The Role of Organization Communication in the Implementation of a Business Unit Strategy

by

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(ABSTRACT)

Research on the implementation of strategy in the strategic management field has had much less emphasis than strategy formulation and content. Several implementation models have been published which suggest important factors in the implementation of strategy. Empirical tests of these models, however, have received little consideration.

In order to insure that employees who are responsible for implementing the strategy know what to do and how to do it, communication of the strategy is necessary. Investigation of such communication with various media and the impact of such communication on knowledge of the strategy was examined in a field study. Questionnaires were administered to 1220 employees in fourteen plants of a major garment manufacturer. The survey questions addressed knowledge of strategy, media used to learn of the strategy, organization commitment, and demographic information. The employees' performance was measured using plant production records over a standard production period.

The study hypotheses addressed the effect of using different levels of media richness to learn of the Strategic Business Unit (S.B.U.) level strategy and the relationship of knowledge of the strategy, organization
commitment, and employee productivity. In addition, the study investigated demographic impact on communication and the most effective level of management perceived by employees in terms of communication. Research questions explored differences in plants with participative and traditional line management approaches to manufacturing processes in terms of organization commitment and performance.

The study results provide a better understanding of communication media effects from the recipient's perspective and useful information on the impact of strategic knowledge on organization commitment. A lack of support for relationships between organization commitment, strategic knowledge, and productivity indicates additional research is required to further explore strategy implementation factors and performance. The study findings are useful as a basis for continuing research of the process between strategy formulation and firm performance.
Acknowledgements

Credit for attaining the credentials to fulfill a lifetime dream to become a university professor goes to many supporters over the years of matriculation and many years before that. My managerial experience and drive developed in my first two careers deserve mention. Thanks go to the U. S. Army where I learned leadership abilities necessary to accomplish the dream. Experiencing what academicians refer to as the "real world" before commencing my final degree program with Richardson-Merrell, Lorillard Corporation, and AT&T requires mention. Those firms placed me in positions to prove my ability as a business manager. I have drawn upon the experiences in those firms for evaluation and reasoning throughout my Ph.D program.

My thanks go to Dr. Fred Young and Dr. Gerry Francis at Elon College for convincing me that pursuit of a Ph.D was necessary to become an accepted professional in academe. They pointed out the many reasons to obtain the terminal degree in my chosen field and provided the opportunity to be a part-time faculty member at Elon College to confirm my dream to become an academician.

In an early interview at Virginia Tech about the program here, Dr. Larry Alexander asked me why an older person would pursue such an onerous task when the probability of getting a good faculty position was doubtful. Over the last four years I hope I have answered that question for him.
My thanks go to him for continuing support over the entire period of my quest at Virginia Tech. He has allowed latitude and provided direction necessary for completion of that onerous task.

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The most important thanks go to my wife Joyce. She has always been the necessary woman behind the successful man in my career and she remained the same throughout this program. It was she who suggested in late 1986 that we leave the industry rat race and pursue my dream. She put up with my transition from industry executive to student including the many bad moods and difficult times that every student experiences. Through all that, she was understanding, encouraging, and supportive. The dream has been realized through her support. My sons Mike and Trent and my daughter-in-law Laura have always been supportive and understanding of my need to complete the Ph.D program as well.
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Chapter 1

Introduction

Effective use of communication can reduce confusion, coordinate productive efforts, and standardize the routing of management information throughout the organization (Yates, 1989). Yates suggested that communication has been the dominant tool in management's effort to get desired results from employees at all levels of the organization. One binding force that helps promote organization productivity and profit is communication according to Kreps (1990). He posited that there is a strong correlation between effective communication and organizational output.

Researchers consider strategic business unit (S.B.U.) strategy and its effect on firm performance at the heart of the strategic management field (Porter, 1980; Venkatraman & Ramanujam, 1986; Wheelen & Hunger, 1989). The S.B.U. strategy is a plan developed by top management with the objective of successfully competing within a specific industry. Research in the field has emphasized the content of the business strategy rather than the process by which it is implemented (Fahey & Christensen, 1986; Huff & Reger, 1987).

While it is the successful implementation of strategy that improves performance, there is very little research available on the process of implementation. According to Hambrick and Cannella (1989), "Without
successful implementation, a strategy is but a fantasy (278)." This study focuses on communication of the strategy to S.B.U. employees as an important factor in the implementation process.

Even though research on strategy implementation is sparse, there have been several models proposed to improve on the implementation process (e.g., Stonich, 1982; Hrebinjik & Joyce, 1984; Galbraith & Kazanjian, 1986; Thompson & Strickland, 1990). The models present only minimum details about basic implementation components, however, and empirical research which tests the overall models is limited.

Other research has addressed several diverse variables which likely impact on the implementation process (e.g., Lorange & Murphy, 1984; Alexander, 1985; Nutt, 1986; Stringer & Uchenick, 1986; Govindarajan, 1988; Alexander, Scott, & Guffey, 1989; and Higgins & Diffenbach, 1989). A variable mentioned by many of these researchers was the effective communication of the strategy. Exploratory empirical research on the communication of strategy has been undertaken recently by Alexander, Scott, & Guffey (1990).

The communication media used, employee knowledge of the strategy gained from communication, and the impact of knowledge of the strategy on employee productivity are the key factors included in this study.

The selection of media to insure effective communication is important to the communication of messages of different levels of complexity (Goldhaber, Yates, Porter, & Lesniak, 1978; Foltz, 1985; Daft & Lengel, 1986; Daft, Lengel, & Trevino, 1987; Lengel & Daft, 1988). Selection of media by the management team is an important tool in the communication

Introduction
of strategy (Lengel & Daft, 1988). In addition, the use of available media by the employees from the media choices available to them is of interest in studying strategy communication.

Gaining knowledge of the strategy through communication requires the identification of the attributes which define the strategy. Porter (1980) and other researchers (Dess & Davis, 1984; Robinson & Pearce, 1988) suggested attributes which define Porter's generic strategies.

The impact of communication and employee productivity has been the topic of research aimed at the project level (Tubbs & Widgery, 1978; Downs & Hain, 1982). Employee productivity is an important factor in the implementation of strategy (Stonich, 1982, Galbraith & Kazanjian, 1986; Thompson & Strickland, 1990).

**Research Questions**

The implementation process includes the transmittal of the strategic decisions made by the top management team to those responsible for strategy implementation. In order to better understand the process and the need for communicating strategy, the following research questions were examined:

Does the communication media selected by the employees from the media used by the firm to communicate the strategy affect the employees' knowledge of the strategy?

Does knowledge of the firm's strategy have an impact on employees' commitment to the firm?
Does knowledge of the firm's strategy have a positive impact on employee productivity?

Effective communication is defined as "the medium for the coordination and control of group activities, member socialization, group integration, and conflict management, to name just a few of its functions (Poole & Hirokawa, 1986)." Such a medium used in this study includes the overt actions of management to make the S.B.U. strategy known to line employees.

Research in the organizational communications field has produced mixed results relative to the correlation between communication and performance (Jablin, Putnam, Roberts, & Porter, 1987). That research suggests that attitudinal variables such as organization commitment are related to performance based on organizational communication studies. A suggestion has been made that communication is "necessary for member satisfaction and productivity but not sufficient (Falcione, Sussman, & Herden, 1987: 222)." Since the organizational communication literature includes attitudinal variables in analysis of impact on performance, this study will include organization commitment as a variable. Organization commitment is an attitudinal variable which is discussed in the research on communication and performance (Jablin, et al., 1987).
Objectives of the Study

The study objective is to analyze communication of the S.B.U. strategy to the firm's employees in terms of the communication media used, knowledge gained of the strategy, and the impact of that knowledge on organization commitment and productivity. The study will develop a model of the relationship between communication of a firm's strategy to employees through various media, organization commitment, and employee productivity. In addition, the study will investigate the impact of a formal communication program on organization performance and other organizational level effects.

Significance of the Study

This research offers the opportunity to define and test the effect of strategy communication on employees in terms of their knowledge of the strategy, commitment to their organization, and their productivity on the job. Studies have shown a positive relationship between firms which formulate strategies and performance (Anderson & Zeithaml, 1984; Rhyne, 1986; Romanelli, 1987; Cool & Schendel, 1988), but the implementation activities that occur between the formulation of the strategy and measured performance have been largely ignored. Studies have also shown a positive
relationship between communication and increased productivity in the accomplishment of projects (Tubbs & Widgery, 1978; Downs & Hain, 1982; Clampitt & Downs, 1983) and organizational performance (Snyder & Morris, 1984). While most of those studies are limited in scope to particular projects rather than the firm's strategic accomplishments, they provide a basis for further research on communication and productivity. The investigation of knowledge of strategy based on communication and its impact on performance may provide for continuation of needed research on communication and other strategy implementation variables.

Research has shown that effective communication is important in the attainment of goals and the implementation of change (Coch & French, 1948; Fidler & Johnson, 1984; Seibold & Meyers, 1986; Lawler, 1988). The results of this study in terms of the relationship between communication and knowledge of the S.B.U. strategy, organization commitment, and employee productivity have implications for management research and practice as follows:

1. First, the understanding of media types which are most effective in strategy communication is explored.

2. Second, it provides empirical testing of the impact of communication of the strategy on organization commitment.

3. Finally, it should improve understanding of the impact of communication of strategy on employee productivity.
Study Overview

Chapter 1 provides an introduction of the issues investigated in the study, the research questions, purposes of the study, and significance of the study to practitioner and academic interests.

Chapter 2 presents background information of various strategy implementation research which has been conducted. In addition, applicable concepts in the organizational communications and organizational development fields are reviewed. Theoretical bases for the variables investigated in the study are reviewed and, finally, a conceptual model and hypotheses are presented as the basis for investigation of the research questions.

Chapter 3 focuses on research methodology. Descriptions of the sample and sites, the measures used and their reliability and validity, and the statistical tests used in the study are discussed.

Chapter 4 presents the characteristics of the sample and tests of the hypotheses and the research questions. Validity and reliability results are also included.

Chapter 5 presents a discussion of the results obtained from the various statistical tests and implications of the study results. Other issues including limitations of the research and suggestions for additional research are also included.
Chapter 2

Literature Review

In order to establish a basis for the development of a strategy communication model, this chapter will review literature related to strategy implementation, organizational development, communication studies, and organization commitment. A conceptual model of strategy communication will then be developed based on that review. The study hypotheses will be derived from the model proposed.

Much of the research in the field of strategy has emphasized strategy content, strategy typologies and contingencies related to the performance of the firm. Literature reviews by Fahey and Christensen (1986) and Huff and Reger (1987) found a heavier emphasis on content than process with minimal research on strategy implementation. As the strategy field develops and becomes more of an established discipline, research efforts must provide more attention to the implementation process in order to expand strategy theory. The process literature that addresses implementation is heavily oriented toward practitioner issues rather than theoretical issues.

Strategy implementation literature includes presentations of various models showing the organizational characteristics suggested as important factors for effective strategy implementation. In addition, research
concentrating on other suggested factors in successful implementation provides a basis for additional investigation of implementation variables.

The organizational development literature provides bases for the implementation of change in organizations. Studies from the organizational communication field provide additional background for investigating the process of disseminating the strategy message to employees. Finally, behavioral research considers organization commitment as a factor in employee response to organizational direction.

The following sections will discuss each of these sources of theoretical bases for the study. The sources will then be used to construct a model of strategy communication.

**Strategy Implementation**

Several strategy implementation models have previously been proposed which contain various factors required for effective strategy implementation (e.g., Stonich, 1982; Hrebinak & Joyce, 1984; Galbraith & Kazanjian, 1986; Thompson & Strickland, 1990). The models all draw from the strategic management literature and discuss similar variables required for strategy implementation. A summary of key variables and their coverage in each of the models is shown in Figure 1 on page 10.
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<tr>
<td>Structure</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Planning</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Task</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Process</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Culture</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Human Resources</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Objectives</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Rewards</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Communication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</tbody>
</table>

*Figure 1. Variables Presented in Several Implementation Models*
While the researchers presented the models in different ways, there are similarities in variables included such as structure, planning, process, human resources, and reward systems. A striking similarity is the fact that each model contains communication as an integral part of implementation. Communication is described as the translation of strategy into operating objectives (Hrebiniak & Joyce, 1984), as information processing (Galbraith & Kazanjian, 1986), and as installing administrative support systems (Thompson & Strickland, 1990). Empirical research which tests the models is very limited.

In addition to the strategy implementation models reviewed, other implementation research provides insight into this study. While not entirely consistent in the field, the models reviewed basically assumed that implementation follows strategy formulation and is contingent upon strategic goals. Bourgeois and Brodwin (1984) suggested five strategy implementation models which represent an increasingly sophisticated way to think about the implementation process. Their five implementation models are called commander, change, collaborative, cultural, and crescive. The communication of strategy becomes more prevalent in each of the different models. They pointed out the growing importance of information processing in each model. Since each approach builds on the previous one, the complexity and information required grows.

Researchers in other studies have suggested specific factors are related to successful strategy implementation (e.g., Stonich 1981; Wernham, 1984; Alexander, 1985; Carnall, 1986; Reed & Buckley, 1988). Goal setting, identification of critical success factors and performance ap-
praisals based on achieving the strategic goals were suggested by Reed and Buckley (1988). Stonich (1981) emphasized reward systems which reinforce long term strategic performance of the individual along with the day-to-day performance for which one is normally rewarded. Wernham (1984) included superordinate goals, technical and market validity, and top management team support. Carnall (1986) suggested transition management, organizational culture, and organizational politics. Alexander (1985) suggested five factors which promote successful strategy implementation. The factors were (1) communication, (2) start with a good concept or idea, (3) obtain organization commitment and involvement, (4) provide sufficient resources, and, (5) develop an implementation plan. These factors were based on responses from 46 private sector CEO's and government agency heads.

Sleman and Pinto (1987) suggested that such factors as goals, top management team support, plans, communication, resources, and trouble shooting are related to successful project implementation when used in an appropriate sequence. Their research proposed these factors as indicators of implementation success and, therefore improved performance.

In most of the studies reviewed, communication was a key variable in effective implementation of strategy or change. Some of the studies specified communication as an integral success factor while others suggested it as part of the process of implementation.
Organizational Development

The organizational development field also provides research bases for investigating implementation activities. Nutt (1986) conducted exploratory, empirical research to determine how strategies are implemented and determined that one of four distinct implementation tactics were utilized in over 90 percent of the cases studied. In each of the four tactics, communication to employees was a key variable in strategy implementation.

In the period just after World War II, Coch and French (1948) found that effective communication could overcome resistance to change in a garment manufacturing plant. They concluded that change could be accomplished through group meetings where the need for change was effectively communicated and group participation in the planning for changes was stimulated. The study pointed out that most of the problems in the plants originated from change situations and that the problems were lessened through communication, group meetings and employee participation.

In a discussion of implementation theory from an organizational development perspective, Porras and Robertson (1987) found that communication was proposed as a key variable by most of the 16 researchers they reviewed. In their development of a typology consisting of implementation theory and change process theory, communication was prevalent as a diagnostic variable.

Additional organizational development work done in non-profit organizations presented findings on implementation activities. Stevens,
Beyer, and Trice (1930) studied how managerial receptivity, perception of top level emphasis, organization commitment and other organizational characteristics impact strategy implementation in the government sector. They found consistent support for (1) attitude toward the policy, (2) perceived top management emphasis, (3) perceived need for the policy, and (4) familiarity with the policy as important to the implementation of the policy. The perceptions of the policies studied by the organization members required effective communication of the policies.

One important aspect not empirically studied in the strategy implementation and organizational development fields to date is the communication of the strategy to the firm's line employees. The field of organizational communications provides some bases for investigation of the impact of communications on individuals and groups.

**Communication Studies**

Lack of communication can instill a fear or suspicion of change by individuals responsible for implementing the change. Brown stated, "Poor communication increases suspicion, and, suspicion, lack of faith (1987; 9-10)". A set of requirements adapted from Brown for communicating effectively is shown in Figure 2 on page 16. These requirements emphasize the importance of communication in getting the right message to the target audience. They are directed to organizations communicating messages
concerned with the health and survival of the organization. Incumbent in the requirements is the need for effective media targeted to the audience of the message. Based on the complexity of the S.B.U. strategy, support is shown for a well planned and executed communication program to insure that the message is received by employees. Analysis of the requirements show that the effectiveness of the communication is based on the correct media which will achieve the objectives.

Communication studies that have explored the process of communication are prevalent in the organizational communication field. That field is giving added emphasis to business communication which is defined as, "... the process whereby members gather pertinent information about their organization and the changes occurring within it (Kreps, 1990: 11)."

Kreps (1990) posited that communication processes provide the basis for information or knowledge in organizations. That information provides the means for enhanced organization performance. His model of the relationship between communication processes, information, and organization performance is shown in Figure 3 on page 17. The process of communication provides the mechanism to clarify complex requirements and changes in the organization's direction and enables members to achieve organizational objectives (Kreps, 1990). Managers may use multiple communication processes to convey information to organization members in order to enhance overall organization performance.

While a limited theoretical base has been established in the relationship between communication and group performance, Seibold and Meyers (1986) showed support for a positive relationship between high
1. The messages must, first of all, be sent.

2. They must reach the right people.

3. They must be regarded as authoritative in order to be accepted.

4. They must be intelligible to those to whom it is directed.

5. They must be sufficiently specific that no one doubts what is wanted.

6. They must provide the information that is needed to carry them out, or indicate where it can be found.

7. Those receiving them must be able to do what is asked.

8. The action ordered must be seen as appropriate to the purposes to be achieved.

9. They must be seen as consistent with the personal objectives of the recipients.

10. They must in some way be able to convey to the senders that they have been received.

Figure 2. Brown's Communication Effectiveness Requirements
Figure 3. Communication, Information, and Organization Performance: Source: Kreps (1990: 12)
quality communication and high quality group solutions. High quality communication was defined in their study as having an organized format, summarization, and established idea relationships during communication. In a study of developmental processes in group decision-making, Poole and Doelger (1986) proposed that unclear goals and unclear knowledge about problem solutions will result in more confusion about acceptable alternatives. They also suggested that groups which receive unclear communication for any of several reasons will encounter more disorganization than groups with clear and consistent communication. These studies support the proposal that effective communication should result in more organized and coherent performance by groups.

The literature also recognized a change in management style away from the policy of telling employees as little as possible and toward respect for the employees who seek information (Emig, 1985). Rue and Holland (1989) proposed that the fear of divulging corporate strategy to competitors through employee communication may be overshadowed by the support given by employees as a result of communication of the strategic goals by top management.

Foltz (1985) suggested two primary functions of organizational communication. They were (1) supporting organizational objectives, policies, and programs and (2) meeting audience needs. He integrated the two functions through the proposition that inherent in gaining support for objectives, policies, and programs is knowledge of what audiences want to know and how they want to get the information. According to Foltz, the communication policy of a firm should have the following results:

Literature Review
1. Better communication will encourage employees to make a greater contribution to organizational goals because they will have a clear understanding of the goals.

2. More effective downward communication will stimulate more ideas and greater response from employees.

3. Better communication will help secure wider support for the organization's stand on important issues.

These results of effective communication strongly support higher organization commitment and performance as the response to well understood goals.

Figure 4 on page 20, which is adapted from Foltz (1985), presents 12 objectives which should be considered in a firm's employee communication program. The objectives indicate a clear relationship between communication, employee knowledge, and firm goals. The propositions contained in his objectives provide the bases for testing different media for effective communications of S.B.U. strategy to hourly employees.

Table 1 on page 21 and Table 2 on page 23 present findings by Foltz (1985) on topics and sources of information from 32,000 employee surveyed in 26 organizations in the United States and Canada. The topics such as future plans in which a high percentage of the employees showed interest support the need for communication of a firm's strategy to its employees. Other research has supported the suggestion that employees desire more top level information in a firm (Kleiner, 1984; Leaper, 1985; Kleiner & Bouillon, 1988). In Table 2, the current rankings are those that employees selected as their current source of information, while the preferred ranking shows the sources they prefer.
1. Formal program of regular communication with all employees.

2. A regular channel of downward printed communication to inform them about all aspects of issues pertinent to the firm.

3. Publications that will permit in-depth coverage of internal and external issues of the firm.

4. Special management publications addressing special managerial needs.

5. Emphasis on subjects that relate to corporate objectives.

6. Regular meetings between management and employees with interaction.

7. Annual state of the business review with employees.

8. Regular employee/supervisor meetings to discuss problems, issues, and opportunities.

9. Communicate to employees at least as early as release to outside media.

10. Encourage employees to ask questions and make methods available to do so.

11. Conduct surveys periodically to evaluate the effectiveness of the communication program and to determine employee needs and interests.

12. Reexamine objectives annually to ensure they are in line with organizational objectives.

Figure 4. Foltz's Communications Program Objectives
<table>
<thead>
<tr>
<th>Rank</th>
<th>Subject</th>
<th>&quot;Very Interested&quot; and &quot;Interested&quot; responses combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Organizational plans for the future</td>
<td>95.3%</td>
</tr>
<tr>
<td>2</td>
<td>Productivity improvements</td>
<td>90.3%</td>
</tr>
<tr>
<td>3</td>
<td>Personnel policies and practices</td>
<td>89.8%</td>
</tr>
<tr>
<td>4</td>
<td>Job-related information</td>
<td>89.2%</td>
</tr>
<tr>
<td>5</td>
<td>Job advancement opportunities</td>
<td>87.9%</td>
</tr>
<tr>
<td>6</td>
<td>External events effect on job</td>
<td>87.8%</td>
</tr>
<tr>
<td>7</td>
<td>How my job fits in organization</td>
<td>85.4%</td>
</tr>
<tr>
<td>8</td>
<td>Other organizations' operations</td>
<td>85.1%</td>
</tr>
<tr>
<td>9</td>
<td>How we're doing versus the competition</td>
<td>83.0%</td>
</tr>
</tbody>
</table>
The top three information sources that employees prefer as shown in Table 2 support the use of rich media for effective communication. Media richness refers to the media's ability to change the understanding of recipients of information over a time interval (Daft & Lengel, 1986). The definition of rich media includes face-to-face sources such as the immediate supervisor, small group meetings, and top executives. Such rich media were proposed as most effective and timely in changing understanding of recipients of complex messages subject to different interpretations. The lower ranked sources in Table 2 include lean communication media as defined by Daft and Lengel (1986) such as bulletin boards, mass media (e.g., newspaper and television), and business reports. Some rich media such as audiovisual programs and the grapevine were also included as lower ranked sources. Daft and Lengel defined lean media as impersonal means of communication which require more time to understand the message communicated and are less effective in changing recipients' understanding. Examples of such media are written communications of a general nature and standard operating procedures. These media are useful for rules and regulations in which communication flows one way. They suggest, however, that rich media communication likely precedes communication of rules and regulations to insure the basis for them is understood. From this analysis the employee preference for rich face-to-face communication media is supported for learning complex messages such as the firm's strategy.

Other research has been conducted which suggested that employees prefer rich communication media for complex messages (Daft & Lengel, 1986; Woods, 1986; Daft, et al., 1987; Lengel & Daft, 1988). Lengel and Daft
<table>
<thead>
<tr>
<th>Preferred Ranking</th>
<th>Sources of Information</th>
<th>Current Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Immediate supervisor</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Small group meetings</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Top executives</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>Employee handbook/other brochures</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Local employee publication</td>
<td>8</td>
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<tr>
<td>6</td>
<td>Orientation program</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>Organization-wide employee publication</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Annual state-of-the business report</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>Bulletin boards</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Upward communication program</td>
<td>14</td>
</tr>
<tr>
<td>11</td>
<td>The union</td>
<td>9</td>
</tr>
<tr>
<td>12</td>
<td>Mass meetings</td>
<td>10</td>
</tr>
<tr>
<td>13</td>
<td>Audiovisual programs</td>
<td>15</td>
</tr>
<tr>
<td>14</td>
<td>Mass media</td>
<td>13</td>
</tr>
<tr>
<td>15</td>
<td>The grapevine</td>
<td>2</td>
</tr>
</tbody>
</table>
(1988) proposed a relationship between communication media richness and
effectiveness by suggesting six rules to enhance media selection:

Rule 1: Send nonroutine, difficult communication through a rich
medium -- preferably face-to-face.

Rule 2: Send routine, simple communication through a lean medium.

Rule 3: Use rich media to extend your presence throughout the
organization.

Rule 4: Use rich media for implementing company strategy.

Rule 5: Don't let media censor information about critical issues.

Rule 6: Evaluate new communication technology as a single channel
in the media spectrum.

Clearly, these rules suggest a relationship between the important complex
issues characteristic of corporate strategy and the need to communicate
these issues through rich media. Examples of rich media are face-to-face
meetings and personal telephone conversations. Written media such as
memos, letters and bulletin board materials are example of lean communi-
cation media.

The data shown in Figure 5 on page 25 support research findings in
terms of media preferences and the importance of information sources close
to the employees (Goldhaber, et al., 1978). The face-to-face, closeness
of information sources, and formal media preferences confirm findings by
researchers that employees prefer rich media for understanding informa-
tion. While the reference in Figure 5 to less timely and low quality
information from top management appears to contradict other findings, the
media used was not specified. The reason for this apparent anomaly could
be based on use of lean communication media for those top management
messages.
1. Organization members would rather receive information than send it.

2. Information sources closest to the employees are the best.

3. Top management provides less timely and lower quality information than other key sources.

4. Employees prefer getting information through formal means than informal means such as the grapevine.

5. Employees prefer face-to-face communication.

6. Employees are generally satisfied with their departmental communication, but are less satisfied with organization-wide communication.

7. No general differences were found between demographic characteristics (age, sex, etc.) and communication variables used.

8. The greater the distance between communication sources and receivers, the less effective the communication of information.

Figure 5. International Communication Association Survey Findings
Research has also shown that communication plays an important role in achieving objectives leading to effective organizations (Peters & Waterman, 1982; Banas, 1989; Lawler, 1988; Lawler, 1991; Storm & Bennett, 1991). In discussion of such goals, Lawler (1991) emphasized employee needs for information in areas such as process, quality, customer feedback, and events as well as knowledge of work, the business, and work systems as key factors to consider in making the organization more effective. Similarly, Storm and Bennett (1991) pointed out the need for open communication systems as key factors necessary for success in the innovative approach to sharing of strategies with employees at the General Motors Saturn Automobile Plant. The topics disseminated through the open communication systems included flexibility, customer orientation, innovation, quality, aggressive competitive behavior, and continuous improvement, all of which are appropriate subject matter for S.B.U. level strategies. Many of these factors, including communication, have also been stressed by Peters and Waterman (1982) in their research on excellent companies.

A strong relationship between communication and performance has been suggested by several other researchers (e.g., Hawkins & Penley, 1978; Tubbs & Widgery, 1978; Tavernier, 1980; Tubbs & Hain, 1979; Downs & Hain, 1982; Clampitt & Downs, 1983). A review of organizational communications research found that effective communication is considered a prerequisite for increasing productivity (Downs & Hain, 1982). Additionally, Tavernier (1980) and Tubbs and Widgery (1978) found significant increases in productivity in organizations which had implemented communication

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26
training programs. Organizational performance was found to be strongly related to organizational communication in a study by Snyder and Morris (1984). Support for the proposition that communication is related to organizational productivity is clearly shown in the literature.

A common thread is shown in the strategy implementation, organizational development, and organizational communication literature. Effective communication is a key success factor in strategy implementation, change management, and organizational productivity. Analysis of this literature provides the bases for this study.

The literature on communication and productivity also suggested that employee attitudes such as organization commitment and satisfaction are related to communication and performance (e.g., Downs & Hain, 1982; Jablin, et al., 1987; Lawler, 1991). In order to complete the research review of the impact of communication in the organization, the literature on organization commitment will be reviewed.

Organization Commitment

Commitment has been operationalized as both a behavioral variable and an attitudinal variable. The attitudinal operationalization suggested by Mowday, Steers, and Porter (1979) addressed organization commitment as one in which the goals of the individual and the organization are congruent. Blau and Boal (1987) defined commitment as, "A state in which

Literature Review
an employee identifies with a particular organization and its goals, and he/she wishes to maintain membership in the organization in order to facilitate its goals (290)." It is also discussed in terms of one's determination to reach a goal as a result of commitment to the goal (Locke, Latham, & Eng, 1988). The attitudinal characteristics suggested for commitment are those of interest in this study. Those characteristics lead to commitment to the organization which is suggested by researchers as a consequence of effective communication.

Stringer and Uchenick (1986) suggested that a relationship between understanding the firm's strategy and organization commitment leads to goal accomplishment. Higgins and Differnach (1989) posited that enhanced employee motivation and productivity are reasons to communicate strategy to employees. A positive impact on organization commitment and productivity are also suggested by other researchers (Lengel & Daft, 1988; Hambrick & Cannella, 1989).

In a meta-analysis study of antecedents to organization commitment, Mathieu and Zajac (1990) found that leader communication was highly correlated with organization commitment. That study included 124 different studies addressing the variables of interest. Randall (1987) suggested that high levels of organization commitment lead to a secure and stable work force, high goal accomplishment, and greater productivity, and therefore to higher levels of performance. Organization commitment addresses the need employees feel to act in a way that meets organizational interests according to Wiener (1982). Finally, Walton (1985) compared commitment strategies to control strategies and concluded that through

Literature Review
effective communication and employee participation, commitment strategies lead to enhanced organizational performance. In implementing commitment strategies, he suggested that business data be shared widely with employees.

Research has shown a modest relationship between organization commitment and performance in some cases and a marked drop in performance concurrent with a drop in organization commitment in others (Mowday, et al., 1979; Locke, et al., 1988). Mathieu and Zajac (1990) supported that modest relationship in their meta-analysis, although they showed a positive correlation between organization commitment and performance. Randall (1990) conducted a meta-analysis of 35 studies and found a weak, but positive relationship between organization commitment and work outcome. She pointed out that with the multiplicity of variables which could affect work outcome, weak relationships should be expected.

The research findings above establish a basis for further testing the relationship between communication, knowledge, organization commitment and performance. This group of researchers support relationships between communication, organization commitment and productivity. While outcomes based on organization commitment show weak support, the combination of strategy knowledge, organization commitment, and productivity as an outcome has not been tested to date.

Since the plants of the test firm are located in different size communities, there may be some impact on commitment due to plant location. Employees in small communities have fewer employment opportunities and
attitudes toward the only firm available with job opportunities could be affected.

Conceptual Model

Based on analysis of the variables presented in the various implementation, communication, and organization commitment studies, a proposed model is presented in Figure 6 on page 31. The model focuses on several key variables included in the studies presented earlier in the literature review section.

In order to analyze the communication of a firm's strategy, it is important to identify the specific strategic message being communicated. Porter (1980) suggested that only one generic strategy should be developed and implemented by the firm. Firms which follow more than one generic strategy are "stuck in the middle" and performance is suboptimized in those situations according to Porter.

The model proposes (1) a relationship between media used by employees and their knowledge of the strategy and strategy attributes, (2) a relationship between employees' organization commitment and their knowledge of the strategy, and (3) a relationship between knowledge of the strategy and organization commitment with employee productivity. Each of the propositions has a theoretical basis in the various literature reviews presented in this chapter.
Figure 6. Strategy Communication Model
An earlier model by Scott, Alexander, and Gaffey (1991) proposed relationships between organizational variables such as organization commitment and trust in management; individual variables such as knowledge, perceived impact and management support of the plan; and individual characteristics with employee support of a firm's business plan. The relationships were investigated using regression analysis and found to be generally supported. Analysis of that model showed support for an overall relationship between knowledge, organization commitment, management trust, and support for the strategy.

**Hypotheses**

The following study hypotheses have been derived based on the model in Figure 6 on page 31 and discussions of variables reviewed in the literature. Descriptions of the variables and testing procedures are presented in Chapter 3.

**Hypothesis 1: Impact of Rich Communication Media**

H1: Employees who emphasize rich communication media for receiving strategic information will have more knowledge of the S.B.U. strategy.

**Hypothesis 2: Impact of Lean Communication Media**

H2: Employees who emphasize lean communication media for receiving
strategic information will have less knowledge of the S.B.U. strategy.

Kreps (1990) pointed out that the process of communication provides the ability to clarify complex requirements which leads to information necessary for good organization performance. The communication of those complex messages such as strategy are more effective if the messages are communicated through rich media (Goldhaber, et al., 1978; Foltz, 1985; Daft & Lengel, 1986; Daft, et al., 1987; Lengel & Daft, 1988). Among the media recommended for effective communication by Foltz (1985) were personal methods which were included as rich media. He pointed out that such effective downward communication would result in wider employee support. Research by Foltz (1985) showed that employees preferred rich media as their choice for information source.

Other research on the use of media has investigated the impact of lean versus rich media in communicating strategy with mixed results (Tyler, Bettenhausen, & Daft, 1989; Alexander, et al., 1990). The hypotheses proposed will provide additional tests of the effect media selection by the employees has on their strategic knowledge.

**Hypothesis 3: Impact of Knowledge on Employee Organization Commitment**

H3: Employees who know the firm's S.B.U. strategy will have higher commitment to the organization than employees who do not know the firm's S.B.U. strategy.

The process of communicating messages, which includes strategic information, results in an increase in organization support by employees (Foltz, 1985). Foltz also posited that such communication encourages
employees to make a greater contribution to organizational goals. Brown (1987) warned of a lack of faith and suspicion as a result of poor communication in research directed toward communication and organizational health. In discussions of participative management efforts, several researchers suggested a direct relationship between communication and organization commitment by employees (Coch & French, 1948; Banas, 1989; Lawler, 1988, 1991; Storm & Bennet, 1991). Effective communication as a determinant of commitment strategies was the focus of research by Walton (1985).

While hypothesis 4 does not posit that strategic knowledge gained from the communication program is the sole cause of organization commitment, support is provided for a higher level of commitment through effective communication.

**Hypothesis 4: Knowledge, Organization Commitment, and Productivity**

\[ H_4: \text{Employee productivity is positively related to employee knowledge of the S.B.U. strategy and organization commitment.} \]

Researchers have found support for a positive relationship between knowledge gained from communication, organization commitment and employee productivity (e.g., Tubbs & Hain, 1979; Downs & Hain, 1982; Clampitt & Downs, 1983; Foltz, 1985; Yates, 1989; Kreps, 1990). Jablin, et al. (1987) discussed organization commitment as a factor affecting the impact of communication on performance. High quality communication leads to high quality problem solutions in organizations according to Seibold and Meyers (1986). The summary of effects of communication policy on a firm
shows results such as (1) greater employee contribution to organizational goals, (2) idea stimulation and greater employee response, and (3) wider employee support for organization policies (Foltz, 1985). A weak positive relationship has been found between organization commitment and performance (Stringer & Uchenick, 1986; Hambrick & Cannella, 1989; Mathieu & Zajac, 1990; Randall, 1990).

An important factor in participative management is the role communication plays in increasing employee organization commitment and productivity leading to increased organizational performance according to several researchers (e.g., Peters & Waterman, 1982; Banas, 1989; Lawler, 1988, 1991; Storm & Bennet, 1991). Randall (1987) posited that high levels of organization commitment lead to greater productivity and, therefore, higher organizational performance. That was supported by Wiener (1982) who suggested that employees need to act in ways which meet organizational interests.

Finally, the several implementation models reviewed included an emphasis on the human resources in organizations as important to implementation (Stonich, 1982; Hrebiniak & Joyce, 1984; Galbraith & Kazanjian, 1986; Thompson & Strickland, 1990). Other research has also suggested relationships between knowledge gained from communication, organization commitment, and productivity (e.g., Coch & French, 1946; Alexander, 1985; Nutt, 1986; Slevin & Pinto, 1987).

Research from the three major literatures reviewed show support for the relationships hypothesized. Further investigation using actual employee performance data should provide additional insight into the re-
relationship between productivity, organization commitment, and strategic knowledge.

Two additional hypotheses which are not specifically indicated in the model are suggested based on propositions contained in the organizational communication literature. The hypotheses add to the analysis of strategy communication effectiveness and impact of media.

Hypothesis 5: Demographic Variables and Knowledge of Strategy

H5: Demographic variables such as age, job tenure, and education are not related to strategic knowledge gained through the various media used.

H5a: Age is not related to strategic knowledge gained through the various communication media used.

H5b: Job tenure is not related to strategic knowledge gained through the various communication media used.

H5c: Education is not related to strategic knowledge gained through the various communication media used.

H5d: Age, job tenure, and education as a group are not significantly related to strategic knowledge gained through the various communication media.

Findings of the International Communication Association Survey showed that no general differences were found between demographic characteristics and communication variables used (Goldhaber, et al., 1978). In a study including age and tenure as predictors of reactions to performance feedback communication, Snyder, Williams, and Cashman (1984) did not find a role for age and tenure in the performance feedback process. No support for a relationship between demographic variables and knowledge was found in a previous study on communication effects (Scott, et al., 1991). While
education was not specifically noted in the literature supporting the hypothesis, it is also proposed for test as part of the employees' demographics.

The test of this hypothesis is also important as a control issue in validating the results of the other hypotheses proposed in the study. The impact of the demographic variables on other statistical tests will be investigated.

Hypothesis 6: Importance of Supervisory Communication

H6: Employees who have knowledge of the S.B.U. strategy will emphasize the direct supervisor over peers, plant staff management, the plant manager, or division management for learning about the S.B.U. strategy.

The findings of the International Communication Association and other research indicated that employees preferred face-to-face communication and that information sources closest to the employee were the most effective (Goldhaber, et al., 1978; Foltz, 1985). Woods (1986) also suggested that the first line supervisors were the most important communicators in industry. Porter and Roberts (1976) identified the employee's immediate superior as potentially the most important source of information. Other research has indicated that employees do not prefer this rich media (Alexander, et al., 1989). Further analysis is needed to clarify the effectiveness of this personal communication medium.
Exploratory Research

In addition to the hypotheses developed in the previous section, the literature suggested other effects which the study will examine as exploratory research. From early organizational development research (Coch & French, 1948) to current participative management approaches (Lawler, 1991; Storm & Bennet, 1991), researchers have proposed that employee participation was related to plant performance. One of the objectives of a communication program was more active participation by employees. The research setting used for this study provides an opportunity to investigate plant level effects.

The following two research questions are suggested from the literature reviewed at the plant level of analysis.

1. Will there be a difference in knowledge of the S.B.U. strategy in plants where participative management is practiced versus plants with traditional management systems?

2. Will there be a difference in organization commitment in plants where participative management is practiced versus plants with traditional management systems?

Figure 7 on page 39 suggests that a formal communication program is related to organization performance. Support for such a relationship has been established (Downs & Hain, 1982; Snyder & Morris, 1984; Foltz, 1985; Seibold & Meyers, 1986; Yates, 1989; Kreps, 1990). Since data are not available for causal analysis, the performance of the S.B.U. in the study can be measured before the communication program was started and at the present time.
Figure 7. Communication and Performance Model
While improvement in S.B.U. performance after implementation of a communication program cannot be statistically related to causal variables, the direction of change provides evidence of the probability of a positive effect. Based on this analysis, the following research question was examined:

3. Does S.B.U. performance improve after the implementation of a formal strategy communication program?

The participative management literature also addresses performance as higher in plants which utilize such management. A research question will be investigated relative to participation and performance.

4. Will there be a difference in performance in plants where participative management is practiced versus plants with traditional management systems?

Investigation of the research questions posed will provide information which may be used in additional research in the areas of communication and participative management approaches. Additional research at this level in the organization may also provide bases for research on S.B.U. strategy implementation.

Summary

This chapter has presented a review of literature in several research fields. Based on that review, a conceptual model was developed with hypotheses and research questions of relationships of communication media, employee knowledge, organization commitment, and productivity.
Chapter 3

Methods

This chapter will discuss the methodology of the study in terms of the research setting and sample, control of variables, and definition of measures. In addition, the statistical analysis will be presented in terms of validity, reliability, hypothesis, and research question testing.

Based on examining implementation, organization development, and communication research, the goal of this study was to examine the relationship between knowledge of the strategy gained from communication, media used by employees, their organization commitment, and productivity. Research reviewed in Chapter 2 established theoretical bases for the study objectives. In order to investigate the hypothesized relationships, data were collected from approximately fifteen plants in a S.B.U. of a major United States corporation. The data were then used to investigate the relationship of variables of interest. This chapter details the basic methodology of the study, including (1) the research setting and sample, (2) data collection methods, (3) measures, and, (4) analytical methods.
Research Setting and Sample

Data for this study were collected from line employees randomly selected from approximately fifteen (15) plants of a major garment manufacturing business unit of a Fortune 500 corporation in the United States. Line employees are those employees of the firm who are considered non-exempt, first-level, and who are paid on an incentive basis. They are the employees who actually perform the basic transformation processes in the firm.

The plants are primarily located in the southeastern United States and consist of manufacturing operations that produce the garments. The garments manufactured are primarily underwear, T-shirts, and sweat shirts. Most of the plants are located in small southern towns with some in medium size metropolitan areas. The employees who participated in the data collection are paid on an incentive pay system based on piece rates. In such a pay system, employees' pay is based on the output produced compared to outputs which have been computed as standard or normal.

Top management adopted a low cost strategy in the late 1980's with the same characteristics as the overall cost leadership strategy defined by Porter (1980). Since the adoption of that strategy, there has been a concerted and formal communication program by management to communicate that strategy to all employees in the business unit. That formal program is still being used for continuing education. Different methods such as video tapes, meetings with employees by different levels of management,
newsletters, and bulletin board notices have been used in the communication program. In addition to internal decisions by management on methods of communication, professional consultants have been used by this S.B.U. to develop effective communication programs. An extensive campaign was designed by the consultant for the initial communication effort and an annual update has been utilized with consultant support for subsequent years. Plant managers were surveyed to insure that all the communication media used in the questionnaire were available to the employees.

Data were collected by the researcher at each of the selected plant locations. Questionnaires were administered to small groups of randomly selected incentive paid employees who were paid for the time spent completing the questionnaire at their normal pay rate. Employees were briefed on the study objectives and the definition of unfamiliar terms by the researcher with no company management present and with the understanding that no individual answers to survey questions would be provided to management. The briefing will also included a careful explanation of employee selection of media used for strategic knowledge. This was done to control for the employee selecting the last media used for gaining knowledge rather than the media which was most effective to them.

The business unit represented in the study has been a participant with the Barringer Center at Virginia Polytechnic Institute and State University. They have supported several research studies in the past with faculty members and doctoral students at Virginia Tech. Support from top
management and staff managers has been helpful in planning and conducting this research.

Control of Variables

Classification of strategy type is sensitive to the type of industry in which a firm competes according to Hambrick (1982). He used the example of the research by Lawrence and Lorsch (1967) and the differences in the container and plastics industries as examples of different factors which determine strategy type. Limiting research to a particular industry controls for the strategy type variable.

Each of the plants in the S.B.U. used for the study had consistent management direction, similar technology, and used the same basic operations in the manufacturing process. The structure difference of line versus team management was one of the variables investigated. Selection of a single S.B.U. with those conditions controlled for management, technology, and manufacturing operations differences. The benefits and reward systems were uniform for all employees in the various plants surveyed which controls for some of the variables which could impact employee's productivity.

One of the hypotheses of the study examined the control for employee demographics such as age, tenure, and education. The literature posited
that such demographics are not related to knowledge gained through communication.

Measures

The following sections discuss the various measures used in the study. Measures are defined and the instruments used to measure each of the variables are discussed.

Low Cost Strategy

While not a dependent nor an independent variable in the study, confirmation of the strategy type selected by the firm is important to define the knowledge variable as the focus of the communication effort. For that reason, some background on the strategy used by the firm is discussed here. Porter (1980) developed three generic strategies defined as overall cost leadership or low cost, differentiation, and focus. The two basic generic strategies which differ in dominant characteristics are low cost and differentiation. Overall low cost strategy requires:

.....aggressive construction of efficient-scale facilities, vigorous pursuit of cost reductions from experience, tight cost and overhead control, avoidance of marginal customer accounts, and cost minimization in areas like R&D, service, sales force, advertising, and so on (Porter, 1980: 35).
The basic aim of a low cost strategy is to produce at the lowest cost so that low sales prices will make a competitive profit.

Differentiation, as an alternative generic strategy, involves creating a product that is perceived industrywide as being unique on one or more dimensions (Porter, 1980). Design, brand image, technology, customer service, and dealer networks are examples of attributes which may emphasize differentiation in a firm's generic strategy. Many successful differentiating firms do so using more than one attribute.

Porter's focus generic strategy involves concentrating on a limited portion of an overall industry such as a particular consumer group, a product line or a limited geographic area. According to Porter (1980), a firm using a focus strategy must also decide whether to focus on the basis of low cost or differentiation.

In a previous study in the same business unit, research included the identification of the generic strategy (Alexander, et al., 1989). To confirm the generic strategy of the study firm, nine members of the top management team in various functional areas were surveyed to determine their perception of the firm's strategy as related to Porter's generic strategies. A low cost strategy was selected by all the top managers. A separate survey of twenty one first line supervisors in two of the firm's plants showed that all of them also classified their firm as following a low cost strategy. The results of the survey confirmed the low cost strategy message which the firm was attempting to communicate to all employees through a formal, planned communication campaign. The top

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management team was surveyed again in this study to confirm that the low cost strategy was still identified by management as the firm's strategy.

Employee Knowledge of the Strategic Plan

Employees' understanding of the low cost generic strategy adopted by the firm indicates the effectiveness of the communication program underway in the firm since 1988. Using the different generic strategies defined by Porter (1980), the following items were used to determine the employees' perception of the specific generic strategy stated by the firm:

Use an "X" to indicate which one of the following statements best describes the firm's business plan.

a. (FIRM NAME) business plan is trying to sell products which are unique and different from its competitors.

b. (FIRM NAME) business plan is trying to become a low cost, high quality producer in the industry.

c. (FIRM NAME) business plan is trying to focus on certain customer groups and special types of clothing rather than covering the whole industry.

d. None of the above.

e. I am not sure what the business plan is.

The variable was coded as a dichotomous variable indicating "knowledgeable" for the low cost response and "unknowledgeable" for any other response.

To confirm the understanding by employees in selection of the strategy type and to investigate the availability of scales defining strategic types, additional questions were used. The questions were based on re-
search describing attributes of cost leader and differentiation generic strategy types (Porter, 1980; Dess & Davis, 1984; Porter, 1985; Robinson & Pearce, 1988). Those attributes include emphasis on production efficiency, reduced waste and scrap, low labor costs, and bargaining with suppliers for low prices. If employees knew the strategy, they should also have known the attributes which define the strategy. The attributes were measured with a Likert-like scale with responses ranging from "strongly disagree" = 1 to "strongly agree" = 7 with 4 representing a "don't know" point. Attributes of strategic type used were:

1. (FIRM NAME) business plan emphasizes selling unique styles or designs of its knit wear rather than standard styles and designs.

2. (FIRM NAME) business plan emphasizes producing low cost products.

3. (FIRM NAME) business plan emphasizes worker safety over production efficiency.

4. (FIRM NAME) business plan is to sell its products at a low price in its industry.

5. (FIRM NAME) business plan emphasizes reducing waste and scrap.

6. A primary emphasis of (FIRM NAME) business plan is production of large standard lots rather than several different small lots.

7. Sacrificing high quality for high production is emphasized in (FIRM NAME) business plan.

8. (FIRM NAME) business plan stresses providing a variety of products or styles rather than a few standard styles or designs.

9. (FIRM NAME) business plan emphasizes keeping labor costs low.

10. (FIRM NAME) business plan emphasizes the introduction of new products rather than selling the same existing products.

11. (FIRM NAME) business plan emphasizes low prices from suppliers in order to sell at low prices.
12. (FIRM NAME) business plan emphasizes selling to customers who want higher priced exclusive products.

13. (FIRM NAME) business plan emphasizes cost reduction programs.

14. (FIRM NAME) emphasizes high cost exclusive product design over low cost standard designs as part of the business plan.

Knowledge of the strategic plan was used as an independent variable in the impact of knowledge on productivity and as a dependent variable in the analysis of the type media used in communication of the strategy.

Organization Commitment

Employees' organization commitment was measured with a 15 item scale developed by Porter, Steers, Mowday, and Boulian (1974). The items are based on employee intensity of effort, pride in the firm, care for the firm, and evaluation of the firm as a place to work. The responses were measured with a Likert-like scale with responses ranging from "strongly disagree" = 1 to "strongly agree" = 7 with 4 representing a "don't know" point. Employees in the pilot test defined the response of "don't know" as having no opinion on the scale. The questions were changed to indicate firm or company rather than organization and, otherwise, match the scale as tested by Porter, et al. (1974) exactly. Additionally, in preliminary research, use of this scale resulted in a coefficient alpha of .93 showing strong reliability among the items used in the scale (Scott, et al., 1991). The 15 items used in the scale were:

1. I am willing to put in a great deal of effort beyond that
normally expected in order to help this company be successful.

2. I talk up (FIRM NAME) to my friends as a great company to work for.

3. I feel very little loyalty to this company. [Reverse scored]

4. I would accept almost any type of job assignment in order to keep working for this company.

5. I find that my values and the company's values are very similar.

6. I am proud to tell others that I am a part of this company.

7. I could just as well be working for a different company as long as the type of work was similar. [Reverse scored]

8. This company really inspires the very best in me in the way of job performance.

9. It would take very little change in my present circumstances to cause me to leave this company. [Reverse scored]

10. I am extremely glad that I chose this company to work for over others I was considering at the time I was hired.

11. There's not too much to be gained by sticking with this company indefinitely. [Reverse scored]

12. Often I find it difficult to agree with this company's policies on important matters relating to its employees. [Reverse scored]

13. I really care about the fate of this company.

14. For me, this is the best of all possible companies for which to work.

15. Deciding to work for this company was a definite mistake on my part. [Reverse scored]
Performance and Productivity

Since the goal of strategic planning is improved performance in the firm (Porter, 1980; Venkatraman & Ramanujam, 1986), successful implementation of the strategy can be measured in terms of improved performance. In many studies in the strategic management field, financial results are the measures used in the operationalization of performance (Venkatraman & Ramanujam, 1986). Traditional financial measures such as return on assets or return on sales are not appropriate for measuring individual employee performance. Operational performance measures are suggested as equally important indications of organizational performance by Venkatraman & Ramanujam (1986).

Implementation of low cost strategy emphasizes employee productivity (Porter, 1980; Dess & Davis, 1984).

Productivity data were obtained from each plant's production records and measure each employee's productivity over the standard production period just preceding the administration of the survey. Productivity data were maintained by the plants as a count of items actually produced versus the standard items required for 100% efficiency for the period worked by each employee. The data were reviewed by the researcher with management of each plant to insure the correct time period was being used and that apparent anomalies did not exist with the production records.

Employee productivity in plants with a traditional line structure is measured individually for each employee on their assigned job. Weekly output is compared to the standard output for the particular job which
produces a productivity measure expressed as a percent of standard output. The procedure to calculate the percent of standard output measure of productivity is also used in plants with team sewing structure. Here, individual employee productivity is expressed as the productivity for the respective team in these plants.

The measure of S.B.U. performance in this study was percentage growth in operating profit net of growth in sales. This method of measuring financial results provides an indication of performance improvement caused by other factors than sales increases. Operating profit is a measure used for reporting financial performance to the parent company. Measures of performance before the initiation of the communication program and for the current period were determined and compared.

Individual plant performance was determined as adjusted standard cost from the firm's cost accounting system. The measure models every sewing plant as if the same product was being produced with the same production standards. Such adjusted standard costs provide a measure of performance as indicated by productivity against standards and is an appropriate performance measure for firms implementing a low cost strategy.

Rich and Lean Media

In order to study the impact of the use of rich and lean media in investigating the most effective communication of strategy (Daft & Lengel, 1986; Lengel & Daft, 1988), the various media and definition of
rich or lean were addressed. The media actually used in the formal communication process at the firm participating in the study were identified (Alexander, et al., 1989) by the firm's management and the communication consultant utilized by the firm for the formal program. Each of the media used were then analyzed to determine which could be classified as rich or lean based on the definitions used in the research proposing use of rich media for complex communication (Daft & Lengel, 1986; Lengel & Daft, 1988). Factor analysis was used to determine if rich and lean communication media measures could be determined. In addition, the media were reviewed by faculty members in the communication studies department at Virginia Tech University for classification of rich or lean.

Determination of the media selected by the business unit for the communication program and actually used by the employees were based on the employees' responses to the following:

1. I learn about the business plan from articles written about the business plan in the company magazine.

2. I learn about the business plan in group meetings conducted by my immediate supervisor/facilitator.

3. I learn about the business plan when (FIRM NAME) Division management above the Plant Manager level meets with employees to discuss the business plan.

4. I learn about the business from letters sent to me from (FIRM NAME) Division management.

5. I learn about the business plan from company television ads.

6. I learn about the business plan from newspaper articles which contain information about the business plan.

7. I learn about the business plan from information placed on bulletin boards, posters, and signs in the plant.

8. I learn about the business plan from Plant Manager meetings.
in which the business plan is discussed.

9. I learn about the business plan from company slogans, buttons, sweat shirts, T-shirts, records, etc.

10. I learn about the business plan from Stockholder Annual reports for (FIRM NAME) which I have received.

11. I learn about the business plan from reading articles written in my plant's newsletter.

12. I learn about the business plan from my immediate supervisor/facilitator in one on one discussions with me.

13. I learn about the business plan from other employees who tell me information about the business plan.

14. I learn about the business plan from a video tape shown and discussed with me and a group of employees about the business plan.

15. I learn about the business plan from members of the plant management staff other than the Plant Manager or my supervisor/facilitator.

A five item scale ranging from "not at all" = 1 to "great extent" = 5 was used to find the relative extent each item had been used by employees to learn about the business plan.

To decrease the possibility of employees selecting the last medium used to learn of the business plan, clear instructions were included in the researcher's instructions to employees emphasizing selection of the particular media used at any time in the program rather than the last medium used. A clear presentation and understanding of those instructions provided for the employee's selection of the extent to which each medium had helped the employee to learn of the firm's strategy.
**Statistical Analysis**

Statistical analyses which provided accurate and reliable testing of the study hypotheses were used. Several types of research validity must be considered in the research design (Judd & Kenny, 1982). The following subsections address validity issues in the study.

**Construct Validity**

Construct validity is the extent to which the study variables successfully represent the intended construct (Cronbach & Meehl, 1955). In addition to testing for the extent to which indicators of each construct fairly represent that construct, the constructs required testing to ensure that they were different from other constructs utilized in the study. Content validity, reliability, and factor analysis were used in this study to establish construct validity of the variables.

**Content Validity:** Content validity determines the adequacy of the sample domain to describe the measure (Nunnally, 1978). Face validity determines the apparent applicability of the items used in the measure. The scale used to determine the organization commitment measure was adapted from existing research wherein it was found to be valid and, therefore, face or content validity was established for the variable. The strategy at-
tributes scale was based on existing research which defined the attributes of Porter's (1980) generic strategies and was reviewed for face validity by members of the researcher's Doctoral Committee. In addition, the scale was subjected to pilot testing for validity by representatives of the firm used for the sample.

The potential scales defining rich and lean media were based on presenting the actual media used in the firm's communication program. The emphasis of the fifteen items in the questionnaire about media was determination of which of the media the employees used to learn of the business plan.

Content validity was not a concern for the direct indicators of knowledge of the generic strategy and the demographic variables since respondents were queried for direct responses to those questions. In addition, the productivity and performance measures were not a concern since direct measures of those measures from company records were used. With content validity established, factor analysis was used to determine construct validity.

**Factor Analysis:** Factor analysis refers to statistical techniques which allow the researcher to represent a set of variables in terms of a smaller number of items (Kim & Mueller, 1978). Factor analysis using varimax rotation was, therefore, used to confirm that items were properly assigned to the appropriate scale. Since the items in each scale had been analyzed above for content validity, the factor analysis provided a test of construct validity.
Reliability

Insufficient reliability occurs when an observation is repeated and fails to produce similar results in the same environment, thus, the measures cannot be trusted to predict true changes (Cook & Campbell, 1979; Rosenthal & Rosnow, 1984). Internal consistency of the appropriate scales used in the study were subjected to a coefficient alpha analysis. Such a test examines the correlation among the items of a scale relative to the number of items in the scale (Carmines and Zeller, 1979). Alphas of 0.70 have been suggested as acceptable for scale development (Nunnally, 1978).

The questionnaire was pilot tested before primary data collection at one plant in the S.B.U. That pilot test will served as a final test for overall survey validity. The pilot test will included discussions with the respondents in addition to analysis of their responses to the survey.

Hypothesis Testing

The hypotheses tested in this study were examined using Pearson's product-moment analysis, multiple regression, and Student's t-test analysis. Each of the statistical techniques are discussed below.

Pearson's Product-Moment Analysis: The Pearson's product-moment analysis is widely employed as an index of the relationship between variables
(Rosenthal & Rosnow, 1984). This analysis provides useful information about the relationship between variables such as (1) the positive or negative direction of the relationship, (2) the degree of the strength of the relationship, and, (3) the percent of variation explained by the relationship between the two variables.

**Multiple Regression Analysis:** Regression allows testing of the model proposed and explains the variability accounted for by the independent variables. Using one of several methods to enter variables into the linear regression model, the hypothesized relationship of the dependent variable to the independent variable(s) can be tested. Calculation of the coefficient of determination ($r^2$) explains the variation caused by the independent variables on the dependent variable.

**Student’s T-Test:** The Student’s t-test compares sample means and determines if a significant difference exists between the means. Comparison of the magnitude of means where a significant difference exists can provide information on the magnitude of preferences, perceptions, or other measures.

**Hypotheses Tests:** The statistical analyses for the various tests required were accomplished using SPSS-X. The hypotheses were tested as shown in the following sections.

**H1:** Employees who emphasize rich communication media for receiving strategic information will have more knowledge of the S.B.U. strategy.
Hypothesis 1 was tested using Pearson product-moment analysis to determine if positive correlation existed between the variables.

H2: Employees who emphasize lean communication media for receiving strategic information will have less knowledge of the S.B.U. strategy.

Hypothesis 2 was tested using Pearson product-moment analysis to determine if negative correlation existed between the variables.

H3: Employees who know the firm's S.B.U. strategy will have higher commitment to the organization than employees who do not know the firm's S.B.U. strategy.

Hypothesis 3 was tested using Pearson product-moment analysis to determine if a positive correlation existed between the variables. A dummy variable was used to determine if differences exist in plants which are in small towns where the firm is the dominant employer versus larger towns where many more employment opportunities are available to employees. Regression analysis with the dummy variable included determined relationships including strength of each independent variable.

H4: Employee productivity is positively related to employee knowledge of the S.B.U. strategy and organization commitment.

Hypothesis 4 was tested using regression analysis to determine the relationship between the dependent variable and the independent variables. Stepwise and enter procedures in SPSS-X was used to insure full analysis of the regression model developed.

H5: Demographic variables such as age, job tenure, and education are not related to strategic knowledge gained through the various media used.

H5a: Age is not related to strategic knowledge gained through the various communication media used.

H5b: Job tenure is not related to strategic knowledge gained through the various communication media used.
H5c: Education is not related to strategic knowledge gained through the various communication used.

H5d: Age, job tenure, and education as a group are not significantly related to strategic knowledge gained through the various communication media.

Hypotheses 5a through 5d were tested using Pearson product-moment analysis and regression analysis to determine the relationship between the variables of interest. In addition, control for other hypotheses were insured by testing for the effects of demographic variables on each hypothesis.

H6: Employees who have knowledge of the S.B.U. strategy will emphasize the direct supervisor over peers, plant staff management, the plant manager, or division management for learning about the S.B.U. strategy.

Hypothesis 6 was tested by using t-tests to determine the magnitude of means of each communication medium and whether a significance difference existed between the means. The tests determined the employee preference for strategic communication from the direct supervisor versus other personal sources of communication.

Testing Research Questions

In addition to testing the hypotheses above, the four research questions proposed were also tested using the statistical analyses tools described in the last section. Research questions 1 and 2 which address knowledge and organization commitment in plants with traditional line management systems versus participative management systems were tested
using Student's t-test. Determination of improved performance at the S.B.U. level was tested longitudinally by comparing performance before and after the communication programs. Research question 4 which addresses performance in plants with different management systems was investigated by determining current plant performance using total adjusted standard data maintained by the firm.

Summary

This chapter has presented the methodology used to perform the analyses required of the study. The methodology required a survey of random employees in several of the plants of the firm's S.B.U. used for the study. Particular attention was paid to the sample size in each of the plants in the survey to insure that the random sample was a factual indication of the plant's employee data. Figure 8 on page 62 summarizes the hypotheses investigated. Figure 9 on page 63 presents the four research questions examined in the study.
**Impact of Rich Communication Media**

H1. Employees who emphasize rich communication media for receiving strategic information will have more knowledge of the S.B.U. strategy.

**Impact of Lean Communication Media**

H2. Employees who emphasize lean communication media for receiving strategic information will have less knowledge of the S.B.U. strategy.

**Impact of Knowledge on Employee Organization Commitment**

H3. Employees who know the firm’s S.B.U. strategy will have higher commitment to the organization than employees who do not know the firm’s S.B.U. strategy.

**Employee Knowledge, Organization Commitment, and Productivity**

H4. Employee productivity is positively related to employee knowledge of the S.B.U. strategy and organization commitment.

**Demographic Variables and Knowledge of Strategy**

H5. Demographic variables such as age, job tenure, and education are not related to strategic knowledge gained through the various media used.

**Importance of Supervisory Communication**

H6. Employees who have knowledge of the S.B.U. strategy will emphasize the direct supervisor over peers, plant staff management, the plant manager, or division management for learning about the S.B.U. strategy.

**Figure 8. Study Hypotheses**
RQ1. Will there be a difference in knowledge of the S.B.U. strategy in plants where participative management is practiced versus plants with traditional management systems?

RQ2. Will there be a difference in organization commitment in plants where participative management is practiced versus plants with traditional management systems?

RQ3. Does S.B.U. performance improve after the implementation of a formal strategy communication program?

RQ4. Will there be a difference in performance in plants where participative management is practiced versus plants with traditional management systems?

Figure 9. Research Questions
Chapter 4

Results

This chapter presents the results of collecting data and testing hypotheses and research questions as proposed in earlier chapters. The demographic characteristics of the sample are discussed in the first section of this chapter. Discussion of the construct validity of scales using factor analysis and reliability tests is also included. The remainder of the chapter presents the results of testing the hypotheses and analyzing the research questions posed. The questionnaire used in the study is included in Appendix A. Parts 1, 2, 5, and 8 were specifically used for testing the study hypotheses and research questions. The remaining questions addressed items of interest to the company management or for other research.

Sample Characteristics

Employees of each of the test company's sewing plants were randomly selected from sewing operations to obtain a sample of approximately 100 respondents in each of 14 plants. The total number of respondents was
1220 in all fourteen plants. Questionnaires were excluded from the sample which did not include employee name or were not substantially complete. Using this criteria, 130 of the answers were classified non-responsive and were not included in the statistical analysis. This process produced a response rate of 89% of the population sampled in the study. Paired t-tests of the variables of interest to determine if the difference in data between responsive and non-responsive employees was significant. The results of those tests showed no significant difference (p ≤ .01) between the sets of data.

The gender of the sample was 99% female which is typical of the type jobs surveyed in the cut-and-sew industry. Data were not collected on the race of the respondents. Table 3 on page 67 is a complete listing of the employee demographics from the sample. The table shows a relatively young work force with about two thirds having less than five years tenure with the company. Seventy-nine percent of the sample had at least a high school education, with 21% attending or completing some college. The number of employees in teams with line management structures were about the same as the number of employees in plants with participative management. All the employees in the sample were paid on either an individual or team incentive pay plan. Those on an individual plan were paid based on their own productivity compared with standard productivity for the sewing job to which assigned. The team incentives were paid on the basis of the team's productivity compared with standard productivity for the team. Production standards are established in all the plants by engineers who study all the jobs to determine standard production at the

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100% level. Note that each team included all the sewing jobs required to complete the garment assigned to the team for manufacture.

Reliability and Validity of Variables

Pilot Test

The questionnaire was pilot tested at one of the company's sewing plants which had similar operations and policies to the plants which participated in the survey. Small groups of employees were assembled in the plant conference room and given instructions on completing the questionnaire including an explanation of terms used in the questionnaire. They then completed the survey and stayed in the conference room until all employees in the group were finished. Each section of the survey was then reviewed to insure the employees understood the questions and had interpreted definitions such as business plan correctly. As a result of the pilot test, the survey was modified slightly by substituting words and amending questions based on input of the employees at the pilot plant. These changes were discussed with the committee chairman for face validity. A total of 47 employees participated in the pilot test.
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>19 or Younger</td>
<td>1.3%</td>
</tr>
<tr>
<td>20 to 29 Years</td>
<td>41.7%</td>
</tr>
<tr>
<td>30 to 39 Years</td>
<td>34.0%</td>
</tr>
<tr>
<td>40 to 49 Years</td>
<td>15.5%</td>
</tr>
<tr>
<td>50 to 59 Years</td>
<td>6.9%</td>
</tr>
<tr>
<td>60 or Older</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>Tenure</strong></td>
<td></td>
</tr>
<tr>
<td>0 to 2 Years</td>
<td>28.9%</td>
</tr>
<tr>
<td>3 to 5 Years</td>
<td>37.5%</td>
</tr>
<tr>
<td>6 to 10 Years</td>
<td>15.8%</td>
</tr>
<tr>
<td>11 to 15 Years</td>
<td>9.2%</td>
</tr>
<tr>
<td>16 to 20 Years</td>
<td>4.2%</td>
</tr>
<tr>
<td>21 Years and above</td>
<td>4.4%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>8th grade or less</td>
<td>2.9%</td>
</tr>
<tr>
<td>Some high school</td>
<td>18.2%</td>
</tr>
<tr>
<td>High school graduate</td>
<td>58.3%</td>
</tr>
<tr>
<td>Some college</td>
<td>19.6%</td>
</tr>
<tr>
<td>Associate's degree</td>
<td>0.7%</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

Sample Size: \( N = 1,090 \)
Rich and Lean Media, Low Cost Strategy, and Organization Commitment

Factor analysis with varimax rotation was used to analyze the data and determine survey variables of interest. The factor analysis determined the presence of rich and lean media scales, a low cost strategy scale, and confirmed the organization commitment scales with twelve of the fifteen items used by Porter, et al. (1974). Results of the factor analysis are shown in Table 4 on page 69.

The structure of the variables as a result of factor analysis with varimax rotation is just one of the tests used to determine reliability and validity of the variable constructs. Face validity was also determined for each variable by comparing it to the factors which theoretically make up the variable. Reliability analysis using the SPSS-X statistical package was also used for each of the variables to determine the Cronbach's alpha for each scale. The items which define the rich and lean media, organization commitment and low cost strategy variables and their coefficient alphas are shown in Table 5 on page 70.

Organization Commitment: The organization commitment variable includes twelve of the fifteen items included in the scale developed by Porter, et al. (1974). The remaining three items were reverse coded and a random review of the questionnaires indicates that some respondents may have been confused in their responses to those questions. This is based on a comparison of responses to those items and to other similar items in the scale. Some of the respondents who indicated strong positive organization

Results

68
<table>
<thead>
<tr>
<th>VARIABLE NAME</th>
<th>ITEM</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACTOR 1:</td>
<td>CMT6</td>
<td>0.827</td>
<td>0.079</td>
<td>0.014</td>
<td>0.073</td>
</tr>
<tr>
<td>ORGANIZATION</td>
<td>CMT10</td>
<td>0.792</td>
<td>0.049</td>
<td>0.027</td>
<td>0.021</td>
</tr>
<tr>
<td>COMMITMENT</td>
<td>CMT2</td>
<td>0.790</td>
<td>0.100</td>
<td>0.014</td>
<td>0.079</td>
</tr>
<tr>
<td></td>
<td>CMT14</td>
<td>0.757</td>
<td>0.077</td>
<td>0.017</td>
<td>0.055</td>
</tr>
<tr>
<td></td>
<td>CMT5</td>
<td>0.713</td>
<td>0.162</td>
<td>0.072</td>
<td>0.039</td>
</tr>
<tr>
<td></td>
<td>CMT8</td>
<td>0.704</td>
<td>0.198</td>
<td>0.125</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td>CMT13</td>
<td>0.673</td>
<td>0.027</td>
<td>0.125</td>
<td>0.021</td>
</tr>
<tr>
<td></td>
<td>CMT15</td>
<td>0.666</td>
<td>0.026</td>
<td>0.053</td>
<td>0.026</td>
</tr>
<tr>
<td></td>
<td>CMT4</td>
<td>0.658</td>
<td>0.041</td>
<td>-0.023</td>
<td>0.103</td>
</tr>
<tr>
<td></td>
<td>CMT1</td>
<td>0.608</td>
<td>0.027</td>
<td>0.102</td>
<td>0.185</td>
</tr>
<tr>
<td></td>
<td>CMT11</td>
<td>0.580</td>
<td>0.058</td>
<td>0.004</td>
<td>0.083</td>
</tr>
<tr>
<td></td>
<td>CMT12</td>
<td>0.423</td>
<td>0.266</td>
<td>-0.074</td>
<td>0.037</td>
</tr>
<tr>
<td>FACTOR 2:</td>
<td>MED8</td>
<td>0.138</td>
<td>0.726</td>
<td>0.136</td>
<td>0.158</td>
</tr>
<tr>
<td>RICH</td>
<td>MED3</td>
<td>0.110</td>
<td>0.702</td>
<td>0.054</td>
<td>0.072</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>MED2</td>
<td>0.205</td>
<td>0.667</td>
<td>0.087</td>
<td>0.150</td>
</tr>
<tr>
<td>MEDIA</td>
<td>MED15</td>
<td>0.055</td>
<td>0.659</td>
<td>-0.022</td>
<td>0.026</td>
</tr>
<tr>
<td></td>
<td>MED12</td>
<td>0.115</td>
<td>0.576</td>
<td>0.121</td>
<td>0.108</td>
</tr>
<tr>
<td></td>
<td>MED14</td>
<td>0.047</td>
<td>0.552</td>
<td>-0.010</td>
<td>0.196</td>
</tr>
<tr>
<td>FACTOR 3:</td>
<td>BP4</td>
<td>0.108</td>
<td>0.064</td>
<td>0.757</td>
<td>0.128</td>
</tr>
<tr>
<td>PORTER'S</td>
<td>BP2</td>
<td>0.058</td>
<td>0.027</td>
<td>0.717</td>
<td>0.115</td>
</tr>
<tr>
<td>LOW COST</td>
<td>BP11</td>
<td>0.118</td>
<td>0.083</td>
<td>0.579</td>
<td>-0.064</td>
</tr>
<tr>
<td>STRATEGY</td>
<td>BP13</td>
<td>0.055</td>
<td>0.154</td>
<td>0.513</td>
<td>-0.048</td>
</tr>
<tr>
<td></td>
<td>BP9</td>
<td>0.001</td>
<td>-0.006</td>
<td>0.488</td>
<td>0.036</td>
</tr>
<tr>
<td>FACTOR 4:</td>
<td>MED1</td>
<td>0.182</td>
<td>0.074</td>
<td>0.111</td>
<td>0.685</td>
</tr>
<tr>
<td>LEAN</td>
<td>MED11</td>
<td>0.144</td>
<td>0.264</td>
<td>0.061</td>
<td>0.670</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>MED10</td>
<td>0.149</td>
<td>0.214</td>
<td>-0.020</td>
<td>0.556</td>
</tr>
<tr>
<td>MEDIA</td>
<td>MED7</td>
<td>0.035</td>
<td>0.381</td>
<td>0.107</td>
<td>0.526</td>
</tr>
<tr>
<td></td>
<td>MED4</td>
<td>0.062</td>
<td>0.350</td>
<td>-0.019</td>
<td>0.409</td>
</tr>
<tr>
<td>EIGENVALUE</td>
<td></td>
<td>8.193</td>
<td>4.060</td>
<td>2.403</td>
<td>2.100</td>
</tr>
</tbody>
</table>
Table 5. Variable Items Defined with Reliability Coefficient

<table>
<thead>
<tr>
<th>Organization Commitment (Alpha = 0.90)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMT1. I am willing to put in a great deal of effort beyond that normally expected in order to help this company be successful.</td>
</tr>
<tr>
<td>CMT2. I talk up (FIRM NAME) to my friends as a great company to work for.</td>
</tr>
<tr>
<td>CMT4. I would accept almost any type of job assignment in order to keep working for this company.</td>
</tr>
<tr>
<td>CMT5. I find that my values and the company’s values are very similar.</td>
</tr>
<tr>
<td>CMT6. I am proud to tell others that I am part of this company.</td>
</tr>
<tr>
<td>CMT8. This company really inspires the very best in me in the way of job performance.</td>
</tr>
<tr>
<td>CMT10. I am extremely glad that I chose this company to work for over others I was considering at the time I was hired.</td>
</tr>
<tr>
<td>CMT11. There's not too much to be gained by sticking with this company indefinitely. (R)</td>
</tr>
<tr>
<td>CMT12. Often I find it difficult to agree with this company's policies on important matters relating to its employees. (R)</td>
</tr>
<tr>
<td>CMT13. I really care about the fate of this company.</td>
</tr>
<tr>
<td>CMT14. For me, this is the best of all possible companies for which to work.</td>
</tr>
<tr>
<td>CMT15. Deciding to work for this company was a definite mistake on my part. (R)</td>
</tr>
</tbody>
</table>

R = Reverse coded.

<table>
<thead>
<tr>
<th>Porter's Low Cost Strategy (Alpha = 0.66)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP2. (FIRM NAME) business plan emphasizes producing low cost products.</td>
</tr>
<tr>
<td>BP4. (FIRM NAME) business plan is to sell its products at a low price in its industry.</td>
</tr>
<tr>
<td>BP9. (FIRM NAME) business plan emphasizes keeping labor costs low.</td>
</tr>
<tr>
<td>BP11. (FIRM NAME) business plan emphasizes low prices from suppliers in order to sell at low prices.</td>
</tr>
<tr>
<td>BP13. (FIRM NAME) business plan emphasizes cost reduction programs.</td>
</tr>
</tbody>
</table>
commitment based on other responses indicated negative organization commitment on one or more of the subject reverse coded items. Reliability was tested with the addition of the three reverse coded items to determine if the Cronbach's alpha improved. The results did not support including the three items in the scale since the coefficient alpha did not improve as a result of adding the additional items.

Knowledge of Low Cost Strategy: Porter's low cost strategy includes theoretical indicators represented by items 2, 4, 5, 6, 9, 11, and 13 in part 1 of the questionnaire. The scale defined by factor analysis with a reliability coefficient of 0.66 is defined by items 2, 4, 9, 11 and 13 of part 1. The remaining items loaded as a separate scale in the factor analysis. The two items were reducing waste and scrap and producing large standard lots as emphases of the business plan. The item which suggests reducing waste and scrap straddled the two item factor and the low cost factor in the factor analysis. Adding that item to the reliability analysis decreased the coefficient alpha, however. The remaining items in part 1 were theoretical indicators of Porter's differentiation strategy and factor analysis selected three of those items (7, 12, and 14) as a factor with a reliability coefficient of 0.63.

Another test of knowledge of the low cost strategy was an item which asked for a specific selection of the firm's strategy with choices of differentiation, low cost, focus, don't know and not sure. The responses coded knowledgeable and not knowledgeable were then compared with the knowledge of the low cost strategy scale using oneway analysis of variance.
tests. The results showed a significant difference in groups of employees which were knowledgeable and not knowledgeable in their selection of the indicators of low cost strategy using the low cost strategy scale. Two tests for homogeneity of variance showed significant differences in the groups. Both the Cochran's C test ($C = 0.6378, p \leq 0.001$) and the Bartlett-Box ($R = 31.801, p \leq 0.001$) showed significant differences indicating that support exists for knowledge of the strategy using the two measures.

To confirm that the firm's strategy was low cost, the S.B.U.'s top management team was surveyed with the same questions from Part 1 of the questionnaire as the employees answered. The responses were unanimous in selecting the low cost strategy and at least 75% of the top management team gave a positive response to the scale indicators of the low cost strategy. Table 6 on page 73 is a summary of the applicable responses of the top management team. Top management also confirmed that low cost was the strategy message communicated to all employees in the communication program.

Rich and Lean Communication Media: Rich and lean communication media items with their coefficient alphas are presented in Table 7 on page 75. Management in each of the plants confirmed that the media choices on the questionnaire were available to the plant's employees. The rich and lean media scales developed are original with this study. A search of the literature did not discover previous developed scales defining these variables. In addition to the scales determined by factor analysis,
<table>
<thead>
<tr>
<th>Item</th>
<th>Percent Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP2. (FIRM NAME) business plan emphasizes producing low cost products.</td>
<td>100%</td>
</tr>
<tr>
<td>BP4. (FIRM NAME) business plan is to sell its products at a low price in its industry.</td>
<td>75%</td>
</tr>
<tr>
<td>BP9. (FIRM NAME) business plan emphasizes keeping labor costs low.</td>
<td>75%</td>
</tr>
<tr>
<td>BP11. (FIRM NAME) business plan emphasizes low prices from suppliers in order to sell at low prices.</td>
<td>100%</td>
</tr>
<tr>
<td>BP13. (FIRM NAME) business plan emphasizes cost reduction programs.</td>
<td>100%</td>
</tr>
<tr>
<td>BP15. (FIRM NAME) business plan is trying to become a low cost, high quality producer in the industry.</td>
<td>100%</td>
</tr>
</tbody>
</table>
faculty members of the Communication Studies Department at Virginia Tech University supported the selection of rich and lean media items used in the scales.

The scales defining rich and lean media used eleven of the fifteen items addressing media. The four items not used in one of the two scales were television advertisements, newspaper articles, buttons and other company gift items, and peer employees. The first three do not fit well into the theoretical definitions of rich or lean media and the last item is commonly known as the "employee grapevine." Those four items defined a separate factor in the factor analysis. Adding the remaining items to the rich or lean media variables did not improve the Cronbach's alpha for those measures.

Table 8 on page 76 shows summary data for employees' organization commitment, knowledge of the low cost strategy, and rich and lean communication media. Likert scales were used for organization commitment and low cost strategy variables by asking respondents to agree or disagree with varying degrees of intensity to statements. The two media scales used Likert scales to determine the degrees of use of the particular media selected to learn of the company's business plan. During the instructions prior to completing the questionnaire, the researcher explained that the media used to learn of the strategy over time should be selected rather than the most recent media that the respondent remembered using. This was done to reduce respondents' bias to select the medium used most recently to learn of the business plan.
### Table 7. Variable Items Defined with Reliability Coefficient

**Rich Communication Media (Alpha = 0.78)**

<table>
<thead>
<tr>
<th>Item (MED)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MED2</td>
<td>I learn about the business plan in group meetings conducted by my immediate supervisor/facilitator.</td>
</tr>
<tr>
<td>MED3</td>
<td>I learn about the business plan when (FIRM NAME) Division management above the Plant Manager level meets with employees to discuss the business plan.</td>
</tr>
<tr>
<td>MED8</td>
<td>I learn about the business plan from Plant Manager meetings in which the business plan is discussed.</td>
</tr>
<tr>
<td>MED12</td>
<td>I learn about the business plan from my immediate supervisor/facilitator in one on one discussions with me.</td>
</tr>
<tr>
<td>MED14</td>
<td>I learn about the business plan from a video tape shown and discussed with me and a group of employees about the business plan.</td>
</tr>
<tr>
<td>MED15</td>
<td>I learn about the business plan from members of the plant management staff other that the Plant Manager or my supervisor/facilitator.</td>
</tr>
</tbody>
</table>

**Lean Communication Media (Alpha = 0.72)**

<table>
<thead>
<tr>
<th>Item (MED)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MED1</td>
<td>I learn about the business plan from articles written about the business plan in the company magazine.</td>
</tr>
<tr>
<td>MED4</td>
<td>I learn about the business plan from letters sent to me from (FIRM NAME) Division management.</td>
</tr>
<tr>
<td>MED7</td>
<td>I learn about the business plan from information placed on bulletin boards, posters, and signs in the plant.</td>
</tr>
<tr>
<td>MED10</td>
<td>I learn about the business plan from Stockholder Annual reports for (FIRM NAME) which I have received.</td>
</tr>
<tr>
<td>MED11</td>
<td>I learn about the business plan from reading articles written in my plant's newsletter.</td>
</tr>
</tbody>
</table>
Table 8. Variable Statistics Summary

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
<th>MINIMUM VALUE</th>
<th>MAXIMUM VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGANIZATION COMMITMENT</td>
<td>1,085</td>
<td>4.851&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1.083</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>LOW COST STRATEGY</td>
<td>1,089</td>
<td>5.394&lt;sup&gt;1&lt;/sup&gt;</td>
<td>0.828</td>
<td>1.60</td>
<td>7.00</td>
</tr>
<tr>
<td>RICH COMMUNICATION MEDIA</td>
<td>1,081</td>
<td>2.418&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.857</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>LEAN COMMUNICATION MEDIA</td>
<td>1,084</td>
<td>2.466&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.795</td>
<td>1.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

1 Measured with a seven point Likert scale where 1 = strongly disagree and 7 = strongly agree.

2 Measured with a five point Likert scale where 1 = not at all and 5 = great extent.
Employee Productivity

Employee productivity results are shown in Table 9 on page 78. The productivity data for employees from below 100% up to above 140% are shown in the table. The majority of employees performed below 120% with 46.6% below the 110% productivity level. About 13% of employees performed above 130%. The mean productivity level of employees was about 120% of the defined standard production rate. This is normal in incentive paid jobs.

Hypotheses Tests

Results of testing each of the hypotheses are presented in this section. Each hypothesis tested is presented with appropriate statistical results.

Impact of Rich Communication Media

Hypothesis 1:

H1. Employees who emphasize rich communication media for receiving strategic information will have more knowledge of the S.B.U. strategy.

Hypothesis 1 was supported. A positive correlation was found between the six item rich communication media scale and the five item knowledge
Table 9. Sample Productivity Data

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Productivity</strong></td>
<td></td>
</tr>
<tr>
<td>Below 100%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Above 100% Below 110%</td>
<td>33.6%</td>
</tr>
<tr>
<td>Above 110% Below 120%</td>
<td>22.0%</td>
</tr>
<tr>
<td>Above 120% Below 130%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Above 130% Below 140%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Above 140%</td>
<td>8.4%</td>
</tr>
<tr>
<td><strong>Sample Mean</strong></td>
<td>2.936</td>
</tr>
<tr>
<td><strong>Sample Std. Dev.</strong></td>
<td>1.411</td>
</tr>
<tr>
<td><strong>Sample Range</strong></td>
<td>5.000</td>
</tr>
</tbody>
</table>

**Sample Responses**

1 = Below 100%
2 = Above 100%
3 = Above 110%
4 = Above 120%
5 = Above 130%
6 = Above 140%

Sample Size: \( N = 1,090 \)
of the low cost strategy scale ($r = 0.2097, p \leq 0.001$). Results of the Pearson product-moment analysis performed using the SPSS-X statistical system are shown in Table 10 on page 80. The table presents each of the scales developed and the Pearson product-moment correlation between the scales. Significance level (p-value) and correlation coefficient ($r$ value) are shown for each scale in relation to the three other scales of interest. With a very large sample, the correlations hypothesized are considered significant at the less than or equal to 0.01 level only. The large sample size might cause significant correlations at higher levels of $p$ which dictates selection of an appropriate p-value to insure acceptable statistical effect.

Impact of Lean Communication Media

Hypothesis 2:

H2. Employees who emphasize lean communication media for receiving strategic information will have less knowledge of the S.B.U. strategy.

Hypothesis 2 was not supported. Table 10 shows a positive correlation between the five item lean communication media scale and the knowledge of the low cost strategy scale ($r = 0.2152, p \leq 0.001$). A significant negative correlation between the two scales would be necessary to support less knowledge as a result of using lean communication media.
<table>
<thead>
<tr>
<th>MEASURE</th>
<th>Rich Communication Media</th>
<th>Knowledge of Low Cost Strategy</th>
<th>Lean Communication Media</th>
<th>Organization Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rich Communication Media</td>
<td>1.0000</td>
<td>0.2097</td>
<td>0.5673</td>
<td>0.2923</td>
</tr>
<tr>
<td>Knowledge of Low Cost Strategy</td>
<td>1,081</td>
<td>1,081</td>
<td>1,081</td>
<td>1,076</td>
</tr>
<tr>
<td>Organization Commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Entries represent: Correlation coefficient, Sample size, p-value ≤
Impact of Knowledge on Employee Organization Commitment

Hypothesis 3:

H3. Employees who know the firm's S.B.U. strategy will have higher commitment to the organization than employees who do not know the firm's S.B.U. strategy.

Hypothesis 3 was supported. A positive correlation between the twelve item organization commitment scale and the knowledge of the low cost strategy scale is shown in Table 10 (r = 0.1629, p ≤ 0.001). A significant negative correlation was found between organization commitment and selection of differentiation strategy (r = -0.1063, p ≤ 0.001) which reinforces the support found for the hypothesis. Testing for the impact of plants located in small towns versus large towns (area) showed a significant relationship between organization commitment and area (r = -0.2099, p ≤ 0.001). The direction of the correlation indicates that employees in smaller towns have higher organization commitment than employees in larger towns.

A regression model of organization commitment as the dependent variable and knowledge of the low cost strategy and town size as independent variables was analyzed for a relationship between the variables. A significant positive relationship was shown with both independent variables in the model. In a stepwise process, size of town entered the model on the first step indicating a stronger effect than knowledge of the low cost strategy. The results of the regression analysis are shown in Table 11 on page 82.

Results
Table 11. Organization Commitment, Knowledge, and Size of Town Model

Dependent Variable: Organization Commitment

Variables Entered in the Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T Value</th>
<th>Significance of T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of Town</td>
<td>-0.2192</td>
<td>-7.478</td>
<td>≤0.001</td>
</tr>
<tr>
<td>Knowledge</td>
<td>0.1756</td>
<td>5.990</td>
<td>≤0.001</td>
</tr>
</tbody>
</table>

Multiple R: 0.2728
R Square: 0.07441
Employee Knowledge, Organization Commitment, and Productivity

Hypothesis 4:

H4. Employee productivity is positively related to employee knowledge of the S.B.U. strategy and organization commitment.

Hypothesis 4 was not supported. Regression analysis using the step-wise variable selection method and using a probability of F-to-enter (PIN) value of 0.05 and a probability of F-to-remove (POUT) value of 0.10 found no significant relationship between productivity, organization commitment, and knowledge. To force the variables into the regression relationship, an enter method was used which uses each of the variables of interest in the regression model with no probability to enter or exit limits. The results of that analysis also showed no support for the hypothesized relationship. Table 12 on page 84 presents the results of the regression analysis with productivity as the dependent variable and organization commitment and knowledge of the low cost strategy as the independent variables.

Since the productivity measure differed among employees in a line versus team structured organization, the same regression analyses were performed for each set of the data to determine whether relationships existed. Results were the same with no support shown for the hypothesis.
Table 12. Productivity, Knowledge, and Organization Commitment Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T Value</th>
<th>Significance of T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization Commitment</td>
<td>-0.0574</td>
<td>-1.865</td>
<td>≤0.0624</td>
</tr>
<tr>
<td>Strategy Knowledge</td>
<td>0.0445</td>
<td>1.448</td>
<td>≤0.1480</td>
</tr>
</tbody>
</table>

Multiple R: 0.0667
R Square: 0.00444
Demographic Variables and Knowledge of Strategy

Hypothesis 5:

H5. Demographic variables such as age, job tenure, and education are not related to strategic knowledge gained through the various media used.

Hypothesis 5 was tested for each of the variables using Pearson's product-moment analysis and then for the group of variables using regression analysis. Table 13 on page 87 shows the correlation of the demographic variables and the knowledge of low cost strategy scale.

Hypothesis 5a:

H5a. Age is not related to strategic knowledge gained through the various communication media used.

No support was found for a significant relationship between age and knowledge of the low cost strategy ($r = 0.0573, p \leq 0.060$) as shown in Table 13. While not statistically supported, the findings offer confirmation of the lack of influence of age on knowledge gained through communication programs.

Hypothesis 5b:

H5b. Job tenure is not related to strategic knowledge gained through the various communication used.

The test of Hypothesis 5b showed that tenure was significantly related to knowledge of the strategy. Table 13 shows a significant positive relationship between job tenure and knowledge of the low cost strategy ($r$...
= 0.1496, p ≤ 0.001). This result shows that employees with longer tenure with the company have more knowledge of the business plan. An r value of 0.1496 shows that other variables also have impact on the knowledge gained through the communication media tested.

**Hypothesis 5c:**

H5c. Education is not related to strategic knowledge gained through the various communication media used.

No support was found for a significant relationship between education and knowledge of the low cost strategy as suggested by Hypothesis 5c. No significant correlation was found between education and knowledge of the low cost strategy in Table 13 (r = 0.0099, p ≤0.745).

**Hypothesis 5d:**

H5d. Age, job tenure, and education as a group are not significantly related to strategic knowledge gained through the various communication media.

Table 14 on page 88 shows the results of testing a regression model with knowledge of the low cost strategy as the dependent variable and age, job tenure, and education as the independent variables. Tenure was the only variable accepted into the regression model and the percent of variation explained by the tenure variable was very small (r² = .024). The remaining variables did not qualify to enter the regression equation in the stepwise procedure.
<table>
<thead>
<tr>
<th>MEASURE</th>
<th>Knowledge of Low Cost Strategy</th>
<th>Age</th>
<th>Job Tenure</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of Low Cost</td>
<td>1.0000</td>
<td>0.0573</td>
<td>0.1496</td>
<td>0.0099</td>
</tr>
<tr>
<td>Strategy</td>
<td>1,089</td>
<td>1,079</td>
<td>1,077</td>
<td>1,076</td>
</tr>
<tr>
<td></td>
<td>0.060</td>
<td>0.001</td>
<td>0.745</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.0000</td>
<td>0.4496</td>
<td>-0.2557</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,080</td>
<td>1,074</td>
<td>1,075</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.001</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>Job Tenure</td>
<td>1.0000</td>
<td>-0.1779</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,078</td>
<td>1,072</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,077</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Entries represent: Correlation coefficient
Sample size
p-value ≤
<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T Value</th>
<th>Significance of T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure</td>
<td>0.1549</td>
<td>5.121</td>
<td>≤0.001</td>
</tr>
<tr>
<td>Multiple R:</td>
<td>0.1549</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R Square:</td>
<td>0.02398</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>T Value</th>
<th>Significance of T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.0033</td>
<td>-0.096</td>
<td>≤0.9233</td>
</tr>
<tr>
<td>Education</td>
<td>0.0360</td>
<td>1.170</td>
<td>≤0.2421</td>
</tr>
</tbody>
</table>
Importance of Supervisory Communication

Hypothesis 6:

H6. Employees who have knowledge of the S.B.U. strategy will emphasize the direct supervisor over peers, plant staff management, the plant manager, or division management for learning about the S.B.U. strategy.

Hypothesis 6 was supported. A comparison of means among the media sources of interest shows a significantly higher mean for the direct supervisor/facilitator than the other sources. Note that the preference is for supervisory communication to a group of employees rather than one-on-one communication. The results of the analysis shown in Table 15 on page 90 presents means for each of the personal contact media and t-tests between supervisor and other personal media as the source of information on the business plan.

Summary of Hypotheses Testing

The results of testing the hypotheses are shown in Figure 10 on page 95. The results are summarized as to whether each hypothesis was supported or not supported in the various statistical tests performed. The results are discussed in Chapter 5.
<table>
<thead>
<tr>
<th>Source of Knowledge</th>
<th>Mean</th>
<th>T value Versus Supervisor</th>
<th>Significance of T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor in Group</td>
<td>2.9570</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division Management</td>
<td>2.5636</td>
<td>9.14</td>
<td>≤0.001</td>
</tr>
<tr>
<td>Plant Manager</td>
<td>2.6923</td>
<td>6.16</td>
<td>≤0.001</td>
</tr>
<tr>
<td>Other Peer Employees</td>
<td>2.2608</td>
<td>13.39</td>
<td>≤0.001</td>
</tr>
<tr>
<td>Plant Staff</td>
<td>2.0809</td>
<td>19.43</td>
<td>≤0.001</td>
</tr>
</tbody>
</table>
Research Questions

In addition to the six hypotheses tested, analyses of four research questions was conducted. The results of the analyses are presented in this section. Results for the research questions are summarized in Figure 11 on page 96.

Knowledge and Organization Commitment

Research Question 1:

RQ1. Will there be a difference in knowledge of the S.B.U. strategy in plants where participative management is practiced versus plants with traditional management systems?

Research question 1 was investigated using t-test analysis resulting in no significant support for a difference in knowledge of the strategy in plants with traditional management versus participative management. The knowledge of the low cost strategy was not significantly different in plants with team sewing versus plants with line structure of management. Table 16 on page 93 presents the results of the t-test analysis for the team sewing plants versus plants with line structures for knowledge of the low cost strategy and organization commitment.

Research Question 2:

RQ2. Will there be a difference in organization commitment in plants where participative management is practiced
versus plants with traditional management systems?

The statistical analysis found support for higher organization commitment in plants with traditional management versus plants with participative management. The results of t-test analysis of data comparing team sewing plants with line managed plants show that organization commitment is significantly higher in line managed plants than in team sewing plants.

Strategic Business Unit and Plant Performance

Research Question 3:

RQ3. Does S.B.U. performance improve after the implementation of a formal strategy communication program?

Using operating profit net of sales, S.B.U. performance was compared for the period before the communication program was initiated to the current period. Results of that comparison showed improved performance during that period. The profit factor had a compounded increase of 17% over the period from 1988 to 1991 using data from plants in the S.B.U. over the entire period. The results are further discussed in Chapter 5.

Research Question 4:

RQ4. Will there be a difference in performance in plants where participative management is practiced versus plants with traditional management systems?

The trend to date in the current fiscal year is for better performance in plants with traditional line structure than in team sewing plants.
Table 16. Organization Commitment and Knowledge in Different Plants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Plant Type</th>
<th>Mean</th>
<th>T Value</th>
<th>Significance of T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of Low Cost Strategy</td>
<td>Team Sewing</td>
<td>5.3452</td>
<td>-2.01</td>
<td>≤0.045</td>
</tr>
<tr>
<td></td>
<td>Line Structure</td>
<td>5.4456</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Commitment</td>
<td>Team Sewing</td>
<td>4.6734</td>
<td>-5.65</td>
<td>≤0.001</td>
</tr>
<tr>
<td></td>
<td>Line Structure</td>
<td>5.0398</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Team Sewing Plants Sample: N = 560
Line Managed Plants Sample: N = 525
Using a measure of total adjusted standard cost, the top three plants in the S.B.U. had line structure followed by two team sewing plants and then two additional plants with line structure. Five of the top seven plants in terms of adjusted standard cost had line structure. The three lowest total adjusted standard cost plants were team sewing plants.
Impact of Rich Communication Media

H1. Employees who emphasize rich communication media for receiving strategic information will have more knowledge of the S.B.U. strategy. Hypothesis was supported.

Impact of Lean Communication Media

H2: Employees who emphasize lean communication media for receiving strategic information will have less knowledge of the S.B.U. strategy. Hypotheses was not supported.

Impact of Knowledge on Employee Organization Commitment

H3. Employees who know the firm’s S.B.U. strategy will have higher organization commitment to the organization than employees who do not know the firm’s S.B.U. strategy. Hypothesis was supported.

Employee Knowledge, Organization Commitment, and Productivity

H4. Employee productivity is positively related to employee knowledge of the S.B.U. strategy and organization commitment. Hypothesis was not supported.

Demographic Variables and Knowledge of Strategy

H5. Demographic variables such as age, job tenure, and education are not related to strategic knowledge gained through the various media used. Findings were mixed (tenure was related).

Importance of Supervisory Communication

H6. Employees who have knowledge of the S.B.U. strategy will emphasize the direct supervisor over peers, plant staff management, the plant manager, or division management for learning about the S.B.U. strategy. Hypothesis was supported.

Figure 10. Study Hypotheses Results
RQ1. Will there be a difference in knowledge of the S.B.U. strategy in plants where participative management is practiced than in plants with traditional management systems?
No significant difference in knowledge of strategy found.

RQ2. Will there be a difference in organization commitment in plants where participative management is practiced versus plants with traditional management systems?
Organization commitment found higher in traditional plants.

RQ3. Does S.B.U. performance improve after the implementation of a formal strategy communication program?
Results showed S.B.U. performance improvement over time.

RQ4. Will there be a difference in performance in plants where participative management is practiced than in plants with traditional management systems?
Results showed better performance in traditional plants.

Figure 11. Study Research Questions Results
Chapter 5

Discussion of Results

Chapter 5 includes a discussion of the results which were presented in Chapter 4. Overall conclusions based on the research findings and limitations of the study are presented. The implications of the research and additional research are discussed based on the findings of the hypotheses tests and analysis of research questions explored.

Knowledge and Media Used

As hypothesized, the employees used rich media sources to learn of the strategy as suggested by Foltz (1985) and Lengel and Daft (1988) among others. The rich personal communication from management levels at division management through plant management and the direct supervisor was used by the employees to learn of the strategy. The counter to this argument was that employees who used lean media sources to learn of the strategy would have less knowledge of that strategy. Researchers and management might conclude that the use of rich personal media is the only choice if complex messages are to be communicated to employees. This
hypothesis was not supported and, in fact, the results show a similar significant positive correlation between knowledge of the low cost strategy and rich (r = 0.2097) and lean (r = 0.2152) media use to learn of that strategy. These results indicate that the use of rich, personal media versus lean impersonal written media is not as important as the use of either available media types in a communication program to communicate complex messages such as strategy. The results indicate that the use of lean media explained slightly more of the variation in knowledge of the low cost strategy than the use of rich media.

The strategy message communicated through the firm's formal communication program was oriented to the organization as a whole rather than to individuals in the organization. Many of the theoretical bases for testing these hypotheses was based on communication of personal messages to individuals such as specific changes to a job or project level objectives rather than S.B.U. level objectives. At least one of the strategy implementation models reviewed suggested that communication involves the translation of the strategy into operating level objectives (Hrebiniaiak & Joyce, 1984). Consideration must also be given to the fact that it may be equally effective to use lean or rich media for more impersonal messages. Future research could investigate the use of rich or lean media at different message levels to add to the empirical research in this area.
Knowledge and Employee Organization Commitment

Knowledge of the strategy was shown to be related to higher organization commitment as hypothesized. Organization commitment was measured with a tested instrument which addressed employee perceptions of the company, individual values compared to company values, level of employee effort toward company goals, and pride in the company. The variables were measured at the same time with the same instrument, but knowledge is gained over time while commitment reflect the employees' attitude at the time the test is administered.

A positive correlation between knowledge and organization commitment using these measures supports the suggestion by Foltz (1985) that knowledge leading to organization commitment has two primary functions. Those functions are support for organization objectives and meeting employee needs. Blau and Boal (1987) suggested that employee identification with the organization and desire to maintain membership in the organization are the functions served by organization commitment. The findings also support the Mathieu and Zajac (1990) suggestion that effective leader communication and organization commitment are correlated.

While the correlation coefficient ($r = 0.1629$) did not show a high percent of variation explained, organization commitment is a measure which can be affected by many other variables. The significant relationship ($p \leq 0.001$), even in a large sample, supports the proposed relationship in the model shown in Figure 6 on page 31. The relationship
of the size of the town in which the plant is located, knowledge of the low cost strategy, and organization commitment shown in Table 10 is also significant. Knowledge of the low cost strategy and the size of the town explain over 7% of the variation in the sample used in the study.

**Knowledge, Organization Commitment, and Productivity**

No support was found for the hypothesized relationship between knowledge of the low cost strategy, organization commitment, and employee productivity. Tests using a regression model showed no support for variation in productivity caused by knowledge of the low cost strategy and organization commitment. When paired with age, tenure, and education, the model only showed a relationship between tenure and productivity. That relationship only explained two percent of the variation in productivity related to tenure, however ($r^2 = 0.0183$).

Analysis shows various possible reasons for the lack of support for the hypothesis. The literature review showed mixed support for the correlation between communication and performance. One suggestion was that communication is necessary but not sufficient for improved productivity (Falcione, et al., 1987). Other literature which showed support for a positive relationship between communication and productivity were based on specific project accomplishments rather than the S.B.U. level of analysis (e.g., Tubbs & Widgery, 1978; Downs & Hain, 1982).

Discussion of Results
The theoretical bases established by researchers such as Coch and French (1948) and Seibold and Meyers (1986) related to the implementation of change. Communication of the S.B.U. strategy is more general and the strategy is generic across the various plants in the S.B.U. and, therefore, lacks the specificity of projects or focused changes in the plants. Communication of strategic operating objectives which have been translated from the generic to the specific for particular organizational groups may provide a better environment for analyzing the relationship between these variables. Employees who understand the specific translation of the S.B.U. strategy to their operating environment through effective communication would provide a more appropriate sample for further investigation.

The results of research in the organization commitment area have also been mixed as related to productivity. The support shown in several studies has been categorized as modest (Mowday, et al., 1979; Locke, et al., 1988; Randall, 1990). Another factor impacting the organization commitment and productivity relationship could be the level of analysis. High commitment measured at the organizational level compared to organizational productivity could provide a better analysis of a positive relationship than the analysis provided herein at the individual level of analysis.

The improvement in overall S.B.U. performance shows the right trend to support improved performance at the S.B.U. level as a result of the communication program. Data are not available, however, to determine support for such a relationship. While the improvement in performance
was measured on a longitudinal basis, other data over the period was not available to allow analysis. Additional longitudinal research would allow analysis of causal relationships between communication, organization commitment, and S.B.U. performance.

The Strategy Communication Model

The conceptual model presented in Figure 6 on page 31 was only partially supported based on the results discussed above. The model may be modified to suggest use of both rich and lean media to communicate the strategy to employees. Support has been shown that use of both rich and lean media improves the knowledge of the correct S.B.U. strategy by the firm's employees. As proposed in the model, employee organization commitment is positively related to the knowledge gained from the different types of media used. The resulting impact of the knowledge gained and organization commitment on employee productivity is not supported, however. The findings provide a basis for further research and revisions to the model regarding the impact on employee productivity. Additional variables such as support for the strategy, knowledge of specific operating objectives drawn from the S.B.U. strategy, ability, skill, training, and other attitudinal variables may provide for improvement to the model.
Communication Media and Demographic Variables

The suggestion that employee demographics such as age, tenure with the organization, and education do not significantly impact knowledge gained through the communication programs was generally confirmed. Tenure showed a significant positive relationship, but causality may be questionable. Logic would suggest that employees with more tenure know more about the organization. If logic prevailed, the knowledge of the S.B.U. strategy might be attributed to long tenure rather than to effective communication programs. It is interesting to note that tenure was significantly related to performance while age and education was not. That finding lends support to tenure as a potential causal variable when investigating strategic knowledge and performance. Additional research may provide a basis for that relationship.

Importance of Supervisory Communication

The first-line supervisor as the most important source of communication used by employees to learn about the business plan was supported by the study. The supervisor as a source of information for groups of employees had the highest mean of all personal rich media examined. The supervisor in a one-on-one role had the lowest mean of such media. In
an incentive pay environment, employees may lose money if they take time away from production to talk with their supervisor on a one-on-one basis. Most group meetings with the first-line supervisor include pay at the average incentive rate for the employees. This could explain the preference of the supervisor in group meetings for learning and the clear rejection of the supervisor in one-on-one settings for learning. Complex messages such as strategy require time and employees are likely to opt for the direct supervisor in a group meeting, but not one-on-one.

The use of the direct supervisor was compared to use of other peer employees, plant staff management, plant managers, and division managers. This finding suggests that effective communication of important S.B.U. messages should be an important part of the first-line supervisors' job responsibilities. In the case of team sewing plants, the team facilitator was the surrogate for the first-line supervisor since that person performs many of the same duties and is a source of information for the employees.

**Research Questions**

The literature suggests that in participative management environments, employees are more committed and know more about what is happening to their firm. Findings of research questions 1 and 2 did not support that suggestions in the test firm. No significant difference was found in the knowledge of the S.B.U. strategy and organization commitment was
significantly higher in plants with traditional line management. The desired effects of higher employee organization commitment and knowledge of firm strategies, objectives, and goals may take longer to realize than the three year transition period to date of changing from traditional line management to team management in the test firm.

The findings of research question 3 determined by comparing the S.B.U. performance using operating profit net of sales as a measure, showed an improvement in S.B.U. performance of 17% over the period from 1988 to 1991. The longitudinal analysis shows a trend of improving performance during a period of formal communication of the S.B.U. strategy, but does not necessarily support communication as the cause of improvement. Data were not available to examine causal relationships over the longitudinal period. Interviews with S.B.U. management revealed that they attributed improvements in performance to improved productivity and cost reduction rather than increases in sales. While such causes cannot be verified, they indicate successful implementation of the low cost strategy, but do not provide support for correlation between communicating the strategic message and S.B.U. performance. It is of interest to note that the improvement of performance is suggested in the literature as one of the results of a communication program. While not supporting communication program causality, the trend in performance by the S.B.U. is in the right direction.

The test company had only started changing some plants from traditional line structure to team structure in the last three years. The relatively short time period may explain why desired productivity as a
result of team management as investigated in research question 4 was not supported. While management motivation in making the change was for improved productivity, the organizational changes are still in transition. Another factor which may be of importance in comparing productivity in the different management structures is the ability of the more productive individual employees to earn more incentive based pay on an individual job than on a team. Isolated comments were provided to the researcher during data collection which indicated that concern.

Since adjusted standard cost procedures define each plant as producing the same items with the same standards as all other plants, the comparisons of team versus line managed plants are of equivalent measures. Other factors may be present such as management style, leadership characteristics, or plant location which impact overall plant performance. A longitudinal measure of performance from changeover to full maturity as team sewing plants may be appropriate to determine the impact of participative management on performance.

**Limitations of the Research**

The research findings of this study must consider the limitations due to external validity, prediction versus causality of variable relationships, and variables not investigated. Knowledge of these limitations will allow understanding of the research in the proper context.
External Validity

The study was conducted in a single business unit of one industry. Samples which are so limited restrict the generalizability of the study findings. The sample was also limited to sewing operations employees on incentive paid jobs. Predicting results for other employees in the same industry is limited since data are not available to analyze effects among other employee groups. The sample group was 99% female and the findings are also limited based on gender impacts when considering predictability in other employee groups with different gender mixes.

Reliability of Scales

While the scales developed had acceptable internal consistency coefficients, confirmation in other employee groups and improvement in reliability would enhance use of the scales to determine variables in future research. Organization commitment was supported as a well established scale, but the rich and lean media and knowledge of low cost strategy scales were introduced in this research and require further validation for more widespread applications. The only scale with reliability below the 0.70 Cronbach's alpha level was knowledge of the low cost strategy, but that scale was also supported by another individual item measure indicating knowledge of the low cost strategy.
Determination of Causality

Determination of causality indicated in the model in Figure 6 on page 31 cannot be assumed. All data for the study was collected over a three week period in the fourteen plants in the sample. Prediction and structural causality are distinct model differences noted in regression techniques according to Cook and Campbell (1979). The collection of data in a cross sectional study limits the ability to determine structural causality. For example, the impact of age cannot be assumed by cross sectional analysis of employees in different age groups. The cross sectional study can suggest predictions of effects of certain variables to certain age groups. Longitudinal studies which follow a respondent over time and observe effects is an acceptable way of determining causal effects of variables.

Additional research investigating the longitudinal impact of communication programs and changes in employee attitudes and productivity would provide support for causal relationships. Longitudinal studies would also provide important results in terms of the changes in organization and S.B.U. performance as a result of strategy communication.

Conclusion Validity and Other Variables

The sample of approximately 100 respondents in each of fourteen sewing plants provides an adequate sample size for the relationships tested.
It is noted that eleven percent of the responses were not used due to lack of individual performance data for those respondents. Tests did determine, however, that differences in these two groups were not significant. With a large sample of over one thousand respondents, care should be taken with conclusions of significance in relationships. A significant correlation at the $p \leq 0.10$ level may be misleading for conclusions about predicting future impact. The effect of that correlation may be very small due to the large sample. Conclusions in this research were based on a $p$ value of less than or equal to 0.001 to insure adequate conclusion validity.

In any study on factors which impact employee productivity, several variables could be determinants of the productivity level. Factors such as pay, organization structure, personal characteristics, family situations, and other attitudinal variables were not investigated. An attempt to control for unexplained variables with homogeneous industry, company, and work environment selections limits external validity. The research is, therefore, necessarily limited in some objectives of management research. Replication of this type of study in other controlled environments can lead to a better understanding of the relationships and enhancement of the knowledge base in the field.
Implications and Future Research Suggestions

Implications: The need for communication expressed in most strategy implementation models (Stonich, 1982; Hrebinjak & Joyce, 1984; Galbraith & Kazanjian, 1986; Thompson & Strickland, 1990) and in other research (Bourgeois & Brodwin, 1984; Alexander, 1985; Stringer & Uchenick, 1986; Slevin & Pinto, 1987) has been supported in terms of employee knowledge of S.B.U. strategy and commitment to the organization. The determination of media type effectiveness from the employee perspective has also been explored and both rich and lean media shown to be effective in learning of the S.B.U. strategy.

Management practitioners can make use of the findings to select communication which will enhance the understanding of complex messages by operating employees in organizations. The survey can be a valuable tool to practitioners to perform communication audits of the effect of different media types. The use of results showing that rich and lean media are equally used to learn of complex messages such as strategy is important to managers. With equal effectiveness, there is a strong implication to use both rich and lean media for maximum efficiency in communicating to employees. In addition, the support of the first-line supervisor as the most effective personal communication medium provides a guideline for communication. Where organization commitment is the goal of management, communication of strategic information to employees has been shown to increase the employees' organization commitment.

Discussion of Results
With an increase in participative types of management, the study provides input to the impact of communication with employees as a technique of participation. The benefits of improved organization commitment and productivity suggested by participative management structures were not supported in the study. This could be an indication that such benefits do not occur immediately but take time. Such findings provide caution to managers in evaluating changes to the participative management processes. Results on a longitudinal basis are more appropriate to determine effects.

The research provides investigation of some of the many variables with possible impact in the strategy implementation field. Support for part of the strategy communication model suggests exploration of other variables which may moderate or replace the variables proposed in the model. Since the model spans the organizational behavior, human resource management and strategic management fields, a possible base is provided for research input from all of these management disciplines.

**Future Research:** The primary focus of this research is exploratory. Very little empirical research has been done in the strategy field to investigate the gap between strategy formulation and strategy implementation. The major conclusion to be drawn from the findings of the exploration of the role of communication in strategy implementation is the need for additional research.

The findings of media types used by employees to learn about the firm's strategy are important. Since the findings are presented from the

Discussion of Results

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employee's perspectives, they provide additional input into the role of media type suggested by Lengel and Daft in several studies. Additional research is needed, however, regarding the content of the strategic message which is communicated to the operations employees. Translation from the theoretical indications of particular strategy typologies into operating objectives as suggested by Hrebiniak and Joyce (1984) could be studied along with media types and impact on employee productivity. Such research may be important to determine the impact of media selection on knowledge and the impact of the knowledge on employee productivity. Since this research centered on employees on incentive paid jobs, additional research in other reward system environments should also be conducted.

In addition to the individual employee level of analysis, additional research at the organizational and firm level is necessary for progress in determining the relationship between strategy communication, employee attitudes and organizational performance. Enhancement of organization performance is the role of strategy and additional research which builds from the individual level will be necessary to provide bases for effective communication of the right level of strategic message throughout organizations.

Research is also appropriate to confirm findings relative to the impact of media on employee knowledge. A field experiment where rich and lean communication media could be manipulated would provide an excellent test of media effectiveness. Such research will require close control over an adequate time period to insure the message can be understood.

Discussion of Results
With mixed results in current research, the relationship between knowledge of the firm's future plans, organization commitment or other attitudinal variables, and employee productivity require additional research. For future research in the strategy implementation field, the various variables which are suggested in published models are candidates for empirical research. While all the models do not specific include a communication link, communication is required as discussed in Chapter 2. The potential for additional research in the strategy implementation is extensive due to the many variables suggested which affect the successful implementation. Studies which focus on specific variables while controlling for others will expand the theoretical bases needed in the strategy implementation field.
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VIRGINIA TECH STUDY OF HOW (FIRM NAME) BUSINESS PLAN IS COMMUNICATED TO ITS EMPLOYEES

PART 1: (FIRM NAME) BUSINESS PLAN DEFINITION

A business plan can be defined as the overall plan to help the firm compete successfully against the competitors in the industry. A business plan also helps the firm achieve its long-term goals and objectives. For example, the business plan for 7-Eleven stores is to sell last minute shopping items and snack foods to people in a hurry who are willing to pay extra for the convenience of not waiting in line.

Directions: We want to find out how you would describe the business plan of your company, (FIRM NAME). Exclude products not manufactured in your division and other unrelated products in completing this questionnaire. Please use an 'X' to mark the extent to which you agree or disagree with the following statements.

1. (FIRM NAME) business plan emphasizes selling unique styles or designs of its knit wear rather than standard styles and designs.

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2. (FIRM NAME) business plan emphasizes producing low cost products.

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3. (FIRM NAME) business plan emphasizes worker safety over production efficiency.

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4. (FIRM NAME) business plan is to sell its products at a low price in its industry.

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5. (FIRM NAME) business plan emphasizes reducing waste and scrap.

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6. A primary emphasis of (FIRM NAME) business plan is production of large standard lots rather than several different small lots.

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7. Sacrificing high quality for high production is emphasized in (FIRM NAME) business plan.

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8. (FIRM NAME) business plan stresses providing a variety of products or styles rather than a few standard styles or designs.

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9. (FIRM NAME) business plan emphasizes keeping labor costs low.

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10. (FIRM NAME) business plan emphasizes the introduction of new products rather than selling the same existing products.

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11. (FIRM NAME) business plan emphasizes low prices from suppliers in order to sell at low prices.

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12. (FIRM NAME) business plan emphasizes selling to customers who want higher priced exclusive products.

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13. (FIRM NAME) business plan emphasizes cost reduction programs.

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14. (FIRM NAME) emphasizes high cost exclusive product designs over low cost standard designs as part of the business plan.

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15. Use an 'X' to indicate which one of the following statements best describes (FIRM NAME) business plan.

   a. ____ (FIRM NAME) business plan is trying to sell products which are unique and different from its competitors.

   b. ____ (FIRM NAME) business plan is trying to become a low cost, high quality producer in the industry.

   c. ____ (FIRM NAME) business plan is trying to focus on certain customer groups and special types of clothing, rather than covering the whole industry.

   d. None of the above.

   e. ____ I am not sure what the business plan is.
PART 2: HOW YOU HAVE LEARNED ABOUT (FIRM NAME) BUSINESS PLAN

Directions: We want to find out how the business plan has been communicated to you. Please use an 'X' to mark the extent to which each item has helped you learn more about (FIRM NAME) business plan.

1. I learn about the business plan from articles written about the business plan in the company magazine.

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2. I learn about the business plan in group meetings conducted by my immediate supervisor/facilitator.

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3. I learn about the business plan when (FIRM NAME) Division management above the Plant Manager level meets with employees to discuss the business plan.

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<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

4. I learn about the business plan from letters sent to me from (FIRM NAME) Division management.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

5. I learn about the business plan from company television ads.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

6. I learn about the business plan from newspaper articles which contain information about the business plan.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

7. I learn about the business plan from information placed on bulletin boards, posters, and signs in the plant.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

8. I learn about the business plan from Plant Manager meetings in which the business plan is discussed.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

9. I learn about the business plan from company slogans, buttons, sweatshirts, T-shirts, records, etc.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

10. I learn about the business plan from Stockholder Annual reports for (FIRM NAME) which I have received.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

11. I learn about the business plan from reading articles written in my plant's newsletter.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

12. I learn about the business plan from my immediate supervisor/facilitator in one on one discussions with me.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

13. I learn about the business plan from other employees who tell me information about the business plan.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

14. I learn about the business plan from a video tape shown and discussed with me and a group of employees about the business plan.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
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</thead>
</table>

15. I learn about the business plan from members of the plant management staff other than the Plant Manager or my supervisor/facilitator.

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>
**PART 3: MY SUPPORT FOR (FIRM NAME) BUSINESS PLAN**

**Directions:** We want to know to what extent you agree with and support (FIRM NAME) business plan. Please use an 'X' to mark the extent to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>1.</th>
<th>(FIRM NAME) business plan affects my pay.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>(FIRM NAME) business plan affects my job security.</td>
</tr>
<tr>
<td>3.</td>
<td>(FIRM NAME) business plan affects employee morale.</td>
</tr>
<tr>
<td>4.</td>
<td>(FIRM NAME) business plan affects the number of employees working for it.</td>
</tr>
<tr>
<td>5.</td>
<td>(FIRM NAME) business plan affects the promotional opportunities for employees.</td>
</tr>
<tr>
<td>6.</td>
<td>(FIRM NAME) business plan affects my feelings about my job.</td>
</tr>
</tbody>
</table>

---

**PART 4: THE IMPACT OF (FIRM NAME) BUSINESS PLAN**

**Directions:** We want to know how you believe the current business plan at (FIRM NAME) affects you. Please use an 'X' to mark the answer you believe.

| 1. | (FIRM NAME) business plan affects my pay. |
| 2. | (FIRM NAME) business plan affects my job security. |
| 3. | (FIRM NAME) business plan affects employee morale. |
| 4. | (FIRM NAME) business plan affects the number of employees working for it. |
| 5. | (FIRM NAME) business plan affects the promotional opportunities for employees. |
| 6. | (FIRM NAME) business plan affects my feelings about my job. |

---

**PART 1: THE IMPACT OF (FIRM NAME) BUSINESS PLAN**

**Directions:** We want to find out which of the following communication media has been used more by you to learn about the (FIRM NAME) business plan. Please use an 'X' to mark the media choice which you have used more to learn about the business plan for each of the choices listed below.

<table>
<thead>
<tr>
<th>1.</th>
<th>Company Magazine</th>
<th>Immediate Supervisor/Facilitator</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Meetings with Plant Manager</td>
<td>Bulletin Boards</td>
</tr>
<tr>
<td>3.</td>
<td>Meetings with Plant Manager</td>
<td>Annual Reports</td>
</tr>
<tr>
<td>4.</td>
<td>Plant Newsletter</td>
<td>Plant Staff Management</td>
</tr>
<tr>
<td>5.</td>
<td>Letters from Division Management</td>
<td>Meetings with Plant Manager</td>
</tr>
<tr>
<td>6.</td>
<td>Company Magazine</td>
<td>Meetings with Plant Manager</td>
</tr>
<tr>
<td>7.</td>
<td>Immediate Supervisor/Facilitator</td>
<td>Bulletin Boards</td>
</tr>
<tr>
<td>8.</td>
<td>Immediate Supervisor/Facilitator</td>
<td>Company slogans, buttons, T shirts, etc.</td>
</tr>
<tr>
<td>9.</td>
<td>Plant Newsletter</td>
<td>Immediate Supervisor/Facilitator</td>
</tr>
<tr>
<td>10.</td>
<td>Meetings with Division Management</td>
<td>Newspaper Articles</td>
</tr>
</tbody>
</table>
PART 5: MY COMMITMENT TO (FIRM NAME)

Directions: We want to find out how committed you are to (FIRM NAME). Please use an 'X' to mark the extent to which you agree or disagree with the following statements.

1. I am willing to put in a great deal of effort beyond that normally expected in order to help this company be successful.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

2. I talk up (FIRM NAME) to my friends as a great company to work for.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

3. I feel very little loyalty to this company.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

4. I would accept almost any type of job assignment in order to keep working for this company.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

5. I find that my values and the company's values are very similar.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

6. I am proud to tell others that I am part of this company.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

7. I could just as well be working for a different company as long as the type of work was similar.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

8. This company really inspires the very best in me in the way of job performance.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

9. It would take very little change in my present circumstances to cause me to leave this company.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

10. I am extremely glad that I chose this company to work for over others I was considering at the time I was hired.

    strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

11. There's not too much to be gained by sticking with this company indefinitely.

    strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

12. Often I find it difficult to agree with this company's policies on important matters relating to its employees.

    strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

13. I really care about the fate of this company.

    strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

14. For me, this is the best of all possible companies for which to work.

    strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

15. Deciding to work for this company was a definite mistake on my part.

    strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

PART 6: TRUST IN MANAGEMENT

Directions: We want to find out how much you trust management at (FIRM NAME). Please use an 'X' to mark the extent to which you agree or disagree with the following statements.

1. I trust Division management (management above the Plant Manager) at (FIRM NAME) to treat me fairly.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

2. I trust Division management (management above the Plant Manager) at (FIRM NAME) to follow through with what they say they are going to do.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

3. Division management (management above the Plant Manager) cannot be trusted at (FIRM NAME).

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

4. Generally speaking, Division management (management above the Plant Manager) at (FIRM NAME) can be trusted.

   strongly disagree  disagree  slightly disagree  don't know  slightly agree  agree  strongly agree

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PART 7: (FIRM NAME) DIVISION MANAGEMENT COMMITMENT TO THE PRESENT BUSINESS PLAN

Directions: We want to find out how much you feel (FIRM NAME) Division management (management above the Plant Manager) is really committed to following its present business plan. Use an 'X' to mark your answer in the appropriate box for each question.

1. How committed is (FIRM NAME) Division management (management above the Plant Manager) towards following its present business plan?

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
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</thead>
</table>

2. How likely is it that the current business plan will remain an important part of how (FIRM NAME) does business, rather than being just a passing fad?

<table>
<thead>
<tr>
<th>not at all</th>
<th>slight extent</th>
<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

3. How likely is it that (FIRM NAME) Division management (management above the Plant Manager) will be willing to make this business plan the number one priority, even when times are tough?

<table>
<thead>
<tr>
<th>not at all</th>
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<th>moderate extent</th>
<th>substantial extent</th>
<th>great extent</th>
</tr>
</thead>
</table>

PART 8: BACKGROUND INFORMATION

1. What is your sex? ___ male ___ female

2. How many years have you worked for (FIRM NAME)?
   ___ 0 to 2 years
   ___ 3 to 5 years
   ___ 6 to 10 years
   ___ 11 to 15 years
   ___ 16 to 20 years
   ___ 21 years and above

3. What is your current job at (FIRM NAME)?
   ___ Sewing Machine Operator
   ___ Cutter
   ___ Material Handler
   ___ Inspector
   ___ Other (specify) ____________________________

4. How old are you?
   ___ 19 years or younger
   ___ 20 to 29 years old
   ___ 30 to 39 years old
   ___ 40 to 49 years old
   ___ 50 to 59 years old
   ___ 60 years or older

5. Use an 'X' to mark the highest formal education you have completed.
   ___ 8th grade or less
   ___ Some high school
   ___ High school graduate
   ___ Some college
   ___ Associate of Arts degree
   ___ Bachelor's degree

6. Approximately what is your current annual income from this job alone?
   ___ Less than $12,500
   ___ $12,500 to $14,999
   ___ $15,000 to $17,449
   ___ $17,500 to $19,999
   ___ $20,000 or above

7. Are you on an incentive job (piece rate)?
   ___ Yes ___ No

8. Are you on a team or an individual incentive rate?
   ___ Team ___ Individual

9. Use an 'X' to mark where your current performance level (your 4 week average) now stands.

<table>
<thead>
<tr>
<th>Below 100%</th>
<th>Above 100%</th>
<th>Above 110%</th>
<th>Above 120%</th>
<th>Above 130%</th>
<th>Above 140%</th>
</tr>
</thead>
</table>

10. I am collecting this information for my doctoral dissertation at Virginia Tech. In the future I may need to see if your feelings have changed. To do so I will require that I know your names. I will not share the names with other researchers, (FIRM NAME), or anyone else.

   Last name: ____________________________

   First name: ____________________________

Thank you very much for supporting this student's efforts to complete his degree. You are contributing to better education with your support.
W. Robert Guffey was born January 9, 1938 in Greensboro, North Carolina. He attended public schools in North Carolina and Virginia and graduated from the public school system in North Carolina. He received his undergraduate degree in Industrial Engineering from N. C. State University in Raleigh, North Carolina in 1960.

After seven years as an U. S. Army Officer, he was employed by Richardson-Merrell Corporation in Greensboro, N. C.; Lorillard Corporation in Greensboro, N. C.; and AT&T Corporation in a variety of domestic and international assignments. In each of the companies he attained progressively higher management positions. He completed the MSBA degree from the University of North Carolina at Greensboro as a part-time student in 1971.

In late 1986, Bob made the decision to pursue a career in academe as his third career. He completed courses at the University of North Carolina at Chapel Hill while teaching part-time at Elon College in the 1987-1988 academic year. In August 1988 he started the Ph.D program at Virginia Tech and completed the degree in May 1992.

Bob is married with two adult sons and a grand daughter. He is currently employed by Radford University, Radford, Virginia as Assistant Professor of Management. On June 1, 1992, he will become the Dean of the Love School of Business at Elon College, Elon College, North Carolina.