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Communication and Working Relationships with University Facilities Management Teams as Perceived by University Interior Designers
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COMMUNICATION AND WORKING RELATIONSHIPS WITH UNIVERSITY FACILITIES MANAGEMENT TEAMS AS PERCEIVED BY UNIVERSITY INTERIOR DESIGNERS

By

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ABSTRACT

COMMUNICATION AND WORKING RELATIONSHIPS WITH UNIVERSITY FACILITIES MANAGEMENT TEAMS AS PERCEIVED BY UNIVERSITY INTERIOR DESIGNERS

By

Nancy E. Van Over

The purpose of this study was to investigate university interior designers perceptions of facilities management team communication patterns and how they affect the working relationship of the team. Variables included point of involvement, regularly scheduled meetings, communication flow, role clarity and information seeking. The way in which these variables are implemented determines if the designer perceives the working relationship of a project to be successful or problematic.

Data for this study were collected through a survey instrument administered to members of the Association of University Interior Designers (AUID) and their university facilities planners.

Findings of the study revealed that when the designers were brought in early and had regularly scheduled meetings, 76% of the designers perceived their communication with the facilities management team to be reciprocal producing ease of information seeking and a successful working relationship.

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CHAPTER I

INTRODUCTION

Many issues face the Interior Designer in the 1990's: housing for the homeless, licensing, adaptive reuse, building/safety codes, and intelligent buildings to name a few. The key correlation among these issues is the designer's ability to identify and communicate both the problems and the solutions.

Working with a facilities management team, the designer needs to keep the channels of communication open with all members. This is not always easy. Many factors, dealing with both individual personalities as well as organizational culture, play a part in making up the role set of a given Facilities Management team.

Statement of the Problem

In the area of contract design, whether it be corporate or institutional, the interior designer must have the communication skills to work with interprofessional groups of people making up a facilities management team. The interior designer must relate to each professional on both a group basis, and a one-to-one basis. This relationship is described as interpersonal communication (Deutsh, 1969).

The perceived effectiveness of this communication may affect the perceptions of the working relationships within the team.

Research Objectives

The overall intent of this study is to determine how working relationships are affected by the communication patterns of university facilities management teams from the interior designer's perspective. The research objectives for this study are (1) to identify the communication patterns of the facilities management team as perceived by the university interior designer. (2) to identify the designer's perceived successful or problematic communication patterns with university facilities management teams in terms of project management. (3) to identify the impact of role clarity on communication patterns perceived by the interior designer, (4) to identify the impact of role clarity on the information seeking process, and (5) to identify the impact of perceived communication patterns on the information seeking process.

Justification

Much has been published and taught about the communication process between the designer and the client, but little has been directed toward the designer and the facilities management team. This study focuses on the interior designer's perception of the effect of power struggles, role

expectations, and role clarity on the working relationship of a facilities management team and project outcome. By defining and analyzing some of the common communication patterns of successful and problematic working relationships, from the interior designers perspective this research will attempt to establish communication guidelines that a facilities management team can follow to produce a more successful working relationship, thus potentially producing a more successful end product. Studying how information seeking is affected by working relationships within a facilities management team, from the interior designers perception, will aid in identifying some of the variables that can and cannot be changed to reinforce a successful working relationship. The ability to acquire information to complete a given project may affect the interior designer's perception of the success or problems of a working relationship.

Assumptions

The following assumptions were made about facilities management teams before developing the objectives of this study: (1) all members of a Facilities Management Team have experienced problematic relationships; (2) interior designers and architects are aware of the conflicts between their professions; (3) not everyone is willing to compromise.

Conceptual Framework

The conceptual framework for this study is derived from five variables that are believed to have an impact on the university interior designers perceptions of the working relationship of a university facilities management team. The five variables are: (1) the point of the interior designer's involvement; (2) the utilization of regularly scheduled meetings through out the project; (3) two-way or one-way communication patterns; (4) the extent of role clarity; (5) the ability to seek proper information to complete a given project. The utilization of these variables from the interior designer's point of view will contribute to the perception of the facilities management team's working relationship. Is it successful or problematic? Figure 1-1 illustrates this relationship.

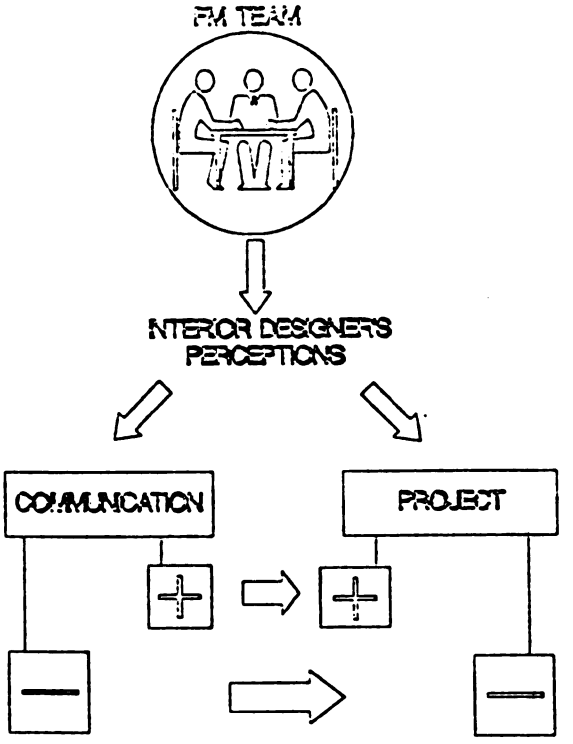


Figure 1-1 CONCEPTUAL FRAMEWORK FOR A FACILITIES MANAGEMENT WORKING RELATIONSHIP

CHAPTER II

REVIEW OF LITERATURE

Interpersonal Communication

Interpersonal communication has been defined by the ABC Teaching Methodology and Concepts Committee-Subcommittee 1 (1987) as "the transactional process through which people share their ideas and feelings by simultaneously sending and receiving messages. Interpersonal communication focuses on how people think and interact". Five steps were suggested to enhance the accuracy and effectiveness of interpersonal communication: 1)appropriate self-disclosure, 2) clear expression, 3) active listening, 4) adequate feedback, and 5) assertive behavior. Several models and techniques have been suggested to define and help the interpersonal communication process.

Persing (1981) discusses interpersonal communication in small groups as elements of size, location, time, topic, purpose, formality, designation, cohesion, methods and roles. Each element plays an important role in the success of the group. Under the element of methods four basic categories are set up: 1) problem solving, 2) educating, 3) brainstorming, and 4) role-playing. It is also suggested that group members take on one of three roles, the first of these is participant, which can be exhibited by either

task-oriented behavior, process-oriented behavior or destructive role behavior. The second role is that of leader, and the third is recorder.

There are many models and techniques available to instruct people on good communication processes. According to Wyatt and Atwater (1988) there are three reasons why people do not actively try to become better communicators: 1) changing how one communicates means changing habits, and most people are too busy, 2) advice is often couched in technical jargon that is not easily understand, and 3) advice is in the form of rules or directions that are hard to remember and put into practice. Wyatt and Atwater believe in using the Heuristic "Context" instead of rules by "teaching people to analyze the context when they speak or listen and to identify which elements of context define the situation." Context of a situation is defined as: 1) the time and place where people are talking and listening or reading, 2) what else is going on while people are talking and listening or reading, and 3) what people expect to have happen in the situation.

Conflict and Role Ambiguity

Deutch (1969) describes conflict as resulting wherever incompatible activities occur. These actions may "prevent, obstruct, interfere with, injure or in some way make it (communication) less likely or less effective". (Deutch, 1969, p.7-8) Conflict may reflect a rivalry or be due to a

scarcity of a resource. This resource is the area of expertise that overlaps with each professional's own job description. According to Hocker and Wilmont (1985), interpersonal communication is described in two issues that seem to be at the center of all interpersonal conflicts: self-esteem and power. The struggle between these two issues will be inherent at some level in all conflict relationships. According to Tedeschi (1973), a person who has low self-esteem/confidence generally has a history of failure and of receiving punishments. Role conflict is defined by Kahn et al (1964) as the degree of incongruity or incompatibility of expectations associated with the role, and the power associated with that role. This may be one of the underlying problems in communication between the American Institute of Architects (AIA) and the American Society of Interior Designers (ASID). Interior designers and architects make up only a small segment of a facilities management team. When there are problems between two or more members on a team, the conflict may cause perceived problems in the working relationship for the entire team. Schmertz (1987), discusses the power struggle between AIA and ASID. Both the architects and interior designers are battling for control of a $40-billion-a-year segment of the construction market. Neither are willing to collaborate or compromise with each other. This is only one area of conflict between these two professionals. Druckman and Zechmeister (1973) suggest that the intensity of conflict

will vary dependent upon the resistance to compromise and the need for power.

Other areas that can cause conflict may stem from role ambiguity. Role ambiguity refers to knowing or being clear on the appropriate behavior for a particular position (Rizzo, House, & Lirtzman, 1970). Understanding one's expected behavior and the consequences of that behavior will determine the level of role ambiguity one has (Hartman, Johnson, 1989). According to Kahn, Wolf, Quinn, Snock, & Rosenthal (1964), high levels of role ambiguity may promote anxiety, distortion of reality, and produce less efficient performance of individuals. Working relationships within a facilities management team are dependent upon each member performing his/her own tasks to make up the whole project. If one member is not contributing to the final project due to role ambiguity, conflict will likely become apparent and contribute to the perception of a problematic working relationship.

Role

Katz and Kahn (1978) discuss the many facets of role. Role becomes the expected behavior or activities of a person. Role then becomes the link between individuals and their organizational level. Role behavior refers to the repeated actions of an individual. The expected activities associated with an individual becomes his/her role expectation. When two or more role expectations exist simultaneously, role conflict develops. This may be due to

the fact that the person has two or more roles. Those with whom a member must interact become a role set. "Role episode consists of a sequence of events involving members of a role-set and the focal person". The sequence of role episode begins with sending role expectations from the members of the role-set to the focal person to influence their behavior. The focal person then acts either in compliance or noncompliance with the role-set. Members then observe the focal person's behavior and decide if the behavior has met their expectations. The process begins again. This process of role expectation becomes an important issue for facilities management teams. If a member is not living up to the expectations of the other members, a perceived problematic working relationship may develop.

In essence, power and role conflict play a major role in how the communication process between interior designers and architects, purchasers, project managers, contractors and installers will progress, either productively or destructively.

Communication Patterns

Communication is described as links between members. (Farace, 1977). Farace labels these communication-link properties as symmetry, strength, and reciprocity. A symmetric link is a two-way exchange. People exchange information on an equal basis. Asymmetry is one-way. There is unequal sharing of information. Asymmetrical links are

most common in situations where superiors are relating messages to their subordinates. Farace's second link property is strength. This is determined by looking at the levels of interaction with one another such as frequency and time periods. When two individuals agree that they both have or do not have good communication, that can be called agreement reciprocity.

Rockey (1977), feels that attitudes and relationships have much more influence on communication than do techniques and formats. When interactions are characterized by trust, respect and confidence, people talk and listen more maturely, more openly, and more constructively. When people feel put down, excluded or threatened, communication patterns may become defensive, sullen or retaliatory.

Status has been found to have an impact on communication (Allen, 1977). Those of higher status will communicate with one another while those of lower status will not communicate as frequently with those in their own status level. They will, however, try to communicate with those of higher status. They generally are not able to complete reciprocation.

Information Seeking

Information seeking is dependent on one's communication patterns as well as on one's proximity to those from whom they wish to acquire information. The following focuses

first on information seeking and its relationship to interpersonal communication patterns.

Johnson (1988) defines information seeking as the purposive acquisition of information from selective information carriers. Five techniques are identified by Townsend (1986) to acquire possible information needed to make the communication process effective: 1) non-verbal listening, 2) interventional listening, 3) interactive questioning, 4) interrogation, and 5)inquisition.

The accessibility of acquiring information refers to the cost associated with using a particular source. How easy or difficult is it to ask another person for help or information? What might be the potential risks involved (Allen, 1977)? One of the costs associated with information seeking and communication patterns is whether or not the seeker is always in the role of a seeker. If so, his information exchange is asymmetrical, one-way. Eventually people will no longer give him information unless he can return the exchange in the future. Another cost for the information seeker if he/she only seeks information is reputation. Questions will arise as to the person's competency.

Allen (1977), developed three "cost reducing" strategies. The first is the least favorable. He entitles it "Oil on Troubled Waters." Here the information seeker will downgrade his/her intelligence openly so colleagues will not have the "opportunity to make a derogatory comment

and simultaneously evoke empathy from the person being questioned." (Allen, 1977, p.195) The second strategy is called "Literary Preparation." Here the inquirer will try to seek background information on a particular subject from a source such as books that will not directly challenge his ignorance. This is helpful when the inquirer cannot formulate a question properly or does not feel comfortable asking questions within a certain group of people. The last strategy is called "Neutral Social Interaction." This particular strategy helps to protect the ego. It is the most commonly used technique for interpersonal communication. One only communicates with those with whom he/she interacts socially. At that point discussions are neutral and not centered around the technical knowledge or lack of it. These social interactions can prove to be a non-threatening source of information when a relationship is developed.

Lenz (1984) describes purposive information seeking as an interpersonal process. An individual can acquire information from casual acquaintances and friends of friends, thus potentially sharing ignorance and not acquiring the correct information.

Information seeking has also been related to the individual's perception of what he/she can control in the future (DeVito, Bogdanowicz, & Reznikoff, 1982; Rosenstock, 1974b cited by Johnson, 1988). Here again the issues of power, control and possible conflict may come to light.

People will give or seek information if it is to their benefit.

Another detriment for seeking information may be proximity relationships. These are the actual physical spatial distances. Once again the issue of "purposive" acquisition comes into play. Hagastrand (1953) was able to show that the physical distance between individuals was correlated to the frequency of interaction. The farther the physical distance, the fewer contacts were made to acquire needed information. The closer two people are spatially, the greater the chance for their information fields to overlap. This can cause either strong or weak interpersonal ties (Granovetter, 1973). Space will determine with whom one forms relationships and "influence the meanings given to interactions within it", such as spatial violations and privacy (Johnson, in press).

Organizational Culture and Network Analysis

Organizational culture may set the tone for interpersonal communication. According to House and Rizzo (1972) role conflict is most strongly related to the supportive leadership and organizational practices of perceived organizational effectiveness. Independent variables that interact with communication in organizational conflict have been labeled "Actor Attributes" by Putman and Poole (1987). Examples of these are: predispositions, needs, personality traits, beliefs, attitudes, skills and cognitive styles. Rockey (1977) suggests that personal

styles will have the greatest influence upon the quality of organizational communication more so than communication policies.

Allen (1977) believes that shortening communication paths, which is what overlapping of roles and information sources will achieve, is the goal for creating organizational structures. Daft and Lengel (1986) add that organizations also wish to reduce equivocality. "Equivocality means ambiguity, the existence of multiple and conflicting interpretations about an organizational situation" (Weick 1979; Daft and Macintosh 1981, cited by Daft and Lengel, 1986, p.550). Daft and Lengel (1986) developed seven structural characteristics decision makers (ie: facilities managers) should use to reduce equivocality:

(1) Group Meetings. Participants exchange opinions, perceptions and judgments face-to-face. Group reaches a collective judgment.

(2) Integrators. Full time integrators are project managers. Part-time integrators are liaison personnel. Their duty is to be a boundary spanner dealing with problems and goals of other disciplines for the good of the whole group.

(3) Direct Contact. This promotes discussion and exchange of view points between two people.

(4) Planning. All courses of action are discussed. Schedules are defined and feedback mechanisms are established. This is an ongoing process.

(5) Special Reports. These are one-time studies and surveys. Data is obtained and interpreted and reported to the managers.

(6) Formal Information Systems. This includes performance evaluations, budgets and any additional information for the project manager to receive, thus developing a feel for how the project is progressing.

(7) Rules and Regulations. These apply to recurring problems from the past.

Network analysis becomes a major approach to the communication structure of an organization. It consists of both formal and informal communication relationships (Johnson, 1990). Thompson (1967) examines the interrelationships between communication structures by classifying different types of interdependencies in an organization. Pooled interdependence involves discrete contribution and support of the whole organization. Sequential interdependence is exactly what it sounds like: members of the organization must work in sequence. One cannot act before the other. The last interdependence is labeled reciprocal interdependence. This happens when the outputs of each element become the inputs for others. Johnson (1990) suggests that most organizations operate using sequential interdependence. This produces a more organized structure. Yet when dealing with role sets, all

interdependencies may need to be utilized at the same time or separately in order to implement the communication needed to complete a given task or project.

How people perceive the interpersonal communication, conflict and role ambiguity, communication patterns, ability to seek needed information, and the overall organizational culture may contribute to the perception of a successful or problematic task or project. In this study, the focus was placed on the perception of the interior designer. Survey questions were developed to address the above mentioned variables and are discussed in Chapter III.

CHAPTER III

METHODOLOGY AND PROCEDURES

Research Design

The purpose of this study was to investigate university interior designer's perceptions of facilities management team communication patterns and the affect on the working relationship within the team. A survey was developed to acquire the necessary data.

Assumptions

Three assumptions were made about facilities management teams prior to developing the objectives of this study: (1) all members of a facilities management team have experienced problematic relationships; (2) interior designers and architects are aware of the conflicts between their professions; (3) not everyone is willing to compromise.

Research Objectives

The research objectives for this study are: (1) to identify the communication patterns of the facilities management team as perceived by the university interior designer; (2) to identify the designer's perceived

successful or problematic communication patterns with university facilities management teams in terms of project management; (3) to identify the impact of role clarity on perceived communication patterns; (4) to identify the impact of role clarity on information seeking; and (5) to identify the impact of perceived communication patterns on information seeking.

Methodology

Questionnaire

The questionnaire (Appendix A) contained 57 questions and a cover letter on Michigan State University letterhead, introducing the researcher's university and organizational affiliation. Anonymity was assured for both respondent and school. Two questionnaires were developed. One was directed toward University Interior Designers and focused on their own perceptions of the facilities management team's communication. The other questionnaire was sent to directors of university facilities management. Questions paralleled each other but were answered from the director's perception of the interior designer's communication and participation.

The body of the questionnaire consisted of twelve major sections outlined below. Interior designers and directors of facilities management were both asked to describe a project they deemed successful to be used in answering sections one and two. Section one, items 1-4, consisted of

questions relating to the point of the interior designer's involvement in the context of the described successful project. Section two, items 5-9, dealt with perceptions of the interior designer/facility manager in relation to role clarity and communication for the described successful project. These statements were rated on a five point Likert scale. Interior designers and directors of facilities management were both asked to describe a project they deemed problematic to be used in answering sections three and four. Section three, items 10-13, consisted of questions relating to the interior designer's point of involvement in the context of the described problematic project. Section four, items 14-18, dealt with perceptions of the interior designer/facility manager in relation to role clarity and communication for the described problematic project. These statements were rated on a five point Likert scale. Section five, items 19-23, addressed the interior designer's frequency of working with each member of the facilities management team and vice versa. Section six, items 24-28, compared the point of interaction between the interior designer and the facilities management team. Section seven, items 29-36, consisted of the interior designer's/facility manager's perception of each facilities management team member's responsibilities of a given project. Section eight, items 37-41, documented the interior designer's/facility manager's perceived direction of communication flow with each facilities management team

member. Section nine, items 42-46, addressed the topic of job size and budget in relation to those with whom the designer worked. Section ten, item 47, documented the point at which the designer's involvement was sought in most projects. Section eleven, items 48-52, consisted of checking off the answer that best completed the statement regarding another person's perceived communication problems. Section twelve, items 53-57, collected demographic information.

Sample Selection

A total of 127 surveys were mailed out to two different groups of people: university interior designers and university directors of facilities management and planning. The interior designers who participated in this study were members of the Association of University Interior Designers (AUID). They represented thirty-six Universities across the United States. All ninety-one members were mailed a survey. The remainder of those surveyed were the directors of facilities management and planning at the thirty-six schools represented by the AUID members.

Data Collection

On March 7, 1991 127 surveys were mailed. Accompanying the survey was the introductory letter previously described which was directed to the AUID member and the facility planner (Appendix). The purpose of this letter was to

introduce the study, explain its importance, and to assure confidentiality. Instructions were included for filling out the sections on successful and problematic projects. Surveys were self-addressed for return, and postage was pre-paid.

Approximately six weeks after the surveys were sent, follow-up telephone calls were made to those who had not responded. Of the 127 surveys sent, a total of 47 were returned, for a total return rate of 37%. Thirty-five of these were from the 91 AUID members yielding a return rate of 38.5%. The remaining 12 were from the facility planners yielding a return rate of 33%. For this group the small sample size of facility planners threatens validity of results and conclusions drawn. The study will analyze only the responses from the AUID members.

Operational Definitions

Information Seeking: The purposive acquisition of information from selective information carriers (Johnson, 1988).

Communication Flow:

Asymmetrical Communication: "Inequality in communication exchange. One person primarily seeks information and the other primarily provides it." (Farace, 1977, p.181)

Sequential Communication: "Two persons interact on an equal basis. People meet to share information, giving and taking equally on both sides." (Farace, 1977, p.181)

Pooled Interdependence: Each part of a system renders a discrete contribution and is supported by the whole. (Thompson, 1967)

Sequential Interdependence: When one unit of the organization must act before another can. (Thompson, 1967)

Reciprocal Interdependence: The outputs of each element of the system become inputs for others. (Thompson, 1967)

Role: The total requirements put before the employee who occupies a particular position. (Katz & Kahn, 1978)

Role Set: Those with whom a member must work (Katz & Kahn, 1987)

Role Behavior: Expectations and preferences of the focal person by themselves and their role set. (Katz & Kahn, 1978)

Role Ambiguity: The presence or clarity of behavioral requirements that help to indicate what behavior is appropriate in a particular position. (Rizzo, House, & Lirtzman, 1970)

Conceptual Definitions

Design Process: The steps taken to complete a design project from beginning to end.

Role Clarity: One's singular understanding of the job definition and responsibilities for a given project.

Successful Work Relationship: The balance of power. Clarity of roles and expectations. The ability to acquire information for the completion of a given project.

Problematic Work Relationship: An imbalance of power creating frustrations between facilities management team members. The inability to acquire necessary information to complete a given project.

Cohesiveness: The unity and understanding between all members of a Facilities Management team that allows them to work as a whole to complete a project in the most efficient manner possible.

Successful End Project: The functional needs of the client have been met in addition to budget, delivery, installation and occupancy requirements and deadlines.

Problematic End Project: One or more problems occurred such as delayed delivery and occupancy deadline, project over budget, poor installation, or the basic functional needs of the client were not met.

Perceived Communication Patterns: To observe from one's own point of view the communication flow of one's self or another.

Hypotheses and Statistical Analyses

In order to meet the research objectives of this study, five groups of hypotheses were proposed. Group 1 hypotheses are related to the first research objective, Group 2 hypotheses are related to the second research objective, hypothesis 3 is related to the third research objective, Group 4 hypotheses are related to the fourth research objective and Group 5 hypotheses are related to the fifth research objective. All hypotheses are stated in the null form.

Group 1

No significant differences exist between perceived communication patterns of facilities management team projects, from the interior designers perspective.

1.1 No significant difference exists between the interior designers perceived flow of communication with each individual facilities management team member; all are viewed with equal relationships.

1.2 No significant difference exists between perceived successful and problematic projects in terms of the point when communication patterns began to work in a given project.

The statistical test for H1.1 was analyzed by using a Cochran Q Test. Communication flow was described as either

reciprocal or one-way using the facilities management team members as the five variables for this dichotomous test. Hypothesis H1.2 was analyzed using one-way chi-squares for both successful and problematic projects in relation to the point in which communications patterns began to work.

Group 2

No significant difference exists between perceived successful and problematic project management goals and issues.

2.1 No significant difference exists between perceived successful and problematic projects in terms of the designer's point of involvement.

2.2 No significant difference exists between perceived successful and problematic projects when progress meetings are scheduled.

2.3 No significant difference exists between perceived successful and problematic projects when progress meetings are scheduled weekly, bi-weekly or monthly.

2.4 No significant difference exists between perceived successful and problematic projects in terms of meeting the clients needs.

The statistical test for H2.1 was analyzed by using Wilcoxin matched-pairs signed rank test on successful and problematic projects. Hypothesis H2.2 was analyzed by using a one-tailed binomial test . Hypothesis H2.3 was analyzed by conducting a Wilcoxin matched-pairs signed rank test for subjects who held regularly scheduled meetings for both successful and problematic projects. Hypothesis H2.4 was analyzed using a one-way repeated measures ANOVA with project type (successful vs problematic) as a within-

subjects factor and rating of meeting client needs as a dependent variable.

Group 3

H3 No significant difference exists between role clarity within a facilities management team and perceived communication patterns.

The statistical test for H3 was conducted by using a MANOVA with one within-subjects factor. (Project: successful, unsuccessful) and four dependent variables from four questions used on the research survey.

Group 4

No significant difference exists between the interior designer's perceived level of role clarity and their information seeking process.

4.1 No significant differences exists between the interior designer's perceived level of role clarity and meeting the clients' needs for a successful project.

4.2 No significant differences exists between the interior designer's perceived level of role clarity and meeting the clients' needs for a problematic project.

The statistical tests for H4.1 and H4.2 were conducted by using Spearman Correlation Coefficients.

Group 5

No significant difference exists between the interior designer's perception of communication flow with the facilities management team members and information seeking.

5.1 No significant difference exists between the interior designer's perception of communication flow with the facilities management team members and meeting the needs of the client for a successful project.

5.2 No significant difference exists between the interior designer's perception of communication flow with the facilities management team members and meeting the needs of the client for a problematic project.

The statistical tests for H5.1 and H5.2 were conducted by using Spearman Correlation Coefficients.

CHAPTER IV

RESULTS AND ANALYSIS OF FINDINGS

Introduction

This chapter will present the results of the statistical analysis of the hypotheses. The hypotheses are divided into five groups which are related to the research objectives of this study: (1) to identify the communication patterns of the facilities management team as perceived by the university interior designer. (2) to identify the designer's perceived successful or problematic communication patterns with university facilities management teams in terms of project management. (3) to identify the impact of role clarity on perceived communication patterns, (4) to identify the impact of role clarity on information seeking, and (5) to identify the impact of perceived communication patterns on information seeking. The responses analyzed are only those of the AUID members.

Results of Statistical Analyses

Objective One

Identify the communication patterns of the facilities management team as perceived by the university interior designer.

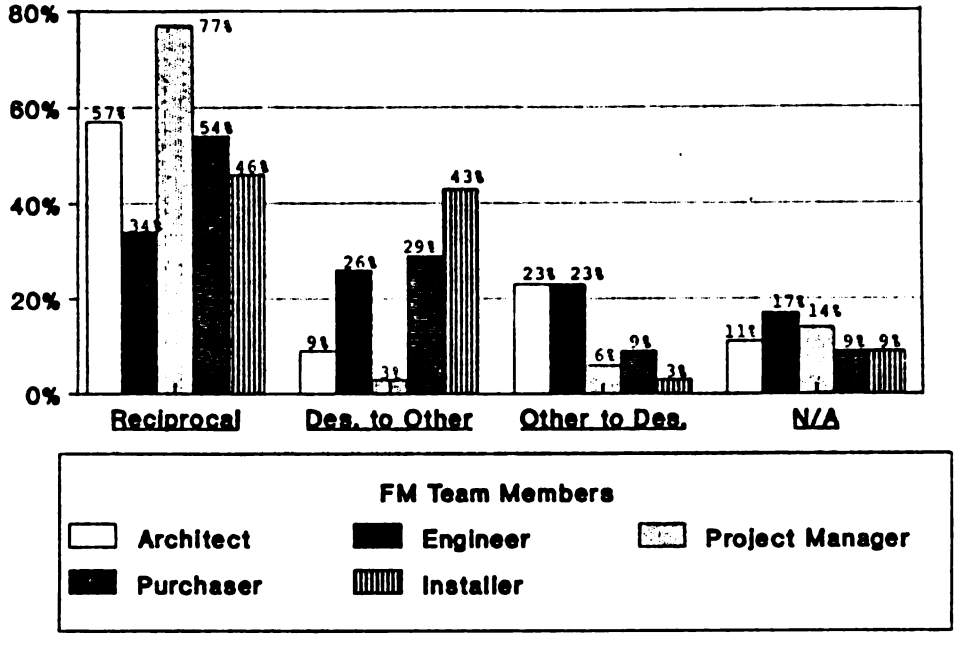
Group 1 Hypotheses

No significant differences exist between perceived communication patterns of facilities management teams projects from the interior designer's perspective.

1.1 No significant difference exists between the interior designer's perceived flow of communication with each individual facilities management team member; all are viewed with equal relationships.

The relationship between the research classification of reciprocal communication flow and one-way communication flow was measured using question number 15 from the survey regarding the interior designer's perception of communication flow with the facilities management team members. Interior designers were asked to describe their perceived flow of communication with the following facilities management team members: architect, engineer, project manager, purchaser, and installer. They were given three choices for communication flow; reciprocal, designer directed one-way, and other (team member) directed one-way. The five variables used for the test were the five 'other' facilities management team members. Of the 35 responses, 25 were used due to the fact that 10 respondents did not interact with all five team members on a regular basis.

Figure 4.1 when viewed in bar chart form produces a more visual account of the interior designer's perception of the communication flow with each team member.



(n=25)

Figure 4.1 Communication Patterns from the Interior Designer's Perspective

The investigator collapsed the two one-way categories into one and analyzed the data by using a Cochran Q Test. Cochran Q was significant at $p<.0046$. Therefore, it was determined that the interior designer's perception of communication flow between facilities management team members is significant (Table 4.1). Hypothesis 1.1 was rejected.

Table 4.1 Cochran Q Test for Communication Flow of the Facilities Management Team from the Interior Designers Perspective.

# of Cases	Cochran Q	DF	P
25	15.06	4	.005
*10	–	–	–
35 Total			

* Respondents did not interact with all five team members on regular basis.

1.2 No significant difference exists between perceived successful and problematic projects in terms of the point when communication patterns began to work in a given project.

The relationship between perceived successful and problematic projects and the point when communication patterns began to work or break down was measured through the data collected from question 2 on both the perceived successful and problematic sections of the survey. Respondents were asked to describe when communication patterns began to work for the perceived successful project; beginning, middle, or end. The same was done for the perceived problematic project question 2 which related to the point of communication breakdown. The data was analyzed using one-way chi-squares. Chi-square was significant ($p<.001$) for perceived successful projects (Table 4.2). Chi-square was significant ($p<.001$) for perceived problematic projects (Table 4.3). As a result, hypothesis 1.2 was rejected.

Review of Tables 4.2 and 4.3 indicate that the perception of a project's success correlates with communication patterns working at the beginning or breaking down at the beginning of the project.

Table 4.2 Chi-Square Test for Point of Working Communication Patterns for Perceived Successful Project

Point of Working	Observed Freq. (%)	Expected	Residual
Beginning	22 (62.9)	11.67 (33.3	10.33
Middle	13 (37.1)	11.67 (33.3)	1.33
End	0 (0.0)	11.67 (33.3)	-11.67
Total	35 (100)		

Chi-Square	DF	P
20.97	2	.001

Table 4.3 Chi-Square Test for Point of Working Communication Patterns for Perceived Problematic Project

Point of Working	Observed Freq. (%)	Expected	Residual
Beginning	17 (54.8)	10.33 (33.3)	6.67
Middle	13 (41.9)	10.33 (33.3)	2.67
End	1 (3.3)	10.33 (33.3)	-9.33
Total	*31 (100)		

Chi-Square	DF	P
13.42	2	.001

* 4 missing, did not answer on questionnaire.

Objective Two

Identify the designer's perceived successful or problematic communication patterns with university facilities management teams in terms of management.

Group 2 Hypotheses

No significant difference exists between perceived successful and problematic project management.

2.1 No significant difference exists between perceived successful and problematic projects in terms of the designers point of involvement.

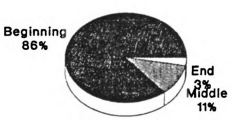
A Wilcoxin matched-pairs signed rank test was used to analyze the point of involvement, in relation to perceived successful and problematic projects. Subjects were asked to describe the point at which they became involved in both their described perceived successful project and their perceived problematic project (Appendix A). Although three responses were possible, i.e.; beginning, middle and end, middle and end were collapsed together to analyze the point of involvement as beginning or later. An average of 73% of the subjects (N=35) entered successful and problematic projects at the same time showing that designers are being asked to enter projects at the beginning stages. However they were significantly more likely to enter problematic projects later in terms of point of involvement ($p<.04$). Perceived successful projects were entered later by 14%, while perceived problematic projects were entered later by 40%. The Wilcoxin matched-pairs signed rank test results are presented in Table 4.4. H2.1 was rejected. Figure 4-2 illustrates the percentages of responses for both perceived

successful and problematic projects in terms of the interior designer's point of involvement.

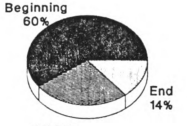
Table 4.4 Wilcoxin test for Interior Designer's Point of Involvement

Successful with Problematic	
Mean Rank	Cases
5.63	8 - Ranks (Problematic LT Successful)
5.00	2 + Ranks (Problematic GT Successful)
	21 Ties (Problematic EQ Successful)
	4 Missing Responses
	35 Total
Z = -1.78	1-Tailed = p<.04

LT= less than GT= greater than EQ= equal to



Perceived Successful Project



Perceived Problematic Project

NOTE: 86% = 30 responses 60% = 21
26% = 9 14% = 5
11% = 4 3% = 1

(n=35)

Figure 4.2 Interior Designer's Point of Involvement

2.2 No significant difference exists between perceived successful and problematic projects when there are not regularly scheduled meetings for a given project.

Subjects were asked to respond for both their described perceived successful and problematic projects regardless of whether or not there were regularly scheduled progress meetings for their given project. Their response was given in a yes or no answer (questions 3 for both successful and problematic projects).

Using a one-tailed McNemar binomial test, ($p<.04$) the results show that although the majority of subjects reported some meeting schedule for perceived successful and problematic projects, there was a tendency for problematic projects to have no scheduled progress meetings. The results for the binomial test are reported in Table 4.5. H2.2 was rejected.

Table 4.5 McNemar Binomial Test for Regularly Scheduled Progress Meetings

Regularly scheduled meetings		Successful	Problematic
	No did not have	2	10
	Yes did have	10	9

Cases = *31 One-Tailed p<.04

* 4 responses missing on questionnaire

2.3 No significant difference exists between perceived successful and problematic projects as to when progress meetings are scheduled.

The Wilcoxin matched-pairs signed rank test was used to analyze the responses given for question #4 (successful and problematic perceptions) regarding how often there were regularly scheduled meetings for those who had indicated earlier that there were. The subject's choices were weekly, bi-weekly and monthly. The perceived successful and problematic project responses were analyzed. No significant difference was found at p<.24, suggesting that as long as there are meetings, frequency does not seem critical (Table 4.6). H2.3 was not rejected.

Table 4.6 Wilcoxin Test for Successful and Problematic Projects and Progress Meetings

Mean Rank	Cases	
3.60	5	- Ranks (Problematic LT Successful)
5.00	2	+ Ranks (Problematic GT Successful)
	8	Ties (Problematic EQ Successful)
	16	*Total

Z = -.68 One-Tailed = p<.24

* 19 respondents did not have regularly scheduled meetings.
LT= less than GT= greater than EQ= equal to

2.4 No significant difference exists between perceived successful and problematic projects in terms of meeting the client's needs.

Both question 9 (successful project) and question 9 (problematic project) asked the subject: How would you rate the finished job in terms of meeting the client's needs, budget, deadline and design quality? These were ranked on a 5 point Likert scale, from very successful to very unsuccessful (Appendix A), to determine whether the perceived working relationships within the facilities management team affected meeting the client's needs.

The analysis used was a one-way repeated measures ANOVA with the project type (successful and problematic) as a within-subjects factor and the rating of meeting the client's needs as a dependent variable. The perceived successful projects reported significantly higher ratings on meeting the client needs at p<.001 than perceived

problematic projects. The results of the ANOVA are in Table 4.7. H2.4 was rejected.

Table 4.7 One-way Repeated Measures Anova for Meeting Clients Needs

Source of Variation	DF	Sum of Squares	Mean Square	F Value	P
Effect: Success					
Meeting needs	1,30	31.23	31.23	52.70	.001
Within: Problems					
Meeting needs		17.77	0.60		

Objective Three

Identify the impact of role clarity on perceived communication patterns.

Group 3 Hypothesis

H3 No significant difference exists between role clarity within a facilities management team and perceived communication patterns.

The statistical test for H3 was conducted by using a MANOVA with one within-subjects factor (Project: successful, unsuccessful) and four dependent variables from questions 5-8 on both the described successful and problematic projects. Questions 5-8 were rated on a 5 point Likert scale. They dealt with the issues of communication and role clarity. Thus, as a group, these questions provided a check for unlike responses distinguished between successful and problematic projects as required by the instructions. More importantly though, the analysis of the individual items

provided information about what aspects of the team interactions contribute to the perceptions of success.

Using the Multivariate analysis of variance, overall significance at $F=25.70$, $p<.001$ was achieved for the difference between perceived successful and problematic projects. When examined by univariate analysis, significant difference was revealed for questions 5, 6 and 8. Only question 7 showed no difference; that is, when asked the degree to which communication contributed to the project's perceived success or problems, respondents judged communication to neither contributed or detracted from project outcome. Results of the MANOVA are in Table 4.8.

Table 4.8 Summary of Multivariate Analysis of Variance for Role Clarity and Communication Patterns in Perceived Successful and Problematic Projects

Source of Variation	DF	Sum of Squares	Mean Square	F Value	P
Effect: Project					
ID Role	1,30	7.8	7.8	6.85	.014
FM Role	1,30	19.76	19.76	14.55	.001
FM Com.	1,30	.26	.26	.19	.666
Overall	1,30	70.26	70.26	85.19	.001
Within					
ID Role		34.19	1.14		
FM Role		40.74	1.36		
FM Com		40.74	1.36		
Overall		24.74	.82		
Total:	4,27	7.8	7.8	25.08	.001

* ID Role (question 5)= Interior designer's perceptions of their own role clarity.
  FM Role (question 6)= Interior designer's perceptions of the facilities management teams role clarity.
  FM Com. (question 7)= Interior designer's perceptions of team communication patterns in relation to success or problems.
  Overall (question 8)= Interior designer's perceptions of overall communication and working relationship.

Objective Four

Identify the impact of role clarity on information seeking.

Group 4 Hypotheses

No significant differences exist between the interior designer's perceived level of role clarity and the information seeking process.

4.1 No significant differences exist between the interior designers perceived level of role clarity and meeting the clients' needs for a successful project.

In analyzing H4.1, the researcher correlated question 5 and question 9 from the described perceived successful projects. Question 5 pertained to the interior designer's perception of his/her own role clarity for that given project. Question 9 pertained to the interior designer's perception of meeting the client needs. Question 9 was chosen to be viewed as the variable of information seeking. If the project was viewed as successful, the researcher assumed that the subject was able to acquire the necessary information needed to complete the project.

Spearman's Correlation Coefficients test was run. Significance ($p<.099$) was not found. Results are shown in Table 4.9. H4.1 was not rejected.

4.2 No significant differences exist between the interior designer's perceived level of role clarity and meeting the clients' needs for a problematic project.

In analyzing H4.2, the researcher correlated question 5 and question 9 from the described perceived

problematic projects. Question 5 pertained to the interior designers perception of their own role clarity for that given project. Question 9 pertained to the interior designers perception of meeting the client needs. Question 9 was chosen to be viewed as the variable of information seeking. If the project was viewed as problematic, the researcher assumed that the subject was unable to acquire the necessary information needed to complete the project.

Spearman's Correlation Coefficients test was run. Significance ($p<.332$) was not found. Results are shown in Table 4.9. H4.2 was not rejected.

Table 4.9 Correlation Between Interior Designer's and Facilities Management Team's Role Clarity and Finished Job Rating

Correlation	Finished Job Rating	P
Interior Designer's Role Clarity		
Successful Project (N=35)	.2229	.099
*Problematic Project (N=31)	-.0814	.332
Facilities Management Role Clarity		
Successful Project (N=35)	-.0098	.478
*Problematic Project (N=31)	.1115	.275

* 4 missing responses on questionnaire

Interior Designers Role Clarity (question #5)

Facilities Management Role Clarity (question #6)

Objective Five

Identify the impact of perceived communication patterns on information seeking.

Group 5 Hypotheses

No significant difference exists between the interior designers perception of communication flow with the facilities management team members and information seeking.

5.1 No significant difference exists between the interior designers perception of communication flow with the facilities management team members and meeting the needs of the client for a successful project.

In analyzing H5.1, the investigator correlated question 6 and question 9 from the described perceived successful projects. Question 6 pertained to the interior designers perception of the facilities management teams role clarity for that given project. Question 9 pertained to the Interior Designers perception of meeting the client needs. Question 9 was chosen to be viewed as the variable of information seeking. If the project was viewed as successful, the researcher assumed that the subject was able to acquire the necessary information needed to complete the project.

Spearman's Correlation Coefficients test was run. Significance ($p<.478$) was not found. Results are shown in Table 4.9. H5.1 was not rejected.

5.2 No significant difference exists between the interior designers perception of communication flow with the facilities management team members and meeting the needs of the client for a problematic project.

In analyzing H5.2, the researcher correlated question 6 and question 9 from the described perceived problematic projects. Question 6 pertained to the Interior Designers' perception of the Facilities Management Teams role clarity for that given project. Question 9 pertained to the Interior Designers perception of meeting the client needs. Question 9 was chosen to be viewed as the variable of information seeking. If the project was viewed as problematic, the researcher assumed that the subject was unable to acquire the necessary information needed to complete the project.

Spearman's Correlation Coefficients test was run. Significance ($p<.275$) was not found. Results are shown in Table 4.9. H5.2 was not rejected.

In order to complete the picture of the interior designer's perception of the facilities management team's working relationship, descriptive statistics must be presented. Here the investigator will present data concerning the issue of role. As discussed earlier within this document, role is defined by Katz and Kahn (1978) as the expected behavior or activities of a person. It is the link between individuals and their organizational level. Subjects were asked several questions regarding their role responsibilities, other team members' responsibilities, and if problems occur when they overlap.

Subjects were asked to define the responsibilities of each team member for any given project. The following is a compiled list of responses from interior designers. Those listed have a similar response rate of 90% or more. Most were large projects.

ARCHITECT:
- Structure
  - safety
  - codes
  - working drawings
  - programming
  - material selection
  - Coordination of mechanical and electrical engineers
- Project manager
- Budget

ENGINEER:
- Mechanical efficiency
  - HVAC
  - Electrical structure
- Manager Capacity
- Consultant
- Coordinate with Architect and Interior Designer

PROJECT MANAGER:
- Oversees project to ensure cohesiveness of all trades
- Assigns Designers
- Sets deadlines
- Handles political problems
- Reviews and approves bids
- Schedules all work

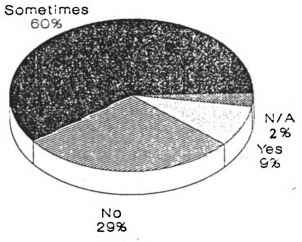
PURCHASER:
- Bids
- Dealing with vendors
- Awarding contracts
- Purchase Orders
- Cost
- Delivery
- Inventory numbers
- Informs design staff of needs

INSTALLER:
- Accurately install merchandise
- Notify team of better way to achieve same results
- Delivery/Receiving
- Estimation of cost before completion

INTERIOR DESIGNER:

- -Space planning
- -Specifying finishes and furnishings
- -Bid Documents
- -Budget
- -Programming
- -Purchasing
- -Project Manager
- -Follow through to installation
- -Resolve damages
- -Provide input on Architects original working drawings
- -Interact with end user

When asked to name the other team members whose role overlaps with the interior designers, the following four people were named: (1) architect, (2) project manager, (3) electrical engineer, and (4) purchaser. The subjects were then asked if the overlapping of responsibilities caused problems in communication. Figure 4.3 describes their responses in percentages. Of the 35 responses analyzed, 2.86% did not respond (n=1); 8.85% felt there was a problem in overlapping responsibilities (n=3); 28.57% did not feel there was a problem (n=10); 60% felt that there was sometimes a problem in overlapping of responsibilities (n=21).



(n=35) 60%=21 responses 29%=10 9%=3 2%=1

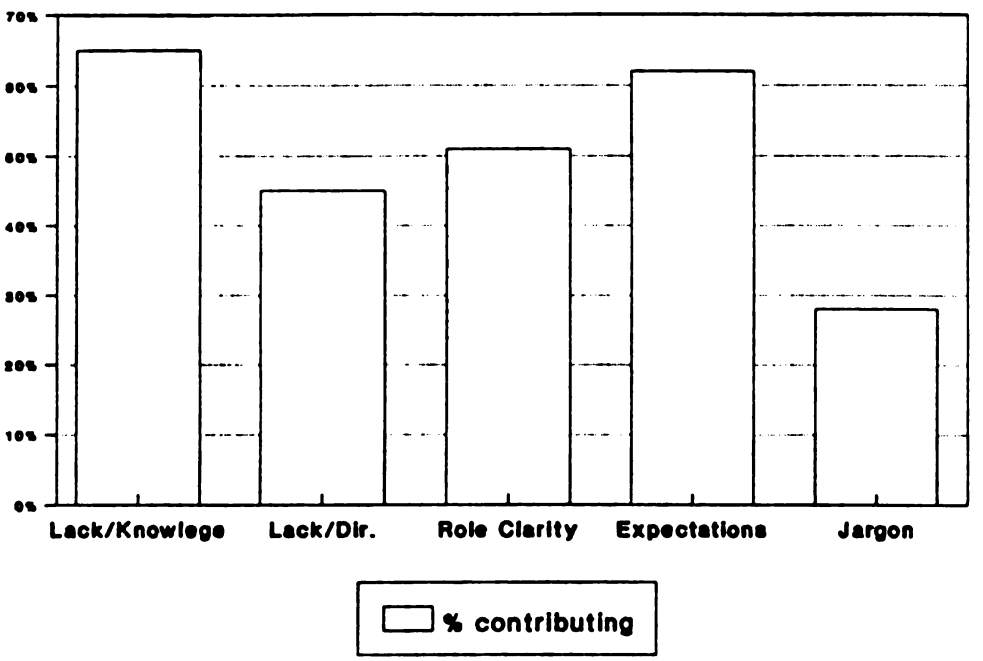
Figure 4.3 Overlapping of Job Responsibilities and Communication

To determine if specific variables attributed to the perceived communication problems between the interior designer and other team members, subjects were asked to respond to the following question (n=35). I feel that the problem of communication is often attributed to someone's:

1. Lack of knowledge pertaining to the project? (65%+)
2. Explanation of directions? (45%+)
3. Role Clarity? (51%)
4. Role expectation? (62%+)
5. Jargon only associated with their profession?(28%+)

Figure 4.4 illustrates the responses received in terms of relation to percentages. For response category 1, over 65% of the interior designers indicated that the lack of knowlege pertaining to the projects contributed to perceived communication problems. In response category 2, over 45%

perceived explanation of directions to contribute to communication problems. Role clarity, in response category 3, was rated over 51% responsible for communication problems. Role expectaions, in response category 4, contributed to over 62% of a persones' communication problems. Only a little over 28% of problems with jargon was perceived to be responsible for communication problems.



*Lack/Dir.= Lack of Direction

Figure 4.4 Attributions of Communication Problems (n=35)

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is divided into four sections. Section one contains a summary of the research methodology, data analysis, and findings of the research. Section two presents the conclusions of this research study. The third section discusses limitations associated with the research. Section four contains recommendations for university interior designers and facilities management teams as well as future use of data for continued research.

Summary of Research Methodology and Data Analysis

How working relationships are affected by the communication patterns of university facilities management teams from the interior designers' perspective were studied by using the following research objectives: (1) to identify the communication patterns of the facilities management team as perceived by the university interior designer. (2) to identify the designer's perceived successful or problematic communication patterns with university facilities management teams in terms of project management. (3) to identify the impact of role clarity on perceived communication patterns, (4) to identify the impact of role clarity on information

seeking, and (5) to identify the impact of perceived communication patterns on information seeking.

For survey analysis, data was collected to investigate the perceived communication patterns of university interior designers and facilities management teams from the interior designers perspective. Seven sections of questions were analyzed and consisted of Likert-type scales, open-ended and closed questions.

The questionnaire (Appendix) contained 57 questions and a cover letter on Michigan State University letterhead, introducing the researcher's university and organizational affiliation. Anonymity was assured for both subject and school. The body of the questionnaire consisted of twelve major sections. Two questionnaires were developed. One was directed toward university interior designers and their own perceptions of the facilities management team's communication. The other questionnaire was sent to directors of university facilities management. Questions paralleled each other but were answered from the directors' perception of the interior designers communication and participation. The questionnaires received from the directors of university facilities management were not analyzed due to a low response rate.

On March 7, 1991 127 surveys were mailed. Approximately six weeks after the surveys were mailed, follow-up telephone calls were made to those who had not

responded. Of the 127 surveys sent, a total of 47 were returned. 35 of these were from the AUID members yielding a return rate of 38.5%. The remaining 12 were from the facility planners yielding a return rate of 33%.

The hypotheses were tested by the use of Chi-Squares, McNemar Binomial test, Wilcoxin Matched-Pairs Signed Rank test, Cochran Q test, Spearman Correlation Coefficients, an ANOVA and a MANOVA. Perceptions of role responsibilities were analyzed though descriptive statistics. Results of the statistical analyses are in Table 5.1.

Table 5.1 Summary of Hypotheses Testing

Hypothesis	Test	Results
H1.1	Cochran Q Communication Flow of Facilities Management Team	Significant
H1.2	Chi-Square Analysis Point of Communication Patterns Working or Breaking Down	Significant
H2.1	Wilcoxin Matched-Pairs Signed Rank Test Interior Designers Point of Involvement	Significant
H2.2	McNemar Binomial Test Regularly Scheduled Meetings	Significant
H2.3	Wilcoxin Matched-Pairs Signed Rank Test Frequency of Scheduled Meetings	Not Significant
H2.4	ANOVA Meeting Client Needs	Significant
H3	MANOVA Role Clarity and Communication Patterns	Significant
H4.1	Spearman Correlation Coefficient Interior Designers Role Clarity and Information Seeking for Successful Project	Not Significant
H4.2	Spearman Correlation Coefficient Interior Designers Role Clarity and Information Seeking for Problematic Project	Not Significant
H5.1	Spearman Correlation Coefficient Communication Flow and Information Seeking for Successful Project	Not Significant
H5.2	Spearman Correlation Coefficient Communication Flow and Information Seeking for Problematic Project	Not Significant

Summary of Findings

Communication Patterns of Facilities Management Team Projects, from the Perspective of the Interior Designer.

Analysis of the communication patterns of facilities management team projects from the interior designers perspective revealed that communication patterns will vary depending upon the individual with whom the designer is working. Each member of the facilities management team contributes either negatively are positively to the cohesiveness of the communication process. How people communicate with one another within a facilities management team can have an impact on the working relationship of the team as a whole. According to Figure 4.1, 54% of the interior designers felt that their communication with the team members was reciprocal; 22% felt that they were the ones who were giving directions where one-way communication took place. The highest percentage of reciprocation was with the project manager (54.29%). This is important since the project manager is generally overseeing the entire project, and good communication is important to have for both parties concerned in order to meet client needs.

When the point of communication breakdown or working mode was analyzed (Table 4.2 and Table 4.3), the results showed that the positive or negative interaction took place at the beginning of both successful (62.9%) and problematic (54.8%) projects. This seems to imply that it is important, if not essential, to establish good communication patterns and relationships at the beginning of a project.

Perceived Successful and Problematic Project Management.

The management of a project was shown to play an important role in the perception of the project working relationship. When the interior designer was brought in at the beginning of a project the perception was more likely to be one of success (Table 4.4). This can be coupled to the need for regularly scheduled progress meetings (Table 4.5). This is the time to establish role expectations and responsibilities not only for oneself but for the other members as well. Analysis showed that the frequency of meetings such as weekly, bi-weekly or monthly did not have significance as to the perceived outcome of the project as long as there were progress meetings scheduled throughout the project (Table 4.6).

An important issue was brought to light in view of project management and communication when meeting the client's needs. The perceptions of the working relationship do not seem to correlate with meeting the client's needs. The project will be completed no matter how the working relationship has progressed. The only differences may be that problematic projects may take longer and cost more money to finish.

Patterns of communication between members of a facilities management team may be clearer, reducing the perception of a problematic working relationship if Daft and Lengel's (1986) seven structural characteristics are utilized. This includes group meetings, integrators, direct

contact, planning, special reports, formal information systems, and rules and regulations.

Role Clarity Within a Facilities Management Team and Perceived Communication Patterns.

The issue of how role clarity and communication affect the working relationship was analyzed to reveal that role clarity for both the interior designer and facilities management team plays an important part in how people perceive the working relationship. Based on the data (Table 4.8) the researcher feels that knowing the expectations and responsibilities of one's role will promote a feeling of direction and a more stable environment. Communication was also judged to neither contribute nor detract from project outcomes.

The Interior Designers Perceived Level of Role Clarity and The Information Seeking Process.

Analysis of role clarity and the information seeking process proved not to be significantly correlated. This could be due to variables not addressed in the study.

If information seeking is purposive as Johnson (1988) suggests, designers will make every effort to acquire information needed to complete their job whether they feel it is their responsibility or not.

The Interior Designers Perception of Communication Flow with the Facilities Management Team Members and Information Seeking.

The communication flow of the facilities management team members was not significantly correlated to information seeking in this study. Once more this may be due to specific variables not addressed in the survey. It may also suggest that team members will seek out whatever information they need to complete the project regardless of their communication patterns with the other members. This would lead the investigator to ask if information is always acquired from the best sources. If this is not the case, it could give rise to some of the problems in a perceived problematic project or even in a successful project.

Overlapping Role Responsibilities

Analysis of the interior designers perception of the other team members' role responsibilities resulted in a list of descriptions containing many overlapping areas. The overlapping responsibilities were prominent with four team members; the architect, engineer, purchaser and project manager. An interior designer, by educational standards, will overlap in knowledge and ability to perform certain responsibilities with all of the team members. This may be true between all team members and their educational standards.

Conclusions

Results of this study provided insights into the working relationships of a university facilities management team. Analysis of these findings allowed for several conclusions to be drawn.

First, it is important to establish reciprocal communication patterns with those from whom one will be seeking information at the very beginning of the project. By being part of the process at the beginning stages, communication channels are established, and the opportunity to develop positive interpersonal relationships is facilitated. This promotes the perception of a successful working relationship.

Second, establishing regularly scheduled progress meetings, as suggested by Deft and Lengel (1986), will promote the perception of a successful project. It will not make a difference how frequently the meetings are scheduled, as long as there are regularly scheduled progress meetings. This places a check and balance system on the team to lower the level of role ambiguity. This will cause less anxiety and distortion of reality as well as promote more efficient performance (Kahn, Wolf, Quinn, Snock & Rosenthal, 1964).

It may also be concluded that the working relationship of the Facilities Management Team has little bearing on the end requirements for meeting the client needs, (Table 4.9).

Third, role clarity, if not defined may cause problems in the perceptions of communication patterns with the other

team members. This includes reducing the fear of overlapping of responsibilities.

Fourth, university facilities management team members are not always located in the same building or encapsuled under the same department. According to Hagerstrand's (1953) research, one could then assume that possible information seeking between facilities management team members could be hindered before even beginning.

Finally the information seeking process of designers and team members may not rely so heavily on role clarity and the flow of communication between members. It becomes apparent that team members will acquire information to complete a project regardless of the level of role ambiguity or direction of communication with other members. This substantiates Johnson's theory that information seeking is purposive (1988).

Limitations

This study involved the use of survey research methodology. Many limitations are associated with survey research (Babbie, 1986). Babbie discusses the limitations to structural surveys by stating that they are designed to assess attitudes and characteristics common to all respondents. Surveys also consist of a limited number of measures. As a result not all appropriate responses may be measured. This is true of this study. Using an interview survey may be the most effective way to obtain precise

information, with the opportunity to ask additional questions if need be would be strongly suggested for future research.

A second limitation was the low response rate for the directors of facilities management (12 surveys) even after aggressive follow-up procedures. If the directors' surveys had been used, a more comprehensive study would have resulted. One observation noted by the researcher as to the low response of the directors was that several directors routed their surveys back to the interior designer to fill out. This resulted in three conclusions by the researcher. (1) The directors do not have time or wish to take time, (2) they do not really know how the interior designer works within the team or what their role is and (3) they did not realize the importance of their own response.

Recommendations

The first recommendation is for the facilities manager to establish role descriptions and expectations at the beginning of a project. Make sure that everyone understands these expectations within the role set.

Second, have regularly scheduled progress meetings through out the project. These should include everyone that will be involved at all stages of the project. Finally, encourage reciprocal interaction between all members to

promote positive communication and possibly more accurate help for information seeking.

Recommendations for further research involve expanding the populations surveyed to members of the Institute of Business Designers (IBD), the American Society of Interior Designers (ASID) and the International Facility Management Association (IFMA). This would broaden the base of subjects creating a more reliable and valid study in terms of numbers of responses.

Another recommendation for future research would be to use the information presented in this thesis in conjunction with the research suggested above to develop teaching material for interior design or facilities management students at the college level. This material would be used to teach communication skills needed to facilitate a productive and successful working relationship between facilities management team members.

Several methods of helping students understand the communication process and its possible problems have been utilized in the classroom. Teaching teamwork through "role-playing" was highly advocated through a study by Hauge (1986) who interviewed several corporate leaders, each indicating that poor communication skills were the most common problems of new employees. "The executives viewed skills in problem solving, using both creative and technical skills, as a key ingredient in successful performance in high tech jobs." Lehman (1987) suggests that business

communication students can improve their management and communication skills by forming teams and playing the roles of corporate employees, including holding stockholders' meetings, drawing up reports, discussing new products and in general honing their professional appearance and conduct. To show students the importance of role knowledge and communication, Holgate (1987) brought in an actual client, Architect, contractor, regulatory authority, and community interest groups to play a part in an "executive game". It was designed to give students of civil engineering some impression of the wider context in the design of a building. A similar approach was taken by Kilty-Padgett and Case (1984) where they instructed their interior design students to form design teams portraying the various roles of individuals in the design process: architect, landscape architect and interior designer. When the student projects were completed, they were reviewed by a professional team consisting "of the two faculty members teaching the course, an architect, a broker representing a local development firm, a builder and an engineer". Through this exercise students were able to see the aspects involved in cooperative decision-making. Lachs (1984) discusses the need for role-playing and case studies in the classroom. He feels that facts and information should be obtained from the lecture method of teaching, while techniques that develop conceptual skills and affect attitudes are best learned through simulation techniques. By combining lectures, role-

playing and case studies, one should have a strong teaching package to begin teaching the communication skills that interior design students are lacking. Current college students represent the up-and-coming facilities management teams of the future. By teaching them interpersonal communication skills needed for the design process, it will strengthen the possibility for group cohesiveness needed to complete a design project, both effectively and efficiently.

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APPENDIX

MICHIGAN STATE UNIVERSITY

COLLEGE OF HUMAN ECOLOGY
DEPARTMENT OF HUMAN ENVIRONMENT AND DESIGN

EAST LANSING • MICHIGAN • 48824-1030

March 7, 1991

Dear AUID Member,

I am a Graduate Student at Michigan State University in Facilities Design and Management as well as an Affiliate member of AUID. The focus of my Masters Thesis study is on the working relationships of University Interior Designers and the Facilities Management teams with whom they interact. A Facilities Management team, for this study, will consist of the University's Architect, Engineer, Project Manager, Installer, Purchaser, and Interior Designer.

The purpose of this study is to document perceived communication patterns between University Interior Designers and the other professionals with whom they work and how their work relationship effects the job as a whole.

This survey should take approximately 10 minutes to complete. All responses will be strictly confidential. Your name and school will not appear on the survey. The survey will be numerically coded. You indicate your voluntary agreement to participate by completing and returning this questionnaire. Information collected is for support of my Masters Thesis. Publication based on thesis is expected. The results will be sent to the *AUID Record*.

As you answer the questions on the subsequent pages, please think first in terms of successful projects in which you were involved. Success will be defined in terms of good working relationships and communication between the interior designer and facilities management team rather than in terms of meeting deadlines and budgets or the design quality of the end product. Then think of projects you were involved in that were problematic. Problematic will be defined as poor working relationships and communication.

When you have completed the survey, please fold it and place it in the enclosed stamped envelope and return by March 30, 1991. Your prompt attention is appreciated. Thank you for your cooperation.

If you have any questions please feel free to contact me at:

614 Vernon Dr.
Mt. Pleasant, MI 48858
(517) 773-0813

Nancy VanOver, Investigator

SUCCESSFUL PROJECT

Briefly describe, in terms of project type, size, duration, budget, square feet and number of people involved, a project where the communication and working relationship between yourself and the Facilities Management team members was SUCCESSFUL. (The Facilities Management team should include at least four of the following members: Architect, Engineer, Project Manager, Purchaser, Installer or Interior Designer).

1. At what point did you become involved in the project?
   Beginning 30 Middle 4 End 1,

2. At what point did communication patterns begin to work?
   Beginning 22 Middle 13 End 0,

3. Were there regularly scheduled progress meetings?
   Yes 10 No 2,

4. How often were they? Weekly ____ Bi-weekly ____ Monthly ____

For questions 5-9 please check on the continuum the degree you feel best answers the question.

5. To what extent do you feel your role was clear?
   Lg. extent 18 10 5 2 0 Sm. extent

6. To what extent do you feel the other team members roles were clear?
   Lg. extent 14 8 8 5 0 Sm. extent

7. To what extent do you feel the success of the finished job was due to the success of the team's communication and working relationship?
   Lg. extent 14 15 3 3 0 Sm. extent

8. To what extent do you feel the working relationship and communication was a success overall.
   Lg extent 15 12 6 2 0 Sm. extent

9. How would you rate the finished job in terms of meeting clients needs, budget, deadlines, and design quality?
   Very Successful 22 11 1 1 0 Very unsuccessful

PROBLEMATIC PROJECT

Briefly describe, in terms of project type, size, duration, budget, square feet and number of people involved, a project where the communication and working relationship between yourself and the Facilities Management team members was PROBLEMATIC. (The Facilities Management team should include at least four of the following members: Architect, Engineer, Project Manager, Purchaser, Installer or Interior Designer).

1. At what point did you become involved in the project?
   Beginning 21 Middle 9 End 5

2. At what point did communication begin to break down?
   Beginning 17 Middle 13 End 1

3. Were there regularly scheduled progress meetings?
   Yes 9 No 10

4. How often were they? Weekly ____ Bi-weekly ____ Monthly ____

For questions 5-9 please check on the continuum the degree you feel best answers the question.

5. To what extent do you feel your role was clear?
   Lg. extent 14 6 2 3 6 Sm. extent

6. To what extent do you feel the other team members were clear?
   Lg. extent 3 6 9 5 8 Sm. extent

7. To what extent do you feel the problems of the finished job were due to the problems of the team's communication and working relationship?
   Lg. extent 22 1 2 5 1 Sm. extent

8. To what extent do you feel the working relationship and communication was a success overall.
   Lg extent 0 3 3 16 9 Sm. extent

9. How would you rate the finished job in terms of meeting clients needs, budget, deadlines, and design quality?
   Very Successful 3 8 12 7 1 Very unsuccessful

WORKING RELATIONSHIP OF FACILITIES MANAGEMENT TEAM

10. How often do you work with the University's: (check your answer)

	EVERY PROJECT	SPECIAL PROJECTS	NEVER
Architects:	49%	34%	17%
Engineer:	17%	40%	40%
Manager:	77%	11%	12%
Purchaser:	77%	17%	3%
Installers:	77%	17%	3%

11. At what point in most projects do you interact with the:

	BEGINNING	MIDDLE	END	NEVER
Architect:	60%	23%	11%	6%
Engineer:	37%	17%	11%	35%
Manager:	77%	11%	6%	6%
Purchaser:	34%	46%	9%	11%
Installers:	26%	23%	46%	5%

12. What do you perceive the responsibilities of a given project to be for the:

Architect: _____

_____

Engineer: _____

_____

Manager: _____

_____

Purchaser: _____

_____

Installer: _____

_____

Interior Designer: _____

_____

13. Do you feel any of the preceding peoples responsibilities overlap with yours? Yes 67% No 33% If yes, please identify whose: _____

_____

14. Does this cause problems in your communication with those people? Yes 9% No 31% Sometimes 60%.

WORKING RELATIONSHIP OF FACILITIES MANAGEMENT TEAM

15. Do you feel the direction of communication flow on a project with the following people is best described as:

	Reciprocal/two-way	Designer->Other	Other->Designer
Architect:	57%	9%	23%
Engineer:	34%	26%	23%
Manager:	77%	3%	6%
Purchaser:	54%	29%	9%
Installer:	46%	43%	3%

16. Does the size of a job dictate if you work with the:

	YES	NO	(If yes): SQUARE FEET	BUDGET
Architect:	___	___	_____	_____
Engineer:	___	___	_____	_____
Manager:	___	___	_____	_____
Purchaser:	___	___	_____	_____
Installer:	___	___	_____	_____

17. At what point in most projects are you asked to be involved?
Beginning _____ Middle _____ End _____

18. Please complete the following statement by checking your answer/s.
I feel that the problem of communication is often attributed to someone's:

1. Lack of knowledge pertaining to the project?	23
2. Explanation of directions?	16
3. Role clarity?	18
4. Role expectation?	22
5. Jargon only associated with their profession?	10

19. Combining students and employees, how large is your University?_____

20. How many Interior Designers are on staff? _____

21.In what department are you employed? _____

22. What areas on campus are your responsibility? _____

_____

23. What are your responsibilities for a given project? ie: space plan, specifications, ect._____

_____

PLEASE ADD ANY ADDITIONAL COMMENTS OR SUGGESTIONS THAT YOU FEEL WOULD HELP WITH COMMUNICATIONS AND THE WORK RELATIONSHIP OR OTHER PROBLEM AREAS NOT ADDRESSED BY THIS SURVEY ON THE BACK OF THIS PAGE.

MICHIGAN STATE UNIVERSITY

COLLEGE OF HUMAN ECOLOGY
DEPARTMENT OF HUMAN ENVIRONMENT AND DESIGN

EAST LANSING • MICHIGAN • 48824-1030

March 7, 1991

Dear Facility Planner,

I am a Graduate Student at Michigan State University in Facilities Design and Management. The focus of my Masters Thesis study is on the working relationships of University Interior Designers and the Facilities Management teams with whom they interact. A Facilities Management team, for this study, will consist of the University's Architect, Engineer, Project Manager, Installer, Purchaser, and Interior Designer.

The purpose of this study is to document perceived communication patterns between University Interior Designers and the other professionals with whom they work and how their work relationship effects the job as a whole.

This survey should take approximately 10 minutes to complete. All responses will be strictly confidential. Your name and school will not appear on the survey. The survey will be numerically coded. You indicate your voluntary agreement to participate by completing and returning this questionnaire. Information collected is for support of my Masters Thesis. Publication based on thesis is expected. The results will be sent to the *AUID Record*.

As you answer the questions on the subsequent pages, please think first in terms of successful projects in which your department was involved. Success will be defined in terms of good working relationships and communication between the interior designer and facilities management team rather than in terms of meeting deadlines and budgets or the design quality of the end product. Then think of projects your department was involved in that were problematic. Problematic will be defined as poor working relationships and communication.

When you have completed the survey, please fold it and place it in the enclosed stamped envelope and return by March 30, 1991. Your prompt attention is appreciated. Thank you for your cooperation.

If you have any questions please feel free to contact me at:

614 Vernon Dr.
Mt. Pleasant, MI 48858
(517) 773-0813

Nancy VanOver

Nancy VanOver, Investigator

SUCCESSFUL PROJECT

Briefly describe, in terms of project type, size, duration, budget, square feet and number of people involved, a project where the communication and working relationship between the Facilities Management team members and Interior Designer was SUCCESSFUL. (The Facilities Management team should include at least four of the following members: Architect, Engineer, Project Manager, Purchaser, Installer or Interior Designer).

1. At what point did the Interior Designer become involved in the project?
   Beginning _____ Middle _____ End _____.

2. At what point did communication patterns begin to work?
   Beginning _____ Middle _____ End _____.

3. Were there regularly scheduled progress meetings?
   Yes ____ No ____.

4. How often were they? Weekly ____ Bi-weekly ____ Monthly ____

For questions 5-9 please check on the continuum the degree you feel best answers the question.

5. To what extent do you feel the Interior Designer's role was clear?
   Lg. extent _____ _____ _____ _____ _____ Sm. extent

6. To what extent do you feel the other team member's roles were clear?
   Lg. extent _____ _____ _____ _____ _____ Sm. extent

7. To what extent do you feel the success of the finished job was due to the success of the team's communication and working relationship?
   Lg. extent _____ _____ _____ _____ _____ Sm. extent

8. To what extent do you feel the working relationship and communication was a success overall.
   Lg extent _____ _____ _____ _____ _____ Sm. extent

9. How would you rate the finished job in terms of meeting clients needs, budget, deadlines, and design quality?
   Very successful _____ _____ _____ _____ _____ Very unsuccessful

PROBLEMATIC PROJECT

Briefly describe, in terms of project type, size, duration, budget, square feet and number of people involved, a project where the communication and working relationship between the Facilities Management team members and Interior Designer was PROBLEMATIC. (The Facilities Management team should include at least four of the following members: Architect, Engineer, Project Manager, Purchaser, Installer or Interior Designer).

1. At what point did the Interior Designer become involved in the project?
   Beginning ____ Middle ____ End____,

2. At what point did communication begin to break down?
   Beginning ____ Middle ____ End____,

3. Were there regularly scheduled progress meetings?
   Yes ____ No ____,

4. How often were they? Weekly ____ Bi-weekly ____ Monthly ____

For questions 5-9 please check on the continuum the degree you feel best answers the question.

5. To what extent do you feel the Interior Designer's role was clear?
   Lg. extent _____ _____ _____ _____ _____ Sm. extent

6. To what extent do you feel the other team member's roles were clear?
   Lg. extent _____ _____ _____ _____ _____ Sm. extent

7. To what extent do you feel the problems of the finished job were due to the problems of the team's communication and working relationship?
   Lg. extent _____ _____ _____ _____ _____ Sm. extent

8. To what extent do you feel the working relationship and communication was a success overall.
   Lg extent _____ _____ _____ _____ _____ Sm. extent

9. How would you rate the finished job in terms of meeting clients needs, budget, deadlines, and design quality?
   Very successful _____ _____ _____ _____ _____ Very unsuccessful

WORKING RELATIONSHIP OF FACILITIES MANAGEMENT TEAM

10. How often do the following people work with your Interior Designer:

	EVERY PROJECT	SPECIAL PROJECTS	NEVER
Architects:	____	____	____
Engineer:	____	____	____
Manager:	____	____	____
Purchaser:	____	____	____
Installers:	____	____	____

11. At what point in most projects do the following people interact with the Interior Designer:

	BEGINNING	MIDDLE	END	NEVER
Architect:	____	____	____	____
Engineer:	____	____	____	____
Manager:	____	____	____	____
Purchaser:	____	____	____	____
Installers:	____	____	____	____

12. What do you perceive the responsibilities of a given project to be for the:

Architect: _____

_____

Engineer: _____

_____

Manager: _____

_____

Purchaser: _____

_____

Installer: _____

_____

Interior Designer: _____

_____

13. Do you feel any of the preceding peoples responsibilities overlap with yours? Yes _____ No _____ If yes, please identify whose_____

_____

14. Does this cause problems in the communication with those people?
Yes _____ No _____ Sometimes _____.

WORKING RELATIONSHIP OF FACILITIES MANAGEMENT TEAM

15. Do you feel the direction of communication flow between the Interior Designer and the following people is best described as:

	Reciprocal/two-way	Designer->Other	Other->Designer
Architect:	____	____	____
Engineer:	____	____	____
Manager:	____	____	____
Purchaser:	____	____	____
Installer:	____	____	____

16. Does the size of a job dictate if the Interior Designer works with the:

	YES	NO	(If yes): SQUARE FEET	BUDGET
Architect:	___	___	_____	_____
Engineer:	___	___	_____	_____
Manager:	___	___	_____	_____
Purchaser:	___	___	_____	_____
Installer:	___	___	_____	_____

17. At what point in most projects does the Interior Designer become involved?

Beginning _____ Middle _____ End _____

18. Please complete the following statement by checking your answer/s.
I feel that the problem of communication is often attributed to someone's:

1. Lack of knowledge pertaining to the project? ____
2. Explanation of directions? ____
3. Role clarity? ____
4. Role expectation? ____
5. Jargon only associated with their profession? ____

19. Combining students and employees, how large is your University?_____

20. How many Interior Designers are on staff? _____

21. In what department are you employed? _____

22. What areas on campus are your responsibility? _____

_____

23. What are your responsibilities for a given project? ie: space plan, specifications, etc._____

_____

PLEASE ADD ANY ADDITIONAL COMMENTS OR SUGGESTIONS THAT YOU FEEL WOULD HELP WITH COMMUNICATIONS AND THE WORK RELATIONSHIP OR OTHER PROBLEM AREAS NOT ADDRESSED BY THIS SURVEY ON THE BACK OF THIS PAGE.