Linking Customer Knowledge With Successful Service Innovation

Dr. Geoffrey L. Gordon, Marketing, Northern Illinois University
Dr. Peter F. Kaminski, Marketing, Northern Illinois University
Dr. Roger J. Calantone, Marketing, Michigan State University
Dr. C. Anthony di Benedetto, Marketing, Temple University

Abstract

In order to satisfy customer needs and wants, the business-to-business service provider must develop and market services that provide value to the customer's organization. Because of the importance and the difficulty of evaluating value from the customer's perspective, a critical need exists for firms to obtain and possess knowledge about what activities create customer value for individual customers. The objective of this study is to explore the activities and knowledge needed to develop and market services that create customer value. Results of a study undertaken on the development and marketing of services and products in the telecommunications industry are provided. The report concludes with a discussion of managerial and research implications.

Introduction

An important goal of any organization, whether service oriented or product oriented, is to make profits and/or enhance other organizational performance indicators (Narver and Slater 1989). Profit making is indeed one of the key tenants of the marketing concept itself. Managers of business-to-business service firms must not forget that the profit motive forms the basis of the goals of their customers as well (Scheuing and Johnson 1989). To successfully satisfy an intermediate customer's needs and wants, the service provider must develop and market services that provide value to the customer's organization. That is, the buying firm must correctly perceive that adopting the service of the provider will improve the buyer's operating results (Day and Wensley 1988).

In order to provide services of value to its customers, the business-to-business services firm must determine what characteristics of these services are valued most highly by each individual customer. Accomplishing this can be difficult, as the buyer may be uncertain exactly what needs must be met, how to assess the value of new technology, or how to judge the ability of the service provider to deliver service on time with sufficient support. Additionally, dynamic changes in service usage patterns, evolving competitive influences, or alteration in buying procedures might cause the buying firm to modify its evaluative criteria (Takeuchi and Quelch 1983).

The value of a service has little to do with what the provider of the service thinks its value to be. Service value is very subjective and is determined by the custom-

er, not the provider. Thus, to be in a position to provide value to customers, the provider must obtain sufficient knowledge about each customer's value assessment procedures to understand the customer's perspective (Forbis and Mehta 1981; Day and Wensley 1988). Although it may be impossible to determine the exact value of a provider's service offerings to each individual customer, the provider can strive to understand the approximate value of a given service for a majority of customers or for strategic groups of customers. These efforts must begin with a thorough understanding of the components (and their related importance) of the customer evaluation process (Davidow and Uttal 1989). The greater the knowledge possessed by service suppliers of how customers evaluate and use services, the greater the likelihood of successful service development and marketing.

Service providers must not ignore the prime importance of understanding and interacting with their customers. "Increasingly, the profitability of manufacturers depends upon their use of service (providers) technologies and their extension of these technologies as products for exploitation" (Quinn and Doorley 1988). In many industries, including large appliances, computers, telecommunications, hardware, office equipment, and industrial machinery, service support is emerging as the major area in which firms will soon be striving for competitive advantage (Lele 1986).

The objective of this study is to explore the activities and knowledge needed to ascertain, develop, and market services that create customer value, from the point of

view of business-to-business service innovation. In addition, analyses will be undertaken to determine if significant differences exist between the levels of activities undertaken and customer knowledge possessed by business-to-business service marketers.

The Study and Methodology

This paper reports on the results of a study of the development and marketing of services in the telecommunications industry. The telecommunications industry is a very fast growing service segment of the economy and is currently undergoing rapid technological change. Substantial amounts (on average, \$2 million to \$2.5 million per company) are spent annually by telecommunications managers marketing services and products to offer businesses (*Teleconnect*, 1991).

following sections. For purposes of this study, only those vendor aspects that were related to and could be clearly evaluated by the customer were examined. Since value can best be evaluated from the customer's perspective, relationships were measured based on these perceptions.

The research instrument was developed using an extensive literature review as well as, interviews with representatives of telecommunications vendors, telecommunications managers of customer firms, and industry analysts, and consultation with other researchers involved in scale development. A pre-test was conducted by a national market research organization to assess the reliability of the components of the measurement instrument and to gain respondent feedback on the instrument and the data collection process.

The current study was designed to test the relationships shown in Figure 1. As the figure shows, positive relationships are thought to exist between the levels of customer interaction engaged in by the vendor, vendor use of intelligence gathering devices, and vendor knowledge of the customer. Vendor knowledge about the customer is expected to be positively related to value creation knowledge; that is, vendor knowledge of how its potential services could benefit the customer. Further, value creation knowledge is expected to be positively related to successful service innovation development.

The proposed relationships represent an effort to: (1) identify the major components of a firm's level of market (customer) orientation and (2) assess the usefulness of a firm's possession of such orientation in developing successful service innovations. The variables and their associated components will be described in the

Prospective respondents (telecommunications managers in customer firms) were contacted by phone and asked to participate in the study. Of 680 calls placed, 379 managers agreed to participate. Questionnaires were delivered by hand and picked up by representatives of the market research company. Of the 379 questionnaires distributed, 358 were picked up, and thirteen had to be discarded, leaving a total of 345 usable questionnaires (response rate 51%).

The research instrument consisted of a set of six point Likert-type scales. Six point scales were used to eliminate the neutral response category. The research instrument was designed to assess the following: (1) respondent's perceptions of activities used by vendors to gather information; (2) vendor knowledge of intermediate and end customers; (3) vendor knowledge of the value that its own (potential) services provide to custom-

er organizations; and (4) the actual value that a service adopted (or intended to be adopted) by a customer provides to the customer's organization. Two aspects of respondent's perceptions were measured: (1) perceptions regarding the importance of activities, knowledge possession, and characteristics or traits associated with the service adopted; and (2) perceptions regarding customer information gathering activities, customer knowledge possession, and levels of value associated with the adopted or soon to be adopted service.

Prior to filling out the survey, the respondent was asked to identify three telecommunications vendors by name. The vendors were to be ones with whom the respondent had current or previous dealings. Vendor A was to be a vendor whom the respondent perceived to be typical of that class of vendors the respondent would rate as "above average". In addition, the respondent's organization should have recently adopted or, in the near future, intended to adopt a specific service developed and marketed by Vendor A. Vendor B was to be representative of the category of vendors whom the respondent would rate as "average". Vendor C was to be representative of the category of vendors whom the respondent would rate as "poor" or "below average".

Respondents to the survey were asked to answer several questions related to their organization and their own job responsibilities. About 60% of respondents described their scope of responsibility as company-wide; almost all the remainder had division- or department-wide responsibilities. About a third of respondents were from manufacturing firms, another third from consumer service firms, 13% from business-to-business service firms, and the remainder from government agencies or other types of firms.

Definitions of Variables

Customer interaction is the respondent's perceptions regarding the frequency of interaction between the vendor and the customer. Long-term relationships with customers are thought to be necessary for the development of services that ultimately provide customer value (Bund Jackson 1985; Gronroos 1984; Maidique and Hayes 1984; von Hippel 1988). Frequent customer contact by salespeople, other marketing personnel and executives, and engineers and technologists is one means by which knowledge regarding customer activities, needs, wants, and other information related to potential vendor development of value enhancing services is acquired. Opportunities for knowledge acquisition also result from vendor participation in industry tradeshow, conferences, and association meetings. In addition vendors can formally set up activities whereby customer interaction is secured, such as roundtable discussions, service trials, and test markets sponsored by the vendor. In sum, relationships with current and potential customers can

be used to build and maintain an awareness of the current and future status of the marketplace (Bentley 1990).

Customer intelligence gathering devices are defined as the respondent's perceptions regarding the level of use of intelligence gathering devices by the vendor. Measures of this construct reflect the various means by which vendors can gain customer knowledge aside from personal interaction with the customer. Collection of information about both customers and potential customers as well as their associated needs and wants as a focal point of a firm's marketing activities is necessary for customer knowledge leading to successful service innovation efforts. Specifically, two main mechanisms exist for gathering customer input: customer questionnaires and surveys, and customer satisfaction measurements.

Vendor knowledge of the customer is defined as the respondent's perceptions about the amount of intermediate and end customer knowledge the vendor possesses. Customer knowledge consists of vendor understanding of the various facets of the intermediate and associated end customer's business that can then lead to knowledge of the specific means by which vendor developed and provided services can (potentially) add value to the customer's operations. Components of intermediate customer knowledge measured in the present study include vendor knowledge of the intermediate customer's overall operations compared with single functions; products and services and the importance of each in the customer's market strategy; financial position, including long and short-term goals; marketing strategies; strength of position in marketplace and long-term prospects; competitors and how the intermediate customer differentiates itself; current technologies utilized; relationships with other vendors; decision-making processes; and the regulatory environment. Components of end customer knowledge measured in the present study include knowledge of the ways and means end customers use the intermediate customer's services/products; the size and growth rates of end customers; the end customer's decision-making processes in evaluating products or services and their associated quality; and the end customer's financial position and resource constraints.

Vendor knowledge of customer value creation is defined as the respondent's perceptions regarding the level of vendor knowledge by which its (potential) services impact on, and create value for, the customer's organization. Prior to new service development, a vendor should have in-depth knowledge of how a proposed service(s) will fit into and impact on potential customers' existing operations and how these services can potentially add value to the customers' operations. Vendor knowledge of customer value creation, is measured by assessing the impact on overall customer

operations; the impact on customer cost drivers; and the impact on customer uniqueness drivers. Combined, these three component measures comprise the value creation knowledge measure. This conceptualization is roughly based on the work of Porter (1985).

Service innovation development is the output of service innovation endeavors, and is defined as the respondent's perceptions regarding the level of value inherent in a service marketed by a vendor. Four components of service innovation development were assessed in this study: traits associated with the vendor; innovation novelty attributes; innovation cost and financial attributes; and innovation uniqueness attributes. Several dimensions constitute each of these components.

Traits associated with the vendor are those valued by the customer and include vendor experience, image, and reputation; personnel competence; financial stability; reliability; access; selection of services or products offered and/or ability to serve as a single supply source; and responsiveness to customer demands, needs, and wants. Novelty attributes consist of the associated attributes and characteristics of the service innovation related to its newness. Novelty attributes measured included compatibility with existing customer skills and capabilities; compatibility with existing customer technologies; and ease of adoption and integration into the customer's organization and existing systems.

Cost and financial attributes are defined as the means by which customer value can be realized through the service innovation's ability to lower customer costs and/or improve other financial indicators. Cost and financial characteristics measured included savings from service use; price advantages and alternatives; trial on a small scale; and availability of financing, warranties, and guarantees. Uniqueness attributes are defined by the value a customer realizes through the service innovation's ability to provide for benefits attributable to increased customer differentiation versus competitors. Uniqueness characteristics measured included long service life; superiority to competing or existing services; ease of operation and maintenance; custom-design; performance of new or unique tasks; and operational improvement.

In summary, five variables were measured (see Figure 2): customer interaction; customer intelligence devices; customer knowledge; value creation knowledge; and service innovation development. Descriptive statistics for the measures utilized are contained in Table 1.

Results

Prior to analysis, reliability tests were performed on the individual measures and their component measures.

Cronbach's coefficient alpha was calculated for each measure used (and for all of the vendors measured) and provides an assessment of the internal consistency of each scale. As shown in Table 2, all measures had coefficient alphas well above the 0.5 minimum recommended by Churchill (1979) as acceptable for use in exploratory research. Given that all of the scales were initially developed for the current study, the overall high coefficient alphas are well within an acceptable range.

Stepwise regression analysis was utilized to examine the relationships proposed in the current study. The purpose of this analysis is to gain a further understanding of the amount of variance explained by the variables presented in Figure 1 (Note: For the variables analyzed in the current research, a probability-of-F value of 0.05 was set as the entry criteria and the criterion for variable removal was set at a probability-of-F value greater than 0.1).

Vendor knowledge of the customer (customer knowledge measure) was regressed on the interaction and intelligence gathering devices measures. The procedure was conducted for all three vendor types (VA-Above Average, VB-Average, and VC-Below Average) evaluated. The results of the analysis are presented in Table 3. For all three vendors, the measure of interaction entered the equation first followed by the intelligence gathering devices measure. The inclusion of these variables in the regression model results in R-squared values of 0.253, 0.270, and 0.274 for vendors A, B, and C respectively. These results indicate that this set of information measures explains approximately twenty-five percent of the variance in vendor knowledge of the customer.

Overall vendor value creation knowledge was regressed on the vendor knowledge of the customer (customer knowledge) measures of intermediate and end customer knowledge. The results of this analysis are displayed in Table 4. Both customer knowledge measures entered into the equation in the same order for all three vendors evaluated. The inclusion of these independent variables in the regression model results in R-squared values of 0.619, 0.629, and 0.651 for vendors A, B, and C respectively. These results indicate that this set of customer knowledge measures explains over sixty percent of the variance in overall value creation knowledge.

In the final regression analysis, Vendor A service innovation development was regressed on the Vendor A value creation knowledge measures of overall impact, cost impact, and differentiation impact. Only information on Vendor A was used for this measure because Vendor A was the vendor from which an actual service was adopted or soon to be adopted by the respondent. The results of this analysis are exhibited in Table 5.

Figure 2
Variable Definitions

Variable	Definition	Components
Customer Interaction	Perception of the vendor regarding frequency of interaction between vendor and customer.	Customer contact Trade Show Participation Formal Activities
Customer Intelligence Gathering Devices	Perception of the vendor regarding the level of use of intelligence gathering devices.	Customer Questionnaires Customer Satisfaction Measurements
Vendor Knowledge of the Customer	Perception of the vendor regarding the amount of intermediate and end customer knowledge possessed.	Overall Operations Products and Services Financial Position Marketing Strategies Strength of Position Long-term Prospects Competitors Technologies Utilized Relations With Other Vendors Decision Processes Regulatory Constraints
Customer Value Creation Knowledge	Perception of the vendor regarding the level of knowledge of how to create customer value.	Impact on Overall Operations Impact on Cost Drivers Impact on Uniqueness Drivers
Service Innovation Development	Perception of the service innovation regarding the level of inherent value.	Vendor Traits Novelty Cost and Financial Uniqueness

Only the cost impact and the overall impact variables were entered into the regression equation. The inclusion of these two independent variables in the regression equation results in an R-squared value of 0.419 for Vendor A. The R-squared value indicates that cost impact and overall impact account for over forty percent of the variance in service innovation development.

Following the analysis of data using multiple regression models, further analysis was conducted to examine differences between the mean values assigned to each vendor type for the variables measured. Of particular interest was whether or not respondents could perceive

significant differences between the vendor types, related to the variables measured. It should be reemphasized that telecommunications managers evaluated actual vendors in completing the survey instrument, rather than measuring abstract concepts.

A series of analysis of variance procedures was undertaken to determine if significant differences existed between the mean scores assigned to Vendors A, B, and C. In analysis of variance, the total variance in the data being evaluated is decomposed into the proportion which is within each of the vendor groupings and the proportion which is between them (Johnston 1986).

Analysis of variance procedures can be used to test the hypothesis that several population means are equal. To test the hypothesis that the vendor group means for each measure were equal, the F-statistic was calculated ($F = \text{Between Groups Mean Square} / \text{Within Groups Mean Square}$) for each measure. The Scheffe multiple comparison procedure was utilized as a means of testing for significant differences between means when multiple comparisons (those comparing Vendors A, B, and C) were carried out.

Results of the analysis of variance procedures are shown in Table 6. These results confirm that significant differences do exist between the mean scores given to Vendors A, B, and C for all overall measures (Note: The interaction and intelligence devices measures were combined to form an information measure), at the 0.01 level. These results confirm that respondents were able to discern significant differences between the activities performed and knowledge possessed by the three vendor types evaluated.

Table 1
Descriptive Statistics for Vendors A, B, and C Scales

Scale	Number of items	Vendor A (VA-Scale)			Vendor B (VB-Scale)			Number of items	Vendor C (VC-Scales)		
		Mean ^a	Std. Dev.	n ^b	Mean ^a	Std. Dev.	n ^b		Mean ^a	Std. Dev.	n ^b
Information	7	26.57	7.04	345	21.62	6.45	336	7	15.60	5.81	314
Interaction	5	19.39	5.44	345	15.76	4.80	336	5	11.32	4.35	314
Intelligence Devices	2	7.18	2.67	345	5.86	2.45	336	2	4.27	2.16	315
Customer Knowledge	14	55.94	14.26	342	46.48	13.73	329	14	35.58	14.19	305
Intermediate Customer	10	40.82	10.29	343	33.76	10.03	330	10	25.83	10.71	306
End Customer	4	15.13	4.77	343	12.70	4.43	331	4	9.71	4.18	307
Value Creation Knowledge	19	78.13	18.21	341	64.61	17.97	328	19	46.93	18.19	304
Overall Impact	8	34.99	7.87	344	28.87	8.32	332	8	20.93	8.68	308
Cost Impact	6	23.81	6.47	343	19.88	6.21	331	6	14.38	6.24	307
Differentiation Impact	5	19.32	5.85	343	15.96	5.44	330	5	11.74	4.98	307
Service Innovation Development	20	91.75	14.21	345							
Vendor	7	33.59	5.32	345							
Novelty	3	13.67	2.59	345							
Cost	4	17.37	3.55	345							
Uniqueness	6	27.12	4.89	345							

^a 1 = Never, 6 = Frequently for Interaction/Intelligence Devices Scales.

1 = No Knowledge, 6 = Great Deal of Knowledge for Customer Knowledge and Value Creation Knowledge Scales.

1 = Offered No Value, 6 = Offered Great Value for Service Innovation Development Scales.

^b n = number of valid cases.

Table 2
Coefficient Alphas For Vendors A, B, and C Survey Measures

Coefficient Alphas				
Scale	Number of items	Vendor A (VA-Scales)	Vendor B (VB-Scales)	Vendor C (VC-Scales)
<u>Information</u>	<u>7</u>	<u>.80</u>	<u>.78</u>	<u>.76</u>
Interaction	5	.79	.72	.68
Intelligence Devices	2	.66	.65	.63
<u>Customer Knowledge</u>	<u>14</u>	<u>.93</u>	<u>.93</u>	<u>.94</u>
Intermediate Customer	10	.91	.91	.93
End Customer	4	.85	.86	.86
<u>Value Creation Knowledge</u>	<u>19</u>	<u>.95</u>	<u>.92</u>	<u>.96</u>
Overall Impact	8	.92	.93	.93
Cost Impact	6	.89	.90	.90
Differentiation Impact	5	.92	.92	.91
<u>Service Innovation Development</u>	<u>20</u>	<u>.93</u>		
Vendor	7	.86		
Novelty	3	.77		
Cost	4	.69		
Uniqueness	6	.85		

Numbers of valid cases for each reliability measure are given in Table 1.

Conclusions and Implications

Deregulation and the advent of competition have changed the rules of the game for service companies. For many years, management in the telecommunications industry could be content with being non-innovative for there was little incentive to taking risks. However, in today's environment, service organizations must learn to compete effectively as new competitors, both domestic and foreign, are entering markets that were formerly legal monopolies or where entry was otherwise restricted. The key to competing effectively in these markets is to develop ways to meet what can be termed the "service challenge". This challenge is the quest to constantly develop new services to better meet customer needs; to improve upon the quality and variety of existing services; and to provide these services in a manner which best serves the customer (Peter and Donnelly 1991).

The emphasis in the present study was on determining whether levels of vendor-customer interaction, use of intelligence gathering devices, and various aspects of customer knowledge positively influenced the service innovation development process. A secondary emphasis was determining whether or not significant differences existed among vendor types in regards to the above variables. Results of the regression analysis suggest that levels of vendor interaction with the customer and use of intelligence gathering devices explain a significant portion of the variance in the level of vendor customer knowledge. Given that the information gathering activities examined in the study are largely controllable by the vendor, the importance of these results is magnified. It appears that, through the use of frequent and varied information gathering activities, vendors can become quite knowledgeable regarding their present and future (potential) customers. While several scales have been previously developed to measure whether compa-

Table 3
Stepwise Regression Of Customer Knowledge On
Information Measures

Dependent Variable--Customer Knowledge			
Independent Incremental Variable	Standardized Regression Coefficient	T-Value	Adjusted R ²
<u>Vendor A</u>			
1. Interaction	.419	8.029 ^a	.236
2. Intelligence Devices	.155	2.975 ^a	.253
<u>Vendor B</u>			
1. Interaction	.422	7.553 ^a	.254
2. Intelligence Devices	.157	2.820 ^a	.270
<u>Vendor C</u>			
1. Interaction	.302	5.245 ^a	.211
2. Intelligence Devices	.300	5.205 ^a	.274
^a p < .01			

Table 4
Stepwise Regression Of Value Creation Knowledge On
Customer Knowledge Measures

Dependent Variable--Value Creation Knowledge			
Independent Incremental Variable	Standardized Regression Coefficient	T-Value	Adjusted R ²
<u>Vendor A</u>			
1. Intermediate Customer	.552	10.693 ^a	.586
2. End Customer	.283	5.483 ^a	.619
<u>Vendor B</u>			
1. Intermediate Customer	.493	9.508 ^a	.578
2. End Customer	.353	6.806 ^a	.629
<u>Vendor C</u>			
1. Intermediate Customer	.471	8.704 ^a	.593
2. End Customer	.387	7.151 ^a	.651
^a p < .01			

nies undertake certain of these activities, or the importance of overall company knowledge (Parasuraman, Berry, and Zeithaml 1983; Morris and Paul 1987), none has examined the relationship between vendor use of information gathering activities and vendor knowledge of the customer.

Further analysis revealed that the level of vendor customer knowledge explained a significant portion of the variance in the vendor's level of value creation knowledge. This finding strongly suggests that vendors must possess in-depth knowledge of their customers (and their associated environment) prior to attempting

to ascertain specific means by which potential services can contribute to customer value creation. This finding supports previous conceptual work which stressed the importance of customer knowledge in developing effective marketing programs.

The final regression analysis examined the relationship between the level of value creation knowledge and the level of value contained in a service innovation. This relationship was examined from the perspective of customers who had adopted, or intended to adopt, the service from the vendor evaluated. The results indicated that overall impact and cost knowledge explained about

Table 5
Stepwise Regression Of Innovation Development On
Value Creation Knowledge Measures

Dependent Variable--Vendor A Innovation Development			
Independent Incremental Variable	Standardized Regression Coefficient	T-Value	Adjusted R ²
<u>Vendor A</u>			
1. Cost Impact	.352	5.832 ^a	.365
2. Overall Impact	.346	5.728 ^a	.419
3. Differentiation Impact		NOT ENTERED	
^a p < .01			

Table 6
Analysis Of Variance Procedures For Determination Of
Differences In Means Between Vendors A, B, and C Measures

Measure	Source (Groups)	Vendors A, B, and C Comparisons		
		Mean Squares	F-Value	Prob.
Information	Between	9,903.75	236.19	.00
	Within	41.93		
Customer Knowledge	Between	33,430.87	169.12	.00
	Within	197.67		
Value Creation Knowledge	Between	78,396.34	238.62	.00
	Within	328.54		

Note: For all three measures examined, results of the Scheffe Test indicate that significant differences exist at the .05 level for all possible comparisons (Vendor A versus Vendors B and C and Vendor B versus Vendor C).

forty-two percent of the variance in the value assigned to the service innovation. This finding provides support for the contention that the development of successful service innovations (those adopted by customers) is highly dependent on the results of organizational efforts undertaken by the firm to get to know its customers.

Analyses of variance were also carried out to determine if telecommunications managers were able to discern differences between the levels of activities undertaken and the knowledge possessed by the three vendor types evaluated. These results indicated that significant differences did exist between the three vendor types across all comparisons. In all comparisons made, Vendor A scored higher than Vendor B which scored higher than Vendor C.

The practicing manager will note that the variables in this study were examined from the perspective of the customer. Efforts to develop and market successful new services must be based on a thorough understanding of the customer developed from information collected directly from the customer. Attempting to develop a service innovation strategy simply by relying on vendor perceptions of business customer needs is no longer sufficient to ensure successful introduction.

Several implications for managers in business-to-business service organizations can be derived from the study results. First, the vendors that undertook more frequent and varied information gathering activities (Vendor A) were consistently rated far superior to the other two vendor types (Vendors B and C) in terms of both vendor knowledge of the customer and vendor knowledge of customer value creation.

The implications of this finding are important to business-to-business marketers. Over ninety-five percent of the respondents could discern differences between above average and average vendors and identify representative companies by name. Over eighty-eight percent of the respondents were able to discern differences between above average, average, and below average categories of vendors and identify representative companies. Vendors categorized in the average and below average groups include some of the largest, best-known telecommunications service providers in the United States.

The findings suggest that many companies, both large and small, are not undertaking the necessary efforts to acquire and utilize customer knowledge. Instead, as several researchers have noted, lip service is being paid to the concept of being market oriented. A contribution of this study is that it provides to managers empirical evidence of the need to undertake customer knowledge acquisition activities.

Generic knowledge of a class of customers, which can be gained through indirect means, is not sufficient. The more successful companies will instead acquire and use specific knowledge gained of specific customers. This type knowledge serves as a critical input to the service innovation process. Successful organization-wide responsiveness to customer and associated value creation knowledge comes in the form of service innovations which are adopted by customers. Study results indicate that a strong relationship does exist between vendor knowledge and successful innovation efforts. This type knowledge can only serve to enhance the results of technical or other skills.

Suggestions For Future Research

The study was restricted to one industry setting, the telecommunications industry. In order to increase the generalizability of the findings, the study should, in the future, be replicated in a variety of service as well as product industries. Future research might also involve examination from both the customer's and service provider's perspective, as this would reveal the existence and magnitude of gaps between the two perspectives. Finally, respondents were not asked for information related to comparison of specific services offered by average and below average vendors. Future research might focus on making meaningful comparisons between the service innovations offered by the three types of vendors.

References

1. Bentley, Kathleen, "A Discussion of the Link Between One Organization's Style and Structure and Its Connection With Its Market," *Journal of Product Innovation Management*, Vol. 7, pp. 19-34, 1990.
2. Bund Jackson, Barbara, "Build Customer Relationships That Last," *Harvard Business Review*, November-December, pp. 120-128, 1985.
3. Churchill, Gilbert A., "A Paradigm for Developing Better Measures of Marketing Constructs," *Journal of Marketing Research*, Vol. 16, February, pp. 64-74, 1979.
4. Coyne, Kevin, "Beyond Service Fads--Meaningful Strategies for the Real World," *Sloan Management Review*, Summer, pp. 69-76, 1989.
5. Davidow, William H. and Bro Uttal, "Service Companies: Focus or Falter," *Harvard Business Review*, July-August, pp. 77-85, 1989.
6. Day, George S. and Robin Wensley, "Assessing Advantage: A Framework for Diagnosing Competitive Superiority," *Journal of Marketing*, Vol. 52 April, pp. 1-20, 1988.
7. Forbis, John L. and Nitin T. Mehta, "Value-Based Strategies for Industrial Products," *Business Horizons*

- zons, May-June, pp. 32-42 pp. 1981.
8. Gronroos, Christian, "A Service Quality Model and Its Marketing Implications," *European Journal of Marketing*, Vol. 18, No. 4, pp. 36-44, 1984.
 9. Johnston, R.J. *Multivariate Statistical Analysis* in Geography. Longman Scientific and Technical, Essex, England, 1984.
 10. Lele, Milind M., "How Service Needs Influence Product Strategy," *Sloan Management Review*, Fall, pp. 63-70, 1986.
 11. Maidique, Modesto A. and Robert H. Hayes, "The Art of High-Technology Management," *Sloan Management Review*, Winter, pp.17-31, 1984.
 12. Morris, Michael H. and Gordon W. Paul, "The Relationship Between Entrepreneurship and Marketing in Established Firms," *Journal of Business Venturing*, Vol. 2, pp. 247-259, 1987.
 13. Narver, John C. and Stanley F. Slater, "The Effect of Market Orientation on Business Profitability," *Marketing Science Institute*, December, pp. 1-35, 1989.
 14. Parasuraman, A., Leonard L. Berry and Valarie A. Zeithaml, "Service Firms Need Marketing Skills," *Business Horizons*, November-December, pp. 28-31, 1983.
 15. Peter, J. Paul and James H. Donnelly, Jr., *A Preface to Marketing Management*, fifth edition, Business Publications, Inc., Plano, Texas, 1991.
 16. Porter, Michael E., *Competitive Advantage*. The Free Press, New York, 1985.
 17. Quinn, James Brian and Thomas L. Doorley, "Key Policy Issues Posed by Services," *Technological Forecasting and Social Change*, Vol. 34, pp. 405-423, 1988.
 18. Scheuing, Eberhard E. and Eugene M. Johnson, "A Proposed Model For New Service Development," *The Journal of Services Marketing*, Vol. 3, No. 2, pp. 25-34, 1988.
 19. Takeuchi, Hirotaka and John A. Quelch, "Quality is More Than Making a Good Product," *Harvard Business Review*, July-August, pp. 139-145, 1983.
 20. Von Hippel, Eric, *The Sources of Innovation*, Oxford University Press, New York and Oxford, 1988.
 21. "Communication Manager Survey," *Teleconnect* October, pp. 124-137, 1991.