

**CUSTOMER SERVICE QUALITY
IN THE
CONSTRUCTION INDUSTRY**

by

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B.S. Systems Engineering, U. S. Naval Academy

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**Submitted to the Department of
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the Requirements for the
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Abstract

This thesis investigates how operations management principles are used in various service industries to improve customer service quality and how these principles can be employed in the construction industry. The study defines the current strengths and weaknesses of construction management firms as they relate to customer service, the key factors of customer satisfaction, elements of customer loyalty, industry perspectives of both the constructors and the clients, and highlights areas of improvements. Application of these principles focuses on particular key elements attributable to successful quality service as it relates to services typically provided by construction management firms.

A case study application of a conceptual model of service quality was performed using a local construction management firm. This application attempts to identify the existence of communication gaps between the client and the server, and management and server by identifying the existence of the contributing factors of these gaps. Verification of these contributing factors was performed by surveying employees of a local (Greater Boston) construction management company of representative size. The results of the study indicate that significant differences existed in the perception of service quality by the three levels of the organization who perform the services, top management, project management, and home office support.

Despite the high costs associated with the implementation of service quality programs in construction, the determination is made that given the increase in demand by clients for construction management services, the increase in the number of companies (both construction and non-construction related) entering the construction management field, the increased competitiveness from foreign competitors, and competitive advantage to be gained from utilizing a quality service strategy, customer service quality is an issue that cannot be ignored by the construction industry.

Thesis Supervisor: Professor Fred Moavenzadeh
Title: Director, Center for Construction Research and Education

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1. Introduction

The construction industry in the United States is an industry in transition. The market has become global and domestic firms are facing stiff competition, not only from Japan, but from Korean, German and French conglomerates. The way business is conducted is also changing. The tried and true lump-sum bid system is giving way to more non-traditional approaches involving such terms as counter trade, financial engineering, multi-national financing or equity partnership. In order to stay competitive in this changing environment, substantial research efforts are underway to apply high technology to how constructors in the U.S. do business. Research areas include robotics and automation for on-site construction, prefabricated, multi-story structures, use of composite materials for concrete reinforcement, and application of expert and computer-aided computer systems to assist on how projects are designed, engineered, scheduled and managed. In an effort to increase productivity and reduce the competitive advantage enjoyed by some foreign firms, a significant amount of research attention has also been devoted to the areas of quality in design and construction, schedule compression, strategic planning and alliances, and addressing ever-changing requirements of regulatory agencies as they pertain to current issues such as environmental considerations. The importance of these above areas cannot be underestimated. Each area represents a facet of the business which, without proper attention, would leave an unsuspecting company open to costly liability or loss of market share by ever-present competitors. However, implementation of innovations into construction is difficult given the historically minimal margins. For example, a technological innovation like robotics systems for on-site construction is cost prohibitive and thus not readily accepted by the

industry. Construction is a business of low profit margins, high competitiveness at all levels,¹ and extremely dependent on repeat business. Yet, not understandably, very little research and emphasis from the industry is placed on a concept used in other industries to gain increased productivity or profitability, that being the concept of customer service quality. Those voicing their opinions of the importance customer service has and will continue to play in the business arena include Harvey Shycon, a consultant with Arthur D. Little, Inc. who stated in *The Wall Street Journal* that services are especially crucial in a competitive market. When there are more sellers than buyers, companies discover that "you have to find ways to give the customer more value than merely the product."²

A reason for the minimal emphasis on service quality in construction may be that customer service has traditionally been associated with service industries, which construction is not grouped into normally. Theodore Levitt said "there are no such things as service industries. There are only industries whose service components are greater or less than those of other industries."³ In this regard, construction fits quite nicely. Companies within the industry are composed of a manufacturing component and a service component. The manufacturing component plans and schedules a project, buys and stockpiles the needed materials and equipment, and then "manufactures" the required facility or structure. But the manufacturing component is not activated until a project is secured or won. Obtaining new work and ensuring the product is delivered as promised are just a few of the many functions of the services component of a construction

¹ A 1987 Commerce Department census indicates that there were 1.9 million entities operating as general contractors, heavy construction contractors, or special trade contractors that year. (*Business Roundtable - Construction Users Headlines*, October, 1990.)

² Amanda Bennett, "Making the Grade With the Customer," *The Wall Street Journal*, November 12, 1990.

³ Theodore Levitt, "Production-line approach to service," *Harvard Business Review*, Volume 50, Number 5, September-October 1972, pp. 41-42.

company. The services component varies widely among individual companies and can include business development, quality control, estimating, design and engineering.

Additional services increasingly required of construction firms are operations and maintenance, financial engineering, training of complex building systems, and many other aspects of facilities management.⁴ In addition, construction clients are demanding that companies expand the scope of "services" they offer. For example, a significant increase in the use of competitive negotiation, privatization, design-build, design-build-lease back, and design-build-finance and lease back has occurred and all are delivery systems where service reputation is a factor in choosing the successful bidder. These changing trends are not only limited to the private sector, the public sector is also using these non-traditional approaches. In fact, some state agencies are "looking to the private sector for examples" of alternative methods of delivering construction results.⁵ *Engineering News Record* reported last year that the top 100 construction management firms in this country reported an increase in 1989 billings of 29 percent over 1988.⁶ As a result, there are strong indications that there will be an increasing need for companies to implement customer service quality strategies as more and more services are offered by firms in the industry.

1.1. Service Quality in Other Industries

⁴Hazel Bradford, Steven W. Setzer, William G. Krizan, "Maintenance work looking good," *Engineering News Record*, Volume 226, No. 16, April 22, 1991: pp. 30-31.

⁵John I. Carlson, Jr., "Changing Times in Massachusetts," *Construction Business Review*, March/April 1991, p. 67.

⁶Roger Hannan, "Billings are climbing higher as construction management attracts new converts," *Engineering News Record*, June 21, 1990, p. 31.

In contrast, other industries have for some years employed service quality strategies with dramatic results. Quality customer service has played an ever-growing role in the operations management of many domestic and foreign manufacturing and service companies. An example of this increased emphasis in service quality was the tremendous amount of advertising Cadillac and Federal Express purchased to let consumers know they won the Malcolm Baldrige National Quality Award in 1990.⁷ Car companies have especially gone out of their way to let prospective customers know that the quality of their cars and repair service is as good if not better than that offered by foreign car makers.

Reasons why customer service has been addressed in other industries are many and include foreign competition pressures to maintain equal (if not better) quality and service for similar products, costs of obtaining a competitive advantage through other means (e.g., use of high technology) are prohibitively high and subject to quick obsolescence, and having a service quality strategy is in fashion or vogue, that is, everyone seems to be doing it. William Davidow⁸ states that creating a high level of customer service quality is advantageous because good service makes money when the quality is high. When quality is high and complaints are minimal, then service is perceived as being great since the customer never has to either utilize the service or the queue to get service is small and therefore access to service is quick. In addition, service has a strategic value that

⁷ Both companies were subsequently criticized for their "marketing" of the awards which was viewed by the National Institute of Standards and Technology (the award sponsor) as not conforming with the spirit of the award itself. Federal Express, the other 1990 winner, was the first "service" company to win this award. Past award winners include: 1989 - Milliken & Company, Xerox Business Products and Systems; 1988 - Globe Metallurgical, Motorola Inc., Commercial Nuclear Fuel Division of Westinghouse Electric Corporation.

⁸ William Davidow. "The Coming Service Crisis," *Managing Services* by C. Lovelock (ed.), 1988: p. 18.

requires a long term outlook and commitment by the server. Finally, good quality is the antecedent of good service. Leading companies use service excellence to differentiate themselves, increase productivity, earn customer's loyalty, create positive word-of-mouth advertising, and seek some shelter from price competition, all of which can directly or indirectly create competitive advantages.

1.2 Reasons for Customer Service Quality in the Construction Industry

Not surprisingly, the same reasons for emphasizing customer service in other industries is valid for construction. The industry is an extremely competitive industry. With the exception of the top tier companies, most firms are very similar in their substance, structure and in their approaches to production. With the exception of price, there is very little that distinguishes one contractor from another, which is one of the main reasons that the lump-sum bid system can be used so widely in construction. One means of gaining a competitive advantage is to differentiate the product or service offered to the customer. In construction, there seems to be an obvious need for such differentiation.

Foreign competition pressures are another reason why a differentiation strategy should be employed by domestic construction firms. In addition to foreign price competition, customer service quality is and has been totally integrated into how foreign construction firms conduct their business. For example, traditional methods of establishing long term business relationships which are fostered on a quality product and service is the accepted norm for both construction and non-construction industries in Japan. And finally, the way business is being conducted in construction is changing. Companies are going to need to offer a wider range of services. As more companies offer these services and become

more and more alike, service quality will become the determining factor in selecting a contractor for project execution.

1.3 Thesis Purpose

The purpose of this thesis is to examine the field of customer service using principles developed within the context of other industries. This approach is necessary since the predominant amount of research has been done in non-construction⁹ industries such as fast food establishments, retail stores, and financial or investment brokerage services, and little if any has been done in construction. This thesis is divided into five main sections. Chapter Two begins with the presentation of well known principles and models of customer service and the customer service delivery process. These concepts include defining service quality, perceptions of service quality, quality and price, and a conceptual model of service quality. In Chapter Three, these models and principles are analyzed and refined to reflect the inherent complexities and subtleties of construction, and in so doing, addresses and researches five distinct areas of customer service within the industry. These areas are:

Investigate how customer expectations are developed, and through what medium(s) the customer perception of the actual experience occurs. Customer perception of service quality will then be determined by comparing expectations and perception of the actual experience.

⁹Non-construction companies are defined as companies not listed under Department of Commerce Standard Industrial Classification (SIC) Code fields 15, 16, and 17.

Investigate from the customer's point of view, customer service quality in the both the service process (i.e., the actual construction and/or preconstruction coordination) as well as the service outcome (i.e., completion of the construction).

Investigate and compare the quality level at which regular service is delivered, and the quality level at which "exceptions" or "problems" are handled.

Investigate the change in a company's organization from a low-contact service firm to a high-contact service firm when a problem occurs.

Determine what can be done to improve customer service quality in the construction industry. In addition, identify adequate performance measurements which allow a monitoring of improvement or decline in service quality.

In Chapter Four, using the framework described Chapter Two and refined in Chapter Three, the internal (within the company) service quality of a local construction management firm is analyzed. This is done through the use of survey results of employees which identify contributing factors to communication "gaps" that measure discrepancies between customer expectations and perceptions, and perceived service quality. The internal construction organization is examined in Chapter Five. This chapter addresses the relationship between customer service quality and the types of service, the organization of construction companies, the degree of customer contact and

control, materialization of service, operations management, and the human dimension. Ideas and concepts for implementation of a service quality program within a construction management company is provided in Chapter Six. Finally, the last chapter contains conclusions and recommendations based on the result of the analysis of the construction management company as well as an overall assessment of the applicability of the concept of customer service quality to construction.

2. Defining Customer Service Quality

There is a tremendous amount of current literature available on customer service and implementing quality service strategies. However, very little is available as these concepts relate to the construction industry. Furthermore, most of the research is not quantitative in nature. There are no set formulas to calculate how a strategy should be implemented, or to determine what exactly are the customer's needs and wants. For this reason, defining exactly what customer service is not simple or universal, but rather dependent on the type of organization and service in question. In fact, there are probably as many definitions of what quality customer service is as there are construction contractors in the U.S. As alluded to earlier, the Baldrige Quality Award is fast becoming the standard of product quality and customer service quality among corporate America. The National Institutes of Standards and Technology have quantified these attributes of product and service quality into an examination based on a company's efforts in seven different categories which include Leadership, Information and Analysis, Strategic Quality Planning, Human Resource Utilization, Quality Assurance of Products and Services, Quality Results, and Customer Satisfaction. The two categories of Quality Assurance of Products and Services and Customer Satisfaction constitute 450 of the 1000 points possible on the exam.¹⁰ More abstractly and less quantitatively, Laura Liswood simply states that customer service is "the job of keeping customers once you've won them."¹¹ Davidow defines service as "those things which when added to a product, increase its utility or value to the customer."¹² Customer service quality then is a

¹⁰ Laura A. Liswood, *Serving them Right*, 1990: p.166.

¹¹ *Ibid*, p. xxvii.

relative level of service for those "things" which are added by the server to whatever the customer purchases, be it a product or an intangible service. It also follows that to measure customer service quality, one merely has to measure the utility or value of the service and/or product *after* the customer has received it and subtract from that amount the cost of providing the service and/or product. Unfortunately, service quality varies from customer to customer, from service provider to service provider, and from product to product. And because of these variations, there exists no single way to measure service quality for all industries.

The remainder of this chapter will present concepts and models developed within the context of non-construction industries but whose application in construction is valid. Each concept and model plays a significant role in helping to define the make-up of service quality. These concepts and models will be used in subsequent chapters to develop construction-specific relationships with which to model typical construction organizations for evaluation and analysis. The four areas presented below are Determinants of Service Quality, Customer Expectations and Perceptions, Price and Service Quality, and the Conceptual Model of Service Quality.

2.1. Determinants of Service Quality

While an exact definition of service quality acceptable to all industries is not easily formulated, its determinants are easily recognized and formalized. There exists extensive literature concerning the elements of service and quality. And although these elements or determinants are called by different names or are listed with slight variations, their

¹²William H. Davidow, "The Coming Service Crisis," *Managing Services*, C. Lovelock (ed.), 1988: p. 18.

similarity and context are essentially the same. Liswood calls them "Major Barriers to Good Service."¹³ Joan Cannie refers to her "Keys to Customer Driven Service."¹⁴ Jay Spechler in his book titled, *When America Does it Right*, has "Six Key Success Factors" to quality customer service he has identified from among the hundreds of case studies of companies from a wide variety of industries he reviewed.¹⁵

Berry, Zeithaml and Parasuraman¹⁶ have identified "Ten Determinants of Service Quality." This set of determinants are based on extensive survey research performed over an extended period of time and encompass "most (if not all) consumer service industries" in terms of their applicability.¹⁷ These determinants are:

1. Reliability - consistency of performance and dependability.
2. Responsiveness - willingness and readiness of employees to provide service.
3. Competence - employees have required skills and knowledge to perform the service.
4. Access - customer can easily contact, approach and obtain service.
5. Courtesy - politeness, respect, consideration and friendliness of customer-contact personnel.

¹³ Laura A. Liswood, *Serving Them Right*, 1990: pp. 16-25.

¹⁴ Joan Koob Cannie, *Keeping Customers for Life*, 1991: p. 38.

¹⁵ Jay W. Spechler, *When America Does it Right*, 1988, pp. 8-9.

¹⁶ Leonard L. Berry, Valarie A. Zeithaml, A. Parasuraman, "Quality Counts in Services, Too," *Managing Services*, C. Lovelock (ed.), 1988: pp. 217-218.

¹⁷ Applicability of these concepts to industrial buyer behavior needs to be justified at this point. Norman Fisher (*Marketing for the Construction Industry*, 1986: pp. 40-41) differentiates industrial buyer behavior from consumer buyer behavior in three ways. First, industrial buyers are assumed to be rational in the decision-making process, that is, each purchase by industrial buyers follows a rational and logical (but not necessarily most cost effective) buying decision. Second, industrial buyers are not influenced by media campaigns, merchandising, impulse, fashion, and packaging. Third, they are a better informed purchaser than their consumer counterparts, knowing alternate source of supply and competition. None of these three differences, however, change the validity of the determinants as a measure of service quality.

6. **Communication** - keeping customers informed in a language they can understand.

7. **Credibility** - trustworthiness, believability and honesty. Having the customer's interest at heart.

8. **Security** - physical safety, financial security, and confidentiality.

9. **Understanding the Customer** - making an effort to understand the needs and wants of the customer.

10. **Tangibles** - the physical evidence of the service.

The determinants represent what customers are looking for in a service or dimensions in a service that are missing. The importance of these determinants varies from service to service, or from industry to industry. For example, in the case of Responsiveness, people are willing to wait for hours outside the hottest nightclub in the city perhaps because the owners of the club always book the "hottest" bands or shows. This would also be an example of a higher emphasis on the dimension of Understanding the Customer. By contrast, a McDonald's restaurant would not be in business long if it took more than a few minutes to deliver the service and product they provide. Customers associate and demand more of one determinant than another given the particular service being utilized at the time. There are, however, some generalities that can be made concerning customer importance on the determinants. The following Table 1 illustrates the importance that Reliability was to respondents in a survey performed within four different service sectors.

**IMPORTANCE OF SERVQUAL DIMENSIONS
IN FOUR SERVICE SECTORS¹⁸**

	Mean Importance Rating on 10- Point Scale	Percentage of Indicating <u>Dimension is Most Important</u>
Credit Card Customers (187 respondents)		
Tangibles	7.43	0.6
Reliability	9.45	48.6
Responsiveness	9.37	19.8
Assurance	9.25	17.5
Empathy	9.09	13.6
Repair and Maintenance Customers (183 respondents)		
Tangibles	8.48	1.2
Reliability	9.64	57.2
Responsiveness	9.54	19.9
Assurance	9.62	12.0
Empathy	9.30	9.6
Long-Distance Telephone Customers (184 respondents)		
Tangibles	7.14	0.6
Reliability	9.67	60.6
Responsiveness	9.57	16.0
Assurance	9.29	12.6
Empathy	9.25	10.3
Bank Customers (177 respondents)		
Tangibles	8.56	1.1
Reliability	9.44	42.1
Responsiveness	9.34	18.0
Assurance	9.18	13.6
Empathy	9.30	25.1

Table 1

Source: Gabriel R. Bitran, "Service Quality," Unpublished lecture notes from MIT Course 15.768, *Operations Management in the Service Industry*, Fall 1990. Extracted from *Delivering Quality Service: Balancing Customer Perceptions and Expectations* by Valerie Zeithaml, A. Parasuraman, and Leonard L. Berry. Scale ranges from 1 (Not at all important) to 10 (Extremely important).

¹⁸The SERVQUAL study used only five dimensions or determinants. By their definition, Assurance is Competence, Courtesy, Credibility, and Security. Empathy includes Access, Communication and Understanding the Customer.

In all four service sectors, the dimension of Reliability was rated the most important. In addition, this dimension also received the highest percentage of respondents who felt it was most important among the five dimensions. In this case, the message is quite clear, customers are looking for a service that is reliable and responsive, which rated the next highest dimension in all four of the service sectors.

2.2. Customer Expectations and Perceptions

When a retailer sells a product, the customer's determination of the quality of that product will normally depend to some extent on the quality level that product was manufactured at. In a service, it is usually a process which is the product that is sold. For example, a stockbroker who buys and sells stock offers a brokerage service that is not taken home or possessed by the customer but rather experienced. In services then, how customer expectations are formulated and perceptions managed plays a key role in service quality perceived and measured. This relationship between expectations and perceptions has been formalized by Berry, Zeithaml and Parasuraman.

Berry et al¹⁹ state four conclusions about the concept of service quality which are derived from the development of the ten determinants above. One of these conclusions deals with the determinant of Understanding the Customer and is that perceptions of service quality result from comparing *expectations* prior to receiving the service and actual *experiences* with the service. If the expectations of the service were met, then service quality is perceived by the customer as satisfactory. Expectations not met or exceeded are then perceived as unsatisfactory or above satisfactory service quality respectively.

¹⁹Berry et al, "Quality Counts in Services. Too," *Managing Services*, C. Lovelock (ed.), 1988: p. 218.

Figure 1 shows this relationship between customer expectations and perceptions.

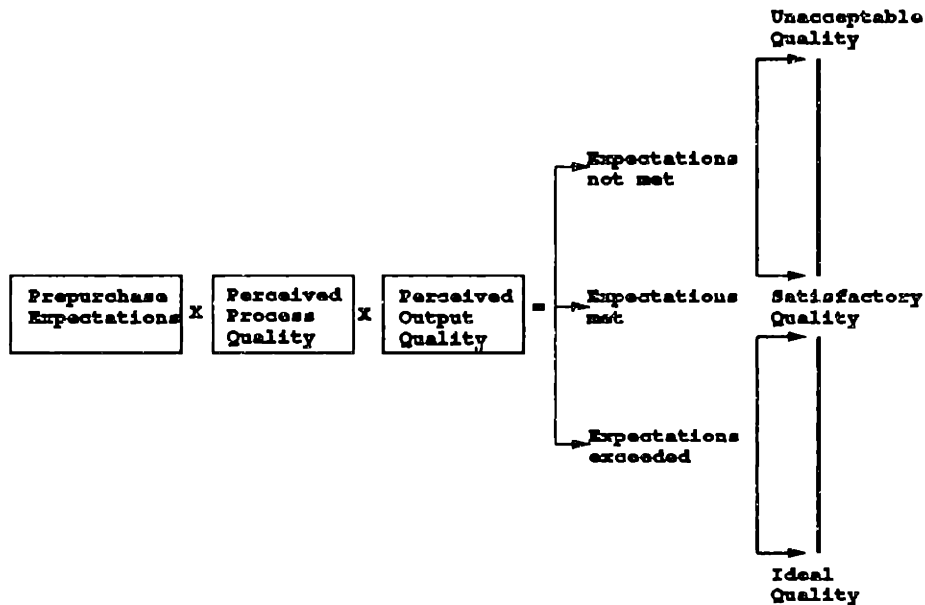


Figure 1 - Continuum of Perceived Service Quality. Source: Berry, Zeithami, Parasuraman, "Quality Counts In Services, Too," *Managing Services*, C. Lovelock (ed.), New Jersey: Prentice Hall, 1988.

In the cases where the service is followed by the delivery of a product, for example, ordering food in a restaurant, the service quality perceived by the customer may be altered by poor product quality, even though the service surrounding the delivery of the product was satisfactory. Service quality perceptions are also altered by what Berry et al have defined as two types of service: the service quality at which regular service is delivered and the service quality when "exceptions" or "problems" are handled. An example of this second type is the nationally franchised oil change shop that advertises to change your car's oil and filter in less than 15 minutes. But looks what happens to the

service quality, however, when a 1952 Jaguar XK-120 drophead coupe arrives which requires the oil pan to be removed in order to clean or change the filter and it takes one-half hour to perform the change. Because the "normal" service delivery process is disrupted, the quality of the oil change service has degenerated.

The other two conclusions by Berry et al are that quality evaluations are derived from the service process as well as the service outcome, and that when a problem occurs, the low, customer-contact firm becomes a high, customer-contact firm. This latter issue, especially the cost associated with becoming a high customer-contact firm will be explored in more detail in the next chapter.

2.3. Conceptual Model of Service Quality

A model of service quality has been developed by Berry, Zeithaml, and Parasuraman.²⁰

This model is presented in Figure 2 below.

²⁰Valerie A. Zeithaml, A. Parasuraman, and Leonard L. Berry, *DELIVERING QUALITY SERVICE: Balancing Customer Perceptions and Expectations*.

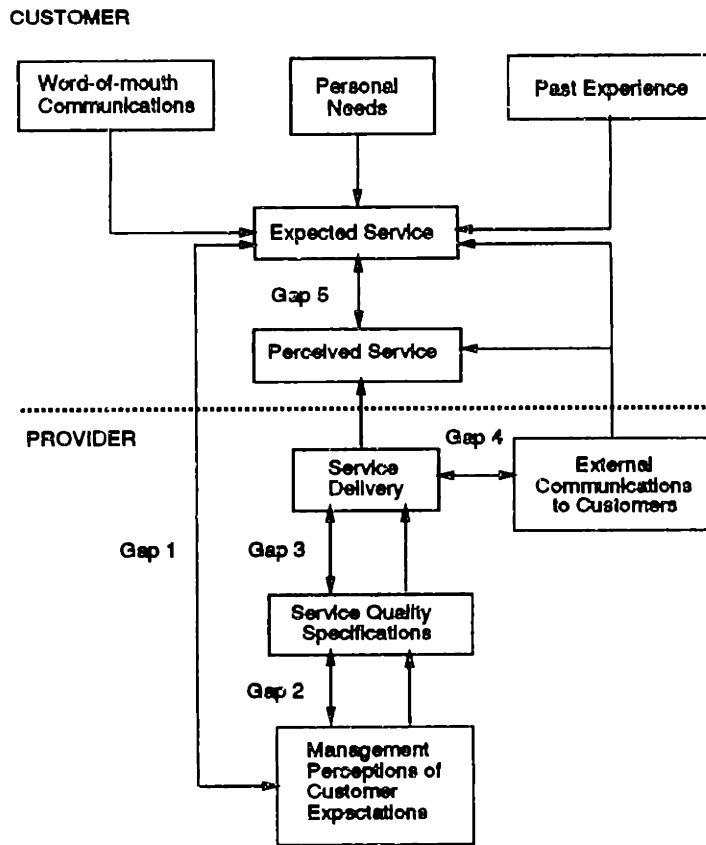


Figure 2 - Conceptual Model of Service Quality. The numbered gaps represent deficiencies in perceptions and communication between management, the server and the customer. Source: Valerie A. Zeithaml, A. Parasuraman, and Leonard L. Berry, *DELIVERING QUALITY SERVICE: Balancing Customer Perceptions and Expectations*.

This model shows how service quality can be measured. It also shows how service quality can be affected by the existence of *gaps* in the customer service delivery system. These gaps are divided into external and internal types relative to the organization, and they are measured through an analysis of the *contributing factors* to their existence. One of the key concepts in this model is that the service quality is not absolute, but rather heavily dependent on perceptions and expectations. Therefore, managing and shaping customer and server perceptions can greatly influence the perceived service quality. A description of these gaps and contributing factors to their existence is given below:

Gap 1 is the difference between management perception of customer expectations and the customer expectation of the service. This gap is related to management providing what they think the customer wants rather than providing what they actually want.

Contributing factors to Gap 1 existence are:

The management's marketing research effort is inefficient or insufficient to understand customer needs and expectations .

Marketing orientation is misdirected.

Lack of upward communication. Insufficient top management's effort to seek, stimulate and facilitate the flow of information from employees at lower levels.

Fails to gather needs and expectations of customers through formal and/or informal information gathering activities.

Too many levels of management.

Inadequate management commitment to service quality.

Gap 2 is the difference between management perception of customer expectations and the specifications that are established for service delivery. In spite of the fact that management may know what a customer wants, the wrong service-quality standards are used. Contributing factors are:

The level that management views service quality as a key strategic goal is inadequate.

Perception of infeasibility or the unsatisfactory extent to which managers believe that customer expectations can be met.

Inadequate task standardization involving how hard and soft technologies are used to standardize service tasks.

Absence of goal setting. Service quality goals tend to be based on company standards rather than customer expectations.

Gap 3 is the difference between service delivered and the service quality specifications.

Contributing factors are:

Role ambiguity where employees are uncertain about what managers or supervisors expect from them and how to satisfy those expectations.

Role conflict where employees perceive that they cannot satisfy all the demands of both the internal and external customers they must serve.

Poor employee-job fit. A mismatch between skills and jobs.

Poor technology-job fit. An inappropriateness of the tools and technology available to employees to perform their jobs.

Inadequate supervisory control systems that creates inappropriateness in the company's evaluation and reward systems.

Lack of perceived control where the employee's perception of flexibility of working with implicit and explicit company rules in dealing with problem situations is limited.

Lack of teamwork.

Gap 4 is the differences between external communication to customers and service delivered. Contributing factors are:

Inadequate horizontal or interdepartmental communications. This involves inadequate communication between:

- Advertising and operations
- Salespeople and operations
- Human resources, marketing and operations
- Differences in policies and procedures across branches and departments

Propensity to overpromise to the extent that communications with customers does not accurately reflect what customers receive in the service encounter.

Gap 5 is the difference between customer expectation of the service and the perception of the service received. Gap 5 is the consequence of the Gaps 1, 2, 3, and 4.

In summary, the larger the gap, the lower the perceived service quality level. The contributing factors for each communication gap are more easily quantified than the actual gap, and so, it is by measuring the perception of the presence or absence of these contributing factors that the perception of gap existence can be determined and measured qualitatively. Chapter Four performs an analysis of a construction management firm which identifies the existence of these gaps through measurement of the existence of their contributing factors.

3. Applying Service Quality Principles to the Construction

Industry

The purpose of this chapter is to apply the principles and models presented in the previous chapter to specific work relationships and organizations found in the construction industry. The analytical framework developed is general in nature, but because variations exist not only in companies but in project nature and contractual arrangements, the framework is illustrated by application to a specific type of company, a construction management organization. The construction management organization is chosen because it offers more services than a general contractor would be expected to provide and it is representative of companies in the industry today that are pursuing services-related work, that is, work efforts in addition to the actual construction of a facility or structure. An organizational chart of the typical construction management company to be used in this study is provided in Figure 3 below.²¹

²¹ To keep terms previously used consistent, the terms owner and construction manager shall be used interchangeably with customer and server respectively. In addition, client shall also be used in place of customer.

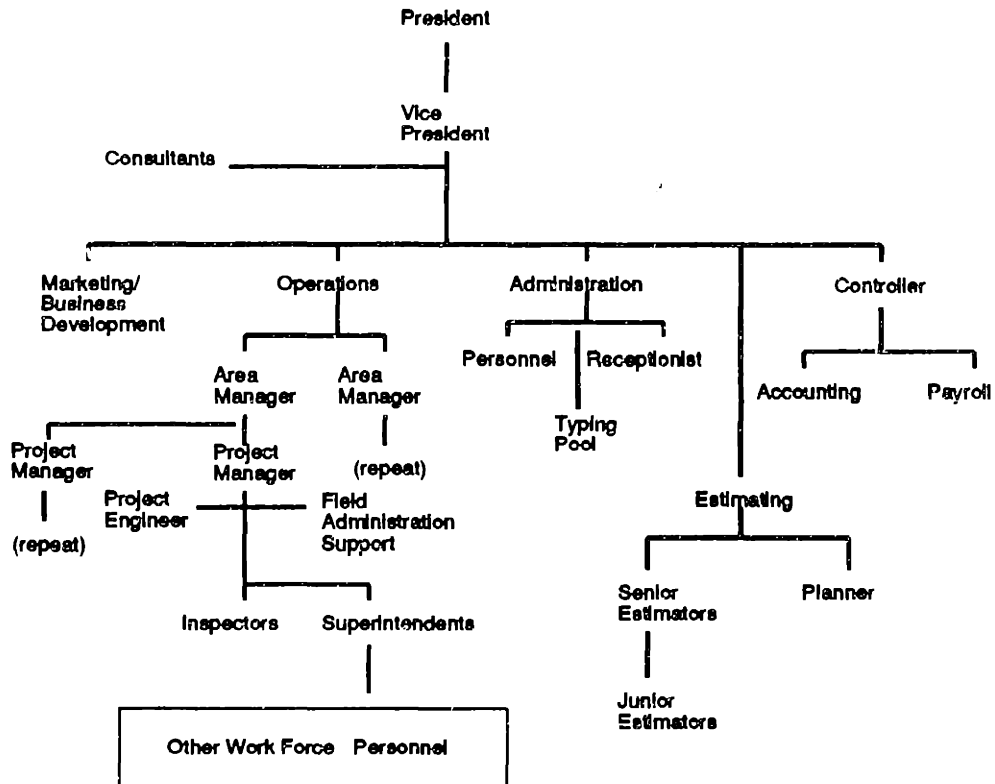


Figure 3: Organizational chart of typical construction management firm to be used throughout this chapter to illustrate principles and methods. This same organizational chart will be used in the following chapter since it is similar to the organization chart of the construction management firm used in the case study.

With this organization, the construction manager will coordinate the project from design through completion, working as the key member of the building team to meet the needs and wants of the owner. There exist two significant differences between the construction manager and the general contractor despite the similarities in their respective organizational structures. These differences are in customer orientation and the type of services performed. The general contractor is profit motivated and profit oriented. In contrast, the pure construction manager²² works for a predetermined fee and

²² Pure construction management is defined as rendering services for only the financial liability of a fee. Construction management "at risk" assumes some of the risk by guaranteed maximum price contracts in addition to performing services. Unless noted, pure construction management is to be assumed throughout this study.

so is owner oriented. Secondly, the goal of the general contractor is to provide a facility at the lowest possible cost in order to realize the greatest margin of profit. The construction manager must provide a number of distinct but interrelated services in order to protect the interests of his client. There are four reasons why construction management is chosen over use of a general contractor: (1) to coordinate construction functions; (2) reduce time for design and construction; (3) reduce costs; and (4) increase project flexibility. All services a construction manager performs accomplishes one of these four owner aims. And it is through the use of services rendered to the client that this optimized coordination and management is accomplished.

3.1 Typical Services in the Construction Management Organization

The types of services construction management companies offer their clients varies from firm to firm. However, there are some services that are common to most companies. A listing of services typically performed is provided in Table 2 below and are broken down by project phase.

<u>Preconstruction</u>	<u>Bid Phase</u>	<u>Post BOD/ Construction</u>
High Customer-Contact Services		
Prepare preliminary estimate	Cash flow projections	Conduct project meetings
Environmental impact studies	Analyze bids	Cost control
Site selection studies	Recommend contract award	Schedule control
Zoning requests		Manage owner-furnished items
Advise on design team selection		Negotiate change orders
Advise on scope definition		Final payment verification
Prepare milestone schedule		Closeout contracts and punchlists
Devise multi-contract strategy		Manage interior work
Low Customer-Contact Services		
Propose alternate methodologies	Bidder prequalification	Obtain permits
Identify long-lead materials	Survey labor market	Contract administration
Prepare bid packages	Value engineering	Submittal review coordination
Manage technical consultants	Develop site logistics	Shop plan review coordination
Review specification criteria		Coordinate and inspect work
Prepare general conditions		Arrange inspections and testing
Prepare supplementary conditions		Warranty enforcement
Identify design interferences		

Table 2

Types of services to be provided by a typical construction management company. Source: Extracted from "Educating Construction Managers," by Leland S. Riggs, *Journal of Construction Engineering and Management*, Vol. 114, No. 2, June 1988, p. 281.

The services in Table 2 are further subdivided into high and low customer-contact services. A high customer-contact service is defined as a owner oriented service or one requiring heavy involvement by the client or the client's representatives in order to accomplish or provide the service. Heavy involvement implies that the client is as much an active participant of the service delivery process as the server. Therefore, satisfactory quality service in the context of high customer-contact services requires each participant (i.e., both the client and server) to play their respective role successfully and intelligently. For example, the service of preparing preliminary estimates involves an estimate by the construction manager and/or the design staff based on the needs and wants of the owner. A faulty estimate due to engineering error may result in overruns during actual construction leaving the owner less than satisfied with the estimating service performed. The estimating team, in turn, is dependent on the owner's ability to communicate those needs and wants accurately enough to ensure they are included within the project scope

and preliminary estimate. A failure by either side to perform their role accordingly will lead to a less than satisfactory level of service quality experienced by the client.

Low customer-contact services are those services which are oriented toward non-owner entities of the building team such as the designer, suppliers, consultants, the general contractor or subcontractors. In the case of low customer-contact services, the level of service quality is wholly dependent on the performance of the construction manager (server) to manage and coordinate the performance of its own workforce or those working for it. An example of a low customer-contact service is preparing the general conditions of the work performance contract. Normally an owner will not become involved in the preparation of the general conditions of a contract. Nonetheless, the construction manager must ensure the general conditions are whole and consistent with other parts of the contract or risk potential problems later on in the project, even if the construction manager is not responsible for their preparation, like when the contract documents are prepared by the designer.

3.2. Linkages Between Services

Although the services are independent functions, those performed earlier in the project can be linked or have some affect either directly or indirectly to services provided later in the project. More importantly, a service performed early in the project may impact on the quality of a different service performed later in the project. One example of such a linkage is between the services to prepare contractual documents and to administer the contract. If some important contract clause was incorrectly written and the mistake does not manifest itself until well into the construction phase of the project, then the contract

administration service may be faulted. Obviously, such a linkage can be positive in terms of providing a high level of quality service. An example of this situation would be the case of an extremely accurate preliminary estimate resulting in no cost overruns and the resulting owner perception that an exceptional cost control service was provided. Prepare contract documents and contract administration, survey labor market/ analyze bids/ preliminary estimate and cost control, and prepare milestone schedule/ identify long-lead items and schedule control are other examples of linkages that exist between the services of the various phases of work.

3.2.1. Time and Linkages

There is also a time impact associated with the perception of service quality for services that are performed later in the contract. The perception for those services performed later in the project (i.e., those services performed during the bid or construction phases) tend to have a greater impact on the overall service quality than the perception of the services performed earlier (or in the preconstruction phase) of the project. A reason for this phenomenon is the typically long duration of the project allows the server to correct those mistakes or problems which have manifested themselves early on. The less time elapsed since the problem, the greater the probability it will not be forgotten or overshadowed by a superior service or a superior product. Secondly, the nature of construction is such that the final stages of work are what the owner will see, remember, and use or live with the most. Unfortunately, the later stages of work are also the most complex to coordinate and manage.

3.3. Service Quality Determinants in Construction

The importance of determinants will vary from service to service in construction because of its inherent complexities, long duration of the project, and sophisticated client demands. Below, each determinant is examined from the point of view of the client and construction manager relationship.

Reliability - While in other industries Reliability proved to be most important to the customer as illustrated by Table 1, in construction, some owners are willing to take a chance with construction managers who are less experienced and/or less reliable due to the price differential and subsequent savings (see also the Competence description and footnote below). This is especially true in the lump sum, low-bid environment where past performance of the contractor is essentially ignored for price. The requirement for payment and performance bonds in construction serves to illustrate that owners are willing to pay the insurance required to compensate for the lack of this determinant since they ultimately incur the cost for such protection.

Responsiveness - Time is money in construction. The financial impact on debt service for short term financing and other costs if the project is allowed to fall behind can be disastrous and bring a project to a grinding halt. Banks and lenders typically look at the forecasted cash flows of a project rather than assets as collateral for a loan. Accordingly, feasibility and engineering studies must be accurate so that the cash flow projections can be relied upon. Any delay in completion of a facility upsets the forecasted cash flow results in financial impacts for the owner. In the case of commercial buildings, a signed lease may contain penalty payments to be paid by the owner if the facility is not ready for

occupancy by the tenant on the date decided. Where a client may be willing to take a chance on a low-bid contractor to perform a job on time, use of a construction manager implies that the client is willing to pay the extra premium to ensure the project is completed on time with a minimum amount of escalation. This determinant is most important for low customer-contact services since these types of service are generally related to the operational or time sensitive portion of the project.

Competence - Construction is inherently complex and problems are bound to arise. Construction management skills are not generally perceived as something that is conducive to being taught in a classroom due to the limitless permutations of circumstances and situations which can arise during a project. As a result, experience plays a key role in determining the skill level of industry workers and experience is what owners seek in the construction management arena. A survey of the *Engineering News Record* Top 100 construction management firms' clients by Murray, Woywitka, Gallardo, and Aggarwal²³ showed that these clients selected construction managers 47 percent of the time due to personnel having more experience, 25 percent of the time because of engineering expertise, and only 16 percent of the time due to costs being lower. A high skill level is generally demanded and expected by the owner. The owner also expects experienced personnel to be responsible for work performance but not necessarily perform the actual work. Apprenticeship and assistant superintendent training programs on the labor and management levels respectively are a fact of life in construction and readily accepted by the client.

²³L. William Murray, Ron Woywitka, Evelyn R. Gallardo, and Sunil Aggarwal, "Marketing Construction Management Services," *Journal of Construction Division, Proceedings of the American Society of Civil Engineers*, Vol. 107, No. CO4, Dec. 1981, pp. 665-671.

Access - Direct or immediate physical access by the client to the services a construction manager offers is not extremely important. Typically, projects are at sites away from the owner's principal work area. Since most services performed by the construction manager requires no product to be received by the client or the client to be present to receive the service, the need for high accessibility by the client to the facilities of the server are minimal. For high customer-contact services where owner interaction is involved, communication via other mediums are employed to transmit the necessary information between the two parties. However, this determinant can gain extreme importance when an exception or problem arises and the firm is forced to transform from a low to a high customer-contact profile.

Courtesy - In the field, this item is not as important in construction as it would be in other industries because of the reputation of construction workers. The home office is a different situation from the field however. And although this determinant remains of low importance, overall impressions can be made by low level staff personnel lacking basic courtesy skills. Courtesy plays a more important role for high customer contact services than low customer contact services since client's perceptions are more dependent in the former type of services than they are in the latter.

Communication - Because of the complexity of the construction delivery process and the high number of individuals and entities involved, communication is probably the most important of all. This determinant plays an important role in both high and low customer contact services since success of the project depends on how well each member of the building team can communicate with each other and through one another. The role of electronic communication (e.g., fax machines, modems, etc.) has improved and increased

the rate at which team members are able to pass information to one another, thus making this determinant easier to realize and accomplish.

Credibility - This determinant is very important throughout the entire delivery service process, especially for high contact customer services. In addition, this determinant plays a greater and greater role as project completion nears and substantial completion dates are projected. Credibility is also affected by the contractual relationship maintained between the construction manager and the owner. For example, a construction manager at risk, by the very nature of the financial risk assumed in the project, would be perceived to have less of the customer's best interests at heart than a relationship based on pure construction management terms. Such an arrangement acts to change the perception a client will have toward the construction manager.

Security - Confidentiality plays an important role in high customer-contact services, especially those related to financing, estimating, and the bidding process. In terms of financial security however, such concerns are compensated for by the requirement of performance and payment bonds the general contractor is required to obtain to ensure the facility or structure will be built.

Understanding the Customer - This element of service quality is interrelated with other determinants and changes depending on the phase in which the project is currently in more than any other determinant. For example, the understanding the client's expectations and objectives are extremely important while the project scope and design are being formulated. Once the plans and specifications are finalized and timetables are established for completion, these expectations and objectives have been reasonably

quantified. Execution and completion then become more important to the client. Any new requirement to change or alter the project will result in a corresponding increase in the importance of this determinant as these changes are incorporated into the project execution and cost framework.

Defining customer profiles in order to better understand the client is also vastly different than in other service industries. Construction companies cannot use demographic data such as sex, age, or income as a gauge to what a client may want or need. Instead, companies in the industry must rely on past experience with the client, reputation, and knowledge of the owner's business aims. In addition, limited public financial information may also be available. Other aspects to consider might include stated client attitudes towards its own customers and economic growth/ recession of the area.

Tangibles - In construction, tangibles can be an important factor in determining the selection of a construction manager. The impact of tangibles would be dependent on what amount of work will be subcontracted, the location of the project (i.e., if equipment would have to be rented at the site anyway), and other factors. Also, at home office management level, the client may be impressed by or looking for a firm with computer-aided capabilities such as a computer-aided design (CAD) system in-house. Tangibles normally associated with service industries such as the facility itself, for example, the decor of a Japanese restaurant, are not that significant in the construction industry although their importance as a quality cue to potential customers may be higher than for actual customers.²⁴

²⁴ Gabriel R. Bitran, "Service Quality," Unpublished lecture notes from MIT Course 15.768, *Operations Management in the Service Industry*, Fall 1990.

General observations can be made about determinants and the concept of low and high customer-contact services. For example, the distinction between low and high customer-contact services is important in the context of the service quality determinants. Within the construction industry, reliability in the form of consistency and dependability of work performance is important but it does not occupy the top position as it does in other industries as shown by the SERVQUAL study. Given the low profit margins and tight time constraints typical of the majority of construction work, Responsiveness would most important for those services related to reducing the time for project completion. In addition, the importance of each determinant changes when construction management services are categorized as either high or low customer contact. And due to the relatively long duration of the service delivery (typically construction projects can run from a few months to years), the importance can change over time. For example, the owner rightfully expects the highest level of server credibility, confidentiality, and customer understanding for high customer-contact services like preliminary estimate, site selection and environmental impact studies since it is these types of services which ultimately dictate the feasibility and success of the project's construction. On the other hand, with low customer-contact services such as submittal or shop drawing review and coordination, responsiveness and communication are of a much greater importance to the client since these two elements determine operational success once project construction has been initiated.

3.4. The Relationship Between Contact, Time, Linkage and Determinants

An owner expects the construction manager to perform the following four functions: (1) to coordinate diverse construction functions on large projects, (2) to reduce the total time for design and construction, (3) reduce construction costs, and (4) to increase project flexibility. Each of these reasons can be related to specific services offered by a construction manager. In turn, each group of services can be identified with specific determinants which are of greater importance than other determinants at a particular phase of the building delivery process. The following diagram illustrates this relationship between level of contact, time, linkage and determinants.

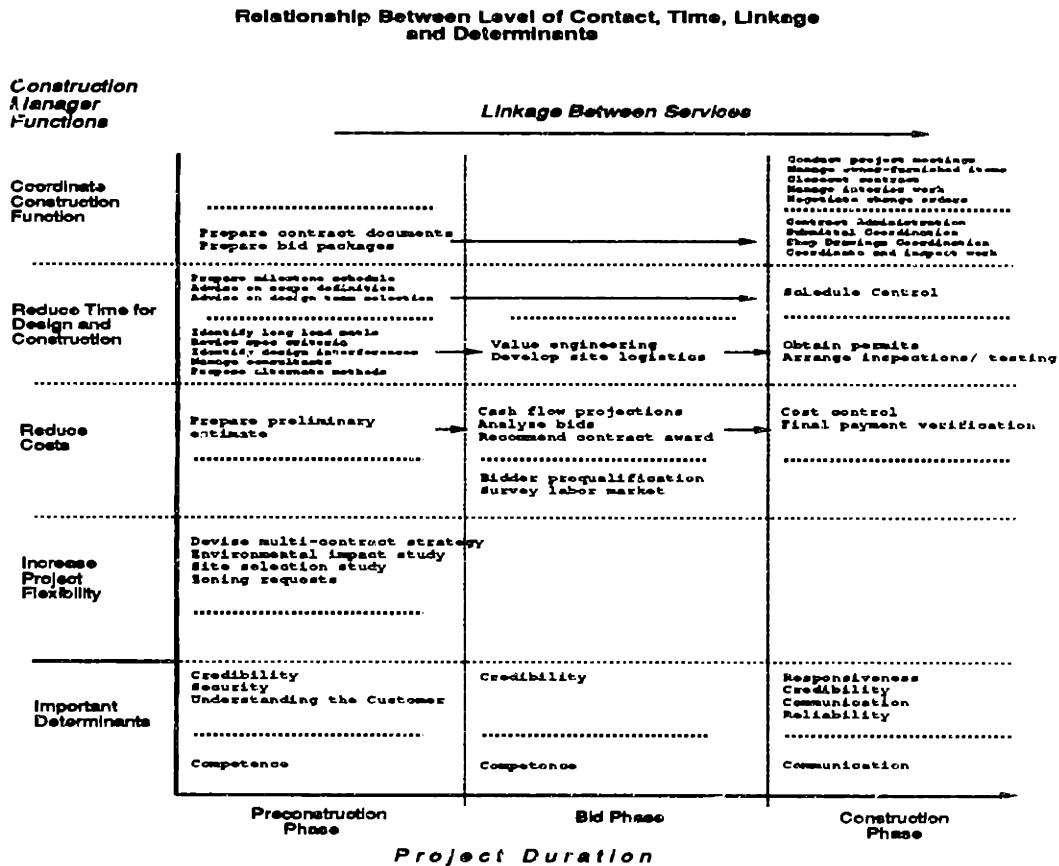


Figure 4 - Linkage between services over the different phases of the building delivery process. Note how determinants change with respect to the particular work phase. This shift in determinant importance acts as a cue to the service provider to shift emphasis on how each service is provided depending on what phase the project is in at the time.

Linkage between services occurs horizontally within each of the construction manager functions listed in Figure 4. The last horizontal row shows prominent determinants for each of the phases of the delivery process. These determinants change over the duration of the contract period. Only the Credibility determinant retains its relative importance to high contact customer services over all three phases. Those services or determinants listed above the heavy dash line in each square are related to high customer contact services while those below are low customer contact services. One interesting note is the number of determinants that are important during the last phase of construction for high customer contact services is larger than for other phases.

3.5. Client Responsibilities, Objectives and Expectations

While a client's perceptions are a function of the determinants described above to varying degrees, managing and manipulating those perceptions are the key to a successful quality service delivery process. Because of the complexities of the construction process, there exists inherent barriers to providing a high level of service quality. These problems relate to the participatory role the client or owner has in the construction process and how well the owner plays his role and is understood by the construction manager.

3.5.1. Owner Responsibilities

Owner responsibilities for the most part are well defined in most construction projects. The owner generates either the need or want for a given structure or facility. The owner is responsible for making sure that adequate financing for the project is available and that

all project team members like the construction manager and the prime contractor(s) get paid. The success of the project depends on how well the owner can administer the relationship between project cost, facility appearance, building functionality, and financial performance (e.g., amount of tenant leasing in commercial buildings) to ensure a balanced and usable product is obtained taking all constraints into consideration.

3.5.2. Owner Objectives

While owner responsibilities are well established and known by the project team members, owner objectives may or may not be, although most are intuitive. The first and most important objective of an owner is to obtain a usable facility or structure of the highest quality that is completed within the allotted time frame at the lowest possible cost. Some other objectives which are met by meeting the first objective includes minimize debt service of short and long term financing (if private owner), minimize size of required investment, maximize return on investment, maximize profit, and reduce economic, business, and contractual risk associated with project. Not all objectives may be made clear however. For example, financing may be kept secret because of stipulations made by the lender or an owner's desires to keep financial particulars confidential.

3.5.3. Owner Expectations

Differing from responsibilities and objectives, expectations are relatively unknown to the construction manager. Concerns over increasing costs of materials and labor, environmental regulations, high interest rates, material shortages, supply fluctuations, energy conservation, regulations for using minority contractors, and an increase in

building, financing and budget complexity are just some of the reasons why owners turn to construction managers. However, what the owner expects within these areas and to what extent is not generally known. Overall compliance may be assumed but to what extremes or limits should a construction manager go to ensure compliance is commonly not known until after an issue has arisen. Given that the perception of service quality is based on a comparison between customer expectations and the service experienced, knowledge of customer expectations is an absolute necessity. There is a requirement in construction for team communication and a positive relationship between designer and construction manager to ensure expectations are known and met. Unfortunately, owner expectations may never be verbalized or communicated to the construction manager during the project duration. Other service industries enjoy the luxury of dictating to the customer what their expectations should be before they buy a service. For example, a ten minute automatic car wash establishment makes publicly known through some marketing medium (i.e., newspaper or television advertisement), a special reduced rate for all cars brought into its place of business after 4 p.m. Customers who read or see this advertisement will now expect to get a car wash at a special reduced rate after 4 p.m. that will take no longer than ten minutes. Construction, on the other hand, is much more complex and its services cannot be rigidly structured or programmed. There is no way of knowing what will happen throughout the duration of the contract and the owner does not know what service will be used until that service is required and so the owner's expectations are may never be communicated or if they are, they will be communicated after the service has or is being rendered. In general, those expectations that are verbalized or communicated tend to concern the overall project outcome, for example, "high quality construction" or "on time and under budget" are common owner

expectations. Construction management firms typically make no effort to shape or form customer expectations on other than the overall level. That is, no effort is made to formulate the owner's expectations of those services listed in Table 2. In addition, those overall project expectations that are made are a consequence of contractual requirements such as the preliminary estimate and project schedule. This lack of attempt to manage expectations is a key factor to why these services are not generally recognized by the owner as adding value to the construction delivery process. This concept of making the customer aware of the value of the service provided is known as "materialization of service" and is addressed in a later chapter.

3.5.4. Objectives versus Expectations

An objective is a goal to be reached. An expectation is how an objective is reached. Knowing and satisfying objectives does not necessarily ensure satisfying expectations. For example, an objective of the owner is the completion of an office building. However, if the owner had to fund numerous change orders and pay high escalation percentages, then expectations may not have been met despite having met the objective. A major barrier to quality customer service in construction then is not adequately *knowing* and *managing* customer expectations. Understanding the customer as well as knowing which and when other service quality determinants are important to the client allows insight into customer expectations and directly affects the level of service quality provided.

3.6. Service Quality and Price in Construction

Expectations can also be altered by price. In the construction industry with predictably low returns and ease of entry, cost and price can be dominant factors in selecting a constructor. If price is the dominant factor in delivering the construction service and product, as it is in the lump-sum bid system, then overspecification (e.g., providing many services) of the product actually reduces its quality. In addition, cost to the owner (customer) in the private and public sectors usually determines feasibility and ultimate award of the project contract. It is this relationship between cost and service/product quality that the owner must balance to bring a project to its fruition. It is also this relationship that determines the level of service (not necessarily product) quality the customer can expect. For example, equal product quality would be expected from a low-bid contractor and a construction management firm performing the same project²⁵ since similar plans and specifications are used. Yet, the level of service quality expected by the owner would be higher for the construction management firm because of the premium price paid for services the owner expects to receive. On the other hand, the low-bid contractor would attempt to limit the amount of overhead costs (i.e., services provided) to ensure profitability. A General Services Administration study on construction management²⁶ listed the following costs as those normally considered by clients in deciding whether to use construction management or not:

Inflation. Rates from 0.5% to 1% per month can mean substantial savings for projects that finish faster.

²⁵ In this case, the construction manager would not be performing "pure" construction management functions but rather assuming some of the project risk by providing a guaranteed maximum price.

²⁶

Using Construction Management for Public and Institutional Facilities, Prepared for the U.S. General Services Administration by Public Technology, Inc. of Washington, D.C., March 1976, p. 22.

Reduced need for temporary quarters. For an owner currently renting space, each month saved in construction time translates into one month less payment for rented space.

Finance Costs. Contractors normally incur substantial costs for interim financing of their work prior to payment by the owner. If design and construction schedules can be reduced, interest charges for short-term financing can also be cut.

Efficient and reliable planning. Rigorous planning and adherence to design and construction schedules can reduce the need for contingency funds carried in contractor's bids and may lead to bid packages with a lower total cost.

Reduction in adversary relationships. As an independent agent not exposed to risks of bidding, the construction manager is able to freely lend knowledge and expertise and actively protect the owner's interests.

Increased construction cost awareness during design.

Avoid unnecessary long-term staffing. No in-house expertise needs to be hired by the owner.

Of the seven items listed, six are directly concerned with reduction in project costs. Although clients may not choose their construction managers by cost (i.e., lower fee cost less important per Murray et al in Section 3.3.), their ultimate aim is to save money. Therefore the employment of the construction manager is an investment by the owner in

the amount of the construction manager's fee. The overall level of service quality can then be partially gauged by the return on the owner's investment as well as the cumulative quality of those services rendered during the project delivery process. The higher the return on investment, the higher the level of service satisfaction and perceived service quality as it relates to the overall service quality level experienced.

3.7. The Conceptual Model of Service Quality in Construction

This section addresses how the Berry, Parasuraman and Zeithaml's Conceptual Model of Service Quality applies to construction management services. The model is quite easily incorporated into the context of the building delivery process because participant relationships are well defined (i.e., players are contractually bound to performance) and milestones are specified in definite terms. For example, expected service is influenced by the following factors: type of contract, contractual relationship, original project schedule, original cost estimate, design quality, design renderings, financial engineering employed, and past experience of the owner concerning construction quality whether that past experience is with the current server or not. Perceived service is influenced by the actual schedule, actual project costs (i.e., cost escalation), actual financing costs (although this information is not generally known to the construction manager), actual quality of construction, the client/ server relationship that existed during the project, number of change orders, number and length of delays, number, type and recurrence of problems, and the ease with which the newly constructed facility or structure is used for its intended purpose. The service delivery process and building delivery process are influenced by such factors as the construction work force, home office personnel, displayed technical

competence of these two groups, team coordination (i.e., with the designer, subcontractors, suppliers, etc.), and regulatory coordination (i.e., with local, state, and/or federal safety inspectors, health inspectors, building inspectors, etc.). External communications to customers are influenced by progress reports, progress meetings, payment voucher accuracy, and marketing efforts. The communication gaps presented in the service quality model also incorporate the affect of personnel on the expectations and perceptions of the client. These human interactions that provide the services are the focus of the following discussion.

3.7.1. Gap 1 in Construction

Gap 1 is the difference between management perception of what the customer wants and the customer's expectations of that service. As stated earlier, unlike other service industries that can rely on demographic data to construct customer profiles of individuals by state, region, city or community, marketers in construction are not afforded that luxury. In construction, indirect marketing has a limited affect. Construction managers are going to base their perception of customer wants on the type of client they are dealing with and the particular economic state that market is in at the time of performing the service. This is due to how new work is obtained by the firm. Typically, the client makes known, either by publically announcing a new project or through the designer chosen for the project, an intention to build a facility or structure. Only when this objective is known, will marketing efforts by interested construction management firms have any noticeable influence. Management's understanding of the customer must come through other channels such as personal knowledge or past working experience with the client.

Another problem associated with Gap 1 existence may be a lack of upward communication due primarily to top management's insufficient effort to facilitate the flow of information from employees at lower levels. There are a number of reasons for this lack of information flow including organizational structure and information flow arrangements in those organizations. There is a lack of upward communication because of the structure of project and home office organizations. The structure of typical construction organizations are hierarchical in nature, and each organization performs their functions at separate physical locations. Workers or foreman at the field organization may learn of new work or problems with existing performance from their counterparts in the owner's organization but may not tell their superiors because of a lack of allegiance to the prime contractor or construction manager. This is especially true when the project work is complex and it requires a high number of sub and sub sub contractors to perform the work. This situation tends to create too many levels of management for feedback and information to find its way back to the top.

One advantage that construction does have over other service industries is that the members of the building team will get to know each other very well by the end of a project. This is due to the inherent nature of construction which requires constant meetings to assess problems and progress on a regular basis and the long duration of the delivery process. Weekly or twice weekly, regularly scheduled meetings are not an uncommon occurrence. This closeness between the client and the designer can be used to the advantage of the construction manager to orient marketing aims, learn customer needs and wants, redirect resources to meet the unique demands of this type of customer, and assess management's commitment towards responding to those needs and wants.

3.7.2. Gap 2 in Construction

In construction, most companies rely on the quality and timeliness of the product (i.e., the completed facility or structure) as the means to gain a competitive advantage over industries rivals. The focus and concentration has always been on how to get the job done cheaper and faster with company differentiation based solely on competence or reputation. Automobile makers have learned that a cheaper product is not necessarily an instant answer for success and profits. Customers have come to demand a high level of quality in the products they buy and they are also willing to pay a premium for the product and service quality which differentiates the companies that deliver in this manner. For example, Mercedes Benz, Volvo, BMW, and Acura all produce luxury, quality cars. Any competitive advantage enjoyed by any one of these car makers comes from other aspects of their business of which service and reputation play an important role. Customers want a long term commitment behind the products they purchase. Construction is no different. Unfortunately, management views held by those in construction of service quality as a key strategic goal are inadequate. However, as services becomes a greater and greater share of how construction business is done in America and abroad, a company's strategic ability to differentiate themselves from others will depend more and more on service quality and not just reputation or competence as the variety of services offered becomes more and more universal.

There is a perception among those in the industry that those who deal with construction must be reactive rather than proactive. This conclusion is based on the view that each project is unique and therefore it is impossible to plan ahead. For example, even standardized plans and specifications for similar buildings must be site adapted so

standardization of the work effort is limited in scope. Since it is not possible to plan for the unknown, the approach is to wait for whatever may happen to happen. Based on this lack of task standardization, there is an absence of goal setting which perpetuates the perception of infeasibility or the unsatisfactory extent to which managers believe that customer expectations can be met. As a result, service quality goals in construction tend to be based on company standards rather than customer expectations.

3.7.3. Gap 3 in Construction

Home office personnel are in the unique role of always being in demand. During periods of low work production, they are usually busy trying to bid and obtain new work. During periods where a high workloads, they are busy still trying to get work but also resolving problems that occur in the field. For this reason, conflicts concerning role ambiguity where employees are uncertain about what managers or supervisors expect from them and how to satisfy those expectations, and role conflict where employees perceive that they cannot satisfy all the demands of both the internal and external customers they must serve are more prevalent among the home office personnel. The inability of upper management to define what role each individual should undertake as well as the individual's ability to prioritize projects in accordance with company priorities can create queues in work accomplishment which affect the perception of and actual service performed for clients. This is especially true for project managers who are traditionally assigned all encompassing tasks. Any additional work load that arises, such as an exception or problem which requires immediate resolution, can upset the balance of the project manager's workload and affect the performance of services. In addition,

construction is also susceptible to instances where a mismatch between skills and jobs sometimes occurs because of the varying type of work involved. This may involve a new type of contract or a type of work that the company has little experience in in terms of estimating or actual construction.

Construction is also susceptible to a lack of perceived control where the employee's perception of flexibility of working with implicit and explicit company rules in dealing with problem situations is limited. One example of a lack of perceived control is company limits on the amount of change order an individual can negotiate or sign. In these cases, the project manager must rely on the home office to perform a function in order to complete the service. Inability of the home office to perform or a mishandling of the documents involved only lead to a perception of a lower level of service quality performed.

Since most construction organizations tend to be hierarchical in form and in most instances, each level of the organization performs their work in different physical locations, there can be a tendency to have a lack of teamwork present. Most typical conflicts arise between the home office versus field. Field personnel typically complain that estimators should be doing a better job of estimating because jobs produce a low profit or no profit or a loss. Creating teamwork between two different physical locations is quite difficult and involves a committed management team to accomplish.

3.7.4. Gap 4 in Construction

With two separate and distinct organizations located in physically different locales, inadequate communication between the home office and field operations is bound to

occur. There may also be differences in policies and procedures across branches and departments which affect the performance of field personnel when they interact with the client, and which affect home office personnel's dealings with the same client personnel.

There may also be a propensity to overpromise to the extent that communications with customers does not accurately reflect what customers receive in the service encounter.

The "can do" attitude can sometimes work to the detriment of a company in two ways.

First, if the company fails to keep its promise to the client, their reputation and credibility will suffer. Secondly, demands on company personnel to continually do the "impossible"

will eventually lead to job dissatisfaction among the individuals who must realize the promises of the management personnel who make the promises. There is also a legal

liability associated with the propensity to overpromise, a topic addressed by Woolever²⁷

who states that "Though it's natural for writers [service providers committed contractually] . . . to put the company's best foot forward and to concentrate on the company's image, that impulse is at the root of many potential miscommunications."

Such problem areas that lead to litigation include a tendency to use extreme words, or an

attitude that any problem can be solved. Though this may be true technically, time and

budget constraints may impede the practicality of such promises. Woolever adds that

service providers who commit themselves in writing "need to focus more attention on the

buyer than on the seller. Because liability claims generally come from the consumer,

writers [service providers] must take extra precautions to understand what motivates their

audience and what language will persuade them without creating false signals."

²⁷ Kristin R. Woolever, "Corporate Language and the Law: Avoiding Liability in Corporate Communications," *IEEE Transactions on Professional Communications*, Volume 33, No. 2, June 1990: p. 96.

In construction, advertising is extremely limited. Only the largest companies in the industry invest any sizable sum into advertising. Smaller companies depend on word-of-mouth advertising, networking and reputation for external communication with the client. Due to these reasons, the presence of a large Gap 4 in construction companies is to be expected for smaller sized companies.

A case study of a local construction management company is presented in the next chapter. The purpose of this case study is to see if various levels of customer contact personnel perceive the manifestation of these communication gaps within an actual organization.

4. Service Quality Gaps in a Construction Company - A Case Study

The purpose of this case study is to analyze the perception of service quality and its influence on performance within a local construction management company and to apply the principles previously described, specifically Berry, Parasuraman, and Zeithaml's Conceptual Model of Service Quality. For this analysis, the framework presented in Chapter 2 and elaborated on in the previous chapter is used. This model consists of identifying communication gaps that measure discrepancies between customer expectations and perceptions, and perceived quality. These gaps are divided into external and internal types and they are measured through the analysis of the contributing factors to their existence. One of the key concepts in this model is that the service quality is not absolute, but rather heavily dependent on perceptions and expectations. Therefore, managing and shaping customer and server perceptions can greatly influence the perceived service quality delivered. The following case study identifies the existence of these gaps within the company at various of top management (president and vice president), project management (project managers and engineers), and home office support (estimators and a planner). This analysis also identifies differences in the perception of the size of the gaps between the three levels of customer contact personnel.

4.1. Scope and Methodology

This analysis will focus on service quality issues rather than the mechanics of service delivery process. The methodology is comprised of distinct steps. A description of these

steps is provided below:

A company was chosen based on age, total annual revenue, reputation in the market area they serve, willingness to participate in the study, and accessibility to the researcher. There were a variety of reasons for establishing these parameters. First, it was important to choose a company beyond the age of average business failure for companies in construction.²⁸ This was done because a company experiencing financial difficulty would bias the results as the company would not be expected to provide a satisfactory level of customer service which could be evaluated. Secondly, an average sized company, representative of the majority of established companies in the industry was also desired. For this reason, a company with revenues less than \$50,000,000 per year and greater than \$25,000,000 per year was chosen. Third, it was desirable to have a company with a highly regarded reputation (i.e., already providing a high level of service quality) so the effectiveness of customer service present could be gauged to performance more easily than a company without such a reputation. Fourth, willingness to participate on the part of the company was essential to the validity of the results and success of the analysis.

A detailed questionnaire was then prepared for the market segment in which the company operates. This questionnaire is provided as Appendix

²⁸ In 1986, one-third of all construction failures were accounted for by companies that were three years old or less. Over 7.5 percent of the total number of failures were caused by businesses in their first year of operation. Reference: Roozbeh Kangari, "Business Failure in Construction Industry," *Journal of Construction Engineering and Management*, Vol. 114, No. 2, June 1988, pp. 173-174.

A. The questions asked the respondents to score specific aspects of contributing factors to internal service quality gaps. A five point scoring scale was developed where five represented a perception of outstanding service quality or where no communication gap existed. On the other end of the scale, a score of one represented a perception of the worst quality service or the largest gap possible.

The questionnaire was submitted to 33 individuals from all levels of the company. Instructions with the questionnaire asked each respondent to answer the questions from the point of view of their respective position. Separate envelopes were provided to convey to the respondents a sense of confidentiality and thereby ensure a more candid and honest answer.

Once the questionnaires were received back, the raw data was compiled into an electronic data base and analyzed based on the conceptual model of service quality described in Chapter Two.

Additional research was performed by telephone in order to get further information that was needed. Such information included company financial data.

Questionnaires were sent out in early April 1991 and responses were received before the end of the month.

Complete responses were received from 12 individuals (36 percent response) in the company. Two responses were from the president and

vice president of the company. Four responses were from project managers or project engineers. Three responses listed estimator as their position. One was listed as a project planner. The remainder did not identify their position and were disregarded. A response was considered complete when all questions had been answered.

Data was tabulated for each individual response. Averages were then calculated for each individual, type of position, and the company as a whole. Individuals were grouped into one of three sections: top management, project management and home office support.

The tabulated data was then analyzed, observations were made, and recommendations developed based on the analysis.

4.2. Company Description

The following information on the company was collected over a period of time beginning in late 1990. During this time, changes occurred within the company due to economic (market) , personal, or productivity-enhancement reasons. Where applicable, these changes are noted. The description of the company relates to its state as of April 1991. Financial performance information relates to the company as of the last complete fiscal year, 1990.

4.2.1. Structure

The company is a privately owned, construction management company founded in 1981. Located in the Greater Boston area of Massachusetts, the company has enjoyed annual revenue growth since fiscal year 1986. The company employs approximately 100 people and had revenues of greater than \$30 million dollars in 1990. The company performs both pure construction management and construction management "at risk" services for clients. The organization consists of the owner who acts as CEO, president, and chairman of the Board of Directors. The Board of Directors are solely an advisory group. The president is also the sole share holder in the company.

4.2.2. People

The company is relatively young and competent. Top and middle management in the home office has an average age in the late thirties/ early forties. Everyone works with a sense of determination and confidence. There is a definite lack of lines of authority. However, responsibility and accountability are present in most everyone's work. The turnover rate is low. The ratio of field to home office personnel is approximately three to one. There are no formal mentor or grooming programs. Marketing is done by a consultant who works two days a week. Business development is performed by the president and another person. The other person also performs non-business development functions on an as-needed basis.

4.2.3. Culture

Corporate culture tends to follow the philosophy of the owner/ president. His work philosophy is, to put succinctly, one of accessibility. Clients are each given a sense of priority by the company toward their projects. If a problem with a project arises, the

client has the ability and, in fact, is encouraged to call top management directly for resolution. In addition, downward flow of information tends not to follow the chain of command. Home office personnel also enjoy accessibility to the president. In addition, project managers and project engineers often utilize the open channel to the top.

4.2.4. Use of Technology

Use of microcomputers is widespread throughout the home office. There is no utilization of computers in the field however. There is no standardization of equipment or networking channels established between work stations. Primary computer software (e.g., word processing or electronic spreadsheets) is standardized. The home office currently uses an AT&T phone system which performs well and can be readily expanded upon need. There is also one fax machine.

4.2.5. Marketing

A marketing team has been established within the company whereby a manager or company officer is responsible for a specific client in terms of follow-up, feedback, and investigation of possible leads. There is no tracking system in place which measures the on-going or past performance of the team, and therefore, no indication if the team is effective or not. A marketing meeting does take place once a week where leads and follow-up efforts are discussed.

4.2.6. Types of Work Performed

The company pursues and performs work in the following market areas: technical, institutional, health care, commercial, specialty and miscellaneous. For marketing

purposes, the company tracks operational performance by the following dollar volumes: less than \$100,000, \$100,000 to \$500,000, \$500,000 to \$1,000,000, \$1,000,000 to \$3,000,000, \$3,000,000 to \$5,000,000, and greater than \$5,000,000. In 1990, approximately 90 percent of their work involved providing construction management services, both pure and "at risk" types.

4.2.7. Reputation

Reputation is clearly a strong asset of the company. The reputation is, in large part, due to the professional contacts and networking efforts of the president. Contacts in the Greater Boston area are the essential ingredient to the company's past and current success. In addition, the company's ability to provide individualized attention to clients is definitely a service that they emphasize and deliver, and is something which clients demand.

4.2.8. Services Performed

The company has performed nearly all the services listed in Table 2. Preconstruction and bid services are performed by home office personnel. These individuals include the president, vice president, planner, and estimators, or through them in conjunction with consultants hired for completing a particular service. Services in the construction phase are performed by project managers, project engineers, and superintendents. Within this company, the president assures service quality by becoming personally involved with issues that clients see their way. As previously mentioned, it is not unusual for an owner's representative to call the president directly in order to resolve an outstanding issue.

4.3. Data Analysis and Interpretation

The data was gathered, compiled and broken into groups representative of the various layers of management present within the company's structure. These groups include top management (the president and vice president), project management (project managers and project engineers), and home office support (mainly estimators). Ten survey forms were deemed usable which represents a 30 percent response rate based on the number of questionnaires sent out. Higher, individual percentages such as 100 percent for the top management and 67 percent for project managers suggests a higher level of dependability for these specific groups.

The data quantitatively compares each group's respective perception of communication gaps as they relate to the gaps described in Chapter Two under Section 2.4. The rating scale employed varied from a five (Strongly Agree) to a one (Disagree). Questions the participants responded to relate directly to those contributing factors identified for each particular gap. Gap 1 was not included because it involves the relationship with the client who is external to the company's operation. The survey allows the reader to compare each group's perception of contributing factors and thus the gaps. Significant differences are identified below. The closer the score to five, the smaller the gap is perceived to be by that group. Questions listed in Appendix A relate to each of the contributing factors listed in Chapter Two for Gaps 2, 3 and 4. For example, questions 1 through 5 relate to the contributing factor of Management Commitment and questions 6 through 10 relate to the Perception of Feasibility for Gap 2. A complete listing of contributing factors and questions which relate to them is shown in Table 3 below.

Gap	Questions	Contributing Factor
2	1-5	Management Commitment
	6-10	Perception of Feasibility
	11-12	Task Standardization
	13-16	Goal Setting
3	17-22	Role Ambiguity
	23-27	Role Conflict
	28-30	Employee Job Fit
	31-32	Technology Job Fit
	33-37	Supervisory Control Systems
	38-41	Perceived Control
	42-46	Teamwork
4	47-49	Horizontal Communication
	50-52	Propensity to Overpromise

Table 3

Listing of questions and related contributing factors of communication gaps used in the questionnaire provided as Appendix A.

Complete descriptions of the contributing factors listed in Table 3 were presented in Chapter Two and elaborated on within the context of the construction industry in Chapter Three.

4.3.1. Gap 2 Analysis

The results of the survey for questions that related to Gap 2 issues are plotted in Figure 5 below.

Perception Measurement of Gap 2

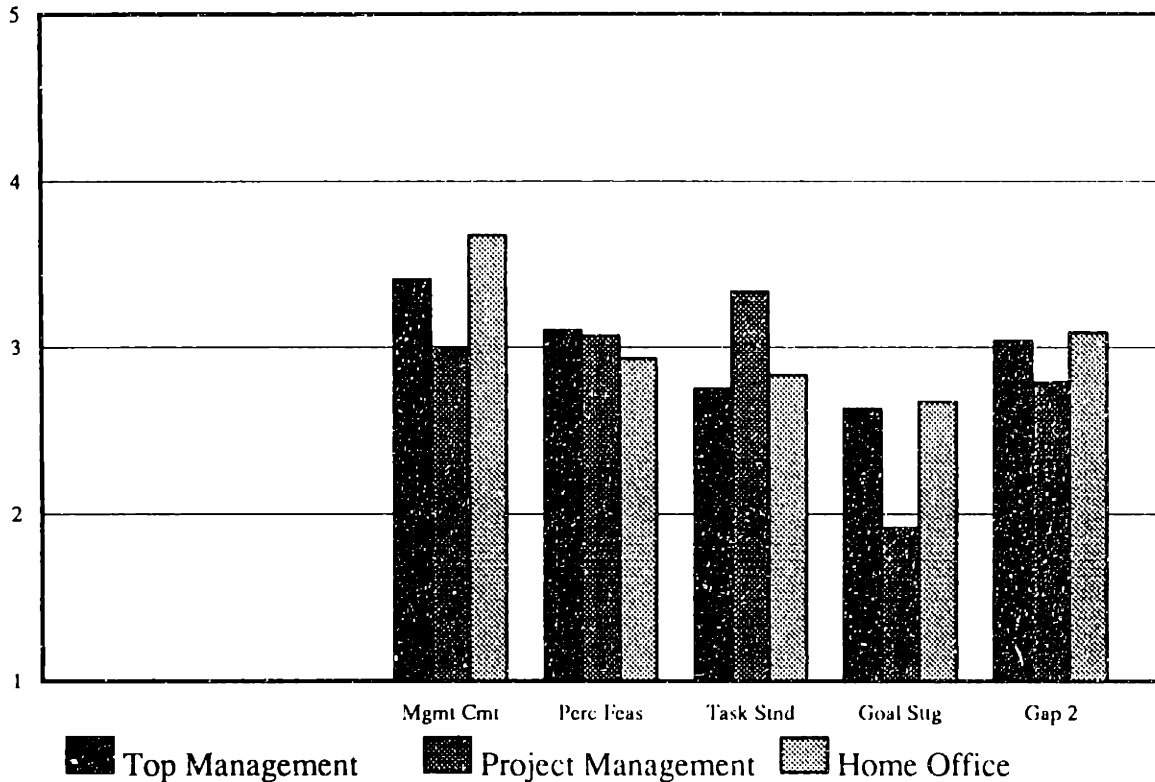


Figure 5 - Gap 2 survey results showing the difference in the perception of communication gap that exists between management perception of what the client wants and how the organization is designed to meet those wants. The following abbreviations are used: Mgmt Cmt-Management Commitment, Perc Feas-Perception of Feasibility, Task Stnd-Task Standardization, and Goal Sttg-Goal Setting. Gap 2 represent the overall average based on the scoring received for all the contributing factors.

These questions addressed the type of resources are committed to service quality, how those resources are allocated, what technology is used and is it adequate, and management's use of goal setting in the context of services. Since the majority of construction services are performed by the project manager, their perception of a larger gap than that of the home office is significant. In a comparison of services performed by the two groups, most of the high customer-contact services done in the preconstruction phase are performed by the home office staff usually with a technical consultant. Other services performed by the home office are advisory in nature or a preliminary aspect of the work such as estimating or scheduling. The fact that the home office support and top

management perceive the same level of gap existence overall suggests that the emphasis on resources, technologies, and service quality is higher at the home office than in the field. Significant differences also exist between the individual contributing factors. For example, Management Commitment and the Perception of Feasibility for performing quality service were somewhat universally perceived as having less of a gap than Goal Setting. The relative low score for Goal Setting indicates that service quality goals in the company tend to be based on company standards rather than customer expectations which is expected with the case study company given the focus the president personally gives to client issues. Goal setting is not necessary for lower level personnel since this arrangement allows them to be relieved of responsibility for customer expectations because their preesident will always assume these duties.

4.3.2. Gap 3 Analysis

This gap deals with how well employees fit into the jobs assigned to them, how well they can or are allowed to perform in that job given the constraints of the company's bureaucracy, the supervisory controls imposed upon the employees, and the amount of teamwork present. Surprisingly, this gap had the highest average (or smallest perceived gap) of the three gaps despite the fact that construction management services are typically highly interactive, labor intensive, and performed in multiple locations (all of which apply to the construction management company services studied) and are especially vulnerable to this gap. The survey results for Gap 3 are shown below in Figure 6.

Perception Measurement of Gap 3

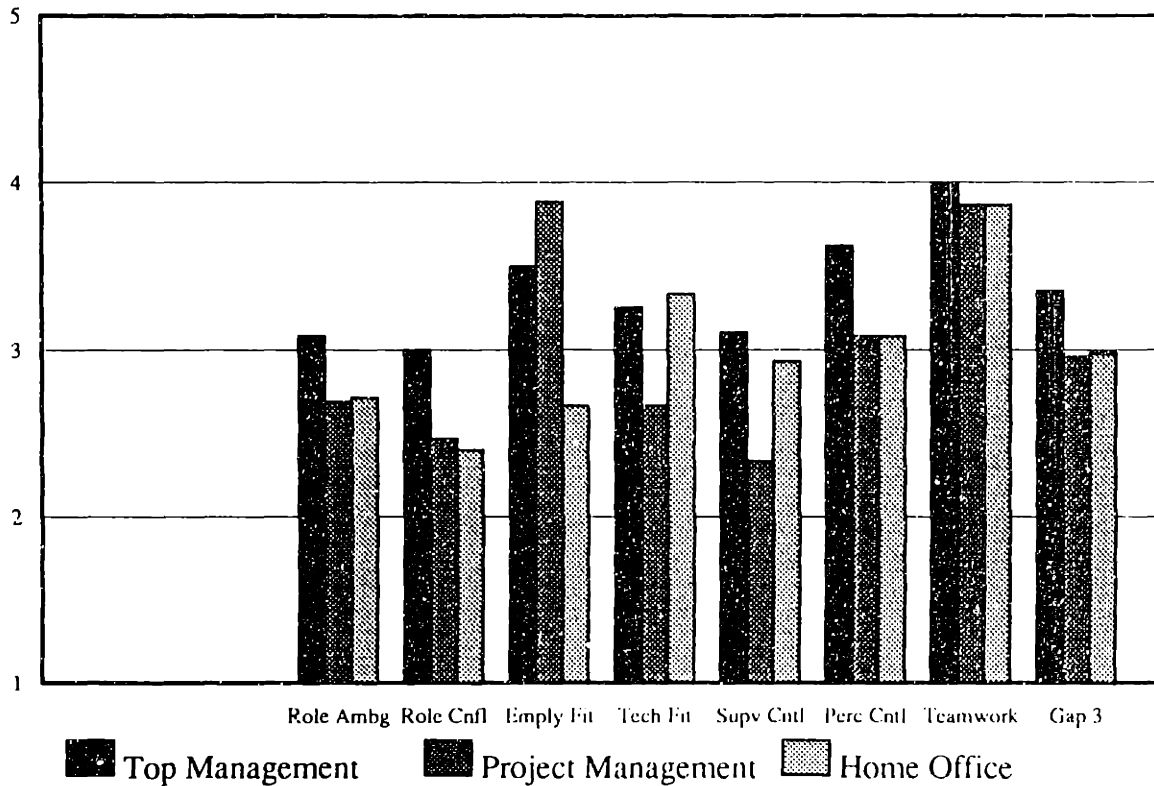


Figure 6 - Gap 3 survey results. The graph show the differences between the three levels of customer contact personnel have in their perception of how service is delivered with regard to the design of the organization that delivers that service. The following abbreviations are used: Role Ambg-Role Ambiguity, Role Cnfl-Role Conflict, Empl Ftl-Employee Job Fit, Tech Ftl-Technology Job Fit, Supv Cntl-Supervisory Control Systems, Perc Cntl-Perceived Control, and Teamwork.

Teamwork was perceived as having the smallest gap among the contributing factors of Gap 3. The high Teamwork score corresponds with the organization's people, structure and culture as described earlier in this chapter. Lowest scores are recorded by the Project Management and Home Office groups for Role Ambiguity and and Role Conflict. These areas of uncertainty as to what supervisors expect, and an inability of satisfying both management and the client are inherent problems within the construction industry. The structure of the relationship of the construction organization, where a project manager must answer to more than one supervisor (i.e., the owner and top management) fosters these conflicts and ambiguities.

4.3.3. Gap 4 Analysis

Gap 4 measured how the three control groups perceived the quality of the company's external communication (e.g., advertising) to the client about its services and how that service was delivered. The Gap 4 results of the survey are shown in Figure 7 below.

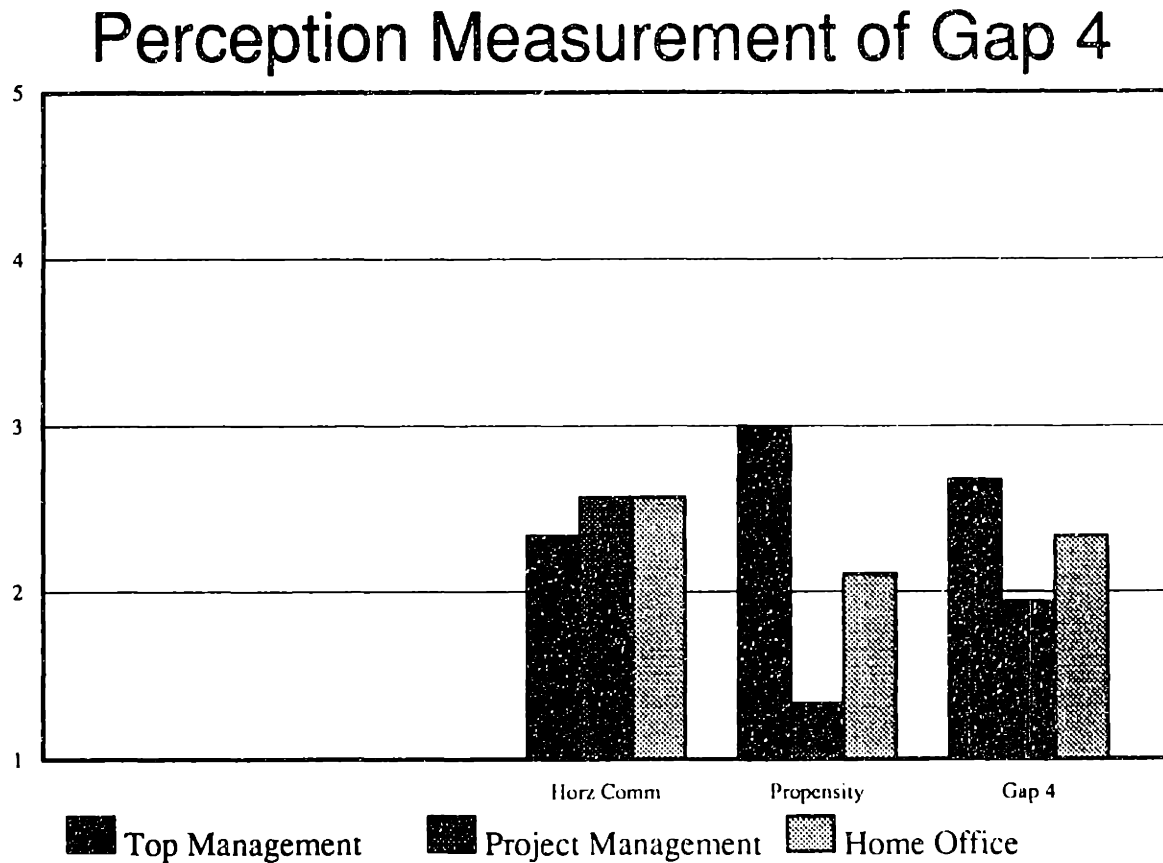


Figure 7 - Gap 4 survey results. The graph shows the difference in perceptions of how well the company correlates its external communication with the client to the actual service delivered.

Overall, this area represented the largest perceived gap among the three gaps analyzed. As mentioned previously, the amount of advertising and traditional marketing a construction firm does is limited which is industry-wide since construction companies tend to rely on word-of-mouth advertising and networking. The low overall rating may also be a result of the small advertising force (i.e., part-time individual) and business

development efforts which are essentially those performed by the president who is also committed to other duties like running the company. In each of the gap analyses, Top Management perceived a smaller communication gap than the two other control groups did. The perceived gap was largest in perceptions dealing with external communications with clients. In addition, it is typically Top Management who is responsible for client contact, committing company resources and authorizing contractual relations with customers. Since reputation and competence are the primary means of differentiation among construction companies, it is expected that external communications are of limited importance in the industry. The low scores received for the contributing factors for this gap are also expected. One significant difference does manifest itself in the graph above however. There exist a considerable difference in the score for Propensity to Overpromise between the Top and Project Management groups. The difference is considered significant since it exceeds the unbiased standard deviation calculated for Gap 4 scores (0.84399).

4.4. Case Study Comments

These differences between how each control group perceives the importance of a type of customer or the size of the project is illustrated in Tables 4 and 5 below. In the survey, each respondent was asked to rank each type of client the company performs work for by which one received the most (score of 1) to least (score of 5) amount of customer service and response. These results are compiled in Table 4 along with rankings by the most to least workload (number of jobs) and profitability.

Market Area	Top Mgmt	Ranking by:		No. of Jobs	Profit
		Project Mgmt	Home Office		
Technical	2	3	3	4	5
Institutional	3	2	2	1	3
Health Care	1	1	1	2	4
Commercial	5	6	4	3	2
Specialty	4	4	5	5	1

Table 4

Comparison of how each customer contact group viewed the importance of the type of customer they service. Included is how each type of customer ranked by the number of jobs (workload) and percent profit per job. Source: Survey results and company records.

Table 4 indicates that the same priority for customer service and response is consistent among the three control groups. In addition, the priorities followed by the control groups is somewhat in line with the relative size of each type of customer. However, there are significant differences when compared to the profitability of each type of client.

The same procedure as above was duplicated for dollar volume of projects. Each respondent ranked each size of project by which one receives the most to least amount of customer service and response. These results are compiled in Table 5 along with rankings by the most to least workload and profitability.

Dollar Volume	Top Mgmt	Ranking by:		No. of Jobs	Profit
		Project Mgmt	Home Office		
<\$100K	7	7	6	1	2
\$100K-\$250K	6	6	5	2	1
\$250K-\$500K	5	4	3	3	7
\$500K-\$1000K	4	2	2	5	3
\$1000K-\$3000K	2	1	1	4	6
\$3000K-\$5000K	1	3	4	6	6
>\$5000K	3	5	7	7	4

Table 5

Comparison of how each customer contact group viewed the importance of the size (in price) of the project. Included is how each size of job ranked by the number of jobs (workload) and percent profit per job. Source: Survey results and company records.

Table 5 shows wide differences in perception of the importance the various size jobs has on the control groups. A very significant difference exists both between the importance

of workload share and profitability over the size of the job by the control groups. Tables 4 and 5 indicate that the company success in providing quality service is partially a result of the emphasis it places on the customer over the size of the project. In addition, this success is in spite of the existence of communication gaps, specifically Gap 4.

The case study shows that unlike other companies more acutely aware of customer service quality issues, this construction management firm performs customer service on an ad hoc and as-needed basis. The survey results have identified a number of areas where employees perceive significant problems with service quality toward the customer exists. The company's focus on the client as a type, size and profit generator varies from group to group which suggests greater coordination and communication between the groups is needed as identified by survey results.

5. The Internal Customer Service Organization

The purpose of this chapter is to identify typical organizational characteristics found in construction management companies which either inhibit or more easily allow a high level of service quality. The focus of this chapter will be on organizational structure, customer contact and control, materialization of service, operations management and the human interaction between client and server. This discussion serves only to identify problems or advantages within a construction management organization that can be related to and/or affect how service quality is delivered to the client.

5.1. The Construction Organization

Because services are performed in two separate locations, the home office and the field, there are two separate organizations that must communicate and interact with the client and themselves at any one time. This situation creates a control problem in terms of communication between the client and the construction manager, and managing the work for those providing services in both the field and home office organizations. This situation readily lends itself to communication gaps previously described in Chapters Two and Three. In construction, there are other factors which affect the construction manager's ability to provide a high quality level of customer service. According to Stinchcombe,²⁹ the sources of variability in the work flow of construction administration includes variations in the volume of work and product mix, seasonal variations in both volume and product mix, and the limitation of performing work within a small

²⁹ Arthur L. Stinchcombe, "Bureaucratic and Craft Administration of Production: A Comparative Study," *Administrative Science Quarterly*, Vol. 4, 1959: p. 179.

geographic area. These sources of variability are common among small to medium size construction management firms. This instability affects the organization of the company through ongoing hirings and firings. Realizing that the owner will most likely have a small staff dedicated to a project of any significant size, the working relationship between the construction manager's personnel and those of the owner requires a certain amount of continuity, something that may be harder to maintain than it is in other industries. Also important is the organizational continuity between the architect, engineer, or other design professional. While having work implies a certain amount of job security, the environment described by Stinchcombe indicates an increased likelihood of employee feeling job insecurity, especially in periods of economic down turns, which may force employees to find job security in other firms or industries.

Additionally, the organizational concept of the construction management team itself must be considered. Organizational structure by geographical areas of a project, or by the more traditional approach of design, procurement, construction and project services are more commonly used. However, in order to enhance service quality, certain reporting relationships and communication channels need to be established and utilized. This should be done with the idea of organizing for efficiency, but maintaining flexibility, as all projects are unique. One advantage of a matrix organization over the more classical and hierarchical construction organization is the inherent link that the matrix organization maintains with its home office functional manager. Such a link is advantageous in that an open channel for information from the field to the home office (and vice versa) is inherently available and, since a reporting relationship exists, is required to be used.

There is no customer service function that clients can rely on or turn to as they can in other service industries. The project manager assumes the role of the customer service person. Along with coordinating, managing, resolving operational problems, and negotiating, the project manager must perform the role of dealing with the exceptions or problems that arise during the performance of services. And as stated earlier, when problems or exceptions arise, the level of customer-contact also rises to a much higher level. When the time a project manager spends on resolving a problem increases, the performance of other services the project manager performs may suffer, thereby creating a waiting or queue situation where the client must wait until time is available to perform a service.

5.2. Degree of Customer Power and Control

Bitran and Hoech state that server power is established in a number of ways.³⁰ First, service providers can gain power by being in a unique position to deliver the service. For example, an auto mechanic may be the only mechanic in a small town and everyone must use that mechanic. Power in this situation is by virtue of the monopolistic situation the mechanic enjoys and service is a direct function of how the mechanic wishes to treat his customers. Secondly, quality elasticity³¹ which is a measure of how important quality is to a customer's purchase decision, can determine who controls a service encounter. No quality elasticity or inelasticity creates server power since customers are willing to accept inferior services due to other factors. One example are popular night spots which

³⁰ Gabriel R. Bitran and Johannes Hoech, "The Humanization of Service: Respect at the Moment of Truth," *Sloan Management Review*, Winter 1990, pp. 90-91.

³¹ Quality elasticity is analogous to price elasticity from economics.

commonly have long lines of people waiting to enter. By willingly standing outside and submitting to the leadership of a generally less intelligent doorman, the customers are also accepting the server's control of the situation in exchange for the value of the anticipated service they will receive. In this situation, the customer always has the option of not standing in line or not accepting the service and leaving. Another source of server power, and one which is most applicable to the owner/ construction manager relationship, is where one party is committed to the service to be rendered. In the case of construction, there is a contractual agreement which binds the owner to accepting the services the construction manager provides. And once the contract is signed, the client is a captive customer. The owner initially has power, especially during the selection process for the construction manager. However, after design is ongoing, the owner is normally delegated to a role of giving input and thus experiences a loss of control over those performing the services for him. The owner's control is constrained by the reality that changing the scope of the design at some point will cost additional money, or, if unhappy with the server, that termination of the agreement between the construction manager and the owner may involve substantial financial restitution for less than adequate services rendered. The same is essentially true for the actual construction of the owner's project where premature termination of the project may result in financial repercussions. Despite these constraints, the client still exercises considerable power and control due to the other factors. The owner can withhold payment, threaten not to use the construction manager again, or pursue a legal remedy to an unsatisfactory situation. These issues of customer power are addressed in the next paragraph. From this list of client strategies to struggle for control, it is obvious that attempts by the owner to regain power and control are negative in nature to the construction manager. Any other level of

performance other than satisfactory and the client can be expected to react negatively. As Bitran and Hoeh point out, allowing customers to get out of their commitment is a service strategy and can be a source of server power in that it can encourage customers to come back later out of a sense of obligation. In addition, the company develops a reputation for being easy to do business with, another reason for customers to come back. Obviously, such a strategy in construction, given the large costs and extensive commitments associated with projects, would involve a case-by-case review in order to evaluate the feasibility of such a strategy.

Customer power is developed by the customer's authorization and payment for a service. The owner maintains considerable power through this mechanism in construction. The construction manager offers services to the owners, and the owner pays for them. The owner has to choose what services it wants performed and pay (at least partially) before the quality and the price of the services become clear. For this reason, the terms of payment are quite important to the client's ability to maintain power and control over the construction manager. On construction projects, payments are almost never full, something that is not common in other industries. Partial payments and the system of retainage is a way of life in construction, and are tools the owner can use quite successfully to control a service provider, even to the point of taking advantage of the server. Another form of customer power is the client's ability to not repurchase a service. Most construction projects requiring construction management services are large in nature and this power can be quite significant, especially during a low or downward economic period. Customers also exert power through the ability to take legal action or recourse for services not performed to their satisfaction. In construction, the

cost of litigation limits the affect of this option. Although, in some cases, customers will pursue a legal recourse for the principle of the issue despite the costs of such efforts.

There are a number of strategies servers use to struggle for control and they include: ignore the customer, reject the customer, reply to the customer's attempt to control, react (other than verbally) to a customer's attempt to control and engage the customer so that the client does not try to seek control. Due to the contractual relationship between the owner and construction manager, the first two strategies are not valid options for the service provider to use, although many owners may argue that the first one is used quite often. More commonly, however, construction managers will attempt to reply or react to an owner's attempt to struggle for more control during a service process.

5.3. Materialization of Service

The materialization of service is a process whereby the customer is aware of all the actions performed before, during and after the service and/or product is received. Materialization of service is a value added concept where service quality adds value to the final product which customers are willing to pay for at a price which produces a profit. And more importantly, the customer will be willing to pay for such a service again and again. Efforts in other industries are made to ensure customers are aware of the value their service adds to the overall service or product received. For example, consider the marketing Federal Express spends so customers are aware that they can determine a package's status anywhere in the world almost simultaneously. Such materialization of service not only aids in terms of advertising but it differentiates Federal Express's service from the host of other overnight services it competes against.

Such a materialization of service can be looked upon as transaction costs that are lost if the customer is not made aware of their existence. Ouchi³² describes this relationship quite succinctly in the following quote:

If one individual sells his or her services to another, it may be difficult to assess the true value of that labor. In particular, if the labor is to be used in an interdependent technology, one which requires teamwork, it may be difficult to assess the value contributed by one worker as opposed to another, since their joint efforts yield a single outcome in this case, or in a case where it is likely that task requirements will change, then the auditing and complex contracting required to create the perception of equity can become unbearably costly.

As Ouchi implies, efforts must be made by the service provider in order for the other party to truly assess the value of the service provided. Because construction is composed of many teams (i.e., consultants, sub and sub sub contractors) performing various services at any one time, materialization of service rarely takes place in construction. In addition, there are in the industry attitudes of "leave me alone and let me do the work" which diminish customer interaction and limits the server's ability to materialize the service for the client. Many construction companies, rather than allowing involvement and inquiry by the client, do not want to be bothered because client involvement will bring changes and changes can only bring more problems. Change orders are a way of doing business in construction. Before a high level of service quality can be achieved, there is a need to accept the fact that client changes will happen in construction and look at it as an opportunity to excel and add value to the product that is being provided to the owner.

³²William G. Ouchi, "Markets, Bureaucracies, and Clans," *Administrative Science Quarterly*, Volume 25, March 1980: p. 131.

Customers more easily grasp the materialization of service when there is proof that the service has been delivered. Other industries do this through unconditional guarantees, customer service organizations, and direct advertising. For example, would it not be proof that a construction manager was providing a high level of service quality if that company offered to complete all change orders within five working days or its fee was reduced by a certain percentage, and the owner never had to reduce the fee? Such a service adds value to the overall construction process and helps the owner to easily materialize the service and its value. Other industries perform the same materialization. Retail store chains will take back customer purchases, even if the reason is the customer did not like the item after all. One problem in construction is that the materialization must be sustained over a longer duration of time than in other service industries.

5.4. Operations Management

How to deploy resources when service time is crucial is the purpose of utilizing operations management to enhance the level of quality in a service process. Operations management also influences how a customer perceives and experiences the service rendered. Operations management involves various areas of resource coordination including use of technology, capacity planning, facility design and flow planning, demand and resource smoothing, scheduling labor and equipment, and queue management. Operations management can also maximize the materialization of service by making the client aware of the intricacies of the business operation and informing the client on how well those complexities are handled. Some examples are a retail store plans a facility so the customer can visually see the majority of items that are

for sale; fast food restaurants design their facilities so that the customer can move quickly to the cashier while reading the menu, receive the food, move to the eating area; a supermarket uses express lanes to speed shoppers with just a few items on their way, or they open a new lane only when a shopper is waiting thus giving the shopper the impression of exceptional service while minimizing the checker's wasted time he/she would have spent waiting for a customer by utilizing it elsewhere in the store. Three specific areas of operations management are addressed here, use of technology, queue management, and demand and resource smoothing.

5.4.1. Use of Technology

The building delivery process has a long cycle time from the Notice to Proceed to when the project is finally completed and used. Because of this reason, there is a very high level of information exchange that occurs generally over a long period of time. Shop drawings, submittals, product data sheets, design modifications, user-requested modifications, and inspector daily reports are some examples of what information is routinely exchanged between the building team players. How the information is exchanged also varies. Information exchange can be anything from physically handing a foreman a piece of paper to the electronic transfer of a complete set of project drawings via a modem. Within this realm of information generation and manipulation, there are competitive advantages which can be realized both to increase productivity and profitability as well as increase the level of service quality.

According to Porter and Millar,³³ a competitive advantage through information

³³ Michael E. Porter and Victor E. Millar, "How information gives you competitive advantage," *Harvard Business Review*, Vol. 63, No. 4, Jul-Aug 1985, pp.158-159.

technology can be obtained by determining the role of technology in the industry, identify and rank how the information technology might create a competitive advantage, and look how these technologies might create new businesses. Due to high cost, field impracticality, and the variability of the work itself, use of high technology on construction sites such as robotics remains severely limited. However, in the home office environment, especially involving service-related functions, use of information and computer technology is widespread and growing. Use of (CAD) computer-aided design systems are commonplace and some companies even possess the capabilities to employ computer-aided manufacturing in conjunction with CAD systems. For construction management firms, information systems can allow these companies to focus or aim their efforts (i.e., increase the service quality level) toward the clients or type of clients that produce the most profit. An example of using information technology to help in refocusing service emphasis is taken from the Porter and Millar article. Casinos spend approximately 20 percent of their revenues on complimentary services for "high rollers." The traditional method of identifying these high rollers had been to have pit bosses "keep an eye out" for them. By tracking spending patterns using computer systems, casinos have reduced that complimentary budget by over 20 percent. Such tracking systems would be useful in construction to develop trends in how a client pays over the duration of the project, requests changes, or requires other services. Information of this nature is extremely important for the company to manage their workload more efficiently as well as allowing them to tailor the service to meet the specific characteristics of the client. This example also brings out a point concerning large versus small accounts which is that transactions must be handled the same but customers must be treated according to size. Shooting for the highest level of service quality would mean each client would enjoy the

same benefits. But a company cannot really afford to do this across the board. In fact, distinguishing between levels of service for various sizes of clients is used by many other industries including the airlines, investment brokers, and others and can increase the level of customer business as is the case with frequent flyer programs and related benefits.

5.4.2. Management of Queues

Queue management is necessitated by management desire to fully utilize given resources while dealing with a fluctuating demand. Queues are created when demand for a service is high and resources to provide that service are limited. Low utilization of the resources means a greater forgiveness in the system and zero or little waiting time for the customer. Conversely, high utilization means a high penalty cost if something should go wrong or there is an exception with a long waiting time for the customer. One hundred percent utilization and zero queues is a "just-in-time" or JIT system delivery. In construction, there is a substantiated desire on management's part to ensure personnel are highly utilized. Problems in service quality occur when an individual is faced with performing services for two or more different projects or situations. Since only one project or issue can be handled at a time, the others must wait and a queue is created. There are a number of issues that arise when a client has to wait that impact on the client's attitude toward the wait and perception of service quality. For example, the environment of the wait might be such that the client feels it is not possible for him to wait. An example of this is when work at the job site has ceased but workers are still getting paid and costing the owner money with no productive gain. For the wait to be acceptable (obviously acceptance will vary depending on the client), the client needs to know how long the wait will be and the reason for the wait. The client will then assess these reasons within the

context of his/her own past experience with waiting, fairness of the wait (i.e., who was in line first), cost effectiveness of the wait, and whether the waiting time can be used in some other manner.

5.4.3. Demand and Resource Smoothing

A construction organization involves control on two levels. First, there is a company wide problem of juxtaposing all the jobs within the home office and various field organizations to meet the demands of the various jobs undertaken at the time. Secondly, there is a need to relate this company wide situation to the smooth and efficient running of each individual. "At the office level, careful planning and consideration of all projects is needed to maintain a balanced staff, to avoid unnecessary overhead, or lost time, and to forecast future cash flow demands." At the project level, the project manager must organize efforts so as to achieve the high technical competence, quality assurance and reasonable profits that are required to sustain operations on both levels.

5.5. The Human Dimension

The Business Roundtable reported that a survey by the Construction Industry Workforce Foundation showed that although young people have a high regard for construction as a vital industry, they view construction workers as unskilled manual laborers who lack prestige, class and respectability.³⁴ In a study performed by Maloney and McFillen,³⁵ construction workers felt that the average contractor used punishment to influence

³⁴ Anonymous, "CONSTRUCTION NEEDS TO CHANGE IMAGE TO ATTRACT YOUNG WORKERS, SURVEY SAYS:," *Construction User Headlines*, September 1990: p.2.

³⁵ William F. Maloney and James M. McFillen, "Worker Perceptions of Contractor Behavior," *Journal of Construction Engineering and Management*, Vol. 113, No. 3, September 1987: p. 418.

workers' behavior on the job. "He [the contractor] criticizes them [the workers] for poor performance and fires them if they perform poorly. In addition, the average contractor applies pressure to the workers to have them improve the quality of their work." In addition, the average contractor makes more use of punishment than he does reward. "Contractors are willing to consider suggestions made by workers and that they recognize workers who make suggestions. On the other hand, contractors do not share information about construction projects, provide an orientation to the general goals and objectives of the projects, or explain the relationship of an individual's work to the total project." While these findings are derived from the field environment, many of the individuals who perform services in the home office as well as project managers have substantial exposure to these attitudes, either through direct or indirect experiences. Customer service is heavily dependent on individual performance, both in and out of view of the client. If customer service is to attain the same success and power it has in other service industries, construction worker attitudes, both in the field and the home office, will require changes.

6. Implementation of Quality Service Controls

There are reams of literature written describing various ways quality service programs should and are implemented within various industries. Jay Spechler's "Six Key Success Factors" mentioned earlier is one of many outlines available to base a service quality program on. One advantage of Spechler's outline over the others is its simplicity. The six factors are: strategy, technology, measurement, feedback, organization, and training. Each of the six areas is briefly examined below in the context of the typical construction management company first presented in Chapter Three.

6.1. Strategy

Service quality strategy must ultimately come from the president or CEO of a company. And such a strategy is only successful if there is a continuing commitment to the setting of the highest service level standards. A strategy must be designed to provide the best services in the entire industry. Anything less than the highest standards is a compromise and will not result in a successful strategy. In construction, the ability to sustain a strategy is limited by seasonal variability in workloads which leads to changing staff, the need to maintain a flexible strategic posture in order to be responsive to economic downturns, and to a smaller extent, by union workers whose loyalty and commitment rests with their respective organization and not the company. While a pure construction management firm would not directly be affected by the use of a union workforce, the affects of cyclical variability in workload increase the difficulty of sustaining such a strategy over a long period of time.

6.2. Technology

Technology can be used to improve service by increasing the reliability and responsiveness of the service provider while reducing operating costs. In addition, the number of customer choices or options can also be increased. There is also the advantage of being able to improve employee morale (working with the latest equipment) and to improve performance quality. At the construction site, however, use of robotics and other forms of automation have been slow in development and wide spread acceptance. Because of this reason, implementation of technology has been principally exploited in the support not production functions of construction.

6.3. Measurement

Any measurement system used to gauge customer service performance should be compatible with how the customer measures the company. The measurement system should measure internal customer service performance and external customer satisfaction. In construction, establishing performance measurement and goals can be difficult. Conducting a service audit is necessary. An audit should identify customer contact tasks (other than sales), for example, service delivery tasks, billing and customer records transmittal, problem solving, and complaint handling. Review standard procedures for each task: written standards (procedures manual) for each task, oral/written instructions (ad hoc), availability (hours/day, locations), interactions with other personnel. Identify performance goals by task: specific quantitative goals, qualitative goals, contribution to related activities, contribution and commitment to long-term success of the system. Finally, identify measure of performance by task:

dollar based, time based, management or supervisor evaluations, and customer evaluations. Any audit system is difficult and costly to maintain but a customer service quality program cannot exist without measurement to reflect customer expectations and perceptions.

6.4. Feedback

Obtaining accurate customer feedback is one of the more difficult problems facing marketing personnel in any industry today. One advantage that construction does have over other industries is the long duration of association with the client and the inherent need to meet with the client on a regular and frequent basis. These meetings are ideal periods during which sources customer satisfaction or dissatisfaction can be identified, elaborated on and addressed. It is the construction manager's opportunity to research and monitor the client in order to determine customer needs, wants, and satisfaction levels. Other industries use devices such as unconditional guarantees as one means of obtaining feedback. Unconditional guarantees forces a company to listen to the customer as well as evaluate the problems associated with the product or service to avoid further reduction of revenues and profits due to unhappy customers. Service evaluation forms returned by the customer and surveys are other means used by service companies to obtain feedback. Similar devices to solicit honest and critical feedback need to be developed for the construction industry.

6.5. Organization

Some companies have created new executive positions for service quality issues in order to develop a quality culture. The commitment of personnel and resources sends a clear message to customers that the companies who create these positions are serious about their commitment to service quality. An executive position for service quality in construction might serve well in the home office environment. However, potential problems of communication, accountability and responsibility exist for enforcement in the field. In some ways, service quality is analogous to safety directors in construction companies. Where once a single safety director operating out of the home office was considered sufficient effort to monitor safety issues at all construction sites, current regulations, high costs of injury liability, and public sympathy for injured workers have forced owners to demand and companies to place a safety professional at each construction site. As the importance of service quality grows in the industry, justification for employing service quality professionals may also.

6.6. Training

Training related to service quality involves two different aspects, training of the customer contact and support personnel within the company, and training of the customer about the service the company provides. Training company personnel can be done directly through a variety of teaching mediums. It is through training that those personnel who are not customer contact individuals should be identified and assigned duties which limits the interaction with the client. Training of the customer can only be done during when the customer's attention is devoted to the service delivery process or while the customer anticipates the service. Other industries educate their customers through advertising

(e.g., a special sale for a single item which occurs only on a certain day during specific hours), or through the use of signs in their place of business which direct customers to the correct line or area. Training of construction clients requires much more subtlety than the direct approaches listed. More commonly, construction clients are trained by experience, that is, having gone through a few jobs with the service provider so each side knows how the other operates to some extent.

7. Recommendations and Conclusions

This thesis has focused on the aspect of customer service and the role it plays in other industries and in construction. Customer service is often overlooked in construction for a number of reasons. Construction is a low profit business with many competitors and high segmentation. Customer service functions and attitudes are typically found in industries such as fast food restaurants, retail stores, shipping companies where the high cost of implementing and maintaining such services can be more easily afforded. In addition, construction is not technically a service. Rather, construction professionals fabricate facilities and structures in a timely and efficient manner in order to realize a small profit. Based on this definition, one might conclude that customer service does not have a place in the construction environment.

In an unchanging world, such reasoning would suffice. However, the environment we work and live in is highly dynamic. Construction, which is heavily dependent on that environment, is also constantly changing. Where business is conducted can change as frequently as political sentiment does. Who performs that work is a list that grows longer and longer each day as Asian and European companies look to diversify geographically in an attempt to smooth out their own fluctuating domestic demands. How we do business changes with technology and economic trends. While technology changes how construction operations are performed, economic trends can even dictate how construction contracts are awarded. Exciting and innovative terms such as counter trade, financial engineering, and equity partnership are a result of high levels of debt national governments have incurred over the past few decades. These methods of

innovative contracting require construction firms to staff personnel that are knowledgeable in formulating such transactions in order to remain competitive. The contractual framework through which construction is performed is also changing. Various contract mechanisms including design-build, and design-build-finance and lease-back require additional services for the construction firm to perform above what is normally required under the tried-and-true lump sum bid delivery system. In addition, clients are demanding a greater scope of operational support, especially in the post-construction phase such as facilities operations and maintenance. As the services component of construction companies continues to increase, customer service will play a larger part of and more important role in what construction companies do the near future.

This analysis presented principles of customer service that are used in other industries to identify customer service problems and trends. These principles are also used to analyze personnel attitudes and service functions to determine possible solutions based on improving the quality of customer service. Berry, Zeithaml, and Parasuraman identified ten determinants of service quality which influence and alter the way a customer perceives and experiences a service. Berry, Zeithaml, and Parasuraman also established a relationship between expectations and perceptions of service quality. These customer expectations and perceptions are formed and altered by the service experience and server perceptions of how that experience should and did take place. The server emphasis placed on these determinants before, during, and after the service experience dictates the success of that experience and perceptions. An examination of these principles in the context of the construction industry showed variations that exists in how these determinants interact with one another. The Conceptual Model of Service Quality was

applied to a local construction management company. Despite the relative success the company has enjoyed over the years and its reputation for customer service, there existed significant differences in the perception of the services provided to its clients. In addition, the case study also showed significant differences in how each control group (top management, project management, and home office support), viewed company priorities toward the type of customer and size of project, which also differed somewhat when compared to the profitability and amount of work the company performs. Another significant finding was the smaller gap perceived by the Top Management group than that perceived by the field or home office group in the three areas of client/ server contact analyzed in the case study of Chapter Four.

7.1. Conclusions

A number of conclusions are made below based on the analysis presented in this thesis.

These conclusions are:

Customer service creates a competitive advantage which is needed as changes to the construction environment continues. Competitive advantages due to high levels of quality service can include price shelter and differentiation. Unlike the differentiation based on competence or reputation that most construction companies rely on, customer service allows a differentiation by service quality which allows more strategic value and flexibility to the company who uses it.

In some cases, determinants lack the importance they hold in other industries. For example, the determinant of Tangibles plays a smaller role within construction and then

only for the services which tend to be home office based.

Other types of services such as fast food and retail outlets perform their service typically within a few minutes. In the construction industry, the service delivery process takes place over a long period of time, generally months and even as long as years. Therefore, the service quality must be sustained over a longer period of time and customer expectations and perceptions must be managed and manipulated over a longer period of time.

Among the factors that serve to shape the tasks performed and the place of customer service within the organization are: presence or absence of intermediaries, high contact versus low contact, institution versus individual purchases, duration of service delivery process, capacity-constrained services, frequency of use and repurchase, level of complexity, and degree of risk (use of sureties).

Services in construction are performed within a rapidly and constantly changing environment and for this reason the determinants of service quality behave differently than they do in other service industries in that these determinants change over time. The service delivery duration of non-construction services are generally rendered over a short period of time.

Services in construction are linked. That is, a service performed early in the project may impact on the quality of a different service performed later in the project. One example of such a linkage is preparation of the contractual documents and contract administration. If an important contract clause was incorrectly written and the mistake does not manifest itself until well into the construction phase of the project, then the contract administration

service may be faulted. Obviously, such a linkage can be positive in terms of providing a high level of quality service. An example of this situation would be the case of an extremely accurate preliminary estimate resulting in no cost overruns and the perception of an exceptional cost control service provided.

There are a number of issues which arise with the implementation of quality service programs in a construction management company. A complete quality service strategy involves all members of the workforce, from the president to the customer contact person and everyone in between who supports these individuals. In construction, however, workers typically associate with unions and/or professional affiliations, not the company. Therefore, it is tougher to instill the concept of quality service on a workforce who displays no loyalty or may be working for a competitor the following year.

Lump-sum, low bid method of getting work, the most predominant means of getting work in the industry, does not encourage customer service. In fact, it makes the price of the product the overriding factor of quality. Since services are inherently minimized and profit taking justifiably maximized under this construction delivery system, a low bid approach to construction work fosters the industry's emphasis away from customer service.

Customers buying durable goods are more tolerant of poor service because the benefits of the products will outlast the actual service encounter.³⁶ In construction however, the same physical product can be achieved by any given company. Each company will use the same plans and specifications to construct the facility or structure. The only

³⁶ Gabriel R. Bitran and Sriram Dasu, "Framework for Analyzing Service Operations," Unpublished lecture notes from MIT Course 15.768, *Operations Management in the Service Industry*, Fall 1990.

difference that remains then is how that facility or structure is completed in terms of other services rendered and the construction quality of the completed structure or facility. In construction management, where a larger part of what the owner pays for are the related services, there is an opportunity to differentiate from competitors by providing a higher level of service quality.

Product differentiation, which a high level of service quality can provide, is also a major source of barrier to entry. Along with advertising, being first in the industry, and product differences, customer service fosters a brand identification. In construction, there exists a high intense rivalry, high buyer power in economic downturns and a lack of differentiation and/or switching costs which creates an opportunistic advantage for firms using customer service as a strategic tool.³⁷

A survey of *Engineering News Record's* Top 100 Construction Management firms' clients state that because a firm's personnel had more experience was the number one reason why they selected a construction manager.³⁸ The client's reliance on experience in choosing engineering and construction companies to perform work was substantiated in a more comprehensive study performed by Fumio Sugimoto. Sugimoto found that in top tier companies of both the U.S. and European markets, that project management expertise and company reputation were the primary sources of competitiveness.³⁹

³⁷ Michael Porter, "How competitive forces shape strategy," *Harvard Business Review*, Vol. 57, No. 2, Mar-Apr 1979: p157.

³⁸ L. William Murray, Ron Woywitka, Evelyn R. Gallardom, and Simil Aggarwal, "Marketing Construction Management Services," *Journal of the Construction Division, Proceedings of the American Society of Civil Engineers*, Vol. 107, No. C04, Dec. 1981: p. 668.

³⁹ Fumio Sugimoto, *Globalization of International Engineering and Construction Firms for Building Their Competitiveness*, Doctor of Science Degree Thesis, Department of Civil Engineering, Massachusetts Institute of Technology, June 1990.

Customers are willing to pay a premium in construction given the right incentive.

7.2. Recommendations

Other industries make extensive use of unconditional service warranties. Christopher Hart states that service guarantees do the following: forces you to focus on customers, sets clear standards that both the customer and server understand, generates feedback when something goes awry, forces you to understand why you fail, and builds marketing muscle.⁴⁰ In construction, most guarantees offered are due to contractual requirements such as five year roof guarantees. The main exception is guaranteed maximum price contracts typically offered by construction managers. Guarantees on individual services can also be used to highlight the advantages stated by Hart. For example, time limit guarantee on change orders with a percentage of the fee returned would set clear standards for the construction manager to reach or exceed. In addition, such guarantees serve to materialize the service provided both positively if service is good and negatively when the standards set are not met.

Construction companies should implement a field support services to enhance the likelihood of a client returning for future business. Specifically, this would entail offering operations and maintenance support services to clients. Field support is how other industries develop a customer loyalty. For example, when an IBM personal computer is broken, customers take it to an authorized IBM repair shop because, presumably, the technicians know their product better than anyone else. Who would

⁴⁰ Christopher Hart, "The power of unconditional service guarantees," *Harvard Business Review*, Vol. 66, No. 4, Jul-Aug 1988: pp. 60.

know the complex interworkings of a facility better than the people who built it? By offering operations and maintenance services, the firm ensures they stay within the purview of the client, they have established a source of information with the client, and acquired work that is steady and continuous in terms of income generation. This approach to field support is based on the old adage that "no sale is ever final." This not a common premise in the construction industry where the highest concern is to finish the punchlist and get off the job site as soon as possible.

Need to enhance the ability to materialize services rendered to the customer. Each opportunity with the customer should be used to educate the customer on the benefits realized by the services. Materialization of services also serves to substantiate in the client's mind the value of those services and so increasing the likelihood of using those services at some future time.

Construction firms enjoy an advantage few other industries have, that is the close and regular interactions required during the delivery process. A firm can get to know a client quite well because of the frequency of meetings and the duration of the project. Weekly or twice weekly meetings between the owner, construction manager, and other building team players should be viewed as opportunities for the service providers to expand on information concerning the client, designers, and others. Companies should maintain computer databases of such information to allow them to exploit the information when the appropriate time arrives in the same manner as casinos focus on big spenders.

7.3. Last Word

Customer service is needed for American construction companies to remain competitive in the face of foreign competition as well as competition from non-construction entities such as real estate and accounting firms who are entering the construction management field. These firms are legitimate competitors in view of the growing segment of services construction companies must offer and their longer history of providing quality services. Customer service has a strategic importance in that it allows a company to differentiate its product and price for a competitive advantage. This product differentiation is also a major source of barrier to entry for other companies. Such barriers are extremely important in construction since the industry has historically been viewed as one with low barriers to entry, and high buyer power during economic downturns. Service quality can increase productivity by forcing a company to care more about what they are doing for their customer, which inherently forces them to care more about what they are doing to themselves. Service quality earns customer loyalty by fostering a brand identification which is a vitally important in the highly cyclical business of construction given the little or no switching costs. In addition, service quality can create positive word-of-mouth advertising which is a mainstay of external communication between any construction company and its clients. Lastly, service quality allows some shelter from price competition which allows the company to realize a higher profit and affords the opportunity to provide a higher level of service which only serves to perpetuate this cycle. Service quality is expensive and construction is a low profit margin business. As demonstrated in other industries, establishing and maintaining a successful quality customer service strategy is costly and time consuming. In addition, short-term return is often negative on the accounting books. However, in a long-term sense, companies cannot expect to remain competitive over time given the changing nature of the industry.

Overcoming the problems mentioned above is the challenge of customer service in construction.

Buzzell and Gale⁴¹ state that "in the long run, the most important single factor affecting a business unit's performance is the quality of its products and services, relative to those of competitors."

⁴¹Robert D. Buzzell and Bradley T. Gale, *The PIMS Principles, linking strategy to performance*, New York: Free Press, 1987.

Appendix A

This questionnaire is designed to assess how your company's organization practices and operates with regard to your client's needs and wants. The answers given will allow me to examine current practices within your department and identify positive and negative trends affecting serviceability and customer interaction. The questionnaire will take approximately 45 minutes to complete.

To complete this questionnaire please provide the appropriate rating to the right of the statement which corresponds with how you assess your company's attitude or practice toward the item stated. The rating scale is as follows:

- 5 - Strongly Agree*
- 4 - Agree*
- 3 - Somewhat Agree*
- 2 - Somewhat Disagree*
- 1 - Disagree*

For example, the first statement is "Resources are committed to departments to improve the response and commitment to clients." If you "Strongly Agree" with this statement, you would place a "5" in the space provided at the right. If, on the other hand, you were to "Disagree" or felt that no resources were committed, then you would place a "1" in the space. Questions in the Background Section of this questionnaire are to be answered directly and not with the use of the scale. All questions should be answered with respect to your current position. All information you provide will remain strictly confidential, both internal and external to the company and its personnel. When complete, please put the questionnaire in the envelope provided and place in the box located in the reception office. In view of the confidentiality of all information, we ask for your complete honesty.

Part One

1. Resources are committed to departments to improve the response and commitment to clients. _____
2. Internal programs exist for improving the quality of service to clients. _____
3. Managers who improve the quality of service to clients are more likely to be rewarded than other managers. _____
4. The company emphasis on serving customers is as much as or more than its emphasis on obtaining new work. _____
5. Upper and middle managers are committed to providing quality service to the clients. _____
6. The necessary capabilities exist to meet client requirements. _____
7. Client expectations can be met without hindering financial performance. _____
8. Existing computer systems enable client expectations to be met. _____
9. Resources and personnel are available to deliver the level of service clients demand. _____
10. Management changes or is willing to change existing policies and

procedures to meet the needs of clients.

11. Automation is used to achieve consistency in serving clients.

12. Programs are in place to improve operating procedures so that consistent client service is provided.

13. A formal process is in place for setting quality of service goals for employees.

14. There are clear goals about what the company wants to accomplish.

15. The company measures its performance in meeting its service quality goals.

16. Service quality goals are based on client oriented standards rather than company oriented standards.

Part Two

17. Management provides accurate information to employees concerning job instruction, company policy and procedures, and performance assessment.

18. Employees understand the product and services offered by the company.

19. Employees are able to keep up with changes that affect their jobs.

20. Employees are trained to interact effectively with clients.

21. Management often communicates company goals and expectations to employees.

22. Employees understand what managers expect from them and how to satisfy those expectations.

23. Clients and managers have the same expectations of employees.

24. Client-contact employees can depend on other support employees to provide quality service to clients.

25. Employees have enough time to do the work assigned them.

26. There are not too many demands in employees' jobs which makes it difficult to effectively serve customers.

27. Not too many clients want service at the same time.

28. Employees are able to perform their job well.

29. Management hires only people who are qualified to do their jobs well.

30. Management devotes sufficient time and resources to the hiring and selection of employees.

31. Employees are given the tools and equipment needed to perform their jobs well.

32. Equipment used is highly maintained and rarely fails to operate.

33. Employees know what aspects of their jobs will be stressed most in performance evaluations.

34. Employees are evaluated on how well they interact with clients.

35. Employees who do the best job of serving clients are more likely to be rewarded than other employees.

36. Employees who make a special effort to serve clients receive increased financial rewards, career advancement, and/or recognition.

- 37. Employees feel appreciated for their contribution. _____
- 38. Employees do not have to spend time in their jobs trying to resolve problems, over which they have little control. _____
- 39. Employees are given the freedom to make individual decisions to satisfy client needs. _____
- 40. Employees are encouraged to learn new ways to better serve their clients. _____
- 41. Employees are not required to get approval from another department before delivering a service to clients. _____
- 42. Employees and managers contribute to a team effort in servicing clients. _____
- 43. Support service employees provide good service to client-contact personnel. _____
- 44. Employees are personally involved and committed to the company. _____
- 45. Client-contact employees cooperate more than they compete with other employees in the company. _____
- 46. Employees are encouraged to work together to provide quality service to clients. _____

Part Three

- 47. Client-contact personnel have input in advertising planning and execution. _____
- 48. Client-contact personnel are aware of external communications (e.g., advertising campaigns) to clients before they occur. _____
- 49. Policies and procedures for serving customers are consistent across departments and branches. _____
- 50. There is no increasing pressure inside the company to generate new business. _____
- 51. The company never overpromises to gain new clients. _____
- 52. Competitors never overpromise to gain new clients. _____

Background Information

Title of Positon: _____

Title of Supervisor's Position: _____

For the two listings below, rank the following category of work by what you feel receives the most to least client service and response. For example, if you felt that healthcare projects received more of the company's client service and response than projects in the other market areas listed, then you would place a "1" in the space provided at the right. If technical projects received the next most service, then you would place a "2" in the space provided, and so forth. Repeat the rankings for the Dollar Volume listing.

<u>Market</u>	<u>Rank</u>
Technical	_____
Healthcare	_____
Institutional	_____
Commercial	_____
Specialty	_____
Miscellaneous	_____

<u>Dollar Volume</u>	<u>Rank</u>
\$0 - \$100,000	_____
\$100,000 - \$250,000	_____
\$250,000 - \$500,000	_____
\$500,000 - \$1,000,000	_____
\$1,000,000 - \$3,000,000	_____
\$3,000,000 - \$5,000,000	_____
>\$5,000,000	_____

On a scale of 1 to 10 with 10 as the most important, please rank the following items which you feel your clients consider most important to least important in performing what you do for them.

- _____ Reliability - Consistency and dependability.
- _____ Responsiveness - Willingness, readiness, and timeliness.
- _____ Competence - Skills.
- _____ Access - Approachability and ease of getting service.
- _____ Courtesy - Politeness, respect, consideration, and friendliness.
- _____ Communication - Informed, clarity, and ability to listen.
- _____ Credibility - Trustworthiness, believability, and honesty.
- _____ Security - Physical, financial or confidential danger, risk or doubt.
- _____ Understanding the Customer - Knowing needs and wants.
- _____ Tangibles - Physical facilities, appearance, equipment, tools, etc.

This completes the questionnaire. I would like to thank you very much for your participation in our study. Please use the attached envelope to seal your answers. Return the envelope to the designated box in the Reception Room.

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