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An Evaluation Of The Effectiveness Of The National Head Start Bureau Early Literacy Mentor -Coach Initiative On Teacher Literacy Practices And Children'S Literacy Learning Outcomes

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AN EVALUATION OF THE EFFECTIVENESS OF CORPORATE COMMUNICATION DURING LARGE-SCALE INFORMATION TECHNOLOGY CHANGES

A dissertation

Presented to

The College of Graduate and Professional Studies

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of the Requirements for the Degree

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Dawna M. Drum

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ABSTRACT

The success rate of information technology implementations remains low, despite decades of scholarly research and popular advice. Whether success is defined by spending within the budget, on-time completion, functionality of the final implementation, or satisfaction of the users, few projects are deemed to be complete and resounding successes. One possible reason is inadequate communication during the change process, and many studies have examined aspects of change communication such as media choice, message content, and timing of the messages. What has been missing, however, is an assessment of these items' effectiveness across hierarchical levels within an organization undergoing an important technology change. Most previous studies have focused on the perceptions and actions of managers, even though it is the non-managerial employees who determine the ultimate success of the implementation in daily use. The intent of the current study was to evaluate the effectiveness of organization-wide change communication at all hierarchical levels to determine differences in perceptions as well as differences in actual effectiveness, through the use of established quantitative tools and qualitative methods. Employing a modified case study approach, two organizations (a mid-sized public university and a food processing organization) were studied during the implementation of a major IT change. It was hypothesized that the perceived effectiveness of media, content and timing that had been used when communicating

about change would have an effect on the actual effectiveness of communication, as measured by several questions specific to each organization's current project. Results revealed that perceived effectiveness of media was the only factor that had a significant effect on the actual effectiveness of communication.

Contributions of this study include formalizing a mechanism for evaluating employee preferences for communication and the actual effectiveness of change communication, as well as providing potential insights into ways to improve communication practices during large-scale IT implementations.

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CHAPTER 1

INTRODUCTION AND CONTEXT OF PROBLEM

It has been widely reported that a high percentage of change initiatives are unsuccessful. Rogers (2003) determined that technological innovations are particularly susceptible to failure, and mainstream news sources are replete with stories of information technology projects that are exorbitantly over budget, late, or otherwise unsuccessful.

One potential reason for the failure of so many change projects is insufficient communication during the change process (Armenakis & Harris, 2002; Armenakis, Harris, & Mossholder, 1993; Bernerth, 2004; Daly, F., Teague, & Kitchen, 2003; Edwards & Humphries, 2005; Miller, V. D., Johnson, & Grau, 1994). Poor communication can lead to rumors, incorrect information and increased resistance to change (Allport & Postman, 1965; Bordia, Jones, Gallois, Callan, & DiFonzo, 2006; DiFonzo & Bordia, 1998; Elving, 2005). Managers and executives relay the information they feel is needed by the employees, but even when an organization adheres to a comprehensive communication plan, employees may feel that they have not received enough information (Goodman & Truss, 2004; Hargie & Dickson, 2007). Additionally, it has been acknowledged that individuals have varying backgrounds and past experiences

that influence their preferences for information and their understanding of what is communicated to them (Conrad & Poole, 2002; Downs & Adrian, 2004). Information does not always reach all employees as intended, nor with the desired results (Downs & Adrian, 2004; Hargie & Dickson, 2007). Not everyone in an organization wants the same information or applies the same meaning to the information that is received. Because effective change occurs when there is bottom up support and top down direction, it is in the best interests of the organization to find ways to ensure the effectiveness of their change communication.

Rogers (2003) studied the diffusion of innovations and consequently defined stages in the Innovation-Decision process; Knowledge, Persuasion, Decision, Implementation and Confirmation. These were then aligned with the most appropriate method of communication for each stage. Mass media (news sources, mass publications) were determined to be more effective at the Knowledge stage while interpersonal channels (face-to-face meetings) were determined to be more effective at the Persuasion stage. This macro-level research focused on the individual adoption of optional innovations such as new medical techniques or lifestyle changes, and led Rogers to place people into five groups based on their willingness to adopt the innovation. These five types are Innovators, Early Adopters, Early Majority, Late Majority and Laggards.

Rogers also studied innovation adoption by organizations, and concluded that there were three types of innovation decisions within organizations: optional, collective and authority. Optional decisions are made by an individual within the organization

independently of others in the organization. Collective decisions are decided on by a group, but must be abided by all members of the group, regardless of their decision on the vote. An example is the group decision to begin using laptop computers within a sales department; regardless of how they voted, all members of the department must now use the new laptops. Finally, authority decisions are dictated by relatively few individuals within the organization, such as an executive team, but all members must comply with the decision. These are also macro-level concepts, which do not take into consideration the effect of the adoption on individuals.

Research has shown that for non-optional changes (either collective or authority decision types) at an organizational level, the communication channels and sources outlined by Rogers may be insufficient as it has been observed that the effectiveness of change communication remains low (Armenakis & Harris, 2002; Elving, 2005; Goodman & Truss, 2004; Holt, Armenakis, Field, & Harris, 2007; Larkin & Larkin, 1994). Because individuals will be required to carry out any change, whether optional or not, their acceptance of the innovation is crucial, and communication about the change plays a pivotal role in the formation of their acceptance.

Review of Related Literature

The need for communication during change projects, whether technological in nature or not, has been widely studied and acknowledged. Effective communication during organizational change can aid in appropriate sense-making of a shifting situation, and can shape cognitions in the direction most appropriate to align employee beliefs with

organizational goals (Balogun & Johnson, 2004; Bartunek, Rousseau, Rudolph, & DePalma, 2006; Bernerth, 2004). Rumors can be diffused when correct knowledge is distributed (Allen, Jimmieson, Bordia, & Irmer, 2007; Allport & Postman, 1965). Employee ownership of the change may be increased if employees are engaged in the change process from the beginning, and they may thus display fewer resistant behaviors (Bordia, Hobman, Jones, Gallois, & Callan, 2004; Elving, 2005).

Communication Definition and Concepts

Communication is a process that impacts any discussion of change dynamics. There are four components of the communication model: the communication source, the message, the channel or medium, and the communication receiver. The communication source is the person sending information, and this person must make decisions about what information will be sent (the message), by what means (the medium) and to whom (the receivers) (Berlo, 1960). When applied to organizational communication in particular, the communication process is further complicated by three generally accepted perceptions. First, organizations are very complex open systems that are influenced by both their internal and external environments. Second, organizational communication is comprised of messages, and the flow, direction, purpose and medium of the messages. Third, organizational communication necessarily involves the people within the organization, and is thus influenced by their attitudes, skills, relationships, and feelings (Goldhaber, 1993).

Rogers (2003) noted that it is possible to make communication campaigns more effective by following some guiding principles; use formative research to understand the intended audience and thus plan the campaign thoroughly, use that information to set appropriate goals, segment the heterogeneous audience into more homogeneous groups, and design the communication content so that people in the intended audience are motivated to discuss the message within their own networks. The ability of change agents to follow these principles requires information about many attributes of communication in organizations.

Information is power, and during large-scale changes, the increased uncertainty increases the power of information. Change is not an apolitical process, and what gets communicated, as well as what does not, sends strong signals to all stakeholders as groups try to achieve their preferred outcomes (Dawson, 2004; Kurchner-Hawkins, Miller, Vigoda-Gadot, & Drory, 2006). Politics within change communication must therefore be acknowledged, as it will play a role in the effectiveness of change communication. For example, message content and language itself may be a political tool, as it may separate the information haves from the have-nots, protect the ego of the sender, and convey selected ideas while obscuring others (Butcher & Atkinson, 2001; Sillince, 1999; Sussman, Adams, Kuzmits, & Raho, 2002). Timing of the message may have political implications, as some groups may be intentionally excluded to marginalize their opinions and minimize or even eliminate their potential participation (Fimbel, 1994). Media choice also has political implications. A message recipient is less likely to

move the exchange to a more personal medium such as face-to-face, if the sender originated an impersonal medium such as a written memo, thus allowing the sender to control the exchange on his or her own terms (Rice, 1984), and there is a significant difference in the media chosen for task-related messages as compared to political messages (Sussman, et al., 2002).

Varying attributes of the communication process as it relates to change have been studied in detail, covering areas such as media choice, timing of messages and content of messages. The following sections will address each of these topics in turn.

Medium of Change Communication

Different types of media vary in "richness", which is the ability of that medium to facilitate interaction and understanding while reducing ambiguity, and many studies have confirmed a preference by managers for rich media (Daft, Lengel, & Trevino, 1987; Donabedian, McKinnon, & Burns Jr., 1998; Fulk & Boyd, 1991). Face to face conversations are much richer than a company-wide newsletter, for instance, and this richness may influence the perception and retention of the message by the receivers (Lim & Benbasat, 2000). Communication media choice by managers has been found to vary based on a number of environmental factors. When a message is ambiguous, managers often tend to prefer face-to-face communication, as it is seen as a richer medium than a written document, allowing for more information sharing and reduction of message and/or job equivocality (Daft, et al., 1987). Richer communication forms are also preferred by managers when tasks are highly variable and less analyzable (Donabedian,

et al., 1998). Guidelines have been developed for managers based on these studies, including admonitions to match the richness of the medium to the complexity of the message, consider the preferences of the audience for written or verbal communication, and consider social norms of the organization (Fulk & Boyd, 1991).

Media richness theory has not been consistently supported in subsequent studies however, and media choice is not always straightforward nor even a true choice (Balogun & Hope-Hailey, 2008; Lee, J. & Heath, 1999; Rice & Gattiker, 2001; Sussman, et al., 2002). Organizations may have policies requiring specific types of communication to be delivered via a particular medium; for instance, employment information must be mailed in paper form to the employee's home. Organizational norms often play a part in a manager's decision to use a particular medium; perhaps due to a widely scattered population, speed considerations and a concern for saving paper, e-mail is not seen as an informal, lean medium and therefore may be considered appropriate for a significant announcement. Conversely, a written document or e-mail may be the medium of choice because the information to be communicated is unpleasant and this choice allows the communicator to avoid confrontation.

Timing of Change Communication

There are stages to change processes, although the names and order of the stages proffered by researchers have varied, and it is acknowledged that communication content and methods should vary by stage. Perceptions of the change also vary by stage as participants gain more information, attempt to make sense of the change, and integrate

the change into their work processes (Bridges, 1991; Ford & Ford, 1995; Hall & Hord, 2001; Lewin, 1948). Thus, timing of the change communication is crucial. Employees tend to want as much information as possible as soon as possible, but this is often not feasible for a wide variety of reasons such as legalities or incomplete information. It is possible that managers are able to influence the perceptions of their staff concerning a change, in part because managers have information sooner and in part because of their position of authority. This influence is not consistent across stages however, and is subject in part to the communication style and fluency of the manager (Brotheridge, 2005).

Content of Change Communication

Message content plays a significant role in the change communication process, and includes such attributes as adequacy, clarity and accuracy of information sent to and received from employees (Goodman & Truss, 2004; Wilson & Hochel, 1994). An appropriate change message can create readiness for change, as well as influence the perceptions of change recipients (Armenakis, Bernerth, Pitts, & Walker, 2007; Armenakis, et al., 1993; Bernerth, 2004). Additionally, managerial messages and actions must align to maintain both the credibility of the management team and the integrity of the change process, as the content of the message can itself send its own message (Butcher & Atkinson, 2001; Daly, F., et al., 2003; Goodman & Truss, 2004). In other words, both good and bad information must be communicated, or the message that may be received is that bad information is being covered up.

Generally, these three components (media, timing and content) are studied in isolation from each other, and studies have also tended to focus on the perceptions of managers, particularly at the highest levels (Lee, J. & Heath, 1999; Sturdy & Grey, 2003). However, because humans vary so widely in their knowledge, needs and experiences, it cannot be assumed that change agents and change recipients have the same needs and/or understanding (Bartunek, et al., 2006). Because of these variations, individuals take actions that are logical to them, often without regard for the greater needs of the organization (Rogers, 2003). We must expand our understanding of variations in what people expect and require from messages concerning organizational changes. This constitutes the problem for this study.

Statement of Purpose

Therefore, the purpose of this study was to identify factors that influence the effectiveness of change communication as perceived by employees at multiple hierarchical levels during large scale information technology projects. Specifically, do the media of communication (e-mail, presentation, personal contact), the timing of communication, and the content of communication influence how employees at various organizational levels perceive and respond to the communication? This research promotes an understanding between executives, management and non-management employees as to how to communicate with each other by highlighting what and when to communicate during organizational change.

Change recipients have past experiences that contribute to their understanding of current organizational change, and therefore are not "empty vessels." In other words, their experiences, knowledge and current perceptions all contribute to how each new change is viewed (Ford, Ford, & McNamara, 2002; Rogers, 2003). Much of the change literature focuses on how to overcome employee resistance, with little information about how to do so, or why employees might be exhibiting resistant behaviors. Additionally, past research has provided an incomplete picture of organizational change processes by ignoring this component of organizational systems (Buchanan, 2003; Butcher & Atkinson, 2001; Donovan, Hartley, & Strudler, 2007; Ford, et al., 2002). It is important to attempt to understand the views of change recipients, who are generally not managers.

This research added to our understanding of how people respond to planned information technology changes by studying what is actually being communicated and comparing that to its effectiveness as described by organizational members. Additionally, our understanding of the communication expectations of employees at varying organizational levels was explored, leading to increased effectiveness in organizational change communication. A major contribution of this study is the development of a means of assessing both the perceptions and actual effectiveness of planned organizational communication during large-scale change.

Specific research questions answered in this study include:

- What are the changes going on at the organizations under study?

- What processes have been used to communicate the change, including media, timing and content?
- How effective is the communication?
- What is the estimated relationship between the perceived effectiveness of media, timing and content, and the effectiveness of communication?
- Does the effectiveness of communication vary across hierarchical levels within organizations?
- Does the effectiveness of communication vary across divisions within organizations?

Statement of Assumptions

The following assumptions were made in conducting this study:

- Multiple organizations could be found within the range of the researcher's travel resources that would be willing to participate in this research.
- Because multiple organizations were studied representing multiple industries, generalizability was improved.
- Of the employees who responded to the initial communication surveys, a statistically significant number would participate in the second (qualitative) data gathering phase on organizational communication and perceptions.

Statement of Limitations

The single researcher involved in this study has a pro-innovation bias that must be acknowledged. Rogers (2003) notes that the majority of diffusion of innovation studies

reveals a pro-innovation bias in that they do not question the appropriateness of the given change for the environment or population under study. This bias was not seen as a concern in the current study because the participating organizations had independently made the decision to implement a change, and agreed to allow the researcher to observe the process. The questions asked and data gathered did not influence the results of this study negatively, but instead emphasized that because organizations will continue to implement large-scale changes, it is worthwhile to examine ways to make those change processes more effective.

The fact that changes progress through multiple stages is well established (Bridges, 1991; Kotter, 1996; Rogers, 2003), and authors have also suggested that the method of communication should vary based on the stage (Lewis, 2007; Rogers, 2003). This study did not attempt to assess the appropriateness of the communication in relation to the current stage of the change, but rather assessed the effectiveness of the communication that had already occurred.

Only organizations in the upper Midwest region of the United States were studied, due to resource limitations of the researcher. This may effect generalizability to other regions of the country, and certainly affects generalizability to other regions of the world. However, because the organizations chosen covered both privately held and publicly funded organizations in two very different fields, generalizability should still be upheld.

Only one researcher conducted the interviews and performed the coding of the qualitative data. This may have lead to researcher bias but the researcher relied heavily on her committee members to prevent this bias.

Statement of Methodology

The intent of this research was to study the influence of change communication as experienced by employees during a time of large-scale planned technological change at the selected organizations, and in particular, discussed the views of employees, executives and managers of these communication methods. Through the use of a company-wide survey in a first phase, employees at multiple levels of an organization answered questions about their perception of specific organizational communication events related to the change (a specific meeting, a corporate newsletter, etc.). A second phase consisted of qualitative data gathering through personal interviews, observations and analysis of various forms of actual organizational communication at the participating organizations.

A modified case study approach was employed to understand how and why the selected organizations used specific forms of communication and what impact this had on the effectiveness of the communication (Yin, 2008). Data collection was not as in-depth as with traditional case studies, however using case study methods provided information that defined the context of the study and allowed triangulation with the quantitative data. Structuring the study in this manner also allowed for collection of multiple types of information at multiple points in time and from multiple sources while the change was

still in progress, which provided broader and deeper information than relying on participant recall after the changes had been implemented (Armenakis, Bernerth, et al., 2007; Rogers, 2003).

Population and Sample

Given that the setting of this research was identified as organizations undergoing a major information technology change, the population from which a meaningful sample could be drawn was limited to only organizations with a formalized information technology (IT) department. Additionally, the population was limited to those undergoing a significant change during the period of this study. Beyond these factors, however, it was difficult to define the population for this study. For instance, organizations around the world met the qualification of having formalized IT departments, but organizations outside the Midwest region of the United States were out of reach due to the researcher's budgetary restrictions. Large organizations such as non-profit organizations, corporate farms or governmental departments also rely on information technology, but may not have their own formalized IT department that would lead a large-scale change for the organization. Thus, it was difficult to precisely define the population for this study, but using the limiting factors of corporations with formalized IT departments in the Midwest, a sample was drawn that has important lessons to share about communication during large-scale IT projects.

The sample for this study was two organizations that were undergoing significant changes to their computer information systems. Organizations that were within driving

distance of the researcher were contacted to determine their interest in participating. Within driving distance of the researcher are small to mid-sized towns, as well as the Minneapolis/St. Paul, MN, metro area, and the Madison, WI, metro area. This region thus provided a wide variety of organizational types and sizes that are representative of firms across the country. This proximity also provided the researcher with an awareness of many of the current projects at these organizations, and the ability to more efficiently assess the potential fit for this research. Two organizations were selected for this study; a mid-sized public university and a food processing organization.

All relevant stakeholders were surveyed via e-mail. At the food processing organization, this group included members who were identified as participants in the implementation, even though their work had not yet begun at the time of the survey. At the public university, all faculty, instructional academic staff and current students were surveyed. Participants to be interviewed for the qualitative phase were selected to provide a stratified sample, based on hierarchical level and membership in specified departments and divisions.

Data Collection

Data was collected via anonymous electronic surveys administered to all identified stakeholders in the selected organizations. The instrument to gather this information was developed using a compilation of items based on the Organizational Communication Development Audit Questionnaire (Goldhaber, Dennis, Richetto, & Wiio, 1979), and the Episodic Communication Channels in Organizations (ECCO)

survey (Davis, 1953). Survey questions are included in this study as Appendix A for the university and Appendix B for FPO.

Independent variables were perceived effectiveness of media used, perceived effectiveness of actual timing and perceived effectiveness of actual content, as well as organizational level and division. The dependent variable was effectiveness of communication and was operationalized using a modified version of the ECCO analysis survey instrument that uses information specific to each organization to evaluate effectiveness of specific communication events. The ECCO analysis survey measures the accuracy of information known by employees, thus allowing effectiveness to be evaluated by comparing what is known to what has been officially communicated. The effect of demographic variables such as age, gender and length of employment on change dynamics have been well documented in previous studies and thus was not a focus of this study.

Organizational artifacts such as existing brochures, training tutorials, posters, and company e-mails were analyzed and direct on-site observations were made of meetings, casual conversations and other interactions to provide a clearer picture of the organizational culture. Factors such as organizational stability, mission and vision, and general communication practices helped define the setting in which the research took place. Combined with interviews of employees at each organizational level and division, triangulation of the quantitative and qualitative data gathered was possible.

Data Analysis

Quantitative data from the surveys was analyzed using SPSS software to determine the ability of the perceived effectiveness of media, content and timing to predict actual communication effectiveness, as well as organizational level and division. Descriptive data such as mean and standard deviation for age, gender, length of employment, hierarchical position, etc., are also reported.

As defined above, the independent variables were the perceived effectiveness of actual media, timing and content which are interval, and organizational division and organizational level, which are categorical variables. The dependent variable was a measurement, thus making it interval.

Descriptive statistics will be reported separately for each organization, including demographic characteristics such as age, length of employment, etc. This data helps establish a clearer picture of the organization (Yin, 2008). In addition, individual communication events were categorized and analyzed. For example, a training session would be considered an individual communication event that could be compared to a corporate-wide e-mail as another individual communication event to help answer the research questions.

Qualitative data from interviews was analyzed using Atlas.ti software to facilitate coding of the interview data.

Table 1: Statement of Terminology

Term	Definition
Change Agent Homophily	The degree to which two or more individuals are similar in such aspects as education, beliefs, socioeconomic status, etc (Rogers, 2003).
Communication	"a process in which participants create and share information with one another in order to reach a mutual understanding. This definition implies that communication is a process of convergence (or divergence)…a two-way process of convergence, rather than a one-way linear act in which one individual seeks to transfer a message to another" (Rogers, 2003, pp. 5-6)
Content	The message is the content to be transmitted, which has also been defined as the symbols and signals which convey what we wish others to understand (Tourish & Hargie, 2000).
Effectiveness of communication	The accuracy of information understood by members of an organization, based on communication distributed by the organization
Large Scale Technological Change	An organizational change that implements a new technology which affects the majority of organization members by causing the need for new skills, routines and management practices with the intent of improving the organization's performance.
Media Richness	The ability of a medium to carry information of multiple types and thus reduce equivocality; face-to-face is the richest possible medium because of the multiple cues available to the receiver in the form of directly spoken words, vocal inflections, body language, etc.(Daft & Lengel, 1986).
Medium	The channel is the means by which the message is transmitted, such as voice, memo, or e-mail. Channel and medium are often used interchangeably. (Berlo, 1960)
Politics	Actions related to power and influence that primarily occur outside of the normally sanctioned organizational processes (Fimbel, 1994; Kurchner-Hawkins, et al., 2006).

CHAPTER 2

REVIEW OF LITERATURE

This review of literature begins by providing required background information such as definitions of "large-scale technological change" and "communication," followed by a brief discussion of the consequences of poor communication during large-scale technological change. A brief history and description of change theory and communication theory follow, leading to sections discussing current research pertaining to each of the dependent and independent variables. The final section of the literature review will demonstrate the need for this study.

Large-scale technological change

An innovation is "an idea, practice or object that is perceived as new by an individual or other unit of adoption…the perceived newness of the innovation for the individual determines his or her reaction to it" (Rogers, 2003, p. 12). New or upgraded information technology that is being implemented within an organization can be considered an innovation under this definition, as the members will surely perceive some level of "newness" in this change.

Large-scale changes pose a direct challenge to routines in an organization by forcing people to "unlearn" long-held skills and relearn new ones that are potentially

radically different, often in a very short timeframe (Alvarez, 2008). This obviously causes an upheaval in the organization, but Covin and Kilmann (1990) narrowed the definition of "large-scale change" further as they were preparing a survey to understand potential positive and negative influences during these times. They developed the following criteria for inclusion in their study: the change encompasses the entire organization with a view to improving performance, covers a long timeframe, and changes the way the organization is managed (Covin & Kilmann, 1990).

Thus, combining these definitions, a "large-scale technological change" is one that implements a new technology that affects the majority of organization members by causing the need for new skills, routines and management practices with the intent of improving the organization's performance.

Communication

Communication has been posited to be "the most fundamental and pervasive of all management activities" (Tourish & Hargie, 2000). In a survey to determine the key skills needed by managers during change, communication ranked highest, and many other items on the list were linked to communication skills as well such as gaining support of key people, energizing and enthusing others, explaining reasons, etc. (Woodward & Hendry, 2004). Managers must share information as well as gather information and feedback from a wide variety of constituents both inside and outside their organization. Communication is a dynamic, interactive process that was first recognized by Berlo in 1960 (Goldhaber, 1993). This process consists of six components: the communication

source, the encoder, the message, the channel, the decoder, and the communication receiver (Berlo, 1960). Each of these components was examined in greater detail later in this chapter, since they each play a significant role in the current research.

This research considered both "formal" and "informal" communication. Formal communication has been explicitly planned by management and follows the official organizational structure, while informal communication is that which occurs between coworkers and is neither planned nor intended by management (Weenig, 1999).

Need for effective communication

Many authors have found that employees want more information during times of change, whether or not a well-planned and well-executed communication process was in place (Hargie & Dickson, 2007; Whelan-Berry, Gordon, & Hinings, 2003). In one surprising example, for instance, in a case study of two organizations, one with a strong well-executed communication plan and one without any plan, the results indicated that neither group of employees felt that they had enough information (Goodman & Truss, 2004). Information is so widely and immediately available on any given topic via radio, internet, television, etc., that employees expect the same immediate fulfillment of their information needs at the workplace (Bjorkman, 2009). Simple guidelines for communication are no longer sufficient, because they do not align with the actual strategies in use in organizations and do not give enough recognition to the fact that communication is a powerful tool for ensuring the desired outcomes (Dawson, 2004). This philosophy pairs well with Bjorkman's (2009) somewhat derogatory discussion of

"jazzy slick newsletters" and Hargie and Dickson's (2007) lamenting of the fact that employees are not receiving information that is important to their effectiveness at work. If employees are not getting the information they need and expect, communication will be perceived as ineffective.

This ineffectiveness can lead to confusion and uncertainty. Confusion often causes increased information-seeking by employees to alleviate the discomfort of being out of control of their environment and outcomes that will affect them (DiFonzo & Bordia, 1998; Elving, 2005; Goldsmith, 2001). Just when employees have the greatest need for accurate, relevant information, it is often at its scarcest, as both the quality and quantity of information often decrease during times of large-scale change due to legal restrictions, heavy workloads and other factors (DiFonzo & Bordia, 1998; Rousseau & Tijoriwala, 1999). Managers however have reported that they do a good job of communicating with their employees (60%) but only 30% of their employees agreed. To fill this gap, employees often resort to informal means such as "the grapevine" and rumor (Crampton, Hodge, & Mishra, 1998).

Rumors and Negative Information

In their seminal work on rumors, Allport and Postman (1965) found that when there is insufficient or conflicting information, groups of people will pass information amongst each other without the standards of evidence they would normally expect if they had one complete picture of the situation from reliable sources. They also pointed out that rumors travel across networks of people much more quickly than the truth, and are more

likely to be believed even when the deliverer of the "news" acknowledges that what they are imparting is rumor. These informal networks of people have come to be known as the "grapevine" that circulates information outside the officially sanctioned mechanisms established by management, and the effects of this type of communication often go unrecognized (Crampton, et al., 1998). In a study of 158 organizations, Crampton, et al. (1998) surveyed top-, mid- and lower-level managers and found a wide variety in beliefs about the grapevine. The lowest managers were most in tune with the very existence of rumors, the existence of which higher level managers either denied or intentionally ignored. The importance of high levels of grapevine activity was also not consistently understood; lower-level managers generally recognized that high activity coincided with a lack of clear information, while higher level managers seemed to feel that this activity was a normal part of the lives of the lower echelons. This is a very unfortunate viewpoint that highlights the need for continued study of methods to evaluate the effectiveness of communication during change.

In what has been termed "the negativity effect," it has additionally been shown that negative information, such as is often the case with a rumor, is much more likely to be believed, and will have a longer effect on the recipient (Kellermann, 1984). Furthermore, rumors and negative information gain strength with repetition and once they have taken hold in employees' minds, attempts by management to relay correct information may actually damage the credibility of the managers (Bordia, et al., 2006; Schweiger & Denisi, 1991). Events that contradict the original understanding of

confusing information do not necessarily lead to a correct understanding. Rather, more elaborate and unlikely explanations often fill the gaps, and the more unlikely an explanation is, the more likely it is to be believed (Allport & Postman, 1965; Watzlawick, 1977).

The study by Schweiger and Denisi (1991) was one of the first to empirically test the effects of consistent and thorough communication during times of change. Using two plants in an organization that was to participate in a merger, a "realistic merger preview" document was provided to employees at just one of the plants. Employees, including the plant manager, at the other plant received limited information and were not aware of the information provided to the other plant (this was consistent with how the parent organization would have communicated with them under normal operating conditions, making them a control group). Many positive effects resulted from the additional information provided to the first plant, such as reduced uncertainty and increased perceptions that managers were trustworthy, honest and caring. Additionally, rumors were minimized. This study highlights the need for clear and consistent communication, particularly when combined with other studies that have indicated that negative information is much more highly disseminated than positive information. Bordia, et al. (2006) evaluated 1610 responses concerning rumors, stress and uncertainty and found that negative rumors were more than 15 times more likely to be reported than positive ones (479 negative rumors such as "we are all going to be laid off" compared to 31 positive rumors such as "our benefits will improve"). Those who reported the negative

rumors also had higher levels of stress than those who reported hearing positive or no rumors.

Management communication can help control rumors by reducing confusion and uncertainty. In a widely cited study, Smeltzer (1991) interviewed 184 employees at 43 organizations that had recently announced a major change. He found strong qualitative evidence that management should relay information as soon as possible rather than waiting until all information is known, as this reduces uncertainty and helps control harmful rumors. Delaying communication or not sharing all relevant information led to anger and the proliferation of rumors. In a more recent study, strong quantitative results were provided by 877 managers and employees of one government office undergoing a series of significant changes. The quality of change communication (defined as the usefulness, timeliness and accuracy of the content) was found to reduce uncertainty about strategic aspects of the change, but participative decision making was required to reduce uncertainty about job-related and structural issues (Bordia, et al., 2004).

Given that a propensity for negative information seems to exist in the absence of clear consistent information, it becomes apparent that research into what constitutes effective communication should be fruitful.

Project Failure

In addition to confusion, uncertainty and rumors, poor communication can also lead to failure of a change project. Less than 10% of project failures are due to technical issues, but a high number of project failures are instead due to poor communication

(Lewis & Seibold, 1998). These results were echoed by the findings of a study of information technology executives about the reasons for project failure. Unclear communication of goals and deliverables was found to be the highest ranked attribute contributing to IT project failure, at a far higher rate than technical issues (Oz & Sosik, 2000). This may be due in part to the fact that managers find it easier to deal with the technical issues within their field of expertise than to address the more poorly defined aspects of communication. Most managers do not understand the communication process required to turn business objectives into results, thus they do not apply enough strategic thought to the planning of communication, which can cause organizational change projects to flounder (Bjorkman, 2009).

Furthermore, managers often underestimate the impact that their actions have on employees and overestimate the effectiveness of their own communication. They recognize that many managers in general are poor communicators but are convinced that they themselves are better than average. The study by Smeltzer (1991), as noted previously, uncovered management views that employees had been told about the impending changes and thus should have all the relevant information. Their employees, in contrast, responded that they did not have information about the aspects of the change that mattered most to them, such as consequences for their job and workgroup. A later quantitative study revealed strong confirmation for the same types of results as 60% of managers reported that they communicated frequently while only 30% of their employees agreed. In fact, 35% of the employees stated that their manager communicated very little

(Crampton, et al., 1998). Providing further evidence of the disparity between employee and management views of effective communication, Robson and Tourish (2005) conducted focus groups and interviews of individual managers and employees to uncover what managers thought they should be doing to improve communication compared to what they actually did and why. Although relatively small and wholly qualitative (focus groups of 23 total people and nine individual interviews) the comments demonstrated that managers feel they are doing at least a satisfactory job of communicating while their employees do not agree. Clearly there is a mismatch between the views of employees and the views of managers who tend to be unaware of their communication failings.

Politics

Politics must also enter into any discussion of effective communication during organizational change. Politics has been defined as actions related to power and influence that primarily occur outside of the normally sanctioned organizational processes (Fimbel, 1994; Kurchner-Hawkins, et al., 2006), and during times of change information is power. Change is not an apolitical process, and what gets communicated, or not communicated, provides powerful justification for future courses of action and also sends strong signals to all stakeholders as groups try to achieve their own favored outcomes (Dawson, 2004). Stakeholders all make decisions about when to share their information, with whom and when, to gain the most advantage for themselves, but this varies depending on the type of change (Dawson, 2004). For example, change that is not critical to the mission of the organization can be implemented in a relatively relaxed approach while change that is

critical and/or challenged by stakeholders may require more political communication in order influence perceptions in the desired direction, a la Machiavelli.

Marshak (2006) posits that there are six dimensions of change and only one of these is consistently overt. They are reasons (rational and analytic logic, the one overt dimension), politics (individual and group interests), inspirations, emotions, mindsets and psychodynamics (anxiety-based and unconscious defenses). During times of uncertainty and change, political actions tend to increase and also tend to be more negative, so it is imperative to understand how these dimensions will affect both the sending and receiving of any type of communication (Marshak, 2006). The change initiative may be based on the selfish motives of those in charge, or individuals may be trying to protect their own "turf" or attempting to proactively manage issues by setting the agenda for public discourse. For instance, as indicated by Sillince's (1999) post-hoc review of publicly available information from significant changes at AT&T over several years, the types of information communicated as well as the language used morphed over the course of these changes to allow the leadership team to influence perceptions in their desired direction. During times of change, stories and public information may appear to be factual but they always contain an element of politics. The "official view" comes from key individuals and thus may preclude other points of view, as evidenced in a similar study of public discourses concerning the merger of US West and Qwest (Leonardi & Jackson, 2004). Through the use of political language, in this case the idea of "technological determinism," leaders were able to justify their decisions by making the merger seem

inevitable due to the constant and unavoidable progression of technology. These types of discourses can have the effect of shutting out stories that do not coincide with the "official" version of change events, making it important for research to include multiple perspectives, or "competing narratives" of the change process (Buchanan, 2003).

Thus, message content and language itself may be a political tool, as they may separate the information haves from the have-nots, protect the ego of the sender, convey selected ideas and obscure others. Several authors such as Butcher and Atkinson (2001) have attempted to re-direct the "language of change" to deal with this separation, claiming that current methods of communicating during change are too top-down and political; what is required is bottom-up communication since it is the recipients of change who can make the biggest contribution. Their attempt merely muddies the waters of change communication however. For instance, at one point they advocate the use of covert, clandestine means of communication by management, claiming that this is morally justifiable since it is for the greater good of the change project and the organization as a whole. In a later section they then lament that the current language of change perpetuates the conceptualization of something that is done to change recipients, rather than something they participate in and co-construct (Butcher & Atkinson, 2001). Similar contradictions abound in their article, but there is an important reason for including it in this literature review. They raise interesting points in their review of language and political literature as noted above, and their conceptualization of manipulative managers conniving to ensure that changes benefit them personally are

commonly held opinions by many employees. Their actual conclusions should be avoided as they continue to perpetuate a managerialist view while at the same time contributing little to a true understanding of change communication or employee perspectives (Collins, 2003).

Media choice has political implications as well. A message recipient is less likely to move the exchange to a more personal medium such as face-to-face if the sender originated an impersonal medium such as a written memo, thus allowing the sender to control the exchange on his or her own terms (Rice, 1984). There is also a significant difference in the media chosen for task-related messages as compared to political messages. Peers such as managers at the same hierarchical level often employ political tactics in an attempt to gain the most of an organization's scarce resources. When attempting to influence those higher than themselves people will employ much more subtle tactics in a face-to-face situation, but when issuing directives they are more likely to use e-mail and other impersonal forms of communication. Interestingly, e-mail was also found to be used frequently when building coalitions, due to its ability to reach larger numbers of potential allies at the same time with the same information (Sussman, et al., 2002). The potential for both timing and media use to be influenced by political machinations point to a need for an examination of what influence timing and media have on the effectiveness of communication during organizational change.

Critical change management literature questions the more traditional view that change is an apolitical process and many authors now advocate that politics must be

considered when planning change communication. For instance, Dawson (2004) claims that the proper way to view the political processes is not the open, wholly participative style advocated by Kurt Lewin nor the subversive, divisive methods advocated by Machiavelli. Politics is one dimension among many that must be understood and included in any study of effective change communication (Kurchner-Hawkins, et al., 2006; Marshak, 2006).

The need for effective communication during large-scale technological change is thus clear. Organizational communication of change-related information is extremely complex and when not handled properly can cause uncertainty, confusion, rumors and even project failure. Managers must focus attention on this strategic process and the existence of the potential for politics must be recognized so that it does not damage the effectiveness of communication.

The next section of the literature review will examine general change theories, including a comparison of optional and non-optional changes, stages of change, and resistance.

General Change Theories

Stages of Change

There has long been a concern with how to induce people to change, whether it is to change their religious beliefs, support a new ruler, or implement a new technology, but the recognized leader of the current views of organizational change management is frequently identified to be Kurt Lewin. Beginning in the 1930's in Nazi Germany, he

worked with groups of people to get them to change aspects of their life as varied as their eating habits to their political affiliations (Schein, 1999). He observed that there are stages through which groups and individuals appear to progress when changing, which he categorized as "unfreezing," "moving," and "refreezing" to symbolize the shift in attitudes that are necessary before a change can take place, and the subsequent need to ensure that the new process continues to be employed. He also categorized the forces that may help or hinder change efforts in terms of "force fields" and advocated that change agents employ a technique he termed "force field analysis" using principles found in physical science. In simple terms, there are forces holding an individual or group in place and thus working against the change, and the individual or group also needs to have their own momentum in favor of the change. To affect change, the forces resisting the change must be decreased, while the forces pushing in the direction of the change must be increased. Employing only forces pushing for the change will only serve to increase resistance (Lewin, 1947:2009; Schein, 2002)

Later authors expanded on the linear, three-stage model and also applied the models to specific groups or situations. For instance, Kotter (1996) developed an 8-step model based on his long consulting and research career. It became extremely popular in the practitioner literature but the foundations can be traced to Lewin's model. The steps include

- Establishing a sense of urgency
- Creating the guiding coalition

- Developing a vision and strategy
- Communicating the change vision
- Empowering broad-based action
- Generating short-term wins
- Consolidating gains and producing more change
- Anchoring new approaches in the organizational culture (Kotter, 1996, p. 21)

This model is intended for managers to use in assisting with organizational change, and employs both stages of change and force field analysis. The first four steps align well with the unfreezing concept, and also serve to increase momentum in the desired direction of the change. The next three steps (empowering broad-based action, generating short-term wins, and consolidating gains and producing more change) are the moving phase, while anchoring is the refreezing phase.

Rogers (2003), through analysis of his own and other's work over decades, also found that there are stages through which individuals progress in their decision to adopt or reject an innovation. He labeled his phases "knowledge," "persuasion," "decision," "implementation," and "confirmation" (p. 21). In the knowledge phase, the individual learns of the existence of an innovation and begins to understand how it works. During the persuasion stage an attitude is formed, and this is acted upon in the decision phase by engaging in activities that lead to either adopting or rejecting the innovation. Implementation occurs when an individual actually begins to use an innovation and

confirmation involves gathering information to reinforce the adoption decision. The similarities to Lewin's model can be seen clearly; the knowledge and persuasion are akin to "unfreezing" as the information gathered helps the individual to understand reasons for making a change; decision and implementation are akin to "moving" because a change is actually undertaken; and confirmation is akin to "refreezing" as the individual confirms that the change will become permanent.

A third staged model, one developed through change research with teachers, is the "Stages of Concern" model (Hall & Hord, 2001). They advocate understanding change through the eyes of the change recipient in terms of what they are concerned with at any given moment in the change process, which resulted in a seven-stage model.

- Awareness – There is little concern or involvement with the innovation.
- Informational – The person is interested in learning more in a general sense.
- Personal – Concerns begin to grow about how the person would use the innovation, including roles, skills, status and conflict considerations.
- Management – The person focuses on using the innovation, and making the best use of information and resources.
- Consequence – The concern is for how the use of the innovation will affect the person's clients, such as performance and changes needed to increase client outcomes.

- Collaboration – The person begins to focus on coordination and cooperation with coworkers in their use of the innovation.
- Refocusing – Universal benefits and improved alternatives become the primary concern (p. 63).

Again the similarity with previous stage models can be seen. The first three stages lend themselves to the idea of "unfreezing" as the individual learns more about the innovation and its possible benefits while the next three (management, consequence and collaboration) focus on "moving" when the innovation is implemented. Refocusing then becomes the "refreezing" stage as benefits are realized and improvements are made.

Many studies have provided relatively consistent support for these and many other similar linear staged models, and concluded that there are observable events in any change program. While they are also popular with practitioners because of their simplicity, some scholars have criticized the linear staged approach as being too linear and simplistic (Boyatzis, 2006; Dawson, 2004; Svyantek & Brown, 2000:2009; Wheatley, 2006). There is a growing movement to view organizational change from an "open systems" perspective, and to employ scientific terminology to organizational change practices. As early as the 1950's scholars were advocating viewing organizations as biological systems that need input from their environment, perform internal processes and produce actions and products that in turn affect their environment (Boulding, 1956; von Bertalanffy, 1972). As such, when organizations become too stable, in other words

when they achieve equilibrium, they begin to stagnate and atrophy without the addition of new energy (information and ideas, for instance) from external sources. Thus organizations should be seen, these authors reason, as being in various stages of chaos, measured in general terms as how far from their equilibrium they are (Cartwright, 1991; Fitzgerald & van Eijnatten, 2002; Shaw, 1997). Viewing organizations in this way, as biological entities, leads to a far richer perspective, as all parts of the system (employees, external stakeholders, etc.) are involved in the processes that will move the organization forward, to grow and evolve. The system is able to grow and change as required, based on inputs from both within and without the system, rather than being directed by a few individuals controlling from the top (Wheatley, 2006). Communication is the key to crossing the boundaries of the system and providing the necessary interaction with the external environment.

While the open-system, biological perspective is indeed useful for providing a more realistic view of an organization as a flexible entity, it provides less assistance with the practicalities of planning a major technological change. In those instances, the most effective approach will be one that plans the stages of the change, while recognizing that the individuals experiencing the change, and the organization as a whole, will continue to grow and evolve based on inputs such as information and energy from its environment. As change unfolds, the participants' views also change, and people may experience "interpretive shifts" through gathering information, forming opinions, etc. (Isabella, 1990), thus re-emphasizing the need for consistent, accurate information during change.

Without this view, there is a danger of falling into "template diagnosis" by employing an unsystematic process for developing a course of action without understanding the organization's unique characteristics. The "n-step" models, as the linear staged models are called, with their emphasis on a specific number of steps per phase, may seem to be a quick fix but employees often recognize that the chosen approach does not fit the organization nor them personally (Armenakis, Harris, Cole, Fillmer, & Self, 2007). Contrasted with the n-step models, a flexibly structured, communicative approach that addresses an individual's needs for information and also recognizes that individuals will progress through these stages at different rates will provide a much more effective model for change.

Optional vs. non-optional change

Changes may be optional or non-optional, and in the reality of modern organizations the majority of planned changes are not open for discussion. Rogers (2003) defined a continuum of the amount of discretion an individual has in implementing a given change. At one end is completely optional change, where the individual's decision to adopt the innovation is made completely independently of other individuals. At the other end is the "authority" decision in which relatively few members of a group mandate a decision that must be adopted by all members. In the middle of the continuum is the "collective" decision, in which members collectively decide whether or not to adopt an innovation, but once adopted it is expected that all members will comply. Most large-scale technological changes fall into the "authority" type because it is unlikely that all, or

even most, organizational members will be asked their opinion on whether or not to adopt a new information technology.

The members do, however, decide to what extent they will use the new technology. Their reactions can be affected by the communication they receive during the change process (Balogun & Hope-Hailey, 2008; Papa & Papa, 1990). For instance, in a study of a newly implemented information technology, the results showed that even though the use of the technology was supposedly optional, employees and outsiders were expected to use it. However, there were no incentives, no rewards for use and no management support, so the technology was not widely adopted. Management did not clearly communicate their expectations, and the informal communications about an early version of the software were very negative, making widespread adoption of the final version highly unlikely (Downing, 2004). The Downing (2004) study was entirely qualitative, but it supports previous research that found that the perception of voluntariness (and other aspects of the innovation) is key to successful implementation of technology. These perceptions are far more important than the actual voluntariness (Moore & Benbasat, 1991).

If the mere perception that a change is not optional can negatively impact adoption, it is then very important that employees understand why changes are needed, particularly when it is obvious that they have no choice but to implement the change. Any negative behaviors can significantly hinder the implementation and adoption of a new information technology (Balogun & Hope-Hailey, 2008; Ram & Jung, 1991). It is

important to understand the distinction between optional and non-optional changes because when changes are forced, resistance often increases as discussed in the earlier segment on force fields (Lewin, 1947:2009). Thorough and consistent communication can provide information that will both lessen the forces holding the change recipients in place and increase the forces driving them toward change, thus decreasing resistance to change.

Resistance to change

As with change models, research into resistance to change has a long history. As far back as 1928, Lewin was developing his ideas of force fields and resistance to change. As noted earlier, however, he was applying the term "resistance" in a physical science sense; in any interaction, forces that inhibit movement in a desired direction are creating resistance to the movement and these forces must be changed to reduce resistance. Since that time, in an unfortunate shift in meaning, "resistance" has come to be used in a psychological sense, that has led to a common mindset that all employees will resist change and it is up to managers to make sure they forestall that tendency (Dent & Goldberg, 1999; Ford & Ford, 2009). In a study that has become a classic in change literature, researchers found through experimentation and observation that when employees are involved in decision making, they are far more likely to support an organizational change (Coch & French, 1948:2009). The title of their article was "Overcoming Resistance to Change," however they used the word resistance only twice in the article. That seemed to set the stage for a preponderance of the subsequent

literature on change as well as in management education texts and popular literature (Dent & Goldberg, 1999). Both genres tend to follow an approach to organizational change that is based on reason and logic, with the assumption that change recipients will respond in kind. When the "logical" path that has been presented by management is not accepted whole-heartedly by the change recipients, change agents may feel that they are dealing with illogical resistance and respond with further examples of the supposedly overwhelming logic behind their choices (Marshak, 2006). In fact, it has been posited that perhaps the term "resistance" has become so popular particularly because it is too hard to deal with the behaviors and communication at an individual and personal level, or to admit that management is not handling the change in the most effective manner (Ford & Ford, 2009).

Resistance is not a given. Not all changes are resisted and actions labeled as resistant are not usually seen that way by the recipients of the change. Studies of technology implementations often reveal employee "resistance" to be based on their own perceptions of the best way to perform their tasks most effectively. In one very telling example, Downing (2004) studied an organization that had spent considerable time and money to implement a knowledge system that first-level technical support employees could use to more effectively answer incoming calls. Few employees used the new system however, and managers felt that the employees were merely resisting the change. Interviews by the researcher revealed contradictory beliefs. Employees were not using the system because they felt that it actually slowed down their call response times and

frequently returned incorrect or incomplete information. Numerous studies on technology implementation have found similar results, in that employees often believe they are making the best choices for their workgroups and/or organizations, even if their actions are labeled “resistance” (Boudreau & Seligman, 2005; Gasser, 1986; Koopman & Hoffman, 2003; Leonardi, 2007; Markus, Axline, Petrie, & Tanis, 2000). These behaviors may actually be a warning or notification that the change is not appropriate for the organization or the situation in some way, so careful attention to the variations in understanding of change agents and recipients is important (Armenakis, Harris, et al., 2007; Bartunek, et al., 2006; Ford, Ford, & D'Amelio, 2008).

Resistance is thus not an obstacle to be overcome, but is a natural part of change that can offer critical information to help improve the change implementation (Isabella, 1990). Management should take care not to label actions as resistant without understanding the underlying motivation. Using the term “resistance” implies that all actors in the situation have access to the same information, construct the same reality from it and have the same ability to deal with it (Ford & Ford, 2009; Ford, et al., 2008; Joshi, 1991).Behaviors that can be seen as detrimental to a change effort can happen at all levels of an organization and may be due to many things such as self-interest and politics, psychological or emotional reasons, cultural bias, historical change factors and many others (Balogun & Hope-Hailey, 2008). It has often been treated as a simple matter of what is happening now, in the current change process, but in reality it is a combination of an individual’s past experiences and beliefs about what will happen in the future. There

are background "realities" that are based on these perceptions, and any attempt to reduce resistance by addressing only the current situation will be more likely to reinforce them. Any approach to change must address these "background conversations" rather than using the latest popular method of addressing resistance (Ford, et al., 2002).

It has become obvious that change agents and recipients will not all have the same "reality" or ability to deal with change, but an effective communication plan should allow them to have virtually the same information, regardless of their position in the organization. As evidenced by the technology studies referenced above, this is often not the case, however. Change agents and recipients often have very different information, which provides further evidence for a need to evaluate the effectiveness of communication during technological change.

General Communication Theory

Communication is a dynamic, interactive process that was first recognized by Berlo in 1960 (Goldhaber, 1993). This process consists of six components: the communication source, the encoder, the message, the channel, the decoder, and the communication receiver (Berlo, 1960). In most instances of interpersonal communication, the communication source and the encoder are the same person; the person wishing to send a message also encodes it into the appropriate form (English vs. Chinese, formal vs. informal, technical vs. simple, etc.) before sending it. The message is the content to be transmitted, which has also been defined as the symbols and signals that convey what we wish others to understand (Tourish & Hargie, 2000). Channel and

medium are often used interchangeably, and this discussion will also do so. The channel is the means by which the message is transmitted, such as voice, memo, or e-mail. And, finally, the decoder and receiver are also usually the same person in interpersonal communication; the person hearing the message decodes the meaning.

Even a simple example will illustrate the complexity of this seemingly straightforward process. If Sue wants John to pass her the salt at the lunch table, she chooses (encodes) her words and actions (the content) and transmits them to John to get the desired reaction. If Sue does not like John and wants to be sure he recognizes that, she may merely point at the salt and snap her fingers. If Sue wants to be polite so that she does not offend John, she may ask him to pass the salt with a smile on her face, and add a "please" to her request. Upon receiving either of these messages, John will apply his own decoding process to determine what Sue wants, what she is trying to communicate to him, and whether or not he will comply with her request. To add to this complexity, there is the addition of "noise" to the process, which is anything that interferes with or distorts the message, such as a disability, the environment, past history, or semantics (Tourish & Hargie, 2000). For instance, perhaps Sue pointed at the salt and snapped her fingers because the lunch room was too noisy for John to hear her spoken words, but because of their past history, or his views of managers in general, John was predisposed to think that Sue is rude so he decoded her message in a negative light.

Communication is thus "a process in which participants create and share information with one another in order to reach a mutual understanding. This definition

implies that communication is a process of convergence (or divergence)…a two-way process of convergence, rather than a one-way linear act in which one individual seeks to transfer a message to another" (Rogers, 2003, pp. 5-6). There are many more definitions to be found in the literature, but Goldhaber (1993) has concluded that there are common threads that can be gathered. These include:

- Organizational communication occurs within a complex open system that influences and is influenced by its internal and external environment.
- Organizational communication involves messages and their flow, purpose, direction and media.
- Organizational communication involves people and their attitudes, feelings relationships and skills (p. 14).

The factors that must be considered when attempting to understanding the effectiveness of communication must thus incorporate multiple viewpoints, including those of employees in particular.

Multiple viewpoints

Merely telling employees something is not the same as communicating with them (Rogers, 2003; Smeltzer, 1991). Each individual listener creates meaning for himself or herself based on past experiences, and change agents thus cannot assume that there is a single point of view. There is not a "single world to which everyone has access, or a common descriptive language that mirrors that world" (Ford & Ford, 2009, p. 220). It is very likely that people's perceptions will vary depending on their experiences, role in the

organization, role in the change process, etc. and these may actually be conflicting (Covin & Kilmann, 1990; Gallivan, 2001; Kang, Hill, & Seo, 2009, August; Lewis, 2007; Rousseau & Tijoriwala, 1999). When examining the viewpoints of four groups of people involved in organizational change (managers, researchers, and internal and external consultants), Covin and Kilmann (1990) found wide variation in the importance placed on various success factors, based on the respondent's role in implementing change. Researchers were most concerned with preparing for change, while managers were most concerned with visible management support. No employees were included in that study, but when Gallivan (2001) included employees, he found similar results in the widely differing points of view of multiple groups. Managers and change agents believed the change project to be about helping technical employees learn new skills to help both the organization and the individuals be more productive. The groups who were on the receiving end of the change, in contrast, did not see the coordination at the organizational level and felt instead that their individual initiative to learn independently was being taken away. These differing viewpoints obviously pose a serious threat to the success of a change project, and must be addressed through the use of effective communication to help all groups reach the same level of understanding and readiness to change.

The term "change readiness" has been used to indicate an individual's or group's level of willingness to engage with the change process (Armenakis & Harris, 2002; Armenakis, et al., 1993), but this is not just an internal process, and will vary just as do individual reactions to change. Change readiness is socially constructed in part by the

integration of observations of others, and meanings placed on the observed importance of the change (Bjorkman, 2007) and when combined with a tendency to interpret messages in terms of one's own beliefs and values, and one's perception of the innovation, it becomes clear that it will be rare that individual perceptions will coincide. The Bjorkman (2007) study found that readiness to change is highly affected by the method of communication; mass electronic communication is an excellent way to create awareness of a change, and possibly even create understanding of a change, but it is unlikely to create behavior change. She found that readiness to change and the subsequent behavior change are far more likely to occur when there is an actual conversation to create shared meaning. This also indicates a need for further study into the differences between individual points of view and what means of communication will be most effective in creating the shared understanding necessary for successful change implementation.

The presence of these varying viewpoints indicates that communication during change should not be static; one size will not fit all. Various individuals and groups will use different types of information, from different channels at different times. Framing the change through many types of communication such as documents, personal statements, memos and announcements will facilitate good communication, but each individual will still construct the message in their own way (Lee, E., Lee, & Schumann, 2002; Lewis, 2000b). Some people will come to accept the change more quickly than others, and there are factors that will widen this gap such as education, existing knowledge, relevant social contacts, and selective exposure, acceptance and retention of messages (Rogers, 2003;

Tichenor, Donohue, & Olien, 1970). It is vital that organization members do come to accept the change, but for the right reasons; unthoughtful acceptance generates initial compliance, but thoughtful acceptance is more enduring and provides stability for the change (Ford, et al., 2008).

A concept closely tied to varying viewpoints is that of change agent homophily. Rogers (2003) defined it as the degree to which two or more individuals are similar in such aspects as education, beliefs, socioeconomic status, etc. This is important during change because there is no reason to assume that change agents and change recipients share the same understanding; they are most likely not homophilous and thus will have differing viewpoints (Bartunek, et al., 2006). It is common for individuals to communicate more frequently with those most like themselves. This can cause role issues and communication problems as change agents are often heterophilous (the opposite of homophilous) from both the change recipients and the management instigating the change (Rogers, 2003). This puts an additional burden on the change agent who has been exhorted to communicate frequently and in a positive manner, but because they may be so unlike the change recipients their message may be seen as unrealistic (Ford, et al., 2008).

Because of these tendencies, groups with less perceived power and resources (the change recipients) often get less attention. Additionally, change agents often do not consider that what they see as "resistance" may be constructed from a Pygmalion effect as change recipients try to get more attention (Ford & Ford, 2009; Ford, et al., 2008;

Lewis, 1999). In a study of 89 change implementations, Lewis (1999) found that there was an important difference in the information disseminated to paid employees as compared to those who were less visible to the change agents, such as volunteers, telecommuters and employees in satellite offices. For a successful change, however, all stakeholders who are affected by the change must have all the relevant information. Applying their many years of research and practice in a review of literature intended to extend understanding of the term "resistance," Ford and Ford (2009) also posited that labeling actions as "resistance" is an interpretation of events by change agents who are not applying the same lens as the change recipients. It is thus not a factual report and once a change recipient has been labeled as "resistant" there is a strong tendency to treat those people differently than those who have been labeled "compliant" or "supportive."

Multiple viewpoints and change agent homophily demonstrate a need to understand how effective communication can contribute to the likelihood of success of a change project. In particular, the viewpoints and attitudes of employees need to be examined, as there has been a gap in this segment of the change and communication literature, as will be discussed.

Need to understand employee attitudes

It has been clearly established that there will be many individual viewpoints in an organization, and that change agents will likely vary in important ways from the recipients of change. The consequences of these facts may be detrimental to effective communication during times of change if ignored, but can provide great benefits if

incorporated into a strategic plan for communication. Many employees feel that all corporate communications are somehow tainted (Llewellyn & Harrison, 2006). Although relatively small and entirely qualitative, their study found a uniform mistrust of management communication across multiple types of written communication on differing topics at different organizations. Based on their literature review, however, they concluded that these attitudes are very common among employees of many educational levels, backgrounds and industries, and furthermore contradicted literature that had shown a reduction in traditional "us vs. them" thinking.

Self, Armenakis and Schraeder (2007) contend that these types of spurious results may be due to the fact that research so often ignores or marginalizes the viewpoint of the change recipients. They set out to study several change-related items. The one most relevant to the current study was the perceptions of change recipients relating to a specific piece of communication (a written newsletter) and tying those perceptions to a known construct, Perceived Organizational Support (POS). Their results were interesting in that people reporting high POS were likely to report that the newsletter was effective in justifying the change, but low POS led to low perceptions of the effectiveness of the newsletter. In fact, the more positively the message was portrayed, the more negatively these people viewed the justification for the change. While these results are interesting, they somewhat muddle the stated purpose of the article, which was to examine the viewpoints of employees. While all 467 respondents were employed by the organization

being studied, they were all managers, leaving the reader to wonder what the viewpoints of non-managers are.

Combine these attitudes with the fact that managers are able to direct change activities but are much more constrained in any attempt to change employee's views of the world, and it becomes clear that communication during change presents a conundrum. In response, many authors have suggested a need to include more employee viewpoints in research, instead of privileging managerial responses as has happened in the past (Bordia, et al., 2004; Grant, Michelson, Oswick, & Wailes, 2005; Sturdy & Grey, 2003). There has been little research into the non-managers' view of planned, non-optional organizational change and even less into how they actually feel about it, but the benefits of moving away from simply labeling these actions "resistance" and moving toward a better understanding of employee concerns can be substantial (Bartunek, et al., 2006). For instance, a good understanding of employee attitudes may be a better criteria for assessing organizational performance because they are a strong indicator of future problems, and are a better indicator than profitability and other bottom-line results in the short-term (Armenakis, Harris, et al., 2007). Each perspective highlights a different aspect of the same change including motives, standards for evaluation of results, and organizational practices, providing a fuller picture than one overarching account of the change (Zorn, Page, & Cheney, 2000).

Communication research has tended to focus on finding and perfecting the tool of communication, without considering how the tool was used or whose ideas were being

privileged in its use, and thus organizations continue to use methods that are ineffective (Bjorkman, 2009; Deetz, 2001; Miller, D., Madsen, & John, 2006; Miller, V. D., et al., 1994). The term "megaphone management" has been applied to the practice of widely broadcasting one message to all employees with the expectation that everyone will understand the message exactly as intended (Quirke, 1995), and this idea corresponds well with the funnel concept developed by Quirke (1995) and expanded on by Balogun and Hope-Hailey (2008). At the wide top end of the funnel, managers review news and business objectives, consider options, evaluate solutions and announce their conclusions. These ideas are funneled to employees whose concerns often do not match with the information they are being given, as they wonder if they will have a job, what the change means for them, and how much sense the change makes for the business. The further an individual is from the top of the organization, the less context they have for the information they receive. For example, they will not be likely to learn about the many alternatives that were researched before management selected the current change project objectives, nor all the considerations that went into the conclusion that was announced. These models were supported by the work of Kang, Hill and Seo (2009) in the responses of 1,117 employees indicating that the greater the distance from the top-level managers propagating the change communication, the more likely they are to perceive the change communication as ineffective and the less likely they are to be committed to the change. Employees at varying levels of the organization do indeed have differing viewpoints, according to these results, and thus it fills an important gap in the literature to focus on

the targets of the communication and their relative position, in addition to the content (Kang, et al., 2009, August).

Having defined the process of communication, briefly reviewed communication theory, and examined the need for inclusion of employee viewpoints for effective communication, the next section of this literature review will examine each of the current study's variables in turn.

Independent Variables

As noted earlier, specific research questions to be answered in this study included:

- What are the changes going on at the organizations under study?
- What processes have been used to communicate the change, including media, timing and content?
- How effective is the communication?
- What is the estimated relationship between perceived effectiveness of media, timing and content, and the effectiveness of communication?
- Does the effectiveness of communication vary across hierarchical levels within organizations?
- Does the effectiveness of communication vary across divisions within organizations?

These questions lead to the definition of variables as follows. Independent variables were the perceived effectiveness of media use, the perceived effectiveness of

content, and the perceived effectiveness of timing in addition to organizational level and division. The dependent variable was the effectiveness of communication.

Media effectiveness

The terms medium and channel have often been defined separately, with the channel being the method of transfer (print or television, for example) and medium being the physical means of transfer (paper or airwave), but generally accepted usage allows them to be interchanged (Williams, 1987), and this discussion will follow that trend.

Different media have been determined to vary in their "richness" and the term "media richness" has come to be common when discussing media effectiveness. Richness refers to the ability of a medium to carry information of multiple types and thus reduce equivocality; face-to-face is the richest possible medium because of the multiple cues available to the receiver in the form of directly spoken words, vocal inflections, body language, etc. Media Richness Theory states that managers in particular will base their media choices on the richness required for each type of communication task, in order to reduce equivocality and confusion. For example, a routine message would require a less rich medium (such as a short e-mail, perhaps) than a formal announcement of a significant change. Information seeking would follow a similar pattern; when information is confusing, richer media should be desired and sought out (Daft & Lengel, 1986; Daft, et al., 1987). Fulk and Boyd (1991) further defined richness in terms of four factors: speed of feedback, variety of communication channels employed, personalness of the source and richness of the language used (p. 410).

Fulk and Boyd (1991) also determined that individuals have "media styles" based on personality types and preferences. A closely related concept is that of "social presence," which is the ability of a medium to transmit some essence of the individual to the receivers. Media that are "richer" thus also have higher social presence because the multiple cues in rich media (body language, vocal inflection, etc.) give the receiver a better sense of the sender's personality (sensitive, impersonal or impassioned, for example) and attitude toward the message (Rice, 1984; Rice, Chang, & Torobin, 1992). While the general concept of richer or leaner media appears to be widely accepted, Media Richness Theory (also known as Information Richness Theory) has not been shown to consistently hold true, as people choose media for a variety of reasons besides its perceived richness, regardless of whether they are sending or receiving information. This will be discussed further in the upcoming section on media choice.

While Media Richness Theory has detractors, study after study has shown a preference among employees for the richest form of communication (face-to-face) regardless of the type of information being relayed. Meetings, memos and corporate-wide information have been shown to have a small impact on productivity, as demonstrated by Clampitt and Downs (1993). Their results indicated that employees at two different types of companies felt that direct communication with their supervisors was much more effective in enhancing their productivity and understanding of organizational issues. Employees regularly indicate that communication with their immediate supervisor is much more effective (Hargie, Tourish, & Wilson, 2002; Self, Armenakis, & Schraeder,

2007). This is emphasized by Larkin and Larkin's (1994) popular book on communicating change that presents a wealth of information from a variety of sources indicating that employees in the United States, the United Kingdom and Canada all greatly prefer to hear news from their immediate supervisor. Other research based on years of consulting and research repeats the same message; front-line supervisors are the preferred medium of frontline employees but the supervisors are often not fully utilized (Bjorkman, 2009; Hargie & Tourish, 2004).

Formal group meetings are also considered to be a very rich medium as participants can gather multiple clues from all other participants (Rice, et al., 1992). These environments may create a more comfortable environment when participants know each other and may thus lead to more information sharing, understanding and higher involvement, in turn leading to positive feelings about the change. It is somewhat counter-intuitive to note, however, that the positive feelings and understanding engendered in these types of meetings are not likely to produce true acceptance of the change. The emotional response required for acceptance will take many more conversations, and this is where the person-to-person communication is crucial

Informal communication is also considered to be a rich medium, but there are both positive and negative aspects associated with it. As discussed previously, the grapevine is an informal means of communication that may carry accurate information, but frequently carries negative and/or inaccurate information. Thus, informal communication may contribute to actual knowledge, but not to feelings of inclusion.

Respondents in one study said that they were not fully informed about the change in question, but surprisingly they could answer questions about the change quite well. Further probing revealed that they had received their information through informal channels rather than official ones, and thus were not confident in the accuracy of their knowledge (Weenig, 1999).

Media Choice

Much work has been done to examine why communicators, and in particular, managers, choose a given medium for their messages. As noted earlier, Media Richness Theory posits that managers in particular will choose the medium for their message based on rational factors such as how equivocal the message is (Daft & Lengel, 1986). In contrast, however, some researchers believe that MRT is flawed, because it has been poorly operationalized and fails to account for the fact that often media choice is neither intentional nor optional, and furthermore the strength of its empirical support has been greatly exaggerated. Additionally, supposedly lean media can support considerable socio-emotional content in many contexts, thus further eroding the effectiveness of Media Richness Theory (Rice & Gattiker, 2001).

In one study, when seeking information, managers wanted information in written form (a lean source) more often than face-to-face because they then had a written record. The stated preferences were close however, because they also felt that face-to-face communication was more comprehensible and credible (Lee, J. & Heath, 1999). Sussman, et al, (2002) also found that media choice was influenced by many factors other

than richness. They examined the sending of different types of messages within organizations, including task-related and political messages, and found that richness was less important than the purpose of the message. For example, sending information to many people at once is a convenience factor leading managers to choose electronic media, while political maneuvering leads them to choose face-to-face meetings more often (albeit possibly due to the increased richness).

Media choice has been shown to vary by many factors in addition to task and message equivocality, such as social influence of the peer group, personal factors, technology factors, organizational rank and functional area (Donabedian, et al., 1998; Trevino, Webster, & Stein, 2000). Media choice will generate its own meaning based on the motives of both the sender and receiver, as well as the culture of the organization and other social factors. Factors such as experience with the media, the message content and topic, and communication partners were also found to influence media choice (Yoo & Alavi, 2001). An example would be an individual who is not comfortable using e-mail and thus uses telephone and face-to-face for virtually all his communications. At the other extreme would be a closely-knit yet physically dispersed group of technology professionals who use instant messaging (a very lean medium) for almost all communication; because of their shared experiences and comfort with the technology, they can derive all the necessary information without the cues of richer media.

Because of this apparent confusion, models of when and why to choose media have been developed, suggesting variations contingent upon the context of the message,

the type of change, the organizational climate, etc. For instance, face-to-face is too rich for routine communication and may create confusion, but written bulletins lack enough information for complex messages (Balogun & Hope-Hailey, 2008; Yates, Orlikowski, & Jackson, 2008). Even with models, however, the effectiveness of communication during change remains low, and media choices may be a factor.

Multiple channels

Due to these widely varied results, many scholars and practitioners have called for the use of multiple media during change communication, with some additionally advocating that channels should vary by the stage of change. The pairing of stage with type of communication is inconsistent, however. Some authors suggest the use of mass communication during the early stages of the change in order to increase awareness and then interpersonal communication to increase the chances of adoption and commitment to the change (Quirke, 1995; Rogers, 2003). Others have interpreted their own and extant research in the exact opposite way, and they thus suggest that interpersonal communication should come first, when people are initially learning about the change. This is the time when people will have the most uncertainty and therefore require the most accurate and current information possible. Written forms of communication can be used as reminders of what was discussed, and for updates as the change progresses (Balogun & Hope-Hailey, 2008; Bjorkman, 2009; Larkin & Larkin, 1994). Interestingly, all the above authors agree that written communication should never be the only, or even the primary, source of communication throughout a major change.

Participative forms of communication are much better at reducing uncertainty for job-related or structural changes because they are far more likely to lead to acceptance, whereas the mass forms of communication are better at creating awareness and understanding (Bjorkman, 2009; Bordia, et al., 2004). This is because mass media channels, with their ability to reach large audiences rapidly and spread information quickly, are usually too general to provide enough information and reinforcement to help form a true opinion about the innovation or change. Furthermore, these one-way channels such as mass e-mails or all-employee meetings may be appropriate for communicating strategic decisions, but are often used in inappropriate ways, and are also often the communication methods least preferred by employees. It has even been shown that these channels tend to reinforce or even increase existing attitudes, regardless of whether they are positive or negative. When examining Forest Service employees' reactions to newsletter articles intended to encourage employees to feel positively about the organization, the authors found that if an employee already felt a strong identification with their employer, the stories in the newsletter tended to reinforce this feeling. If an employee was not already feeling a strong identification, the newsletters reinforced the distance they felt and were viewed very negatively. This study was interesting in that it used both quantitative data to measure employees' organization identification and reactions, and also used interviews and content analysis for strong qualitative results (DiSanza & Bullis, 1999). Their results reinforced those found much earlier in a study of mass-media effects on knowledge that found that both attitudes (positive and negative)

and gaps in knowledge are reinforced by mass communication. Reviews of previous events and new research of their own lent strength to the results (Tichenor, et al., 1970). These types of results may come about because people pay attention to what matters to them and unless they feel that this particular mass communication has meaning for them, they will tend to give it less attention, making it likely that only people who already care about a message (positively or negatively) will tend to pay attention. Interpersonal exchanges, in contrast, provide many opportunities for clarification and additional cues, and thus are more likely to induce a strong change in perception (Lewin, 1948; Rogers, 2003).

People tend to pay more attention to messages based on the expectations created by the use of certain media. A written memo from the chancellor is more important than an e-mail from the same person, for instance. Media richness and social presence have been shown to affect perceptions of messages, as employees may feel slighted if an important bit of information is sent in a less rich source, because it implies a social distance from the employees or indicates fear of facing the employees directly (Smeltzer, 1991). The use of multiple forms of media during change communication will thus help to ensure that everyone has a higher chance of receiving the information via their preferred method (Berlo, 1960; Johnson, Donohue, Atkin, & Johnson, 1994; Reichers, Wanous, & Austin, 1997). Some media have the advantage of overcoming issues of space, time, permanence and distribution but not all media can communicate all relevant

cues, thus it becomes apparent that media effectiveness is an important component in the effectiveness of change communication.

Content Effectiveness

What is in the change message has not been addressed in popular literature as often as recommendations to communicate often and openly, but that lack is not reflected in the scholarly literature, where there is much more (Lewis, Schmisseur, Stephens, & Weir, 2006). Content has been defined as "the material in the message that was selected by the source to express his purpose" (Berlo, 1960, p. 59) and this is critical because content that is useful in one setting may not be in another. Receivers of information will have their own definitions for terms, and there may be a great difference between the literal meaning, the intended meaning and the actual interpretation of message content. Receivers tend to decode all messages looking for the "real" message (Quirke, 1995). In one study of employee reactions to an announcement of change, Smeltzer (1991) found that euphemisms such as "right-sizing" and "enhanced voluntary severance" when referring to layoffs resulted in jokes and employees often felt that such wording was condescending. Similarly, Zorn (2000) found that terms can be both packed with meaning and devoid of meaning because there is so much leeway for misunderstanding. In his lengthy and detailed case study, he found that terms such as "quality" and "excellence" were intended by the manager to be inspiring and motivate the employees to achieve ever greater successes in their department. The employees, however, while feeling a sense of enthusiasm after the speeches and group activities, often did not understand how they

could implement these lofty ideas to make positive changes. The terms thus had both very much and very little meaning.

The language used to communicate change must be credible and consistent. First and perhaps foremost, the words themselves must be understood and should be specifically designed for the lowest socio-economic rung within the organization. Most messages are not tailored in this way however and thus enhance the gaps between groups through ineffective use of language, presentation, etc. (Rogers, 2003). Corporate communications are often seen as being dishonest, with the sole purpose of trying to get employees to believe the corporate line while assuring the shareholders that all is well, as evidenced by the in-depth analysis of employee reactions to specific corporate communication vehicles (Llewellyn & Harrison, 2006). Furthermore, much of what is currently disseminated by management is seen as "change speak" by those who are required to implement the change, and who often feel that it does not clearly address what is expected of them (Butcher & Atkinson, 2001; Crampton, et al., 1998). This may be because change agents tend to ask "how can we accomplish this?" while change recipients tend to ask "what is going to happen to me?" (Ford, et al., 2008), but additionally, it may be because there are too many communications focused on understanding when they should be focused on performance and acceptance (Ford & Ford, 1995). For instance, employees expect communication to include explanations of decisions and opportunities for input (understanding), but explanations alone will not

address employee needs to understand how to implement the changes in their daily tasks (performance).

In fact shallow explanations may only heighten uncertainty because employees' job-related concerns are not addressed. In a qualitative study intended to uncover the types of uncertainties, sources and evaluations of change communication, and the role of trust in evaluating change communication, employees revealed that while top management relayed information that helped them understand the strategic intent of the change, only information from their supervisors truly helped them implement the change by addressing uncertainties about implementation and job-related issues (Allen, et al., 2007). Employees feel that they have a right to this type of information, and unless it is provided they will not see the change as being justified or workable (Daly, J. P. & Geyer, 1994). Oz and Sosik (2000) provided evidence that executives shared the same understanding as provided in the employee studies discussed above. Clear communication of goals can therefore lead to improved performance because it enhances understanding of what an employee needs to do, and is thus highly correlated with comprehension of task-related requirements and expectations; its lack, on the other hand, is highly correlated with project failure. Without this type of information, employees will continue to wonder what the change means for them and what to do about it, but will also question why particular options were not considered or what was behind the logic of the decision that has been communicated (Balogun & Hope-Hailey, 2008).

The content of the message is thus the primary mechanism for creating readiness to change, and therefore must be as thorough as possible. Many authors have provided guidance for what types of information needs to be conveyed in a change message. As noted earlier, recipients of information have a great variety of experiences and needs that influence their ability and desire to understand and apply information. Understanding these variations, or "frames," is critical to presenting clear and concrete messages. Lewin (1948) provided an interesting yet simple example that helps illustrate the concept of changing frames. During war-time America in the 1940's, he tried to convince housewives to use intestinal meats as a more thrifty alternative to traditional high quality cuts by providing lectures from experts and other housewives, to little effect. Until he changed their frames of reference through discussions with other housewives about perceptions of being able to provide for their families and how to prepare tasty meals using these new items, almost no one employed his suggestions. Without an understanding of the frames within which employees operate, change managers are unlikely to appropriately communicate the message, and thus employees' frames are unlikely to change. They will continue to interpret, evaluate, and act on the information they receive based on their current frames, that may be incongruent with what management expects (Gallivan, 2001).

Armenakis and his colleagues have also developed guidelines for content. These include five elements designed to help employees to change their frames of reference and consequently embrace change. These are discrepancy (the difference between what is

being done now compared to what is needed), appropriateness (identifying that this is the right approach to the given need), valence (what's in it for the recipient), principal support (the visible support of leaders), and efficacy (the assurance that the recipient can actually accomplish what is being asked) (Armenakis, Bernerth, et al., 2007; Armenakis, Harris, et al., 2007; Armenakis, et al., 1993).

There are many tactics that can be employed to implement the content guidelines from simple suggestions such as indicating the level of uncertainty for each component of a message (Larkin & Larkin, 1994) to employing the correct level of concern, praise, shared beliefs, or "us vs. them" (DiSanza & Bullis, 1999). There is wide agreement, however, that in addition to being fair and unbiased, content must be specific to the context of the organization. Past experiences with change in the organization will color employees' perception of the current change, and they play such a significant role that communicators have little hope of changing attitudes through mass communication, and may in fact do harm unless they take into consideration all aspects of the organization related to the change (Dawson, 2004; DiSanza & Bullis, 1999; Rogers, 2003). Messages must include both positive and negative information, including progress, problems and results of ongoing activities to help employees view the information as trustworthy (Larkin & Larkin, 1994; Reichers, et al., 1997). However, there is a very strong "negativity effect" which leads people to give more credence to negative information than to positive; layoff rumors will generally be more readily believed than pay raise rumors, for example (Kellermann, 1984). In what was expected to be merely a "paper

change" in which a large organization was going to spin off one of its existing plants with no loss of jobs or change in function, managers told groups of employees verbally about the change during the day and also included the information in union newsletters in language that was direct, brief and to the point. It was later discovered that employees still experienced high levels of stress and felt that they did not have enough information (Walker, Armenakis, & Bernerth, 2007).

What actually goes into the message is thus vitally important, and if the effectiveness of communication during change is to be understood, content must be one of the components evaluated.

Timing Effectiveness

Today's employees live in a world of almost instant access to information through the internet, television, smart phones and even scrolling news updates while standing in line at the grocery store. It is no wonder then that they have come to expect this instant availability of information about their organization and work as well (Bjorkman, 2009). Even when an organization follows a strong communication plan and makes efforts to ensure that employees know as soon as possible, they still often feel that they did not know soon enough. In one organization with a strong, timely communication plan, and one with no plan at all, both groups of employees felt that they received too little information and that it was too late (Goodman & Truss, 2004).

There is surprisingly little research into the timing of change messages. Most of the literature is of a prescriptive nature intended to help managers and change agents

understand that they need to communicate often and early. There does not seem to be an "ideal time" to communicate information about a change, as all stakeholders will expect as much information as soon as possible, and in fact, there is strong evidence that the longer change agents wait to communicate a change, the worse employees' reactions will be and the longer it will take to recover (Balogun & Hope-Hailey, 2008; Larkin & Larkin, 1994). If management withholds information until they have the "whole story" they may lose the advantage of communicating early and often. It's critical that management is ahead of rumors and outside information, because people will not react favorably if they are surprised by information that is important to them (Reichers, et al., 1997; Smeltzer, 1991). The Reichers, et al. (1997) study covered three years at one organization and studied cynicism about change by surveying approximately 1600 employees before and after initiatives aimed at improving various aspects of the organization's culture. The results showed strongly that cynicism was related to feeling uninformed and to a lack of communication and respect from supervisors and union leaders. These results led them to suggest that the timing of messages should be enhanced to avoid surprises; if employees are surprised, they begin to fill in the gaps with their own answers over time.

Message repetition may also be a factor in the timing of a message since it has been shown that repetition first tends to increase agreement with a message, but then decrease it (Petty & Cacioppo, 1986). In what they termed the "Elaboration Likelihood Model," they suggested that early messages allow an opportunity to consider the

information and its implications, and process the arguments, but over-repetition becomes irritating when the pleasure of discovering something new is lost.

How and when a message is sent may also have political implications. Timing becomes important as some groups may be intentionally excluded until it is too late, in order to marginalize their opinions, minimize their potential participation or eliminate it altogether. Furthermore, those with information may carefully control the timing of the release of their information to garner the best possible reception from the recipients, or the most attention from those with more power than the sender (Fimbel, 1994).

Credible information is obviously needed over the entire change project, but those needs may change. Rogers (2003), for example, has posited that during the early stages of adoption, mass media channels are more effective while interpersonal channels are more effective later as people are making their decisions about adopting the innovation. As discussed previously, however, there is disagreement on how to communicate at the various stages of change, and others advocate using interpersonal methods early in the change followed by written messages for confirmation and updates, in contradiction of Rogers and others (Balogun & Hope-Hailey, 2008; Larkin & Larkin, 1994). Regardless of the media however, all the authors seem to agree that communicating often and early is the best policy. This is an important factor in the effectiveness of change communication, because as the studies above demonstrate, managers and employees often do not have the same understanding of “often” or “early.”

Organizational Level

Research has shown that there are functional differences in the roles and uses of information based on hierarchical levels within an organization. The higher in the organization an individual is, the more information she or he receives in general, and it tends to come from a wider variety of sources, indicating differences in communication patterns by organizational level (Goldhaber, 1993; McPhee & Poole, 2001). In a relatively small, self-report study of 55 managers at one bank, the highest levels of management were found to be the most in need of improvement as a channel for information, because they are least likely to communicate below their peer level. Additionally, upper level managers rarely communicate lower than the mid-manager level, and lower-level managers were found to have the most communication with all levels of managers and employees (MacLeod, Scriven, & Wayne, 1992). Past studies have concluded that there are differences in how people at different organizational levels communicate, but furthermore there are other dimensions to acceptance of change and these have also been found to vary by level. While small (N=40) this study was interesting because it determined that there are multiple levels to users' responses to planned change; decided vs. undecided (how firm the individual's decision about the innovation is), self-focused vs. other-focused (the degree to which the individual's response is focused on self or others), and the more traditional positive vs. negative (Lewis, 1997).

Mid-managers may need the most thorough understanding of planned organizational change. Based on a longitudinal, contextual study of 26 middle managers undergoing significant organizational change at one company, multiple functional roles were found for employees at this organizational level that were not duplicated at other levels such as non-managers or executives. They generally serve four roles during a change: undertaking their own personal change, helping others to change, implementing the change in their department and keeping the business running. They are therefore both targets and implementers of change, simultaneously. They are "shock-absorbers" for the lower level employees by filtering senior management information to give employees only what they need, but they are also the implementers of the change, causing large amounts of "emotional labor" which is exacerbated because they are not fully in either camp (Balogun, 2003; Balogun & Hope-Hailey, 2008).

In addition to differences in roles during change, the perceptions of communication and the usefulness of information also vary by organizational level. In a study comparing types of information against productivity, managers and supervisors reported that corporate information (notices about changes, financial information, policies, etc) made them more productive, while non-management employees reported no effect. Actual results showed that satisfaction with these items had no effect on actual productivity, however, which contradicts much of the communication literature (Clampitt & Downs, 1993). This finding is particularly important to the current study which will examine effectiveness of communication, as opposed to satisfaction with communication.

In a more recent qualitative snap-shot study of 10 executives at organizations undergoing a major organizational change, widely conflicting views of communication effectiveness were uncovered. Some of the executives interviewed reported that while it was critical for management to have buy-in to a change, it was less important for employees as they only cared about their pay and benefits, and just did not care about the same things as management. In contrast, however, executives at other organizations felt that employees must have all information possible and that treating them as valuable sources of information could have very positive benefits. The authors noted that this may be due in part to the more traditional nature of the first set of organizations (Daly, F., et al., 2003). Because they have been in possession of the information for a longer time, managers have had a longer time to adjust to the implications of the change, and also often have less to lose as a result of the change. This may make them less sensitive to the needs of their employees (Luo, 2007).

Llewellyn and Harris (2006) also found differences in the uses and perceptions of communication by organizational level. They found a uniformly anti-management bias at the organizations they studied, where there was still very clearly a class structure. Employees treated all official corporate communications as “tainted”, and attributed near-pathological levels of dishonesty to their management group. This could be attributed to the fact that perceptions of organizational communication vary based on the amount of power a person has, which is generally an attribute of their level within the hierarchy. Lower level employees tend to feel less in control of their situations and therefore feel

more uncertainty. Higher status employees reported much more positive reactions to organizational changes (Martin, Jones, & Callan, 2006). As distance from top management increases, employees' understanding of top management communication and therefore their commitment to the change may vary. In other words, the further down the hierarchical chain an employee is, the more likely he or she is to have a different perception of top management's communication than what was intended (Kang, et al., 2009, August). The idea of distance is important as well because as Larkin and Larkin (1994) explain, front line employees do not read, either because they are less able, they do not care or they do not trust the information they receive. The lower in the hierarchy a person is, the more pronounced is the effect.

The consequences of these real and perceived differences between organizational levels are many. Groups give different accounts of the same change, and this may be attributed to three reasons: the complexity of change prohibits one simple account, people have different roles in change and therefore experience it differently (phenomenological variance), and politics cause people to put different spins and judgments on the same change (Buchanan, 2003). This wide variation in the importance placed on various components of the change communication contributes to responses to rumors and grapevine activity, and also contributes to the positive or negative reframing of messages from management (Crampton, et al., 1998; Lewis, 2000b).

Organizational level has been demonstrated to influence multiple aspects of organizational change and communication, thus it was used as one of the independent variables in this study. The second independent variable is organizational division.

Organizational Division

Organizational division has received less study in relation to organizational change and communication. Media selection has been fairly thoroughly studied and was expected to show some correlation to organizational division due to a phenomenon called "occupational socialization" wherein people who work together tend to influence each other's preferences for a particular medium for communication. This Social Information Theory predicts that across work groups there will be variation in perceptions and uses of communication technologies, but within workgroups there should be much more similarity because of the social support and interaction within the group (Fulk & Boyd, 1991). In contrast, Information Richness Theory (IRT, also known as Media Richness Theory) posits that people select their communication media based on rational choices related to the needs of the current task (Daft & Lengel, 1986; Daft, et al., 1987). One group of researchers compared their results using Social Information Theory and Information Richness Theory to see if they could understand executives' media choices and if there was a difference across functional areas (i.e., divisions). The Social Information Theory did not hold however, and was found to have little relationship to functional area. IRT was found to explain much more of the difference in media choices (Donabedian, et al., 1998). This study is frequently cited as supportive of IRT and as

downplaying the variation across functional areas, but the study was not a strong one. They surveyed 68 top executives in several industries, but all were men. Additionally, much of the research they cited discussing communication technology choice was from the mid-1980's while their own article was written in 1998. In the many intervening years, communication technologies and the perceptions of their appropriateness for various tasks changed significantly. Updated research into the communication differences across organizational divisions and functional areas is needed.

Somewhat more research has been done on the effectiveness of information exchange across groups. In an examination of an organization implementing a new process for training and information sharing, only the group charged with implementing the change knew about it. Even the groups who were being trained did not understand the reason behind the change, thus highlighting serious deficiencies in information exchange across divisions (Gallivan, 2001). Exchanges across functional boundaries are less often about process or knowledge-related topics and are also more likely to be informal (Kock & McQueen, 1998). This finding was the result of research into how information and knowledge are shared within and across business processes, and while not specifically directed at differences between divisions certainly points to an interesting direction for further study. Another article indicating that there may be differences in communication between divisions was an essay by McPhee and Poole (2001). Their research concluded that reducing centralization can have an impact on the amount of communication across boundaries, and can increase effectiveness of communication (McPhee & Poole, 2001).

Again, this does not relate directly to the current study, but does indicate that there may be differences to be discovered through further study. Because less study has taken place on the topic of organizational division as it relates to communication effectiveness, it should present an interesting independent variable for this study.

Demographic Data

Various demographic variables have provided mixed results in studies over many years, so these will not be considered in this study. For instance, in a review of several studies totaling over 40,000 employees, Goldhaber (1993) reported that many factors show different significance based on industry and other organizational contingencies. Gender does not have a strong effect on organizational communication behavior, but age has more influence in that younger employees tend to want more information but tend to receive less. Length of employment was shown to be strongly related to communication behavior because those who have been there the longest receive the most information, while shift of work showed little correlation to communication behaviors except in service industries. Organizational level was shown to be important because the higher the level, the more information people receive, and union membership was also found to be an important factor, but only in specific industries such as manufacturing. Level of education was found to be important, with those having the most and the least education wanting and needing the most information.

Similarly, when studying perceptions of whether or not an organizational change was justified, Self, et al (2007) found no influence for their control variables of age,

gender, and organizational level. MacLeod, et al (1992) also reported on previous studies that found conflicting results for gender-based communication behaviors, while their own study showed no difference in the communication behaviors of men and women, with the exception of attendance at scheduled meetings. Additionally, they found that gender differences did not hold true across different levels of management. Because a wide range of studies have revealed little or no significance to demographic variables in relation to communication behaviors and effectiveness, they will not be used as independent variables, but instead are reported as descriptive statistics.

Dependent Variable

Communication was previously described as a dynamic process consisting of six components: the communication source, the encoder, the message, the channel, the decoder, and the communication receiver (Berlo, 1960). Based on this definition of the communication process combined with the research questions, the dependent variable has been identified for the current study as effectiveness of communication. There is little previous research on whether or not communication has been effective during change, as most previous studies have focused on the satisfaction with change communication as noted previously in this review of literature. One exception is the aforementioned study that provided "realistic merger preview" documents to one plant but not another during an organizational change. The authors demonstrated empirically that such communication can help alleviate concerns, but did not evaluate the true effectiveness of the document and other communication (Schweiger & Denisi, 1991).

Relationship of Independent and Dependent Variables

As demonstrated above, there is extensive research into the individual independent variables defined for this study (media, content, timing, organizational level and division), and there are models indicating that all the proposed variables are important and/or mutually dependent. Smeltzer (1991) developed a model for communication strategy that takes the shape of a triangle with "channel," "message" and "time" each on one of the three sides, determining the "strategy" depicted in the middle. Organizational dynamics and the nature of the change are indicated as influencing these factors. Similarly, Balogun and Hope-Hailey (2008) developed a "change kaleidoscope" that facilitates analysis of the change context, thus leading to effective choices about many aspects of the change process, including communication. Factors in their model include many items, but the ones most pertinent to this discussion are time available to accomplish the change, change targets, diversity, capability and readiness. Current literature, and their own text, show that these are all factors in effective communication, but there is no research examining all independent variables simultaneously, nor tying them to organizational level or division.

Need for the Current Study

While many research studies have focused on aspects of communication such as those noted above (media choice, timing and content) none have focused on all three components simultaneously, and none have probed the perceptions of non-management change recipients. Furthermore, studies that were directed in a similar vein as the current

research were highly qualitative in nature, with little quantitative analysis of a wider population. The following examples establish a direction for the current study by providing evidence of the need for further study into communication effectiveness.

Lee and Hearth (1999) found that managers value multiple methods of communication, but often preferred written communication when they wanted to give more careful consideration to a topic. This contradicted media richness theory that asserted that richer media is always preferable (Daft, et al., 1987). This research was qualitative and focused solely on managers.

Sillince (1999) examined the use of language at various stages of change at two organizations through the examination of case studies previously published by others. Both organizations (AT&T and Chrysler) have undergone immense changes over the last four decades, so the author examined the use of language as quoted in the interviews comprising the case studies. Criteria of coherent language use were developed and applied to these cases. No new data was gathered.

Daly, et al, (2003) found a strong belief in the link between communication and change management success in their pilot study. Their participants provided evidence that drivers of change are primarily external to an organization while impediments to implementing significant changes are primarily internal. Additionally they concluded that when implementing change, how action is taken is just as important as the action itself. This research focused on executives and was qualitative only.

Goodman and Truss (2004) found that timing of the message, appropriate media, alignment of employee profiles with communication strategy and minimizing uncertainty all were significant in the two organizations that they studied. One organization had a clear communication plan during their significant organizational change, while the other organization approached their significant organizational change with a more laissez-faire attitude. While positive results were found for many aspects of the communication plan at the first organization, the overall perception of the change communication was still negative. Unsurprisingly, the results at the second organization were decidedly negative. This study was exclusively qualitative and exclusively managerial in its focus.

Balogun and Johnson (2004) conducted a strictly qualitative study of middle managers to discover the processes that they used to make sense of a change. The participants completed log type diaries and then moved to focus groups as the study progressed. The authors found that most social processes to clarify a change happened horizontally in the absence of senior management direction. They concluded that senior management needs to pay more attention to how they communicate. Change leaders cannot truly control change, because it is the lateral conversations and social interactions of the change recipients that truly create change by determining the meanings and outcomes of change activities. Managers must therefore manage perceptions by providing accurate, timely, complete information. Without this, change recipients will form their own sense of what the change means for them, which is then not likely to correspond to the management view of the change.

The research of Bartunek, et al (2006) was both quantitative and qualitative in nature, and also included non-management employees. However, it did not explore communication during change, but rather examined gains and losses resulting from the change as perceived by the employees themselves. They found that participation in the change initiative and inclusion in a department where the change was more fully implemented both increased perceived gains. They also found a significant difference in how change is presented by management and perceived by non-management employees.

The study that came closest to the intent and methodology of the current study was that of Self, Armenakis and Schraeder (2007). In one organization they analyzed the context, content and process of change simultaneously through the use of several constructs. The impact of change was measured through open-ended questions and the effectiveness of communication was measured by two questions referring to the usefulness and the satisfaction with each of two specific corporate communication pieces. Perceptions of justification for the change were determined by the relationship of several dependent variables including the previously established concepts of Leader-Member Exchange and Perceived Organizational Support. Results supported the hypothesis that the extent to which employees found that the given change was justified was influenced by Perceived Organizational Support. However, although this study was purported to be an analysis of employee reactions, it focused on managerial employees only.

A very recent study focused on the hierarchical “distance” between top management and employees to determine its effect on attitudinal and behavioral

responses to top management communication about organizational change (Kang, et al., 2009, August). They opined that the underlying assumption of previous work on change communication was that the communication was uniformly perceived by all employees, but their findings found otherwise. A greater distance between top management and employees leads to a negative influence in the perception of top management communication, but this was offset by the leadership behaviors of the employee's workgroup supervisor. This study measured the perception of communication, not the actual effectiveness, but quantitatively established that there are differences in how communication is understood at varying hierarchical levels.

The preceding research reveals that members at different organizational levels have varying needs for communication and that the timing, media and content are important attributes for further study. Taken together, they provide a springboard for the current study.

There have been few research studies evaluating the interaction of multiple communication components simultaneously during a large-scale change. Additionally, there have been few studies that have studied perceptions of non-managers (Bartunek, et al., 2006), and even fewer have studied the combined viewpoints of executives, managers, and employees (Self, et al., 2007). We do not know what information from the manager or change agent is most effective, or whether that effectiveness varies with the type of media, the timing or the content. This is due in part to the macro-level

sociological approach taken by many change and innovation researchers, and in part to the lack of integration of diffusion of innovation with organizational change literature.

This review of the literature has identified gaps that need further study, and additionally authors have called for further inquiry in several areas that this study addressed. These areas are the need for assessment and evaluation of communication during change, a need for a focus on employee viewpoints, and a need for more information about the implementation of change.

Most of the literature acknowledges that communication is central to any change implementation. In other words, is management focusing on the right messages delivered to the right people in the right ways at the right time, which is how Bjorkman (2009) indicates her evaluation of the effectiveness of communication. Research of this nature allows a focus on mid-course corrections and also captures change recipients' viewpoints much nearer to the actual change, instead of waiting until the end of the change, thus providing much more valuable and accurate information (Armenakis, Harris, et al., 2007; Rogers, 2003). Feedback must be elicited and used during the course of the change to evaluate the effectiveness of the change, even when an organization has an appropriate communication plan in place (Goodman & Truss, 2004). The current research will provide guidance as to how this type of formative research can be accomplished.

The current research also provides a means for eliciting the viewpoints of employees and other change recipients. This group has often been marginalized in change literature, but this type of information provides a very important diagnostic tool for

management as well as provides researchers with an important "bottom-up" perspective that may provide new insights (Bryant, 2006; Lewis & Seibold, 1998; Martin, et al., 2006). Without a good understanding of employees' and other stakeholders' frames, there is no way to identify incongruencies, which could prove to be an important diagnostic tool to forecast and avoid problems (Armenakis, Bernerth, et al., 2007; Gallivan, 2001; Self, et al., 2007). There is still a need to understand how employees feel about what has been communicated to them and how the current strategy is working (Bjorkman, 2009).

In addition to addressing the needs for assessment of communication and discovering employee viewpoints, the current research also answers calls for more information about the implementation of technological change. Lewis and her colleagues have issued several calls for further research into communication during change implementation (Lewis, 2000a, 2006, 2007; Lewis, Hamel, & Richardson, 2001; Lewis, et al., 2006), also claiming that "systematic research on the effectiveness of change communication is scarce (2000, p153)" and also claiming that much of both the popular and scholarly literature moves too quickly to recommendations for effective communication without explaining what a change agent should do or why (Lewis, 2000b, 2007; Lewis, et al., 2006; Lewis & Seibold, 1998). Rogers (2003) also cited a need for further communication studies, offering as evidence that only about 7% of diffusion studies have examined the effects of communication on the diffusion of innovations.

Beyond these general calls for more research into implementation communication, there have also been calls to study specific aspects of change

communication that this research will address. Forced adoption has been acknowledged as being very different from optional adoption, but less research has been conducted into forced adoption (Ram & Jung, 1991). Concerning media choice, it has been noted that there is a need to understand whether certain media increase the chance of success and the conditions of their use, and as this may be tied to the success of the implementation effort, a comprehensive effort is needed to describe, explain and predict the use of communication media during the implementation of organizational change (Timmerman, 2003, p. 302). Similarly, more research is needed concerning the content of specific change drivers such as whether various types of communication have a greater impact on the effectiveness of the change (Whelan-Berry, et al., 2003).

CHAPTER 3

METHODS

In addition to an organizational survey, a modified case study approach was employed to understand how and why the selected organizations used specific forms of communication and what impact this had on the effectiveness of the communication (Yin, 2008). Data collection was not as in-depth as with traditional case studies, however using case study methods provided information that defined the context of the study and allowed triangulation with the quantitative data. Structuring the study in this manner also allowed for collection of multiple types of information at multiple points in time and from multiple sources while the change was still in progress, which provided broader and deeper information than relying on participant recall after the change had been implemented (Armenakis, Bernerth, et al., 2007; Rogers, 2003).

Population and Sample

Given that the setting of this research was identified as organizations undergoing a major information technology change, the population from which a meaningful sample could be drawn was limited to only organizations with a formalized information technology (IT) department. Additionally, the population was limited to those undergoing a significant change during the period of this study. Beyond these factors, however, it

was difficult to define the population for this study. For instance, organizations around the world will meet the qualification of having formalized IT departments, but organizations outside the Midwest region of the United States were out of reach due to the researcher's budgetary restrictions. Large organizations such as non-profit organizations, corporate farms or governmental departments also rely on information technology, but may not have their own formalized IT department that would lead a large-scale change for the organization. Thus, it was difficult to precisely define the population for this study, but using the limiting factors of organizations with formalized IT departments in the Midwest, a sample was drawn that has important lessons to share about communication during large-scale IT projects.

The sample for this study was two organizations that were currently undergoing significant changes to their computer information systems. All selected participants of the case organizations were surveyed via e-mail. Subjects to be interviewed for the qualitative phase were selected by stratified random sampling, based on hierarchical level and membership in departments and divisions that were affected by the change. In addition, theoretical sampling was used. This allowed the researcher to "maximize opportunities to develop concepts in terms of their properties and dimensions, uncover variations, and identify relationships between concepts (Corbin & Strauss, 2008, p. 143). In other words, theoretical sampling allowed the researcher to search out people, artifacts or any other bit of data that would further explain the concept under study. If the stratified sample yielded only individuals who were completely satisfied with the

communication they receive, for example, the researcher was obligated to pursue avenues that would yield participants who were not satisfied, by purposefully looking for conditions that would help her understand how these concepts vary under different conditions (Corbin & Strauss, 2008).

The Model

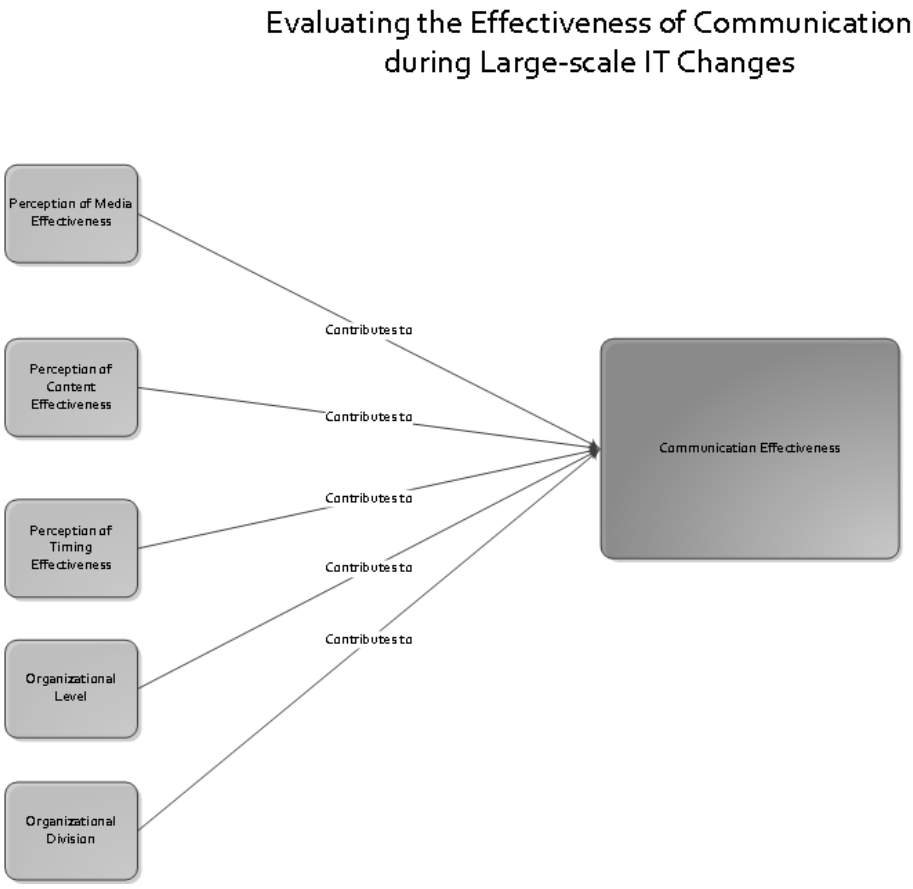

Figure 1: Conceptual Model

The conceptual model in Figure 1 depicts the hypothesized relationships between an individual's perceived effectiveness of communication attributes and the effect that these perceptions have on the effectiveness of the communication. Based on input from the management at each case study organization, questions were developed to ask members to indicate the media from which they have received information about the technology project and how effective they felt this particular medium was. These items were compared to the ECCO score to evaluate their influence.

It was further hypothesized that organizational level and organizational division would influence communication effectiveness. Based on the review of related literature, as noted previously, differences have been found based on these two independent variables in previous studies, but their influence on the effectiveness of communication has not been studied. This conceptual model was tested by the use of a quantitative survey and qualitative data gathering in multiple forms.

The Survey

Data Collection

All selected members of the case organizations received an e-mail with a link to an electronic survey specific to their organization. The instrument to gather this information was developed using a compilation of items based on the Organizational Communication Development Audit Questionnaire (Goldhaber, Dennis, Richetto, & Wiio, 1979), and the Episodic Communication Channels in Organizations (ECCO)

survey (Davis, 1953). Survey questions are included in this document as Appendix A for the university and Appendix B for FPO.

Independent variables were organizational level and division, and the perceived effectiveness of media use, perceived effectiveness of content, and perceived effectiveness of timing, which were compared to predict the dependent variable, effectiveness of communication. Organizational division and level are hypothesized to correlate with communication effectiveness, but will not predict it.

Communication effectiveness was operationalized using modified elements of the ECCO analysis survey instrument that uses information specific to each organization to evaluate effectiveness of communication events. The ECCO analysis survey measures the accuracy of information known by respondents, thus allowing effectiveness to be evaluated by comparing what is known to what has been officially communicated. The original instrument asked respondents to indicate whether or not they knew individual bits of information (provided to the researcher by management) and then to indicate where they heard these facts. The current instrument asked respondents to indicate the media used for each separate fact, because the media may not have been the same for each piece of information. For instance, perhaps the employee heard that the payroll system was changing at a department meeting, but found out the implementation date from a fellow employee. This distinction may prove to be an important one.

While not a strictly quantitative tool, ECCO has been found to be both reliable and valid in multiple studies and reviews. ECCO has been identified as both simple to

administer and as providing consistent and easy to interpret results, and the results corresponded well with other sources of information within the organizations studied (Davis, 1953). There has been some concern however about the adequacy of information obtained from analysis of a small number of messages. This concern arises primarily during studies of communication network analysis within an organization, which has been a primary use of the ECCO tool, as such a study would require a large number of messages to construct a complete network (Zwijze-Koning & de Jong, 2005). This was not a concern for the current study as it did not seek to study a communication network but rather sought to understand the dissemination of specific messages related to a specific event (the technology implementation).

ECCO has also been found to be valid, suffering only from common threats to validity such as self-reporting and faulty memory of respondents. Additionally, because respondents are asked to recognize items rather than recall them, they may respond as though they are fully informed. The survey itself thus becomes a communication vehicle (Downs & Adrian, 2004; Zwijze-Koning & de Jong, 2005). It is adaptable to a wide variety of situations and can be used to check the penetration of information in an organization because it deals with factual information rather than perceptions or evaluations of satisfaction (Downs & Adrian, 2004; Goldhaber, 1993; Hargie & Dickson, 2007). Because an ECCO study focuses on just one message, it is recommended that it be combined with other instruments and interviews to get a more complete picture of the

organization (Downs & Adrian, 2004). This is precisely the path the current study took, through the use of the survey, interview and modified case study methods.

The effect of demographic variables such as age, gender and length of employment on change dynamics have been well documented in previous studies and thus were not a focus of this study.

Table 2: Table of Variables

VARIABLE	TYPE	SCALE	DESCRIPTION OF MEASURE	ANALISYS
Organization Level	Independent	Categorical (nominal)	Check-box response based on categories provided by organizations	Correlate to Communication Effectiveness
Organization Division	Independent	Categorical (nominal)	Check-box response based on categories provided by organizations	Correlate to Communication Effectiveness
Perception of effectiveness of media	Independent	Interval	Likert-type items	Correlate to Communication Effectiveness
Perception of effectiveness of content	Independent	Interval	Likert-type items	Correlate to Communication Effectiveness
Perception of effectiveness of timing	Independent	Interval	Likert-type items	Correlate to Communication Effectiveness
Communication Effectiveness	Dependent	Interval	Calculated based on ECCO Score	Correlational Analysis with all above variables

Data Analysis

Quantitative data from the surveys was analyzed using SPSS software to determine the ability of the perception of effectiveness of media, content and timing as well as organizational level and organizational division to predict communication effectiveness. Descriptive data such as mean and standard deviation for age, gender, length of employment, hierarchical position, etc., will also be reported as they help to define the setting for the case studies.

The independent variables of perceived effectiveness of media, content and timing are interval. The conceptual model states that these variables should predict communication effectiveness; higher perceived effectiveness of the actual attributes employed by management should contribute to a better understanding of the information being communicated, which will be reflected in a higher communication effectiveness score. The effectiveness of communication may be mediated by organizational level and/or organizational division however.

Descriptive statistics will be reported separately for each organization, including demographic characteristics such as age, length of employment, etc. This data helps establish a clearer picture of the organization (Yin, 2008).

The Cases

As noted previously, organizations were chosen for participation in this study based on a number of factors, including but not limited to, the presence of a formalized information technology department, the size of the technology implementation the

organization was undergoing, and whether the change was optional or non-optional. A modified case study approach was utilized to gather descriptive data on each organization, and additionally, qualitative data from interviews and observations were analyzed using Atlas.ti software to facilitate coding of the interview data.

Organizational artifacts such as existing brochures, posters, training tutorials, and company e-mails were analyzed and direct on-site observations were made of meetings, casual conversations and other interactions to provide a clearer picture of the organizational culture. Factors such as organizational stability, mission and vision, and general communication practices helped define the setting in which the research took place, which provided a context for analyzing the results of both the surveys and the qualitative data gathering (Yin, 2008).

In addition, specific communication events were categorized and analyzed. For example, a training session would be considered a specific communication event that could be compared to a corporate-wide e-mail as another specific communication event to help answer the research questions. Combined with interviews of stakeholders at each organizational level and division, these multiple sources of quantitative and qualitative data provide what Corbin and Strauss (2008) refer to as "credibility." There is sufficient information such that readers will feel they are able to judge the situation for themselves, and will be able to evaluate how the researcher came to her conclusions. Additionally, the multiple forms of data provide results that are useful to both practitioners and researchers in the relevant fields of communication and information technology.

CHAPTER 4

RESULTS

Two organizations agreed to participate in this study; a mid-sized public university undergoing a change to its student information system, and a food processing company moving from an outdated information system to an SAP system to encompass all their operations. The first two research questions posed at the beginning of this study provide context for the organizations under study, and will be answered through the use of case study information presented in the next section.

Research Question 1: What are the changes going on at the organization under study?

Research Question 2: What processes have been used to communicate the change(s), including media, timing and content?

Public University

The mid-sized public university has a student population of approximately 10,500 students including undergraduate and graduate level students, and approximately 510 faculty and instructional academic staff. (Note that for the remainder of this study, faculty and instructional academic staff will be referred to collectively as faculty.) The institution was using an inhouse information system called “MyUSystem” (a pseudonym), also commonly referred to as “the legacy system” or “the bridge system” for all student,

human resources, financial, and course-related information. The system had been constantly modified over approximately 30 years, so some modules were very old but still functional while others had been modernized. Many features were well-liked by both academic advisers and students, such as the course searching and degree audit functions, but other features were very confusing to the occasional user.

In May 2007, the chancellor of the university announced that the institution would transition to a PeopleSoft-based system. This software had been purchased by the statewide university system, and each university was required to pay a portion of that purchase and annual license whether or not they had actually implemented the software. Thus, rather than the gradual conversion originally planned, a project was initiated to have the majority of PeopleSoft components in place in spring of 2010. A consulting team specializing in PeopleSoft campus installations was retained and began working with the internal IT team in spring of 2007. Specific functional areas covered by the conversion include overall demographic data, admissions and recruitment, student records, financial aid, student financial accounts, and advising. Eventually other areas such as human resources and other administrative computing functions will also be converted, but this has not been communicated to the campus as a whole and thus was not a focus of the current study. At the time of this study, the conversions of student records, recruitment, admissions, and some of advising had been completed, so the concern of the existing students and faculty centered on class registration and advising for summer and fall classes in 2010.

The Chief Information Officer (CIO) was the head project manager, and with the help of one Assistant Project Manager, information about the project was disseminated through multiple channels to the university population. The following information has been synthesized from a review of relevant artifacts, observations of multiple university stakeholders in a wide variety of settings, interviews with the CIO and Assistant Project Manager, interviews with students and faculty, and both quantitative and qualitative data gathered on surveys.

General Communication Environment

Like most public universities, this one has both student and faculty senates that are charged with deciding the direction for the university as a whole and representing the interests of their constituents. Also like most public universities, the faculty and students feel that it is their right to vote on every major issue affecting the campus. In recent years, this has proved to be a major point of contention for both groups, as decisions have been implemented that appeared to contradict the will of the constituencies. Of particular importance was the implementation of a tuition increase, which was passed by the student senate in opposition to the general vote of the students, fostering the widely-held belief that university leaders had somehow coerced the senators. Another incident was the voting on a new school mascot, since the university has never had one. One character has been an "unofficial" mascot for decades, but when the committee charged with developing a new mascot sent a survey to all members of the campus community to vote on a mascot, this character was not on the list of choices, but an animal and a male

character related to the region's history were. This was viewed as simply another instance where the central administration ignored the wishes of faculty and students, and showed their lack of concern for both communication and diversity.

Additional factors in the current environment at the university were the recent high rate of turnover at the highest echelons of the university ranks, and a push by many faculty to unionize. In approximately the last five years, the chancellor, the provost, two assistant vice chancellor positions, two university dean-level positions, and three college deans have all been turned over, some more than once and most with people from outside the university as well as outside the state university system. This may or may not have contributed to the current push for unionization, because some of these leaders were seen as autocratic and unsympathetic to the values of a liberal education held in such high esteem by many faculty.

In this environment of perceived lack of concern by central administration and attitudes about organizational communication that ranged from apathy to near hostility, the IT implementation team knew they would face a significant challenge in trying to ensure that their message reached those who needed it most.

Questions relating to the general communication climate were included in the questionnaire to faculty and students, and contribute to the observations related above. These were Likert-type items with a range of one (lowest) to five (highest), leading to the conclusion that the general communication climate was viewed as neither very bad nor very good. The results are presented in Tables 3 and 4. Neither students nor faculty feel

strongly about the communication climate as all items scored approximately at the midpoint of three, without large standard deviations.

Table 3: Student View of General Communication Climate

	Mean	Std. Dev
Information is freely shared by the leadership team.	3.02	.74
My opinions about this project do not count (reverse coded)	2.98	1.03
The leadership team listens to employee concerns about this project.	2.88	.72
The leadership team understands employee concerns about this project.	2.85	.83
Project-related information is not easy to find (reverse coded)	2.77	.91

Table 4: Faculty View of General Communication Climate

	Mean	Std. Dev
Information is freely shared by the leadership team.	3.07	.95
My opinions about this project do not count (reverse coded)	2.63	1.04
The leadership team listens to employee concerns about this project.	2.78	.96
The leadership team understands employee concerns about this project.	3.00	.95
Project-related information is not easy to find (reverse coded)	2.86	1.02

Project Communication

Beginning in the summer of 2007, communication about the conversion from the legacy system to PeopleSoft was disseminated to faculty, students and staff because all stakeholders would be affected by this change to some degree. This task was assigned to the Assistant Project Manager, who, with assistance from the PeopleSoft consulting team, developed a detailed communication plan. Each audience and the needs of that particular group of stakeholders were specified along with a timeline and the media of

communication to be used. This work was completed throughout the summer of 2007, based on input from technology team members, other administrators, the consultants, and a limited number of faculty. See Appendix C for details.

The project managers knew that it would be difficult to reach students and faculty, so their communication plan encompassed many media spanning a wide timeframe. They also knew from past experience that attendance at formal training sessions is consistently low and e-mails from the central IT group and central administration are not widely read. They did their best to design the titles of the e-mails and other announcements so as to draw the readers' attention, with subject lines such as "BIG CHANGES TO MYUSYSTEM COMING: the New MyUSystem System (Update #1)."

Food Processing Organization

The food processing organization is located in the upper Midwest in a very small town, and is thus one of the major employers for the region. (Note that for the remainder of this study, this organization will be referred to as FPO.) They were founded in 1985, but have a strong family tradition of using similar recipes and making their livings in related pursuits dating back well over 100 years. At their primary location, they have one plant and their corporate operations, in addition to three other processing plants in the US and one foreign country, and sales offices in many countries. They have a very well-known brand name with global sales, supported by a popular humorous advertising campaign that is very much in evidence throughout the facilities. The character from these ads greets visitors in the waiting area that is designed after a hunting lodge,

reflecting both a common theme of the region and the passions of the founder. Samples of FPO's products are available along with product literature and industry magazines. Inspirational slogans are prominent throughout the facilities, as are photographs of the founding family and framed articles from major publications concerning FPO. For example, in recent years, FPO has been recognized as one of the top 50 best private employers, and their current ad campaign was awarded "Biggest Hoot" by USA Today. These types of recognition are especially gratifying to employees at all levels because of FPO's current rapid growth contrasted with their modest beginnings, and they like to point out that the majority of their growth has come in the last 10 years. Employees in all departments sport a wide variety of clothing with the FPO company name and logo, or the character from the advertisements, and almost no clothing dressier than khaki slacks is in evidence. The atmosphere is busy, energetic, and friendly.

FPO is currently using the Navision ERP information system, which they have considered replacing many times in the past. It was purchased but had been heavily modified over many years and FPO had outgrown its capabilities both in a technical sense because it is a small Windows-based system, and organizationally as employees have implemented many workarounds and side processes in order to perform their job functions. The current project had been discussed for at least a year, but in summer of 2009, SAP was selected as the vendor, and a consulting team was also selected to help with the implementation. A very aggressive timeline was set for implementation of the first phase in late 2010. The project team made the commitment to change FPO's

business processes to match the SAP software, rather than engage in software modifications to match current business practices as in the past, based on the philosophy that SAP employs "best practices" and FPO is not unique. Multiple functional areas are covered by this implementation, including Enterprise Resource Planning (ERP), Business Planning and Consolidation, Human Capital Management, Organizational Change Management, and Electronic Data Interchange, making this an extremely complex and far-reaching implementation. This research was entered into in very early 2010, just as the implementation team was bringing on the consulting team, working out communication plans and structuring the changes.

General Communication Environment

The executive team has been in place for several years and appears to be highly respected by the employees. The founder is currently the CEO and chairman of the board, and is still very active in FPO's operations. A son of the founder is the President, and he and the other top executives have done their best to create an environment of friendly, open and honest communication.

An anecdote experienced by this researcher will provide an interesting example of this environment. At the project kick-off meeting of about 50 employees from all locations (including internationally), refreshments were served as people milled about and greeted one another before the presentations began. I was introduced to some of the staff and was chatting as well. When the founder entered the room, he was immediately surrounded by well-wishers, as would be expected, but he continued to scan the room

while chatting, and soon recognized that I was not familiar to him. He quickly but politely moved away from the group and came toward me with a broad smile, shook my hand and told me how excited he was about this project, but did not question my role in it. When I introduced myself and explained that I was working with the project leader, Jane (a pseudonym), to understand the communication processes surrounding this project, he said that he had heard about that effort and was very supportive, he asked many questions and he expressed great interest in seeing the results. When I related this incident to Jane and other project team members, they laughed and said that was very normal for him.

This open and friendly attitude seems to be widespread and the statements of belief in the executive team seem to be genuine. Many employees stated that if the founder or his son makes a statement it is generally believed, but they also qualified their statements by clarifying that they did not expect leaders at that high level to understand the daily operations of each functional area. In an attempt to ensure an appropriate level of detailed understanding, managers meetings are held monthly by the president, and managers at all locations attend physically or via conference call.

Questions relating to the general communication climate were included in the questionnaire to employees, and contribute to the observations related above. These were Likert-type items with a range of one (lowest) to five (highest), leading to the conclusion that the general communication climate was viewed as neither very bad nor very good. The results are presented in Table 5. Employees do not feel strongly positive nor

strongly negative as a whole about the communication climate, given that the midpoint is three.

Table 5: FPO View of General Communication Climate

	Mean	Std. Dev
Information is freely shared by the leadership team.	2.63	1.04
My opinions about this project do not count (reverse coded)	2.89	1.12
The leadership team listens to employee concerns about this project.	3.03	.89
The leadership team understands employee concerns about this project.	3.01	1.01
Project-related information is not easy to find (reverse coded)	2.83	.96

Project Communication

A formal communication plan was developed for all stakeholders throughout the project, which can only be summarized here due to a confidentiality agreement. This can be seen in Appendix D. This was distributed to the project team and as of the date of this research had been adhered to consistently. A project kick-off meeting was held in mid-March, 2010, during which the founder, president and CFO spoke to the assembled project team. These presentations were interesting in a rhetorical sense as well as a practical sense. The use of references to the past indicated the desire to communicate that the organization has seen many tough situations in the past, but the practical effect was to build the team's confidence. All three presenters spoke in a friendly and "down to earth" style, and all relied heavily on references to the company's humble beginnings and its recent strong growth as primary reasons for the current project. For example, the founder began his welcome by stating that this project will be immense and that he had doubts about it. After a slight pause for effect, he stated that he knew if he had doubts, everyone

else there did too. He continued, as did the president and CFO during their portions, by referencing other momentous decisions in FPO's history, some of which were successful and some of which were not. Each of them also called out several meeting participants with phrases like "Hey Suzie, remember that time we tried to…." or "I know that John remembers that flop because it was his job to …" They also asked for the commitment of the assembled employees, and made it sound as if the employees had a choice in the matter. This style had the effect of reminding everyone that teamwork was imperative, but also that planning and commitment must be a top priority to avoid costly and embarrassing mistakes as they continue to grow. The final speakers at the meeting then focused on the practicalities of the project such as timelines and responsibilities of internal employees and external consultants.

On the same day as the kick-off meeting for the core project team, awareness events were held for all employees. These were innovative. The project has an acronym that denotes the fact that there will now be one solution for the entire organization, and this acronym was frosted onto cookies that were left in the various break rooms. There was also a "bingo" type game that had the dual purposes of encouraging employees to begin using the FPO intranet more regularly (to check their winning status) and also to reinforce the acronym awareness. The project team also received t-shirts that combined FPO's logo with the project acronym and logo (a stylized tree). These combined events did create awareness of the project, and caused the desired effect of encouraging employees to talk to each other and their supervisors about what exactly this acronym

meant. The president also sent out an e-mail to all employees at about that same time that was worded much more formally but outlined the functional areas covered, highlighted what a tremendous undertaking this would be and provided a general timeline.

In early June, 2010, this researcher returned to FPO to conduct interviews as follow-ups to the survey conducted in early April. In June, there were attractive project-awareness posters in evidence in all areas of the facilities visited, including the meeting rooms, corporate offices, plant and cafeteria. The posters include FPO's logo and name across the top, and the project acronym and logo (a stylized tree) in the primary space, along with something of a collage of words such as "centralized," "best practices," "foundation of the future," "streamlined," and "real-time." It was also interesting to note that the tree logo had been used in different forms and in other ways such as bulletin boards with departmental information relating to the project.

The Survey

Electronic questionnaires were designed with the help of a panel of experts and the project managers at both organizations, with the intention of determining how effective the communication surrounding each project had been. Nearly identical questionnaires were developed for faculty and students at the public university, with only minor wording changes for the media used to communicate with each group. A very similar questionnaire was developed for FPO, with changes for the content of the project, and organizational differences such as department names. The first section of the questionnaire asked respondents if they knew that a change to their information system

was taking place. If they answered "Yes" they were presented with types of media used by the project managers to communicate the change. For the university, these included the student newspaper, e-mail from a campus administrator, their academic adviser (for students) or department chair (for faculty), the grapevine, or some other means. For FPO, these included a project awareness event, their manager, a department meeting, a project team member, a project team meeting, the grapevine, e-mail, the project intranet site, or something else.

For each media chosen, they were presented with a Likert-type item to rank the effectiveness of that particular medium from "Did not help at all" to "Helped very much" and were also asked to provide any additional comments on that medium. They were then presented with a second section that asked a very specific question about the new system, and if they answered "Yes" they were presented with similar questions about the media used to communicate that piece of information and were asked to rank its effectiveness. FPO employees received a third question about the project followed again by the media ranking questions. As a final section, all respondents were then presented with questions about the communication environment at their organization and demographic questions.

On the other hand, if respondents answered "No" to the question about whether they knew of the change at all, they were sent directly to the portion of the questionnaire with the same general questions about the communication climate at their organization, followed by the demographic questions. See Appendix C for the questionnaires.

Subjects

At the university, questionnaires were distributed electronically to all currently registered undergraduate and graduate students (10,563) and all faculty and instructional academic staff (510) in early April, 2010. No reminder e-mails were allowed to the students, as access to the all-student distribution list is very tightly controlled. One reminder e-mail was sent to the faculty list. Two weeks later the questionnaires were closed, resulting in 916 student responses and 105 faculty responses. Three student responses had to be discarded due to incomplete data, but no faculty responses were discarded.

Students

While the student response rate is disappointing at only 8.6%, it is indicative of the general communication climate on campus as discussed previously, and although low still presents a representative sample of the groups across the campus, with the exception of gender. The data in Table 6 demonstrates that although stratified random sampling was not chosen for this study, the breakdown of respondents is interestingly close to the percentages found on campus. The "Survey %" columns represent the responses to the current study while the "Campus %" columns represent the actual figures as reported by the university. Age data gathered by this survey also matches what would be expected at a traditional public university with 95.6% of the student respondents under the age of 30.

Table 6: Demographic Information for Students

(N=913)

Class			**Gender**			**College**		
	Survey %	Campus %		Survey %	Campus %		Survey %	Campus %
Graduate	2.2	5.2	M	24.1	56.5	Arts &Sciences	37.9	46.4
Senior	25.6	33.7	F	58.3	43.5	Business	17.9	21.2
Junior	26.1	20.7	Did not respond	17.6		Education & Human Services	18.3	23.5
Sophomore	17.1	21.7				Nursing & Health Services	5.7	8.1
Freshman	10.8	18.7				Undeclared	2.3	
Other	0.9					Other	1.0	
Did not respond	17.3					Did not respond	17.0	

Faculty

The faculty response rate was 20.59% (105 usable responses out of 510 emails sent). Again, this is generally considered to be a less than desirable rate, but it is indicative of the current campus communication climate as discussed previously. The data in Table 7 demonstrates that although stratified random sampling was not chosen for this study, the breakdown of respondents is still quite close to the percentages found on campus. The "Survey %" columns represent the responses to the current study while the "Campus %" columns represent the actual figures as reported by the university.

Table 7: Demographic Information for Faculty and IAS

(N=75)

Category			**Gender**			**College**		
	Survey %	Campus %		Survey %	Campus %		Survey %	Campus %
Faculty	65.7	70.1	M	38.2	50.6	Arts &Sciences	49.0	68.5
IAS	23.0	29.9	F	45.1	49.4	Business	23.5	11.5
Did not respond	14.7		Did not respond	16.7		Education & Human Services	3.9	11.7
						Nursing & Health Services	4.9	8.2
						Undeclared	18.6	
						Other	49.0	68.5
						Did not respond	23.5	11.5

Food Processing Organization

At FPO, the questionnaire was sent to 128 employees who had been identified by the project team and management as those who should be aware of more than simply the project name after the project awareness events. Of these, 75 were returned, and all were usable, for a response rate of 58.6%. The groupings by age, job class, years of employment, gender and department for the FPO respondents are displayed in Table 8. The fact that 64% of the respondents have been employed at FPO for less than five years

is primarily because of their strong growth in recent years as opposed to rapid turnover at the entry level.

Table 8: Demographic Information for FPO Subjects

(N=75)

Age Groups	**Freq %**	**Job Class**	**Freq %**	**Years Employed**	**Freq%**	**Gender**	**Freq %**	**Dept.**	**Freq %**
20-30	13.3	Director and above	5.3	<1 year	8.0	Male	26.7	Corporate Accounting	16.0
31-40	38.7	Supervisor/Manager	30.7	1-5	56.0	Female	68.0	Customer Service	13.3
41-50	30.7	Non-Mgmt, Full-time	60.0	6-10	18.7	Did not respond	5.3	Finance and Sales Systems	6.7
50+	13.3	Did not respond	4.0	11-15	9.3			Human Resources	1.3
Did not respond	4.0			15+	4.0			Information Technology	2.7
				Did not respond	4.0			Distribution Center	12.0
								Logistics	4.0
								Main Plant Operations	12.0
								Procurement	2.7
								Marketing	2.7
								Payroll	2.7
								Other	17.3
								Did not respond	6.7

Research Questions

As described in Chapter 3, the dependent variable for this study was Communication Effectiveness. For the public university, two yes/no questions were used to calculate this score. The first was “Did you know that [the university] is installing a new class registration system?” and the second was “Did you know that during the transition you may need to check both the old system (MyUSystem) and the new system

(MyUSystem CampS)?" If they responded with "No" to the first question, they did not see the second question since it was not possible for them know a fact about the transition period if they were not aware that a change was being made. The possible range of scores was thus zero (did not know anything), 1 (knew that a new system was being implemented) or 2 (knew both pieces of information). The mean for students was 1.33 with a standard deviation of .589, and for faculty the mean was 1.75 with a standard deviation of .553. The results show very clearly that while almost all of the students and faculty knew that a change was coming, a much lower percentage of the students knew the details of what was going to occur (See Table 9).

Table 9: University Communication Effectiveness

Possible Score	**Student Percent**	**Faculty Percent**
Zero (knew nothing)	6.2% (57 of 913)	5.8% (6 of 102)
One (knew that a new system was being implemented at their organization)	93.8% (856 of 913)	94.1% (96 of 102)
Two (knew both pieces of information)	39.5% (361 of 913)	81.4% (83 of 102)

The questions for communication effectiveness at FPO were similar, but instead of just two, there were three factual questions. The first was "Did you know that your company is beginning a new project called [project name]?", the second was "Did you know that [project name] consists of five main areas [list of functional areas]?" and the third was "Did you know that Phase 1 of [project name] will include Corporate,

Distribution Center and [main] Plant, that Phase 2a includes [two other locations] and that Phase 2b includes [final location]?" Thus the possible communication effectiveness scores for the FPO subjects were zero (knew nothing) to three (knew all the facts). The mean was 1.73 with a standard deviation of .741. The data in Table 10 reveals that again a very high percent of the respondents were aware of the change but that far fewer had a good grasp of the details of the project.

Table 10: FPO Communication Effectiveness

Possible Score	**Employee Percent**
Zero (knew nothing)	2.7% (2 of 75)
One (knew that a new system was being implemented at their organization)	97.3 % (73 of 75)
Two (also knew the five functional areas)	20 % (15 of 75)
Three (also knew the phases)	56% (42 of 75)

This then partially answers the third research question posed at the beginning of this study.

Research Question 3: <u>How effective is the communication?</u>

Only 39.5% of the students who responded knew both bits of information, thus the communication to students does not appear to have been highly effective. However, since 81.4% of the faculty who responded knew both bits of information, it would appear that communication to faculty was highly effective. This would appear to be a very serious issue, since the communications that were sent to both students and faculty were

intended to enable them to navigate the new system in order to register for fall 2010 courses, as well as know what functionality was still on the old system. FPO, on the other hand, was at the earliest stages of awareness for their project, and if the results are considered in that light, the awareness campaign appears to have been extremely effective as 97.3% of employees knew of the project. The more detailed components concerning functional areas and phases appear to have been less effective at the point of this study.

Faculty and Student General Perceptions of Communication

Students and faculty scored well on the awareness question, but the students scored very poorly on the detail question. Faculty and students had very similar perceptions of the communication surrounding the MyUSystem project, based on qualitative responses to the questionnaires administered in early April as people were using the new system for the first time, and during interviews conducted in late May and early June. A total of 44 students and seven faculty were interviewed. (There was little value seen in interviewing large numbers of faculty since their survey responses were qualitatively and quantitatively so consistent.) The details of the university interviewees' group memberships are provided in Table 11. The general guide for interviews can be seen in Appendix E.

Table 11: Demographic Frequencies for University Student Interviewees (N=44)

Class		**Gender**		**College**	
Graduate	0	M	25	Arts &Sciences	15
Senior	19	F	19	Business	27
Junior	10			Education & Human Services	0
Sophomore	14			Nursing & Health Services	1
Freshman	1			Undeclared	1
Other	0			Other	0

It is interesting to note that many students expressed regret and/or frustration at the fact that they did not read the communications nor take the time to look over the tutorials that were discussed in the e-mails. This topic arose both on the survey responses and in the interviews, with some students admitting that this lack of information was their own fault, and others blaming the project team for not making it more apparent that the information was important. During the interviews, students were surprised that there were so many of their fellow students who did not know that a change was coming. Snowball techniques were employed to attempt to find some of these subjects to interview, but none were found; this is not surprising given that they represented only about 6% of the respondents and these students may have felt embarrassment about coming forward. By

far the vast majority of students said that they ignored the e-mails and other communications, but at least knew that a new system was coming.

It was also interesting that so many university respondents, although primarily students, said that the new system should be removed because they did not like it. They felt that there was no reason to change and the university should not change systems so often (even though the system had not changed significantly in many years). The fact that the current system change had occurred was frequently attributed to the central IT department needing something to do, wanting to spend money just because they could, or wanting to always have the latest and greatest technology regardless of the cost or need. These subjects seemed to see this as a point of poor communication because, as stakeholders, they should have had input or been able to evaluate the two systems and choose which one to keep.

FPO Employee General Perceptions of Communication

FPO employees who took the survey scored well on the awareness question but did less well on the two subsequent questions about specific aspects of the project. Interviews to expand on the quantitative data were conducted in early June, 2010. Interviews with four managers and 12 employees were conducted, which included both plant and corporate employees from the departments that will be most affected by the implementation. All interviewees were women, a fact that was surprising given that when selecting interviewees only department and title were used as selection criteria and only approximately 68% of the potential interview candidates were women. The details of the

interviewees' group memberships are provided in Table 12. The general guide for interview questions can be seen in Appendix E.

Table 12: FPO Interviewees

(N=16)

	Managers	**Non-managers**
Main Plant (Office workers only)	1	4
Human Resources	1	1
Accounts Payable/Accounts Receivable	2	3
Purchasing		2
Customer Service		2

During the interviews, most employees could discuss the general concept of what the project was about, using terms such as "changing all our processes" and "connecting all the different departments." They were far less cogent concerning the details of the project however. Phrases such as "I have no clue" and "I'm really worried" surfaced frequently, as did confusion about terms such as ERP (Enterprise Resource Planning) and SAP (the name of both the purchased system and the vendor of the chosen software system). In discussions with the project team, this was deemed acceptable for the phase of the project at which the survey had been conducted, as they had been focusing on awareness rather than the details of the project. This had not been communicated well to the employees however, as evidenced by an employee who said

> I'm not really sure about what [project name] is or the ARP or SCP or whatever it's called. I keep hearing... but I have no idea… I understand that it's supposed to replace our current Navision, which is scary because I don't know

what it is and I work with Navision so it's like, when am I going to know... (laughing)... and I understand it's supposed to be implemented in the fall. So you know that's what I've heard anyway...

There was a general impression that managers were going to meetings but they were not sharing what they learned there. Some employees even commented that the meetings seemed to be secretive, although most did not attribute negative motives to their managers, but rather thought that the managers must feel that employees did not need to know yet. Most of the employees strongly disagreed with this notion however, and thought that the definition of who needs to know must be expanded. From the managers' and project team's perspectives, however, many felt that there was nothing to share yet because they were still in a "discovery" phase and thus were only answering questions from the project team, rather than making decisions that needed to be communicated to the employees.

About half of the employees stated that they felt their managers were not communicating enough about the project, despite the enormity of the impact that it will have on the entire organization. Several of the remaining employees were not concerned at this point and trusted that they would be informed when they needed to begin working with the new system, while the remainder stated that their managers were doing a good job of relaying information. Managers and employees from the same department had been chosen deliberately for just this reason, because as noted in the literature review in

Chapter Two, previous studies have shown that managers often feel they are communicating well but their employees often disagree (Crampton, et al., 1998; Robson & Tourish, 2005). At FPO however, employees' and managers' perceptions generally corresponded. Employees who stated that they had sufficient information reported to managers who said they were trying very hard to relay information quickly, often immediately after the managers' meetings, or whenever their staff had a question. On the other hand, two employees reported that their manager seemed to hold onto the information as if it was a source of power and even seemed irritated when the employees found information from other sources. That manager stated during her interview that there really was nothing of value to report yet and the employees were overreacting to some extent, although the statement was couched in terms of apparent concern for the employees that did not seem sincere. For example, one such statement was:

> …she's so afraid that now with the new system that she's not going to know all of the stuff that she knew before and she's concerned about that and you know… I know that we have been told that there's going to be different roles with this one versus the last one and so on and so forth... in [department name] though the different roles shouldn't be any different than Navision was you know … so I guess that's where I'm going too… I can understand her concerns. But she doesn't need to be involved as much as she was before you know but you kind of hate to let go sometimes too… (laughing)…

Two other employees agreed that their manager seemed to be keeping secrets and she did not like to talk about the project, and indeed this manager never responded to multiple requests for an interview.

Analysis of Perceived Effectiveness

The next research question provides further information about this effectiveness by relating it to other variables.

Research Question 4: What is the estimated relationship between the perceived effectiveness of media, timing and content and the effectiveness of communication?

Perceived Effectiveness of Media

Perceived effectiveness of media was calculated based on responses to two sets of similar questions. Recall that if a respondent indicated that she or he knew a change was coming, the next question then asked how the respondent had received this information and presented a list of media types to select from based on how the IT project managers had attempted to disseminate that piece of information. In the case of the students, these types were the student newspaper, e-mail from a university official, the student's academic adviser, and the grapevine. In the case of the faculty, these types were the student newspaper, e-mail from a university official, the faculty member's department chair, and the grapevine. And finally, FPO employees were presented with a project awareness event, their manager, a department meeting, a project team member, a project team meeting, the grapevine, e-mail, the project intranet site, or something else. They

were then asked to rank their perception of the effectiveness of that medium in helping them understand the project. (Note that "Other" was not given a score for perceived effectiveness due to the variety of possible media types identified by the respondents.) Perceived effectiveness of media for the first set was then calculated from the number of subjects who selected that media type multiplied by the rankings given to that media, in effect giving a weighted average of the media types. An identical list was presented if the subject indicated that they knew the subsequent bits of information and the calculations were repeated for this set. The formula for calculating the perceived effectiveness of each media type is thus:

(#Selected / Total * Perceived Effectiveness) = Media Type Effectiveness

The highest possible ranking would then be 4.0 if all subjects selected the given media type and all of them gave it the highest possible ranking of 4. Overall perceived effectiveness of media usage is the average of the two calculations, as can be seen in Table 13.

Table 13: Media Type Effectiveness Calculations for Students

Media1 - Did you know that a new system was coming? (N=856)				
	# Selected this Media	**Proportion Selected this Media**	**Perceived Eff**	**Media Type Eff**
Student newspaper	26	0.030	2.15	0.07
E-mail	708	0.827	2.55	2.11
Adviser	122	0.143	2.36	0.34
Grapevine	239	0.279	2.03	0.57
Average				0.77
Media2 - Did you know that you may have to use both systems during the transition? (N=361) Only got to this section if they answered that they knew both facts				
	# Selected this Media	**Proportion Selected this Media**	**Perceived Eff**	**Media Type Eff**
Student newspaper	2	0.006	2.50	0.01
E-mail	148	0.410	2.87	1.18
Adviser	28	0.078	3.07	0.24
Grapevine	57	0.158	2.21	0.35
Average				0.44
Overall Perceived Media Effectiveness				0.605

The project team at the university used multiple means to communicate including e-mails, the student newspaper and the student's advisor, in addition to items not listed here such as table tents in the student center and cafeterias, and handouts given to department chairs at meetings. One student even responded that "I heard it from friends,

from table tents, from signs, from e-mails, from mail from my adviser, etc... This is a silly survey." The results of this research as displayed in Table 13 reveal that not all respondents were as observant as this student, however.

Table 14: Media Type Effectiveness Calculations for Faculty

Media1 - Did you know that a new system was coming? (N=102)				
	# Selected this Media	**Proportion Selected this Media**	**Perceived Eff**	**Media Type Eff**
Student newspaper	2	0.020	1	0.02
E-mail	75	0.735	2.49	1.831
Chair	35	0.343	2.51	0.861
Grapevine	24	0.235	2.17	0.511
Average				0.806
Media2 - Did you know that you may have to use both systems during the transition? (N=71) Only got to this section if they answered that they knew both facts				
	# Selected this Media	**Proportion Selected this Media**	**Perceived Eff**	**Media Type Eff**
Student newspaper	0	0	0	0
E-mail	46	0.648	2.65	1.720
Chair	23	0.324	2.78	0.901
Grapevine	14	0.197	2.57	0.507
Average				0.781
Overall Perceived Media Type Effectiveness				0.793

E-mails were the most often mentioned media both quantitatively and qualitatively for students and faculty and as can be seen in both Table 13 and 14, received the highest percentages of usage. In general however, the e-mails were received very negatively. General comments included that they were too long, there were too many of them, and the fact that the headings were all in capital letters was irritating as this is a common way to denote "yelling" when texting or writing informally. Most people stated that they did not read them, or skimmed them at best. Several students and faculty did note that they were too busy at the time the e-mails arrived, but based on the title they either saved them for later reference or deleted them based on their confidence that they could learn the new system when it was their turn to register or advise. Most students and faculty however simply stated that the e-mails were far too vague and classes or tutorials should have been provided, when in fact they were. Those who read the emails indicated that they were generally helpful, as were the tutorials.

During the interviews at both organizations, it became apparent that people perceived that they receive far too many e-mails in a day, thus making it very difficult to attend to anything that is not an immediate concern such as for a class or a job demand. Further questioning uncovered the fact that on average students and faculty receive anywhere from 20 to 40 e-mails a day, including "spam" e-mail that the university is not very successful at blocking. This was seen as a major hindrance to communication, causing recipients to skim and filter their messages, primarily on the basis of the name of the sender. As one student succinctly stated, "We know our networks." The central IT

group at the university is not seen as an entity that requires a recipient's immediate attention. The assistant project manager acknowledged that they recognized this might be a factor before they sent the e-mails out, but were hoping that the subject line ("BIG CHANGES COMING TO MyUSystem…") might inspire people to read them.

At FPO, in contrast, e-mail was not ranked highly as a medium on the surveys, but during the interviews most people expressed a preference for e-mails for regular updates. Additionally, e-mail was suggested by several people as a way to drive employees to go to the intranet; if a brief summary of updates could be sent with links to the intranet, employees would know that there was new information on the intranet and they would then read it. E-mail received quite low effectiveness rankings, while managers were ranked highly as a medium (See Table 15). It is interesting to note however that the effectiveness of the medium changed based on the type of information. For instance, the intranet was ranked fairly low (2.60) for knowledge of the project phases, but quite high (3.67) for knowledge of the five functional areas affected by the project.

Table 15: Media Type Effectiveness Calculations for FPO Employees

Media1 - Did you know that your company is beginning a new project called [project name]? (N=75)				
	# Selected this Media	**Proportion Selected this Media**	**Perceived Eff**	**Media Type Eff**
Project Awareness Event	18	0.240	2.44	0.586
Manager	34	0.453	3.18	1.442
Department Meeting	22	0.293	2.82	0.827
Project Team Member	12	0.160	3.25	0.520
Project Team Meeting	4	0.053	3.75	0.200
Grapevine	18	0.240	1.56	0.374
E-mail	10	0.133	2.40	0.320
Intranet	17	.0227	2.38	0.539
Average				0.601
Media2 - Did you know that know that [project name] consists of five main areas? (N=15)				
	# Selected this Media	**Proportion Selected this Media**	**Perceived Eff**	**Media Type Eff**
Project Awareness Event	3	0.200	3.67	0.734
Manager	6	0.400	3.83	1.532
Department Meeting	4	0.267	3.25	0.867
Project Team Member	4	0.267	3.50	0.933
Project Team Meeting	5	0.333	3.20	1.067
Grapevine	1	0.067	3.00	0.200
E-mail	2	0.133	3.00	0.400
Intranet	3	0.200	3.67	0.734
Average				0.808
Media3 - Did you know that know that Phase 1 of [project name] will include Corporate, Distribution Center, and [main] Plant, that Phase 2a includes [2 other locations] and that Phase 2b includes [final location]? (N=42)				
	# Selected this Media	**Proportion Selected this Media**	**Perceived Eff**	**Media Type Eff**
Project Awareness Event	4	0.095	3.75	0.357
Manager	19	0.452	2.84	1.285
Department Meeting	7	0.167	2.71	0.452
Project Team Member	6	0.143	3.67	0.524
Project Team Meeting	6	0.143	3.50	0.500
Grapevine	4	0.095	2.50	0.238
E-mail	3	0.071	3.33	0.238
Intranet	10	0.238	2.60	0.619
Average				0.527
Overall Perceived Media Type Effectiveness				0.645

At FPO, the project team was trying to get employees to use the company's intranet for project related updates, but as seen in Table 15 above, and also revealed during the interviews, this tactic has been largely unsuccessful. All employees interviewed knew of the existence of the intranet because this is where human resources information is stored, along with other types of information that employees occasionally need. Several employees expressed surprise that project information was available there however, and those who did know said that they did not go there regularly. The general impression was that information had been put there at the beginning of the project, such as the initial timeline, and the announcement letter from the president, but that nothing had changed. Without a specific reason to go look at the intranet, many employees stated that they would not because they were too busy; there was simply not enough perceived value in the content available on the intranet. Commenting on the possibility of an employee from the plant or warehouse using the intranet, one employee who was in a liaison position between corporate and the plant said that it was unlikely that employees would use the computer in the cafeteria area due to embarrassment or privacy concerns. She felt that even the bingo game had not been enough of an enticement for those employees.

FPO managers and supervisors were also thought to be a good source of information, provided that the manager was one who shared information readily. Employees who did not receive information from their manager expressed a strong desire to be informed in that way. There was a mixed response however on the types of

information desired from the supervisor. Some people wanted all information to come from their own supervisor. Others however felt that information about how the project would affect workloads or priorities should come from supervisors while more "generic" types of project information such as timelines or status updates would be best from the project team so that all employees got the same information at the same time.

Given that the highest possible score for media effectiveness was 4.0 (all subjects selected the given media and all gave it the highest possible ranking of 4.0), overall media usage does not appear to be highly effective at either organization.

Perceived effectiveness of timing

Perceived effectiveness of timing was calculated based on two questions in the section on general perceptions of project communication. These were five-point Likert-type items with scales of Strongly Disagree to Strongly Agree and the effectiveness of timing is simply the average of the means of the responses in this case.

Table 16: Perceived Effectiveness of Timing for Students

	Timing Eff	**Std. Dev**
Project related information does not reach me (reverse coded)	3.18	.898
I have the project-related information I need when I need it	2.93	.877
Perceived Effectiveness of Timing	3.06	.615

Table 17: Perceived Effectiveness of Timing for Faculty

	Timing Eff	**Std. Dev**
Project related information does not reach me (reverse coded)	3.40	.904
I have the project-related information I need when I need it	2.75	.886
Perceived Effectiveness of Timing	3.08	

As seen in both Table 16 and Table 17, students and faculty feel that information does reach them but not in a timely manner. This was supported by comments both on the questionnaires and during the interviews where students and faculty frequently commented that they should have had information much sooner. One faculty member stated “I was too busy to read the entire thing; also, it wasn't giving me ‘just-in-time’ information exactly when I needed it so I wasn't sure what to pay attention to/try to remember, etc.” Student comments were very mixed, from those who thought the information appeared the day that they registered for classes to those who stated that having e-mails three months ahead of time is useless since they are not registering at that time.

Table 18: Perceived Effectiveness of Timing for FPO Employees

	Timing Eff	**Std. Dev**
Project related information does not reach me (reverse coded)	2.65	1.121
I have the project-related information I need when I need it	2.93	.794
Perceived Effectiveness of Timing	2.79	

These questions were on a scale of 1 to 5, so effectiveness of timing at FPO is slightly below the midpoint of three. A few of the subjects expressed a very laissez-faire attitude and made comments to the effect that it did not do any good to worry about it because it was going to happen anyway, or that they did not need to know yet and they were comfortable with that. Most of the employees however expressed concern about how they could continue to be effective at their jobs. They expressed great pride in their company and the part that they played, and felt slighted because they felt that they did not know even the bare minimum of information they required. They also expressly stated that they did not need or want all the details of the project as this would be very confusing as well as time consuming, and they were very mindful of the requirements of their daily duties. They did, however, want to know when their functional areas would be involved and there was much confusion about the go-live date, which they considered vital information.

Perceived Effectiveness of Content

Perceived effectiveness of content was calculated based on five questions in the section on general perceptions of project communication. These were Likert-type items with five-point scales of Strongly Disagree to Strongly Agree, and the effectiveness of content is simply the average of the means of the responses. Values are shown in Table 19.

Table 19: Perceived Effectiveness of Content for Students

	Content Eff	**Std. Dev**
Project-related information is not reliable and accurate (reverse coded)	3.18	.747
I can depend on the truth of the project information I receive	3.29	.807
The language used in the communication is too hard to understand (reverse coded)	3.25	.885
I can easily understand the project-related information that is sent out	3.02	.909
The leadership team has not explained enough about what this change means (reverse coded)	2.55	.969
Perceived Effectiveness of Content	3.06	.621

Table 20: Perceived Effectiveness of Content for Faculty

	Content Eff	**Std. Dev**
Project-related information is not reliable and accurate (reverse coded)	3.23	.702
I can depend on the truth of the project information I receive	3.27	.858
The language used in the communication is too hard to understand (reverse coded)	3.18	.789
I can easily understand the project-related information that is sent out	2.89	.932
The leadership team has not explained enough about what this change means (reverse coded)	2.82	1.019
Perceived Effectiveness of Content	3.08	

At the university, the general consensus among both students and faculty was that the e-mails were very long but did not contain enough detail, and thus the content was

ranked at the mid-point on a scale of one to five, as seen on Table 19 and Table 20. A common concern was also that the e-mails did not explain the reason for the change; most people felt that the university was changing simply because other universities in the state system already had the PeopleSoft system, or that the central IT department needed something to do. Additionally, both students and faculty commonly stated that there was too much information that had to be "sought out," referring to the fact that the e-mails contained links to tutorials and more detailed information that could be accessed if the reader so desired. These statements are difficult to reconcile. As the assistant project manager pointed out, the project team attempted to keep the e-mails relatively short by sending multiple shorter communications, and including links for more in-depth information, yet people still felt that the e-mails were too lengthy while also stating that they did not provide enough information.

Table 21: Perceived Effectiveness of Content for FPO Employees

	Content Eff	**Std. Dev**
Project-related information is not reliable and accurate (reverse coded)	3.31	.716
I can depend on the truth of the project information I receive	3.52	.795
The language used in the communication is too hard to understand (reverse coded)	3.43	.701
I can easily understand the project-related information that is sent out	3.15	.672
The leadership team has not explained enough about what this change means (reverse coded)	2.60	1.053
Perceived Effectiveness of Content	3.23	

The effectiveness of content at FPO was generally quite good. (Recall that these questions were on a scale of one to five). As previously noted, employees at both the managerial and employee levels felt that communication was trustworthy and easily understood. The most common concern about the content both on the survey comments and during the interviews related to the level of detail they were hoping to receive. Some employees had expectations that were unrealistic for the current phase of the project, such as how a complex task that causes difficulties would be performed in the new system, but most simply wanted to see the system and get a feel for it, and to understand the timing of the components that would affect them personally. Intranet content also arose frequently as a potential source for improved communication; if the content on the intranet was kept up to date it could be an important means of communication.

Another theme that frequently arose at FPO was that of feedback. Although this study did not specifically address it, when asked about the content of the communication and what might be missing, feedback was one of the most common responses. Feedback is part of the communication process and FPO employees felt that it was severely lacking. The content they had received was very basic, but they were additionally looking for feedback on the information they had provided to the project team about their tasks and functional areas. Additionally, this lack of content was contributing to much of the perceived discontent with the communication because employees were coming to feel that perhaps the right people were not even on the team. For example, feedback had not been provided on the inputs received from a particular department so that when that

manager was finally involved in the project, serious gaps were discovered in the model of that process. Subjects were very careful to express respect for the current members, but felt that the team was perhaps not complete.

Correlational Analysis for Communication Effectiveness

To answer Research Question 4 (the relationship between the effectiveness of communication and the perceived effectiveness of media, timing and content), a one-tailed correlation analysis was run comparing effectiveness of communication to each of the perceived effectiveness variables individually. A one-tailed correlation was determined to be most appropriate for this study because a specific (positive) direction has been predicted for these relationships (Field, 2005). As depicted in Table 22, for students, all three variables had weak correlations with the effectiveness of communication, although these were all significant at $p<.01$. In other words, the actual effectiveness of the communication as measured by the "Did you know" questions in the early section of the instrument, did increase as students' perception of the effectiveness of media increased. This also held true for content and timing of the communication.

Table 22: Correlational Coefficients for Effectiveness Variables for Students

Variable	**Effectiveness of Communication**
Perceived Effectiveness of Media	.136**
Perceived Effectiveness of Content	.169**
Perceived Effectiveness of Timing	.180**

** Correlation is significant at the 0.01 level (1-tailed)

The data in Table 23 reveals that for faculty, there was not a significant relationship between the perceived effectiveness of content and effectiveness of communication, nor between the perceived effectiveness of timing and effectiveness of communication. There was, however, a weak positive relationship (r=.295) between perceived effectiveness of media and effectiveness of communication that was significant at p<.01. Thus for faculty there was a weak but significant relationship between the actual effectiveness of communication as measured by the "Did you know" questions and the perceived effectiveness of the media used for communication, but this relationship was not seen for timing and content.

Table 23: Correlational Coefficients for Effectiveness Variables for Faculty

Variable	**Effectiveness Of Communication**
Perceived Effectiveness Of Media	.295**
Perceived Effectiveness Of Content	.037
Perceived Effectiveness Of Timing	.126

** Correlation is significant at the 0.01 level (1-tailed)

As displayed in Table 24 for FPO employees, there was a weak but significant relationship between all variables and effectiveness of communication and all are significant at p<.01 (1-tailed). Thus there was a weak but significant relationship between the actual effectiveness of communication as measured by the "Did you know" questions and each of the perceived effectiveness variables.

Table 24: Correlational Coefficients for Effectiveness Variables for FPO Employees

Variable	**Effectiveness Of Communication**
Perceived Effectiveness Of Media	.357**
Perceived Effectiveness Of Content	.325**
Perceived Effectiveness Of Timing	.271**

** Correlation is significant at the 0.01 level (1-tailed)

None of the perceived effectiveness variables (media, content and timing) had a strong effect on the actual effectiveness of the communication received by any of the three groups in this study although the results were slightly stronger at FPO.

Correlational Analysis of Hierarchical Level

Research Question 5 was "Does the effectiveness of communication vary across hierarchical levels within organizations?" For students, "hierarchical level" best corresponds to their grade level, and in this study there were six total levels; graduate, senior, junior, sophomore, freshman and other. (Students in the "Other" category may be taking a course through the Continuing Education office, special students who have not yet been admitted to full academic standing, or some similar situation.) A two-tailed correlation analysis was performed, because the direction of the possible interaction was not known (Field, 2005). There was only a weak positive correlation between hierarchical level (grade level) and communication effectiveness (r=.021), and this was not significant.

For faculty, hierarchical level was divided into three categories; instructional academic staff, tenure-track, and tenured. This grouping resulted in a weak positive correlation (r=.160) but it was not significant.

At FPO, respondents were grouped into four job categories; director and above, supervisor/manager, full-time non-manager and part-time non-manager. None of the respondents were part-time employees, and only four were director or above. This resulted in a weak but significant correlation between hierarchical level and communication effectiveness (r=.314 at p<.01, 2-tailed).

Correlational Analysis across Divisions

The final research question was "Does the effectiveness of communication vary across divisions within organizations?" In the case of the students, divisions are represented by colleges and at this university there were six possible choices, which were assigned values of one to six; Arts and Sciences, Business, Education and Human Services, Nursing and Health Services, Undeclared and Other. As previously noted, a two-tailed correlation analysis was performed, because the direction of the possible interaction was not known (Field, 2005). There was only a weak negative correlation between college and communication effectiveness (r= -.094), but this was a significant effect at p<.01 (two-tailed).

In the case of the faculty, divisions are represented by colleges and at this university there were five possible choices, which were assigned values of one to five;

Arts and Sciences, Business, Education and Human Services, Nursing and Health Services, and Other. There was a weak negative correlation (r= -.045) but this was not significant.

Finally, for FPO correlations were run for both department and division. There were 11 departments, which revealed that there was a weak negative correlation (r= -.044) but it was not significant. Grouping the departments into three divisions of Corporate, Distribution Center and Main Plant indicated only a weak correlation as well (r= .059) but it similarly was not significant.

Additional Findings

As a secondary aspect of this study, respondents were asked via both survey and interview questions about their preferences for communication. These provided quite interesting results, and perhaps led to more questions than answers. The survey results can be seen in Table 25.

Table 25: Media Preferences

Students	**Media Type**					
	E-mail	Student Newspaper	Adviser	Speaker in class	Training Class	Other
Freq.	711 (78%)	39 (4.3%)	237 (26%)	280 (30.7%)	98 (10.7%)	20 (2.2%)

Faculty	**Media Type**				
	E-mail	Student Newspaper	Dept. Chair	Training Class	Other
Freq.	69 (67.6%)	19 (18.6%)	18 (17.6%)	39 (38.23%)	6 (5.9%)

FPO	**Media Type**							
	E-mail	Project Event	Mgr	Project Team Mbr	Project Team Mtg	Grape vine	Intranet	Dept Mtg
Freq.	40 (53.3%)	20 (26.7%)	35 (46.7%)	16 (21.3%)	16 (21.3%)	2 (2.7%)	26 (34.7%)	27 (36%)

In their survey comments as well as in interviews, a large percentage of the students derided the e-mails specifically related to the registration system project and said that they received far too many e-mails in an average day for this to be an effective means of communication, and yet 78% of them indicated on the survey that this was the best way to reach them. When asked follow-up questions about how to reconcile this apparent contradiction, students offered suggestions such as having the faculty or the student's own academic adviser send the e-mails instead of the central IT group, because as noted earlier, students "know their network." Some students did acknowledge that this could entail a loss of control over the content of the e-mail as well as concerns over

whether the e-mail would be sent at all. Suggestions for lowering the volume of e-mails included ending the sale of the university's e-mail list to any entity or person willing to spend $70, consolidating announcements from the various campus groups such as Housing, Activities and IT into one weekly update, and doing a better job of managing the "spam" e-mail that arrives in all university e-mail accounts. Additionally, comments from students in the "Other" category included some potentially productive suggestions such as posters on the doors of restroom stalls, YouTube videos, and the televisions in the student centers used to broadcast announcements of campus events. Interestingly, only 30.7% of students who responded to the survey indicated that a speaker in class would be a good means of communicating to students, but in interviews, this was the option that was received most enthusiastically. Comments like "they would be right there and I couldn't ignore them" and "I could ask them questions, and they should be students so they could answer from my perspective" were common.

Similarly, a high percentage of faculty stated that e-mail was the best way to reach them, yet as noted previously they also had some very strong negative comments about the use of e-mail and their inability to read all the e-mails they already received. Comments from faculty in the "Other" category included RSS feeds (simplified information feeds that can arrive in the reader's e-mail or other formats as the reader chooses) and face-to-face discussions with project team members. During interviews, faculty had far fewer suggestions beyond lowering the amount of "spam" but did not respond favorably to the students' suggestions when presented with them. The general

consensus was that faculty are already overloaded and it is not their job to send out e-mails for IT nor allow presenters to use up their class time.

The employees at FPO also expressed a strong preference for e-mail, but they had also not responded as negatively to its use. Some managers did indicate that they received a high volume of e-mails, but they felt that e-mails related to the project would receive a high priority. There was only one additional suggestion from an employee who requested an all-employee meeting in the auditorium.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

The intent of this study was to identify factors that influence the effectiveness of change communication as perceived by employees at multiple hierarchical levels during large scale information technology projects. Large information technology implementations are particularly susceptible to failure despite an organization's best efforts and a wealth of popular and scholarly literature on best practices. One of the primary causes has been determined to be poor communication. Of specific interest in this study were the media of communication (e-mail, presentation, personal contact), the timing of communication, and the content of communication used during the technology implementation and how these variables might influence how employees at various organizational levels perceive and respond to the communication.

In order to continue filling in the gaps in our understanding of how these variables affect communication effectiveness during large IT implementations, two very different organizations were studied. The first organization was a mid-sized public university located in the upper Midwest of the United States that had just undergone the implementation of a new student information system. The second was a food processing organization (FPO) in the upper Midwest of the United States that was in the early stages of converting from an outdated and heavily modified information system to an

implementation of SAP, encompassing the entire organization. The same two research methods were employed at each organization. The first method was a questionnaire designed to measure participants' actual knowledge of the implementation project, the means of communication about the project, and the general communication climate at the organization. A total of 105 useable faculty questionnaires and 913 useable student questionnaires were returned by the university subjects and 75 were returned by FPO, yielding response rates of 20.59%, 8.6%, and 58.6% respectively. These results were analyzed to examine the relationships between five independent variables and the dependent variable, the effectiveness of communication, at these two organizations.

The second method was a modified case study of each organization, including interviews, observations, and review of relevant artifacts. These findings provided context for the quantitative results and also provided more in-depth information about some of the findings from the surveys. A total of 44 university students, eight university faculty and instructional academic staff and 14 FPO employees were interviewed.

In this chapter, these two case study organizations are reviewed, including the survey results, followed by a discussion of the theoretical and practical implications of this study, its limitations and opportunities for further research.

University Case Study

The first organization studied was a public university in the upper Midwest that had just undergone a complete conversion of the student information system. Students and faculty were in the process of using this new system for the first time to register for

Fall 2010 classes at the time of the study, providing many opportunities for observation of meetings, discussions and artifacts as well as semi-structured interviews as follow-up to the survey results. Several themes emerged, and each of these will be discussed.

Communication and Trust

Both the students and the faculty made comments in their written questionnaire responses as well as in interviews and conversations that demonstrated a decided lack of trust in the university's administrative leadership. "Administration" seemed to apply to anyone not a student or faculty member. For example, many respondents in both groups stated that the system was put in place simply because the IT group needed something to do, or because most of the other schools in the state's public university system had the same software. They also felt that they should have been able to vote on whether or not to change the system in the first place and because they now did not like it, it should be promptly removed. The timing of the change was seen as very poor because it occurred when students needed to register, which was attributed to the fact that administrators have no concept of what students and faculty actually do. There is little trust that the administrators will do what is right for the university. Comments were made that the system should have been implemented in the summer when students were not registering, but impartial consideration of this plan reveals that no matter when the system would have been implemented, there would always be an inconvenient "first time" with which students and faculty would have to contend.

These comments reveal a poor communication environment that has developed over many years as the result of several factors. Perhaps foremost among these is the atmosphere of academic silos and bureaucracy that exists. Administrative processes are not easily understood nor well communicated, so university faculty and students often attribute their own motives to the processes that they observe. Any communication about such processes would probably not be read, but this does not stop them from feeling that they do not have enough information. The chancellor does not circulate among the university population, which lends an air of aloofness and separation from "reality" as defined by those not in leadership positions. Additionally, administrative processes are seen as obstructions to the actual mission of this liberal-education university, which is preparing students to learn and become involved citizens. As an example, comments about the "shopping cart" nomenclature for registering for courses in the system were common; this was seen by students as silly, but faculty viewed it as very detrimental and even insulting in that it commoditized the educational process. There was a general feel that such inconveniences should not have to be dealt with, and more effort should have been made to ensure that faculty and students were not disturbed with such trivial details as changes to the registration system. Tools should serve the users, not the reverse.

Communication and getting the message out

Another theme that emerged at the university was that of how to reach the constituents who most needed the information. Both the survey results and qualitative results indicated that large numbers of faculty and students do not read e-mails sent by

administrators. Comments revealed that people skim the list of e-mails in their inbox by looking at the sender's name and possibly the subject line, and the central IT group is generally seen as a sender that can be ignored. There is a general perception that too many unnecessary e-mails are sent by administrators, and people are simply too busy to read them. Workloads are heavy for both students and faculty and many of them do not want to be bothered with tasks that are not immediately related to current activities.

When these same people do not have the information they need at the time a change occurs, however, they are angry that they did not know of the change and again attribute this to the administrators' lack of understanding of what students and faculty need to know. For example, many people commented that tutorials or any sort of training at all would have been nice, when in fact there were links to tutorials in the e-mails as well as on the university's website. Faculty additionally had the opportunity to attend face-to-face training sessions, which very few people took advantage of. Students and faculty also frequently stated that they only knew about the change mere days before registration began, when the truth is that the first e-mails were sent to students almost a month before the first students registered, giving the majority of students far more than a month before they actually registered. Faculty were alerted prior to that so that they would be informed when students began to ask questions.

Food Processing Organization Case

The second organization studied was a food processing organization (FPO) that was in the very early stages of converting from a very old and heavily modified

information system to a fully-integrated SAP system. The timeline was very aggressive with fact-finding and discovery of business processes beginning in March 2010 and culminating with system implementation at year-end of 2010. At the time of this study, employees had received several forms of communication about the project and while some were participating in the fact-finding, most were not. Many opportunities for observations, conversations and interviews provided a context for the survey results, leading to several relevant themes.

Aggressive Timeline

As noted previously, FPO was attacking this project very aggressively, and this seemed to be a contributing factor in many of the communication issues that were observed and reported. Most people were aware of the project, but were lacking the details that they felt they needed. Several people commented that the right people were not on the project team because tasks had not been properly thought out in the haste to implement quickly. For example, the human relations manager in the corporate office performs very different types of tasks than the human relations managers in the plants and distribution centers, but only the corporate HR manager was on the project team until early June. At that time, potentially serious flaws were found in the HR processes that had been designed. Some participants attributed this to the speed with which the team was moving ahead, leading to hasty decisions and mistakes.

Another issue attributed to the aggressiveness of the timeline was the lack of feedback. This was seen by many participants as a serious flaw in the communication

process because they had provided information to the project team about the processes in their respective functional areas but had not received feedback from the project team about how this input was being used, if at all. This contributed to the general feeling of insecurity as employees felt that the team was charging ahead without checking that they had the correct information or allowing the participants to validate the new processes.

Value placed on communication

The IT project manager frequently commented that she did not see the leaders at FPO placing a high priority on communication and this was troubling to her. The awareness events went well and participants expressed a high level of awareness of the project acronym and basic concepts, but detailed information was decidedly lacking. One major issue that was noted was that no communication manager had been designated for the project, even though this position was specified in the early project documents. Thus, the communication duties fell to the project manager, in addition to her other duties related to the fast-paced project. She saw this as a serious short-coming of the project plan, and the observations made as part of this study confirm her concerns. For example, the communication plan was not finalized until mid-May, even though the project had officially been "kicked off" in mid-March, and one of the top executives did not even remember seeing a draft of the plan about a month earlier. This also contributed to the lack of feedback and updates to employees as noted previously; because communication was not assigned to a specific project team member as part of their duties, it frequently was not accomplished in a timely manner.

Additionally, executives at FPO commented frequently that they have excellent communication practices throughout the organization, and subjects commented that the executives liked to "pat themselves on the back about how great communication is," but this was not borne out by the results of this study. While many subjects commented that they believe the information they receive is truthful, they also often felt that their managers were not sharing the information obtained at the managers' meetings or other project meetings. FPO also is working toward a culture of cross-communication and elimination of functional silos, but they have not accomplished this goal yet, according to the project manager. To the executives' credit, when presented with the initial results of this study, they expressed surprise and asked many questions about how to ensure that the managers were communicating more fully.

The Survey

Five independent variables were studied in relationship to the dependent variable, effectiveness of communication. Electronic questionnaires were designed with the help of the project managers at both organizations, with the intention of determining how effective the communication surrounding each project had been. Nearly identical questionnaires were developed for faculty and students at the public university, with only minor wording changes for the media used to communicate with each group. A very similar questionnaire was developed for FPO, with changes for the content of the project, and organizational differences such as department names.

A major finding of this study is that perceived effectiveness of media was the only independent variable that had a significant effect on the actual effectiveness of communication across all three groups of subjects (students, faculty and FPO employees). Perceived effectiveness of content and timing were significant for students and FPO employees, but these were weak effects. These results are important because they reveal that how employees perceive the effectiveness of the means used to communicate important change messages is more important than previously recognized. Many studies have focused on the various types of media used (e-mail, meetings, manager communications, etc.) and measured employees' reactions to each of them, but no previous studies have measured correlation of the media used with whether or not the message is actually reaching the intended targets.

An additional finding related to media use was that respondents gave very different rankings to the effectiveness of the media used for the different bits of information on the questionnaire. This was most telling at FPO. For example, the effectiveness of the manager as a communication medium was ranked (on a 4-point scale) 3.18 for awareness of the project, 3.83 for knowledge of the functional areas covered by the project and 2.84 for knowledge of the phases. This reveals two potential areas for improvement in change communications. First, these results may occur because information is not consistently communicated in all the media used. Second, when considering the "people sources" of information such as managers, project team members or academic advisers, it may reflect a lack of knowledge or even a lack of concern, both

of which could potentially be remedied by ensuring that the "people sources" understand the importance of their role in the change effort and encouraging their support.

Another interesting finding of this study is that there was not a significant difference between the actual effectiveness of communication across divisions within the case organizations. At the university, "divisions" were defined as the four colleges and at FPO, divisions were Corporate, Distribution Center and Main Plant. None of these divisions were significantly different in the level of knowledge about the changes studied. This is interesting because it is contrary to the commonly accepted idea that the corporate office will have more information than plants or other outlying divisions and is also contrary to previous studies and even the current participants' own statements. One potential reason is that this idea has existed for so long that it is generally accepted without question. For instance, one respondent at FPO stated that there will always be cliques who have more information and she personally will always be left out because she is not in the corporate office. Another explanation may be the very general nature of the questions posed for this study. Simple awareness was quite high at both organizations, while the detailed questions received lower scores at both organizations. It may be the case that specific details are known by different people and when this information is shared, those without the knowledge feel at a disadvantage. Further research on this topic should prove very fruitful as it is possible that the differences in knowledge between divisions are perceived rather than actual.

Recommendations for Future Research

This study determined that there is a relationship between the actual effectiveness of communication and the perceived effectiveness of media, timing and content, although the relationship is admittedly weak. Research to date has focused on individual components of the communication process and how individuals respond to various forms of communication, and furthermore, the majority of previous studies have focused on the perceptions of managers. Effectiveness of communication during technology implementations remains poor. Change is a constant in modern organizations, and it is imperative that all stakeholders to the change have a clear understanding of their role in the change and the implications for themselves, their workgroup and their organization. The current research extends prior findings by combining the effects of multiple communication components (timing, media and content) and examining the results across multiple hierarchical levels and organizational divisions.

Multiple Media Types

The current findings build on research such as Rogers (2003), Bjorkman (2009), Daft (1987) and others who suggest using multiple types of media based on the goals of the communication. Mass media such as company-wide e-mails or broadcasts of all-employee meetings have the advantage of overcoming issues of time, distance and consistent distribution. Thus, mass media may be appropriate to raise awareness of the innovation, followed by interpersonal communication to change and strengthen attitudes in favor of the innovation. However, the current study has shown that in the case of large

non-optional information technology implementations, awareness is not enough. Awareness of the changes at each organization studied was very high but detailed knowledge was much lower, and mass media had been the primary means of communication used in each case. Without information on how the change will affect them personally, change recipients feel adrift and begin almost immediately to seek answers about what they should be doing and what will happen if they do not know enough about the new system. The implication is that because these changes are non-optional, change recipients need detailed information much more quickly, and in more formats, than previous research implies.

In an optional change, people need to first know what the innovation is and then form opinions about it, leading to a decision to adopt or abandon the innovation. But in a non-optional change, employees quickly become confused and concerned without more detailed information about how the change will affect them personally, because they know that they will be affected. Additionally, it is possible that employees are resisting the change through the appearance of confusion and thus pretending to misunderstand may be a passive means of fighting the change. Organizational communication plans must incorporate awareness events, a task at which most organizations seem relatively proficient. The immediate next step of the project announcement must be small group meetings with project team members at the department or workgroup level following the awareness event. Awareness will be generated, and detailed questions and concerns can begin to be addressed, which can calm both the real and the feigned confusion. This tactic

has the additional benefit of gathering information from the employees; as questions are asked and answers are researched, the project team may uncover valuable information.

The findings also support Rogers' (2003) contention that communication campaigns can be effective if formative research is used to segment the heterogeneous audience into more homogeneous groups. Mass media messages can then be designed for these groups with the intent of triggering interpersonal communication. Each group in the current study (faculty, students, and FPO employees) rated the various types of media quite differently, and perceived effectiveness of media was the only variable that was consistently found to correlate to actual communication effectiveness. When stakeholders receive information in a way that they perceive as effective, the communication is much more likely to have the effect desired by the project team. This is not to say that each individual or workgroup will have messages specifically tailored for their desires. Rather, population segments can be found whose members communicate in similar ways and prefer similar media. Perhaps plant workers only want to hear information from their direct supervisors while traveling sales people prefer well-structured e-mails with links to deeper information that can be explored when needed.

Organizational Climate

There were marked differences in the responses of each of the three subject groups (faculty, students and employees) that indicate a direction for future research based on organizational climate. Organizational climate has a major impact on how effectively a change is implemented and thus must be understood in order to

communicate to all constituencies in a manner that will help them to understand the relevance of the change. In the case of the university, faculty and students had a very different idea than that of the IT department and the high-level administrators concerning how the change should work, and these differences can be traced to organizational climate. In the case of the faculty, this may stem from the value placed on "academic freedom" at most universities. There is a spirit of individuality, combined with a sense of the importance of their role in creating the future through their students, which does not lend itself to heeding directives from those who merely administer the university. Students, on the other hand, increasingly see themselves as the "c2ustomer" in an educational transaction and because everyone employed at the university is paid through a combination of student tuition and tax dollars, students feel entitled to have a say in the operations. Neither of these "organizational realities" corresponded to how the university administrators tried to communicate with the faculty and students.

At FPO, on the other hand, while employees did indicate that they felt they lacked the detailed information they required, there was far less disagreement about the need for the change itself, and fewer derogatory comments in general. In this case, the organizational climate lent itself much more to obedience and resignation, if not actual acceptance of the change. Corporate employees are more accustomed to doing as they are told or running the risk of being fired. While they recognized that they had no real choice in whether or not to use the new system, they also recognized that their effective use of the system would vary significantly based on the amount of information that they both

gave and received during the implementation project. As with the university, their "organizational reality" did not match well with how the project team was communicating.

One of the key differences in organizational realities to be researched is the level of accountability organizational members are subject to in their use of the new information technology, as this will help researchers understand the organizational reality and stakeholders' reaction to the technology. The university students and faculty in the current study are not evaluated on their use of the system and it is not a daily part of their lives outside of the few days each year that are spent on registering for courses. In stark contrast are the FPO employees, who interact with the system on an almost constant basis. Indeed there are many employees whose jobs entail few tasks which are outside the system, and all employees will be evaluated either directly or indirectly on how they use the system and the information contained therein. This level of accountability almost certainly corresponds to the varying levels of attention paid to the communication about the information technology projects as noted above.

When "organizational realities" are not shared, the likelihood of a successful change implementation decreases (Zammuto, 2009, August). Future research must be directed at uncovering these differences in the varying aspects of organizational climate. Information about recipients' impressions and expectations for the change will vary with the organizational climate, but this knowledge will enable the change agents and

recipients to understand one another and thus devise any corrections needed, as well as improve the likelihood of a successful implementation (Bartunek, et al., 2006).

Change Agent Homophily

Respondents frequently commented that they would prefer to hear detailed information about how the project would affect them from a person who has knowledge of what the respondent actually does. For FPO employees, this person was generally the direct supervisor, while for students is was other students who had been trained to deliver the information. What these respondents were unknowingly asking for was a change agent who was more homophilous with themselves. Rogers (2003) defined "change agent homophily" as the degree to which two or more individuals are similar in such aspects as education, beliefs, socioeconomic status, etc. This is important during change because there is no reason to assume that change agents and change recipients share the same understanding. They are most likely not homophilous and thus will have differing viewpoints (Bartunek, et al., 2006).

This is an important finding of the current study, and it builds on previous research such as Rogers (2003), Larkin and Larkin (1994, 1996), and Bjorkman (2007, 2009) but these findings are generally not implemented during times of organizational change. As seen in this study and many others, mass media such as mass e-mails, posters or large group meetings are the most frequently used to disseminate information about a change, when in practice it is the "people sources" that change recipients express a need

for. This is an important topic for future research; why do organizations continue to communicate in ways that have been to shown to be so ineffective?

As Bjorkman (2009) states, the "people sources" of information are far better at creating behavior change because communication must be a two-way street rather than the one-way currently employed in so many organizational changes. Changes of the magnitude of major non-optional information technology implementations often create a feeling of lack of control or of being manipulated, as confirmed by the current study (particularly at the university). Change recipients may be aware of the change through mass means, and may even know the general attributes of the change such as the timing of phases or reasons for the change, but they rarely seem to understand the impact to themselves. Change recipients additionally are looking for empathy and understanding of their concerns, rather than simply advice for "getting on with it" (Jick, 1990:2009). This can truly be provided only by someone who is similar, or homophilous, to the change recipient. An important area for future research will be to develop an understanding of this dilemma. If change recipients express a need for communication from homophilous sources, and there is a wealth of literature to validate this desire, why then do organizations continue to use communication means that have been shown to be less effective? A participative research methodology such as long-term action research could yield some very interesting results by allowing the researcher to become more deeply involved in the both the culture of the organization as well as the actual technology implementation (Checkland & Holwell, 2007).

The Communication Effectiveness Model

The Communication Effectiveness Model (refer to Figure 1 on page 87) has proven to be a useful tool to evaluate the actual effectiveness of communication during large technology change, in terms of media, timing and content used by the project leadership team. It will benefit from further critique and development in several areas.

The current results indicated that preferences for media varied by the type of information being disseminated. Updates were thought to be acceptable in a short e-mail, while more complex information about how the change would impact the change recipient was more effective from a knowledgeable individual such as a supervisor. The model could be expanded to include preferences for media, timing and content; perhaps if preferences are more closely aligned with what is actually employed during project communications, actual effectiveness of communication will increase.

Another factor that may add value to the model pertains to a change recipient's general perception of the organization. As seen in the university example, change recipients made very negative comments and ranked media, timing and content effectiveness relatively low; this could potentially be a result of their negative perception of the university administration and communication climate. FPO employees generally had a much more positive view of their organization, and they also ranked the effectiveness of media, timing and content much higher. A complimentary construct could be found to assess organizational affiliation, such as Perceived Organizational Support as used in the Self, et. al. (2007) study that compared the extent to which an

organizational change is perceived as necessary to employees' perceived organizational support.

The concept of "burnout" may be an important factor to include in the model as well. Research has shown that if employees are overwhelmed, overworked or otherwise "burned out," this can have important effects on their work performance and general perceptions of their environment (Halbesleben & Buckley, 2006; Halbesleben & Demerouti, 2005; Halbesleben, Wakefield, & Wakefield, 2008) which in turn could lead to negative perceptions of organizational projects and thus influence their perception of the communication.

The model's advantage is that it measures actual effectiveness of communication as opposed to satisfaction with communication, and this is an important distinction to make. The above factors however may mediate the relationship between the actual effectiveness and perceived effectiveness of media, timing and content, and thus could be important directions for future research.

Recommendations for Practice

One of the most important contributions of this study is the development of a means of measuring the actual effectiveness of communication about technology implementations, through the use of an instrument that can be quickly designed with the assistance of project leaders and quickly administered to large numbers of stakeholders while the change is still in progress. This provides a basis for potential mid-course corrections in the communication plan and helps leaders focus on what information is

most lacking from the change recipients' viewpoints. It may even have the effect of improving the communication climate, as change recipients see that their opinion is being asked and that input is subsequently used to improve the change project.

As an example, in order to accomplish any potential mid-course correction, the instrument developed in the current study could be administered initially to establish a baseline before the project is in full swing, and then multiple subsequent times to the same group of change recipients to see if communication effectiveness is improving. By understanding the preferences and expectations of the project participants at the outset, communication events such as meetings, training sessions or other mass media can be balanced with interpersonal communications that are in line with the organizational climate as identified through the research. The baseline allows assessment of the situation before the project begins by understanding both knowledge and attitudes about the project and communication climate, while the follow-up assessments can track improvements (Sinickas, 1999).

Perceptions and satisfaction are far less important than actual actions and actual effectiveness (Lewis, 1999; Lewis & Seibold, 1998) and this model gives practitioners a way to measure actual effectiveness. Closely related to that fact furthermore, is the notion that actions speak louder than words. What change agents do will have much more impact than what they claim is important or what they put in their communication plan (Goodman & Truss, 2004) and this was borne out in the current study particularly at FPO. The leadership team stated that they believed in open and honest communication,

and that it was their intent to communicate fully about the SAP implementation project. To their credit, they did seem to believe that is what they were doing, but employees did not see the team's actual actions that way; information was not distributed evenly and feedback was not being received. Change agents must "walk the talk" or change recipients will not fully accept the change.

Because organizational climates can vary so substantially, it is important to understand the context in which the change will take place. As found in the current study, different climates will require very different means of communicating. Communication about changes in an institution of higher education must be structured to accommodate the faculty's and students' perceptions that they should not be bothered with too much information about the tools they use to accomplish their larger tasks. In a for-profit organization, on the other hand, the new information technology system is almost certainly one of the most important tools used on a daily basis. Practitioners must find a way to effectively communicate with their change recipients, by taking into consideration the climate and goals of the organization as well as the goals of the project.

Acceptance of the change

This study additionally confirms previous research findings that during non-optional changes, communication must be focused on performance and acceptance as opposed to understanding as is currently often the case (Ford & Ford, 1995; Ford, et al., 2008). In other words, early communication must include not only the means that will be used to accomplish the change (timelines, tasks of project team, etc.), but also include

what the effect will be on the change recipients (how job duties will change, etc.). This was demonstrated at both organizations; none of the groups studied had solid information about how the change would affect them directly, leading many of them to feel that the change was unworkable and perhaps even unjustified.

This is an important finding because this confusion and lack of information led to serious credibility issues at both organizations. At the university, the reasons for the change were not known, leading students, and faculty to a lesser extent, to assume that there was no good reason. At FPO, employees were not convinced that the right participants were on the project team, or that the team would correctly identify all the processes required for the conversion.

Communication Management

This study additionally provides a starting point for understanding how perceptions of media, timing and content can affect the actual effectiveness of communication about technology implementation projects. In light of the generally poor communication observed in many large technology implementation projects and the subsequent suboptimal results of the project, the current study provides several directions for changes in project communication.

First, continuous, effective communication must be the primary duty of one individual, or a group if the size of the project warrants it. Generally these duties become the responsibility of the project manager, as was seen at both organizations in the current study, but this is rarely optimally effective. The project manager is heavily engaged in the

day-to-day management of the project, and communication tasks are often the least painful task to delay when time is at a premium. Organizations claim to put a premium on effective communication, but it is rarely put into motion. Project plans usually designate a dedicated communication manager, or at least someone who will be assigned these duties as their primary responsibility, but as people are assigned to tasks, communication is often lumped in with other duties instead of being properly delegated and the opportunity is lost. The necessary work of formative research to determine the proper communication groupings and methods and to implement the subsequent communication plan cannot be properly executed by someone who has conflicting duties.

Second, multiple forms of media must be used to communicate the many aspects of a given change. People have varying preferences for how they receive information, and furthermore these personal preferences vary according to the type of information being relayed. Mass media were shown to be effective for raising awareness of the project, but during non-optional technology implementations, awareness alone is not enough and can lead to frustration and confusion. Written communication is also effective at serving as a reminder of what was discussed. An intranet site with meeting minutes, or paper documents handed out to change recipients, allow readers to access the information whenever they need it. Both academic and popular authors however, tend to agree that written forms should never be the only, nor even the primary, source of change communication.

Thus, a primary source of information sharing that must be employed more effectively is the homophilous change agent. Depending on the organization this may be a direct supervisor, a colleague who is formally acknowledged as the point of project communication for the department, a student who has been trained to teach other students and answer questions, or some other respected person who has been trained and is committed to playing this role. Without this connection to someone who has a similar worldview, a change recipient's frame of reference is unlikely to match the change agent's frame and thus is unlikely to be altered to that which is required for understanding and acceptance of the new technology (Gallivan, 2001; Rogers, 2003). If a similarly affiliated change agent tells change recipients that this change is beneficial, credibility is increased and acceptance should correspondingly increase.

As organizations move to these improved methods of communication, it will be important for them to ensure a consistent message. One advantage of the currently used methods of mass communication is admittedly that a single message is sent to all stakeholders at the same time. With a move to more people sources of information, it will be crucial that all communicators are committed to the change as well as committed to the duties of communicating. Poor or uninformed communicators will do more harm than good, and thus training will necessarily increase as all communicators are given the proper information and helped to understand the vital role they play in the successful implementation of the new technology. Organizations must make this move however. The pace of change will not slow, employees will not have fewer duties that require

technology, and technology will not become static. With improved methods of communication during information technology implementations, the potential for more effective projects will be realized.

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APPENDIX A: SURVEY INSTRUMENT FOR UNIVERSITY

Please keep in mind that the instrument depicted below was distributed in an electronic format, allowing for branching based on the answers the respondent selected. For instance, the question and associated text entry box about the effectiveness of the grapevine would have only appeared if the respondent had selected "grapevine" as one of the methods by which they had learned the information.

Did you know that [UNIVERSITY] is installing a new class registration system?

- ❍ Yes
- ❍ No

How did you find out about the new class registration system? (Please select all that apply to you.)

- ❑ [student newspaper]
- ❑ E-mail from a [UNIVERSITY] Official
- ❑ My Adviser
- ❑ I heard it through the grapevine
- ❑ Other

How much did the [student newspaper] help you understand this change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the e-mail from a [UNIVERSITY] Official help you understand this change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did your adviser help you understand the change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the grapevine help you understand the change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

Please describe the other way(s) you heard about the class registration system. How much did this help you understand the project and its impact on you? (Please click in the box to type your answer.)

Did you know that you during the transition you may need to check both the old system ([MyUSystem]) and the new system ([MyUSystem] CampS)?

- ❍ Yes
- ❍ No

How did you find out that you may need to check both systems? (Please select all that apply to you.)

- ❑ [student newspaper]
- ❑ E-mail from a [UNIVERSITY] Official
- ❑ My adviser
- ❑ I heard it through the grapevine
- ❑ Other

How much did the [student newspaper] help you understand the change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the e-mail from a [UNIVERSITY] Official help you understand the change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did your adviser help you understand the change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the grapevine help you understand the change and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

Please describe the other way(s) you heard about the fact that you may need to check both systems. How much did this help you understand the change and its impact on you? (Please click in the box to type your answer.)

If you did not know that you may need to check both the old and new systems, did you know something different? Please enter what you heard in the space below. (Please click in the box to type your answer.)

If you did not know that [UNIVERSITY] is installing a new class registration system, did you know something different? Please enter what you heard in the space below. (Please click in the box to type your answer.)

Please answer the questions below ONLY as they relate to the new class registration system.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Project-related information is not easy to find	❍	❍	❍	❍	❍
The leadership team understands student concerns about this project	❍	❍	❍	❍	❍
The leadership team listens to student concerns about this project	❍	❍	❍	❍	❍

My opinions about this project do not count	❍	❍	❍	❍	❍
I understand how this change will affect my registration process	❍	❍	❍	❍	❍
I can depend on the truth of the project information I receive	❍	❍	❍	❍	❍
The language used in the communication is too hard to understand	❍	❍	❍	❍	❍
Project-related information is freely shared by the leadership team	❍	❍	❍	❍	❍
The leadership team has not explained enough about what this change means	❍	❍	❍	❍	❍
I have the project-related information I need when I need it	❍	❍	❍	❍	❍
Project-related Information does not reach me	❍	❍	❍	❍	❍
Project-related information is not reliable and accurate	❍	❍	❍	❍	❍
I can easily understand the project-related information that is sent out	❍	❍	❍	❍	❍

What is the best way to communicate this type of information to you? (Please check all that apply.)

- ❑ E-mail
- ❑ The [student newspaper]
- ❑ My adviser
- ❑ Speaker in one of my classes
- ❑ Special training course
- ❑ Other (Please specify below)

If you specified "Other" above, please provide more information here.

How would you have liked to be involved in this project?

What features would you like to see available in the new system?

What is your classification?

- ❍ Graduate Student
- ❍ Senior
- ❍ Junior
- ❍ Sophomore
- ❍ Freshman
- ❍ Other

How old are you?

- ❍ Less than 20 years old
- ❍ 20 to 30 years old
- ❍ 31 to 40 years old
- ❍ 41 to 50 years old
- ❍ more than 50 years old

What is your gender?

- ❍ Male
- ❍ Female

What college are you in?

- ❍ Arts and Sciences
- ❍ Business
- ❍ Education and Human Services
- ❍ Nursing and Health Services
- ❍ Undeclared
- ❍ Other

APPENDIX B: SURVEY INSTRUMENT FOR FPO

Please keep in mind that the instrument depicted below was distributed in an electronic format, allowing for branching based on the answers the respondent selected. For instance, the question and associated text entry box about the effectiveness of the grapevine would have only appeared if the respondent had selected "grapevine" as one of the methods by which they had learned the information.

Did you know that your company is beginning a new project called [PROJECT NAME]?

- ❍ Yes
- ❍ No

How did you find out about [PROJECT NAME]? (Please select all that apply to you.)

- ❑ Project Awareness Event
- ❑ Manager
- ❑ Department Meeting
- ❑ Project Team Member
- ❑ Project Team Meeting
- ❑ Grapevine
- ❑ E-Mail
- ❑ [PROJECT NAME] Intranet Site
- ❑ Other (please specify)

How much did the Project Awareness Event help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did your manager help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the department meeting help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the Project Team Member help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the Project Team Meeting help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the grapevine help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the e-mail help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the [PROJECT NAME] Intranet site help you understand the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

Please describe the other way(s) you heard about the [PROJECT NAME] project. How much did this help you understand the project and its impact on you? (Please click in the box to type your answer.)

Did you know that [PROJECT NAME] consists of five main areas; Enterprise Resource Planning (ERP), Human Capital Management (HCM), Business Planning and Consolidation (BPC), Organizational Change Management (OCM) and Electronic Data Interchange (EDI)?

- ❍ Yes
- ❍ No

If you did not know that [PROJECT NAME] consists of five functions, did you know something different? Please enter what you heard in the space below. (Please click in the box to type your answer.)

How did you find out about the functions of [PROJECT NAME]? (Please select all that apply to you.)

- ❑ Project Awareness Event
- ❑ Manager
- ❑ Department Meeting
- ❑ Project Team Member
- ❑ Project Team Meeting
- ❑ Grapevine
- ❑ E-Mail
- ❑ [PROJECT NAME] Intranet Site
- ❑ Other (please specify)

How much did the Project Awareness Event help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did your manager help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the department meeting help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the Project Team Member help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the Project Team Meeting help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the grapevine help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the e-mail help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the [PROJECT NAME] Intranet site help you understand the functions of the project and their impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

Please describe the other way(s) you heard about the functions of the [PROJECT NAME] project. How much did this help you understand the project and its impact on you? (Please click in the box to type your answer.)

Did you know that Phase 1 of [PROJECT NAME] will include Corporate, Distribution Center, and [Main] Plant, that Phase 2a includes [two other locations] and that Phase 2b includes [final location]?

- ❍ Yes
- ❍ No

If you do not clearly understand the phases of the [PROJECT NAME] project, what do you believe or what have you heard? Please enter what you heard in the space below. (Please click in the box to type your answer.)

How did you find out about the phases of [PROJECT NAME]? (Please select all that apply to you.)

- ❑ Project Awareness Event
- ❑ Manager
- ❑ Department Meeting
- ❑ Project Team Member
- ❑ Project Team Meeting
- ❑ Grapevine
- ❑ E-Mail
- ❑ [PROJECT NAME] Intranet Site
- ❑ Other (please specify)

How much did the Project Awareness Event help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did your manager help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the department meeting help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the Project Team Member help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the Project Team Meeting help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the grapevine help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the e-mail help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

How much did the [PROJECT NAME] Intranet site help you understand the phases of the project and its impact on you?

Did not help at all	Helped a little	Helped somewhat	Helped very much
❍	❍	❍	❍

Please explain your choice above.

Please describe the other way(s) you heard about the phases of the [PROJECT NAME] project. How much did this help you understand the project and its impact on you? (Please click in the box to type your answer.)

If you did not know that your company is beginning a new project called [PROJECT NAME], did you know something different? Please enter what you heard in the space below. (Please click in the box to type your answer.)

Please answer the questions below ONLY as they relate to the [PROJECT NAME] project.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The leadership team listens to employee concerns about this project	❍	❍	❍	❍	❍
Project-related information is not reliable and accurate	❍	❍	❍	❍	❍
Project-related information is not easy to find	❍	❍	❍	❍	❍
Project-related Information does not reach me	❍	❍	❍	❍	❍
The leadership team has not explained enough about what this change means	❍	❍	❍	❍	❍
I can easily understand the project-related information that is sent out	❍	❍	❍	❍	❍
The language used in the communication is too hard to understand	❍	❍	❍	❍	❍
I understand how this change will affect my job	❍	❍	❍	❍	❍
I can depend on the truth of the project information I receive	❍	❍	❍	❍	❍
I have the project-related information I need when I need it	❍	❍	❍	❍	❍
Project-related information is freely shared by the leadership team	❍	❍	❍	❍	❍
The leadership team understands employee concerns about this project	❍	❍	❍	❍	❍
My opinions about this project do not count	❍	❍	❍	❍	❍

How would you like to receive information about the [PROJECT NAME] project in the future?

- ❍ Project Awareness Event
- ❍ Manager
- ❍ Department Meeting
- ❍ Project Team Member
- ❍ Project Team Meeting
- ❍ Grapevine
- ❍ E-Mail
- ❍ [PROJECT NAME] Intranet Site
- ❍ Other (please specify)

If you selected "Other" above, please give more details here.

What is your job classification?

- ❍ Director and above
- ❍ Supervisor/manager
- ❍ Non-management - full-time employee
- ❍ Non-management - part-time employee

How long have you worked here?

- ❍ Less than 1 year
- ❍ 1 to 5 years
- ❍ 6 to 10 years
- ❍ 11 to 15 years
- ❍ more than 15 years

How old are you?

- ❍ Less than 20 years old
- ❍ 20 to 30 years old
- ❍ 31 to 40 years old
- ❍ 41 to 50 years old
- ❍ more than 50 years old

What is your gender?

- ❍ Male
- ❍ Female

What is your Department?

- ❍ Corporate Accounting
- ❍ Customer Service
- ❍ Finance and Sales Systems
- ❍ Human Resources
- ❍ IT
- ❍ [Distribution Center] Operations
- ❍ Logistics
- ❍ [Main] Plant Operations
- ❍ Procurement
- ❍ Trade Marketing/Marketing
- ❍ Treasury/Payroll
- ❍ Other (Please Specify)

If you selected "Other" above, please give more details here.

APPENDIX C: PUBLIC UNIVERSITY COMMUNICATION PLAN

Type of Information by Communication Method.

	Meetings	Presentations	Web site	E-mail	News Letters, Newspaper, Bulletins	Info Sessions	Training	Other
High Level Changes/Innovations	✓	✓	✓	✓	✓	✓	✓	
Business Practice Changes	✓	✓	✓	✓	✓	✓	✓	
Reporting Changes	✓		✓		✓	✓	✓	
Technical Changes	✓		✓	✓			✓	✓
Organizational Changes	✓	✓	✓		✓	✓		✓
Training Schedule	✓		✓	✓	✓	✓	✓	✓

Audience by Communication Method

	Meetings	Presentations	Web site	E-mail	News Letters, Newspaper, Bulletins	Info Sessions	Training	Other
Sponsors	✓	✓	✓	✓				
Steering Committee	✓	✓	✓	✓			✓	
University System & Other Campuses	✓		✓	✓				
Implementation Team	✓		✓	✓			✓	
Faculty		✓	✓	✓	✓	✓	✓	
Academic Department Heads	✓	✓	✓	✓	✓	✓	✓	
Departmental Admin Staff		✓	✓	✓	✓	✓	✓	
Student Services Staff		✓	✓	✓	✓	✓	✓	
Help Desk Personnel			✓	✓		✓	✓	
Development Staff	✓		✓	✓			✓	
Students		✓	✓	✓	✓	✓	✓	

Communication Events Timeline and Attendance

Date	**Communication**	**Attendees (if applicable)**
June and July,2007	3 Summer Bulletin articles	
Sept, 2007	University Bulletin article	
Sept, 2007	Present to Deans and Directors Meeting	40+
Oct, 2007	University Bulletin article	
Oct, 2007	Kick-off info sessions in multiple buildings on campus	28 total
Sept, 2008	Help Desk announcing training and asking student attendance	
Oct, 2008	University Bulletin article and calendar notes	

Communication Events Timeline and Attendance, Cont.

Oct, 2008	Internal IT newsletter article	
Oct, 2008	mass email to academic chairs, contact staff, program directors	
Oct, 2008	Info Sessions - multiple buildings on campus	84 total
Fall 2008	External IT Newsletter	
Oct, 2008	University Bulletin calendar notes	
Jan, 2009	Info sessions in IT training area	3 total
Feb, 2009	Assistant Deans Meeting	~14
Feb, 2009	External IT Newsletter article	
March and April, 2009	Present to Multiple departments	106 total
May, 2009	Student Senate Technology Committee	2 stu + 6 staff
May, 2009	Student Newspaper article	
May, 2009	email to all campus	
Spring 2010	Presentations to Colleges (chairs meetings) for each college	
March, 2010	Student Newspaper article	

APPENDIX D: SUMMARY OF FPO COMM. PLAN AND RATIONALE

Overview

Summarizes the importance of communications with stakeholders and customers as well as between project team members and the management team.

Executive Staff Communications

Defines what will be communicated from the project managers to the executive staff as well as when (weekly), how (Outlook distribution list) and what (review project progress, costs incurred to date, expected expenditures required to complete the project, changes to plan, and risks and issues and their proposed mitigations, etc.). A specific schedule was included on the detailed communication plan.

Stakeholder Communications

Defines the standard format that will be used for director-level stakeholders to be delivered weekly via Outlook distribution list and also posted to the corporate intranet site to include: project timeline, achievements and significant activities for the week, new issues or concerns, key decisions, planned activities for the following week and beyond, resource plans, risks, issues and financials. Additionally, Business Process Owners are required to meet with their respective management on a weekly basis or as needed to cover function-specific details.

Core Project Team Communications

Defines meetings of the core project team which will occur weekly between and within all of the functional areas affected by the project, to include: action items, issues, project progress, and integration issues between the consulting team and FPO's internal resources. Additionally, a technical team meeting is held weekly to bring the project managers, the development team and the operations team together.

Reporting Schedule

Reports from the project managers and consultants are scheduled to be submitted to the consulting Project Managers prior to 12:00 noon each Friday. The consulting Project Managers will generate weekly project summary status report from these individual status reports and will provide them to the FPO's Project Manager no later than 8:00AM Monday morning. The consulting reports will be circulated to the FPO team for comment/additions and compiled by 5PM each Monday. The FPO Project Manager will generate a weekly project status for the FPO team by Tuesday at 5PM. These are then combined, and both the detailed and summary reports are sent out via e-mail and posted to the intranet site.

Implementation Project SharePoint Site

The Project Team Collaboration Site: [intranet site] will be accessible to all who are working on the project as well as the CEC membership, director-level stakeholders, key international management. Shared Documents, Statements of Work (SOWs), announcements, contact information and links will be accessible through the site.

End User Communication

Functional team members are to provide communication to the end users throughout the project including specifics about what will be changing in the different functional areas as the team approaches "go live". A company-wide site has been created to facilitate additional FPO project communications. URL: [intranet site]

Vendor/Customer Communications

At appropriate intervals prior to “Go-Live”, a communication will be sent to customers, vendors, and employees to inform them of the new formats for the documents they regularly receive from FPO, such as invoices, payments, purchase orders, etc. These letters will be written by the FPO project manager or business representatives and sent to the appropriate audience. Targeted dates for the communications are at least two to four weeks prior to Go-Live date.

Communication Details

The details of this plan were listed on an attached spreadsheet. This plan will be updated throughout the course of the project and may change dependent on project status and communication needs defined by the consultant and FPO project managers.