	.2287
Ability to expedite orders	.8750	.9768	1.4718	.2297	.6879	.3121
Located in close proximity	.8836	.9673	2.0946	.1529	.2773	.7227
Geographic location	.8702	.9822	1.1241	.2931	.3030	.6970

market presence benefits. Consequently, the vendor can design systems for product delivery and customer communications without regard for customer purchase volume.

MANAGEMENT GUIDELINES

These research questions addressed issues concerning the attractiveness of a local market presence to customers and vendors and the feasibility of securing the benefits of a local market presence without establishing a physical facility in close proximity to customers.

Attractiveness of Local Market Presence (Q5A)

Q5A: Is local market presence attractive to a significant group of customers?

Table 4.18 Frequency Distribution

<i>A vendor's local market presence is critical to the success of my firm.</i>				
Value (Scale = 5)	Count	Cumulative Count	Percent	Cumulative Percent
1	6	6	7.7922	7.7922
2	6	12	7.7922	15.5844
3	19	31	24.6753	40.2597
4	24	55	31.1688	71.4286
5	20	75	25.9740	97.4026
Missing	2	77	2.5974	100.0000

Respondents indicated their agreement with the following statement: "A vendor's local market presence is critical to the success of my firm." Table 4.18 presents response frequency. Over 25 percent of respondents indicated strong agreement with this statement. Over 30 percent indicated agreement. Thus, 57.14 percent agreed at some level with this statement. Only 15.58 percent expressed any level of disagreement. Consequently, a local market presence was attractive to over half of the respondents. Vendors should segment their customers according to the attractiveness of a local market presence. If a substantial segment desiring a local market presence emerges, vendors should configure their distribution systems to enhance customer perceptions of a local market presence, moving towards a more integrated channel relationship.

Customer Trade-offs (Q5B)

The next research question examined the trade-offs made by customers when selecting a service package that most closely matches their needs and budget.

Q5B: Are customers willing to pay a premium to receive the benefits of local market presence?

Trade-off analysis examined the relationship between price and facility proximity. Price was evaluated on three levels: 1) 1% above market, 2) market, and 3) 1% below market. Facility proximity was also evaluated on three service levels: 1) 1/2 hour travel time, 2) 3 hours travel time, and 3) 6 hours travel time. Generally, respondents had difficulty understanding the trade-off process. As a result, the sample size was smaller (47 versus 77 responses) for this section than for other sections of the questionnaire.

Examination of the data and the trade-off model indicated that a quadratic estimation of the price and facility proximity variables was most appropriate. This combination resulted in a fairly conservative model of the trade-off process. The overall sample part-worth estimates were 8.29 for price and 46.26 for facility proximity, revealing the utility associated with each attribute. The analysis revealed that price was rated at 45.03 percent importance. Facility proximity was rated at 54.97 percent importance, indicating that it had the greatest range of part-worths and, therefore, made the greatest contribution to the overall utility of the customer's preference for the service.

This result was inconsistent with the findings presented in Table 4.19 which ranked price as third in importance in vendor loyalty and local market presence as fifth. Several factors may have accounted for this conflict. First, respondents were asked to state their preferences for different service level combinations, not indicate the importance of these various combinations to a third factor such as vendor loyalty. Second, respondents were asked to make trade-offs in four different tables. Facility proximity service levels were traded off with service levels of price, fill rate, delivery

Table 4.19 Importance of Customer Service Elements to Vendor Loyalty

Customer Service Element	Mean (Scale = 5)	p-level
Delivery Consistency	4.5132	
		.0864
Fill Rate	4.3816	
		.4769
Price	4.3026	
		.1746
Order Cycle Time	4.1200	
		.0166
Local Market Presence	3.7632	

frequency, or order cycle time. The repetition of facility proximity may have resulted in respondents focusing on this variable. Third, the discrepancy may be due in part to terminology, facility proximity in the trade-off tables and local market presence in the vendor loyalty importance ratings. Respondents did not equate these two terms. Local market presence appeared to be a broader, more descriptive term than facility proximity.

The results were somewhat inconclusive concerning the willingness to pay a premium for a local market presence. There is a greater range of utility associated with facility proximity (travel time) than with price. Consequently, facility proximity is more important in determining the customer's overall preference for the logistics service package. There is a lower range of utility associated with price. This suggests that customers would not be willing to pay a premium for the facility proximity benefits of a local market presence. Any abnormal price increases would probably be met with resistance. However, if physical facilities are undergoing consolidation, resultant cost savings may be used to offset additional costs of any required improvements in a product delivery system or customer communications system.

The Impact of Local Market Presence on Market Share (Q5C)

The next question addressed a potential increase in the vendor's market share due to the implementation of a local market presence strategy.

Q5C: Will local market presence increase market share?

Respondents identified their preference in purchasing uncoated paper products from a vendor with a local market presence. Table 4.20 presents the statistical results. Over fifty-five percent (58.44) indicated a strong preference. Over eighty percent (83.12)

Table 4.20 Frequency Distribution

<i>I prefer to buy uncoated paper products from a vendor with a local market presence.</i>				
Value (Scale = 5)	Count	Cumulative Count	Percent	Cumulative Percent
1	2	2	2.5974	2.5974
2	1	3	1.2987	3.8961
3	10	13	12.9870	16.8831
4	19	32	24.6753	41.5584
5	45	77	58.4416	100.0000
Missing	0	77	0.0000	100.0000

indicated at least some preference to purchase from such a vendor. Less than five percent (3.90) expressed at least some negative preference.

Respondents also identified the importance of five customer service elements in their loyalty to a vendor of uncoated paper products. The results were presented in Table 4.19. All five elements were important to vendor loyalty. However, a local market presence was less important than the other elements at a statistically significant level (maximum $p < .0166$). Therefore, a local market presence had a positive impact on a vendor's short-term market share. Its influence on long-term market share or vendor loyalty was less than other customer service elements measured.

There was a clear preference to purchase uncoated paper products from a vendor exhibiting a local market presence. However, a local market presence did not drive the repeat purchase decision. The vendor must perform adequately in other areas, such as delivery consistency, fill rate, price, and order cycle time. With the exception of delivery consistency, the other areas were not significant components of a local market presence strategy based upon this research.

Necessity of a Physical Facility Commitment (Q5D)

The final research question examined the feasibility of obtaining the benefits of a local market presence without making a physical facility commitment.

Q5D: Can the benefits of local market presence be achieved short of locating a facility in close proximity to customers?

As indicated in Table 4.3, respondents stated that "Located in Close Proximity" and "Geographic Location" were important to neutral to a local market presence strategy. They were ranked eleventh and twelfth, respectively, out of thirteen logistical service benefits. Therefore, it appeared that physical location was not critical to a local market presence strategy.

Logistical service benefits can be configured to simulate a local market presence, reducing the need for a physical location close to the customer. There was a hierarchy of benefits which were important to customers and contributed to a local market presence. The most critical benefits focused on the availability of product in a timely and reliable manner. These benefits must be realized before the customer perceived a successful local market presence strategy and began to practice vendor loyalty.

The second tier of logistical service benefits focused on the accessibility and convenience of interacting with the vendor. This tier became more critical once product was consistently available in a timely, reliable manner. This benefit tier enhanced customer perceptions of a local market presence by focusing on developing the vendor-customer relationship.

The final tier of logistical service benefits encompassed distance. These benefits may become more important after the benefits of the first two tiers have been enjoyed.

This was a complementary tier; it was incapable of bridging any faults in the logistical service benefits provided by the first two tiers. While important in providing tangible security cues to the customer, distance was not the impetus driving a local market presence strategy and/or vendor loyalty.

The research clearly supported the concept of creating a local market presence without facility proximity. It will require greater attention to product delivery systems to facilitate quick response delivery. In addition, customer communication systems should be designed to provide the customer with access to the vendor, facilitating the ordering process and providing information concerning product availability, substitutions, and order deletions.

CONCLUSION

Chapter Four presented the research results, discussing response rate, nonresponse bias, and the statistical analysis and interpretation of each research question.

The research identified key elements of a local market presence strategy. These were divided into three benefit categories: 1) availability of product in a timely and reliable manner; 2) vendor accessibility and interaction convenience; and 3) geographic location and proximity. The cost and competitive structures of the uncoated paper printing industry were determinant in defining these benefit categories. By providing these benefits, uncoated paper vendors have the opportunity to meet the critical needs of printers. Examples of these needs are: 1) prompt delivery; 2) inventory availability; 3) information regarding order deletions and substitutions; 4) picking accuracy; and 5)

procedures for returned merchandise. These needs arise from the inability to forecast demand, low inventory levels, high fixed costs, and competitive pricing. The geographic location and proximity of the vendor provide tangible clues to assure the printer of the vendor's ability to meet these needs.

The research examined the vendor-customer relationship from the customer's perspective. Relationships with vendors exhibiting a high degree of local market presence were viewed quite differently from those in which the vendor exhibited a low degree of local market presence. Relationships with the first type of vendor were described as cooperative, information-sharing, and coordinated, requiring minimal problem-solving. Conversely, relationships with vendors exhibiting a low degree of local market presence were described as lacking trust and requiring problem-solving. Generally, it appeared that printers viewed themselves as members of a traditional channel structure. Characteristics of more integrative channel relationships (e.g., information sharing, focusing on a common goal, interdependence, and participatory planning and goal setting) were not readily perceived by printers within their channel relationships. Cultivation of these characteristics should enhance the perception of a local market presence, encouraging vendor loyalty and enhancing vendor market share.

Both physical distance and delivery time contributed to a customer's perception of a local market presence. However, the research revealed that delivery time was the most critical factor in that perception.

The research identified four factors of a local market presence. They were: 1) delivery reliability; 2) geographic proximity; 3) quick response to product need; and 4)

ordering ease. These factors are related to the benefit categories identified and are driven by the competitive environment.

Four vendor selection factors were identified by the research . However, only the delivery reliability/time factor was significant in predicting the customer's preference to purchase uncoated paper products from a vendor with a local market presence.

Five logistics service quality factors were identified. Delivery reliability/time and picking accuracy were significant in predicting the customer's assessment of how critical a vendor's local market presence was to the success of his firm.

The research divided respondents into two groups based upon uncoated paper purchases as a percentage of total purchases. It was determined that there was essentially no difference between the two groups in their importance ratings of local market presence benefits. Segmentation based upon the percentage of uncoated paper purchases did not result in a meaningful differentiation to guide a local market presence strategy.

The research determined that a local market presence was critical to a majority of respondents. However, the results indicated that respondents were not willing to pay a premium for the enhanced services provided by this presence.

Over eighty percent of respondents indicated at least some preference to purchase uncoated paper from a vendor with a local market presence. This suggested that a local market presence would have a positive effect on a vendor's market share. However, delivery consistency, fill rate, price, and order cycle time were ranked more important than a local market presence in determining vendor loyalty. A local presence may encourage a printer to purchase uncoated paper to fulfill a current need, but the vendor

must perform satisfactorily on a number of vendor selection variables to convert the printer to a loyal customer.

Finally, the research suggested that a local market presence could be enhanced without committing additional resources to physical facilities. This will require greater attention to product delivery systems to facilitate and ensure quick response delivery. Customer communication systems should be designed to provide the customer with vendor accessibility. This access should focus on facilitating the ordering process and providing accurate information concerning product availability, substitutions, and order deletions.

Chapter Five presents the managerial implications of the research.

CHAPTER V: CONCLUSIONS AND IMPLICATIONS

INTRODUCTION

Chapter Five presents the conclusions and implications of the research. The first section discusses the theoretical contributions of the research. The second section examines managerial implications and the impact of the research on business practice. The third section outlines limitations relevant to the interpretation of the research findings. Lastly, the fourth section presents directions for future research.

THEORETICAL CONTRIBUTIONS

This section positions the present research within the spatial economics/location analysis, customer service, and service quality literature streams. First, the research is positioned relative to the perspective of past research. Second, suggestions for changes in the definition of local market presence are presented. Finally, the historical positioning and definition changes are synthesized to clarify the contributions of the research.

HISTORICAL POSITIONING OF RESEARCH

This research contributed to marketing theory by examining how location impacts a firm's demand through local market presence. Historically, location decisions have been investigated from a spatial economic theoretical perspective. Analysis has been based upon concrete measures of time, space or distance, and cost (e.g., von Thunen, 1826; Schaffle, 1873; Weber, 1909; Losch, 1940; and Isard, 1956). Demand was

generally assumed to be static with respect to customer location; altering the location of inventories or a customer contact point was inconsequential to demand levels if costs were unaffected. However, many marketers argued that a local market presence can actually stimulate the firm's demand or market share.

In addition to concrete factors of distance, time, and cost, perceptual factors are critical in the location decision. Specifically, the research identified three benefit categories which were integral in the customer's perception of a local market presence. These categories are customer perceptions of the vendor's: 1) product availability; 2) accessibility and interaction convenience; and 3) proximity. These categories are specific to the uncoated paper printing industry.

Ideally, the vendor considers concrete and perceptual variables in his location decision. The variables are identified, analyzed, and prioritized to construct a location strategy. Figure 5.1 presents the concrete and perceptual variables forming the location strategy. This location strategy should enhance and support the vendor's overall logistics strategy. The vendor's overall logistics strategy will be discussed shortly.

The vendor's location strategy may assume a variety of forms, for example distribution centers (DCs) in local markets, regional DCs, or a centralized DC from which shipments are expedited. The desired location strategy plus additional customer service strategies form the logistics service level. This service level is experienced by the customer and internalized as the perceived logistics service level. The customer compares this perception to the expected logistics service level when he assesses the logistics service quality. The customer utilizes the logistics service quality assessment,

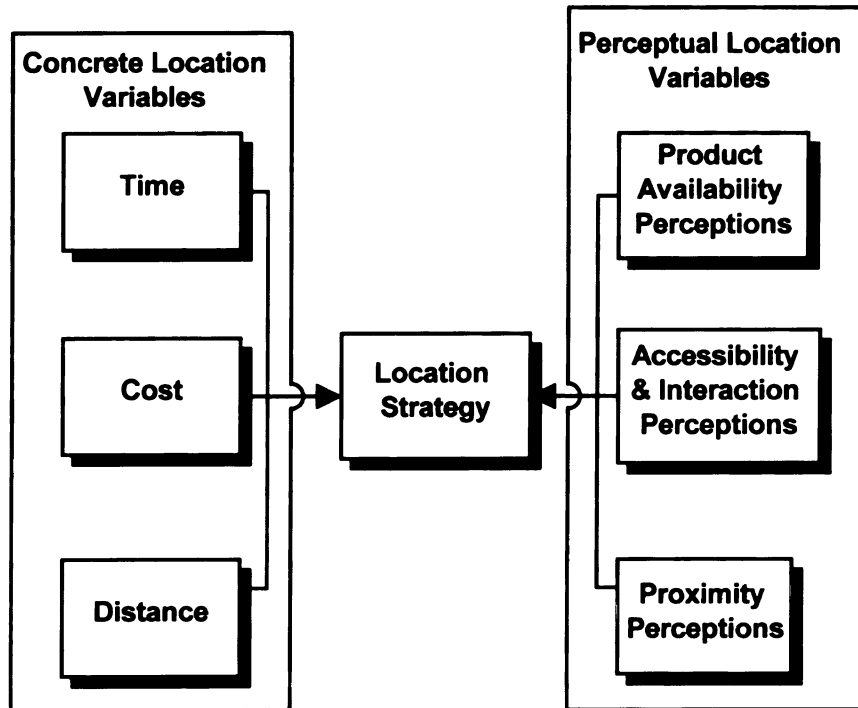


Figure 5.1 Contributions of the Research: Location Factors

price, and other vendor selection variables in the vendor selection process. The customer's vendor selection directly impacts the vendor's market share. These relationships are presented in Figure 5.2. This figure incorporates the research into the customer success stage of the research model developed in Chapter I.

The overall logistics strategy is comprised of the logistics service concept, the logistics service delivery system, and the logistics service level. The logistics service delivery system is configured through distribution system tradeoffs (Stock and Lambert, 1987). At the customer success stage of the research model, these tradeoffs seek to maximize the contribution margin of the logistics service.

The contribution margin of the logistics service is equal to the total utility received by the customer from the logistics service level less the cost of providing this

level of service. In other words, the total utility received by the customer is equal to the monetary value he places on receiving this level of service. The total utility generated from the logistics service level is equal to the utility received from the various distribution components, specifically, transportation, warehousing, order processing and information, lot quantity, inventory availability, and customer service level. The customer values various distribution tradeoff configurations differently, reflecting the utility he receives from each. Various industries and market segments within those industries value various configurations differently (LaLonde and Zinszer, 1976; Rhea and Schrock, 1987). The vendor may enhance his distribution effectiveness and customer loyalty by configuring his distribution systems to reflect these differing logistic service utilities (Gilmour, 1982; Bowersox and Closs, 1992; and Bowersox and Frayer, 1994).

The contribution margin of the logistics service received by a specific market segment may be maximized by selecting the distribution system configuration which provides these customers with the highest level of utility relative to the associated cost of providing the service.

Ideally, the logistics service concept, the logistics service delivery system, and the logistics service level are synchronized into a coherent logistics strategy which effectively and efficiently presents the customer with a logistics service package which meets his needs and accomplishes the vendor's objectives. The vendor may utilize primary, secondary, or even tertiary logistics strategies within a particular market segment.

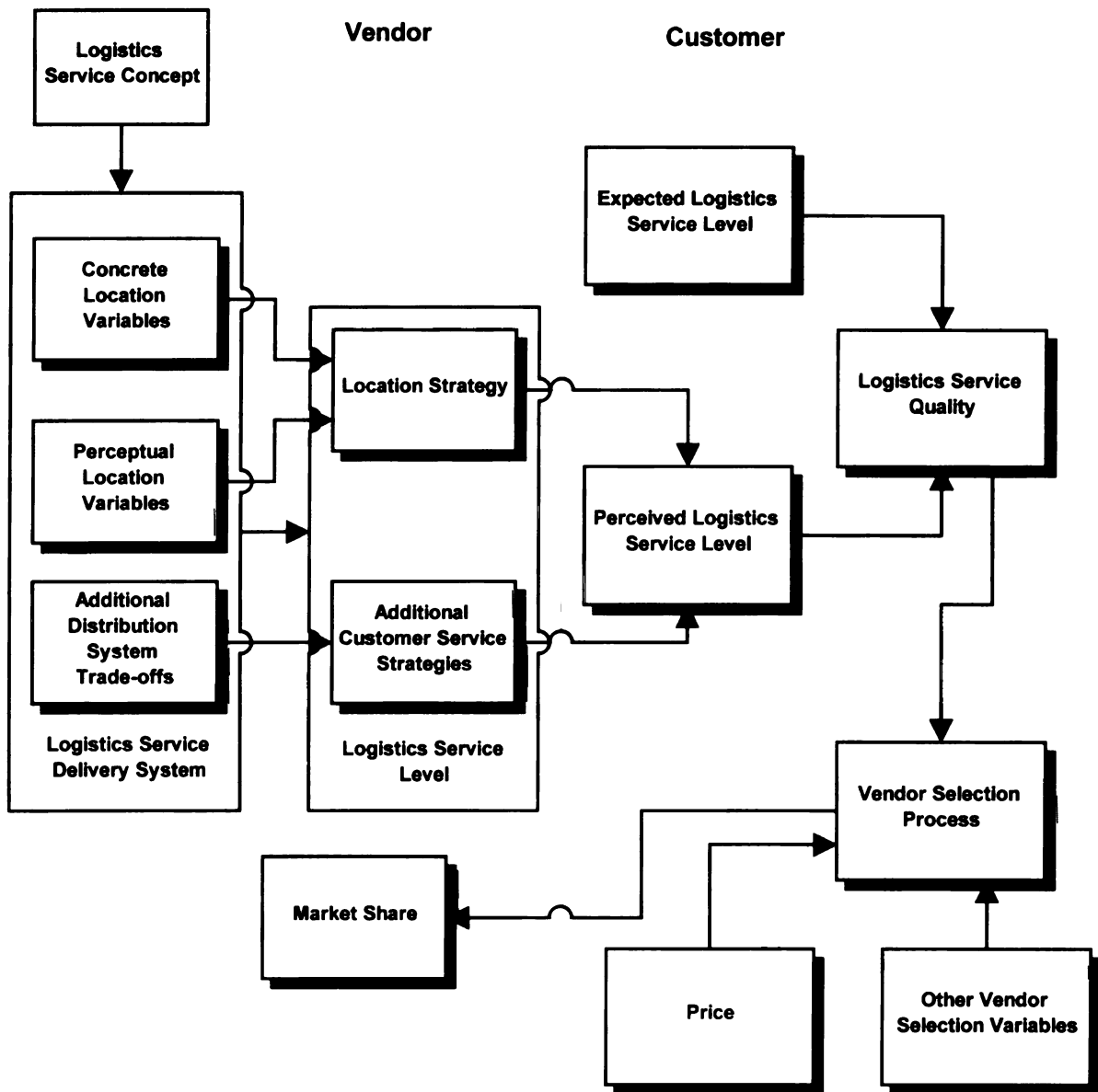


Figure 5.2 Contributions of Research: Logistics Service Quality Model

A logistics strategy may support any one of the three stages which form the hierarchy of customer service standards discussed in Chapter I. These stages are: 1) customer service which compares actual performance with the vendor's internal customer service standards; 2) customer satisfaction which is guided by customer established service standards; and 3) customer success which aims at delighting select customers with value-added logistics. These three stages reflect differing levels of customer responsiveness and commitment between the vendor and the customer. The objectives of the vendor may be to achieve customer service, customer satisfaction, or customer success. In and of themselves, none of these three strategy levels are inherently right, wrong, or more desirable. Each channel and customer relationship should be assessed to determine the most appropriate logistics strategy given the projected value of the customer over the lifetime of the relationship.

This section positioned the research in the spatial economics/location analysis, customer service, and service quality literature streams. The next section discusses suggested definition changes.

SUGGESTIONS FOR DEFINITION CHANGES

This section discusses the need to broaden the definition of a local market presence from a physical proximity concept to one of relational proximity. It also discusses the role of local market presence in defining desired customer service levels within the uncoated paper segment.

This research revealed that local market presence is a more complex concept than facility proximity or "the staging of inventory and/or the maintenance of a customer

contact point within a local market" as posited in Chapter One. It encompassed not only physical location, but also perceptual closeness. It appeared to incorporate various aspects of marketing goodwill as much as physical proximity benefits of product availability. It seemed to encompass how business relationships are cultivated and nurtured, not only where to locate distribution centers. Local market presence reflected the evolution of the channel from a traditional structure to a more integrative, cooperative partnership which seeks to enhance the business success of all channel members jointly. Consequently, this research contributed to location theory by revealing how customer perceptions of the vendor's logistics service and the vendor-customer relationship enhanced or nullified the location decision.

Local market presence is best described as one potential logistics strategy as it encompasses a broader range of logistics variables than implied by location alone. Its configuration influences the transportation, warehousing, order processing and information, lot quantity, inventory availability, or customer service level variables within the logistics service delivery system. Customer service variables, as well as the other logistics variables listed, are the building blocks utilized when constructing a logistics strategy.

Local market presence is more accurately defined as a logistics strategy which integrates the vendor-customer relationship and provides value-added benefits to the distribution channel in a cost-effective manner. It is the perception of physical proximity and the development of relational proximity with the vendor. Local market presence encourages the channel to evolve into a more integrative, cooperative partnership. The

customer receives benefits from a local market presence which may be categorized as: 1) availability of product in a timely and reliable manner; 2) accessibility and convenience of interacting with the vendor; and 3) distance. Location is important only as it supports the processes and outputs of the logistics service delivery system. These processes and outputs are designed to “establish strategic and operational synergies through an extended relationship” (Bowersox and Frayer, 1994: 2.14). The specific benefits received from a local market presence will vary somewhat between industries and between market segments depending upon the nuances of the relevant group (e.g., competitive structure, pressure on delivery time requirements, and cost structure). However, the benefit categories should remain quite stable across industries and market segments. In summary, local market presence should be defined as a configuration of logistics service attributes designed to promote a relational/perceptual proximity which focuses on those customer service elements critical to the customer's success. Its primary facets, in descending order of importance, are product availability in a timely and reliable manner, the accessibility and convenience of interacting with the vendor, and distance.

THEORETICAL SYNTHESIS

As discussed in Chapter One, the definition of customer service has evolved in recent years from a listing of performed functions and/or performance standards to a process that integrates the vendor-customer relationship and provides value-added benefits to the distribution channel in a cost-effective manner (LaLonde, Cooper, and Noordewier, 1988). This expanded definition elevates customer service to a strategic level. In essence, it applies the marketing concept to logistics by adopting a customer

orientation which emphasizes the meeting of the customer's logistics needs in a manner which is profitable or beneficial to the distribution channel. Customer service is no longer defined as a list of performed functions and/or performance standards; it is a strategy which is focused on integrating the vendor-customer relationship and providing value-added benefits to the distribution channel in a cost-effective manner. This integration of the relationship and provision of benefits is accomplished by effectively configuring the various distribution costs (e.g., transportation, warehousing, order processing and information, inventory carrying, and lot quantity) and understanding customer perceptions of the logistics process and output or service level. This customer service strategy aptly describes a general logistics strategy supporting the customer success stage. It is more accurately described as a customer success strategy. A customer success strategy may take on a variety of forms, one of which is a local market presence.

Local market presence is a customer success strategy. It integrates the vendor-customer relationship, promoting relational proximity through a more cooperative partnership. The customer's critical success factors are fulfilled through a local market presence, providing the customer with benefits regarding timely, reliable product availability, vendor access and interaction convenience, and distance. The resulting integrative vendor-customer relationship will "establish strategic and operational synergies" which will promote loyalty to the vendor and enhance his market share.

A customer service strategy may be configured as a local market presence strategy. This strategy may be operationalized by establishing a network of physical

facilities in close proximity to customers. This logistics service delivery system focuses on distance as an integral factor in delivering product in a timely, reliable manner and facilitating vendor access and interaction convenience.

Alternatively, a local market presence strategy may be configured to provide product availability in a timely and reliable manner and vendor accessibility and interaction convenience from a distant location. A segment of respondents indicated that measures of distance were not critical to a local market presence strategy. Over 40 percent of respondents stated that geographic location was neutral to not very important to a local market presence strategy. Over 35 percent stated that close proximity was neutral to not very important. Finally, over 37 percent stated that order processing personnel located in the market area was neutral to not very important to a local market presence strategy. This indicates the existence of a significant market segment which believes a local market presence can be effectively implemented from a distant location.

Implementing a local market presence strategy from a distant location is one possible configuration of a customer success strategy. It focuses on enhancing the success of the various channel members by providing product in a timely and reliable manner and facilitating vendor access and interaction convenience. Effective execution of this strategy should strengthen vendor loyalty and enhance the market share of the vendor.

This research laid the theoretical foundation describing the intangible ramifications of location. It reaffirmed the importance of cultivating and nurturing business relationships in conjunction with appropriate distribution facility location and

rationalization. This research suggested that strategic leveraging of a configuration of distribution points reaches beyond short order cycles and inventory availability; it requires the development of relational and information flows designed to assist customers in achieving success.

MANAGERIAL IMPLICATIONS

This section discusses the managerial implications of the research. These implications are categorized as: 1) general implications and 2) implications for the paper industry.

GENERAL IMPLICATIONS

This research had several important implications for firms attempting to strengthen their local market presence strategy and for firms consolidating their distribution facilities.

Physical Proximity Requirements

Customers believed that a local market presence strategy could be achieved short of physical proximity based upon the analysis of research question Q5D. This is welcome information to firms desiring or in the process of consolidating distribution facilities. However, the process is complicated by the fact that local market presence is not simply a distribution facility in close proximity to a customer. Siting a distribution center close to a customer does not necessarily equate with a local market presence, neither does closing a site proximate to a customer equate with the absence of a local

market presence. Local market presence is a broader, more complex concept, as previously discussed.

Since local market presence is not synonymous with physical proximity, a vendor desiring to meet customer needs through a local market presence is faced with more complex issues than location analysis.

First, the vendor must fully understand the critical success factors of the customer's business. The logistics service delivery system should be designed to provide product availability in a timely and reliable manner. The vendor must determine the customer service elements most important in product availability. Is a short delivery time most critical? Frequent delivery? Extensive inventory availability? Is width or depth of assortment most critical? Or, what other elements of customer service are most critical in providing product availability in a timely and reliable manner? The vendor must thoroughly understand the customer's needs concerning product availability and the forces driving these needs to provide the exceptional service that will facilitate the building of customer loyalty and the nurturing of the vendor-customer relationship.

Second, the vendor must identify the manner in which the customer desires to interact with the vendor. The ordering process should be convenient for the customer. The vendor must determine if operationalization of this concept requires support for ordering via telephone, fax, EDI, and/or a prearranged schedule of shipments (e.g., 200 widgets every 4 days). The vendor should be accessible to the customer. Does the customer desire access through e-mail, monthly sales visits, an 800-number, assignment of a customer service representative to his account, or another means? The vendor must

identify the types of information desired by the customer and the preferred means of sharing this information. These types of information may include inventory status reports, projected order cycle time, product line deletions, and standard substitutions. The customer's interaction with the vendor is important because one focus of a customer success strategy is channel integration. More tangible cues of the advantages of such integration to the customer will facilitate further integration and strengthen loyalty to the vendor.

Finally, the vendor must determine the distance needs of the customer. The vendor must understand the concrete and perceptual functions that proximity serves. Does the customer desire the option of picking-up orders or a specific emergency item? Does he desire the convenience of returning product to the vendor's dock rather than arranging for package pick-up and return shipment? Does distance facilitate product servicing due to the frequency or nature of the required service? The vendor must also understand the perceptual factors associated with the distance between the customer and vendor. Distance may represent safety from product stockouts or extended production line shutdowns due to broken parts or product not meeting quality specifications. The customer may perceive a greater understanding of the critical success factors driving his business on the part of the vendor. The perceptual benefits derived from distance may be as or more important than the tangible benefits.

Delivery time contributed more to a customer's perception of a local market presence than distance based upon the analysis of research question Q2B. Therefore, cultivating a local market presence is much more complex than selecting a site for a

distribution center. It involves determining and understanding the critical success factors of the customer's business and configuring the vendor's logistics service delivery system to effectively and efficiently facilitate the customer's success. The customer is most concerned with receiving the product in a timely, reliable manner so that his business continues to operate normally. This is evidenced in the research by the importance of such time variables as a short delivery time, reliable delivery, short order cycle time, and the ability to expedite orders. In specific situations, it may be possible to effectively implement a local market presence strategy with one distribution center. For example, the vendor may contract with a third-party logistics supplier such as Federal Express to maintain a distribution center in Memphis, Tennessee and ship product in response to customer orders. This design of the logistics service delivery system may successfully achieve the objectives of a local market presence provided that delivery the next business morning is acceptable and the other customer needs related to product availability, vendor accessibility, and distance are met satisfactorily.

Vendor Relationship

Customers viewed their relationships with vendors whom they described as having a local market presence much more positively than their relationships with vendors they described as having little local market presence. This was based upon the analysis of research question Q2A. Logistics service attributes which may be described broadly as marketing goodwill were important to customers when assessing local market presence. These attributes included ordering ease, accurate and timely information, a short communication channel, and quick complaint resolution. Though less concrete,

these attributes can have a significant positive impact on the customer's local market presence evaluation. A vendor performing satisfactorily on these attributes enhances the customer's perceptions of trust, cooperation, problem-solving, interdependence, coordination, information sharing, and quality communication within the vendor-customer relationship. However, management may have greater difficulty focusing on improving customer perceptions of these attributes due to their intangible nature. The subsequent performance evaluation is more subjective and nebulous than in other areas of logistics performance such as order fill rate and delivery time. This research indicated efforts to improve customer perceptions of these attributes should have a positive impact on vendor loyalty.

Segmentation

Uncoated paper customers responded similarly, regardless of the percentage of cost of goods sold accounted for by uncoated paper, based upon the analysis of research question Q4. For this particular industry segment, the evaluation of local market presence benefits and their importance in vendor relationships were fairly consistent among all respondents; purchases of uncoated paper as a percentage of cost of goods sold did not influence response to local market presence. Consequently, customer segmentation based upon purchases as a percentage of cost of goods sold did not appear to be necessary when designing and evaluating vendor-customer relationships.

Rather, it is suggested that customer segmentation be conducted as follows. First, the vendor should define the critical success factors facing the customer's business. If a local market presence strategy is a viable option for this customer, it is expected that

these factors can be categorized as product availability in a timely and reliable manner, accessibility and convenience of interacting with the vendor, and distance. Second, the customer should be segmented based upon his preferences for logistics service. These preferences should achieve the performance level dictated by the critical success factors. This method will provide much more reliable and meaningful segments while providing directives for implementation.

Price Premium

Based upon the analysis of research question Q5B, customers were not willing to pay a premium for facility proximity, though price was ceded a bit more quickly than facility proximity measured as travel time. However, this may be posing the wrong question. Local market presence was operationalized in terms of a physical proximity for the purposes of this research. However, as previously mentioned, local market presence is a broader concept than facility proximity. Geographic location and other distance factors were tertiary importance factors in a local market presence strategy, behind factors of product availability in a timely and reliable manner and the accessibility and convenience of interacting with the vendor. Therefore, the operationalization of a local market presence requires extensive broadening.

This broader definition may not increase printers' willingness to pay a premium for the associated logistical service benefits. However, the provision of these benefits will increase their vendor loyalty and it is probable that a vendor will experience an increase in market share. Vendors must assess their ability to provide these benefits given the competitiveness of the market. Conversely, it is questionable if a vendor can

survive and prosper in this uncoated paper channel without providing timely, reliable product delivery nor an accessible and convenient means of interacting with customers.

Firms may cultivate a local market presence without investing in a physical facility close to a particular customer group. However, it will be necessary to invest in information systems to provide accurate and timely information, facilitate the ordering process and other interactions with the customer, and pinpoint and resolve complaints. Adequate infrastructure and technology must be available to provide timely product delivery. Investment in an extensive inventory of the full product line is not required as long as adequate substitutes are available. The distributor needs to understand the dynamics of acceptable substitutions from the customer's perspective so as to provide satisfactory inventory availability. While a local market presence can be supported apart from facility proximity, it requires a greater understanding of the customer and the factors driving his business.

Conclusion

Managers of firms desiring to pursue a local market presence strategy should follow the steps outlined in Figure 5.3.

First, the customer's critical success factors should be identified and assessed according to their importance rankings and the environmental and competitive factors determining their importance. This will aid the vendor's understanding of the customer's business and facilitate the following steps.

Second, customer expectations regarding the vendor's logistics service delivery system and service level should be defined. It is important to understand these

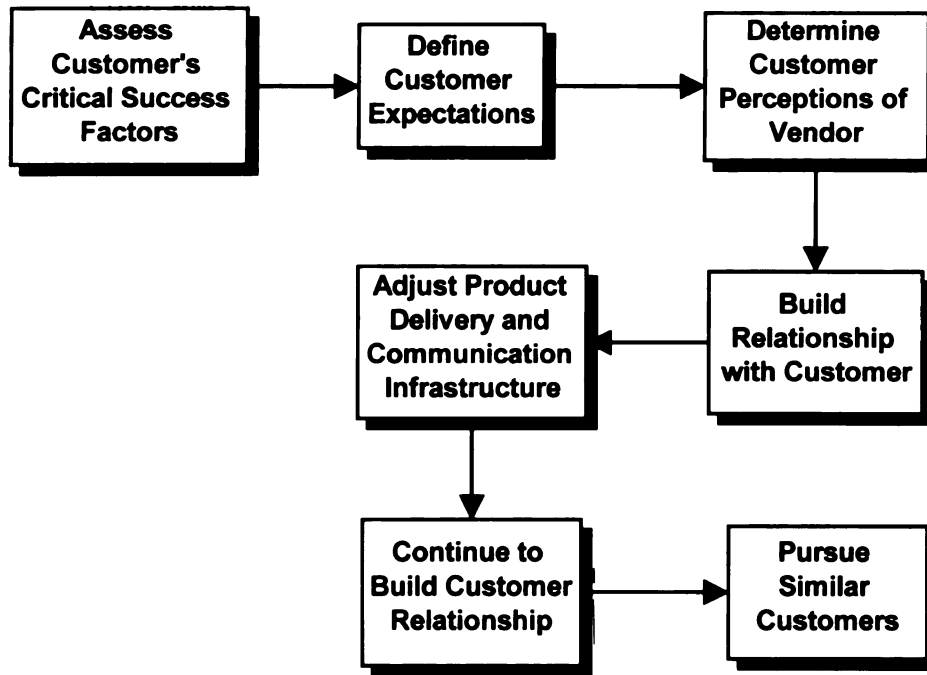


Figure 5.3 Managerial Guidelines

expectations when establishing the logistics service level and when designing tangible cues to the service level provided. These cues will enhance the customer's perceptions of the service level received.

Third, the customer perceptions of the vendor should be determined. These perceptions should be measured and compared with the customer's expectations to highlight those areas which require improvement. These perceptions should also be compared to the customer's perceptions of other vendors to benchmark logistics performance.

Fourth, the vendor should cultivate a relationship with the customer to begin to nurture a cooperative relationship characterized by information sharing and coordination. This is a continual process and may require extensive time and effort to develop.

Fifth, the vendor should adjust his product delivery and communication systems to provide a logistics service level that more adequately meets customer expectations and responds to the problem areas identified from customer perceptions.

Sixth, the vendor should continue to nurture the vendor-customer relationship.

Finally, the vendor should actively seek similar customers. The vendor should have developed extensive knowledge concerning the needs and desires of these customers; this will facilitate the cultivation of additional customers with similar critical success factors.

IMPLICATIONS FOR THE PAPER INDUSTRY

Local market presence was attractive to a significant group of customers based upon the analysis of research questions Q5A and C. Over 55 percent of respondents believed a vendor's local market presence was critical to their success. Over 80 percent expressed a preference to purchase from a vendor with a local market presence. The magnitude of customers perceiving local market presence to be critical to their own success and expressing a preference to purchase from such a vendor deemed local market presence an important concept for paper distributors to understand and leverage. As paper products proliferate and printer's margins remain tight, benefits associated with a local market presence are critical in determining the printer's success or failure. Consequently, paper distributors have the opportunity to establish themselves as the vendor of choice by efficiently providing these benefits to their customers.

Segmentation

The research results suggested several guidelines for customer segmentation. First, the customer should be categorized into one of the three stages of the customer service hierarchy: 1) customer service, 2) customer satisfaction, or 3) customer success. The categorization of the customer is based upon the level of logistics service desired by the customer and required by the competitive structure of the industry.

Second, a basic type of logistics strategy is associated with each stage of the hierarchy, reflecting the logistics service provided, the commitment level within the vendor-customer relationship, and the integration of the channel. The appropriateness of the relevant logistics strategy type to the customer should be assessed. The following customer variables should be evaluated: 1) purchase requirements; 2) projected growth; 3) propensity for loyalty to the vendor; 4) the cost of providing this level of logistics service; and 5) projected profit. The larger the customer's purchase requirements, projected growth, and propensity for loyalty to the vendor, the more attractive the customer is to the vendor. Providing the customer with a logistics strategy which effectively addresses his critical success factors should increase the customer's propensity for loyalty to the vendor. If the customer presents an attractive opportunity based upon this assessment, the vendor should analyze the various costs associated with providing the specified level of logistics service. These costs should include all the logistics costs associated with transporting and storing the product. The costs of any required changes in the product delivery system and/or the infrastructure supporting interactions with the customer should be included. Finally, the vendor should project

expected profits generated by this customer. This should allow the vendor to adequately assess the attractiveness of the customer. A customer failing to be sufficiently attractive to the vendor may be assigned to a hierarchy stage providing a less demanding level of logistics services. Otherwise, the vendor may choose not to pursue the customer.

At each logistics strategy level the vendor chooses to provide, he should choose those customers he desires to pursue. This is particularly important at the customer success stage. This stage requires a long-term commitment to the vendor-customer relationship. A substantial time commitment is required of the vendor to understand the customer's business and design an appropriate logistics strategy to assist the customer in achieving the performance level required by the critical success factors. The customer success strategy level is the most expensive level in terms of time and resource commitments to provide the associated level of logistics services.

Perceptions

The research identified the importance of perceptions in a local market presence strategy. The customer's perceptions of the logistics process and output are integral in the successful execution of a customer success strategy. Vendor-customer relationships are an integral component of these strategies. Consequently, a greater proportion of the exchange is comprised of less tangible and subjective variables.

The importance of perceptions in the evaluation of the logistics processes and outputs challenges the vendor to design the logistics service delivery system so that the customer perceives a differentiated service that uniquely meets his needs. The vendor

should be knowledgeable of the customer's preferences regarding the logistics service delivery system. Examples of differentiated logistics service included:

- 1) The vendor establishing delivery routes to deliver twice daily to printers or to a location where printers may pick-up orders. This would provide reliable delivery. Depending upon the distance to the distribution center, the customer could expect a relatively short order cycle time.
- 2) If same day delivery service is not critical and the distribution center is located at a more distant location, the vendor may ship orders next-day air. Alternatively, a third-party logistics provider could maintain a DC and handle all orders below a specified quantity. Orders of uncoated paper products which are not standard inventory items for a printer would generally be smaller shipments. These next-day air delivery options would provide reliable delivery and may provide a short delivery time and expedited delivery, depending upon current delivery times.
- 3) The vendor may be able to forecast demand across a number of customers for paper products not normally stocked by the customer. A selection of these paper products, in quantities based upon forecasted demand, would be carried on the delivery truck when space permitted. As a result, the vendor may be able to fulfill customer needs which did not arise until the truck had left the DC.

These are just a few examples of how the logistics service may be designed to create a differentiated perception within the customer.

The logistics service delivery system should assist the customer in meeting the challenges of his critical success factors. The resulting logistics services should be provided in a manner which stimulates the customer's perception of receiving a differentiated service. The vendor should attempt to leverage this system to enhance customer satisfaction and loyalty. The uncoated paper segment is characterized by tight

profit margins and short service delivery windows. If a vendor can facilitate a printer's success by providing benefits which successfully address these competitive factors, he is likely to enjoy an increase in customer satisfaction and loyalty, reducing the printer's focus on price.

Internal Cost Evaluation

The vendor should assess his cost structure to identify those categories most critical to customer satisfaction, success, and loyalty. Marketing dollars in these categories should be leveraged to maximize profits and/or market share and future success. This assessment may reveal the need to reallocate marketing dollars to critical categories as the distributor refines his logistics service strategy. This research revealed that inventory and other select logistics benefits were not of paramount importance to this market segment. Benefits of a short delivery time and timely information were more critical to printers. If the allocation of marketing and logistics dollars does not support customer priorities, the distributor should reallocate those dollars to finance the necessary infrastructure to provide these benefits.

Product Delivery System

The vendor should audit his product delivery system to determine if the existing system is capable of providing the timely and reliable service desired by the customer. Any "errors" which result in service failures should be identified and corrected. Product availability in a timely and reliable manner is critical to the successful execution of a local market presence strategy. Any failures in the product delivery system will probably be noticed by the customer and will negatively impact his perceptions of the logistics

service provided by the vendor. If the failure causes the customer to miss an important delivery date or results in another severe consequence, he may choose not to purchase from this vendor in the future.

Customer Communication System

The vendor's system for communicating and interacting with the customer should be assessed to determine if the customer is receiving the desired information and other relationship benefits. This assessment requires exploration of the manner in which the customer desires to communicate and interact with the vendor as well as the types of information needed to facilitate his business success. Communication systems which are convenient for the vendor may not be convenient for the customer due to his business hours, daily work flow, or other characteristics of his work environment. Consequently, the vendor may need to redesign his communication system to address these restrictions. Communication systems are important in customer success strategies due to the integration within the channel. Effective communications are critical in forming positive customer perceptions of the logistics service delivery system.

These guidelines aid the vendor of uncoated paper products in leveraging his local market presence strategy to enhance the success of his customers and, ultimately, his own growth as customer loyalty is strengthened.

LIMITATIONS

There were several limitations to the research which must be considered when interpreting the results.

First, a few respondents indicated that they did not understand logistics terms such as picking accuracy. In addition, some respondents did not understand how to complete some sections of the questionnaire, particularly the trade-off analysis tables. There appeared to have been some confusion among a few respondents on various questions due to varying levels of respondent sophistication. This may have lead to lower response on some questionnaire sections (e.g., trade-off analysis tables) and inappropriate responses on others.

Second, ten of the thirty customer service elements were measured via reversed scales. As previously discussed, it appeared that a number of respondents failed to detect the reversal. The analysis results of these elements were interpreted cautiously and, when possible, variables measuring very similar constructs were substituted.

Third, little previous work on local market presence has been published. Consequently, variables key to this concept may have been inadvertently missed, skewing the results of the research. The research design began with thirty customer service elements which measured aspects of time or distance and examined the relationship of each with a local market presence. Given the extensiveness of the list of customer service elements, the probability of missing a significant number of customer service variables was probably not high.

In addition, there has been a lack of understanding of logistics' role in local market presence. Previous research which includes local market presence within a variable list presents it as one-dimensional and, therefore, unworthy of discussion, implying that it simply refers to a distribution or sales facility located in close proximity

to a customer's geographic location. A basic understanding of the role and dynamics of a local market presence has not been provided by previous research. This research presents a foundational understanding of local market presence.

Fourth, the research assumed that local market presence and physical proximity were similar constructs during the questionnaire development and data collection stages. Analysis revealed that these terms were not similar. This may have resulted in convoluted responses on a few questions. The discussion of the research results highlighted any areas where this created a concern.

Fifth, local market presence and the other logistics service attributes were treated as independent variables. In reality, some of the attributes were dependent; however, data analysis revealed that multicollinearity was not a significant issue when addressing the research questions.

Finally, the research investigated the perceptions of printers of uncoated paper products regarding a local market presence. This research should not be used to make inferences concerning other market segments within the paper industry or market segments within other industries.

DIRECTIONS FOR FUTURE RESEARCH

Research concerning a local market presence is very limited. As firms continue to focus on consolidating distribution centers, local market presence issues will be critical in achieving a smooth transition and sustaining and enhancing customer satisfaction and

vendor loyalty. Local market presence will provide a fertile research area as greater understanding is sought concerning its component attributes and implementation issues.

First, additional research is required to validate the critical benefits of local market presence. This research was limited to printers of uncoated paper products. Benefit categories of product availability in a timely and reliable manner, accessibility and convenience of interacting with the vendor, and distance were identified in the research. Market segments in various industries for which local market presence is a viable option should be analyzed to ensure that the benefit categories remain similar.

Second, research is needed to investigate the specific benefits received from the distance benefit category. Distance variables act as tangible cues to intangible benefits received from a local market presence. For example, these benefits may: 1) assure the customer of an adequate product supply so that delivery dates promised to print customers can be met; 2) indicate the vendor's concern for the customer's success; and 3) reassure the customer that product exchanges or returns can be completed and credits or refunds can be obtained conveniently and quickly. An understanding of these intangible benefits will assist the vendor in designing and implementing a more effective and efficient logistics service delivery system. The vendor may be able to deliver these benefits to the customer and provide adequate cues without an extensive investment in distribution center facilities.

Finally, comparative industry studies would aid in the understanding of the critical success factors impacting the customer's preference for a specific logistics strategy. These studies would provide insight into how the customer prioritizes the

critical success factors. Which factors are most critical to address first? Second? Third? The priority assigned to each factor will impact the selection of the most appropriate logistics strategy. Analysis would also indicate the importance of specific types of critical success factors (e.g., cost structure, product development and differentiation, product availability, product support, and customer communication). These studies should encompass different types of products/services, vendor-customer relationships and histories, and stages of consolidating distribution facilities. Similarities and differences across market segments and industries will provide insight into the design and implementation of logistics service delivery systems for similar market segments and industries.

APPENDIX

APPENDIX

LOCAL MARKET PRESENCE STUDY

Part One Local Market Presence and Its Importance

Please answer all questions with respect to uncoated paper products.

This part of the questionnaire is designed to obtain your beliefs concerning attributes of an uncoated paper vendor's local market presence and the importance of these attributes to your business operations.

The following definition is offered to guide completion of the questionnaire:

A local market presence is the vendor maintaining inventory within a local market.

A. Please indicate the strength of your agreement with the following statements concerning your beliefs of a vendor's local market presence. Circle "NR" if the variable is not relevant to a local market presence.

		I believe that local market presence results in:						I believe that _____ is critical to my business operations.					
		Strongly Disagree			Strongly Agree			Strongly Disagree			Strongly Agree		
		1	2	3	4	5	NR	1	2	3	4	5	
1.	A short order assembly time	1	2	3	4	5	NR	1	2	3	4	5	
2.	A short delivery time	1	2	3	4	5	NR	1	2	3	4	5	
3.	High variability in lead times	1	2	3	4	5	NR	1	2	3	4	5	
4.	The vendor's consistent ability to meet promised delivery dates	1	2	3	4	5	NR	1	2	3	4	5	
5.	Low delivery frequency	1	2	3	4	5	NR	1	2	3	4	5	
6.	The consistent ability to expedite orders	1	2	3	4	5	NR	1	2	3	4	5	
7.	Low order processing accuracy	1	2	3	4	5	NR	1	2	3	4	5	
8.	Low picking accuracy	1	2	3	4	5	NR	1	2	3	4	5	
9.	High inventory availability	1	2	3	4	5	NR	1	2	3	4	5	
10.	A high fill rate	1	2	3	4	5	NR	1	2	3	4	5	
11.	Low order completeness	1	2	3	4	5	NR	1	2	3	4	5	
12.	Timely inventory status information	1	2	3	4	5	NR	1	2	3	4	5	
13.	The order arriving in poor condition	1	2	3	4	5	NR	1	2	3	4	5	
14.	A timely response to assistance requests	1	2	3	4	5	NR	1	2	3	4	5	
15.	High quality technical advice	1	2	3	4	5	NR	1	2	3	4	5	
16.	An improved ability to inspect or diagnose problems areas	1	2	3	4	5	NR	1	2	3	4	5	
17.	Efficient assistance by the vendor in order preparation	1	2	3	4	5	NR	1	2	3	4	5	
18.	Decreased order preparation convenience and efficiency	1	2	3	4	5	NR	1	2	3	4	5	
19.	Efficient assistance from the vendor in handling carrier loss and damage claims	1	2	3	4	5	NR	1	2	3	4	5	
20.	Proper carton identification	1	2	3	4	5	NR	1	2	3	4	5	
21.	Inefficient procedures for returned merchandise	1	2	3	4	5	NR	1	2	3	4	5	
22.	The vendor's increased willingness to accept returns of product damaged or shipped in error	1	2	3	4	5	NR	1	2	3	4	5	

		I believe that local market presence results in:						I believe that _____ is critical to my business operations.					
		Strongly Disagree			Strongly Agree			Strongly Disagree			Strongly Agree		
23.	A decrease in the customer's ability to consistently select the carrier.....	1	2	3	4	5	NR	1	2	3	4	5	
24.	A decrease in the vendor's ability to meet specific or unique customer service and delivery needs of individual customers...	1	2	3	4	5	NR	1	2	3	4	5	
25.	Adherence to special shipping instructions...	1	2	3	4	5	NR	1	2	3	4	5	
26.	Adherence to special packaging instructions.	1	2	3	4	5	NR	1	2	3	4	5	
27.	Timely order status information	1	2	3	4	5	NR	1	2	3	4	5	
28.	More accurate advance information concerning order deletions and substitutions.	1	2	3	4	5	NR	1	2	3	4	5	
29.	More accurate advance information concerning shipping delays	1	2	3	4	5	NR	1	2	3	4	5	
30.	Shorter communication channel and quicker action to resolve complaints.....	1	2	3	4	5	NR	1	2	3	4	5	

B. Please indicate the importance of the following items to a local market presence strategy.

		Not Very Important			Very Important		
1.	Short order cycle time	1	2	3	4	5	
2.	Low lead time variability	1	2	3	4	5	
3.	Short delivery time	1	2	3	4	5	
4.	Reliable delivery	1	2	3	4	5	
5.	Delivery capability	1	2	3	4	5	
6.	Frequent delivery	1	2	3	4	5	
7.	Ability to expedite orders	1	2	3	4	5	
8.	Ability to receive orders electronically	1	2	3	4	5	
9.	Ordering convenience	1	2	3	4	5	
10.	Order processing personnel located in market area	1	2	3	4	5	
11.	Geographic location	1	2	3	4	5	
12.	Located in close proximity	1	2	3	4	5	
13.	Accessibility of seller.....	1	2	3	4	5	

Part Two Comparison of Vendors

Part Two of the questionnaire is a comparison of two vendors of uncoated paper products—one exhibiting a high degree of local market presence and the other a relatively low degree of local market presence.

A. Please select an uncoated paper vendor whom you consider to have a local market presence and answer the next four questions with respect to this vendor. Please indicate the strength of your agreement with the following statements.

		Strongly Disagree			Strongly Agree		
1.	This vendor has a high degree of local market presence	1	2	3	4	5	
2.	I would describe my relationship with this vendor as:						
	a. Trusting	1	2	3	4	5	
	b. Cooperative.....	1	2	3	4	5	
	c. Focused on a Common Goal.....	1	2	3	4	5	
	d. Problem-solving	1	2	3	4	5	
	e. Committed.....	1	2	3	4	5	
	f. Interdependent.....	1	2	3	4	5	
	g. Coordinated	1	2	3	4	5	

- | | | Strongly
Disagree | | | Strongly
Agree |
|----|---|----------------------|-------------------------|---|-------------------|
| 3. | I would describe my communication with this vendor as: | | | | |
| | a. information sharing | 1 | 2 | 3 | 4 5 |
| | b. quality communication..... | 1 | 2 | 3 | 4 5 |
| | c. participatory in planning and goal setting | 1 | 2 | 3 | 4 5 |
| 4. | When a conflict occurs with this vendor, it is resolved through: | | | | |
| | (Please rank based upon frequency of occurrence. "1" occurs most frequently.) | | | | |
| | ___ joint problem solving. | | ___ ignoring the issue. | | ___ arbitration. |
| | ___ persuasion. | | ___ domination. | | |
| | ___ smoothing over the issue. | | ___ harsh words. | | |

B. Please select an uncoated paper vendor whom you consider to exhibit a relatively low degree of local market presence and answer the next four questions with respect to this vendor. Please indicate the strength of your agreement with the following statements.

- | | | Strongly
Disagree | | | Strongly
Agree |
|----|---|----------------------|-------------------------|---|-------------------|
| 1. | This vendor has a high degree of local market presence | 1 | 2 | 3 | 4 5 |
| 2. | I would describe my relationship with this vendor as: | | | | |
| | a. Trusting | 1 | 2 | 3 | 4 5 |
| | b. Cooperative..... | 1 | 2 | 3 | 4 5 |
| | c. Focused on a Common Goal..... | 1 | 2 | 3 | 4 5 |
| | d. Problem-solving | 1 | 2 | 3 | 4 5 |
| | e. Committed..... | 1 | 2 | 3 | 4 5 |
| | f. Interdependent..... | 1 | 2 | 3 | 4 5 |
| | g. Coordinated | 1 | 2 | 3 | 4 5 |
| 3. | I would describe my communication with this vendor as: | | | | |
| | a. information sharing | 1 | 2 | 3 | 4 5 |
| | b. quality communication..... | 1 | 2 | 3 | 4 5 |
| | c. participatory in planning and goal setting | 1 | 2 | 3 | 4 5 |
| 4. | When a conflict occurs with this vendor, it is resolved through: | | | | |
| | (Please rank based upon frequency of occurrence. "1" occurs most frequently.) | | | | |
| | ___ joint problem solving. | | ___ ignoring the issue. | | ___ arbitration. |
| | ___ persuasion. | | ___ domination. | | |
| | ___ smoothing over the issue. | | ___ harsh words. | | |

Part Three Tradeoffs Between Service Levels

Part Three of the questionnaire obtains your preferences for various logistics service levels.

A. Uncoated paper products account for _____ percent of my firm's cost of goods sold.

B. Please indicate the strength of your agreement with the following statements.

- | | | Strongly
Disagree | | | Strongly
Agree |
|----|---|----------------------|---|---|-------------------|
| 1. | I prefer to buy uncoated paper products from a vendor with a local market presence..... | 1 | 2 | 3 | 4 5 |
| 2. | A vendor's local market presence is critical to the success of my firm | 1 | 2 | 3 | 4 5 |

C. Please rank your preferences for the following service combinations from an uncoated paper products vendor—"1" indicates the most highly preferred service combination; "9" the least preferred.

Price and Facility Proximity

Facility Proximity (Travel Time)			
	1/2 Hour	3 Hours	6 Hours
Price			
1% Above Mkt.			9
Market			
1% Below Mkt.	1		

Fill Rate and Facility Proximity

Facility Proximity (Travel Time)			
	1/2 Hour	3 Hours	6 Hours
Fill Rate			
100%	1		
98%			
94%			9

Delivery Frequency and Facility Proximity

Facility Proximity (Travel Time)			
	1/2 Hour	3 Hours	6 Hours
Delivery Frequency			
2 Deliveries/Day	1		
1 Delivery/Day			
3 Deliveries/Week			9

Order Cycle Time and Facility Proximity

Facility Proximity (Travel Time)			
	1/2 Hour	3 Hours	6 Hours
Order Cycle Time			
2 Hours	1		
6 Hours			
20 Hours			9

D. Please indicate the importance of the following items to your loyalty to a vendor of uncoated paper products.

		Strongly Disagree			Strongly Agree		
		1	2	3	4	5	
1.	Local Market Presence	1	2	3	4	5	
2.	Price	1	2	3	4	5	
3.	Delivery Consistency	1	2	3	4	5	
4.	Fill Rate	1	2	3	4	5	
5.	Order Cycle Time	1	2	3	4	5	

Part Four Vendor Selection and Logistics Service Quality

Part Four of the questionnaire is designed to obtain the importance of logistics attributes in your vendor selection process and assessment of a vendor's logistics service quality.

		A. Indicate the importance of the following items in your vendor selection.					B. Indicate the importance of the following items in your assessment of a vendor's logistics service quality.				
		Not Very Important		Very Important			Not Very Important		Very Important		
1.	Short order assembly time	1	2	3	4	5	1	2	3	4	5
2.	Short delivery time	1	2	3	4	5	1	2	3	4	5
3.	Low variability in lead times	1	2	3	4	5	1	2	3	4	5
4.	Consistent ability to meet promised delivery dates	1	2	3	4	5	1	2	3	4	5
5.	High delivery frequency	1	2	3	4	5	1	2	3	4	5
6.	Consistent ability to expedite orders	1	2	3	4	5	1	2	3	4	5
7.	Order processing accuracy	1	2	3	4	5	1	2	3	4	5
8.	High picking accuracy	1	2	3	4	5	1	2	3	4	5
9.	High inventory availability	1	2	3	4	5	1	2	3	4	5
10.	High fill rate	1	2	3	4	5	1	2	3	4	5
11.	High order completeness	1	2	3	4	5	1	2	3	4	5
12.	Timely inventory status information	1	2	3	4	5	1	2	3	4	5
13.	Order arriving in excellent condition	1	2	3	4	5	1	2	3	4	5
14.	Timely response to assistance request	1	2	3	4	5	1	2	3	4	5
15.	High quality technical advice	1	2	3	4	5	1	2	3	4	5
16.	Ability to inspect or diagnose problem areas	1	2	3	4	5	1	2	3	4	5
17.	Efficient assistance in order preparation	1	2	3	4	5	1	2	3	4	5
18.	Order preparation convenience and efficiency	1	2	3	4	5	1	2	3	4	5
19.	Efficient assistance in handling carrier loss and damage claims	1	2	3	4	5	1	2	3	4	5
20.	Proper carton identification	1	2	3	4	5	1	2	3	4	5
21.	Efficient procedures for returned merchandise	1	2	3	4	5	1	2	3	4	5
22.	Willingness to accept returns of product damaged or shipped in error	1	2	3	4	5	1	2	3	4	5
23.	Customer's ability to consistently select the carrier for inbound good	1	2	3	4	5	1	2	3	4	5
24.	Ability to meet specific or unique customer service and delivery needs of individual customers	1	2	3	4	5	1	2	3	4	5
25.	Adherence to special shipping instructions	1	2	3	4	5	1	2	3	4	5
26.	Adherence to special packaging instructions	1	2	3	4	5	1	2	3	4	5
27.	Timely order status information	1	2	3	4	5	1	2	3	4	5
28.	Accurate advance information concerning order deletions and substitutions	1	2	3	4	5	1	2	3	4	5
29.	Accurate advance information concerning shipping delays	1	2	3	4	5	1	2	3	4	5
30.	Short communication channel and quick action to resolve complaints	1	2	3	4	5	1	2	3	4	5

Thank you for taking the time to thoroughly complete this questionnaire. Your input is sincerely appreciated.

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