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**AN EXAMINATION OF COMMUNICATION SATISFACTION AND
COMMUNICATION COMPETENCE IN THREE PROFESSIONAL
TECHNICAL ORGANIZATIONS**

by

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Submitted to the Department of
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Faculty of the Graduate School of
the University of Kansas in partial
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ABSTRACT

The study had two purposes: 1) examine the responses of three professional technical organizations on measures of communication satisfaction and supervisory communication competence, and 2) examine the relationship between communication satisfaction and communication competence. Data were collected from three professional engineering firms using the Downs and Hazen (1990) Communication Satisfaction Questionnaire and 2) Snavelly and Walters (1983) Other Perceived Competency Scale and 3) a set of demographic questions. The questionnaires were distributed to all 487 employees of the three organizations and 339 usable responses were obtained.

The following conclusions were made: 1) the factors of employee satisfaction and perceptions of supervisor communication competence are directly related; 2) employee perceptions of empathic behavior by supervisors has the strongest impact on overall communication satisfaction; 3) type of industry does not appear to influence reports of organizational communication satisfaction; 4) the COMSAT Questionnaire is an effective instrument for detecting differences between technical organizations; 5) demographic variables have little explanatory power with regard to communication satisfaction levels; 6) perceptions of

Self Disclosive behaviors are not considered in evaluations of supervisor competence; 7) interpersonal models of communication competence fail to account for critical factors used by employees in evaluations of supervisors; 8) the greatest corporate communication needs are issues related to Top Management and Interdepartmental Communication; 9) improving the effectiveness of supervisory communication would include satisfying communication task needs, active listening, and demonstrating empathic behaviors.

DEDICATION

*To Melissa,
for her support, encouragement, confidence, sacrifice,
enthusiasm, tolerance, friendship, and love.*

ACKNOWLEDGEMENT

The completion of this project is the result of many people who deserve recognition and appreciation. I am grateful to each of my committee members for their efforts and contributions. I am especially grateful to Dr. Cal Downs for the development and use of the Communication Satisfaction Questionnaire.

The support and personal kindness of my colleagues at University of Arkansas-Little Rock has been constant and is sincerely appreciated.

They say that behind every successful man is a woman. I have been fortunate to have been supported throughout this project by not one, but four exceptional women: my mother, my wife, and my daughters. My deepest and most sincere gratitude goes to Mama, Melissa, Lauren, and Kendall. Thank you.

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CHAPTER ONE

INTRODUCTION

Theorists and researchers have provided considerable evidence establishing communication as an important component of organizational functioning. Organizational communication scholars continue to demonstrate a central concern to explore the relationship between communication and organizational outcomes. Research suggests that communication is related to performance, job satisfaction, productivity, and commitment of organizational members (Clampitt & Downs, 1987; Eisenberg, Monge & Miller, 1983; Goldhaber, Yates, Porter, & Lesniak, 1978; Kongchan, 1985; O'Reilly & Anderson, 1980; Pincus, 1986; Porter & Roberts, 1976; Potvin, 1991; Thiry, 1977; Varona, 1988).

Arnold and Feldman (1986) suggest that effective communication is critical to an organization's success. Effective management is dependant on effective communication in order to motivate employees, conduct effective performance appraisals, negotiate agreements with other organizations, and to gather the information affecting the organizations.

Goldhaber (1986) reports that bad management and ineffective employee communication are major contributors

to the failure of more than ten percent of business enterprises in the United States. Thayer (1961) also maintains that the ultimate success of organizational communication will manifest itself in the success of the organization.

The research concerns of the importance of communication within organizations has led to the development of two relatively modern constructs in the field of human communication: communication competence and communication satisfaction. Although the two concepts have received much attention in the theoretical and research literature, no study has focussed directly on the relationship between them. Furthermore, no research has examined these constructs in the particular context of professional technical organizations.

COMMUNICATION SATISFACTION

Clampitt and Downs (1987) note that in the last 20 years communication satisfaction has become a familiar topic in the literature of organizational communication. In that period the nature of the construct has been defined, a tool to measure it has been developed, and many researchers have utilized the instrumentation to measure communication satisfaction in a wide variety of organizations.

The earliest reference to the construct of communication satisfaction was in a case study of human communication in an urban bank by Level (1959). This study assessed employee satisfaction with several information variables including the amount of information received from management about policies, procedures, and work expectations.

Most of the early theorists treated communication satisfaction as a unidimensional construct. This traditional approach was reflected in Thayer's (1968) definition of communication satisfaction as "the personal satisfaction inherent in successfully communicating to someone or in successfully being communicated with..." (p.144).

Unfortunately, few researchers could agree upon just which single dimension of communication held the construct. Redding (1972) was the first to recognize the probable multi-dimensionality of the construct. He reviewed several studies focusing on communication satisfaction and reported that researchers had attached a wide variety of factors to communication satisfaction. Subsequent documentation of communication satisfaction as a multidimensional construct grew out of two independent factor analytic studies in different countries. Wiio (1976) studied 22 organizations in Finland over a three-

year period. He audited the organizations' communication practices and factor analyzed the results to uncover the underlying dimensions of communication satisfaction. The four broad factors of communication satisfaction reported by Wiio were:

- 1) Job Satisfaction
- 2) Message Content
- 3) Improvements in Communication
- 4) Channel Efficiency

Downs and Hazen (1977) used similar procedures to conclude that the construct was indeed multidimensional. The researchers developed an original questionnaire and collected responses from 510 employees from four organizations. Factor analysis established the following eight stable dimensions of the construct which eventually formed the basis for the Communication Satisfaction Questionnaire (COMSAT):

- 1) Media Quality
- 2) Satisfaction with Supervisor
- 3) Satisfaction with Subordinates
- 4) Communication Climate
- 5) Personal Feedback
- 6) Organizational Perspective
- 7) Organizational Integration
- 8) Horizontal and Informal Communication

A revision by Downs (1990) added two more dimensions, Top Management Communication and Interdepartmental Communication, to establish a total of ten dimensions measured by the COMSAT.

The Communication Satisfaction Questionnaire has been used by several researchers to assess employee satisfaction in a wide variety of organizational settings. A review of the academic research utilizing the Communications Satisfaction Questionnaire indicates that the reported organizations studied were in education, government, accounting, publishing, and health care.

In their review of the literature of communication satisfaction, Clampitt and Downs (1987) found that the studies suggest:

1. The construct of communication satisfaction is indeed multi-dimensional.
2. The Communication Satisfaction Questionnaire developed by Downs and Hazen (1977) has proved to be a useful tool for organizational diagnosis in a wide variety of organizations.
3. Communication satisfaction does link to the end-product variables of job satisfaction and productivity.
4. While the studies indicate that for the most part employees are satisfied with organizational communication, there are definite areas of greatest and least communication satisfaction.

ORGANIZATIONAL COMMUNICATION COMPETENCE

The establishment of the importance of communication in the achievement of organizational goals leads to concerns about the communication abilities of the

individual members of the organization. Argyris (1962) suggested that interpersonal competence is a key communication related variable that contributes to organizational effectiveness. Likert (1967) used the "individual as linking pin" analogy to describe the crucial role members provide in the coordination of various organizational activities. More recently, Sypher (1984) and Sypher and Zorn (1986) have indicated that organizational effectiveness requires that a significant number of organizational members possess communication competence.

Without adequate communication skills, appropriate new members may not join or be recruited for the organization, new members may have difficulties in assimilating, present members may have difficulties coordinating activities, superiors or those with higher status may misunderstand those ... have less status, and vice versa. Roles, values, norms, organizational and individual identities all are developed, changed, accepted and rejected through communication. The level of communication competence among organizational members is likely to affect each of these activities. (Sypher, 1984, p. 103)

Despite the long held assumption that the communication competence of individual organizational members has strong implications for organizational effectiveness, only recently has research addressed the organizational outcomes of communication competence. Monge, Bachman, Dillard, and Eisenberg (1982) and McCroskey (1984) were among the first to argue that

research attention should be focused on the relationship between communication competence and outcomes of communication. Monge, et al. note that almost all of the work concerned with communication competence outcomes has been conducted in the area of interpersonal communication and little has been done to apply the concept to organizational contexts.

Empirical evidence of the individual competencies required for effective organizational management was provided by Boyatzis (1982). The characteristics identified by Boyatzis to differentiate poor, average, and superior managers are primarily communication related factors. The discriminant factors on his list included interpersonal skills, effective public speaking, perspectual objectivity and social development.

Results from research investigating leadership have also illustrated the importance of communication skills. McCall & Lombardo (1983) identified perspective-taking skills as the crucial variable separating successful leaders from those whose careers had been derailed. Individual communication ability was found to be a strong predictor of success in terms of job level and upward mobility in a study of a large insurance company by Sypher and Zorn (1986). Willer and Henderson (1988) found that there are statistically significant

associations between a manager's communication competence and the subordinate's satisfaction, role clarity, and perceived effectiveness of the manager and organizational work unit. Jackson's (1990) findings indicated that communication competence is strongly associated with managerial effectiveness. Analysis demonstrated that managers who were found to be more competent communicators were also identified as those rating highest on five measures of managerial effectiveness.

THE RESEARCH PROBLEM

The importance of communication in organizations has been established and the constructs of communication competence and communication satisfaction have been studied in a large variety of contexts. A review of the communication studies literature indicates very little attention has been given to research examining professional technical organizations. Moreover, the relationship that is intuitively accepted to exist between the communication competence of supervisors and the communication satisfaction of their employees has been inferred without the benefit of demonstrated empirical evidence in all kinds of organizations.

This research study examined the perceptions of both supervisor communication competence and communication

satisfaction of employees of professional technical business organizations. It additionally sought to examine the nature of the relationship between supervisor communication competence and the organizational outcome of employee communication satisfaction.

The need to study each of these constructs independently and within specific industries has been expressed by several researchers (Wiemann, 1977; Monge, Bachman, Dillard, & Eisenberg, 1981; Smith and Hellwig, 1985; Walters, 1980). Monge, et al. (1981) suggest that models of communication competence will not be fully tested until results are replicated using future samples of organizations from different industries. Little research in the area of communication competence has applied the construct to the issues of organizational outcomes and none has addressed the relationship between communication competence of supervisors and the communication satisfaction of organizational members. Additionally, while many studies addressing communication satisfaction have established strong links with several organizational outcomes, few have sought to explicate the antecedents of favorable employee reports of communication satisfaction.

The need for the examination of these constructs in the particular organizational context of professional

technical organizations is particularly important because the industry has rarely been the subject of academic research examining these constructs. The impact of the technical organizational environment on the perceptions of employee communication satisfaction and supervisor communication competence has yet to be rigorously explored. This study represented a significant contribution to the development of research on communication satisfaction and communication competence. While many studies have examined the communication satisfaction of employees in organizations in education, manufacturing, government, health care, and retailing; little research has examined the professional technical organization. This study provided the data necessary to make comparisons of organizations both within the professional technical industry and between various industries. The implications of these findings may have a significant impact on the managerial activities, training, and organizational effectiveness of professional technical organizations.

Specifically, the goals of this study were to

- 1) examine independently the constructs of communication competence and communication satisfaction within the specific organizational context of professional technical organizations

- 2) determine how perceptions of supervisor communication competence impact reports of employee communication satisfaction.

RESEARCH QUESTIONS

The following research questions were formulated to guide this study.

1. What are the relationships among the dimensions of perceived communication competence and the dimensions of communication satisfaction?
2. What are the differences and similarities in employees' responses for the communication satisfaction dimensions and overall composites among the three professional technical organizations?
3. What are the differences and similarities in employees' responses for the organizational communication competence dimensions and overall composites among the three professional technical organizations?
4. Do eight sample subgroups (sex, location, occupation, supervisor occupation, job satisfaction, level, tenure, and function) differ in reports of communication satisfaction and supervisor's communication competence?
5. What are the underlying factor structures for

communication satisfaction and communication competence for this sample as measured by the Communication Satisfaction Questionnaire and the Other Perceived Competence Scale?

6. Which of the communication satisfaction dimensions, if any, prove to be reasonable predictors of overall perceptions of communication competence?
7. Which of the communication competence dimensions, if any, prove to be reasonable predictors of overall communication satisfaction?
8. What are the differences and similarities in supervisors and subordinates on suggestions for improving their communication satisfaction and their supervisor's communication competence.

ISSUE SIGNIFICANCE

A review of research in communication studies reflects a broad interest in the concept of communication competence (Allen & Brown, 1976; Argyris, 1965; McCroskey, 1982; Spitzberg, 1983; Walters, 1980; and Wiemann, 1977).

Communication researchers have been encouraged to closely examine the relationship between communication competence and various organizational outcomes such as communication satisfaction (Wiemann, 1977; Monge,

Bachman, Dillard, & Eisenberg, 1981; Smith and Hellwig, 1985; Walters, 1980).

Interest in the construct of communication competence led to the development of several instruments designed to measure the conceptualized dimensions of communication competence (Argyris, 1965; Bienvenu, 1971; Bochner & Kelly, 1974; Holland & Baird, 1968; Macklin & Rossiter, 1976; Wiemann, 1977).

Studies examining the communication competence construct have explored its relationship with work and supervisor satisfaction (Smith & Hellweg, 1985); roommate satisfaction (Duran & Zakahi, 1988); quality circle participation (Berman & Hellweg, 1989); conflict strategies (Cupach, 1982); personality orientation (Richmond, McCroskey & McCroskey, 1990); academic performance (Rubin & Graham, 1986); undergraduate major (Jackson, 1990); social style (Walters and Snaveley, 1983); job satisfaction, job tension, and turnover propensity (McNeil & Snaveley, 1983).

Phelps and Snaveley (1979) noted little overlap of the various conceptualizations of communication competence in a comprehensive review of measurement instruments. A total of 18 different dimensions were found with only six being common to more than one model.

Based on their review, Phelps and Snaveley developed

a theoretic five factor model of communication competence. This model led to the development of the Other Perceived Competence Scale. This instrument has demonstrated satisfactory performance in the original samples. The Other Perceived Competence scale was modified in subsequent testing (Snaveley & Walters, 1983) and has shown internal consistency, reliability, validity in limited survey applications.

The present study satisfies a need for further exploration and testing of the five dimensional model of communication competence and the Other Perceived Competence scale.

A review of the academic research utilizing the Communication Satisfaction Questionnaire indicates that the reported organizations studied were in education, government, accounting, publishing, or health care. A data base of responses from more than 1400 individuals in 18 companies has been collected at the University of Wisconsin - Green Bay's Communication Research Center.

To date, no research examining communication satisfaction has been conducted specifically within professional technical organizations. Therefore, it was useful to examine this construct within several engineering business firms. This examination considered how the largely technical and unique nature of the work,

personnel, management, and organizational climate in technical professional business organizations impact reports of communication satisfaction and competence.

Of particular related interest are two studies utilizing technical employees. Jackson (1990) indicated that managers with technical undergraduate degrees were less competent communicators than managers with social science undergraduate degrees. In a study of communication satisfaction across several types of industries, Potvin (1990) reported that the high technology organization in her study reported significantly lower reports of communication satisfaction than the other organizations included in the study.

Previous research investigating the communication constructs of competence and satisfaction independently laid a solid foundation for this study to build on.

This descriptive and exploratory investigation provided two unique features in the research design. First, this was the first academic investigation of both communication satisfaction and perceived communication competence in the specific industry represented by professional technical organizations. Second, this was the first attempt to explore the relationship between perceived communication competence of supervisor and communication satisfaction.

The results from this industry specific sample should prove useful in future comparisons, both within and between industries, of communication competence, communication satisfaction and the associations between the two constructs.

OVERVIEW OF THE STUDY

Instruments

The study utilized: 1) the Communication Satisfaction Questionnaire (COMSAT) developed by Downs and Hazen (1990), 2) the Other Perceived Competency Scale developed by Phelps and Snavely (1979) and revised by Walters (1980) and 3) Demographic questions assessing occupation, position, function, sex, and tenure.

These instruments are reviewed in detail in Chapter Three of this study and copies of the instruments with frequency distributions are found in Appendices A and B.

Operational Definitions

For this study, the subject's composite scores on the Communication Satisfaction Questionnaire (COMSAT) will serve as a measure of *overall communication satisfaction*. Composite scores of five items assessing satisfaction with each of the ten dimensions measured by the COMSAT will reflect the operational definitions of the ten dimensions of Communication Climate, Corporate

Perspective, Horizontal Communication, Media Quality, Organizational Integration, Personal Feedback, Subordinate Communication, Supervisor Communication, Top Management Communication, and Interdepartmental Communication.

The subject's composite scores on the Other Perceived Competence Scale (OPC) were held to reflect the respondents perception of his/her supervisor's overall *communication competence*. Composite scores of several items assessing perceptions of the five theorized dimensions of communication competence will reflect the five dimensions of empathy, listening, self-disclosure, social confidence, and behavioral flexibility.

Subjects and Procedures

Subjects were 487 employees of professional engineering business organizations. The subjects were employed in all levels of management in three engineering firms in cities located in the Southwestern and Southeastern United States.

The selection of the sample is thought to increase generalizability within the specific engineering industry and that these findings will serve as a data base for future comparisons both within and between various industries.

In some instances, the subjects were given stamped,

addressed envelopes, and were instructed to return their responses directly to the researcher. In other instances, where costs were prohibitive and an in-house mail system was established, employees returned the questionnaires to a central location where they were collected by the researcher.

Data Analyses

Data from the responses to the two questionnaires were analyzed using SPSS, version 4.1, a statistical package for the social sciences. The analysis will be conducted in steps:

- 1) Descriptive Statistics were established including frequency distributions, means, standard deviations, and rank of all questionnaire items, dimensions, and composites.
- 2) Tests of Difference were conducted on the responses between five subgroups of the employee sample for this study. Paired T-Tests included differences on gender, location, job satisfaction, employee occupation, and supervisor occupation.
- 3) Analyses of Variance (ANOVA) were conducted on the sample responses and used to compare additional subgroups: the three participating organizations, employee tenure, management levels, and job functions within the organizations.

- 4) Pearson Product Moment Correlation Procedures were computed on composite scores of the COMSAT and the OPC scales to determine the relationships between the composites and dimensions of this study.
- 5) Principle Components Factor Analyses were conducted on both study instruments to reveal the factor structure as conceptualized by this sample. These results were used to compare with previous factor analyses on the instruments with other samples.
- 6) Regression Analyses established the predictive relationships between the study composites and dimensions of communication satisfaction and perceived communication competence of supervisor.
- 7) Internal Reliabilities were established for both study instruments and for each of the satisfaction and competence factors used in this study. Cronbach's Alpha was used to establish these reliability estimates.
- 8) Content Analysis of the open ended survey questions were conducted to assess how employees of the three organizations suggest improving the communication satisfaction and communication competence of their supervisors.

SUMMARY

This research study had two main purposes: 1) explore the constructs of communication satisfaction and organizational communication competence independently in a particular organizational context and 2) examine the relationship between perceived communication competence of supervisor and employee communication satisfaction.

To guide this study, ten research questions were formulated. These questions address the nature of the relationship between perceptions of supervisor's communication competence and communication satisfaction; the differences in reports of competence and satisfaction within several of the sample subgroups; the predictive associations of the dimensions of communication satisfaction and communication competence.

While a great many researchers have studied the antecedent and outcome variables associated with communication competence, none have investigated the relationship of this construct to communication satisfaction in specific organizational contexts. The present study sought to fill this gap in the research literature.

The second unique feature of this study is the specific sample used in the study. This is the first study to examine either communication satisfaction or

communication competence within professional technical organizations.

Repeated critical examination of the instruments used to measure communication constructs is necessary to ensure confidence in these instruments. The present study contributed to this process by further examining and reporting the underlying structures and properties of two established research instruments.

This research contributed to the understanding and realization of the scientific potential of the constructs of communication competence and communication satisfaction.

ORGANIZATION OF THE DISSERTATION

This study is presented in five chapters. Chapter One included a statement of the problem, a listing of the research questions, justification for the study, and a brief overview of the research design. Chapter Two is a review of the communication satisfaction and communication competence literature. Chapter Three describes in detail the methodology used in the investigation including descriptions of the research instruments, the professional technical organizations, the data collection procedures, and the statistical analyses of the data. Chapter Four reports the research

findings and data analysis results. Chapter Five presents a discussion of the analysis, conclusions, and suggestions for future research.

CHAPTER TWO - REVIEW OF THE LITERATURE

This chapter reviews the theoretical and research literature concerned with the concepts of communication satisfaction and communication competence. For both concepts, the development of the construct and instrumentation is presented first, followed by a review of relevant research findings.

COMMUNICATION SATISFACTION

The literature review of communication satisfaction is divided into two sections. The first section reviews the historical development of the construct of communication satisfaction. The review demonstrates how the development of the construct culminated in the development of a practical measurement instrument: The Communication Satisfaction Questionnaire. The second section examines several recent academic studies utilizing the Communication Satisfaction Questionnaire. The review then examines both the variety of organizational settings studied and the findings of the research conducted.

Development of the Construct and Instrumentation

Communication satisfaction is a modern construct in the field of human communication. However, despite the youthfulness of the construct, it has been the focus of much attention in both academic and professional communities. Over a period of two decades the construct has become an accepted part of the organizational communication literature and more the 25 dissertations and masters theses have measured the construct.

Clampitt & Downs (1987) reviewed the historical development of the communication satisfaction construct. The earliest reference to the construct of communication satisfaction was in a case study of human communication in urban banks by Level (1959). This study of informational climate variables such as the amount of general information received from management; notification in advance about changes in company policy; procedures and working conditions; and perceptions of freedom to approach superiors. Level (1959) measured the communication satisfaction of the bank employees using questionnaires and interviews. Ten questions addressing communication satisfaction appeared as part of a larger questionnaire designed to also measure employee morale and amount of information. The employee interviews covered the topics of the organization's communication

policies and practices, purposes of meetings, and the quality of meetings.

Level (1959) discovered that a very successful business organization could prosper in spite of what appeared to be numerous communication deficiencies. Although the author cited the interviews as the "most fruitful" method of data collection, he also noted the need for the development of ". . . a standardized instrument for business and industries which would quantify . . . the degree of 'communication satisfaction'" (p. 265).

In the thirty years since the introduction of the term, the construct has been significantly refined. The early research approached communication satisfaction as an unidimensional construct. This traditional approach is reflected in Thayer's (1968) definition of communication satisfaction as "the personal satisfaction inherent in successfully communicating to someone or in successfully being communicated with" (p. 144).

Although many of the early researchers treated communication satisfaction as a unitary or single dimension construct, few of the researchers could agree upon just which single dimension of communication held the construct. Redding (1972) analyzed several studies

focusing on communication satisfaction and reported that researchers had attached a wide variety of factors to the construct including:

- 1) Being notified of changes
- 2) Understanding of job requirements
- 3) Access to important information
- 4) Accessibility of supervisors
- 5) Explanation of policies

The wide variety of components led Redding to suggest that the construct should be viewed as being multi-dimensional in nature.

Subsequent documentation of communication satisfaction as a multidimensional and definable construct grew out of two independent research studies in different countries. Osmo Wiio (1976) studied 22 organizations in Finland over a three-year period. He audited the organizations' communication practices and factor analyzed the results to uncover the underlying dimensions of communication satisfaction. The four broad factors of communication satisfaction reported by Wiio were: 1) Job satisfaction, 2) Message content, 3) Improvements in communication, and 4) Channel efficiency.

Downs and Hazen (1977) used similar procedures to conclude that the construct was indeed multidimensional. These authors defined communication satisfaction as an individual's satisfaction with various aspects of

communication in his/her organization and suggested that the construct included such dimensions as feedback, media quality, and various relationships. The researchers developed an original questionnaire and conducted their research in three different stages.

First, the initial 88-item questionnaire was administered to 225 employees at the managerial and professional staff levels of the United States Army, hospitals, professional organizations, universities, government agencies, and various businesses. The survey yielded 181 completed questionnaires and the results were subjected to two statistical analyses: 1) principal component factor analysis and 2) item validity analysis. A factor analysis of the satisfaction items yielded 10 factors which accounted for 61 percent of the total variance. The item analysis revealed that 83 of 88 items discriminated significantly between satisfied and dissatisfied workers. The net result was that eight stable dimensions of communication satisfaction were established:

- 1) Media Quality
- 2) Satisfaction with Supervisor
- 3) Satisfaction with Subordinates
- 4) Communication Climate
- 5) Personal Feedback
- 6) Organizational Perspective
- 7) Organizational Integration
- 8) Horizontal and Informal Communication

Second, the questionnaire was revised so that each of the dimensions established by the previous research were addressed by five questions on the instrument. The revised 40-item questionnaire was administered in four organizational settings: 96 managers participating in a California training program, 81 employees in a Chicago division headquarters of an international firm, 151 employees of a Florida equipment plant, and 182 employees of a Minnesota car manufacturing plant (a total of 510 subjects). These responses were again subjected to a comparative factor analysis. Downs and Hazen (1977) reported that "the items tend to cluster along the same eight factors, and there is great stability in the way they cluster." Furthermore, the test-retest reliability of the instrument was assessed over a period of two to three weeks. The resultant reliability coefficient for the instrument was .94.

The final phase was conducted by Downs and Hazen (1977) when the researchers examined the relationship between communication and job satisfaction. Using the same four organizations the authors noted that three factors were found to correlate highly with job satisfaction: personal feedback, supervisor communication, and communication climate.

According to Clampitt (1988), the most useful aspect

of the Downs & Hazen (1977) research project were the discovery of eight factors of communication satisfaction. The dimensions described by Downs & Hazen (1977) follows:

Communication climate reflects communication on both the organizational and personal level. On one hand, it includes items such as the extent to which communication in an organization motivates and stimulates workers to meet organizational goals and the extent to which it makes them identify with the organization. On the other, it includes estimates of whether or not people's attitudes toward communicating are healthy in an organization.

Supervisory communication includes both upward and downward aspects of communicating with superiors. Principal items include the extent to which superiors are open to ideas, the extent to which supervisors listen and pay attention, and the extent to which superiors and supervisors offer guidance in solving job-related problems.

Organizational integration revolves around the degree to which individuals receive information about their immediate environment. Items include the degree of satisfaction with information about departmental plans, the requirements of their job, and some personnel news.

Media quality deals with the extent to which

meetings are well organized, written directives are short and clear, and whether the amount of communication in the organization is sufficient.

Horizontal Communication concerns the extent to which horizontal and informal communication is accurate and free flowing. This factor also includes satisfaction with the activeness of the grapevine.

Corporate Information deals with the broadest kinds of information about the organization as a whole. It includes items on notification about changes, information about the organizations' financial standing, and information about the over-all policies and goals of the organization.

Personal Feedback is concerned with the need of the workers to know how they are being judged and how their performance is being appraised.

Subordinate communication focuses on upward and downward communication with subordinates. Only workers in supervisory capacities respond to these items which include subordinate responsiveness to downward communication, and the extent to which subordinates initiate upward communication.

Downs and Hazen (1977) conclude that the various dimensions of communication satisfaction can provide a barometer of organizational functioning, and the concept

of communication satisfaction can prove useful in audits of organizational communication.

The refinement of the construct of communication satisfaction was a theoretical pursuit that cumulated in the development of a practical instrument for organizations. Several authors have offered critical examinations of the instrument. Hecht (1978) reviewed measures of organizational communication satisfaction and praised the thoroughness of the construction of the instrument. Hecht further expressed concerns about a lack of evidence supporting the internal consistency reliability for each dimension and the validity of the scale in general.

Hecht's concerns about the instrument were addressed by Crino & White (1981) by an attempt to discover the dimensional stability and intrascale internal consistency of the instrument. The researcher's factor analysis of the COMSAT resulted in confirmation of an eight-factor solution and they also reported alpha coefficients for internal consistency to be quite high, ranging from a low of .75 for Horizontal/Informal Communication to a high of .86 for Personal Feedback.

Over the period of several years the COMSAT has been determined to be a valid and reliable instrument; however, two studies have suggested further refinement of

the instrument. Using a data base of 1494 subjects in 18 organizations, Clampitt and Girard (1986) subjected the COMSAT to factor analysis. This analysis resulted in a five-factor solution (satisfaction with subordinate communication was not included as a dimension in the analysis), including the unique factors of General Communication Effectiveness and Grapevine Communication, as well as Feedback, Supervisory Relationships, and Corporate Information. No internal reliability coefficients were reported by these authors.

Pincus (1986) proposed a refinement of the COMSAT that added a dimension to the original eight: Top Management Communication. The proposed nine-factor solution would allow the division of the factors into the three generic categories of relational dimension, informational/relational dimensions and informational dimensions.

In spite of these few suggestions for refinement, the COMSAT has been utilized by a number of researchers examining several types of organizations, demographic influences, and outcomes. A review of this research literature follows.

Review of Communication Satisfaction Research

The Communication Satisfaction Questionnaire has been used in over 25 theses and dissertations to analyze organizational communication. This research has sought to 1) assess communication satisfaction in a wide variety of organizational settings, 2) examine the influence of several personal variables on reports of communication satisfaction and, 3) to explore the relationship of communication satisfaction with several outcome variables. This review of the research literature is divided into the three sections reflecting these general purposes. First, a review of the various types of organizations investigated will be presented along with the findings. Second, the results of studies exploring the influence of various demographic variables will be described. Finally, the research analyzing the relationship between communication satisfaction and several outcome variables will be presented.

Organizational Settings

The types of organizations researchers have investigated include governmental, medical, educational, and private business. Table 2.1 presents a summary of the researchers, organizations, subjects, and national settings reviewed for this study.

TABLE 2.1: COMMUNICATION SATISFACTION RESEARCH			
Researcher	Organization	Subjects	Size
Avery (1977)	Government Agency	Government Employees	135
Thiry (1977)	Hospitals & Clinics	Registered Nurses	1,069
Gordon (1979)	Higher Education	Administration	41
Kio (1979)	Government & Business	Nigerian Administration & Line Workers	134
Nicholson (1980)	Urban School District	Administration & Teachers	290
Jones (1981)	Rural School District	Administration & Teachers	142
Duke (1981)	Urban School District	Business Education Teachers	309
Alum (1982)	Manufacturing	Mexican Administration & Line Workers	274
Wippich (1983)	Urban & Rural School Districts	Teachers	150
Clampitt (1983)	Manufacturing & Banking	All Levels of Employees	181
Pincus (1986)	Urban Hospital	Nurses	327
Clampitt & Girard (1986)	18 Various Private Businesses	All Levels of Employees	1,494
Imo (1987)	Urban School District	Teachers	206
Gregson (1987)	Accounting Businesses	Certified Accountants	310
Varona (1991)	Manufacturing, Hospital & School	Guatemalan All levels of Employees	167
Potvin (1991)	Manufacturing, Health Care & Retailing	All Levels of Employees	490
Downs, A. (1991)	Manufacturing & Higher Education	All Levels of Employees & Faculty	195

Government Organizations

Avery (1977) used a governmental agency as the object of the survey. The Mining Enforcement and Safety Administration (MESA), located in Arlington, Virginia, was a relatively new agency within the Department of the Interior at the time of the audit and it was thought that the results of the investigation could be of great value. The organization was divided into four levels of employment in order to examine hierarchial differences. The organization was also divided by the six existing major divisions within the organization. The researchers obtained a 61 percent return on the questionnaire for a total of 135 responses. In his study of government employees, Avery (1977) found that all eight of the dimensions were perceived as at least slightly satisfied. The most satisfied dimensions were Supervisor and Subordinate Communication and the means for only these two dimensions fell in the category of satisfied. None of the dimensions were found to be very satisfied. Three dimensions were found in the low end of the slightly satisfied category and were consequently ranked as the dimensions of least satisfaction: Communication Climate, Personal Feedback and Organizational Perspective.

In similar study conducted by Gordon (1979), administrators from the University of Kansas reported the

most satisfaction with Supervisor Communication, and the least satisfaction with Communication Climate, Personal Feedback, and Media Quality.

The first study to use the instrument with foreign country employees was Kio's (1979) investigation. The sample population for the study was drawn from two agencies, a private sector organization and a governmental agency, located in the Western States of Nigeria. A total of 134 employees were surveyed and 100 percent returned the questionnaire. Kio (1979) sought to compare the levels of communication satisfaction in both federal government workers and private sector workers in western Nigeria. The Nigerian workers in the government were found to be more satisfied with the eight dimensions of the COMSAT than those in the private sector. Kio (1978) noted that it is customary in the Nigerian culture to display respect for both authority and subordinates. The dimensions of Personal Feedback and Horizontal Communication were the areas of least satisfaction. The author surmised that this could also be explained by the culture. In Nigeria, family relationships are much more valued than friendships and relations with peers.

Educational Settings

Nicholson (1980) was the first of several researchers to use the Communication Satisfaction Questionnaire in a public school setting. The population from which the sample for this study was drawn consisted of secondary educators of the metropolitan Nashville Public School system located in the north-central section of Tennessee. Four hundred-sixteen educators were randomly selected and requested to complete the COMSAT. Two hundred-ninety completed questionnaires were returned for a 70 percent rate of response. Nicholson's (1980) study again had similar results concerning the overall satisfaction with each of the eight dimensions. Only the dimension of Corporate Perspective was expressed as being at a level of dissatisfaction, all other dimensions were found satisfying.

Jones (1981) also administered the COMSAT in a public school setting, but instead chose to measure the responses of teachers within four rural school systems. The questionnaire was distributed to 200 randomly selected educators from four rural Tennessee school systems. A total of 142 responses were received for a response rate of 71 percent. The findings of this research contrasted with other similar studies. This study measured less overall satisfaction with the

communication dimensions than other similar studies, although a slightly larger percentage of the respondents was satisfied than dissatisfied. This study determined that Subordinate Communication and Horizontal Communication to be the most satisfied dimensions. The dimensions of least satisfaction were Media Quality and Personal Feedback.

Duke (1981) studied the responses of 309 secondary business education teachers within the Chicago public school system. The sample was drawn from the total population of Chicago business education teachers and represented a 63 percent rate of return. Unlike other studies of urban school teachers, Duke (1981) determined a much lower overall satisfaction with communication. Specifically, 62 percent of the respondents indicated overall dissatisfaction with communication. These Chicago business educators were most satisfied with the dimensions of Organizational Integration and least satisfied with Personal Feedback and Communication Climate.

Wippich (1983) also administered the Communication Satisfaction Questionnaire to subjects selected from a public school setting. The population for this study consisted of 150 elementary and secondary teachers from a midwestern school district. A stratified random sampling

method was used to select a total of 200 teachers who equally represented both levels of teaching (elementary and secondary). One hundred forty-seven complete responses were returned for a response rate of 74 percent. This study revealed that the 147 midwestern educators were satisfied with all eight dimensions measured by the COMSAT. These educators were most satisfied with Supervisor Communication and Communication Climate and Personal Feedback.

Imo (1987) sought to determine if communication satisfaction and the effectiveness of an institution were related in his study of an urban school district. The population for this study consisted of the 500 teachers at all levels within the La Porte, Texas Independent School district. Using the simple random sampling technique, 230 teachers were selected for study. Two hundred six teachers completed the COMSAT for a response rate of 90 percent. The most satisfied dimensions were Supervisor and Horizontal communication and the least satisfied dimensions were Media Quality and Personal Feedback.

Varona's (1991) study included the assessment of a Guatemalan school with the ten factor COMSAT and reported that the 86 teachers and administrators indicated the highest satisfaction with Supervisor and Subordinate

Communication. This sample reported the least satisfaction with Communication Climate and Interdepartmental Communication. The school sample indicated significantly higher levels of communication satisfaction than the Guatemalan hospital and manufacturing company included in this study.

In comparing reports of communication satisfaction within two Australian organizations, Downs (1991) found that her 95 respondents from an institute of higher learning were significantly less satisfied than her manufacturing sample on five dimensions. However, she notes that the mean scores tended to be in the same general range and that the ranks were essentially the same. The educational organization reported the greatest satisfaction with Supervisor Communication and Horizontal Communication, and the least satisfaction with Communication Climate and Personal Feedback.

Medical Organizations

One of the first studies to utilize the COMSAT was a investigation by Thiry (1977) using a sample of 1,160 Kansas nurses. The areas of greatest satisfaction Supervisor Communication and Subordinate Communication. The nurses reported the least satisfaction with Personal Feedback and Communication Climate.

Pincus (1986) utilized a modified version of the

COMSAT in his study of nurses in a large urban teaching hospital on the east coast of the United States. The modified COMSAT included five questions addressing the additional dimension of Top Management Communication. A total of 327 nurses participated in the study representing a response rate of 66 percent. These nurses did not report satisfaction levels as high as the study by Thiry (1977). The Supervisory Communication and Horizontal Communication dimensions were rated the highest, with Organizational Perspective and the newly added category of Top Management Communication rated in the dissatisfied area.

Varona's (1991) study included the assessment of a Guatemalan hospital with the ten-factor COMSAT and reported that the 46 respondents indicated the highest satisfaction with Supervisor and Interdepartmental Communication. This sample reported the least satisfaction with Organizational Perspective and Personal Feedback.

Business Organizations

Clampitt (1983) concentrated on communication satisfaction in profit organizations. His sample included 116 employees from a chair manufacturer and 65 employees of a financial institution. His findings indicated that the type of organization had little effect

on the reports of communication satisfaction. Employees from both organizations reported satisfaction with all eight dimensions of the COMSAT and the areas of greatest satisfaction were Subordinate and Supervisor Communication. The lowest rated dimension was Personal Feedback in both companies.

An attempt to replicate the Clampitt (1983) study using a sample of 1,494 employees from 18 private businesses from various industries including finance, media, service, and manufacturing was undertaken by Clampitt & Girard (1986). Consistent with the previous study, Supervisory and Subordinate Communication were the highest rated dimensions. However, the financial institutions were more satisfied on every factor, with the exception of Personal Feedback, than employees from the other industries.

The first study using the COMSAT in an international setting was conducted by Alum (1982). He surveyed 383 employees from a manufacturing company and received 274 responses for a 71 percent rate of return. Respondents were most satisfied with Supervisor and Subordinate Communication and least satisfied with Personal Feedback.

Gregson (1987) conducted a study utilizing the COMSAT to measure the perceptions of certified public accountants from many different accounting firms. The

population was the 44,000 member of the American Institute of Certified Public Accountants (AICPA). A random sample of 310 questionnaires were returned representing a 35 percent rate of return. The accountants reported the greatest satisfaction with Subordinate Communication and Supervisor Communication and the areas of least satisfaction were Personal Feedback and Communication Climate.

Varona (1991) translated the COMSAT into Spanish and administered the questionnaire to a large Guatemalan food manufacturer. Comparisons with the results of similar American companies were also conducted. A total of 177 responses were received representing a rate of return of 44 percent. The areas of greatest satisfaction were Subordinate Communication and Supervisor Communication and the areas of least satisfaction were Organizational Perspective and Top Management. The results of the survey indicated that all of the dimensions were perceived to be in at least the slightly satisfied range. These findings were also consistent with an earlier study of a Guatemalan printing company by Varona (1988).

In her comparison of communication satisfaction within two Australian organizations, Downs (1991) found that her 100 respondents from a manufacturing organization indicated the greatest satisfaction with

Subordinate Communication and Supervisor Communication, and the least satisfaction with Communication Climate and Personal Feedback. As in the Nigerian study (Kio, 1979), the Mexican study (Alum, 1982), the two Guatemalan studies (Varona 1988; 1991), and five American organizational studies (Avery, 1977; Clampitt, 1983; Clampitt & Girand, 1986; Gregson, 1987; Nicholson, 1980;), Subordinate and Supervisor Communication were the communication satisfaction dimensions of receiving the highest ratings of satisfaction.

Potvin's (1991) research compared a high technology organization with a health care organization on the COMSAT dimensions and reported that the high technology organization indicated significantly lower means on four dimensions. Specifically, the differences were in 1) Personal Feedback, 2) Communication Climate, 3) Organizational Integration, and 4) Media Quality. This study did not report any rankings for the COMSAT dimensions for either the total sample or the individual organizations.

Demographic Influence

Many studies utilizing the COMSAT have examined the influence of various personal and organizational variables on reports of communication satisfaction. The

most common variables include 1) organizational position, 2) age, 3) tenure, 4) sex, and 5) education level.

Position. Several studies from the late 1970s presented evidence that a relation exists between organizational position and communication satisfaction. Avery (1977), by separating the responses of a government agency into the levels of the organizational hierarchy, was able to determine that the top level of the organizational hierarchy felt a greater degree of satisfaction than lower levels. Kio (1979) also measured differences in organizational position by comparing administrators and line workers with similar results. Kio also determined that the administrative workers were more satisfied with communication than line workers. A case study of university administrator's by Gordon (1979) reported significant differences in reported communication satisfaction among five levels of administrators. Thiry's (1977) study of 1,069 Kansas nurses found that personnel in staff roles were consistently less satisfied than nurses in administrative positions on all factors of COMSAT with the exception of Supervisory Communication.

Varona's (1988) study of two Guatemalan organizations presented conflicting reports about the effect of organizational level. In an educational

setting, he found the supervisors to be more satisfied than the non-supervisors. However, in the other organization, a private business, the supervisors were more dissatisfied with the communication. It was inferred that changes within the organization affected the supervisor's more than other employees.

Varona's (1991) study combined three Guatemalan organizations from manufacturing, health care and education and found that the supervisors were significantly more satisfied than subordinates with overall communication. This Guatemalan study further concluded that tenure had no significant correlation with communication satisfaction.

Age. Nicholson's (1980) study of secondary teachers and administrator's found that the administrator's were more satisfied with the Supervisory Communication, Communication Climate, and Media Quality dimensions, than those in non-administrative positions. Nicholson's study also examined demographic information to determine that as the respondent's age and level of education increased, so too did the level of communication satisfaction. She further concluded that the demographic variables of sex, experience, and tenure had no noticeable impact on the reports of communication satisfaction.

Support for Nicholson's findings concerning the

influence of teacher age was presented by Monaco (1985) in a study involving 329 teachers. This study concluded that the greater a teacher's age, the greater the communication satisfaction score; however, Monaco (1985) further concluded that similar positive correlations were evident with regard to tenure.

Jones' (1981) research contrasted with other similar studies using teachers and administrators. Like Nicholson (1980) and Monaco (1985), this study examined the demographics of position, age, tenure, and level of education but found no correlations between any demographic characteristics and the dimensions of communication satisfaction. Similarly, Duke's (1981) sample of secondary teachers could not relate any demographic variables to the COMSAT scores. In addition, this study hypothesized that communication apprehension would be a negative predictor of teachers' job satisfaction. This hypothesis was not supported.

Sex. Although none of the previous research could establish a correlation between sex and any of the COMSAT factors, Gregson (1987) reported that men were more satisfied with the Horizontal/Informal Communication in his sample of 311 members of the American Institute of Certified Public Accountants. Furthermore, he reported that communication satisfaction varied according to the

professional specialty of the accountants; tax accountants were less satisfied with Horizontal/Informal Communication than were audit accountants.

Outcome Variables

Many studies utilizing the COMSAT have examined the influence of reported communication satisfaction on several organizational outcome variables. The most common variables include 1) job satisfaction, 2) productivity, 3) turnover intentions, and 4) commitment.

The organizational communication satisfaction research has provided consistent evidence of positive correlations with job satisfaction. In his study of government employees, Avery (1977) found that all eight of the dimensions were perceived as at least slightly satisfied and that each COMSAT dimension had a significant correlation with job satisfaction. Strongest correlations were with Horizontal Communication, Subordinate Communication, and Communication Climate. Similar correlations between all eight the COMSAT dimensions and job satisfaction were evident in Nicholson's (1980) sample of 298 secondary teachers and administrators, Jones' (1981) sample of 142 rural secondary teachers, and Duke's (1981) sample of 309 Chicago secondary teachers. Each of the above studies

employed only a single global measure of job satisfaction. Wippich's (1983) study of 150 secondary and elementary teachers used a seven-item scale of job satisfaction and found that only the COMSAT dimensions of Personal Feedback and Supervisory Communication to have significant associations with job satisfaction.

Two studies in medical settings examined the relationship between communication satisfaction and job satisfaction. A 1977 study by Thiry, which used a sample 1,160 Kansas nurses, used the global measure of job satisfaction and found significant correlations with all eight dimensions of the COMSAT. Pincus (1986) studied 327 professional nurses and used the COMSAT and the Job Description Index (JDI) developed by Smith, Kendall, and Hulin (1969) to measure communication satisfaction and job satisfaction. The non-supervisory nurses demonstrated positive and significant correlations between all dimensions of communication satisfaction and job satisfaction. However, for the supervisory nurses, only the Supervisory Communication and Communication Climate dimensions correlated with reports of job satisfaction.

Downs' (1991) study of two Australian organizations concluded that there exists a significant positive relationship between job satisfaction and communication

satisfaction. In her study all COMSAT factors, with the exception of Subordinate Communication, correlated significantly with a global measure of job satisfaction. The strongest relationship was with Communication Climate; however, Personal Feedback and Supervisory Communication also had strong correlations. These results were strikingly similar to a study by Alum (1982) of 274 Mexican workers. He also found Subordinate Communication to be the only dimensions of COMSAT to be unrelated to job satisfaction and that the strongest correlations were with Supervisory Communication and Personal Feedback.

Several organizational communication studies have focussed on the outcome variables of job performance and productivity. Clampitt's (1983) study with 181 employees of a manufacturing company and a savings and loan specifically addressed the productivity issue. Interview analysis indicated that the Personal Feedback dimension had the greatest influence on productivity and that all eight dimensions had an "above average impact". A replication of the Clampitt study by Clampitt & Girand (1986) indicated that communication satisfaction was more effective in explaining job satisfaction than perceived productivity.

Three international studies examined the

productivity relationship with communication satisfaction. Alum (1982) studied a sample of 274 Mexican workers and found only Subordinate Communication and Communication Climate to be related to productivity. A study of 143 Nigerian workers by Kio (1979) indicated significant correlations with all COMSAT factors. Similarly, Varona (1988) studied a sample of 165 Guatemalan printing employees and reported that all the dimensions of COMSAT correlated with job satisfaction although some factors had stronger correlations than others.

Pincus (1986) studied 327 professional nurses and found the relation between COMSAT dimensions was much weaker for job performance than for job satisfaction. The non-supervisory nurses indicated that only Supervisory Communication and Personal Feedback correlated with job performance, and for supervisory personnel, only Organizational Integration correlated with performance. Thiry's (1977) study of 1,069 Kansas nurses also found a weaker association between the COMSAT and productivity than for job satisfaction.

Gregson (1987), in his study of 310 certified public accountants, sought to determine the relationship between turnover intentions and communication satisfaction. The results indicated that the accountants made their

decision to leave their current employees based on their level of communication satisfaction. A similar study by Siefker (1988) used a sample of 389 employees of a sales organization to determine that Personal Feedback and Horizontal/Informal Communication were the major predictors of employees' "intent to leave". She further reported several position differences in the associations. Managers' intent to leave was significantly predicted by the Personal Feedback dimension, and the hourly workers turnover intentions were predicted by Communication Climate and Horizontal/Informal Communication dimensions.

Recently, several researchers have examined the relationship between communication satisfaction and organizational commitment. These studies have been successful in establishing strong correlations between the two constructs.

Potvin's (1991) study of 490 employees from several Texas organizations addressed the relationship between communication satisfaction and organizational commitment. Using the COMSAT and several commitment measures, Potvin concluded that there was a definite positive relationship communication satisfaction and an employee's organizational commitment. She found the strongest correlation between the Communication Climate dimension

and commitment composites.

Downs (1991) used similar measures and sampled 195 Australian employees in two organizations to establish a positive relationship between communication satisfaction and organizational commitment. Downs found Supervisory Communication, Personal Feedback, and Communication Climate to be the strongest communication predictors of organizational commitment. She further found that the exact relationship between communication dimensions and levels of commitment varied across organizations and her results were similar to studies using organizations from the United States.

Finally, Varona's (1991) study sampled 326 employees of three Guatemalan organizations to similarly conclude that there is an explicit positive relationship between communication satisfaction and organizational commitment. The strongest correlations for this sample were between Subordinate Communication, Organizational Integration, and Communication Climate.

Summary of Communication Satisfaction Research Findings

The results of studies using the Communication Satisfaction Questionnaire in a wide variety of organizations over a period of over 15 years have revealed several trends about organizations. A review of

the research applications of the COMSAT and conclusions by Clampitt & Downs (1987) and Downs, Clampitt and Pfeiffer (1988) suggest the following basic findings:

- 1) The studies indicate that employees are generally not dissatisfied with organizational communication, although there are areas of greatest and least satisfaction.
- 2) Employees are most satisfied with Supervisory Communication and Subordinate Communication.
- 3) Employees are least satisfied with Personal Feedback, Corporate Perspective, and when included, Top Management.
- 4) Communication Satisfaction links significantly to the end-product variables of job satisfaction, productivity, and commitment.
- 5) The communication satisfaction construct is more effective than is productivity in explaining job satisfaction.
- 6) Job satisfaction is strongly related to the dimensions of Communication Climate, Personal Feedback, and Supervisory Communication.
- 7) Demographic variables provided relatively poor explanations of the level of communication satisfaction.
- 8) There appears to be some indication that employees in managerial roles are more satisfied with communication than those who are not. However, no clearly discernible difference can be detected between employees of profit and nonprofit organizations.

ORGANIZATIONAL COMMUNICATION COMPETENCE

The study of the development and measurement of communication competence has been decidedly cross-disciplinary. Scholars interested in communication competence have come from such fields as linguistics (Chomsky, 1965; Hymes, 1972), psychiatry (Martin & Chapman, 1982; Ruesch, 1951), clinical psychology (Gladwin, 1967; Glasgow & Arkowitz, 1975), social psychology (Athay & Darley, 1981; Weinstein, 1969), developmental psychology (Harter, 1978), rhetoric (Clark & Delia, 1979; Hart & Burkes, 1972), and communication (Bochner & Kelly, 1974; Bostrom, 1984; Wiemann, 1977). The copious research efforts addressing communication competence has lead to varying approaches to and definitions of communication competence. This line of research has largely been concerned with a) identifying the structure of communication competence and b) developing measures to differentiate levels of competence.

The present review of the literature focuses on the concept of communication competence as applied to the particular context of the organizational workplace. This section will: 1) review the historical development of the construct, and 2) review the development of

instruments to measure communication competence in the organizational context.

Development of the Construct

McCroskey (1984) notes that although the term communication competence is a modern one, the history of communication competence, under other labels, is a long and distinguished one. The importance of competence in communication has been recognized for thousands of years. The topic of the oldest written work ever discovered, a parchment approximately 5000 years old, was advice on how to speak effectively. Organization communication competence can loosely be interpreted as the thesis of the oldest extant book. The book, known as the *Precepts*, was written as a guide for administrative interactions by the Pharaoh Ptah-Hotep in about 2675 B.C. The most venerable book ever written on communication, the *Rhetoric*, was written by Aristotle in the fourth century B.C..

The recent development of academic interest in the concept of communication competence represents a continuation of a centuries-old tradition. McCroskey (1984) suggests that the field of study is " . . . open to the charge that we are placing new wine in old wineskins . . . (the only thing that) is new is the term,

communication competence" p.260.

Modern conceptualizations of communication competence have been developed by expanding on the work of researchers and theorists operating from within the Sociolinguistic Tradition (Diez, 1984). This tradition is reflective of several disciplines including structural linguistics, sociolinguistics, anthropology and education. The linguist Chomsky (1968) provided the groundwork for current conceptualizations of communication competence. His original use of communication competence was limited to the structural characteristics of linguistic knowledge. According to Chomsky, the goal of linguistic study was to eliminate the situational factors and identify "the speaker-hearer's knowledge of his language" p.4.

Dissatisfaction with such a limited conceptualization had developed by the late 1960's. Hymes (1971, 1972), especially critical of Chomsky's ideas on competence and performance, pointed out the theoretical and pragmatic weakness of failing to account for the variety of contexts confronting communication conduct in daily life. Today Hymes (1971, 1972) is recognized as the originator of the view that communication competence is a social phenomenon that differs distinctly from performance. This view is still

prevalent and it incorporates cognitive, social, and noncognitive factors:

A model of language must define it with a face toward communication conduct and human life . . . I should take competence as . . . the capabilities of a person. Competence is dependent on both (tacit) knowledge and (ability for) use. Knowledge is distinct, then from both competence (as its part) and from systemic possibility (to which its relation is an empirical matter). The specification of ability for use as part of competence allows for the role of noncognitive factors. . . as partly determining competence. (p. 278-283)

Here, Hymes notes that to be competent, individuals must not only know the appropriate forms of language, they must also know how to use them appropriately to situations. According to Hymes' view, linguistic competence (knowledge) serves as the necessary substratum for the development of skill or communication competence. Skill or "ability for use" is the bridge between knowledge and actual linguistic performance.

The modern sociolinguistic research focus has accepted Hymes' (1971, 1972) redefinition of competence and shifted from syntax to pragmatics. The concern is no longer with the abstract structure of language, but rather with the explanation of the links between speakers, language, and its situated use. These studies have largely addressed the socially developmental aspects of communication. Much of the research has focused on the skill acquisition in children and have examined

situational (classrooms), interactional (directives), functional (dispute resolution) and developmental (child and adult comparisons) aspects of communication competence in children.

The methods in the sociolinguistic approach could be described largely as qualitative or subjective because they often examine naturalistic settings without the manipulation of independent variables. Many studies have been conducted longitudinally and most are concerned with developmental aspects (Corasaro, 1979; Ervin-Tripp, 1977; Gleason & Weintraub, 1976).

Diez (1984) observed that although pedagogical concerns have been the primary impetus for communication researchers' study of communication competence, the essential characteristics that inform research in communication studies--namely, that communication competence is situational, interactional, functional, and developmental-- were originally developed within the sociolinguistic perspective. The prevalent trend of the 1970's academic community was to define in behavioral terms the research constructs of interest. This trend is reflected in the conceptual ambiguity of the communication competence construct.

In reviewing the communication competence literature, several researchers (Cooley & Roach, 1984;

Diez, 1984; Phelps & Snavely, 1979; Sypher, 1984; Spitzberg, 1987; Spitzberg & Cupach, 1989; Wiemann & Backlund, 1980; Wiemann and Bradac, 1989) have noted the literature citing inconsistent definitions/theories and a wide variety of behavioral elements of communication competence.

Cooley Roach (1984) commented that the number of definitions for communication competence increases in almost direct relationship to the number of writers. The difficulty of arriving at an universally accepted definition of communication competence led McCroskey (1984) to refer to it as an elusive construct.

In an extensive review of the communication competence literature Spitzberg & Cupach (1989) identified "three general and interrelated themes frequently manifested throughout approaches to interpersonal competence: control, collaboration, and adaptability" (p. 8). The theme of control is evident in Parks (1977) contention that "a competent communicator is a person who maximizes his goal achievement through communication" (p. 175). The second theme of collaboration arises from the recognition that control is exercised in an interactive context. Wiemann's (1977) definition is illustrative of this recognition:

. . . the ability of an interactant to choose among

available communicative behaviors in order that he (or she) may successfully accomplish his (or her) interpersonal goals during an encounter while maintaining the face and line of his (her) fellow interactants within the constraints of the situation. (p. 198).

The final theme of adaptability, also known behavioral flexibility, can be defined as effectively adjusting to changes in the surrounding context. This concept is closely related to the themes of control and collaboration in that one matches one's responses to one's goals, and involves adaption to the physical, social, and relational context. Literature reviews by Sypher (1984) and Spitzberg & Cupach (1989) suggest that adaptability is perhaps the single most frequently cited characteristic associated with communication competence (Bochner & Kelly, 1976; Chase, Kelly & Wiemann, 1979; Cushman & Craig, 1976; Delia & Clark, 1975; Delia, O'Keefe & O'Keefe, 1982; Feingold, 1976; Hart & Burks, 1972; O'Keefe and Delia, 1979; Steffen & Redden, 1977; Sundberg, Snowden & Reynolds, 1978; Wiemann, 1977).

In a study of communication competence in organizations, Sypher (1984) examined the various perspectives and categorized them in terms of trait, behavioral, and social cognitive approaches. Trait theorists treat communication competence as a cognitive phenomenon and seek to isolate the characteristics

associated with competent communicators (e.g., Kelly, Chase, & Wiemann, 1979). The behavioral perspective conceives of performance as the basis for communication competence and emphasize the outcome achievement aspects of interaction (e.g., Parks, 1977). The social cognitive perspective integrates the trait and behavioral approaches by including both cognition and behavior in determination of communication competence (e.g., Cooley & Roach, 1984).

Two features, effectiveness and appropriate behavior, appear to be represented in essentially all theories, approaches, perspectives, definitions, and constitutive lists of skills and characteristics of communication competence. Because effectiveness and appropriateness are value-laden terms, value decisions inevitably arise when defining and measuring communication competence. The inherent value-laden operationalization of communication competence leaves any researcher defining the concept open to criticism.

Stohl (1983) notes that various definitions have been criticized on the grounds that they 1) do not capture the processual nature of communication (Wiemann & Backlund, 1980); 2) go beyond the domain of competence, equating competence with performance and effectiveness

(McCroskey, 1982); 3) include inappropriate criteria for the assessment of competence (Larson, Backlund, Redmond, & Barbour, 1978); and 4) do not promote a contextual or situational view of competence (Rubin, 1982, Wiemann, 1977).

In addition to the problems associated with operationalizing effectiveness and appropriateness, researchers in communication competence have two general options available for the measurement of the construct. They can either 1) specify a communication task to a subject and conduct observational evaluations of task or 2) elicit evaluations of competence from self-reports, significant others, or third person observers. Again, once the choice is made, the decision is open to criticisms from those schools favoring an alternative research method.

The most useful research definition of communication competence is one that specifies the value decisions involved in operationalization and allows for research flexibility in methodology. The definition satisfying these criteria is offered by Ford (1982):

Communication competence is the ability to attain relevant interactive goals in a *specified* social context using socially *appropriate* means and ways of communicating that result in *positive* outcomes with *significant* others.

Stohl (1983) notes that the various operationalizations of the italicized words allow the definition to be applicable to both performance based and perceptual perspectives of communication competence. For example, positive outcomes can refer to either the researcher's evaluation of the subjects performance, or the scores on perceptual self-reports of the subject.

This definition features the *specified* social context as an important variable in the consideration of competence.

Many researchers have strongly argued that competence judgments are intrinsically contextual (Eisler, 1976; Hersen & Bellack, 1987; Spitzberg, 1983). Schulndt & McFall (1987) argue that advances in the study of communication competence have been hampered by the inadequate conceptualization and measurement of the social situation or context.

Cody and McLaughlin (1978) indicate that, there are at least four ways in which individuals utilize knowledge of social situations:

- 1) People use knowledge of situations as frameworks for evaluating others.
- 2) People process information, as situations unfold, on the basis of there purposes for being in the situation.

- 3) People elect to go into, avoid, or chance a situation according to their self-in-situation scenarios, self knowledge, or perceived competencies.
- 4) People use situational knowledge as a guideline for how to behave. (p.265)

Each of these functions are conceptually relevant to judgments of social behavior as appropriate and/or effective.

Researchers have responded to these cogent arguments by increasingly incorporating context into their competence research. However, Monge, et al. (1981) note that most of the work to date has been conducted in the area of interpersonal communication and little has been done to apply this concept to organizational contexts.

The assessment of effective goal achievement and socially appropriate behavior in organizations is significantly reduced in the organizational setting when compared to most interpersonal contexts. Monge, et al. (1981) offer the following explanation:

in interpersonal relationships a communicator frequently maintains private, multiple and even conflicting goals. There are seldom specified or negotiated expectations about a person's communication behavior. In an organizational setting, however, goals are typically more public and explicit because they are prescribed by the role the individual within the organizational structure, i.e., they are included as apart of job descriptions and performance evaluations. This has especially been the case since the onset of Management by Objectives and other organizational development

programs which make goals explicit. Furthermore, when multiple goals do exist, they are likely to be restricted in number and often in scope. Finally, conflicting goals are often resolved by negotiation during formal meeting such as planning sessions and performance reviews. (p. 506)

Similarly, the problems associated with determining contextually appropriate behavior is significantly reduced in the organizational setting.

Monge, et al. (1981) further argued that the traditional emphasis on abilities valued in intimate and developing relationships, as well as broad definitions of communication competence including social or interpersonal abilities, are often inappropriately applied to the organizational context. They contend that since the majority of organizational communication relationships are non-interpersonal (Miller and Steinberg, 1976), a communication competence construct developed for the workplace should focus on the skills that facilitate interaction between persons in role positions.

Monge, et al. (1981) suggest that research "...should include organizations from different industries and include all organizational levels. In addition, yet to be explored is the relationship of the communication competence construct to other organizational variables. Specifically, communication

researchers need to examine those variables which produce communication competence as well as the effect that communication competence has on such organizational outcomes such as performance and satisfaction" (p. 525).

Development of Instrumentation

Foote and Cottrell (1955) used the term interpersonal competence as a substitute for the term social skills. In their model they attempt to distinguish between interpersonally competent behavior and interpersonally incompetent behavior, and include (1) health, (2) intelligence, (3) empathy, (4) autonomy, (5) judgment, and (6) creativity (p. 41) as the six components of interpersonal competence. Based on the Foote and Cottrell model, Holland and Baird (1968) developed an instrument to measure interpersonal competence. This self-report instrument, entitled the Interpersonal Competency Scale, consists of 20 true/false items. This scale was administered to over 12,000 college freshmen along with scales asking the subjects to report self-ratings of behaviors associated with the items. Estimated reliability figures were .60 for the 6,289 male subjects and .67 for the 6,143 female subjects. Test-retest reliability figures reinforced the original estimations. Results of their study support the

construct validity of the Holland and Baird scale and subsequent studies using the Interpersonal Competency Scale supports the predictive validity of the instrument.

A weakness of the Interpersonal Competency Scale is the inclusion of the dimensions of Foote and Cottrell's model that are not behavioral in nature. One of these dimensions, intelligence, was found by Holland and Baird to be unrelated to interpersonal competence. Another dimension, health, does not seem to be conceptually consistent with the notion of Interpersonal Communication Competence.

Argyris (1965) defined interpersonal competence in terms of the problem solving abilities of the individual. Argyris' work focuses on organizational effectiveness, and he isolated three behavioral categories which facilitate interpersonal competence and three behavioral categories which impeded interpersonal competence. The facilitating behaviors are: (1) owning up to (acceptance of responsibility for manifested behavior), (2) openness (acceptance of new information), (3) experiencing (behavior that presents a degree of risk for the individual). The impeding behaviors are: (1) not owning up to (being able to identify and accept one's own action), (2) not open (discouraging new information), and (3) not experiencing (the avoidance of risk taking).

These six behaviors translate into the categories of (1) individuality, (2) concern, (3) trust, (4) conformity, (5) antagonism, and (6) mistrust. The categories of the Argyris model, each weighted differently, can then be used to code and analyze communication behaviors, resulting in a quantitative measure of interpersonal competence.

Later Argyris (1968) expanded his theoretical model to include the conditions promoting the acquisition of interpersonal competence. Interpersonal competence was defined as "the ability to cope effectively with interpersonal relations" (p. 148), with three criteria necessary for this "coping": (1) accurate perception of the interpersonal situation, (2) development of problem solutions which last over time, and (3) retention of cooperative interaction and maintenance of effective working relations between members of a dyad after solutions to problems are chosen. According to Argyris, acquisition of interpersonal skills is difficult because of (1) the complex nature of the skills, (2) the fact that new models of behavior are being developed and tested, (3) the notion that competence is based on reactive behavior to another's competence, and finally (4) because "it is doubtful that an individual can be taught everything he needs to know in order to behave

competently in most of the situations in which he will find himself" (p. 149-150).

Bennis, Van Maanen, Schein, and Steele (1979) present five personal competencies that can lead to good interpersonal relationships: 1) listening, 2) empathy, 3) analysis, 4) responding, and 5) interpretation. The first competence includes the ability to receive and send information and feelings reliably. The skills associated with this competency include listening attentively, perceiving accurately, and exhibiting a high degree of sensitivity. The second competence, the ability to evoke the expression of feelings, related to self-disclosure and empathetic understanding. Third, the ability to process information and feelings reliably and creatively means that the individual can conceptualize and order the interpersonal experience. The fourth ability, to implement a course of action, implies the acquisition of action-skills. The fifth ability posited by Bennis et al. may be both the most difficult to acquire and the most important to the development of interpersonal communication competence. This ability, to learn in each of the above areas, suggests that individuals be participant-observers when viewing their own interpersonal experience. According to Bennis et al. (1979), when experiences are observed, processed,

analyzed, interpreted, and verified, we can learn to be more interpersonally competent in our communication behaviors.

The conceptual framework for Interpersonal Communication Competence developed by Bochner and Kelly (1974) is based on two key assumptions: (1) all human beings are motivated to interact effectively with their environment; the drive to be interpersonally competent is the drive to influence one's world, and (2) individuals are not competent at birth; competence is learned throughout life. These two assumptions are consistent with the conceptual frameworks proposed by Argyris (1965, 1968) and Bennis et al. (1979). Bochner and Kelly defined interpersonal communication competence as "a person's ability to interact effectively with other people" (1974, p. 288). They presented three criteria for evaluation of competence: (1) the ability to formulate and achieve objectives, (2) the ability to collaborate effectively with others, and (3) the ability to adapt appropriately to situational or environmental variations. Five skills likely to contribute to interpersonal communication competence were cited: (1) empathy, (2) descriptiveness or feedback, (3) owning feelings and thoughts, (4) self-disclosure, and (5) behavioral flexibility. Behavioral flexibility was

thought to be dependent on the development of the other four skills.

Bochner and Yerby (1977) tested the Bochner and Kelly model by exploring the relationship between a subject's perceptions of a peer instructor as being interpersonally competent and his own interpersonal achievement level. The Group Assessment of Interpersonal Traits (GAIT) instrument was used to measure the subject's interpersonal competence. Each subject was asked to rate the other group members on the eight scales comprising the instrument. The resulting factor analysis of the mean scores for each subject on all eight scales indicated that two factors accounted for 62 percent of the variance. The first factor, labeled "Interpersonal Openness" could include three of the skills from the Bochner and Kelly (1974) model: descriptiveness, owning feeling and thoughts, and self-disclosure. The other two skills, empathy and behavioral flexibility, can be included in the second factor labeled "Acceptance/Flexibility."

Argyle (1969, 1972) viewed social interaction skills as being analogous to motor skills, and his conceptual model reflects that orientation. Argyle sees that the social skills operator is motivated by a goal, resulting in selective perception of cues which are translated into

a set of responses. The model of social behavior developed by Argyle (1969) includes seven dimensions: (1) extroversion and affiliation, (2) dominance-submission, (3) poise-social anxiety, (4) rewardingness, (5) interaction skills, (6) perceptual sensitivity, and (7) role-taking ability.

Bienvenu (1974) attempted to develop an instrument to measure interpersonal communication which would be applicable across multiple situations. This scale, the Interpersonal Communication Inventory, was designed to measure the nature rather than the content of interpersonal communication. The original pool of 54 items was reduced to 20 items representing five dimensions of interpersonal communication: (1) self-concept, (2) listening, (3) clarity of expression, (4) coping with angry feelings, and 5) self-disclosure. Weaknesses reported in the Bienvenu scale include the lack of reliability and validity figures and Bienvenu's method of determining the dimension through inspection techniques rather than through the more sophisticated factor analysis techniques now available (Brunner, 1979).

Macklin and Rossiter (1976) used the Bienvenu scale as one source of items in the development of the Interpersonal Communication Report (ICR). This instrument was developed to investigate the relationship

between interpersonal communication competence and self-actualization. Factor analysis reduced the original 61 items to a 15-item scale with three factors labeled: (1) Expressiveness, (2) Self-Disclosure, and (3) Understanding. Expressiveness accounted for 20 percent of the variance while Self-Disclosure and Understanding each accounted for 12 percent of the variance. Split-half reliability for each of the ICR factors was reported as: Expressiveness, .80; Self-Disclosure, .80; and Understanding, .75. Results indicated a moderate, positive relationship between each of the three factors and self-actualization.

Based on the work of Argyris (1962, 1965), Bochner and Kelly (1974), Argyle (1969, 1972), and Goffman (1954, 1963, 1967), Weimann (1975, 1977) developed a model of interpersonal communication competence which reflects his comprehensive definition,

the ability of an interactant to choose among available communicative behaviors in order that he may successfully accomplish his own interpersonal goals during an encounter while maintaining the face and line of his fellow interactants within the constraints of his situation (1975, p. 26)

Weimann's model includes the five dimensions of (1) affiliation/support, (2) social relaxation, (3) empathy, (4) behavioral flexibility, and (5) interaction management. In developing his instrument, Weimann used a

pool of 57 items to describe the dimensions of his model. These items were then reduced to the 36 items showing the greatest between treatment discrimination. Although Weimann's findings generally supported his model, the exact nature of the components is unclear since when subjected to factor analysis, items from all six subscales loaded on one factor which accounted for over 80 percent of the variance. Brunner (1979) revised the Weimann scale to a self-reporting instrument and found that the revised scale had a high reliability (.90) and correlated significantly at the .001 level with the Holland and Baird, Bienvenu, and Macklin and Rossiter's measures of interpersonal communication competence.

The Common Dimensions of Interpersonal Communication Competence

A comprehensive review by Phelps and Snively (1979) of six conceptualizations of interpersonal communication competence (Aryris, 1965; Bienvenu, 1971; Bochner and Kelly, 1974; Holland and Baird, 1968; Macklin and Rossiter, 1976; Weimann, 1977) indicates little overlap between either conceptualizations or instruments. A total of 18 different dimensions were found with only six being common to more than one model.

Based on this review, Phelps and Snively extracted five factors considered theoretically important to a

model of interpersonal communication competence. These factors are (1) empathy, (2) social anxiety, (3) listening, (4) self-disclosure, and (5) behavioral flexibility. Conceptually, the five factors can account for 16 of the 18 dimensions listed in Table 2.2. The two exceptions, health and intelligence, are not considered germane to the conceptual framework underlying interpersonal communication competence.

The Phelps and Snively study indicated that the four scales examined contain five common dimensions, four of which are consistent with the theoretical concept of interpersonal communication competence. Behavioral flexibility, or versatility, as a discreet dimension, emerged in the conceptual schema of interpersonal communication competence, but did not emerge in the analysis of the published measurement instruments.

In summary, the conceptual framework of interpersonal communication competence derived from the literature appears to have five dimensions: (1) empathy, (2) social confidence, (3) listening, (4) self-disclosure, and (5) versatility. These dimensions constitute the basis for the examination of the construct, Interpersonal Communication Competence.

TABLE 2.2: COMMUNICATION COMPETENCE DIMENSIONS

DIMENSION	B	M&R	B&K	A	H&B	W
Behavioral Flexibility			X		X	X
Affiliation\Support						X
Self Disclosure	X	X	X			
Clarity of Expression	X	X				
Listening/Understanding	X	X				
Self Concept	X					
Ability to Cope W/ Anger	X					
Descriptiveness			X			
Owning Feelings/Thoughts			X	X		
Helping Others Be Open				X		
Helping Others Experiment				X		
Social Relaxation						X
Interaction Management						X
Health					X	
Intelligence					X	
Autonomy					X	
Judgment					X	
Empathy			X		X	X

Sources: B = Bienvenu (1971)
M&R = Macklin & Rossiter (1976)
B&K = Bochner & Kelly (1974)
A = Argiris (1965)
H&B = Holland & Baird (1968)
W = Weimann (1977)
(Phelps & Snavely, 1979)

Empathy

Carl Rogers (1951) defines empathy as the capacity to sense another's world as if it were one's own without ever losing the "as if" quality. Two components, understanding and feeling, are consistently referred to in definitions of empathy. Understanding consists of perceptual and cognitive behaviors that combine to form a social understanding and the ability to structure the world as another sees it (Keefe, 1976, p. 10).

Those who define empathy in terms of perception and cognition stress the importance of the dimensions of objectivity, detachment, and analytic knowledge of the other's social roles. In enumerating skills underlying interpersonal competence, Jessor and Richardson (1968, p. 41) state:

First the individual must be able to take the role of another accurately; he must be able to correctly predict the impact that various lines of action will have on the other's definitions of the situation. This is what is meant of empathy if we strip the concept of its affective tones.

Although it is possible to understand another person without feeling with him, empathetic skill requires the emotional response. Research studies indicate that this emotional response can be measured by physiological indicators (Gellen, 1970; Vanderpool and Barrat, 1970).

Much of the research surrounding empathetic skill

has dealt with client/counselor-therapist relationships. Cronbach (1955) pioneered the effort to define empathy in empirical terms. Cline and Richards (1960) used Cronbach's empirical definitions in their subsequent efforts to measure empathy as a factor in personality development. Perceptual discrepancies of therapist's behavior form the basis for other studies of empathic skill (Dymone, 1949; Chance and Meaders, 1960; Smith, 1966).

Empathy was found to be a dimension of interpersonal communication competence in three of the instruments examined by Phelps and Snavely (1979). These researchers also found empathy to correlate significantly with social confidence, listening, and self-disclosure in formulating the model of interpersonal communication competence examined in this study.

Listening

The focus for examination of the communication process is often the expressive abilities of the communicator. However, a significant factor in an individual's ability to communicate effectively is the receptivity to information from others (Larson et al., 1978, p. 48). Some writers argue that communication begins with the ability to gather information. Dance and Larson (1972) describe communication as occurring when an

organism "acts upon information" (p. 11). Thayer (1968) describes communication as occurring when something is taken into account.

One part of the information gathering process is the process of listening. Weaver (1972) states that listening has occurred when "a human organism receives data aurally" (p. 5). The generality of the definition allows for further distinctions as to the types of listening.

One distinction can be made between active and passive listening. Barbara (1958) differentiated between these two types by indicating that in active listening the individual listens with his total self - including his senses, attitudes, beliefs, and intuitions. However, in passive listening, the listener is mainly an organ for reception of sound with little personal involvement. This differentiation is supported by Barker (1971) who views active listening as involving the total organism.

Although both types of listening are referred to as serious, still another distinction can be made between selective listening and concentrated listening. Selective listening involves listening to only certain parts of the message, while concentrated listening involves listening to the entire message and attempting to comprehend all the aspects (Larson et al., 1978).

Listening can also be classified in terms of critical or discriminating. While these terms are not opposite, they do describe different processes. Critical listening implies an evaluative response to a message. The listener makes judgments about the message and the speaker, concentrating on specific attributes and deciding what to retain and what to discard (Keltner, 1970). Discriminating listening is listening for the purpose of understanding and remembering. Discriminating listening involves such skills as understanding the meaning of words from their context, understanding the relationship of details to the main point, and listening to a question of intent to answer (Larson et al., 1978).

Although listening can be classified into various schemes, a listening event is more complex than any single classification type. One of the difficulties in researching and assessing listening as a communication skill lies in the complexity of the process itself. Researchers have yet to clearly define listening and its relationship to the ability to communicate. Three issues are consistently raised concerning the progress of listening research. The first issue concerns the limitations of the instruments available to assess listening ability. A second issue concerns the unidimensional or multidimensional quality of listening.

The third issue concerns the effectiveness of training methods for listening. Although many teachers have successfully trained students to listen more clearly, the specific aspects of that training have not been defined. A clear conceptualization of the listening dimension seems necessary to further research efforts.

To explicate Interpersonal Communication Competence, listening must be conceptualized, at least initially, in very broad terms. The ability to act competently is predicated upon the ability to gather information from the environment.

Self-Disclosure

According to Culbert (1967, p. 2), "self-disclosure refers to an individual's explicitly communication to one or more persons information that he believes these others would be unlikely to acquire unless he himself discloses it..."

Sidney Jourard (1959), a pioneer in the study of self-disclosure, posits that this important aspect of communication is often overlooked in the analysis of communication behavior. Self-disclosure is generally regarded as a process whereby the content of a verbal exchange within the relationship proceeds from non-intimate to intimate areas of exchange (Taylor and Altman, 1966).

Whether or not people actually disclose themselves to another person has been found to depend upon several factors. These factors are the nature of the recipient of the message (Jourard and Lasskow, 1958; Vondracek and Marshall, 1971), the relationship between the discloser and the recipient of the message (Shapiro, Krause, and Truax, 1969), and the kind of information being disclosed (Taylor and Altman, 1966).

Altman and Taylor (1973) and Cozby (1973) have suggested that there are three definitive parameters of self-disclosure. Breadth defines the amount of information disclosed, depth defines the intimacy of the information disclosed, and duration defines the amount of time spent disclosing. Additionally, Jourard (1971) and Pearce and Sharp (1973) suggest that the honesty of the message disclosed is another parameter of self-disclosure.

The most widely used instrument to measure self-disclosure has been Jourard's Self-Disclosure Inventory (Wheless and Grotz, 1976). This instrument deals with the intimacy level of the disclosures made and the honesty with which such disclosures are made. The original instrument consisted of 60 items about six content areas: attitudes and opinions, tastes and interests, work and studies, money, personality, and

body. The second version of the instrument contained only 25 items. However, studies using this instrument have varied the number of items and the recipient of the message. Although many researchers continue to use items from this pool, there is little evidence of their validity. Likewise, validity has not been established for other typical instruments being used as a measurement of self-disclosure.

Social Confidence/Anxiety

Research about the anxiety associated with communication has been conducted under a variety of labels. Scholars of communication theory use the term interchangeably with communication apprehension (McCroskey, 1970, 1975, 1977), reticence (Phillips, 1968, 1977), shyness (Zimbardo, 1977), stage fright (Clevenger, 1959), and unwillingness to communicate (Burgoon, 1976).

Evidence supports the fact that social anxiety is a cognitive based learned behavior. The studies of Phillips and Butt (1966) and Wheelless (1971) suggest that social anxiety develops during the early childhood years and is reinforced by societal rewarding of the quiet child, especially in the school setting.

In one major study, McCroskey, Daly, and Sorensen (1976) found social anxiety to have moderately high negative correlations with tolerance for ambiguity, self-

control, adventurousness, surgency, and emotional maturity. Significant, but less meaningful, negative correlations were also found between social anxiety and confidence, dominance, character, and the need to achieve. Conversely, positive correlations were found between social anxiety and dogmatism, external control orientation, trustfulness, and Machiavellianism.

The dimension of social anxiety, then, is perceived as different from the others in the model of interpersonal communication competence utilized in this study in that the behaviors being examined are associated with the absence of, rather than the presence of, social anxiety. To avoid confusion in interpretation, this dimension has been renamed social confidence in this study to consistent with the other dimensions of this model as suggested by Walters (1980).

Versatility/Behavioral Flexibility

Versatility and Behavioral flexibility are used synonymously in this study. These terms refer to the individual's ability to adapt his/her behavior to meet the demands of the situation. As such, versatility can alter a person's social style in relationship to the effectiveness of the communication behaviors.

Highly versatile individuals are thought to be adaptable, tolerant of ambiguity, negotiable, flexible,

and multidimensional. In contrast, lowly versatile individuals are conceptualized as predictable, specialists, intolerant of ambiguity, single-minded, and inflexible (Lashbrook et al., 1979).

Sullivan (1977) reported moderate correlations between versatility and the dimension of trust, sociability, social attraction, and power. Snavely (1977) also reported a positive correlation between versatility and trust, power, and sociability. Additionally, Snavely's study indicates that versatility is positively correlated with character, composure, task attraction, and competence.

Behavioral flexibility is defined in the Bochner and Kelly (1974) model as the ability to "adapt successfully to structural change." Weinstein's conceptualization of interpersonal communication competence includes the possession of a varied repertoire of lines of action. Weimann (1977) does not offer a clear distinction between interaction management and behavioral flexibility, but concludes that both skills are necessary to the acquisition of communication competence. Behavioral flexibility/versatility was also identified as a discreet dimension by Phelps and Snavely (1979) in their comprehensive review of models of communication competence.

However, this dimension was not represented in the analysis of the items included in the four published measurement instruments included in their study. Phelps and Snavely hypothesized that versatility may be different in nature from the other skills associated with interpersonal communication competence.

Development of The Other Perceived Competency Scale

Using the conceptually common dimensions of communication competence present in four previously published instruments (Bienvenu, 1971; Holland and Baird, 1968, Macklin and Rossiter, 1976; and the revised Weimann, 1977), Phelps and Snavely then examined the four instruments for a match-mismatch of the dimensions underlying the conceptual models of interpersonal communication competence.

The four instruments included a total of 91 scale items which were then given to 1483 subjects. All data were recorded on data scan forms, converted to cards, and analyzed via SPSS principle components factor analysis with varimax rotation to determine the best underlying factor structure. The results were submitted to reliability analysis via Cronbach corrected item alpha and intercorrelations were computed among all dimensions.

The results of the factor analysis indicated that

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the pool of 91 original items could be reduced to 28 items representing five factors: (1) empathy, (2) social confidence, (3) listening, (4) self-disclosure, and (5) health. Factor reliabilities were .80, .83, .73, .77, and .73, respectively. Correlations among the factors ranged from .41 to .02. Because the dimension of health is not conceptually consistent with the Communication Competence model being examined the two items representing health were deleted from the pool of items.

Walters' (1980) study used the Other Perceived Competency Scale in a study of Ohio school district superintendents. This study sought to include the dimension of versatility not represented in the four previously published instruments used in the Phelps and Snavely (1979) study. Walters' instrument include a total of 50 items representing the five factors of empathy, social confidence, listening, self disclosure, and versatility.

Various factor solutions were examined to determine the most consistent underlying factor structure of items on the questionnaire, and the significance of each item to the factor. Examination of these solutions eliminated 22 of the original 50 items. Factor analysis of this data resulted in a four factor solution representing the discrete dimensions of self disclosure, social

confidence, and listening. The fourth factor appeared to represent both the dimensions of empathy and versatility.

The 28 items were then subjected to examination of reliability analysis using the Cronbach corrected alpha method. The examination of reliability resulted in the elimination of two additional items.

The reliability of the 26 items were .92 for the empathy factor, .88 for the social confidence factor, .77 for the self disclosure factor, and .71 for listening.

Walters' (1980) study examined the relationship between social style and communication competence and found significant relations between the two constructs. Additionally, results indicated that the sample of school superintendents exhibited behaviors associated with all five dimensions of the model and were perceived competent in all five dimensions. Self disclosure was the dimension reflected to the least extent and social confidence was the dimension reflected to the greatest extent, followed by listening, empathy, and versatility.

Implications of these studies using the Other Perceived Competency Scale as a research tool include:

1. While the five dimensions of communication competence examined in these studies represent a viable research construct, further research is needed before the model can be considered fully tested and the scale accepted as completely valid and reliable.

2. Further exploration of the two dimensions of empathy and versatility are needed to determine, if possible, the internal likenesses which may indicate that instead of two discreet dimensions, each is part of a singular dimension of communication competence.
3. The 26 items of the Other Perceived Competency scale should be subjected to rigorous examination for potential use in other studies of communication competence.
4. Future studies should include organizations from different industries and include all organizational levels.
5. Communication researchers need to examine the effect communication competence has on such organizational outcomes as performance and satisfaction.

CHAPTER SUMMARY

Chapter Two presented a review of the relevant literature in the study of organizational communication satisfaction and communication competence. This review addressed three issues in the field of communication studies research. First, the development of both study constructs were presented. Second, the development of instruments designed to measure both constructs was presented. Third, research employing both of the study instruments was presented.

CHAPTER THREE: METHODOLOGY

This chapter describes in detail the methodology of this exploratory research study. The information is divided into four sections. First, instruments selected for this research are described. Second, the 17 study variables are identified and defined operationally. Third, the selected sample for the research is described. The final section describes the data analysis techniques to be conducted on the questionnaire responses, as well as the content analytic procedures.

THE RESEARCH INSTRUMENTS

The study questionnaire utilized in this investigation was comprised of 1) the Communication Satisfaction Questionnaire (COMSAT) developed by Downs (1990), 2) the Other Perceived Competency Scale developed by Snavely and Walters (1983), and 3) Demographic questions assessing position, occupation, function, tenure, sex, and location. A copy of the complete questionnaire can be found in Appendix A.

The Communication Satisfaction Questionnaire (COMSAT)

The Communication Satisfaction Questionnaire was developed to measure employees' perceptions of an organization's communication system (Downs et al, 1973). The instrument assesses the employee satisfaction along each of ten dimensions: Communication Climate, Corporate Perspective, Horizontal Communication, Media Quality, Organizational Integration, Personal Feedback, Subordinate Communication, Supervisor Communication, Top Management Communication, and Interdepartmental Communication.

The thoroughness of the three-phase construction of the instrument was noted in a review of various instruments used to assess communication satisfaction by Hecht (1978). Furthermore, the instrument has been found to be internally consistent (Crino and White, 1987) and reliable across a variety of organizations (Downs, 1979).

In short, the COMSAT is a reliable, useful and efficient tool for auditing organizational communication.

The COMSAT consists of only 53 items and is easy and quick to administer while providing coverage of a wide range of communication practices. Fifty questions directly address the ten dimensions of communication satisfaction. Respondents are to indicate their satisfaction with the amount and/or quality of their

communication on seven-item scale ranging from very satisfied to very dissatisfied. The ten dimensions were described in Chapter Two and the specific operationalizations have been withheld at the request of the authors.

The first two items on the COMSAT refer to the "end product" variable of job satisfaction. Item #1 asks employees to indicate their level of job satisfaction and item #2 asks whether that level has increased, decreased, or stayed the same over the past six months. One open ended question is included on the COMSAT (#3) and asks the employee to suggest how the communication associated with their job could change to increase their job satisfaction.

The 50 items which refer to the communication satisfaction dimensions are scored on identical seven point scales, with 1 being "very satisfied" and 7 being "very dissatisfied".

As described at length in Chapter 2, the COMSAT has been determined to be a valid and reliable auditing tool in a wide variety of organizational settings.

The Other Perceived Competency Scale (OPC)

The Other Perceived Competency Scale was developed by Phelps and Snavely (1979) and modified by Snavely and Walters (1983). The 26-item modified version was used in this study to measure the five dimensions of empathy, listening, self disclosure, social confidence, and versatility.

The 26 items on the Other Perceived Competency Scale are scored on a 7 point scale of agreement with 1 representing strong agreement and 7 representing strong disagreement. Listed below are the five dimensions and the items that assess each of the dimensions. The questionnaire item number is also indicated.

1. Empathy

Lets others know they are understood (54)
Appears sensitive to others' needs (55)
Can easily put himself/herself in another's
place (57)
Tries to see things from others' perspective (60)
Readily understands the feelings of others (64)
Adjusts own conversation to make others feel
comfortable (65)

2. Listening

Appears to listen when not really listening (56)
Appears to daydream when s/he should be
listening (63)
Often appears inattentive in conversations (68)
Continues own work when others seek his/her
attention (73)

3. Self Disclosure

Often conveys personal thoughts and feelings (59)
Usually talks as much about personal feelings as the
other person (79)
Shares personal aspirations with others (72)
Never shares feelings and thoughts with others (74)

4. Social Confidence

Appears nervous when talking with others (58)
Seems to be shy around other people (61)
Has difficulty saying things well before a
group (62)
Usually appears relaxed in conversations (66)
Rarely seems to find it difficult to talk to
strangers (67)
Appears self-conscious when addressing groups (69)
Converses easily with new acquaintances (70)
Does not mind meeting strangers (71)
Talks easily with all kinds of people (75)

5. Versatility

Is generally flexible in meeting others' needs (76)
Is versatile in adapting to different
situations (77)
Is willing to relate to others on their terms (78)

The Other Perceived Competency Scale and the model
of communication competence have been demonstrated to
internally consistent and supported by factor analysis,
reliability analysis, and correlation analysis. The
scale and dimensions represent a viable research
construct for additional studies.

STUDY VARIABLES

This investigation of communication satisfaction and
communication competence in professional technical

organizations included a total of 17 study variables. Each of the following 11 study variables are operationalized as the subject's composite score on specified questions on the Communication Satisfaction Questionnaire:

Overall Communication Satisfaction

Satisfaction with Communication Climate

Satisfaction with Organizational Perspective

Satisfaction with Horizontal Communication

Satisfaction with Media Quality

Satisfaction with Organizational Integration

Satisfaction with Personal Feedback

Satisfaction with Supervisor Communication

Satisfaction with Subordinate Communication

Satisfaction with Top Management Communication

Satisfaction with Interdepartmental Communication

The following study variables are operationalized as the subject's composite score on specified questions on the Other Perceived Competency Scale:

Overall Perception of Communication Competence

Perceived Empathy of Supervisor

Perceived Listening Abilities of Supervisor

Perceived Self Disclosure of Supervisor

Perceived Social Confidence of Supervisor

Perceived Behavioral Flexibility of Supervisor

PARTICIPATING ORGANIZATIONS

Initially, three professional technical organizations were approached to generate interest in participation in the research project. Contact was made over the telephone with corporate decision making personnel within each organization. A formal written proposal was forwarded to each of the contact persons. All three participating organizations are located in either the Southeastern or Southwestern United States and all are professional consulting engineering firms. The number of employees in each of the three organizations was 390, 101, and 96. All employees were surveyed and a total of 487 questionnaires were distributed, and 339 were returned for a response rate of 69.6%.

The selection of the sample is thought to increase generalizability within the specific engineering industry and that the findings will contribute as a data base for future comparisons both within and between various industries.

Organization 1

The first organization was an engineering consulting firm with its corporate headquarters located in Fort Worth, Texas. This particular firm was selected for two very practical reasons. First, the author was employed by the firm for a period of five years and is very

familiar with both the organization and its personnel. Second, the top management is very interested in both pursuing the research and receiving the results of the research.

Organization 1 was established in 1939 and is now one of the largest engineering firms in the Southwest. The company employs a total of 390 engineering, technical support and administrative professionals located in Fort Worth, Dallas and Houston, Texas and Fort Myers, Florida.

The organization provides professional consulting services in all aspects of civil, mechanical, electrical, and structural engineering as well as planning, landscape architecture and surveying.

Since 1939 this privately owned organization has specialized in airport planning, design, and construction management. It has provided aviation services for all client groups including regional, county and municipal airports; commercial airlines; airport tenants; and the United States military.

The Director of Personnel agreed to oversee the distribution of the questionnaire packets to all employees in all locations. The questionnaire packets included a letter from the researcher explaining the purpose of the research (see Appendix E), a memo from the President of the firm supporting the research and

encouraging participation in the project (see Appendix D), and a sealable envelope to return the questionnaire in. The sealed envelopes were returned through in-house mail service to the Director of Personnel, who in turn forwarded the envelopes to the researcher. A total of 200 completed questionnaires were returned for a response rate of 51.3%. Table 3.1 identifies the number of responses from Organization 1 by function and position.

TABLE 3.1: SAMPLE DISTRIBUTION BY LEVEL AND FUNCTION ORGANIZATION 1			
Management Level		Organizational Function	
Upper Management	12	Engineering & Technical Support	136
Middle Management	35	Administrative & Corporate Support	30
Supervisor	59	Clerical	12
Non-management Employee	88	Other	17

Organization 2

Organization 2, a privately owned corporation located in Arkansas, provides consulting civil engineering and surveying services. The organization was founded in 1973 and specializes in commercial site work, municipal public works, and landfill planning and

testing. Major clients include several national fast food chains and the world's largest chain of retail discount stores.

Organization 2 employs 101 engineering, technical support, and administrative employees. An Administrative Assistant was assigned as project liaison and was given responsibility to distribute the questionnaire packets to all 101 employees. The questionnaire packets included a letter from the researcher explaining the purpose of the research (see Appendix E), a memo from the President of the firm supporting the research and encouraging participation in the project (see Appendix D), and a sealable envelope to return the questionnaire in. The sealed envelopes were returned through in-house mail service to the Administrative Assistant, who in turn forwarded the envelopes to the researcher. A total of 82 completed questionnaires were returned for a response rate of 81.2%. Table 3.2 identifies the number of responses from Organization 2 by function and position.

TABLE 3.2: SAMPLE DISTRIBUTION BY LEVEL AND FUNCTION ORGANIZATION 2			
Management Level		Organizational Function	
Upper Management	5	Engineering & Technical Support	60
Middle Management	14	Administrative & Corporate Support	9
Supervisor	16	Clerical	5
Non-management Employee	46	Other	7

Organization 3

Organization 3, headquartered in Arkansas, is a privately owned corporation providing a full range of consulting engineering services to a wide variety of clients. Services include civil, electrical, mechanical, and structural engineering, landscape architecture, and environmental and surveying services. The organization was founded in 1917 and specializes in state and municipal government services including highway and bridge planning and construction, water treatment plants, waste water, airport and runway construction, and environmental assessments.

Organization 3 employs 96 engineering, technical support, and administrative employees. An Administrative Assistant was assigned as project liaison and was given

responsibility to distribute the questionnaire packets to all 96 employees. The questionnaire packets included a letter from the researcher explaining the purpose of the research (see Appendix F), a memo from the Chief Executive Officer of the firm supporting the research and encouraging participation in the project (see Appendix E), and a sealable self addressed stamped envelope to return the questionnaire directly to the researcher. A total of 56 completed questionnaires were returned for a response rate of 58%.

TABLE 3.3: SAMPLE DISTRIBUTION BY LEVEL AND FUNCTION ORGANIZATION 3			
Management Level		Organizational Function	
Upper Management	2	Engineering & Technical Support	40
Middle Management	13	Administrative & Corporate Support	4
Supervisor	11	Clerical	3
Non-management Employee	30	Other	9

Descriptive statistics for each of the three participating organizations are reported in Chapter Four. The major statistical analyses, however, used the entire sample as a data set.

Table 3.4 presents the sample distribution for management level and function for the entire sample.

TABLE 3.4: SAMPLE DISTRIBUTION BY LEVEL AND FUNCTION ENTIRE SAMPLE			
Management Level		Organizational Function	
Upper Management	19	Engineering & Technical Support	236
Middle Management	62	Administrative & Corporate Support	43
Supervisor	86	Clerical	20
Non-management Employee	164	Other	33

STATISTICAL ANALYSES

Quantitative Analysis

Data from the responses to the two questionnaires were analyzed using SPSS, version 4.1, a statistical package for the social sciences. The analysis will be conducted in seven steps:

- 1) Descriptive Statistics were established including frequency distributions, means, standard deviations, and rank of all questionnaire items, dimensions, and composites. The SPSS program FREQUENCIES was used to tabulate the data. Additionally, each of the items of both instruments

were rank ordered on the basis of means to efficiently determine the relative strengths and weaknesses of the sample.

2) Tests of Difference were conducted on the responses between several subgroups of the employee sample for this study. Paired T-Tests included differences on job satisfaction (high, low), type of industry (engineering, other), gender, occupation (engineer, other), and supervisor (engineer, other). Engineers refers to employees who are state certified professional engineers. Tests of differences were conducted between engineers and employees and supervisors of all other occupations. The SPSS program T-TEST was used for these comparisons.

3) Analyses of Variance (ANOVA) were conducted on the sample responses to compare additional subgroups that included: the three participating organizations, employee tenure, and the various job levels, functions and locations within organizations. The SPSS program ONEWAY were used for these analyses. Pooled variance estimates were employed and two-tailed probability levels were established. The various subgroups were tested for differences on each of the 17 study variables.

4) Pearson Product Moment Correlation Procedures

were computed on composite scores of the COMSAT and the OPC scales to determine the relationships between the composites and dimensions of this study. SPSS procedure PEARSON CORR was used for these analyses. A two-tailed significance level was set at .05 because the study was largely exploratory and no specific hypotheses had been established.

5) Principle Components Factor Analyses were

conducted on both study instruments to reveal the factor structure as conceptualized by this sample. These results were used to compare with previous factor analyses on the instruments with other samples. Interpretation of this analysis considered an item to load on a factor if it had a loading of .50 or above on that factor and less than a .40 loading on all other factors. The SPSS program FACTOR was used in these analyses.

6) Regression Analyses were conducted to establish the predictive relationships between the overall composite and dimensions of communication satisfaction (excluding the Subordinate dimension) and perceived communication competence of supervisor. Because the study was largely exploratory and no specific hypotheses had been

established, separate Stepwise Multiple Regression procedures were conducted with the composites and factors of both constructs as dependent variables. 7) Internal Reliabilities were established for both study instruments and for each of the satisfaction and competence factors used in this study. Cronbach's Alpha was used to establish these reliability estimates. The SPSS program RELIABILITY's Alpha Model was used in these analyses.

Qualitative Analysis

Responses to the two open questions on the questionnaires were transcribed (see Appendix D) and content analysis of the responses were conducted to assess how the employees of the three organizations suggest improving their communication satisfaction and communication competence of their supervisors. The content analytic procedures were suggested by Weber (1985).

First, the recording units were defined as thematic units. Holsti (1963), defines a theme as a unit of text "having no more than one each of the following elements: (1) the perceiver, (2) the perceived, or agent of action, (3) the action, (4) the target of the action" (p. 136).

Multiple employee suggestions were often recorded within paragraphs and complex sentences. The definition of the theme as recording unit provided the most detailed analysis of the text.

Second, the categories were defined and formulated to ensure that the categories were both exhaustive and mutually exclusive. Analysis of the topics indicated that the two sets of construct dimensions of the study instruments measuring communication satisfaction and other perceived communication competence would serve as appropriate sets of categories for the two open questions. The ten communication satisfaction and four perceived competence definitions were presented in Chapter 2. Additional thematic categories were created for both questions after analysis of the responses indicated a need for additional categories. The single ad hoc category for communication satisfaction is defined as follows:

1) Organizational Aspects consisted of all the organizational related aspects that were not included in the other categories, such as the size of the organization, client relations, organizational training, and organizational demands.

Four ad hoc categories were created for the suggestions related to supervisor competence and are

defined as follows.

1) Responsible Communication refers to the supervisors ability to provide adequate information and feedback in a timely and accurate manner.

2) Personality Aspects includes all the individual personality characteristics which may or may not facilitate effective communication with subordinates, such as openness, superiority, sarcastic, impatience, selfishness, etc.

3) Consistency refers to the ability to provide consistent messages and information over time and to varying audiences.

4) Availability refers to the degree to which the supervisor is able or willing to be available to the subordinate for personal or job related interactions.

Third, separate test coding on a sample of the responses was conducted to test the clarity of the coding rules and category definitions by both the researcher and an experienced independent coder. The need for the ad hoc categories listed above surfaced in this step.

Fourth, assessment of the reliability of the two coders on the sample test was established. One hundred coding decisions were separately conducted by both coders and each decision was compared for reliability.

Fifth, revisions of the category definitions and

coding rules were conducted. The category of Availability was identified as a significant, narrow sub-category of Responsible Communication in this step. The coding rules were modified to include Availability as a distinct category in the interest of meaningful analysis.

Sixth, the entire sample of responses were coded by both the researcher and the independent coder.

Seventh, the achieved intercoder reliability was established using a simple percentage of agreement. An intercoder reliability percentage of 92% was achieved for the analysis of the communication satisfaction question and an intercoder reliability percentage of 95% was achieved for the analysis of the communication competence question. These scores indicate that the categories were reliable and the coding rules were precise. The results from these analyses are reported in Chapter 4.

CHAPTER SUMMARY

This chapter described in detail the methodology of this investigation examining the constructs of communication satisfaction and organizational communication competence independently in three professional technical organizations and the examination of the relationship between perceived communication competence of supervisor and employee communication

satisfaction.

This chapter was divided into four sections. First, the research questions are reviewed and the 17 study variables are identified and defined operationally. Second, the instruments selected for this research are described. Third, the selected sample for the research is described. The final section described the data analysis techniques to be conducted on the questionnaire responses as well as the content analytic procedures.

Chapter Four summarizes the results from these statistical and content analyses. Chapter Five contains a discussion of the major conclusions of this study and suggestions for further research.

CHAPTER FOUR: STUDY RESULTS

This chapter reports the results of the analyses conducted for this study: 1) the statistical evaluations of the two research instruments; 2) the factor analytic procedures on both study instruments; 3) the descriptive statistics for the entire sample and for each participating organization on communication satisfaction and supervisor communication competence; 4) several tests of differences for various subgroups of the entire sample 5) correlations examining the relationship between communication satisfaction and perceived communication competence; 6) regression analyses on the study variables; and 7) the content analysis of the open survey questions soliciting employee suggestions for improving communication satisfaction and communication competence.

THE EVALUATION OF RESEARCH INSTRUMENTS

The internal reliability of both of the research instruments used in this study was determined by computing the Cronbach Alphas using the SPSSX program RELIABILITY. The results of these analyses are reported in Table 4.1.

TABLE 4.1: CRONBACH ALPHAS FOR RESEARCH INSTRUMENTS		
Instrument	Number of items in instrument	Cronbach's Alpha
Communication Satisfaction Questionnaire	50	.966
Other Perceived Competency Scale	26	.929

The Cronbach Alpha of .966 for the Communication Satisfaction Questionnaire indicates that the internal consistency of the 50 items comprising the scale are high. Similarly, the intercorrelations for the Other Perceived Competency Scale was also satisfactorily high with a Cronbach's Alpha of .929.

Additional reliability statistics were computed for each of the ten communication satisfaction and the four other perceived competency factors. Statistics for these factors are reported in Tables 4.2 and 4.3.

TABLE 4.2: CRONBACH ALPHAS FOR COMSAT FACTORS		
COMSAT Factor	Number of items in Factor	Cronbach's Alpha
Corporate Perspective	5	.840
Personal Feedback	5	.849
Organizational Integration	5	.790
Supervisor Communication	5	.862
Communication Climate	5	.827
Horizontal Communication	5	.719
Media Quality	5	.777
Subordinate Communication	5	.864
Top Management Communication	5	.942
Interdepartmental Communication	5	.898

TABLE 4.3: CRONBACH ALPHAS FOR OPC SCALE FACTORS		
Other Perceived Competency Factor	Number of items in instrument	Cronbach's Alpha
Empathy	9	.945
Listening	4	.771
Self Disclosure	4	.707
Social Confidence	9	.869

The Cronbach's Alphas, ranging from .719 to .942, indicate that the consistency of the intercorrelations between items comprising the 10 factors was satisfactory for the Communication Satisfaction Questionnaire. Similarly, the internal consistency of the items comprising the four factors of the Other Perceived Competency Scale also was satisfactorily high with Cronbach's Alphas ranging from .707 to .945.

FACTOR ANALYSES

Principle Components Factor Analysis with Varimax Rotation was conducted to uncover the possible underlying factors in both of the instruments used in this study. The interpretation of the factors considered only eigen values greater than 1.0. Additionally, the analysis considered an item to load on a factor only if it had a loading of .5 or above on that factor and less than a .4 loading on all other factors.

Factor Analysis for the Communication Satisfaction Questionnaire (COMSAT)

A Principal Components Factor Analysis with the Varimax Rotation was computed across all 50 of the Communication Satisfaction Questionnaire (COMSAT) items

simultaneously using the entire sample. The purpose of this analysis was to ascertain whether the factor structure for this sample was comparable to the structure determined by Downs (1977). This analysis of the COMSAT found the varimax to converge in 11 iterations to an eight factor solution. Table 4.4 presents the factors and associated items, and includes factor headings, composed on the basis of the content of the items loading on the factors.

TABLE 4.4: PRINCIPLE COMPONENTS FACTOR ANALYSIS FOR COMMUNICATION SATISFACTION QUESTIONNAIRE					
Factor	Items/Loading		Eigen Value	Pct. Var.	Cum. Pct.
Personal Feedback	10	.720	19.167	38.3	38.3
	11	.717			
	8	.676			
	7	.672			
	4	.619			
	14	.558			
	9	.553			
Supervisor Communication	20	.792	3.48	7.0	45.3
	22	.732			
	25	.707			
	29	.640			
	34	.637			
	18	.626			
	27	.599			
	35	.557			
Corporate Perspective	16	.759	2.51	5.0	50.3
	17	.728			
	24	.630			
	15	.596			
	6	.572			
	13	.528			
Interdepartment Communication	44	.828	2.38	4.8	55.1
	46	.790			
	45	.767			
	48	.714			
	47	.674			
Subordinate Communication	53	.858	1.73	3.5	58.5
	52	.847			
	50	.797			
	49	.798			
	51	.529			
Top Management Communication	43	.770	1.57	3.1	61.7
	40	.733			
	41	.728			
	42	.588			
	39	.582			

Table 4.4 continued on next page
 See Appendix A for complete statement of COMSAT items

TABLE 4.4: Continued				
Factor	Items>Loading	Eigen Value	Pct. Var.	Cum. Pct.
Informal Communication	28 .681	1.35	2.7	64.4
	37 .580			
	36 .550			
	38 .505			
Horizontal Communication	33 .640	1.23	2.5	66.8
	32 .577			
	31 .567			
	30 .529			

See Appendix A for complete statement of COMSAT items

Table 4.4 indicates that most of the items clustered as designated by the authors of the Communication Satisfaction Questionnaire, with a few notable exceptions. Five factors all had the same five items load for this sample as the items had been originally specified. The factors of Personal Feedback and Corporate Perspective both had four of the designated five items load as specified. The Horizontal Communication factor had three items load the same for this sample as for the original sample. However, no factor emerged that was consistent with the original designations of Media Quality, Organizational Integration or Communication Climate. Finally, a new factor entitled Informal Communication, surfaced with four items loading on the factor.

The factor analysis of the COMSAT suggests several observations. First, the four factors of Supervisory Communication, Subordinate Communication, Interdepartmental Communication, and Top Management Communication maintained their integrity with this sample. However, the Supervisory factor also included three items originally associated with the Personal Feedback and Communication Climate factors.

Second, the factors of Personal Feedback, Corporate Perspective, and Horizontal Communication were essentially consistent with the original designations with modest variations.

Third, the failure of three factors to emerge as originally specified suggests that further exploration of these factors may be appropriate. Media Quality, Communication Climate, and Organizational Integration were the same three factors that also failed to surface in Varona's (1991) study of Guatemalan employees. In the present study, three items associated with the Organizational Integration factor loaded on the Personal Feedback factor, two Communication Climate items loaded on the Supervisor factor, and three of the Media Quality items failed to load on any factor, with two items loading on the new Informal Communication factor.

Fourth, items originally associated with the

Horizontal and Media Quality factors clustered to form a new factor called Informal Communication. These same findings had previously been found in studies by Varona (1991) and Clampitt and Girard (1987).

Fifth, these results added further support to the dependability of the two new factors Top Management and Interdepartmental Communication added by Downs (1990) to the COMSAT.

Finally, in spite of a few inconsistent results of the present study with the original structure of the COMSAT instrument, the overall integrity of the COMSAT was essentially upheld by this sample of professional engineering organizations. However, the modest differences in factor structure for this sample suggests a need to consider these differences in the subsequent analyses of this study. Consequently, all further analyses of the COMSAT included both the original and the emergent sample factors.

Factor Analysis for the Other Perceived Competency Scale (OPC)

A Principal Components Factor Analysis with the Varimax Rotation was computed across all 26 of the Other Perceived Competency Scale (OPC) items simultaneously using the entire sample. The purpose of this analysis was to ascertain whether the factor structure for this

sample was comparable to the structure determined by Phelps and Snavely (1979). This analysis of the OPC found the varimax to converge in 10 iterations to a four factor solution. Table 4.5 presents the factors and associated items, and includes factor headings, composed on the basis of the content of the items loading on the factors.

TABLE 4.5: PRINCIPLE COMPONENTS FACTOR ANALYSIS FOR OTHER PERCEIVED COMPETENCY SCALE (OPC)				
Factor	Items/Loading	Eigen Value	Pct. Var.	Cum. Pct.
Empathy	57 .814	10.406	40.0	40.0
	76 .809			
	55 .797			
	78 .786			
	64 .786			
	60 .782			
	54 .748			
	65 .746			
77 .728				
Social Confidence	61 .731	2.911	11.2	51.2
	62 .704			
	58 .690			
	70 .664			
	71 .614			
	67 .585			
	66 .569			
Listening	73 .690	2.127	8.2	59.4
	68 .674			
	63 .662			
	56 .613			
Self Disclosure	59 .801	1.462	5.6	65.0
	79 .739			
	72 .666			
	74 .590			

See Appendix A for a complete statement of OPC items

Table 4.5 indicates that all of the items clustered as designated by the authors of the Other Perceived Competency Scale, with one notable exception. The Social Confidence factor had the same seven items load for this sample as the items had been originally specified. Similarly, the factors of Listening and Self Disclosure both had all four designated items load as specified. The six items specified for the Empathy factor also loaded as specified, however; the three Versatility items also all loaded on the Empathy factor.

The factor analysis of the OPC led to the following observations. First, the four factors of Empathy, Social Confidence, Listening, and Self Disclosure maintained their integrity with this sample. Second, the failure of the Versatility factor to emerge as a discrete factor with this sample suggests that the internal likenesses of Versatility and Empathy may indicate that each is part of a singular dimension of communication competence. Third, the results of this factor analysis of the OPC replicated the findings of Walters' (1980) examination of the OPC. The consistency of these two studies provide evidence of the integrity of the scale and the internal likenesses of empathy and versatility. Finally, the consistent findings of these two studies suggest a four factor model of perceived communication competence with the discrete

dimensions of empathy, social confidence, listening, and self disclosure. Consequently, for this study, all further analyses of the Other Perceived Competency Scale were conducted using the four factor model of perceived communication competence.

DESCRIPTIVE STATISTICS

Frequency distributions, means, and rank for each of the Communication Satisfaction Questionnaire (COMSAT) items and the Other Perceived Competency Scale (OPC) items were computed using the entire sample. These descriptive statistics are reported in Appendix B and Appendix C. These descriptive statistics were also computed for each participating organization.

Communication Satisfaction Questionnaire (COMSAT)

Level of Job Satisfaction

Frequency distributions and means for were computed for the COMSAT item 1: "How satisfied are you with your job?". Responses were given on a seven point scale with 1 as "Very Satisfied" and 7 as "Very Dissatisfied". Results for the entire sample and each organization are reported in Table 4.6.

TABLE 4.6: JOB SATISFACTION: FREQUENCY DISTRIBUTION, AND MEANS FOR ENTIRE SAMPLE AND EACH ORGANIZATION								
Sample	Scale							Mean
	1	2	3	4	5	6	7	
Entire Sample N=339	77	152	71	7	17	9	3	2.33
Organization 1 N=200	38	85	52	6	12	5	2	2.46
Organization 2 N=82	22	40	12	0	3	3	1	2.19
Organization 3 N=56	17	27	7	1	2	1	0	2.03

1= Very Satisfied 7= Very Dissatisfied

These results indicate that overall this sample reports satisfied levels of job satisfaction. The means of all samples fell between the "Satisfied" and "Slightly Satisfied" range and 67.6% of employees report either "Very Satisfied" or "Satisfied" levels of job satisfaction. The reports distinguish the largest sample (Organization 3) as having slightly lower reports of job satisfaction than the other two organizations.

Most Satisfied and Least Satisfied COMSAT Items

The frequency distribution, means and rank for each COMSAT item for the entire sample are contained in Appendix B. Tables 4.7 and 4.8 contain the rank and mean for the five most and least satisfied items for the

entire sample and each organization.

Table 4.7 indicates that the trust provided by supervisors to employees (item 25) was the single most satisfied item on the COMSAT. This item was consistent across all three organizations. Compatibility of work group (item 32), responsiveness of subordinates to downward communication (item 49), and information about company profits and financial standing (item 16) were the three COMSAT items to appear in two of the three organizations studied.

Comparison of the five items of satisfaction for the entire sample and a data base of responses from over 26 companies and 2,101 individuals (Clampitt, 1991) reveals that the same five items are included in both samples. These identical results suggest that employees of the professional technical organizations perceive the areas of greatest communication satisfaction no differently than a data base of widely varying organizational types.

TABLE 4.7: MEANS AND RANK OF THE FIVE MOST SATISFIED COMSAT ITEMS FOR ENTIRE SAMPLE AND EACH ORGANIZATION				
No. COMSAT Item	ENTIRE	ORG 1	ORG 2	ORG 3
	N=339 R MEAN	N=200 R MEAN	N=82 R MEAN	N=56 R MEAN
25 Extent to which my supervisor trusts me	1 2.79	1 2.83	1 2.75	1 2.66
32 ... my work group is compatible	2 2.98	2 3.05	2 2.85	
34 ... amount of supervision given me	3 3.01		3 2.87	
49 ... subordinates are responsive to comm.	4 3.08	3 3.15		2 2.67
52 ...subord. receptive to suggestions	5 3.20	4 3.17		
30 ...horizontal comm. is accurate/flowing		5 3.26		
40 Top management cares about org. members			4 2.94	
16 Info. about company profits and finances			5 2.99	3 2.89
15 Info. about employee pay and benefits				4 2.82
17 Info. about company accomplishments and failures				5 2.89

1= Very Satisfied 7= Very Dissatisfied

Table 4.8 provides the findings of the analysis of the least satisfied items on the COMSAT questionnaire. This table shows much less consistency across the organizations. How the employee is judged (item 8) is the COMSAT item the entire employee sample reported the least satisfaction. No item appeared in the five least satisfied rankings of all three organizations. Four items appeared on two of the organization's rankings:

1) employees have great ability as communicators (item 21); 2) members communicate between departments to solve problems (item 44); 3) priorities between my department and other departments are in agreement (item 48); and 4) how my job compares with others (item 7).

Comparison of the items of least satisfaction for the professional technical organizations included in this study and a data base of 26 companies and 2,101 employees (Clampitt, 1991) generally indicates consistent findings. Because the data base does not include items associated with the Top Management and Interdepartmental Communication factors, only those items in both studies were considered for comparison. The data base comparison indicates that both samples include item #8: How I am being judged, item #7: How my job compares with others, and item #14: How problems in my job are handled as items of least satisfaction. These consistent results suggest that employees of the professional technical organizations perceive the areas of least communication satisfaction very similarly to a data base of widely varying organizational types.

TABLE 4.8: MEANS AND RANK OF THE FIVE LEAST SATISFIED COMSAT ITEMS FOR ENTIRE SAMPLE AND EACH ORGANIZATION

No. COMSAT Item	ENTIRE	ORG 1	ORG 2	ORG 3
	N=339 R MEAN	N=200 R MEAN	N=82 R MEAN	N=56 R MEAN
8 How I am being judged	1 4.15			1 4.33
48 Priorities between departments are in agreement	2 4.10		1 4.22	5 3.78
7 How my job compares with others	3 4.07	3 4.23		2 3.98
39 Top management comm. openly and honestly	4 4.05			4 3.86
14 How problems in my job are handled	5 4.03		2 4.05	
42 Top mgt. informs in a timely way		1 4.40		
44 Members communicate between departments to solve problems		2 4.33	4 3.99	
21 People have great ability as communicators		4 4.23		3 3.93
23 Co. communication makes me identify and feel a part of		5 4.17		
46 Sense of teamwork across departments			3 4.03	
27 Conflicts handled appropriately			5 3.90	

1= Very Satisfied 7= Very Dissatisfied

Comparisons of Tables 4.7 and 4.8 reveal several similarities in the participating organizations on the responses to the COMSAT questionnaire. The items measuring communication within the employee relationships consistently received favorable responses. Supervisor

trust, supervision given, subordinate responsiveness, work group compatibility, horizontal employee communication all emerged on only the analysis of most satisfied COMSAT items.

Three interdepartmental communication items emerged only on the least satisfied analysis of COMSAT items and three were common to at least two of the participating organizations five least satisfied items. The Interdepartmental items were 1) the priorities between departments (item 48); 2) problem solving between departments (item 44); and 3) sense of teamwork between departments (46).

Three other items emerged consistent by appearing on the least satisfied rankings of two organizations: 1) people in company have great ability as communicators (item 21); 2) how problems in my job are being handled (item 14); 3) how my job compares with others (item 7).

Several differences between the three organizations participating in the study are worth noting. Organization 3 consistently reported lower levels of satisfaction on the COMSAT items composing the least and most satisfied items. Organization 3 also included two items of least satisfaction that were unique to this organization: 1) top management communicates in a timely way to keep members informed (item 42); 2) company's

communication makes me identify with it or feel vital part of it (item 23). Similarly, Organization 2 also reported two items particular to this organization's analysis of least satisfied COMSAT items: 1) sense of teamwork across departments; and 2) conflicts handled appropriately through proper communication channels (item 27).

In addition, the analysis of only the most satisfied items from Organization 2 included two items related to organizational information: 1) information about employee pay and benefits (item 15); and 2) information about accomplishments and/or failures of the company (item 17).

The inclusion of Top Management items were revealed in analyses of most and least satisfied COMSAT items. Organization 2 included a Top Management item in the analysis of most satisfied COMSAT items. Conversely, two Top Management items were uncovered in the overall evaluation of the least satisfied items: top management communicates openly and honestly and top management communicates in a timely way to keep members informed.

Paired T-Tests for Most and Least Satisfied COMSAT
Items for the Entire Sample

To ensure the relevance of the preceding analyses of the most and least satisfied COMSAT items, Paired Sample T-Tests were conducted on the ten items in Tables 4.7 and 4.8. The SPSSX program T-TEST PAIRED compared the items and Table 4.9 reports the relevant statistics between each of the paired items. These results demonstrate significant differences between the means of each pair of most and least satisfied COMSAT items.

TABLE 4.9: PAIRED T-TESTS BETWEEN MOST AND LEAST SATISFIED COMSAT ITEMS FOR ENTIRE SAMPLE					
Item No.	Mean	Difference	T Value	DF	Probability
25	2.79				
8	4.15	-1.35	-15.17	329	.000

32	2.98				
48	4.10	-1.11	-13.79	332	.000

34	3.01				
7	4.07	-1.06	-12.73	331	.000

49	3.08				
39	4.18	-1.10	- 8.96	155	.000

52	3.20				
14	4.08	- .88	- 7.47	156	.000

1 = Very Satisfied 7 = Very Dissatisfied

COMSAT Factor Means and Rank by Organization

Descriptive statistics were computed for each of the ten COMSAT factors and the overall composite. The means were rank ordered for the three organizations and the entire sample. Table 4.10 contains the means of the overall composite and the ten COMSAT factors rank ordered for all study samples.

TABLE 4.10: MEAN AND RANK OF THE 10 COMSAT FACTORS FOR ENTIRE SAMPLE AND EACH ORGANIZATION				
COMSAT FACTOR	ENTIRE N=339 R MEAN	ORG 1 N=200 R MEAN	ORG 2 N=82 R MEAN	ORG 3 N=56 R MEAN
Overall COMSAT Composite	3.63	3.78	3.42	3.38
Supervisor Communication	1 3.18	1 3.26	1 3.04	2 3.11
Subordinate Communication	2 3.29	2 3.34	5 3.27	2 3.11
Horizontal Communication	3 3.40	3 3.48	6 3.32	5 3.26
Organizational Integration	4 3.44	4 3.62	3 3.22	4 3.12
Corporate Perspective	5 3.48	5 3.77	2 3.13	1 2.94
Media Quality	6 3.62	5 3.77	7 3.43	6 3.42
Top Management Communication	7 3.82	10 4.17	4 3.24	7 3.46
Communication Climate	8 3.93	9 4.10	8 3.68	9 3.71
Interdepartmental Communication	9 3.96	7 4.02	10 4.01	8 3.65
Personal Feedback	10 3.98	8 4.08	9 3.82	10 3.86

1 = Very Satisfied 7 = Very Dissatisfied

Table 4.10 indicates that although several factors demonstrated considerable variation among the three organizations, other factors emerged as being rated consistently by the organizations. Supervisor Communication and Subordinate Communication were the two factors to consistently emerge as the most satisfied COMSAT factors among the organizations. These two factors relate to the upward and downward communication between one's immediate supervisor and subordinates. Three factors were consistently rated as the least satisfied COMSAT factors: Personal Feedback, Interdepartmental Communication, and Communication Climate. Personal feedback is concerned with how employee performance is being appraised. Interdepartmental communication relates to the communication between departments to facilitate the efficiency of the organization. Communication Climate is concerned with both organizational and personal levels of communication within organizations.

Table 4.10 reveals several differences between the organizations on the COMSAT factors. The largest organization (Organization 1) consistently reported less satisfaction with each of the ten COMSAT factors than the other two participating organizations. Organization 1 reported Top Management as the least satisfied factor.

This dissatisfaction is also reflected in the mean of 4.17, which was the lowest rated factor mean of the computed factor means among the organizations. In addition, Organization 1 reported four of the five factor means computed above the midpoint of 4.0 in this analysis. Organization 1 also reported lower ratings of Corporate Perspective than the other participating organizations.

Organization 2 reported higher ratings of satisfaction with Top Management Communication than the other organizations and ranked the Subordinate Communication factor lower than the other participating organizations.

Organization 3 differed from the other organizations in rating Corporate Perspective the most satisfied COMSAT factor. This factor mean of 2.94 was the only factor mean that was computed in a range higher than 3.04. In addition, Organization 3 reported four of the five most satisfied factor means computed among the three organizations.

Comparison of the rankings of the COMSAT factors for the sample of professional technical organizations and the database of 26 companies and 2,101 employees (Clampitt, 1991) indicated very similar results. Because the data base does not include items associated with the

Top Management and Interdepartmental Communication factors, only those items in both studies were considered for comparison. The three highest ranked factors (Supervisory Communication, Subordinate Communication, and Horizontal Communication) for the professional technical organizations were identical to the results found in the database. Only modest differences are noted in the comparison of the lowest rated factors between the study sample and the database. The study sample reported the least satisfaction with the three factors of Personal Feedback, Communication Climate and Media Quality. The data base indicated the least satisfaction with Personal Feedback, Communication Climate, and Corporate Perspective. The rankings of COMSAT factors by the study sample and the data base suggest that the professional technical organizations perceive the areas of greatest and least satisfaction very similarly to a data base of widely varying organizational types.

Study COMSAT Factor Means and Rank by Organization

The regression analysis for this study on the COMSAT instrument indicated a slightly modified factor structure for this sample. An eight-factor solution surfaced in the study sample and Table 4.11 contains the means of the overall composite and the eight study COMSAT factors rank ordered for each organization.

TABLE 4.11: MEAN AND RANK OF THE EIGHT COMSAT STUDY FACTORS FOR ENTIRE SAMPLE AND EACH ORGANIZATION

COMSAT FACTOR	ENTIRE	ORG 1	ORG 2	ORG 3
	N=339 R MEAN	N=200 R MEAN	N=82 R MEAN	N=56 R MEAN
Overall COMSAT Composite	3.65	3.81	3.45	3.39
Subordinate Communication	1 3.29	1 3.34	5 3.27	2 3.11
Horizontal Communication	2 3.32	2 3.40	2 3.24	3 3.12
Supervisor Communication	3 3.38	3 3.48	3 3.25	4 3.25
Corporate Perspective	4 3.50	4 3.76	1 3.17	1 3.02
Informal Communication	5 3.75	5 3.88	6 3.56	6 3.57
Top Management Communication	6 3.82	8 4.17	3 3.25	5 3.46
Personal Feedback	7 3.86	6 3.98	7 3.67	8 3.67
Interdepartmental Communication	8 3.96	7 4.02	8 4.01	7 3.65

1 = Very Satisfied 7 = Very Dissatisfied

Comparison of Tables 4.10 and 4.11 indicates that the emergent factor structure of the study sample had very little impact on the rankings of greatest and least factor satisfaction. Subordinate Communication, Horizontal Communication, and Supervisor Communication were again the three factors to consistently emerge as the most satisfied COMSAT factors among the organizations. Two factors were consistently rated as the least satisfied COMSAT factors: Personal Feedback and Interdepartmental Communication on both factor rankings.

Other Perceived Competency Scale (OPC)

Frequency distributions, means, and rank for each of the Other Perceived Competency Scale (OPC) items were computed for both the entire sample and for each participating organization. These descriptive statistics are reported in Appendix C.

Highest Agreement and Lowest Agreement OPC Items

The rank and mean for the five items on the Other Perceived Competency Scale that received the highest and lowest means of agreement for the entire sample and each organization are contained in Tables 4.12 and 4.13.

TABLE 4.12: MEAN AND RANK OF THE FIVE HIGHEST AGREEMENT OPC ITEMS FOR ENTIRE SAMPLE AND EACH ORGANIZATION				
No. OPC Item (RS) Indicates Reverse Scored Item	ENTIRE N=339 R MEAN	ORG 1 N=200 R MEAN	ORG 2 N=82 R MEAN	ORG 3 N=56 R MEAN
63 Supervisor appears to daydream when h/she should be listening (RS)	1 2.71	1 2.65	3 2.74	1 2.83
62 ...has difficulty saying things before a group (RS)	2 2.73	2 2.66	1 2.68	4 3.04
61 ...seems to be shy around others (RS)	3 2.80	4 2.83	2 2.73	2 2.84
71 ...does not mind meeting strangers	4 2.84	3 2.82	4 2.76	3 3.00
70 ...converses easily with new acquaintances	5 2.97	5 2.99	5 2.85	
67 ...rarely finds it difficult to talk to strangers				5 3.04

TABLE 4.13: MEAN AND RANK OF THE FIVE LOWEST AGREEMENT OPC ITEMS FOR ENTIRE SAMPLE AND EACH ORGANIZATION				
No. OPC Item (RS) Indicates Reverse Scored Item	ENTIRE N=339 R MEAN	ORG 1 N=200 R MEAN	ORG 2 N=82 R MEAN	ORG 3 N=56 R MEAN
79 Supervisor usually talks as much about personal feelings as the other person	1 3.97	1 3.98	2 3.96	2 3.98
56 Appears to listen to others when really not listening (RS)	2 3.82	3 3.77	1 4.02	
72 ...shares personal aspirations with others	3 3.80	2 3.83		1 4.06
73 ...continues own work when others seek their attention (RS)	4 3.69	4 3.64	3 3.89	
57 ...can easily put him/herself in anothers place (RS)	5 3.65	5 3.62	5 3.63	5 3.82
65 ...adjusts own conversation to make others feel comfortable			4 3.67	4 3.81
64 readily understands the feelings of others				3 3.80

Table 4.12 indicates that the negative statement in Item 63, supervisor appears to daydream when they should be listening, was the single item generating the most agreement on the OPC when appropriately reverse scored. This item was the only item associated with listening on the ranking of highest agreement for all samples. All other ranked items on these rankings are associated with

the social confidence factor. The items comprising the sample rankings demonstrated very high consistency across the three organizations; only six items are included on the highest agreement rankings across all three organizations in Table 4.12. This table would suggest that employees perceive their supervisors to have confidence in social interactions.

Table 4.13 provides the findings of the analysis of the items of lowest agreement on the OPC Scale. Item 79, my supervisor usually talks as much about personal feelings as the other person, was the item of lowest agreement across the entire sample. Although only seven items are included on the rankings of all samples, the rankings across the organizations demonstrated little consistency with only the fifth lowest rated item receiving an equal rating across all three organizations. The factors associated with the seven lowest agreement items included in Table 4.13 include Self Disclosure (items 79 and 72), Listening (items 56 and 73), and Empathy (items 57, 65, and 64).

Comparison of Tables 4.12 and 4.13 reveals that only items associated with the Listening factor are included on both tables. Although the employees agreed that their supervisors did not daydream when they were supposed to be listening (item 63), the employees also indicated that

their supervisors often appear to listen when not really listening (item 56) and continue their own work when others seek their attention (73). These conflicting findings may indicate that while the employees are generally dissatisfied with the listening behavior of their supervisors, they do not associate "daydreaming" as a specific influence on the listening behavior of supervisors.

Paired T-Tests for Highest and Lowest Agreement OPC
Items for the Entire Sample

To ensure the relevance of the preceding analyses of the highest and lowest agreement items on the Other Perceived Competency Scale, Paired Sample T-Tests were conducted on the ten items in Tables 4.12 and 4.13 for the entire sample. The SPSSX program T-TEST PAIRED compared the items and Table 4.14 reports the relevant statistics demonstrating significant differences between each of the paired items.

TABLE 4.14: PAIRED T-TESTS BETWEEN HIGHEST AND LOWEST AGREEMENT OPC ITEMS FOR ENTIRE SAMPLE					
Item No.	Mean	Difference	T Value	DF	Probability
63	2.71				
79	3.97	-1.26	-13.23	332	.000

62	2.73				
56	3.82	-1.09	-10.29	327	.000

61	2.80				
72	3.80	-1.00	-10.13	332	.000

71	2.84				
73	3.69	- .85	-9.00	332	.000

70	2.97				
57	3.65	- .68	-7.98	330	.000

OPC Scale Factor Means and Rank by Organization

Descriptive statistics were computed for each of the four Other Perceived Competency factors and the overall composite. The means were rank ordered for the three organizations and the entire sample. Table 4.15 contains the means of the overall composite and the four OPC factors rank ordered for all study samples.

TABLE 4.15: MEAN AND RANK OF THE FOUR OPC FACTORS FOR ENTIRE SAMPLE AND EACH ORGANIZATION				
OPC FACTOR	ENTIRE N=339 R MEAN	ORG 1 N=200 R MEAN	ORG 2 N=82 R MEAN	ORG 3 N=56 R MEAN
Overall OPC Composite	3.38	3.36	3.35	3.50
Social Confidence	1 2.99	1 2.99	1 3.33	1 3.11
Listening	2 3.37	2 3.30	3 3.50	2 3.40
Empathy	3 3.45	3 3.43	2 3.40	3 3.58
Self Disclosure	4 3.63	4 3.63	4 3.51	4 3.78

Table 4.14 indicates that the employees of the three organizations rated the competence factors quite consistently. Social Confidence had the highest means and Self Disclosure had the lowest means in each of the three organizations. These results indicate that the employees in the study felt that their supervisors demonstrated stronger social confidence behaviors than self disclosure behaviors as measured by the Other Perceived Competency Scale.

TESTS OF DIFFERENCE

Comparison of Organizations on Communication Satisfaction Factors

Comparisons between the three participating organizations were conducted by computing Analyses of Variance and Post Hoc Pairwise Comparison tests on the COMSAT composite and the ten COMSAT factors. These analyses and comparisons were conducted to determine whether any significant differences emerged between the study organizations and the nature of the differences. The results of the Analysis of Variance are contained in Table 4.16.

TABLE 4.16: ANALYSIS OF VARIANCE OF THE 10 COMSAT FACTORS AND COMPOSITE BETWEEN STUDY ORGANIZATIONS						
COMSAT FACTOR	ENTIRE	ORG 1	ORG 2	ORG 3	F	P
	N=339	N=200	N=82	N=56		
	MEAN	MEAN	MEAN	MEAN		
Overall COMSAT Composite	3.63	3.78	3.42	3.38	9.15	.000
Supervisor Communication Subordinate	3.40	3.48	3.32	3.26	1.41	.247
Horizontal Communication	3.18	3.26	3.04	3.11	0.63	.536
Organizational Integration	3.29	3.34	3.27	3.11	2.15	.118
Corporate Perspective	3.44	3.62	3.22	3.12	11.01	.000
Media Quality	3.48	3.77	3.13	2.94	26.04	.000
Top Management Communication	3.62	3.77	3.43	3.42	6.33	.002
Communication Climate	3.82	4.17	3.24	3.46	16.47	.000
Interdepartment Communication	3.93	4.10	3.68	3.71	5.81	.003
Personal Feedback	3.96	4.02	4.01	3.65	2.64	.073
	3.98	4.08	3.82	3.86	2.05	.130

The analyses of variance uncovered significant differences between the organizations on six of the eleven COMSAT factors and composites computed. The significant factors were the Overall COMSAT Composite, Corporate Perspective, Organizational Perspective, Communication Climate, Media Quality, and Top Management Communication. Statistics from these analyses of variance are reported in Tables 4.17 to 4.22.

TABLE 4.17: ANALYSIS OF VARIANCE OF THE OVERALL COMSAT COMPOSITE					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	11.90	5.95	9.15	.0001
Within Groups	335	217.74	.65		

TABLE 4.18: ANALYSIS OF VARIANCE OF COMSAT FACTOR: CORPORATE PERSPECTIVE					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	43.56	21.78	26.04	.0000
Within Groups	335	280.22	.84		

TABLE 4.19: ANALYSIS OF VARIANCE OF COMSAT FACTOR: ORGANIZATIONAL INTEGRATION					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	16.67	8.34	11.01	.0000
Within Groups	335	253.59	.76		

TABLE 4.20: ANALYSIS OF VARIANCE OF COMSAT FACTOR: COMMUNICATION CLIMATE					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	13.48	6.74	5.81	.0033
Within Groups	333	386.19	1.15		

TABLE 4.21: ANALYSIS OF VARIANCE OF COMSAT FACTOR: MEDIA QUALITY					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	9.77	4.87	6.33	.0020
Within Groups	332	256.10	.77		

TABLE 4.22: ANALYSIS OF VARIANCE OF COMSAT FACTOR: TOP MANAGEMENT					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	58.64	29.32	16.47	.0000
Within Groups	331	589.42	1.78		

Additional comparative analyses were conducted to identify which particular organizations differed significantly and what the nature of the differences were. The Scheffe and Student-Newman-Keuls procedures for the Post Hoc, Multiple Pairwise Comparisons both indicated that for each of the six significant COMSAT factor differences identified, Organization 1 was less satisfied ,at the .05 significance level, than both Organization 2 and Organization 3. These results indicate that the employees of Organization 1 are significantly less satisfied with the communication practices associated with Overall Communication Satisfaction, Corporate Perspective, Organizational Perspective, Communication Climate, Media Quality, and Top Management Communication than Organizations 2 and 3.

Comparison of Organizations on Communication

Satisfaction Factors: Eight-Factor Solution

Comparisons between the three participating organizations were conducted by computing Analyses of Variance and Post Hoc Pairwise Comparison tests on the emergent eight factors that surfaced with the study sample. These analyses and comparisons were conducted to determine the presence and nature of any significant differences between the study organizations. The results of the Analysis of Variance are contained in Table 4.23.

TABLE 4.23: ANALYSIS OF VARIANCE OF THE EIGHT COMSAT FACTORS AND COMPOSITE BETWEEN STUDY ORGANIZATIONS						
COMSAT FACTOR	ENTIRE	ORG 1	ORG 2	ORG 3	F	P
	N=339	N=200	N=82	N=56		
	MEAN	MEAN	MEAN	MEAN		
Overall COMSAT Composite	3.65	3.81	3.45	3.39	8.88	.000
Subordinate Communication	3.29	3.34	3.27	3.11	0.63	.536
Horizontal Communication	3.32	3.40	3.24	3.12	2.85	.059
Supervisor Communication	3.38	3.48	3.25	3.25	1.94	.145
Corporate Perspective	3.50	3.76	3.17	3.02	17.91	.000
Informal Communication	3.75	3.88	3.56	3.57	4.50	.019
Top Management Communication	3.82	4.17	3.25	3.46	16.47	.000
Personal Feedback	3.86	3.98	3.67	3.67	3.98	.019
Interdepart. Communication	3.96	4.02	4.01	3.65	2.64	.072

1 = Very Satisfied 7 = Very Dissatisfied

The analysis of variance of the emergent study factors uncovered significant differences between four of the eight factors computed. The significant factors were Personal Feedback, Corporate Perspective, Informal Communication, and Top Management. The overall composite of the new factors also computed as significantly different between the three organizations. Statistics from these analyses of variance are reported in Tables 4.24 to 4.27.

TABLE 4.24: ANALYSIS OF VARIANCE OF THE OVERALL COMSAT COMPOSITE					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	12.32	6.16	8.88	.0001
Within Groups	335	232.17	.70		

TABLE 4.25: ANALYSIS OF VARIANCE OF COMSAT FACTOR: CORPORATE PERSPECTIVE					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	35.38	17.69	17.92	.0000
Within Groups	335	330.74	.99		

TABLE 4.26: ANALYSIS OF VARIANCE OF COMSAT FACTOR: INFORMAL COMMUNICATION					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	8.07	4.04	4.50	.0001
Within Groups	335	297.94	.90		

TABLE 4.27: ANALYSIS OF VARIANCE OF COMSAT FACTOR: TOP MANAGEMENT					
Source	DF	Sum of Squares	Mean Squares	F	Sign.
Between Groups	2	58.64	29.32	16.47	.0000
Within Groups	331	589.42	1.78		

The Scheffe procedures for the Post Hoc Comparison tests indicated that Organization 1 reported significantly less satisfaction (at the .05 level) than Organizations 2 and 3 with each of the factors identified: Personal Feedback, Corporate Perspective, Informal Communication, Top Management, and the overall factor composite.

Comparisons of the original and emergent factor structures for Communication Satisfaction using analysis of variance procedures between the study organizations suggest the following observations. First, it is important to note that the factor items comprising Subordinate, Top Management, and Interdepartmental Communication remained the same in the emergent factor structure. Consequently, no differences could surface on these three factors in comparisons of the factor structures. Second, Organization 1 consistently reported significantly less satisfaction than Organizations 2 and 3 on all factors identified by analysis of variance. Third, although the items comprising the factors of

Supervisory and Horizontal Communication changed in the emergent factor structure, no differences were observed between the organizations in either analyses of variance. Third, the Personal Feedback factor demonstrated significant difference in only the emergent eight-factor structure. The study factor analysis added items referring to information about departmental policies, goals, and job requirements. These items appear to have significant influence in distinguishing Organization 1 from the other two study organizations.

Comparisons of Sample Subgroups for
Entire Sample on Original COMSAT Factors

T-Tests were computed on all ten COMSAT factors and the composite on the following five demographic, dichotomous variables: Sex (male vs. female) Location (headquarters vs. field office), Occupation (professional engineer vs. other occupations), and Supervisor Occupation (professional engineer vs. other supervisory occupations), and Job Satisfaction (less vs. more as indicated by responses to item #1).

Analyses of variance procedures were conducted to determine the differences among the following three groups on the COMSAT factors and composite:
Level (1. upper management, 2. middle management, 3.

first level supervisor, and 4. non-management employee), Tenure (less than one year, 1-5 years, 6-10 years, 11-15 years, and more than 15 years), and Function (administration, engineering, clerical, and other).

The comparison of Sex, Occupation, Supervisor Occupation, on the COMSAT factors using the SPSSX command T-TEST GROUPS uncovered no factors to differ significantly. However, the variable Location found only the COMSAT factor means for Corporate Perspective to be significantly different. The sample was divided in to two location groups based on responses to item #102 which asked employees to indicate whether they were employed at either a headquarters or field office location. Table 4.22 reports the statistics associated with the analysis. The separate variance t-test was utilized for the Location comparisons because the group variances were unequal.

TABLE 4.28: SIGNIFICANT T-TEST COMPARISONS FOR LOCATION: HEADQUARTERS vs. FIELD OFFICES				
Factor	Group Means	Std. Dev.	t Value	Prob
Corporate Perspective	3.43 3.67	1.03 .76	-2.18	.031

To uncover any significant differences between employees reporting low job satisfaction and high job

satisfaction on the COMSAT factors, T-Tests were computed using the two groups. The groups were separated on the basis of responses to COMSAT item #1: How satisfied are you in your job? Numbers 1 to 3 were recoded as More Satisfied (300 subjects) and responses 4 to 7 were recoded as Less Satisfied (36 subjects) on a scale of 1 to 7 where 1 was "Very Satisfied" and 7 was "Very Dissatisfied". The analyses found that the Less Satisfied employees reported significantly different responses to nine of the ten COMSAT factors and the COMSAT composite. Table 4.27 reports the results of this analysis.

**TABLE 4.29 T-TEST COMPARISONS FOR JOB SATISFACTION:
MORE SATISFIED vs. LESS SATISFIED EMPLOYEES**

Factor	Group Means	Std. Dev.	t Value	Prob.
COMSAT	3.38	.782		
Composite	4.28	.677	-7.97	.000
Corporate	3.83	.933		
Perspective	5.28	1.007	-5.10	.000
Personal	3.35	1.011		
Feedback	4.22	.957	-8.57	.000
Organization	3.04	.847		
Perspective	4.31	.931	-5.35	.000
Supervisor	3.81	.979		
Communication	4.90	1.233	-5.96	.000
Communication	3.33	1.039		
Climate	4.03	1.055	-5.81	.000
Horizontal	3.53	.795		
Communication	4.39	.871	-4.60	.000
Media	3.25	.846		
Quality	3.60	.927	-5.28	.000
Subordinate	3.68	.840		
Communication	5.05	.980	-1.43	.170
Top Management	3.90	1.297		
Communication	4.42	1.596	-4.96	.000
Interdepartment	3.53	1.091		
Communication	4.49	1.177	-2.50	.016

This analysis indicates that employees who are less satisfied with their jobs are also much less satisfied with the communication practices associated with their jobs than employees reporting job satisfaction. Nine of

the ten factor differences were at the .0001 level of significance. Only the Subordinate Communication factor responses failed to demonstrate significant differences between the groups. These analyses suggested that there are relationships between communication satisfaction and job satisfaction.

The analysis of variance procedures conducted to determine the differences among the various employee subgroups failed to uncover any significant differences for length of employment with the company or job function within the organizations. However, the analysis of management levels found several factors that indicated significant differences between the management levels. Post Hoc analyses were conducted using both the Scheffe and Student-Newman-Keuls procedures to identify the particular group differences on these COMSAT factors: Corporate Perspective, Personal Feedback, Organizational Perspective, Communication Climate, Top Management Communication, and the COMSAT Composite.

The Post Hoc procedures indicated that employees in the upper management level differed at the .05 level of significance from all other levels of management on each of the above COMSAT factors and the COMSAT composite. The results indicate that the top management employees reported much higher levels of satisfaction with each of

the factors indicated than all other organizational levels. No differences on the COMSAT factors or COMSAT Composite were found between any of the other three management levels: middle management, first level supervisor, and non-management employee. Table 4.28 to 4.33 displays the results of the analyses of variance and Scheffe procedures indicating significant differences between the upper management employees and all other management levels.

TABLE 4.30: ANALYSIS OF VARIANCE OF COMSAT COMPOSITE BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	11.89	3.965	.018	.0005
Within Groups	326	214.77	.658		

Scheffe Procedure for COMSAT Composite by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt			
		2.88	Upper		
3.64	Middle	*			
3.63	Supervisor	*			
3.66	Non-Mgt.	*			

* Denotes pairs of groups significantly different at the .05 level

TABLE 4.31: ANALYSIS OF VARIANCE OF COMSAT FACTOR CORPORATE PERSPECTIVE BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	30.58	10.193	11.46	.0000
Within Groups	326	289.98	.889		

Scheffe Procedure for Corporate Perspective by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
2.40	Upper	
3.58	Middle	*
3.76	Supervisor	*
3.41	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

TABLE 4.34: ANALYSIS OF VARIANCE OF COMSAT FACTOR: PERSONAL FEEDBACK BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	6.22	6.225	5.390	.0012
Within Groups	326	1.15	1.154		

Scheffe Procedure for Personal Feedback by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
3.04	Upper	
3.96	Middle	*
4.12	Supervisor	*
4.00	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

TABLE 4.33: ANALYSIS OF VARIANCE OF COMSAT FACTOR ORGANIZATIONAL PERSPECTIVE BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	14.04	4.680	6.11	.0005
Within Groups	326	249.63	.768		

Scheffe Procedure for Corporate Perspective by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
2.76	Upper	
3.37	Middle	*
3.66	Supervisor	*
3.37	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

TABLE 4.34: ANALYSIS OF VARIANCE OF COMSAT FACTOR COMMUNICATION CLIMATE BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	22.54	7.514	6.53	.0003
Within Groups	326	372.77	1.150		

Scheffe Procedure for Communication Climate by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
2.95	Upper	
3.91	Middle	*
4.15	Supervisor	*
3.94	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

TABLE 4.35: ANALYSIS OF VARIANCE OF COMSAT FACTOR TOP MANAGEMENT COMMUNICATION BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	27.31	9.104	4.74	.0030
Within Groups	322	617.75	1.919		

Scheffe Procedure for Top Management Comm. by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
2.95	Upper	
3.91	Middle	*
3.94	Supervisor	*
4.15	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

These tables indicate that the upper management employees reported more satisfaction with several of the communication practices of their organizations than all other management levels included in this study.

Comparisons of Sample Subgroups for Entire Sample on the Eight Emergent Study COMSAT Factors

Identical T-Tests and Analyses of Variance were computed for the eight-factor COMSAT solution that emerged for the study sample that were computed for the original ten factors. The tests of differences included the following five demographic, dichotomous variables: Sex (male vs. female) Location (headquarters vs. field

office), Occupation (professional engineer vs. other occupations), and Supervisor Occupation (professional engineer vs. other supervisory occupations), and Job Satisfaction (less vs. more as indicated by responses to item #1).

Analyses of variance procedures were conducted to determine the differences among the following three groups on the eight emergent study COMSAT factors and composite: Level (1. upper management, 2. middle management, 3. first level supervisor, and 4. non-management Employee), Tenure (less than one year, 1-5 years, 6-10 years, 11-15 years, and more than 15 years), and Function (administration, engineering, clerical, and other).

The comparison of Sex, Supervisor Occupation, and Location on the eight emergent COMSAT factors using the SPSSX command T-TEST GROUPS uncovered no factors to differ significantly. However, the variables of Job Satisfaction and Occupation did indicate significant differences on several variables. Table 4.34 reports the statistics associated with the analysis of the Occupation variable. This analysis indicated that the Engineers reported greater satisfaction with the two factors of Informal Communication and Corporate Perspective than all other occupations.

TABLE 4.36: SIGNIFICANT T-TEST COMPARISONS FOR OCCUPATION: ENGINEER vs. ALL OTHER OCCUPATIONS				
Factor	Group Means	Std. Dev.	t Value	Prob
Informal Communicat.	3.94 3.67	.898 .975	2.41	.014
Corporate Perspective	3.67 3.41	1.08 1.09	2.05	.036

To uncover any significant differences between employees reporting low job satisfaction and high job satisfaction on the emergent five COMSAT factors, T-Tests were computed using the two groups. The factors of Top Management, Interdepartmental, and Subordinate Communication were not considered in this analysis because the structure of each factor did not change in the eight-factor solution. The groups were separated on the basis of responses to COMSAT item #1: How satisfied are you in your job? Numbers 1 to 3 were recoded as More Satisfied (300 subjects) and responses 4 to 7 were recoded as Less Satisfied (36 subjects) on a scale of 1 to 7 where 1 was "Very Satisfied" and 7 was "Very Dissatisfied". The analyses found that the Less Satisfied employees reported significantly different responses to nine of the ten COMSAT factors and the COMSAT composite. Table 4.35 reports the results of this analysis.

TABLE 4.37: T-TEST COMPARISONS FOR JOB SATISFACTION: MORE SATISFIED vs. LESS SATISFIED EMPLOYEES				
Factor	Group Means	Std. Dev.	t Value	Prob.
COMSAT Overall Composite	3.72 5.02	.952 .890	-7.79	.000
Corporate Perspective	3.25 4.18	.992 1.214	-3.69	.000
Personal Feedback	3.72 5.02	.952 .890	-8.21	.000
Informal Communication	3.65 4.55	.909 1.004	-5.55	.000
Supervisor Communication	3.25 4.48	.912 1.121	-6.34	.000
Horizontal Communication	3.25 3.90	.863 1.034	-4.14	.000

This analysis indicates that employees who are less satisfied with their jobs are also much less satisfied with the communication practices associated with their jobs than employees reporting job satisfaction. All five of the emergent factors, as well as the overall factor composite, were at the .0001 level of significance. These analyses suggested that there are relationships between communication satisfaction and job satisfaction.

The analysis of variance procedures conducted to determine the differences among the various employee subgroups failed to uncover any significant differences

for length of employment with the company or job function within the organizations. However, the analysis of management levels found several factors that indicated significant differences between the management levels. Post Hoc analyses were conducted using both the Scheffe and Student-Newman-Keuls procedures to identify the particular group differences on these COMSAT factors: Corporate Perspective, Personal Feedback, Informal Communication, Supervisory Communication, Horizontal Communication, and the eight-factor COMSAT Composite. Because the item structure for Top Management, Interdepartmental, and Subordinate Communication were identical in both the original ten-factor and emergent eight-factor structures, these factors were not considered in this particular analysis. This analysis indicated no significant group differences on the variable of employee level of management on the three factors of Informal Communication, Supervisory Communication, and Horizontal Communication. The analysis of variance procedures conducted on the factors of Corporate Perspective, Personal Feedback, and the eight-factor composite each indicated group differences. Table 4.36 to 4.38 displays the results of the analyses of variance and Scheffe procedures indicating significant differences between the management levels.

TABLE 4.38: ANALYSIS OF VARIANCE OF COMSAT FACTOR CORPORATE PERSPECTIVE BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	35.30	11.767	11.85	.0000
Within Groups	326	323.70	.993		

Scheffe Procedure for Corporate Perspective by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
2.44	Upper	
3.71	Middle	*
3.81	Supervisor	*
3.36	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

TABLE 4.39: ANALYSIS OF VARIANCE OF COMSAT FACTOR: PERSONAL FEEDBACK BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	18.20	6.068	6.047	.0005
Within Groups	326	327.14	1.006		

Scheffe Procedure for Personal Feedback by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
2.97	Upper	
3.84	Middle	*
4.05	Supervisor	*
3.85	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

TABLE 4.40: ANALYSIS OF VARIANCE OF COMSAT COMPOSITE BY MANAGEMENT LEVEL					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Sign.
Between Groups	3	12.10	4.032	5.734	.0008
Within Groups	326	229.26	.703		

Scheffe Procedure for Overall Composite by Level

Mean	Management Level	Upper Middle Supervisor Non-Mgt
2.92	Upper	
3.72	Middle	*
3.78	Supervisor	*
3.64	Non-Mgt.	*

* Denotes pairs of groups significantly different at the .05 level

The Post Hoc procedures indicated that employees in the upper management level differed at the .05 level of significance from all other levels of management on each the COMSAT factors of Corporate Perspective and Persona; Feedback and the COMSAT composite of the eight emergent factors. The results indicate that the top management employees reported much higher levels of satisfaction with each of the factors indicated than all other organizational levels. No differences on the COMSAT factors or COMSAT Composite were found between any of the other three management levels: middle management, first level supervisor, and non-management employee.

Comparison of the Two Study COMSAT Factor Structures on
the Tests of Difference

Comparison of the tests of differences between the two COMSAT factor structures, the original ten and the emergent eight factors, on the five variables of Sex, Location, Occupation, Supervisor Occupation, and Job Satisfaction suggest the following observations. First, the variables of Sex and Supervisor Occupation failed to demonstrate group differences in either analysis. Second, only the variable of Job Satisfaction demonstrated group differences in both analyses. Both analyses indicated that all factors, with the exception of Subordinate Communication, associated with both factor structures demonstrated group differences on the variable of Job Satisfaction. Third, the variable of Location demonstrated group differences in the only the T-Tests conducted on the original factors. The Corporate Perspective factor was the only group difference observed with the Location Variable. Fourth, the variable of Occupation demonstrated group differences in the only the T-Tests conducted on the emergent eight-factor structure. Engineers indicated greater satisfaction with the two factors of Informal Communication and Corporate Perspective.

Comparison of the results of analysis of variance on

the two COMSAT factor structures, the original ten and the emergent eight factors, indicated very similar findings between the analyses. First, length of employment and job function both failed to indicate any group differences in either analysis. Second, the variable of level of management indicated group difference in both analyses, with the top management level demonstrating greater satisfaction with the communication associated with Personal Feedback and Corporate Perspective.

Comparison of Organizations on Other Perceived
Competency Composites and Factors

Comparisons between the three participating organizations were conducted by computing Analyses of Variance on the OPC composite and the four OPC factors. These analyses and comparisons were conducted to determine whether any significant differences emerged between the study organizations. The results of the Analysis of Variance are contained in Table 4.39.

TABLE 4.41: ANALYSIS OF VARIANCE OF THE FOUR OPC FACTORS AND COMPOSITES BETWEEN STUDY ORGANIZATIONS						
OPC FACTOR	ENTIRE	ORG 1	ORG 2	ORG 3	F	P
	N=339	N=200	N=82	N=56		
	MEAN	MEAN	MEAN	MEAN		
Overall OPC Composite	3.38	3.36	3.35	3.50	0.62	.538
Empathy	3.45	3.43	3.40	3.58	0.51	.598
Listening	3.37	3.30	3.50	3.40	0.97	.382
Self Disclosure	3.63	3.63	3.51	3.78	1.06	.348
Social Confidence	2.99	2.99	3.33	3.11	0.74	.477

The analyses of variance uncovered no significant differences between the organizations on any of the four OPC factors and composites computed.

Comparisons of Sample Subgroups for

Entire Sample on OPC Factors

T-Tests were computed on all four OPC factors and the composite on the following five demographic, dichotomous variables: Sex (male vs. female) Location (headquarters vs. field office), Occupation (engineer vs. others), and Supervisor Occupation (engineer vs. others)

Analyses of variance procedures were conducted to determine the differences among the following three groups on the COMSAT factors and composite:

Level (1. upper management, 2. middle management, 3. first level supervisor, and 4. non-management Employee), Tenure (less than one year, 1-5 years, 6-10 years, 11-15 years, and more than 15 years), and Function (administration, engineering, clerical, and other).

The comparison of Sex, Occupation, and Supervisor Occupation on the OPC factors using the SPSSX command T-TEST GROUPS found no significant differences for employee gender, however; both the Occupation and Supervisor Occupation groups demonstrated significant differences at the level of .05. The only factor difference observed for both variables was the Self Disclosure factor. The sample responded to a demographic question (item 97, Are you a Professional Engineer?) to divide the sample into two groups of engineers and non-engineer for the occupation comparison. Similarly, item 98 asked respondents to indicate whether or not their supervisor was a Professional Engineer to divide the sample into two groups for the Supervisor Occupation comparison. Table 4.40 and 4.41 report the statistics associated with these analyses. The pooled variance t-test was utilized for both the Occupation and Supervisor Occupation comparisons because the group variances were approximately equal.

TABLE 4.42: SIGNIFICANT T-TEST COMPARISONS FOR OCCUPATION: ENGINEERS VS NON-ENGINEERS				
Factor	Group Means	Std. Dev.	t Value	Prob
Self Disclosure	3.86 3.54	1.07 1.03	2.32	.021

TABLE 4.43: SIGNIFICANT T-TEST COMPARISONS FOR SUPERVISOR OCCUPATION: ENGINEERS VS NON-ENGINEERS				
Factor	Group Means	Std. Dev.	t Value	Prob
Self Disclosure	3.75 3.39	1.03 1.05	2.98	.003

Table 4.40 indicates that employees who were Professional Engineers perceived their supervisors to demonstrate significantly less self disclosing behaviors than employees who were not Professional Engineers. Similarly, Table 4.41 indicates that employees who were supervised by a Professional Engineer perceived their supervisors to demonstrate significantly less self disclosing behaviors than employees who were not supervised by Professional Engineers.

The analysis of variance procedures conducted to determine the differences among the various employee subgroups failed to uncover any significant differences for length of employment with the company, job function within the organizations, or management level.

**THE RELATIONSHIP BETWEEN COMMUNICATION SATISFACTION
AND PERCEIVED COMMUNICATION COMPETENCE OF SUPERVISOR**

Pearson Product Moment Correlations were computed for each of the ten Communication Satisfaction dimensions and an overall composite of the ten factors and the four Other Perceived Competency factors and an overall composite. Results from these analyses are reported in Table 4.42. This table indicates a positive correlation between the Communication Satisfaction overall composite and the Other Perceived Competency overall composite, as well as all four of the competency factors. Each of these correlations were significant past the .01 level, indicating a that there existed a direct correlation between communication satisfaction and perceived competence of supervisor. Second, with the exception of Subordinate Communication, all Communication Satisfaction factors had a direct relationship with the Competency composite. Third, the Empathy factor had the strongest correlations with the ten Communication Satisfaction factors and composite. The Empathy correlations ranged from a high of .693 (Supervisor Communication) to a low of .172 (Subordinate Communication). Fourth, the Supervisor Communication factor had the strongest correlations across all of the Competency factors and composite. This finding was not unexpected since the

Supervisor Communication factor items directly address issues of communication competence. Additionally, the Communication Satisfaction factors of Communication Climate, Personal Feedback, and Horizontal Communication were also functionally strong across all of the Competency factors and composite. Finally, the analysis of the correlations between the communication satisfaction revealed that there was a direct relation between the Communication Satisfaction factors and composite and the Other Perceived Competency factors and composite. Empathy was the factor that had the strongest correlation with the COMSAT factors and composite. Supervisor Communication had the strongest correlations with the Other Perceived Competency factors and composite.

TABLE 4.44: CORRELATIONS BETWEEN COMSAT FACTORS AND COMPOSITE AND THE OPC FACTORS AND COMPOSITE

N=339					
COMSAT Factors	OPC Compos	Empathy	Listen	Self Disclo	Social Confid
COMSAT Composite	.44**	.47**	.18**	.24**	.28**
Corporate Perspective	.21**	.25**	-.04	.17**	.13*
Personal Feedback	.40**	.42**	.15**	.24**	.24**
Organizat'l Integration	.30**	.33**	.09	.21**	.18**
Supervisor Communicat.	.68**	.69**	.44**	.27**	.45**
Communica. Climate	.41**	.44**	.20**	.22**	.24**
Horizontal Communicat.	.39**	.43**	.13**	.20**	.28**
Media Quality	.37**	.41**	.10	.24**	.24**
Subordinate Communicat.	.15	.17*	-.02	.13	.12
Top Mgtment Communicat.	.24**	.26**	.09	.15**	.16**
Interdepart Communicat.	.25**	.30**	.07	.10	.18**
* = Significant at p>0.05 level ** = Significant at p>0.01 level					

Correlation between Other Perceived Competency
Factors for the Entire Sample.

In addition, Pearson Product Moment Correlations were calculated among all the competency factors to determine how they were related. This analysis is reported in Table 4.43.

TABLE 4.45: CORRELATIONS BETWEEN OTHER PERCEIVED COMPETENCY FACTORS AND COMPOSITE FOR ENTIRE SAMPLE					
	Compos	Empathy	Listen	Self Disc	Social Confid
Composite	1.000	.901	.647	.626	.695
Empathy		1.000	.434	.448	.482
Listening Self Disclose Social Confidence			1.000	.142	.438
				1.000	.320
					1.000
All correlations are significant past the .01 level					

The correlations displayed in this table indicate that the overall correlation among the competence factors was statistically significant for all relationships. The Empathy factor demonstrated the highest correlations with the other three factors in this analysis and the lowest correlations were shown in the Self Disclosure correlations.

REGRESSION ANALYSES

For the purpose of explaining the relationship between communication satisfaction and perceived communication competence, four Stepwise Multiple Regression analyses were performed across the entire data set.

In the first analysis, the OPC Composite and the four OPC factors were treated as the predictor variables and the original ten Communication Satisfaction factors and composite as the dependent variables. The Subordinate Communication factor was left out of all Stepwise analyses because the items that compose this factor were only answered by supervisors.

The second analysis used the emergent eight-factor structure of Communication Satisfaction as the dependent variables. The results of the regression analysis of the original ten factors are reported in Table 4.44. Table 4.45 reports the results of the regression analysis on the emergent eight-factor structure.

This study of the relationship between communication satisfaction and perceived communication of supervisor sought to examine whether reports of perceived communication competence could be explained by predictive relationships with reports of communication satisfaction.

The third and fourth Stepwise Multiple Regression analyses were conducted with the COMSAT factors as the predictor variables and the OPC composite and factors as the dependent variables. The results of the analysis using the original ten factors are reported in Table 4.46. The analysis using the emergent eight-factor structure is reported in Table 4.47.

TABLE 4.46: STEPWISE MULTIPLE REGRESSION: OPC FACTORS AND COMPOSITE ON ORIGINAL COMSAT FACTORS AND COMPOSITE (LESS SUBORDINATE COMMUNICATION) FOR ENTIRE SAMPLE				
COMSAT Factors	OPC Predictors	R Square	Mult. R	F
Overall COMSAT Composite Supervisor Communication	Empathy	.228	.478	96.85*
	Empathy	.481	.697	303.77*
	Listening	.507	.712	167.95*
	Social Confiden	.516	.719	115.84*
Horizontal Communication Organizational Integration Corporate Perspective	Empathy	.187	.432	75.21*
	Empathy	.109	.331	40.21*
Media Quality Personal Feedback Communication Climate Top Management Communication Interdepartment Communication	Empathy	.060	.245	20.98*
	Listening	.075	.275	13.30*
	Empathy	.166	.407	65.13*
	Empathy	.175	.419	69.49*
	Empathy	.196	.444	80.13*
	Empathy	.066	.258	23.29*
	Empathy	.088	.297	31.61*

* P ≥ .001

Table 4.46 indicates that the Empathy factor was a consistent predictor of the Communication Satisfaction composite and each of the ten Communication Satisfaction factors. Second, the Empathy factor independently accounted for most of the variance explained for each of the ten COMSAT factors. Partial correlations indicated that Empathy uniquely accounted for a range of 48.1% (Supervisor Communication) to 6.0% (Corporate Perspective) of the variance for each of the ten COMSAT factors.

Table 4.47 indicates that the Empathy factor was again the most consistent predictor of the Communication Satisfaction composite and each of the eight Communication Satisfaction factors. Second, the Empathy factor independently again accounted for most of the variance explained for each of the eight emergent COMSAT factors. Partial correlations indicated that Empathy uniquely accounted for a range of 49.4% (Supervisor Communication) to 5.7% (Corporate Perspective) of the variance for each of the eight COMSAT factors.

TABLE 4.47: STEPWISE MULTIPLE REGRESSION: OPC FACTORS AND COMPOSITE ON EMERGENT COMSAT FACTORS AND COMPOSITE (LESS SUBORDINATE COMMUNICATION) FOR ENTIRE SAMPLE

COMSAT Factors	OPC Predictors	R Square	Mult. R	F
Overall COMSAT Composite	Empathy	.247	.497	50.86*
	Listening	.270	.520	28.39*
	Overall	.291	.540	20.88*
Supervisor Communication	Empathy	.494	.702	150.08*
	Social Confiden	.514	.717	80.92*
	Empathy	.188	.434	35.70*
Horizontal Communication	Empathy	.057	.238	9.32*
Corporate Perspective	Empathy	.162	.403	29.94*
Personal Feedback	Empathy	.151	.388	27.44*
Informal Communication	Empathy	.117	.342	20.41*
Top Management Communication	Empathy	.147	.383	8.73*
Interdepartment Communication	Empathy			

* P ≥ .001

Table 4.48 indicates that the Supervisor Communication factor was a consistent predictor of the Other Perceived Competency composite and each of the four OPC factors. Second, the Supervisor factor independently accounted for most of the variance explained for each of the OPC factors. Partial correlations indicated that Supervisor Communication uniquely accounted for a range of 47.8% (Empathy) to 5.8% (Listening) of the variance for each of the five OPC factors. These findings suggest

a strong relationship between the satisfaction with the supervisory communication and perceived empathic behavior of the supervisor.

TABLE 4.48: STEPWISE MULTIPLE REGRESSION: COMSAT FACTORS (LESS SUBORDINATE COMMUNICATION) AND COMPOSITE ON OPC FACTORS AND COMPOSITE FOR ENTIRE SAMPLE				
OPC Factors	COMSAT Predictors	R Square	Mult. R	F
Overall OPC Composite	Supervisor Communication	.362	.631	222.33*
	Top Management Communication	.379	.652	120.84*
Empathy	Supervisor Communication	.478	.664	189.26*
	Top Management Communication	.493	.685	127.72*
	Horizontal Communication	.511	.704	106.60*
Listening	Supervisor Communication	.058	.451	88.11*
	Overall COMSAT Composite	.075	.475	55.23*
	Communication Climate	.089	.490	51.88*
Self Disclosure	Supervisor Communication	.138	.277	27.10*
Social Confidence	Supervisor Communication	.172	.455	85.58*

TABLE 4.49: STEPWISE MULTIPLE REGRESSION: EMERGENT EIGHT COMSAT FACTORS (LESS SUBORDINATE) AND COMPOSITE ON OPC FACTORS AND COMPOSITE FOR ENTIRE SAMPLE				
OPC Factors	COMSAT Predictors	R Square	Mult. R	F
Overall OPC Composite	Supervisor Communication	.384	.619	96.13*
	Corporate Perspective	.400	.633	51.15*
Empathy	Supervisor Communication	.493	.703	150.08*
Listening	Supervisor Communication	.065	.368	12.01*
Self Disclosure	Supervisor Communication	.150	.388	27.38*
Social Confidence	Supervisor Communication	.180	.425	34.00*

* P ≥ .001

Comparison of Tables 4.48 and 4.49 indicates that the Supervisor Communication factor was again the most consistent predictor of the Other Perceived Competency composite and each of the four OPC factors. Second, the Supervisor factor again independently accounted for most of the variance explained for each of the OPC factors. Partial correlations indicated that Supervisor Communication uniquely accounted for a range of 49.3 (Empathy) to 6.5% (Listening) of the variance for each of the five OPC factors. These findings provide additional support for a relationship between the satisfaction with

the supervisory communication and perceived communication competence of the supervisor.

QUALITATIVE ANALYSIS

Two open ended questions were included on the questionnaire administered to the employees of the three professional technical organizations. The two questions solicited suggestions for improving both employee communication satisfaction and the communication competence of their supervisors.

The responses to the two open questions were transcribed and then each response was content analyzed according to the process described in Chapter Three. Appendix F presents the transcribed responses for both questions.

Improving Employee Communication Satisfaction

Question #3 of the survey questionnaire, "If the communication associated with your job could be changed in any way to make you more satisfied, please indicate how" was answered by a total of 196 employees from the three organizations.

A total of 11 categories were used to content analyze the communication satisfaction question. The ten communication factors developed and defined by Downs

(1977, 1989) and an additional ad hoc category developed for this analysis were considered an appropriate set of categories for this question. The ten communication satisfaction definitions were presented in Chapter 2. The ad hoc category is defined as follows.

1) Organizational Aspects consisted of all the organizational related aspects that were not included in the other categories, such as the size of the organization, client relations, organizational training, and organizational demands.

An intercoder reliability percentage of 92% was achieved for the analysis of the communication satisfaction question and the results are summarized in Table 4.37.

TABLE 4.50: SUGGESTIONS FOR IMPROVING COMMUNICATION SATISFACTION GIVEN BY SUPERVISORS AND SUBORDINATES						
CATEGORY	TOTAL		SUPERVISORS		SUBORDINATES	
	No.	%	No.	%	No.	%
Supervisor Communication	32	14	15	13	17	16
Subordinate Communication	3	1	3	3	0	0
Horizontal Communication	3	1	1	1	0	0
Organizational Integration	41	18	18	16	23	22
Corporate Perspective	26	12	13	11	13	12
Media Quality	29	13	17	15	12	11
Top Management Communication	18	8	10	9	8	7
Communication Climate	6	3	5	4	1	1
Interdepartmental Communication	19	9	11	10	8	7
Personal Feedback	26	12	11	10	15	14
Organizational Aspects	23	10	14	12	9	8
TOTAL	222	100	114	100	108	100

The results in this table indicate that the suggested changes needed to improve communication satisfaction were generally similar among both subordinate and supervisors groups. The supervisors (16% of the responses) and subordinates (22% of the responses) both acknowledged that issues related to Organizational Integration category, such as the need for information about their jobs and department plans, were the most

needed changes to increase their communication satisfaction. Issues related to Supervisor Communication were the second highest area of suggested changes with 13% of the supervisors and 16% of the subordinates indicating that their supervisors needed to offer more guidance in solving job related problems and make time to listen and interact with their subordinates. The third highest percentage of suggestions were related to Media Quality with several comments indicating a need for more meetings and written directives. Supervisors were more likely to indicate a need for improved Media Quality (15% of responses) than the subordinates (11% of the responses). Although both groups often suggested needed improvements in Personal Feedback, such as the need for how their work is to be appraised and more frequent feedback, the subordinates were more likely to cite issues related to this area than the supervisors (14% versus 10%). The four categories of Organizational Integration, Supervisor Communication, Media Quality, and Personal Feedback accounted for 58% of the total number of suggestions for improving communication satisfaction among the employees of the professional technical organizations.

Improving Supervisor Communication Competence

Question #80 of the survey questionnaire, "If your supervisor could make any changes to improve his/her ability to communicate more effectively with you, what changes or improvements would you suggest", was answered by a total of 151 employees from the three organizations.

A total of 8 categories were used to content analyze the communication competence question. The four communication competence factors developed and defined by Phelps and Snavelly (1979) and four additional ad hoc categories developed for this analysis were considered an appropriate set of categories for this question. The four communication competence definitions were presented in Chapter 2. The ad hoc categories are defined as follows.

1) Responsible Communication refers to the supervisors ability to provide adequate information and feedback in a timely and accurate manner.

2) Personality Aspects includes all the individual personality characteristics which may or may not facilitate effective communication with subordinates, such as openness, superiority, sarcastic, impatience, selfishness, etc.

3) Consistency refers to the ability to provide consistent messages and information over time and to varying audiences.

4) Availability refers to the degree to which the supervisor is able or willing to be available to the subordinate for personal or job related interactions.

An intercoder reliability percentage of 95% was achieved for the analysis of the communication competence question and the results are summarized in Table 4.51.

TABLE 4.51: SUGGESTIONS FOR IMPROVING THEIR SUPERVISOR'S COMMUNICATION COMPETENCE GIVEN BY SUPERVISORS AND SUBORDINATES						
CATEGORY	TOTAL		SUPERVISORS		SUBORDINATES	
	No.	%	No.	%	No.	%
Empathy	21	11	9	9	12	14
Listening	34	19	24	25	10	12
Self Disclosure	2	1	0	0	2	2
Social Confidence	6	3	4	4	2	2
Responsible Communication	61	33	27	28	34	40
Personality Aspects	27	15	18	18	9	11
Consistent Communication	9	5	3	3	6	7
Availability	23	13	13	13	10	12
TOTAL	183	100	98	100	85	100

The results in this table indicate that the major suggested changes needed to improve their supervisor's competence communication were issues related to: Responsible Communication (33%), Listening (19%), Personality Aspects (15%), and Availability (13%). These four categories accounted for 80% of the total responses. In addition, it is interesting to note that the four ad hoc categories developed for this analysis accounted for 66% of the suggested improvements; this observation suggests that the organizational employees included in this study conceptualize the construct of communication competence in terms of behaviors and attitudes not accounted for in the model examined in this study.

Comparisons of the responses from supervisors and subordinates prompt four observations. First, the subordinates and supervisors reported similar suggestions for improving their supervisor's competence. Both the supervisors and subordinates acknowledged that improvements in the category of Responsible Communication was the single most often cited improvement needed; however, subordinates were more likely to cite this category than the supervisors (40% versus 28%). Common suggestions included providing more information to subordinates about company activities, scheduled progress meetings, providing timely communication, and proving

more guidance and attention. Second, supervisors suggested improvements in the Listening category twice as often as the subordinates (25% versus 12%). Comments included attentiveness when others are speaking, keep an open mind to suggestions, and don't continue working or answer the phone when others are talking. Third, subordinates were more likely to suggest improvements in Empathy than supervisors (14% versus 9%). This category was the second highest cited category among subordinates, but the category ranked fifth among the supervisors. Comments included taking another's point of view, putting himself in our shoes, appears not care about me, and be sensitive to other's feelings. Fourth, supervisors were more likely to indicate a need for changes in Personality Aspects than subordinates (18% versus 11%). Comments included supervisor is often rude, seems consumed only with his own personal success, needs to be more personable, his people skills are severely lacking, and needs to control his temper.

CHAPTER SUMMARY

This chapter reported the results all data analyses conducted for this investigation examining the constructs of communication satisfaction and organizational communication competence independently in three

professional technical organizations and the examination of the relationship between perceived communication competence of supervisor and employee communication satisfaction.

This chapter was divided into seven sections. First, the results of statistical evaluations of the two research instruments are presented. Second, the results of factor analytic procedures on both study instruments are reported. Third, the descriptive statistics for the entire sample and for each participating organization are presented. Fourth, the results of several tests of differences for various subgroups of the entire sample are presented. Fifth, correlations examining the relationship between communication satisfaction and perceived communication competence are presented. Sixth, the results of regression analysis on the study variables are presented. Finally, the findings of the content analysis of the open survey questions are presented.

Chapter Five contains a discussion of the major conclusions of this study and suggestions for further research.

CHAPTER FIVE: CONCLUSIONS AND DISCUSSION

This chapter reports the conclusions from the findings reported in Chapter Four. Additionally, suggestions are presented for future research in the areas of employee communication satisfaction and supervisory communication competence.

REVIEW OF THE RESEARCH QUESTIONS

The following research questions were formulated to guide this study.

1. What are the relationships among the dimensions of perceived communication competence and the dimensions of communication satisfaction?
2. What are the differences and similarities in employees' responses for the communication satisfaction dimensions and overall composites among the three professional technical organizations?
3. What are the differences and similarities in employees' responses for the organizational communication competence dimensions and overall composites among the three professional technical organizations?

4. Do eight sample subgroups (sex, location, occupation, supervisor occupation, job satisfaction, level, tenure, and function) differ in reports of communication satisfaction and supervisor's communication competence?
5. What are the underlying factor structures for communication satisfaction and communication competence for this sample as measured by the Communication Satisfaction Questionnaire and the Other Perceived Competence Scale?
6. Which of the communication satisfaction dimensions, if any, prove to be reasonable predictors of overall perceptions of communication competence?
7. Which of the communication competence dimensions, if any, prove to be reasonable predictors of overall communication satisfaction?
8. What are the differences and similarities in supervisors and subordinates on suggestions for improving their communication satisfaction and their supervisor's communication competence.

MAJOR STUDY CONCLUSIONS

1. Factors of employee satisfaction and perceptions of supervisor communication competence are directly related. Positive correlations between the

communication satisfaction composite and the other perceived competency composite were observed in the study. Level of significance surpassed the .01 level (Table 4.42) for all correlations between the communication satisfaction composite and each of the four other perceived competency factors.

All relevant Communication Satisfaction factors demonstrated a relationship with the Competency composite. Varying strengths of the correlations between the factors were observed. First, the strongest correlations appeared between the Empathy factor with the ten Communication Satisfaction factors and composite. Specifically, the Empathy factor correlated with all ten COMSAT factors with a correlation range from a high of .69 (Supervisor Communication) to a low of .25 (Corporate Perspective). Second, the OPC composite also had strong correlations with the COMSAT factors that ranged from a high of .68 (Supervisor Communication) to a low of .21 (Corporate Perspective). Third, the COMSAT Supervisor Communication factor had the strongest correlations across all of the Competency factors and composite. These correlations ranged from a high of .69 (Empathy) to a low of .27 (Self Disclosure). Additionally, the Communication Satisfaction factors of Communication Climate, Personal Feedback, and Horizontal Communication

were also functionally strong across all of the Competency factors and composite. Finally, the analysis of the correlations between the communication satisfaction revealed that there was a direct relation between the Communication Satisfaction factors and composite and the Other Perceived Competency factors and composite. Empathy was the factor that had the strongest correlation with the COMSAT factors and composite. Supervisor Communication had the strongest correlations with the Other Perceived Competency factors and composite.

2. Employee perceptions of empathic behavior demonstrated by supervisors has the strongest impact on the overall communication satisfaction of their subordinates.

The regression analyses indicate that the Empathy factor was a consistent predictor of the Communication Satisfaction overall composite and each of the ten Communication Satisfaction factors. Second, the Empathy factor independently accounted for most of the variance explained for each of the ten COMSAT factors. Partial correlations indicated that Empathy uniquely accounted for a range of 48.1% (Supervisor Communication) to 6.0% (Corporate Perspective) of the variance for each of the

ten COMSAT factors. These findings suggest that the satisfaction with Supervisor Communication is facilitated by supervisory behaviors associated with Empathy.

Empathy was measured with nine items assessing expressions of understanding, sensitivity to the needs and feelings of others, the willingness to take others' perspectives, and the ability to adapt to others and to different situations.

The importance of this conclusion is supported by the analysis of responses to the open question requesting suggestions from the subordinates on how their supervisor could be a more effective communicator. The category of Empathy received the second largest number of subordinate suggestions.

3. Type of industry does not appear to influence reports of organizational communication satisfaction.

The assumption that the highly technical nature of both the employees and the workplace would impact reports of communication satisfaction was not supported by this study. Although cross-study comparisons are often justifiably criticized, the consistency of responses from varying industries collected in separate investigations warrants analysis and interpretation. Comparisons of the items of greatest and least satisfaction on the COMSAT

questionnaire, as well as the rankings of satisfaction with COMSAT factors, between a database of 26 companies represent a variety of industry types and 2,101 employees (Clampitt, 1991) and the study sample of three professional technical organizations and 339 employees demonstrated strong overall consistency.

Comparison of the five items of satisfaction for the entire sample and the data base reveals that the same five items are included in both samples. These identical results suggest that employees of the professional technical organizations perceive the areas of greatest communication satisfaction no differently than a data base of widely varying organizational types. These identical results are especially noteworthy when considering that although the study sample included ten items related to Interdepartmental and Top Management Communication not included in the data base study, the same five items surfaced as the items of greatest satisfaction.

Comparison of the items of least satisfaction for the professional technical organizations included in this study and the data base of 26 companies generally indicates consistent findings. Because the data base does not include items associated with the Top Management and Interdepartmental Communication factors, only those items

in both studies were considered for comparison. The data base comparison indicates that both samples include item #8: How I am being judged, item #7: How my job compares with others, and item #14: How problems in my job are handled as items of least satisfaction. These consistent results suggest that employees of the professional technical organizations perceive the areas of least communication satisfaction very similarly to a data base of widely varying organizational types.

Comparison of the rankings of the COMSAT factors for the sample of professional technical organizations and the database indicated very similar results. Because the data base does not include items associated with the Top Management and Interdepartmental Communication factors, only those items in both studies were considered for comparison. The three highest ranked factors (Supervisory Communication, Subordinate Communication, and Horizontal Communication) for the professional technical organizations were identical to the results found in the database. Only modest differences are noted in the comparison of the lowest rated factors between the study sample and the database. The study sample reported the least satisfaction with the three factors of Personal Feedback, Communication Climate and Media Quality. The data base indicated the least satisfaction with Personal

Feedback, Communication Climate, and Corporate Perspective. The rankings of COMSAT factors by the study sample and the data base suggest that the professional technical organizations perceive the factors of greatest and least satisfaction very similarly to a data base of widely varying organizational types.

The employees rated all ten of the COMSAT factors at least slightly above the midrange on a 1 to 7 scale, where 1 was "very satisfied" and 7 was "very dissatisfied". The mean for the entire sample on the COMSAT composite was 3.63 on the same 1 to 7 scale, which is between "slightly satisfied" and "indifferent" categories (Table 4.10). These results suggest that overall the employees report satisfaction with the communication in their organizations, but the satisfaction level is not very strong.

4. The COMSAT Questionnaire is an effective instrument for detecting differences between technical organizations. Although the rankings of the communication satisfaction factors among the professional technical organizations are similar, notable differences do surface in the mean comparisons of the study sample of three professional technical organizations.

Several differences between the three organizations

on the COMSAT factors were noted. The largest organization (Organization 1) consistently reported less satisfaction with each of the ten COMSAT factors than the other two participating organizations. Organization 1 reported Top Management as the least satisfied factor. This dissatisfaction is also reflected in the mean of 4.17, which was the lowest rated factor mean of the computed factor means among the organizations. In addition, Organization 1 reported four of the five factor means computed above the midpoint of 4.0 in this analysis. Organization 1 also reported lower ratings of Corporate Perspective than the other participating organizations.

Organization 2 reported higher ratings of satisfaction with Top Management Communication than the other organizations and ranked the Subordinate Communication factor lower than the other participating organizations.

Organization 3 differed from the other organizations in rating Corporate Perspective the most satisfied COMSAT factor. This factor mean of 2.94 was the only factor mean that was computed in a range higher than 3.04. In addition, Organization 3 reported four of the five most satisfied factor means computed among the three organizations.

The analyses of variance uncovered significant differences between the organizations on six of the ten COMSAT factors and composites at the .01 level. The significant factors were the Overall COMSAT Composite, Corporate Perspective, Organizational Perspective, Communication Climate, Media Quality, and Top Management Communication. Post Hoc analyses indicated that for each of the six significant COMSAT factor differences identified, Organization 1 was less satisfied at the .05 significance level from both Organization 2 and Organization 3. These results indicate that the employees of Organization 1 were significantly less satisfied with the communication practices associated with Overall Communication Satisfaction, Corporate Perspective, Organizational Perspective, Communication Climate, Media Quality, and Top Management Communication than organizations 2 and 3.

These observations suggest that the important factors influencing employee satisfaction are not common factors such as industry, but rather the unique features of the particular organization. In this study, size of organization appeared to be a significant variable. Although more research is needed to explore this variable, the largest of the three organizations consistently reported lower levels of employee

satisfaction with communication.

5. Demographic variables generally have very little explanatory power with regard to communication satisfaction levels.

Tests of difference were computed on all ten COMSAT factors and the composite on eight demographic variables: Sex (male vs. female), Location (headquarters vs. field office), Occupation (engineer vs. others), Supervisor Occupation (engineer vs. others), Job Satisfaction (less vs. more), Level (1. upper management, 2. middle management, 3. first level supervisor, and 4. non-management Employee), Tenure (less than one year, 1-5 years, 6-10 years, 11-15 years, and more than 15 years), and Function (administration, engineering, clerical, and other).

The comparison of Sex, Occupation, Supervisor Occupation, Tenure, and Function on the COMSAT factors uncovered no factors to significantly differ. However, three variables did significantly differ: Location, Level of Management, and Job Satisfaction.

The variable Location found only the Corporate Perspective factor to be significantly different. Those professional technical personnel employed at branch offices located separate from the corporate headquarters reported significantly lower levels of satisfaction with

only the Corporate Perspective factor.

The analysis of management levels found several factors indicating significant difference between the management levels. Post Hoc analyses identified the upper management level as significantly more satisfied with the communication associated with the COMSAT factors of Corporate Perspective, Personal Feedback, Communication Climate, Organizational Perspective, Top Management Communication, and the COMSAT Composite at the .01 level. No differences on the COMSAT factors or COMSAT Composite were found between any of the other three management levels: middle management, first level supervisor, and non-management employee. These findings corroborate several previous research studies (Avery, 1977; Kio, 1979; Gordon, 1979; Varona, 1988).

Finally, employees who are less satisfied with their jobs are also much less satisfied with the communication practices associated with their jobs. Nine of the ten factor differences were at the .0001 level of significance. Only the Subordinate Communication factor responses failed to demonstrate significant differences between the groups. These analyses suggested that there are relationships between communication satisfaction and job satisfaction and replicate the results of several studies (Avery, 1977; Nicholson, 1980; Jones, 1981;

Pincus, 1986; Downs, 1991).

6. Perceptions of Self Disclosive behaviors of supervisors are not considered in evaluations of supervisor competence.

The failure of the Self Disclosure factor to emerge as a predictor of the satisfaction with Supervisor Communication suggests that the organizational relationship between supervisors and subordinates is less dependent on the disclosure of personal information than other interpersonal relationships with less distinct roles. The technical employees appear to be concerned about communication needs that are highly task and egocentric. Information about the other in supervisory relationships is not a central concern. This conclusion is further supported by the analysis of responses to the open question requesting suggestions for supervisors to improve their communication. Only 1% of the responses were associated with the Self Disclosure category. This finding suggests that the employment situation may impact perceptions of competence in other ways not measured by the interpersonal communication competence instruments.

7. Interpersonal models of communication competence fail to account for critical factors used by technical employees in evaluations of communication competence of supervisors.

As noted previously, the competence factor of Self Disclosure did not appear to influence employees in their evaluations of competence. Similarly, the competence factor of Social Confidence appears to be a factor that fails to distinguish competence in supervisory relationships. Most of the supervisors evaluated in this study were well educated, experienced management personnel. Researchers should expect positive evaluations of organizational samples on Social Confidence as measured by the Other Perceived Competency Scale. In this study, the Social Competence factor was the highest rated OPC factor.

The failure of two of the four OPC factors to effectively distinguish competent supervisors suggests that the employment situation may impact perceptions of competence in other ways not measured by the interpersonal communication competence instruments. This conclusion is supported by the qualitative analysis of the open question requesting suggestions for improving the communication effectiveness of supervisors. The analysis indicated that factors not included in the model

of communication competence tested accounted for the majority of employee suggestions for improving the communication competence of supervisors. Only 33% of the suggestions were coded into the four categories suggested by the OPC. The four ad hoc categories of Responsible Communication, Personal Style, Consistency, and Availability accounted for the remaining 66% of responses. Additionally, only 4% of the responses were coded as suggestions associated with the Social Confidence and Self Disclosure factors.

The categories of Responsible Communication, Empathy, Listening, Personal Style, and Availability accounted for 91% of the total responses. This finding suggests that the employees included in this study conceptualize the construct of communication competence in terms of behaviors and attitudes not accounted for in the competence model examined in this study.

8. The Other Perceived Competency factors of Empathy and Versatility appear to constitute a singular dimension of communication competence. The theorized five factor solution for the Snavely and Walters Other Perceived Competency scale did not emerge as predicted by the authors. Factor analysis of the scale indicates that all of the items clustered as designated by the authors of

the Other Perceived Competency Scale, with one notable exception. The Social Confidence factor had the same seven items load for this sample as the items had been originally specified. Similarly, the factors of Listening and Self Disclosure both had all four designated items load as specified. The six items specified for the Empathy factor also loaded as specified, however; the three Versatility items also all loaded on the Empathy factor. The factor analysis of the OPC suggests the following observations. First, the four factors of Empathy, Social Confidence, Listening, and Self Disclosure maintained their integrity with this sample. Second, the failure of the Versatility factor to emerge as a discrete factor with this sample suggests that the internal likenesses of Versatility and Empathy may indicate that each is part of a singular dimension of communication competence. Third, the results of this analysis of the OPC replicated findings of Walters' (1980) study. The consistency of these two studies provide evidence of the integrity of the scale and the internal likenesses of empathy and versatility.

9. The greatest corporate communication needs of technical employees in this study are issues related to the factors of Top Management and Interdepartmental Communication.

Analysis of the ranking of the COMSAT factors clearly indicated that factors of Interdepartmental Communication and Top Management were consistently rated among the least satisfied factors. Few published studies have included these factors; however, when included, the Top Management factor is consistently one of the lowest rated factors. Item analysis indicated that several Top Management items were among the lowest rated items. Specifically, open, honest, and timely communication from senior management is perceived as less than satisfying. The qualitative analysis provided further evidence of the need for increased interaction between upper and lower levels. The need for more information about organization-wide activities and plans through publications and meetings constituted the majority of suggestions for improving the communication satisfaction of the technical employees.

Because the nature of professional engineering involves the coordination of several disciplines and departments, it is important to note that this sample rated the Interdepartmental Communication factor as the

lowest rated factor. Additionally, three of the five lowest rated COMSAT items common to at least two of the organizations studied were associated with the Interdepartmental Communication Factor. Specifically, the three items were 1) the priorities between departments; 2) problem solving between departments; and 3) sense of teamwork between departments. The qualitative analysis of the responses to the open questions support this conclusion. Ten percent of supervisor's suggestions referred to the need for enhanced teamwork and interdepartmental communication.

10. Improving the communication satisfaction of employees in professional technical organizations would involve the critical issues of Organizational Integration, Supervisory Communication, Media Quality, and Personal Feedback.

Research Question #8 addressed the differences and similarities between supervisors and subordinates on suggestions to improve their communication satisfaction. The analysis of the open survey question requesting suggested changes to improve communication satisfaction indicated that the suggested changes were generally similar among both subordinate and supervisor groups

(Table 4.37). Both groups acknowledged issues related to Organizational Integration, such as the need for information about their jobs and department plans, were the most needed changes to increase their communication satisfaction. Issues related to Supervisor Communication were the second highest area of suggested changes indicating that supervisors needed to offer more guidance in solving job related problems and make time to listen and interact with their subordinates. The third highest percentage of suggestions were related to Media Quality with several comments indicating a need for more meetings and written directives.

Although both groups often suggested needed improvements in Personal Feedback, such as the need for how their work is to be appraised and more frequent feedback, the subordinates were more likely to cite issues related to this area than the supervisors.

The four categories of Organizational Integration, Supervisor Communication, Media Quality, and Personal Feedback accounted for 58% of the suggestions for improving communication satisfaction among the employees of the professional technical organizations.

11. Improving the effectiveness of supervisory communication would include improved listening, satisfying communication task needs, and demonstrating empathic behaviors.

As previously discussed, the employees of the technical organizations responded to the issues of communication satisfaction very similarly to a database of 26 organizations. However, unlike the database sample, the technical organizations included the COMSAT item "People in my organization have great abilities as communicators" as one of the lowest rated items.

Research Question # 8 addressed the differences and similarities between supervisors and subordinates in the suggestions for improving the communication effectiveness of supervisors. Analysis of the suggestions indicated that both groups acknowledged that improvements in the ad hoc category of Responsible Communication was the most significant improvement needed; however, subordinates were more likely to cite this category than the supervisors. Common suggestions included "providing more information to subordinates about company activities", "scheduled progress meetings", "providing timely communication", and "proving more guidance and attention". Furthermore, supervisors suggested improvements in the Listening category twice as often as

the subordinates. Comments included "attentiveness when others are speaking", "keep an open mind to suggestions", and "don't continue working or answer the phone when others are talking". The supervisors were also more likely to indicate a need for changes in Personal Style than subordinates. Comments included "supervisor is often rude", "seems consumed only with his own personal success", "needs to be more personable", "his people skills are severely lacking", and "needs to control his temper". On the other hand, subordinates were more likely to suggest improvements in Empathy than were supervisors. Comments included "taking another's point of view", "putting himself in our shoes", "appears not care about me", and "be sensitive to other's feelings".

SUGGESTIONS FOR FUTURE RESEARCH

1. Future investigations of communication satisfaction and communication competence might include a broader representation of professional engineers. The findings of this study are representative of only the three organizations that were investigated. Consequently, any generalizations of the findings to the larger populations is limited. Future investigations of these constructs with particular occupations such as

professional engineers are encouraged to employ research designs that would facilitate greater generalizability of the findings. One such method would be to secure research participants through the membership lists of national professional organizations.

2. Future investigations should attempt to further define the construct of organizational communication competence and develop valid and reliable measures capable of assessing the multidimensionality of the construct. The communication competence instrument employed in the current study was developed through the identification of conceptually common dimensions of four previously published Interpersonal Communication Competence instruments. Analysis of responses to an open survey question concerning suggestions to improve supervisor's ability to communicate effectively indicate that employee's conceptualizations of competent supervisory communication included factors not accounted for in the communication competence model. In particular, the category receiving the largest number of responses was the ad hoc category of Responsible Communication. This category accounted for 33% of the total number of suggestions. This category included possession of the necessary knowledge to satisfy

informational needs, the ability to provide information and feedback in a timely manner, and the ability to provide information in an accurate manner. In addition, the analysis of the suggestions to improve the communication effectiveness of supervisors indicated that only 33% of the responses could be categorized into categories suggested by the communication competence model. In particular, the category of Self Disclosure accounted for the fewest number of suggestions and only 2% of the total number of suggestions.

These findings provide evidence that organizational communication relationships are noninterpersonal rather than interpersonal and intimate. Consequently, the competencies required for facilitating effective interactions between individuals in distinct organizational role positions appear to be more practical and less social in nature than those interactions between individuals in more personal and intimate relationships. Future researchers need to identify the particular communication competencies required for organizational relationships and develop instruments which assess those necessary communication skills.

3. Further investigations of both communication satisfaction and communication competence might include the techniques of direct observation or participation.

This study is based wholly on self report data. Consequently, all interpretations are based on the employee's perceptions of their experiences of communication satisfaction and the communication competence of their supervisors. The perceptions may not necessarily reflect conditions as they actually exist. Therefore, future research designs might include direct observation or organizational participation to provide a privileged perspective on the actual happenings within the organizations.

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APPENDIX A

Communication Satisfaction Questionnaire
 Cal W. Downs and Michael D. Hazen Copyright, 1973, 1990

Most of us assume that the quality and amount of communication in our jobs contribute to both our job satisfaction and our productivity. This study is interested in your satisfaction with the communication practices of your organization.

This questionnaire has been given to a wide variety of types of organizations over several years. The current study is focused on several professional engineering organizations. Your firm's responses will be analyzed with the goal of addressing the needs of your organization and the engineering profession at large.

We are pleased to offer you this opportunity to make a contribution to research and appreciate your taking time to complete the questionnaire.

PLEASE NOTE:

1. You should be able to complete the questionnaire in about 15 minutes.
2. Your answers are Completely Confidential. Only the researcher will have access to your survey. Your responses will be combined into groups for purposes of analysis and reporting.
3. DO NOT sign your name; we do not wish to know who you are.
4. Put the completed questionnaire in the envelope provided, seal it, and mail/route/deliver as soon as possible as directed on the cover letter accompanying this questionnaire.

Please answer the following questions by checking the appropriate number.

1. How satisfied are you with your job? (check only one)

- | | |
|--|---|
| <input type="checkbox"/> 1. Very Satisfied | <input type="checkbox"/> 5. Somewhat Dissatisfied |
| <input type="checkbox"/> 2. Satisfied | <input type="checkbox"/> 6. Dissatisfied |
| <input type="checkbox"/> 3. Somewhat Satisfied | <input type="checkbox"/> 7. Very Dissatisfied |
| <input type="checkbox"/> 4. Indifferent | |

2. In the past 6 months, what has happened to your level of satisfaction? (check only one).

1. Gone up 2. Stayed the same 3. Gone down

3. If the communication associated with your job could be changed in any way to make you more satisfied, please indicate how:

A. Listed below are several kinds of information often associated with a person's job. Please indicate how satisfied you are with the amount and/or quality of each kind of information by CIRCLING the appropriate number at the right.

For these items please respond according to the following scale:

	(1) Strongly Satisfied	(2) Satisfied	(3) Slightly Satisfied	(4) Indifferent	(5) Slightly Dissatisfied	(6) Dissatisfied	(7) Strongly Dissatisfied						
4. Information about my job						1	2	3	4	5	6	7	
5. Personnel news						1	2	3	4	5	6	7	
6. Information about company policies and goals						1	2	3	4	5	6	7	
7. Information about how my job compares with others						1	2	3	4	5	6	7	

For these items please respond according to the following scale:

	(1) Strongly Satisfied	(2) Satisfied	(3) Slightly Satisfied	(4) Indifferent	(5) Slightly Dissatisfied	(6) Dissatisfied	(7) Strongly Dissatisfied
8. Information about how I am being judged	1	2	3	4	5	6	7
9. Recognition for my efforts	1	2	3	4	5	6	7
10. Information about department policies and goals	1	2	3	4	5	6	7
11. Information about the requirements of my job	1	2	3	4	5	6	7
12. Information about government action affecting my company	1	2	3	4	5	6	7
13. Information about changes in my company	1	2	3	4	5	6	7
14. Reports on how problems in my job are being handled	1	2	3	4	5	6	7
15. Information about employee benefits and pay	1	2	3	4	5	6	7
16. Information about company profits and financial standing	1	2	3	4	5	6	7
17. Information about accomplishments and/or failures of the company	1	2	3	4	5	6	7
18. Extent to which my supervisors know and understand the problems I face	1	2	3	4	5	6	7
19. Extent to which company communication motivates and stimulates an enthusiasm for meeting its goals	1	2	3	4	5	6	7
20. Extent to which my supervisor listens and pays attention to me	1	2	3	4	5	6	7
21. Extent to which the people in my organization have great ability as communicators	1	2	3	4	5	6	7
22. Extent to which my supervisor offers guidance for solving job related problems	1	2	3	4	5	6	7
23. Extent to which the company's communication makes me identify with it or feel a vital part of it	1	2	3	4	5	6	7
24. Extent to which the company's publications are interesting and helpful	1	2	3	4	5	6	7
25. Extent to which my supervisor trusts me	1	2	3	4	5	6	7
26. Extent to which I receive on time the information needed to do my job	1	2	3	4	5	6	7
27. Extent to which conflicts are handled appropriately through proper communication channels	1	2	3	4	5	6	7
28. Extent to which the grapevine is active in our organization	1	2	3	4	5	6	7
29. Extent to which my supervisor is open to new ideas	1	2	3	4	5	6	7
30. Extent to which horizontal communication with other employees is accurate and free-flowing	1	2	3	4	5	6	7
31. Extent to which communication practices are adaptable to emergencies	1	2	3	4	5	6	7
32. Extent to which my work group is compatible	1	2	3	4	5	6	7
33. Extent to which our meetings are well organized	1	2	3	4	5	6	7
34. Extent to which the amount of supervision given me is about right	1	2	3	4	5	6	7
35. Extent to which written directives and reports are clear and concise	1	2	3	4	5	6	7
36. Extent to which attitudes toward communication in the company are basically healthy	1	2	3	4	5	6	7
37. Extent to which informal communication is active and accurate	1	2	3	4	5	6	7
38. Extent to which the amount of communication in the organization is about right	1	2	3	4	5	6	7
39. Extent to which top management communicates openly and honestly with organizational members	1	2	3	4	5	6	7
40. Extent to which top management cares about organizational members	1	2	3	4	5	6	7
41. Extent to which top management listens to members and welcomes their ideas	1	2	3	4	5	6	7
42. Extent to which top management communicates in a timely way to keep members informed	1	2	3	4	5	6	7

For these items please respond according to the following scale:

(1) Strongly Satisfied	(2) Satisfied	(3) Slightly Satisfied	(4) Indifferent	(5) Slightly Dissatisfied	(6) Dissatisfied	(7) Strongly Dissatisfied							
							1	2	3	4	5	6	7
43. Extent to which top management is believable in its communication with members													
44. Extent to which members communicate between departments to solve problems													
45. Extent to which the interdepartmental communication is about right													
46. Extent to which there is a sense of teamwork across departments or work units													
47. Extent to which managers communicate with one another													
48. Extent to which priorities between my department and other departments are in agreement													

8. Answer the following five statements only if you are a Manager or Supervisor. Then indicate your satisfaction with each of the five statements. If you have no subordinates reporting to you, proceed to question #54.

For these items please respond according to the following scale:

(1) Strongly Satisfied	(2) Satisfied	(3) Slightly Satisfied	(4) Indifferent	(5) Slightly Dissatisfied	(6) Dissatisfied	(7) Strongly Dissatisfied							
							1	2	3	4	5	6	7
49. Extent to which my subordinates are responsive to downward directive communication													
50. Extent to which my subordinate anticipate my need for information													
51. Extent to which I <u>do not</u> have a communication overload													
52. Extent to which my subordinates are receptive to evaluation, suggestions, and criticisms													
53. Extent to which my subordinates feel responsible for initiating accurate upward communication													

C. In answering the next set of questions consider the communication behavior of your immediate supervisor. With that person in mind, indicate your level of agreement with the statement according to the following scale:

(1) Strongly Agree	(2) Agree	(3) Slightly Agree	(4) Indifferent	(5) Slightly Agree	(6) Disagree	(7) Strongly Disagree							
							1	2	3	4	5	6	7
54. Lets others know they are understood													
55. Appears sensitive to others' needs of the moment													
56. Appears to listen to others when not really listening													
57. Can easily put him/herself in another's place													
58. Appears nervous when talking to others													
59. Often conveys personal thoughts and feelings													
60. Tries to see things from others perspective													
61. Seems to be shy around other people													
62. Has difficulty saying things before a group													
63. Appears to daydream when h/she should be listening													
64. Readily understands the feelings of others													
65. Adjusts own conversation to make others feel comfortable													
66. Usually appears relaxed in conversations													
67. Rarely seems to find it difficult to talk with strangers													
68. Often appears inattentive in conversations													
69. Appears self conscious when addressing groups													
70. Converses easily with new acquaintances													
71. Does not mind meeting strangers													

C. In answering the next set of questions consider the communication behavior of your immediate supervisor. With that person in mind, indicate your level of agreement with the statement according to the following scale:

(1) Strongly Agree	(2) Agree	(3) Slightly Agree	(4) Indifferent	(5) Slightly Disagree	(6) Disagree	(7) Strongly Disagree
					1	2 3 4 5 6 7
					1	2 3 4 5 6 7
					1	2 3 4 5 6 7
					1	2 3 4 5 6 7
					1	2 3 4 5 6 7
					1	2 3 4 5 6 7
					1	2 3 4 5 6 7
					1	2 3 4 5 6 7

80. If your supervisor could make changes to improve his/her ability to communicate effectively with you, what changes or improvements would you suggest.

DEMOGRAPHIC INFORMATION

81. Which management level best describes your present position? (Check one)

- Upper Management Middle Management First Line Supervisor Non-Management Employee

82. Are you a Professional Engineer? Yes No

83. Is your immediate supervisor a Professional Engineer? Yes No

84. Which function best describes your position?

- Engineering/Technical Support
 Administration/Corporate Support
 Clerical/Secretarial
 Other (Please describe) _____

85. How long have you been with this organization?

- less than 1 year
 1-5 years
 6-10 years
 11-15 years
 more than 15 years

86. Male Female

87. Please indicate the office location where you are employed.

- Corporate Headquarters
 Branch office
(Please indicate location) _____

When this survey is complete, place it in the envelope provided, seal it, and forward as directed on the cover letter accompanying this survey.

APPENDIX B

COMMUNICATION SATISFACTION QUESTIONNAIRE

ITEM FREQUENCY DISTRIBUTION, MEAN,
AND RANK FOR ENTIRE SAMPLE

Scale: 1-Strongly Satisfied 7-Strongly Dissatisfied

<u>No.</u>	<u>COMSAT Survey Item</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>Mean</u>	<u>Rk</u>
	Information about...									
4	Progress in my job	13	47	166	36	59	9	3	3.36	13
5	Personnel news	16	49	158	62	37	5	8	3.30	8
6	Organization's policies and goals	20	61	131	40	60	17	9	3.43	15
7	How my job compares with others	8	25	89	87	85	26	16	4.07	48
8	How I am being judged	9	29	99	47	95	30	26	4.15	50
9	Recognition for my efforts	14	53	87	55	83	17	29	3.90	38
10	Departmental policies/goals	10	40	133	50	73	19	12	3.72	28
11	Requirements of my job	14	44	139	62	60	10	8	3.51	22
12	Government action affecting my organization	8	20	113	136	41	8	11	3.74	30
13	Changes in the organization	13	37	133	50	67	19	17	3.73	29
14	How problems in my job are being handled	5	18	96	103	87	16	13	4.03	46
15	Employee benefits and pay	16	66	143	47	47	12	7	3.30	9
16	Organization's profits and financial standing	22	61	93	54	67	26	14	3.64	24
17	Accomplishments and/or failures of the organization	19	55	123	56	61	16	8	3.49	19
	Extent to which...									
18	My supervisor knows the problems I face	12	41	27	44	77	16	17	3.75	32
19	Company communication motivates and stimulates enthusiasm for meeting goals	9	27	111	62	85	21	18	3.97	42
20	My supervisor listens attentively to me.	21	77	122	36	53	17	10	3.34	11

<u>No.</u>	<u>COMSAT Survey Item</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>Mean</u>	<u>Rk</u>
21	People in organization have ability as communicators	5	38	94	64	87	33	14	4.03	45
22	My supervisor offers guidance for solving problems on job	22	61	120	43	54	11	21	3.49	20
23	Company's communication makes me identify or feel a vital part of it	9	39	106	61	79	20	22	3.92	39
24	Company publications are interesting and helpful	15	43	142	87	39	4	5	3.37	14
25	My supervisor trusts me	48	94	123	33	25	4	6	2.79	1
26	I receive on time the information I need to do job	5	40	130	48	71	21	19	3.84	34
27	Conflicts are handled appropriately through proper communication channels	5	30	120	66	78	17	17	3.90	37
28	The grapevine is active in our organization	9	27	103	109	55	13	16	3.83	33
29	My supervisor is open to new ideas	23	68	132	52	37	13	10	3.27	7
30	Horizontal communication with other employees is accurate and free-flowing	20	57	149	50	46	8	5	3.27	6
31	Communication practices are adaptable to emergencies	11	38	146	86	38	9	5	3.45	16
32	My work group is compatible	29	84	142	35	35	5	4	2.98	2
33	Meetings are well-organized	9	46	138	61	53	15	12	3.59	23
34	Supervision given me is about right	22	82	156	33	31	7	3	3.01	3
35	Directives and reports are clear and concise	5	45	153	65	48	8	9	3.50	21
36	Attitudes toward communication in the organization are basically healthy	6	42	135	56	68	13	15	3.70	27
37	Informal communication is active and accurate	5	40	151	77	50	7	4	3.49	18
38	Amount of communication in the organization is about right	4	23	114	72	94	18	10	3.96	41

<u>No.</u>	<u>COMSAT Survey Item</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>Mean</u>	<u>Rk</u>
39	Top management communicates openly and honestly with organizational members	12	44	93	56	61	33	37	4.05	47
40	Top management cares about organizational members	16	68	96	62	42	22	28	3.67	26
41	Top management listens and welcomes members ideas	11	50	111	72	47	14	28	3.75	31
42	Top management communicates in a timely way to keep members informed	4	41	109	58	65	28	28	4.00	44
43	Top management is believable in its communication	9	55	128	58	41	21	21	3.64	25
44	Members communicate between departments to solve problems	6	29	122	65	74	29	10	3.89	36
45	Interdepartmental communication is about right	4	27	121	67	78	23	15	3.94	40
46	There is a sense of teamwork across departments	13	24	117	51	80	27	23	4.00	43
47	Managers communicate with one another	5	26	114	99	61	18	10	3.84	35
48	Priorities between departments are in agreement	3	21	101	81	84	30	14	4.10	49
49	My subordinates are responsive to downward directive communication	5	29	89	20	12	0	2	3.08	4
50	My subordinates anticipate my needs for information	0	28	77	28	19	5	0	3.33	10
51	I do not have communication overload	3	17	73	39	18	6	1	3.47	17
52	My subordinates are receptive to evaluation, suggestions, and criticisms	4	27	87	21	12	2	4	3.20	5
53	My subordinates feel responsible for initiating accurate upward communication	4	28	77	17	23	5	3	3.34	12

PLEASE NOTE

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APPENDIX C

OTHER PERCEIVED COMPETENCY SCALE

ITEM FREQUENCY DISTRIBUTION, MEAN,
AND RANK FOR ENTIRE SAMPLE

Scale: 1-Strongly Satisfied 7-Strongly Dissatisfied

<u>No.</u>	<u>OPO Survey Item</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>Mean</u>	<u>Rk</u>
54	Lets others know they are understood	20	62	149	42	43	11	5	3.24	11
55	Appears sensitive to others' needs of the moment	24	74	140	42	35	9	9	3.16	10
56	Appears to listen to others when not really listening (RS)	21	32	109	58	62	30	18	3.82	25
57	Can easily put him/herself in another's place	13	41	128	56	64	20	10	3.65	22
58	Appears nervous when talking to others (RS)	47	71	119	33	39	18	6	3.07	8
59	Often conveys personal thoughts and feelings	15	52	129	51	58	18	9	3.53	19
60	Tries to see things from others perspective	15	50	134	33	39	21	10	3.49	18
61	Seems to be shy around other people (RS)	60	80	116	39	22	11	5	2.80	3
62	Has difficulty saying things before a group (RS)	67	82	109	34	28	7	7	2.73	2
63	Appears to daydream when h/she should be listening (RS)	68	80	121	32	16	10	6	2.71	1
64	Readily understands the feelings of others	11	44	137	59	52	18	12	3.60	20
65	Adjusts own conversation to make others feel comfortable	11	40	137	62	58	14	11	3.61	21

<u>No.</u>	<u>OPQ Survey Item</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>Mean</u>	<u>Rk</u>
66	Usually appears relaxed in conversations	23	66	159	35	34	11	4	3.12	9
67	Rarely seems to find it difficult to talk with strangers	30	67	149	45	29	9	4	3.06	7
68	Often appears inattentive in conversations (RS)	27	61	137	46	39	13	10	3.26	12
69	Appears self conscious when addressing groups (RS)	30	55	119	54	51	16	7	3.35	15
70	Converses easily with new acquaintances	30	79	143	43	26	10	1	2.97	5
71	Does not mind meeting strangers	31	85	156	39	14	7	1	2.84	4
72	Shares personal aspirations with others	7	46	99	83	65	22	11	3.80	24
73	Continues own work when others seek their attention (RS)	15	41	117	65	61	21	13	3.69	23
74	Never shares own thoughts or feelings with others (RS)	25	45	132	58	51	14	7	3.41	16
75	Talks easily with all kinds of people	27	70	158	37	31	5	4	3.02	6
76	Is generally flexible in meeting others needs	21	57	148	50	46	85	5	3.28	13
77	Is versatile in adapting to different situations	21	77	122	36	53	17	10	3.34	14
78	Is willing to relate to others on their terms	20	61	131	40	60	17	9	3.41	16
79	Usually talks as much about personal feelings as the other person	9	27	111	62	85	21	18	3.97	26

Rk - rank of OPC items

(RS) - Reverse Scored Item

APPENDIX D

RESPONSES TO OPEN SURVEY QUESTIONS

ITEM #3-IF THE COMMUNICATION ASSOCIATED WITH YOUR JOB COULD BE CHANGED IN ANY WAY TO MAKE YOU MORE SATISFIED, PLEASE INDICATE HOW

Company No. 1: Management Employees

1. Increased communication between upper level/administrative personnel and lower level personnel.
2. Communication of company business and happenings by memos and/or announcements. Major announcements revealed to employees before reading about it in the paper.
3. Keep me informed. Do not withhold information needed. Be open, not secretive. Give me facts.
4. Need more direct contact among architectural departments in separate offices re: company standards, marketing, etc. This sat in the "out" basket since 2/22. We have been pleading to get our computers upgraded/sped up since 12/24-92 - maybe by the time the job we need them for is done we will get our upgrades. Follow through is terribly slow!
5. Direct, straightforward, less reading between the lines, particularly from client - difficult to control.
6. Communication with clients and meeting realistic goals and expectations, upper level needs awareness of new technologies and its processes.
7. It's not the communication - its the lack of definable role in the company.
8. I want to be told immediately by my supervisor if there are any "problems" with my work, so that I can make improvements before yearly review. I want to attend meetings with clients who are making work requests so that I can get direction/instruction first hand instead of relayed through 2 or 3 other people.
9. Managers would spend a little more time defining particular (specific) project requirements, such as:
1) scope and budget; 2) pitfalls, solutions and peculiarities they anticipate.

10. I need to know the full story before I can properly do projects - usually I only get enough information to get started and then have to be persistent to obtain enough to finish.
11. Mail something home, such as the "Perspective" company newsletter. Publish a firm-wide phone, discipline roster. Publish a photo roster of all staff. Produce video films monthly about company news and distribute to each department for viewing. Have an annual firm-wide meeting where management outlines firm's plans.
12. I am always the last to know about items that directly affect me or affect the quality of work I produce. I am not included in most of the interoffice mail and am left out of general meetings. I keep receiving more responsibilities, but still not enough communication.
13. Types of resources are not readily known or available. There are no "S.O.P." type documents (worked for 19 months before I was told a file # is assigned to every project). No communication of computer resources, new or existing, is provided. Human Resources provides no updates on benefits.
14. Upper management could improve communication and job satisfaction by listening and transferring detailed information from project management and production levels to higher administration levels and to clients rather than just reviewing and transferring the answer and "bottom line" without detail. How you get to the bottom line is important to all levels of communication.
15. Reduce the amount of totally extraneous information. I'm receiving too many 20 page reports which have one line, or nothing, pertinent to me. I have worked elsewhere with no formal communication in-house and that certainly is not best, however, to pass everything along slows communication.
16. Open, honest, sincere and objective communication with my immediate supervisor. More complete understanding as to what each office does, their key personnel, and their accomplishments.
17. I would like to have my own computer station with word processing capability. I can type faster than write and help eliminate "typing staff" load.

18. Better and more timely sharing of knowledge associated with: 1) new capabilities of the entire firm (all offices); 2) new projects won and/or completed (all offices); 3) a corporate sponsored informal information sharing process; 4) any effort to help employees feel welcome and important.
19. More unified communications both from upper branch management and some communications from corporate. More communications to keep us all informed.
20. Less hostile sarcastic quips. More friendly, courteous and helpful communication.
21. Less closed door/secret meetings. More discussion, explanation of what's going on. Less divisiveness between upper management, support staff, especially accounting, to support engineers instead of dominating staff. Entry level skills testing for support staff.
22. To understand more about my experience upon what I can do. Communication of appreciation aside from monetary reward for a job well done.
23. To know how my duties and responsibilities fit with the long and short goals and objectives of the company.
24. Department head to have staff meetings where direction is given, long and short range goals and plans described.
25. All members of our office would use the E-mail. Some people don't turn on their computers, and/or log in.
26. Better communication by local leaders of the branch office.
27. I would like to be a better communicator to those working with and for me.
28. Faster information on project changes that may affect work load or changes in design. More openness on the part of management as to changes in work assignments or project staffing.
29. Communication should be sooner.
30. I wish to have more downward communication in groups rather than just P.M. and engineer doing the communicating.
31. More consistency, more follow-up, especially by senior management. More human resources at the source level of communication.
32. Less combative - There is not a give and take. If you express a differing opinion, there is no sense of someone trying to understand you, rather the interest is in production.
33. He should go back to our weekly planning meetings.

34. Better communication from the Board of Directors indicating future goals and objectives and what the future holds.
35. More information on job position expectations would be very helpful. Specific project expectations are always available but overall general expectations are not. Project expectations and parameters are available but often times late so as to create more work than is necessary.
36. More information on goals and decisions from Board of Directors and stockholders, i.e. less secrecy.
37. If promises are made, they should be kept. In the past, this has not been the case. The word "we" apparently has a dual definition. "We", as in the stockholders, have had our most profitable year ever. "We", as in everyone else, should be thankful "we" have jobs.
38. Generally, people need to accept meetings as a vehicle for exchange of information. currently, meetings are despised and viewed as time wasters.
39. Direct, to the point communication with no wasted words. Improve listening skills myself and associates). Improve the recognition of the written document as an important communication tool. Stress communication is not only verbal.
40. More clear communication about mission and direction of company from upper level management.
41. Newswire is a great help, but better marketing information from all offices would help greatly.
42. More information is needed as to the steps being taken by the company as to how it affects present employees of the company.
43. Our methods of communicating and the equipment we use to communicate are changing rapidly and are becoming more and more progressive. i feel we are at least approaching the leading edge of the technology available and feasible for an engineering company.
44. We need improved project management and communication between departments.
45. This is a big engineering company. Information generated does not flow through organization. I often fill out multiple forms for different departments with the same information.
46. I would appreciate a manager who made time to listen to me, was responsive or at least offered suggestions to make my transition smoother. Instead, I've been told repeatedly the manager's schedule is too busy to permit him to manage me!

47. Dallas office manager needs to have letter on meeting with employees about new work or how things are going with our office.
48. More specific input (staff meeting concerning work input) such as going over drafting consistencies, etc.
49. High level management meetings are held periodically. Can minutes from those meetings be published? Would there be areas of these meetings that can't be made public?
50. A more team atmosphere when working with other departments. Also, include technician in loop so that the information goes to them also, instead of to project managers who sit on it or forget to tell the technician.
51. Being told up front what is expected of me.
52. I would like to see more communication with people at my level (project management) between all disciplines. I don't think we know enough about one another. I would like to know about what these others do and how they feel, how they cope, what they perceive as problems, etc.
53. Update meetings within department so we are aware of what other jobs are being designed here at _____.
54. Implement policy as suggested from below and enforce it from above. Document policies and procedures in writing. Train personnel in procedures as a regular course of business. Reprimand offenders so others feel satisfied in conforming to standards.
55. Corporate goals, customer demands, project schedules, scheduling, deadlines - all have to be more clearly expressed.
56. Communication should be established with all staff members, not just management.
57. Get people to read and respond promptly to memos. Hook up all offices on a WAN. Get principals to clearly express approval or disapproval with a job done and agree upon a definable solution. get principals to share ideas with each other. Get principals to understand that they can't all have everything now.

Company No. 1: Non-management Employees

1. More in detail directions of what is needed on drafting assignments given. For example, give neat markups with a deadline date or time, required job number to be billed to, reference material or examples if needed.

2. Please understand that an MEP employee in the Dallas office usually feels away from main corporate communication through MEP department. We have also been operating without an office head for several weeks. The former head was a poor communicator.
3. It would be nice to know 24 hours (8 hrs.) ahead of time what the next days job would be (when possible).
4. Need more direct interaction with those who desire my time--not by inference or passed along by others.
5. More open discussion of project objectives with project team members.
6. Stop talking things to death and take action! Decide and do it!
7. More interdepartment meetings to discuss important dates.

8. Many times correspondence copies are sent to my desk to inform me of every aspect of a project. This is a good system unless too much material takes away from "productive" time occurs. I find myself lost in paperwork when maybe verbalized requirements would be better for the desire goal or task to achieve for myself.
9. Be better informed on the overall scope of the project.
10. Have direct input into the small things, like where I sit, where my office will be located, who will be in my area, have direct voice to senior management.
11. I like my job. I do not like the attitude of my supervisor. I wish my supervisor would change her attitude. But, I will not leave this job just because of her. I like this company to work for.
12. A little more communication period would be more satisfying.
13. Recognition of my efforts. Information about my job.
14. Communication just needs to be there. A lot goes on that the employees don't get to know about.
15. More accurate answers from office personnel.
16. Office personnel could stay in contact with field personnel pertaining to supplies and needs.
17. As I have little engineering experience, I would greatly appreciate more instruction on how to design my projects rather than having to figure it out on my own. More "big picture" explanations would be helpful as well.

18. Let me know more in advance what's required, accurate due dates, what will I be assigned to next week.
19. Employee meetings.
20. Better project management, more teamwork, less stereotypes held against color and sex, more professional positive attitudes.
21. Systems established and put in working order. Criteria for specific job defined. Hierarchy of authority defined. Evaluation of job performance defined. Pay raise, bonus incentive. Comp time implemented.
22. I wish we had more managers who would thoroughly investigate an issue, map out a strategy and stick with it.
23. More personal approach by top management. Come into the 90's with decision making, i.e. inform employees about items affecting their job--be proactive--be viewed as a team.
24. Department manager should call for a department meeting every so often to let everyone know what is going on instead of the "trickle-down" method now used.
25. The employees need to be more "team" oriented. Right now there is a feeling of every man for himself. No one wants to help anyone else, especially crossing department lines.
26. A bit more specific feedback and more frequent feedback would increase my satisfaction greatly.
27. Need more communication with corporate policies.
28. More discussion and dialogue, less monologue and dictation.
29. I am hearing-impaired. Sometimes I am accommodated, sometimes not. This is a big company and I feel that my supervisors sometimes forget that I need more one-on-one communication.
30. Company procedures enforced and realized by all employees. New employees are given information but something is being lost in the exchange of information.
31. I think the "little guy" needs to be better informed of the general goals (long-term and short-term) of the company.

32. Above all else, the lack of proper training in how our company communicates. People coming in from other companies have different ways of doing things and what is proper to them may not be to us. This is also true for recent college grads. They are not familiar at all with proper and improper methods of communication. What causes me the most dissatisfaction is that no one bothers to tell these people what our standards are or makes any effort to educate them.
33. Keep me informed of things that affect me and my job.
34. Notified from/by supervisors, etc. of what the hell is going on.
35. Correspondence from the "top", keep the employed up to date and involved in order to cut down on rumors and speculation. Weekly correspondence within ones department to keep updated on projects, problems, changes, etc.
36. Would like more input from my boss as to how I am progressing or not progressing.
37. Communication between office managers so that office politics would not preclude the advancement of an individual who is not involved in the political intrigue and backstabbing that exists between the various officials.
38. Better written instructions between different departments. Standing by what you say. As little verbal instructions as possible.
39. It would be nice to be asked one a month, "How are things going?" Communication is "non existent" in my company. I would prefer one-on-one meetings to group.
40. Project manager, etc. try to run projects their way completely. Little or no communication and interaction with people working with them. They need to learn that there are usually more than one correct way to do things. Trust the people and their abilities.
41. That project urgency could be realized from beginning to end not just at the end.
42. Upper management needs to communicate better with lower ranks rather than letting the grapevine distribute information. also, a better job of instructing new employees on SOPs (such as best way to access or use support services) needs to be done.

43. Discipline leaders could stand to improve communications skills by passing along more information without having to be prompted so often.
44. Less bureaucracy.
45. I would ask that supervisors follow through with the 6 month evaluation policy laid out in the employee handbook. I have been here two years and only one written evaluation has been performed.
46. Be told of deadlines before it actually occurs. Speed up processes or get more help.
47. Make me more aware of what is going on and when.
48. My team leader is a constant complainer. Gives no direction - we are expected to just "get it on our own". Doesn't handle crew too well. There is a clique that leader and another employee are involved in. They are perfect, everyone else, stupid.
49. At this time, most communication is non-communication. We are in a period of rapid growth and the most simple things are neglected, e.g. introduction of new staff members with perhaps a background provided. Company publications are not effective when they come out on fixed schedules and are limited in scope e.g. aimed at the overall company. Communication on an informal basis of company goals, failures, etc. creates a feeling of disguise and should be avoided.
50. An orientation of all procedures and a book that clearly states what is required for that customer.

Organization 2 - Management Employees

1. For subordinates to take orders only once and I don't have to repeat the same instructions twice.
2. Management needs to follow through with their commitments in a more timely fashion.
3. Better communication with partners - one, honest, no hidden agendas, mature, sensitive.
4. Better communications between the principals.
5. Principals need to more clearly communicate events with employees.
6. For management to listen more.
7. Need more detailed discussion or briefings when projects are being opened.
8. My immediate supervisor, a senior principal, continuously plays the role of the good guy. Little direction is offered when problems arise. As long as we are having fun everything is o.k. This leaves me hanging at times I need an answer and a solution.

9. Upper management makes commitments to clients which are unreasonable without communicating with the project teams.
10. One(1) supervisor providing direction, not several with conflicting directions! Too many chiefs.
11. The prime objective ("the forest"), adequately explained-there seems to be many forests
12. A better method of tracking performance-workload, etc.
13. Asked to perform at levels exceeding the team's capability and at sometimes the supervisor's.
14. Too much reacting and not pro-acting (putting out fires and babysitting)
15. Less mind changing within levels. More direct communication - "clear" instructions - more directives from contacts recorded and filed with the projects - more documentation to prevent further rework.
16. Principals to be more involved in lobbying with state officials and regulatory agencies.
17. Overall understanding of company policy (all departments) replies to all suggestions - accepted or not
18. Bosses could follow through with implementing of their ideas and direction of job completion or avoid making half-cocked statements.
19. Give me information and feedback that I need.
20. Superiors sharing more vital information on the status of the company
21. Between departments - when 2 or more departments are working on the same projects, there is very little communications, some departments have their own meetings to discuss progress or changes on a job. This is great! But when the changes might affect what another department is doing, they do not inform that other department.

Company No. 2: Non- Management Employees

1. I am a computer technician (CADD). The engineers and upper level management will not take the time or interest to learn and understand (or even listen) to the problems one can encounter in my position. They're only interested in (and only remember) how long it takes me to produce a finished product. I produce quality work, that's my goal. But it's hard to do when time seems to be the only thing considered and appreciated.

2. I would like for the persons(s) (principals) who are responsible for my lot in hours and who are keeping me from working full time to come forward and tell me what their real problem with me is.
3. Firmer due dates of completion of work. Priorities coming from a primary source instead of being changed by various people.
4. Feedback on a frequent basis of company's standing of financial status with specific totals for income and spending shared with the employees.
5. I would like to see upper management be more available. I would also like to see a freer exchange of ideas and more willingness to listen.
6. More one-on-one training
7. Weekly meetings are held for all project groups and information given to associate at that time. We do not have a weekly or semi-weekly meeting and find that others believe we are informed and expected to know things that we don't. The monthly meeting for all associates are not informative enough as to happenings and changes in the company.
8. More facts about upcoming or current jobs.
9. Any changes/updates/etc. in computer system or software should be communicated and given to all employees using it at the same time. At present, a "pecking-order" exists and some people who may need the new updates most are the last to receive them.
10. If I am performing below expectations, let me know; if I am performing above expectations, let me know; if I am performing at expectations, let me know.
11. Less delegation, by the time a project has been delegated several times most of the directions have been lost or misinterpreted. I feel that this causes the project to be only partially complete, or it makes it take twice as long to do the project.
12. More complete communication as to daily developments concerning changing conditions concerning day-to-day development of the work.
13. Better overall communication on company performance and better relay of information on all levels in the organization.
14. More talks between the different departments to let everyone know what's going on.
15. Upper management would be more receptive. Would personally benefit from a good idea.
16. I would like to participate in the staff meetings that presently only the engineers are required to participate.

17. That my supervisors would plainly express their opinions about my job performance on a quarterly basis instead of a yearly one.
18. More communication necessary - teamwork needed. Less focus on individual employee needs, more emphasis on company and client needs.
19. Project schedules are not always made available to techs. Techs should be informed when engineers are going to be out.
20. Policies are not clear cut or publicized.
21. Principles are inaccessible to those who need their help.
22. Frustrations are misdirected.
23. Talent and experience are not rewarded or shared.
24. There should be interoffice memos every time a significant change is made to drafting procedures, upgrades in computer equipment and software instead of relying on word of mouth.
25. Better communication - better planning of day-to-day operations.
26. Vertical communication and decisions from upper management need to be quicker.
27. Everything with the computer department is a deep dark secret if you keep your nose to the grindstone. You need to b.s. with them to find out what's going on! No horizontal communication which is effective for all involved!! Pockets of no information and too much information.
28. More staff meetings (team oriented) to discuss past/potential problems/solutions; more awareness of lower-level staff as to status and development of jobs, company-related events.

Organization 3: Management Employees

1. My supervisor sometimes becomes a bottleneck in communication from project managers to me. He is not quick to send project managers to me when I will be responsible for the project. Then, he gets involved in his own work, and does not always remember to pass information along.
2. Information relative to long-term planning, goals, efforts would be appreciated
3. I think upper level staff meetings could be held a couple of times a month to discuss the state of the company. My biggest problem is when someone outside the company asks me about an important event that I did not know occurred.

4. One Principal (out of 7) does not clearly define work expectations, he does not allow project managers and project engineers to have much contact with client to develop understanding of client's needs. He expects workers to anticipate his thoughts.
5. Base communication criteria on employee's probable "desire to know" rather than employee's "need to know".
6. Would like supervisor (principal) to be better integrated into team. Would like client to have more consistent communication standards.
7. People assigned to me become more proactive in keeping me informed.
8. Be included in the management decisions of the firm.
9. More information pertaining to the likely career track I am on.
10. More feedback on how I do. Goal-setting would be good also
11. More written communication, especially meetings and phone calls.
12. Big gripe - 5 principals do not present a united front - they should form a "pecking order" and support their decisions - too much conflict between them with employees caught in middle
14. Keep me apprised of events that affect jobs in my responsibility list.
15. More total team meetings on project status and overall workload and priorities. Faster notification of major changes in projects affecting my work. Better front-end coordination on work
16. To be given a formal review such as a list of items similar to this check off, instead of just being told you are doing a good or bad job
17. If people would listen, instead of nod, or take the time from thinking what all they think while they listen
18. Management would tap into the ideas of the designers more often and keep the designers up to date on why things are progressing the way they are. Management seems to engage in efforts that could be better handled by the designers and technicians themselves.
19. We are all one company and should work together and there is no reason for everything to be known but time should be taken to explain some of the things done that effect the lower echelon employees.

20. I need information on what is expected of me personally, what I can do to advance goals of this department, (whether there are any goals or not!), whether my contribution is acknowledged, what my lower-than-average pay raise in a year when I personally worked harder and more profitably than ever before meant, etc.
21. All communication flows downward, and there's not much of it when it comes to career direction and encouragement for those not in the right inner circle. All employees should be encouraged to choose career paths and enabled a means to achieve them

Organization 3: Non- Management Employees

1. Communication between my supervisor and our department as a whole is greatly lacking.
2. Feedback on my job performance. Areas I need to improve and suggestions on how to improve
3. Implement a policy by which the company would provide written evaluations of employee's performances. Also, state how raises and bonuses are determined with regard to an individuals performance. This is needed more for younger engineers than people who have been with the firm a long time.
4. More open-ended discussion on overall objectives, accounting, etc. of projects
5. It would be nice if my supervisor would share more of his thoughts with me and would give me a formal evaluation.
6. I wish those above me would better define our overall goals and objectives for a given project. Many times I feel as if I am doing a task without knowing why or what effect it has on the overall scheme of the project.
7. I would like more feedback on my job performance.
8. Better communication with immediate supervisor.
9. Formal performance review.
10. More orientation prior to start of job
11. Project discipline oriented meetings biweekly or so.

12. Departmental communication would be improved so that there is less competition (or hoarding) over project responsibility. Many times, certain departments try to provide all the engineering work on jobs without utilizing personnel from other departments that have better expertise to perform certain aspects of the job. Usually, they only try to get help when they have exhausted the budget without accomplishing the required tasks.
13. Set aside 5-10 minutes per day for questions/direction
14. Communication to me of more practical lead times on jobs. I don't usually get the accurate deadlines for most jobs because everyone wants their work ASAP.
15. My job - For so many different engineers - and each of there differences, make it very difficult to know what is going on with a particular project - on it one day off the next.
16. In staff meetings, every member would participate in the discussion, rather than only 1 or 2. To encourage this, the manager would ask direct questions to each.
17. That engineers would take a couple of hours to sit in on what exactly the accounting department has to do - how long it takes and the details required
18. Need more constructive criticism or praise for job performance
19. Create an information exchange for the sharing of innovative and time-saving ideas i.e. newsletters, group meetings, or other appropriate forum.

ITEM #80-IF YOUR SUPERVISOR COULD MAKE ANY CHANGES TO IMPROVE HIS/HER ABILITY TO COMMUNICATE EFFECTIVELY WITH YOU, WHAT CHANGES OR IMPROVEMENTS WOULD YOU SUGGEST?

Organization 1: Management Employees

1. Increase his self-confidence and begin to trust and delegate. Stop managing with threats and impossible deadlines.
2. Be able to see things from the other person's point of view and develop a closer relationship with all staff members.
3. Should familiarize oneself with computer system to have understanding of work loads and realistic time frames.
4. Consistently monitoring new procedures he dictates. Seldom do new procedures remain in force.
5. To understand where they are coming from on their level and don't take a question and make another question out of it, answer it.
6. Superior is often rude, has habit of ignoring a person as soon as he is done talking. Take an extra moment to actually listen to a person, you may be surprised to find some intelligence lurking.
7. Receiving all information necessary to complete my projects.
8. That they actually remember having a discussion within a few days and then do it again and again.
9. Stop flip-flopping on decisions every time another principal approaches with a different viewpoint.
10. Meetings with staff.
11. To be available more often.
12. Make time and have follow through rather than momentary lip service!
13. His people skills are seriously lacking. He strikes me as a hard working engineer "promoted" into an area he doesn't handle particularly well, nor is he very comfortable with. I'm sure he'd rather be engineering rather than managing.
14. Don't be so sarcastic when explaining. Don't make me or others feel so small.
15. Have more time available.
16. Providing more information about company activities to subordinates. Lack of information until after the fact demoralizes employee morale.
17. Conduct yearly review with all staff. Give periodic feedback during year. Provide encouragement .
18. More accessible, very busy!

19. Attentiveness when others are speaking. Put himself in our shoes.
20. He seems to be entirely consumed with his own personal success. His interest in others is judged by what he can personally gain from the relationship and how he can best profit from the association.
21. To appear to somewhat of a more "regular type of person".
22. Overall job expectations, especially related to marketing. More project information upfront in the initial project stages.
23. Monthly marketing meetings.
24. He should ask more questions, not jump to conclusions.
25. Listen without giving answers before understanding occurs.
26. Listen, understand others, share more time.
27. Learn how to communicate and open his mind to suggestions and quit being so self-centered. When address with questions, he should listen fully and not just what he wants to hear.
28. Because of my supervisor's busy schedule, it is often difficult to communicate with him in a timely matter. (I'm not sure of what "improvements" would solve this - I don't expect him to become less busy.)
29. Provide alternative scenarios when possible changes in design occur and explain why or what is causing the change.
30. Don't answer phone or do work while someone is trying to talk to him.
31. Relax and don't be afraid someone will think of something before he does.
32. Stop working while I'm talking!
33. Better hearing aid. Give direction desired.
34. Share openly how I am perceived by top clients and management.
35. To listen to my level of communication and accept me for who and what I am, not what he thinks and expects of me.
36. Think we instead of I. Be more interested in what is best for the company rather than personal goals and aspirations.
37. Maintain an "open minded" when new ideas are presented and listen when presented before shooting it straight down. Communicate rather than just demands and directions.
38. Scheduled status meetings (weekly) and informal get-togethers.

39. Designated meeting schedule with definite agenda.
40. Communicate in a positive manner. Organize and then communicate what needs to be done.
41. Be attentive listener and give undivided attention.
42. Does not check to see what my level of satisfaction is, and as such, appears to not care.
43. Allow others to assume their responsibilities instead of trying to fulfill all the roles unless information is passed through to the responsible parties.
44. Regular departmental staff meetings to communicate company status and goals. Have lunch with me once every three of four weeks to visit away from the office.
45. Ensure fair and consistent HR policy implementation among all of the firm's staff i.e. don't grant some new employees three week vacations and car allowances when others are denied these perks but considered same level.
45. Be more assertive in communicating employee needs to upper level management.
46. Finish a sentence. Organize your thoughts before you give me directions. Give me complete instructions. LISTEN when I ask you a question and look me in the face!!
47. Give me the straight answer to my role in this company now and for the future.
48. Bring information to me before last minute. Be better organized.
49. More relaxed, less aggressive, more personable.
50. Sometimes talks too much. Needs to keep to main topic of conversation. Wanders off track.
51. Increase review sessions to two times a year and include an overall departmental critique/round table to receive input from department as a whole.

Organization 1: Non-Management Employees

1. Most verbal communications need written backup.
2. Communication of a job well done as well as the job with a problem. Consideration of past or current conflicting communications and resolution of same. Resolution should be to all levels. When possible, provide definite instructions.
3. Listening, more cooperation, get rid of the clique, praise your employees, flexibility.
4. My attention when I am talking.
5. Present problems/priorities I am usually not aware of.

6. More guidance and attention.
7. Control temper in a little more professional manner.
8. My superior has too many "masters" and is occasionally inaccessible due to travel demands. His supervisors should come to an agreement.
9. I can't answer this question. I have never communicated with my supervisor. The most he has ever said to me was "your raise will be on your next check".
10. Get more involved in daily operations and get involved with engineering group and other groups. Be more assertive.
11. Better memory of his/her conversations and recommendations.
12. Be consistent with the overall group rather than one or two persons.
13. Be more a part of the group/department. Know and understand what each person does and goes through. Tell us (department) what is going on and why, etc. with the rest of the company.
14. I feel like I'm either not being heard or grossly misunderstood. Treat us all equally. I fully realize that some people get along better than others, however, that does not mean that some people are treated differently than others.
15. Give me a better idea of what is going on outside of our department.
16. Immediate information flow.
17. Be more direct and to the point. Most conversations are very lengthy and time consuming.
18. Quit playing games.
19. Would not stop to make calls during conference.
20. He is very receptive to communication with his employees but does not convey his impressions of your performance.
21. Monthly meetings (no meetings are currently held at this time). Should be held, especially now, after move to new corporate headquarters to discuss and work out problems and share experiences.
22. Supervisor needs to make clear their decisions or intentions. Too many times questions are not clearly answered and I still have a questions as to what is to happen.
23. New ideas.
24. Make specific recommendations backed up by facts "no generalities". Do not rely on 2nd hand information. Define criteria for job performance.
25. Stop holding work on his desk until the last minute.

26. Better instructions on what needs to be done and when.
27. Be more open and sensitive to others' ideas .
28. Some employees are left in the dark about goings on.
29. Calm down, much too intense.
30. Don't always be so critical.
31. Let me know how well I'm achieving tasks.
32. More departmental meetings.
33. Open up and share thoughts.
34. Make time to discuss work.
35. Document information in memos and written reports when job requires extending time away from the office.

Organization 2: Management Employees

1. Openness
2. Walk a mile in my shoes.
3. Be more relaxed and open minded.
4. Listen and accept new ideas.
5. Understand when a situation has become a problem. React accordingly.
6. Just really listen to what I have to say. Don't judge my ideas based his/her own experiences. I may have a different angle or way of making new ideas work.
7. Head and organize a team of the best within the company - of all disciplines - set job descriptions - be specific, simplify, be fundamentally sound, isolate weaknesses, fill the necessary positions, cross-train members - branch out to strengthen other teams.
8. Needs to focus.
9. Set aside preconceived ideas and look for truth.
10. Listen to the answer to questions asked by supervisor. Hear the answers given. Learn not to become over excited when he does not receive the answer expected.
11. Way what is true, not what he thinks what you want to hear.
12. He should be in the office during normal working hours.
13. Mutual schedule instead of his.
14. Sometimes my supervisor tells me what I want to hear rather than how he really feels.
15. Listen to me and not always relate to own plans, problems, etc.
16. Keep me updated on projects in my responsibility list.

17. He should organize his time to schedule meetings with me to discuss my department instead he tells me it's my responsibility to come see him. When I do, I have to wait for him to get free, then we suffer interruptions.
18. Discuss (informing) what is going on with jobs or company. Be there to help (offer help) when it is needed.
19. Take time to listen to problems in my position that may seem boring or non-important to him.
20. Actually listen, not focus on what he just talked about on the phone and focus on the task at hand - have more focus in general.

Organization 2: Non-Management Employees

1. More formal meetings with his managers - at least on a weekly basis.
2. Follow through with what he says - at least remember saying it.
3. More paper tools: schedules, project requirements.
4. Give the whole story up front. Accept others abilities.
5. More concerned with own interests and feelings. Less of intent to "use" others for own gain would be helpful. Able to communicate freely instead of dictating orders would be helpful.
6. Express expected performance on a regular basis. Point out the pros and cons on a monthly basis.
7. More sensitivity to my feelings during work - does not try and degrade in anyway.
8. Less rigid.
9. Place personal ambition and feelings aside for betterment of company.
10. More open to new ideas.
11. More communications on a more timely basis.
12. Include me in situation changes asap. Need to be "in the loop" more quickly.
13. Communicate directly with me, not through others
14. Tell me how I am doing. Be less reserved. Talk to me as much as to the other employees.
15. Present to employee more information on requirements to complete specific jobs (i.e. make one cup or make two cups) - not just make some cups.
16. Having a little better feel for priorities.
17. Alleviating some of her work load so she has the time to supervise and communicate a little more and try to avert problems before they arise.

18. Listen first, think from all perspectives before suggesting solutions, try to be more patient, trust me, and similar team members more. Try not playing favorites, talk us up as much as he does upper management and self.
19. Couldn't say offhand. Top management could act as if they weren't gods. Anything said to them must be well thought over before it's said.
20. Learn to listen. Do not "talk over" someone who is already talking. Do not interrupt. Be more concise. Uses extremely too many words to explain what could be simple instructions. Let others ask questions.
21. Long-range planning.
22. Admission of their own shortcomings and be a normal person.
23. Be more open to other's ideas.
24. Get out among employees more often.

Organization 3: Management Employees

1. There are some different kinds of information I would like added
2. Sometimes projects are communicated to him when I will be responsible for the projects and he is not prompt in passing down the information.
3. Share honestly what his long-term goals for me are. I don't actually think he cares about my long-term future in the company since each manager has already lined up a "pet" as his "associate". Others don't ever hope to achieve the "associate" rank in the structure of the company.
4. Give feedback which indicates he understands/or request clarification. Give information about attention to my concerns. Take my suggestions seriously and give pertinent information.
5. More lead time on major changes. Better prioritization.
6. By really listening to the problems and not just saying o.k.
7. To not try to hide information that will eventually be made known in the execution of the job as a way of making himself feel superior.
8. Allow people to do their jobs without interference from others.
9. Don't keep things from me. Let me know what goes on behind the scenes so that I am informed.

Organization 3: Non-Management Employees

1. Listen to what is being said.
2. Just let me know why we are doing what we are doing what is required by deadline and who is responsible.
3. Formal evaluation/more time explaining technical subjects. Share more thoughts with me.
4. For him to act like he really, down deep, gives a crap about personal matters (achievements, headaches unassociated with work).
5. Discuss the future of our department as relates to the company goals. Discuss evaluations more thoroughly -how to do my job better, good and bad points, and items I need to work on.
6. That he notify me of upcoming tasks to be performed ahead of time, instead of showing up at the last minute to address the problem. That he respect my ability to solve problems without him being a part of every minor decision.
7. To be more open-minded and willing to try new techniques without feeling threatened. She takes new ideas for procedure like the person is saying her idea is no good.
8. More time to communicate.
9. Better know the jobs under the department. Be able to communicate with upper management and stick up for her department. Don't play favorites!
10. Most of the engineers think you understand the projects when you are assigned - you can't start in the middle of project and expect to know the job.
11. Set aside 5-10 minutes per day for questions/direction

APPENDIX E

(This is an example of a company memo that was distributed with the surveys to inform and motivate participation)

MEMO

To: All Employees

From: _____, President

Subject: Communication Satisfaction Research Project

_____ has been asked to participate in a university research project by Brian Polansky, Assistant Professor, Department of Speech Communication, University of Arkansas-Little Rock. Professor Polansky is completing his doctoral dissertation on the communication within professional engineering firms.

Attached is a survey I like for you to complete. Please take a few minutes to complete the survey. You have been provided an envelope to seal and return the completed survey in. Your confidentiality is assured and the sealed envelopes will be forwarded to Professor Polansky. His study includes several other engineering firms and he is attempting to complete the research as soon as possible. Therefore, we ask that you return the completed survey by the end of business on Monday, _____.

I feel that participation in this effort will provide many useful insights into our organization. Your cooperation and participation is appreciated and expected. If you have any questions, please call Personnel at ext. 1880.

APPENDIX F

Dear Employee:

Please complete the enclosed questionnaire and return in the envelope provided.

Most of us assume that the quality and amount of communication in our jobs contribute to both our job satisfaction and our productivity. This study is interested in your satisfaction with the communication practices of your organization and supervisor.

This questionnaire has been given to a wide variety of types of organizations over several years. The current study is focused on several professional engineering organizations. Your firm's responses will be analyzed with the goal of identifying the needs of your organization and the engineering profession at large.

We are pleased to offer you this opportunity to make a contribution to research and appreciate your taking time to complete the questionnaire.

PLEASE NOTE:

1. You should be able to complete the questionnaire in about 15 minutes.
2. Your answers are Completely Confidential. Only the researcher will have access to your survey. Your responses will be combined into groups for purposes of analysis and reporting.
3. DO NOT sign your name; we do not wish to know who you are.
4. Put the completed questionnaire in the stamped envelope provided, seal it, and mail it.

Your participation is voluntary and the completion of the survey indicates your informed consent to participate.

Any questions concerning the project may be directed to me by calling (501) 569-3158 or writing to:

Brian Polansky, Principal Investigator
Department of Speech Communication
University of Arkansas-Little Rock
2801 South University
Little Rock, AR 72204