TECHNOLOGY AND ORGANIZATIONAL COMMUNICATION

By

Stephanie Marie Pompey

A thesis submitted to the faculty of the University of Delaware in partial fulfillment of the requirements of Master of Arts in Communication

December 1992

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TECHNOLOGY AND ORGANIZATIONAL COMMUNICATION

by

Stephanie Marie Pompey

Approved: 

John A. Courtright, Ph.D.
Professor in charge of thesis on behalf of the Advisory Committee

Approved: 

John A. Courtright, Ph.D.
Chairperson of the Department of Communication

Approved: 

Carol E. Hoffmeyer, Ph.D.
Associate Provost for Graduate Studies
The author wishes to acknowledge the following—

Dr. John Courtright, for his commitment to academic excellence.

Dr. Wendy Samter
Dr. Douglas McCloud, for their commitment to students and this project.

My family, for their commitment to my ultimate success and happiness, academic and otherwise.

And, my thanks to Michelle Warner and the People of MBNA America for making this study possible.

This work is dedicated to—

Terry
Terry II
and Alexis
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ABSTRACT

The purpose of this research was to discover some of the ways people in a large banking institution use technology and the impact on communication. Specifically, three research questions focusing on internal and external communication, work environment, and actual and perceived productivity were explored using observation, interviews and questionnaire.

The study was conducted in the collection department of MBNA America. The questionnaire was distributed to one hundred employees. Ninety-eight percent of the subjects responded to the questionnaire. All respondents were thirty-day collectors or supervisors.

The results of the observations, interviews, and questionnaire indicate that technology does impact the way people communicate in this work environment. Management expectations for the institution of new technology were met in large part.

The technology increased the number of customer/employee interactions and the number of dollars collected. Employees expressed comfort with the technology and the work environment as related to technology use.

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The study propelled several areas for future research. Further questions for exploration can be developed using this study as a basis for developing more detailed premises.

One limitation of the study was the homogeneous nature of the sample. This phenomenon possibly contributed to the lack of variance in the results from the questionnaire. Sampling collectors across levels of delinquency would have added greater depth to the sample.

Particular questions which were not included in this study would have provided more insight to this research and served as a basis for even more detailed investigation using this study as a guide for developing future questionnaires. For example, investigations concerning the individuals who are fired or quit working in the department, and the relationship of supervisor call monitoring and communication would have enhanced this research.
Future research using this study as a basis for developing further questions could focus on exploring the three research questions in detail, using the results from the questionnaire as a tool for research question development. For example, research question one addresses internal and external communication. This study revealed that MIS is used primarily for internal communication while CTA and OCM are used for external communication. Since these technologies have their counterparts in other organizations questions could be developed to explore communication issues as they pertain to MIS use and internal communication.

Furthermore, questions relating to work environment, and productivity in conjunction with the results of the questionnaire can be developed in a similar manner. Combinations of the questionnaire and research questions can be used to developed numerous and detailed research questions for future studies.
Chapter 1

SUMMARY OVERVIEW AND IMPORTANCE

Organizations are created by the processes of communication. As technological knowledge becomes more an issue of a minimum job requirement than expert skill, unique communication issues concerning technology will certainly arise. The repercussions of instituting new technologies would necessarily extend to communication, because the new technologies change the way in which tasks, and the communication which surrounds them, may be done.

Preece (1989) indicates that there are three general objectives that can be applied to the use of new technology: financial and economic, technical and production, and social and organizational. All of these categories have repercussions on the internal and external communication of an organization.

Often, new technology is directly related to improving or in some way changing communication networks and processes. As Culnan & Markus (1987) suggest: "The introduction of new technologies
that alter these communication activities has the potential to influence key aspects of organizational structure and process" (p. 420).

In a much earlier essay, Redding (1964) pointed out that the "very fact of holding a position in an organization determines many of the ways in which a person speaks, listens, writes and reads." Accordingly, the type of technology used by the person who fills that position will also affect communication processes. For example, if the technology used is cumbersome and isolating, then communication will likely be different than if the technology requires and facilitates extensive employee interaction. Some variables to consider are the physical environment created by the technology, personnel changes that occur because of technology use, and altered communication opportunities.

Finally, opportunities for communication may change in type and duration according to the presence of technology in the work place. Because communication is necessary for accomplishing organizational activities, changes in communication through new technologies will affect how the members
of the organization do their tasks. These factors are especially salient when communication is the main function of the organization. In such instances, the introduction of new technology to the production processes also necessarily changes the work tasks that need to be accomplished (McLoughlin & Clark, 1988).

This research will explore this proposed relationship between technology and communication. More specifically, this study seeks to discover some of the ways that people use computers to communicate, how various computer systems affect the work environment and communication structures, and how the use of computers affects organizational members' actual and perceived productivity. I will explore these issues in a descriptive case study of computer adoption in a banking institution.

In their study, Culnan & Markus (1987) say that advocates of new communication technology claim these technologies will make communication more efficient, and will increase both organizational and individual productivity. Further, whenever new technologies alter organizational communication, the
actual structure of the organization may be altered as well.

Many studies use the term new technology. It is important to remember, however, that "new technology" is an arbitrary term. In 1924, for example, Scammell elucidated the do's and don'ts of using the telephone in business. What we now realize, of course, is that today's new and innovative technology is tomorrow's everyday business necessity. In fact, Iacono and Kling (1987) maintain:

Over time they [new technologies] become woven into procedures of organizations and business practices so that they appear indispensable to their users. What was once novel becomes ordinary and taken for granted. (p.117)

The degree to which an innovation (a new technology) becomes an integral and necessary part of the organization reflects, at least in part, the adaptability and success of that technological innovation.

This adaptability aside, the effects a new technology may or may not have on an organization are largely unpredictable. Dimmick (1986), for example, claims that the technological changes in the
communication industry make it difficult to account for and predict changes that will occur as a result of instituting new technology. This "technology assessment" (Short, 1976, p.9) assumes that before assessment there has to be the recognition that the uses of a technology can and frequently do extend beyond the bounds for which the technology was originally intended.

As Williams (1987) suggests, this unpredictability gives rise to a barrage of questions that people have about technology and the effect it will have on their lives. These questions, and whether they are satisfactorily answered, will influence how people feel about their work and how committed they will be to technological success.

In brief, new technologies play an important role in organizations and, more specifically, they directly influence communication in organizations. As a result, when new technologies are introduced in an organization, changes in the communication process as well as the structure of the organization will take place.
In this study, I will investigate three communication issues in connection with the use of a variety of communication technologies in a specific banking institution: namely, Maryland Bank NA. This research will center on the collection department of that bank, and will employ questionnaires, interviews, and observation as data gathering tools (the methodology chapter will further detail this). In particular, I will be seeking information that will address the following three research questions:

1. What impact does technology have on the internally and externally generated communication of managers and organizational members? For example, how does the computer system most frequently used affect the number of people to whom organizational members talk?

2. What impact does technology have on the work environment? For example, how does system use affect managerial roles?
3. What is the relationship between actual and perceived productivity? For example, which system is actually used to collect more money as compared to which system is perceived to collect the most money by employees in the department?

Banking is an industry that relies singularly on communication as the vehicle for conducting business. The power of technology and its effect on communication is apparent. Technology has been a part of the banking industry on a widespread basis (Werneke, 1983). People in the industry assume that the widespread adoption of the various new technologies has had a positive effect on productivity, profit, and job satisfaction. To my knowledge, however, no study has investigated these assumptions in a systematic and rigorous manner. Consequently, this research will attempt such an investigation.

In the following chapter I will review the literature as it relates to my three research questions. "Technology use" refers to my first
of "Productivity."

Question Two: What question three addresses issues of "work environment" refers to.
CHAPTER 2
LITERATURE REVIEW

Technology and its effect on communication issues is an ongoing area for communication research. This literature review will look at some of the relevant investigations as they relate to the three research questions outlined in Chapter One.

Communication and Technology Usage

The first research question addresses how technology is used in an organization. Specifically, what impact does technology have on the internally and externally generated communication of managers and organizational members? Technology can be used and "reinvented" in a variety of ways in organizations for both personal and professional purposes. The way technology is introduced and consequently used in an organization will shape the organization its communication practices.
Meyer & Goes (1988) studied the assimilation of innovations in organizations. They conceptualized assimilation as a nine step process and tracked 300 potential adaptations over a six year period. Their findings suggest that assimilation of technological innovation depends, in part, on a set of previously existing conditions. Their research advanced a model in which the organizational assimilation of advances in technology and innovation of technology are determined by three pre-existing attributes: (1) contextual attributes, (2) innovation attributes, and (3) the attributes arising from the interaction of contexts and innovation. Contextual attributes are those that arise due to the environment and corporate culture. Contextual attributes are specific to a particular organization at a particular point in time. The formality that organizational members use to work on computer systems when the owner is in the office (as opposed to when the owner is absent) is an example of a contextual attribute. Innovation
attributes are those that exist as a result of an innovation. The way people use computers after they are shown extra features is an example. Finally, the attributes that would naturally arise as a result of adapting innovation and context are the third of their pre-existing attributes. Using computers a particular way for work and another way for pleasure is an example of the combination of the two attributes.

Although various technologies may be new, the way we use them may not be (Williams and Rice 1983). For example, a new system may make calling customers more efficient, yet the system is still being used only to contact customers, a function which is not new to the organization. Williams and Rice say we will still interpersonally communicate to relate to other people, run companies, and interact publicly. These authors looked at technological advances in telecommunications and computing, and their organizational implications. In a similar vein, Randolph (1978) focused on the relationship between organizational communication and the organization's technology. While I am attempting to use a
particular organization to look at three broad issues of communication, Randolph (1978) used a field study to conceptualize a model of organization communication. He found support for a theory linking organization technology and communication media. In short, he found that the verbal medium became less predominant as users became more certain and comfortable in their use of technology. He also found that variables other than technology, such as experience, environment, and job satisfaction, are needed to develop an accurate understanding of organizational communication.

Zuboff (1985) stated that technology is not neutral; it shapes and guides the opportunities that it creates. Likewise, inasmuch as pre-existing attributes affect the employee reaction to new technology, technology may also affect the actual ongoing structure of an organization (Barley, 1986). Barley suggests that to understand how technologies affect the structures of an organization, researchers must integrate the "study of social action and the study of social form" (p. 78). He also maintains that people's actions are often shaped by things
out of their control, and it is people's actions that provide the structures for organizations.

I maintain the actions to which Barley refers will impact on how people use technology. For example, the way that people interact on the job will influence how they use technology on the job. As previously stated in this thesis I propose that the converse is also true.

Contrary to Barley's findings, Robey (1981) found few changes in formal structure with the introduction of Computer Information Systems and Management (CISM). He studied eight organizations where CISM was implemented and in five of those organizations there were no changes in formal structure. Where there were changes, he found that they reinforced existing organizational structure.

Robey suggested that CISM is a flexible technology that is compatible with a variety of organizational designs. Such could be the case with a number of technologies that are designed to perform operations in different organizations, e.g., a debt collection system which can be adapted for a variety of collection related organizations.
Technology Use and Management

All categories of technology in organizations affect both management and non-management personnel. However, there are particular issues that are of special concern to management. Increasingly, managers must manage not only personnel, but technology as well. Furthermore, companies that have ignored the increased managerial requirements of new technology have had to deal with "eroded" technology (Ashmore, 1989). According to Ashmore, the technology does not get fully utilized because the needs of management have not been fully addressed. Ashmore adds that some organizations have handled this challenge by creating new positions within the management structure, e.g., Chief Information Officer or Vice President for Information Services.

Whether these new positions are functional is arguable. Gellman (1990) points out that when managing people who handle diverse technologies, the workers can frequently know more about their jobs and the technology than the managers. This is because technology can be specific to a particular task and those who use the technology daily become most
proficient. Managers in this situation can no longer use superior knowledge as a basis for management. This can lead to the necessity for innovative methods of management to allow each employee to work to his or her potential.

Despite these difficulties, managers cannot ignore their responsibilities, especially in the area of planning. Without monitoring and planning, institutions can become dependent on technology to the extent that control is taken out of the hands of the people using the technology. For example, OCM relieves operators of the ability to control their telephone calls. There is evidence that the desire to control resource dependence has led to the suppression of new technology in the work place.

Normally when discussing the management of technology, the use of technology is being explored. Dunford (1987), however, looked at the suppression of technology as a management technique. He maintains that some technology is kept from the work place in an effort to control access and use. That is, some technologies are not released into the work environment in an effort to control resource
Attitudes Toward New Technology

What organizational members think of technology and the meanings associated with it affect how technology is used. Hiemstra (1983) did an ethnographic exploration of the impact that "information technology" has on organizational culture. His description and interpretation of the shared meaning for the term yielded four premises:

1. Information technology is "speeding up" organizational life;
2. Information technology is bringing on a "revolution";
3. "Skeptics" are "oldtimers" and "oldtimers" are probably "skeptics"; and
4. The information technology future is "bigger, brighter, better, faster," though with a danger of being "depersonalized" (p. 812).
These premises give us a glimpse of some attitudes about new technology.

Additional research has examined attitudes about new technology and how those attitudes affect the use of that technology. Elliot and Rosenberg (1986), for example, found that exposure to media science information was positively related to feeling competent about handling technical information, as well as enthusiasm for the implementation of science and technology.

Weick (1985) looked at how people make sense of technology use. He found that people can tolerate problems with other people longer than they can tolerate problems with understanding technology and what it means. Weick also discovered that the electronic world only makes sense when people can go outside the system to comprehend the things the data represent. In other words, people need to have a broader understanding of what the system is relaying than simply the information on the screen.

Huseman and Miles (1988) also investigated the human element in the information age asserting the two major elements of the information age are
computers and humans. In many ways these two components are not complementary; e.g., the rate at which humans and computers process information is vastly different. They go on to say that using computers in ways that are complementary rather than incompatible with humans is challenging and varies with each organizational setting.

Work Environment

The introduction of new technology necessarily changes the physical work environment. People and things have to adjust to accommodate whatever specifications are indicated by the technology. Although computers and other technology no longer take up as much physical space as they once did, technology still has an effect on the "look and feel" of a work space which, in turn, impacts on perceived productivity. Accordingly, my second research question addresses the work environment: What is the impact of technology on work environment?

Environment and Communication

Tushman and Anderson (1986) say that technology is a force that actually shapes
environmental conditions. They observed patterns of technological change in organizations and investigated the effect of those patterns on the work environment. They found that environmental conditions after a technological breakthrough were altered in terms in power structures, growth rates, and competence levels.

In a similar vein, Oldham and Rotchford (1983) found that the office environment influenced worker communication. They looked at several characteristics of office settings and found that there were substantial implications for the way that people work in offices. For example, proximity, noise, and density all impact on the way people communicate. They indicated that further investigation was needed to examine the full range of work environment characteristics that influence worker behavior.

Technologies affect communication because of physical environmental factors and simple usage issues. Pfeffer and Leblebici (1977) indicate that the examination of organizational structure as a dependent variable has become an important aspect of
the literature on organizational communication. They also point out that technology used as a factor in organizational structure has largely been production oriented, i.e., the technology is directly related to increasing some measure of productivity.

**Physical Environment**

The physical environment may also undergo radical changes to accommodate the advent of new technology. Workers may be repositioned, the numbers of employees in a space may be increased or decreased, and machinery may act as barriers to separate or group people. In such circumstances, communication will be affected as well (Redding, 1964). These changes prompted Johnson & Rice (1987) to advocate involving workers in the implementation of new technologies in order to facilitate success with the new technology and increase employee satisfaction. Their findings showed that the chances of success with new technology are increased when workers are involved at the beginning stages of computer implementation. Given the findings from the now 50 year old Hawthorne Studies
(Roethlisberger and Dickson, 1939), this outcome should hardly be considered a surprise since involving workers in the early stages would give them a sense of control and importance.

**Environment and Communication Networks**

Culnan & Markus (1987) include communication networks in the list of factors which form the communication structure that constrains processes of communication. Technology has capabilities that seem to alter dimensions of communication structure such as what the work environment looks like, who can communicate with whom, and the ease of communication. In short, the existence (or absence) of interpersonal networks will influence the degree to which a new technology will be successfully adopted. In turn, the adoption of a new technological innovation will affect the continuance and longevity of these interpersonal networks.

The degree of access to technology also affects communication networks in an organization. Goldhaber et al. (1984) label individuals with access to technology as "liaisons" and those without access as "isolates." Isolates tend to be younger, less
experienced with the system, and to hold less power in the organization. Perhaps more important to this study, isolates tend to withhold information rather than facilitate information flow. This could mean that the more isolates there are in an organization the more stilted and confined communication will be. Identifying and including isolates could have a significant affect on the communication in an organization.

In summary, the impact of technology on organizations and organizational structure is far reaching. Technology not only influences the physical environment, but impacts also on the actual communication structure as well. Markus (1984) says that communication technology will change the very nature of communication in organizations, including who talks with whom, how fast people can communicate, and how accurately.

Clearly, many factors, in combination, determine the work environment of an organization. Roveda and Ciborra (1981) point out that trying to determine the impact of technology is itself difficult because social processes and other
interacting variables are difficult to isolate. In this study, there will be no attempt to isolate the impact of technology. Rather, my goal is to investigate the role some technologies play on certain aspects of organizational communication.

Productivity

Technology has been a part of the banking industry on a widespread basis (Werneke, 1983). The widespread adoption of the various new technologies is assumed to have had a positive effect on productivity and job satisfaction. This assumption, however, deserves and requires empirical examination. Accordingly, my third research question asks: What is the relationship between actual and perceived productivity?

Productivity, Profit, Satisfaction

Increased productivity is most often the primary, if not exclusive, goal held by management when instituting new technology. Sekely (1990) asserts that the main objective for information technology is to add to long-term profitability. The same can be said of the introduction of new
technology in most organizations.

Profitability, however, should be conceptualized quite broadly. Long-term profitability might include making employees more satisfied, thus creating less employee turnover. Because turnover is decreased, profit is maximized. As a result, employee satisfaction with the use of new technology can be a determining factor in whether that technology is viewed as useful and successful.

Steinfield (1985) suggested that since most of the time in particular organizations is spent communicating, improvements to the communication process should have a tremendous impact on the organization and its members. Improved processes of communication will impact on most aspects of organizational survival and productivity. Billings, Klimoski, and Breauh (1977) researched the effect of a massive and comprehensive technological change on an organization. They used a time-series analysis of structured interview data to examine whether
technological change would affect (1) the work and social structure in the organization, (2) absenteeism, and (3) satisfaction of the control group. The researchers found that satisfaction was not affected by the large scale change in technology. This finding was surprising because the technology in this instance was encompassing and involved major aspects of the organization; for example, how and when work could be done.

At the company used for my study, the physical work environment changed as new technology was introduced. Work stations became more streamlined as the technology became less cumbersome. Sutton and Rafaeli (1987) did a study that examined how work stations act as work stressors. Their field study, which acknowledges the Hawthorne effect (Roethlisberger and Dickson, 1939), produced some contradictory results. Reactions to work stations tended to relate to the stations in particular, rather than the work in general. In other words, workers had reactions to the change in work station, but the work continued to be dealt with as usual. The results suggest that the characteristics of work
stations may not be work stressors.

Productivity is quantified in a variety of ways, depending on organizational type, personal goals, and organization position. Williams and Rice (1983) say that much of the new technology used for communication is sold by the promise of increased productivity. Without a clear and mutually agreed upon definition of productivity, however, determining whether a particular technology fulfilled its promise of increased productivity is difficult. In general, management's goals for the new technology are increased productivity, as well as employee satisfaction. For the purpose of this study, increased productivity will be defined as fulfillment of the specific goals of the department under study. That is: Are the collectors collecting more money?

Summary
This case study will examine the three broad areas of organizations, usage, work environment, and productivity as they relate to communication issues.
The available body of literature does not contain research which addresses these issues in this way. While several authors (Hiltz and Turoff, 1981; Picot et al., 1984; and Rice and Barnett, 1985) have used field studies to investigate the effect of technology on organizational members, none have addressed the three particular areas of interest in one body of work.
Chapter 3

METHODS

The three questions I wish to explore focus on technology usage and its relationship to communication, the work environment, and productivity. I used a questionnaire to obtain information about the effects of introducing new computer and telecommunication technology within a large banking institution. This study examined this particular institution in order to gain a greater understanding of how technology affects a variety of communication processes and organizations in general.

There were three communication technologies particular to this study. They were Management Information System (MIS), Outbound Call Management (OCM), and Collection Tracking Analysis System (CTA). MIS is an interactive computer system available for a variety of purposes for a diverse number of organizations. This system can send and receive messages, assist in time management, and help managers organize their organizational obligations.
OCM is a system used by collectors to initiate, maintain, and follow through on customer contact. Collectors log on to the system and can be connected to customers and receive both account history and personal data provided by the system.

Finally, CTA is an interactive system that can be used to locate and track accounts. The system can be used to help the collector maintain statistical information on all accounts in general or particular individual accounts.

Procedure

The data for this study were gathered by administering a questionnaire to managers and employees in the customer assistance or collections department at the Maryland Bank NA in Newark, Delaware. The questionnaire gathered data that will address the proposed research questions and hopefully provide insight toward developing answers to those questions.
Sample

A questionnaire was distributed to 100 employees in the collection department of MBNA. Participants were given the questionnaire, a cover letter, and an answer sheet. Micheal Warner, Vice President Customer Assistance, distributed the questionnaires to collectors and managers, who returned the questionnaires to Warner upon completion.

Ninety-eight of the 100 distributed questionnaires were returned. The sample consisted of 49 males and 48 females. Ninety-eight percent of the respondents are full-time employees and ninety percent have been collectors for less than one year. The questionnaires were not signed and all responses are anonymous.

Demographics

The seven demographic questions refer to age, experience at MBNA, experience as an MBNA collector, gender, full- or part-time status, computer experience, managers and non-managers.
The demographic profile of the respondents is displayed in Table 1. None of the respondents are under 21, 72% are between 21 and 25 years old. The rest of the respondents answered as follows: 18.6% are between 26 and thirty years old, 5.2% between 31-35 years and 4.1% are over 35.

Almost all of the respondents have been working for MBNA for less than one year (over 70%). Over 24% have been at the bank for 1-3 years, 4% 4-6 years and 1% have been working there for over six years.

Nearly 87% of the respondents said that they have been collectors for less than one year. Over 12% have been collecting for MBNA for 1-3 years, and 1% for over seven years. These responses indicate a fairly homogeneous sample as related to age and overall work experience. Most of the people are fairly new to collecting at the bank and likely also new to the computer systems examined in this study.

Fifty-one percent of the sample are male and 49 percent female. Almost all respondents are full-
Table One, Percent Answers For Demographic Questions

<table>
<thead>
<tr>
<th>AGE</th>
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<tr>
<td></td>
<td>Under 21</td>
<td>21-25</td>
<td>26-30</td>
<td>31-35</td>
<td>over 35</td>
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<td>TIME WORKING FOR MBNA</td>
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<td>less than one year</td>
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<tr>
<td>1-3 years</td>
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<td>4-6 years</td>
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<td>over 7 years</td>
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</tr>
<tr>
<td>part time</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PREVIOUS EXPERIENCE WITH COMPUTERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>none</td>
<td></td>
<td>9.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than one year</td>
<td></td>
<td>21.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-4 years</td>
<td></td>
<td>49.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-8 years</td>
<td></td>
<td>18.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>over 8 years</td>
<td></td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURRENTLY SUPERVISING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>61.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>92.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
time employees (98%). Most people had some computer experience before working at MBNA with slightly more than 9% saying that they did not have any computer experience. Over 21% said they had less than one year of computer experience before being hired by MBNA, 49% had 1-4 years experience, over 18% had 4-8 years experience, and 2% had worked on computers for over eight years before working at MBNA.

The percentage of people who supervise individuals is representative of the population as a whole. Almost 93% of the respondents did not supervise.

To summarize, the "typical" respondent in this study was a male or female less than thirty years old who has been working for the bank less than three years. Most respondents are full-time employees who have been collecting for less than one year.

Questionnaire Development

The questionnaire was developed using a variety of sources for guidance. My own experience and knowledge of MBNA and the changes with the new
These influences will be examined by calculating frequencies, and cross tabulations will be calculated for all questions on the questionnaire.
Chapter 4
RESULTS

One hundred employees in the customer assistance department of Maryland Bank, NA in Newark, Delaware were given copies of the questionnaire and cover letter. Ninety-eight of the sample were respondents. Fourteen of the respondents gave answers to one or more of the open-ended questions. Five people answered both questions, five people answered question 36 and four people answered question 37.

Most of the cross tabulations, as described in chapter three, did not produce statistically useful results. The homogeneous nature of the responses made the frequency of occurrence in most categories very small or non-existent. For example, any cross tabulations using question seven had a preponderance of the respondents giving the same answer for that question. The result was that some cells did not contain a sufficiently large frequency
count to provide valid tests of significance. Even with various attempts to collapse categories, most cells still had an insufficient number of responses. The data do provide a wealth of descriptive information that I will explore in this chapter.

Tables 2-4 divide the questionnaire according to the three research issues of (1) technology usage and communication, (2) work environment, and (3) productivity. Demographic information will relate to each of the sub-divisions. Under each of the three headings are general questions that relate to that section. Following each of these questions are the numbers from the questionnaire that address that question.

**Technology Usage and Communication**

Research question one refers to technology and communication.

1. How does the use of new technology impact the internally and externally generated communication of managers and organizational leaders?
This section will examine this question according to table two which lists percent answers for research questions one Questions 8, 9, 10, 11, 13, 22, 23, 24, 25, 26, 27, and 28 refer to technology use and communication.

Collection Tracking System (CTA) is the newest system in this study. The system had been in use less than two months at the time the respondents answered the questionnaire. Despite this newness, ninety-nine percent of the respondents said that they used the CTA system almost every day. Thus, both collectors and managers alike use the new system regularly. The 1% of respondents who answered other than almost everyday said they used CTA at least once a week.

Seventy-eight percent said that they rely on the CTA system more than the other two systems to help with their job functions. Accordingly, over 87% of the respondents felt very comfortable using CTA, and over 12% felt somewhat comfortable using it. No one felt entirely uncomfortable using the system.

Outbound Call Management (OCM) is an automatic calling system that almost all of the sample (94.9%) used almost everyday. The
### Table Two, Percent Answers For Research Question One

How often do you work on the following systems?

<table>
<thead>
<tr>
<th>System</th>
<th>not at all</th>
<th>once a month</th>
<th>once a week</th>
<th>almost everyday</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTA</td>
<td>0</td>
<td>0</td>
<td>1.0</td>
<td>99.0</td>
</tr>
<tr>
<td>OCM</td>
<td>0</td>
<td>0</td>
<td>4.1</td>
<td>94.9</td>
</tr>
<tr>
<td>MIS</td>
<td></td>
<td></td>
<td>5.3</td>
<td>6.3</td>
</tr>
</tbody>
</table>

**COMMUNICATION PARTNERS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>supervisors</td>
<td>2.0</td>
</tr>
<tr>
<td>co-workers (peers)</td>
<td>5.1</td>
</tr>
<tr>
<td>customers</td>
<td>14.3</td>
</tr>
<tr>
<td>outside vendors.</td>
<td>78.6</td>
</tr>
</tbody>
</table>

**COMPUTER USE AND COMMUNICATION**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>seldom</td>
<td>2.0</td>
</tr>
<tr>
<td>sometimes</td>
<td>5.1</td>
</tr>
<tr>
<td>frequently</td>
<td>14.3</td>
</tr>
<tr>
<td>almost always</td>
<td>78.6</td>
</tr>
</tbody>
</table>
Table Two Continued

SYSTEM USED FOR MOST COMMUNICATION

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CTA</td>
<td>27.6</td>
<td></td>
</tr>
<tr>
<td>OCM</td>
<td>71.4</td>
<td></td>
</tr>
<tr>
<td>MIS</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

SYSTEM RELIABILITY

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CTA</td>
<td>78.1</td>
<td></td>
</tr>
<tr>
<td>OCM</td>
<td>19.8</td>
<td></td>
</tr>
<tr>
<td>MIS</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

INTERDEPARTMENTAL COMMUNICATION

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>everyday</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>at least 3 times per week</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>once a week</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>less than once per week</td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td>I do not use it</td>
<td>87.4</td>
<td></td>
</tr>
</tbody>
</table>

NON-COLLECTION COMMUNICATION

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>everyday</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>at least 3 times per week</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>once a week</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>less than once per week</td>
<td>80.0</td>
<td></td>
</tr>
</tbody>
</table>

How comfortable do you feel using the following?

CTA

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>very comfortable</td>
<td>87.8</td>
</tr>
<tr>
<td>somewhat comfortable</td>
<td>12.2</td>
</tr>
<tr>
<td>not at all comfortable</td>
<td>0</td>
</tr>
</tbody>
</table>

OCM

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>very comfortable</td>
<td>86.6</td>
</tr>
<tr>
<td>somewhat comfortable</td>
<td>13.4</td>
</tr>
<tr>
<td>not at all comfortable</td>
<td>0</td>
</tr>
</tbody>
</table>
Table Two Continued

<table>
<thead>
<tr>
<th>MIS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>very comfortable</td>
<td>11.2</td>
</tr>
<tr>
<td>somewhat comfortable</td>
<td>8.7</td>
</tr>
<tr>
<td>not at all comfortable</td>
<td>66.2</td>
</tr>
</tbody>
</table>
remaining respondents said they used the OCM system at least once a week. Almost 20% of the sample said they rely on OCM more than the other systems to help them with their job functions. Most people (86.6%) felt very comfortable using OCM as well. Over 13% felt somewhat comfortable and no one felt uncomfortable.

MIS is the Management Information System used primarily by supervisors. This system integrates the activities of organizations. Daniels and Spiker (1987) maintain that this system performs a variety of management and coordinating functions in a way that can prove vital to an organization.

This endorsement notwithstanding, the respondents in this study painted a somewhat different picture. Over 83% of the sample said they never use MIS. This is in line with the number of people who said they do not supervise people (92.9%). Similarly, no one who responded to the questionnaire thought that MIS was most helpful with the job functions. Of those who use MIS, 80% said they use it less than once a week. Accordingly, over 66% said they were not at all comfortable using OCM. Almost
9% felt somewhat comfortable and more than 11% said they were very comfortable with the system.

Nearly 89% of the sample said they spend most of their work day communicating with customers. Over 11% said they spend most of their work day communicating with co-workers. Again, this is in keeping with previously cited data. MIS is not used for direct customer communication. Hence, the percentage of people who never use MIS is commensurate with the number of people who spend their day talking with customers. The people who say they never use MIS are the same people who say they use the computer to help them communicate. However, some of the people who use MIS also say that the computer helps them communicate. Likewise, almost 93% of the respondents said that they use the computer to help them communicate frequently or almost always.

Clearly, as previously stated, new technology does impact internally and externally generated communication. The technology examined in this study have particular impact on the
communication in this organization. Two of the technologies (CTA and OCM) have their main impact on external communication, while the other (MIS) mainly impacts internal communication.

According to the data gathered, CTA and OCM greatly influence the number of people contacted outside the organization. Further, these systems influence the way people communicate. OCM has been in use since 1988. The advent of OCM represented the integration of the telecommunication systems and the computer system. This integrated system brings accounts up on a screen, calls accounts and eliminates busy signals automatically. This high degree of automation resulted in a substantial increase in customer contacts. According to company records, before the institution of OCM, collector calls averaged about 30 calls per hour and four to five quality customer contacts. After consistent use of the OCM system, contacts reached an average of 11 per hour. Collectors reported that they used OCM daily and felt that its use was helpful in reaching their collection goals.

In addition, the system eliminated the need for manual searching and dialing in many
collection situations. Clerical processes were nearly completely eliminated from the daily tasks of the collection representatives. Further, collectors no longer initiated their own work, but had access to more information about the customer in an easy to access format.

Not only did OCM impact the volume of the calls, but the nature of the calls was influenced as well. The added information available to the collectors allowed the collectors to interact with customers more confidently according to management assessments of computer use as described in earlier interviews with Mike Warner.

The CTA system went on line in March 1992. CTA updated existing systems within the bank and integrated the computer systems. The CTA system is table driven, user friendly, and allows for user interface with the bank's SSBA (an on line data organization system). The system allows for more control over the distribution of accounts and account routing.

However, some anecdotal information obtained from the open-ended questions indicates that the bank
may not have been as successful in its attempts at integration as it hoped.

The collectors who answered this survey indicate that they have overall positive feelings about both OCM and CTA. Their responses also indicate that they perceive that these computer systems have had an impact of both internal and external communication. Collectors indicate that they spend most of the time communicating with people outside the organization. This questionnaire, however, points to the fact that internal communication has been more profoundly impacted by the technology.

For managers, on the other hand, this would not seem to be the case. The managers who responded to this survey indicate similar perceptions about the productivity of both OCM and CTA as the collectors. However, the managers also have experience using MIS that is not shared with collectors. Where OCM and CTA have their largest impact on external communication, MIS has its impact on internal communication. The system allows managers to talk with each other and have access to a variety of information. The system allowed for convenient
prioritization and provided a central storehouse for information.

Work Environment

Question two refers to work environment. Work environment affects the way things can be done in an organization. Obviously, work environment will impact communication networks and other communication issues. Technology shapes and influences work environment in a variety of ways. Hence, Question two asks:

2. How does technology impact the work environment and communication networks?

Questions 10, 12, 18, 29, 22, 30, 31, 32, 33, 34, and 35 are designed to address issues surrounding the work environment. See Table 3 which illustrates the percent answers for research question three.

Over 61% of the sample said that when they need help in performing a daily task they are most likely to go to a peer for help. Almost 38% go to their manager for help while only 1% go to someone outside their department.

Volume of incoming and outgoing communication influences the nature of the work environment as well
Table Three, Percent Answers For Research Question Two

<table>
<thead>
<tr>
<th>HELP SEEKING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>co-worker</td>
<td>56.1</td>
</tr>
<tr>
<td>supervisor</td>
<td>42.9</td>
</tr>
<tr>
<td>someone outside your department</td>
<td>1.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMMUNICATION WITH CUSTOMERS PER HOUR</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 2</td>
<td>2.0</td>
</tr>
<tr>
<td>3-8</td>
<td>7.1</td>
</tr>
<tr>
<td>9-14</td>
<td>13.3</td>
</tr>
<tr>
<td>15-20</td>
<td>34.7</td>
</tr>
<tr>
<td>over 20</td>
<td>42.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPUTER ELIMINATES TEDIOUS FUNCTIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>87.7</td>
</tr>
<tr>
<td>no</td>
<td>12.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FREQUENCY OF COMPUTER ASSISTANCE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>almost never</td>
<td>6.1</td>
</tr>
<tr>
<td>sometimes</td>
<td>12.2</td>
</tr>
<tr>
<td>often</td>
<td>12.2</td>
</tr>
<tr>
<td>almost always</td>
<td>69.4</td>
</tr>
</tbody>
</table>

For the following three questions work environment refers to the physical setting in which you work (for example, desk position, noise, space etc.)

<table>
<thead>
<tr>
<th>ENVIRONMENT FACILITATES CONVERSATION WITH CO-WORKERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td>7.4</td>
</tr>
<tr>
<td>somewhat</td>
<td>45.3</td>
</tr>
<tr>
<td>a great deal</td>
<td>47.4</td>
</tr>
</tbody>
</table>
### Table Three Continued

**ENVIRONMENT FACILITATES COMMUNICATION WITH SUPERVISORS**

<table>
<thead>
<tr>
<th>Perception</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td>10.5</td>
</tr>
<tr>
<td>somewhat</td>
<td>44.2</td>
</tr>
<tr>
<td>a great deal</td>
<td>45.3</td>
</tr>
</tbody>
</table>

**ENVIRONMENT FACILITATES COMMUNICATION WITH CUSTOMERS**

<table>
<thead>
<tr>
<th>Perception</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td>1.1</td>
</tr>
<tr>
<td>somewhat</td>
<td>26.1</td>
</tr>
<tr>
<td>a great deal</td>
<td>72.7</td>
</tr>
</tbody>
</table>
as how comfortable the work environment is perceived to be. Most of the collectors talk to more than 15 people in one hour. Nearly 42% said that they talk to over 20 people in an hour. Almost 35% talk to 15-20 people, more than 13% spoke to between 9 and 14 people, over 7% talked to 3-8 and 2% of the respondents talked with less than two people an hour.

One of the stated management goals of instituting technology is the elimination of tedious parts of the job; for example, dialing phones, clerical work, information seeking, etc. Almost 88% of the respondents answered that they felt that the use of computers eliminated tedious parts of their job that they would rather not do.

Most of the employees in this department spend their work day talking with customers. Hence, it is not surprising that more respondents thought that the work environment made it easy to talk with customers.

In contrast, when asked if the work environment made it easy to talk with co-workers less than 48% said a great deal, over 45% said
somewhat and over 7% said not at all. When asked if the work environment made it easy to talk with supervisors, over 45% said a great deal, 44% said somewhat and over 10% said not at all.

Talking with customers seems to be amicable in relation to the environment. Almost 73% said a great deal, just over 25% said somewhat and 1% said not at all.

Technology can change the very nature of the work environment, including who talks with whom. In this organization technology had an enormous impact on various aspects of the organization. Since all the respondents to my questionnaire are relatively new, they could not be aware of what it was like to work in the paper driven office. The respondents did, however, support the supposition that technology has impacted the work environment.

Paper work in the collection department has been reduced with the advent of each new technology. Respondents are using the additional information provided by the new computers and the information is not causing an increase in the need for hard copies or paper work. In addition, the look of the office
has changed because of the new technology. Computers are on every desk and the vast amount of information provided does not take up a significant amount of space.

Further, the nature of the environment has changed substantially. Management interviews indicate that prior to the new technology, supervisors played a greater role in the daily work lives of employees. Clerical functions no longer play as great a role in the duties of collectors. Furthermore, technology provided the introduction of a new element in the communication network, the system/management liaison.

Productivity

The third question refers to productivity. Communication is central to the productivity goals of the organization as previously stated. The technology used to facilitate communication should impact on the organization in some way. Accordingly, my final research question asks:

3. What impact does the use of technology have on actual and perceived productivity and improving communication.
Questions 12, 14, 15, 16, 17, 19, and 21 refer to productivity. These questions and percentage of respondents providing various answers are displayed in Table 4.

To be clear, productivity in this study refers to collecting money. Before the collectors can collect money, however, they must communicate with a large number of people. The majority of respondents said that the OCM system put them in contact with the largest number of people. Just under 63% of the respondents said that they use the OCM system to communicate with the largest number of people. Slightly more than 36% said they use CTA to communicate with the largest number of people. No one said they used the MIS system to communicate with the largest number of people.

When asked how much the three systems increase ability to collect money, 81% said that CTA increased ability a great deal. More than 17% said somewhat. One percent said not at all. Nearly 81% said that OCM helped a great deal. Over 18% said somewhat and 1% said not at all. In
Table Four, Percent Answers For Research Question Three

<table>
<thead>
<tr>
<th>SYSTEM USED FOR VOLUME</th>
<th>36.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTA</td>
<td></td>
</tr>
<tr>
<td>OCM</td>
<td>62.9</td>
</tr>
<tr>
<td>MIS</td>
<td>0</td>
</tr>
</tbody>
</table>

How much do the following systems increase your ability to collect money:

<table>
<thead>
<tr>
<th>CTA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td>1.0</td>
</tr>
<tr>
<td>somewhat</td>
<td>17.3</td>
</tr>
<tr>
<td>a great deal</td>
<td>81.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OCM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td>1.0</td>
</tr>
<tr>
<td>somewhat</td>
<td>18.4</td>
</tr>
<tr>
<td>a great deal</td>
<td>80.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td>84.0</td>
</tr>
<tr>
<td>somewhat</td>
<td>12.8</td>
</tr>
<tr>
<td>a great deal</td>
<td>3.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SYSTEM MOST USEFUL IN COLLECTING MONEY</th>
<th>62.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTA</td>
<td></td>
</tr>
<tr>
<td>OCM</td>
<td>37.8</td>
</tr>
<tr>
<td>MIS</td>
<td>0</td>
</tr>
</tbody>
</table>

How often hardcopy is required:

<table>
<thead>
<tr>
<th>HOW OFTEN HARDCOPY IS REQUIRED</th>
<th>78.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>seldom</td>
<td></td>
</tr>
<tr>
<td>sometimes</td>
<td>13.3</td>
</tr>
<tr>
<td>frequently</td>
<td>7.1</td>
</tr>
<tr>
<td>almost always</td>
<td>1.0</td>
</tr>
</tbody>
</table>
an expected reversal, 84% said that MIS did not at all increase ability to collect money. Almost 13% said MIS somewhat increased ability to collect money and 3% said that MIS increased ability to collect a great deal. Most people said that they found CTA system most helpful in collecting money. More than 62% said that CTA was most helpful. Nearly 38% said OCM was most helpful, and no one thought that MIS was most helpful.

Another goal of management in instituting technology is the elimination of excessive paper work. Management may have reached that goal. Only 1% said they almost always require a hard copy of the work they do on computer. Seven percent said frequently, more than 13% said sometimes, and over 78% said seldom.

TBT is the system that lists actual productivity statistics such as amount collected, increases, decreases and trends over time. Collectors who avail themselves of this information have an accurate way of assessing their productivity in a variety of ways. Almost 71% use TBT at least weekly. Nearly 47% use TBT daily, over 7% biweekly,
almost 17% weekly, and 29% almost never.

These data show that most people use the TBT system on some regular basis, to help them assess their productivity. This could mean that people have a more accurate picture of how they are doing on the job than they did before the new technology was used. Again this supports the expectations and hopes articulated by management concerning implementing new and sometimes costly technology.
Chapter 5

DISCUSSION

While these data did not provide the substance for statistical tests concerning the nature of technology and organizations, they did provide a wealth of information regarding the premise that technology use does affect the way people communicate in organizations. The answers to the three research questions provide a guideline for further study and investigation. Together, the questions reveal that people, at least in this case study, are affected each working day by the technology they use to complete their assigned tasks. This general observation is not surprising in light of research done by Culnan & Markus (1987), Werneke (1983), and Williams and Rice (1983). They all say, although in different contexts, that communication and technology are intricately linked and that technology affects the communication that occurs in organizations.
Technology use and communication

The findings from this study reveal that the use of particular technology does impact on how people communicate. The technology explored in this study guided the frequency and nature of communication. Individuals who used technology with the capacity to facilitate interaction with vast numbers of people spent more time talking with people. In contrast those participants who used technology to enhance internal communication tended to have less communication external to the organization. The proposition that communication technology can impact on people's behavior is well supported in general, and particularly the literature review chapter of this thesis. Williams and Rice (1983), for example, looked at telecommunication and computing and found that computers influenced communication in a manner very similar to that discovered in this study.

The people who participated in this survey indicated that they almost always rely on some technology to help them communicate. They use
technology to order, to organize, and to conduct the large majority of their job-related functions. Technology use is central to their job descriptions and communication is central to the performance of their work duties. Zuboff (1985) states that the technology molds the nature of communication. These respondents spend most of their work day using computers and other telecommunication technology. Naturally, with technology use and communication so intimately intertwined in the respondents' job function, there were definite patterns in communication and technology use among the respondents. The sample of respondents studied is entirely computer literate in proportions not likely found in the general population. Most of the respondents spend their days talking with customers and simultaneously working on one of two computer-based systems. The responses indicate that collectors rely on those systems to help them communicate with large numbers of people, and to assist them in those communication activities.

Most of the participants in this study feel comfortable with the computer systems they
use most frequently. Because the collectors questioned also report that the systems they use most makes them most productive, it may be reasonable to connect feelings of comfort with feelings of productivity. Even though the CTA system has been in use a shorter time than the other two, more people report feeling very comfortable with this system than the other two. Furthermore, they report that this system helps them collect more money, and assists them in their job functions more often. Just as Robey (1981) found in his study of the CIS system, the CTA system used by the participants in this study may be a flexible system that is created for organizational adaptability.

These findings fall in line with management expectations for the new technology as stated by Micheal Warner, company contact person and Vice President of Customer Assistance. Management instituted the expensive CTA system with the hope that it would be easy for collectors to use, enhance current collector duties and help collectors be more efficient in collecting money from past due accounts.
Organizations often invest in computers because they hope they will have a positive impact on the profitability of their business. The hope is that employees will use computers to enhance production with as few negative repercussions as possible. If the communication technology can have the impact that is intended by managers, organizations will be positively impacted.

Work environment.

Almost all of the respondents said they stay within the department to find solutions to everyday problems. More than half the respondents rely on co-workers more than managers to help them with their daily problems, and the work environment as previously described facilitates this.

Mcloughlin & Clark (1988) indicate that the introduction of technology leads to a tendency for erosion in the role of the first line supervisor. At MBNA, the first line supervisors deal directly with collectors rather than customers. The new technology provides information and assistance once obtained from the front line supervisor. Provided that at some point in MBNA history people tended to turn to
their supervisors for help, this study supports management's conclusion.

Previous research indicates that technology is supposed to make organizational life easier in many respects, as well as impose demands on managers and other organizational members (Hulin and Roznowski, 1985, Randolph, 1978, Zuboff, 1985, Barley, 1986, and many others). The respondents overwhelmingly indicated that they believed the use of computers eliminated tedious parts of their jobs. Further, computer literacy demands are a routine part of employees' tasks. Ideally, this leaves additional time for actual collection duties thereby resulting in increases in productivity.

The customer assistance department at MBNA uses computers to assist their communication with customers. Most of the respondents said that the overall environment made it easy to communicate with the people they need to communicate with in their organizational lives. The people they talk to most, customers, were found to be especially easy to talk to in the work environment.
Productivity.

For the purposes of this study, productivity is operationalized as the number of people contacted and the amount of money collected. The computer system considered most helpful in collecting money by collectors is the CTA system. One might conclude that CTA would also be the system that participants use to communicate with the largest number of people. However, OCM was selected by most of the respondents as the system that they use to communicate with the largest number of people.

This seeming inconsistency might be due to the relative newness of the system. According to Tushman and Anderson (1986) the newness of the system should have altered power structures and growth rates. This is not the case in this study. Most collectors have been only working on the system a couple of months at the time of this writing and there was no apparent change in these components at the time according to observation and conversations with management.

CTA and OCM received similar levels of response to the question of how much the systems
increase the employees' ability to collect money. TBT statistics clearly show steady increases in dollar amounts collected as new technology is introduced and assimilated. Regardless of system use, most respondents functioned without regular need of backup information in the form of hard copies of the work they did on computer. Clearly at this organizational site paper work was reduced with the institution of new technology. This resulted in large scale changes in the organization.

The need for a large clerical staff to manage the paper work was eliminated. Further and more significantly, the nature of the role of collector was altered. Again, this is exactly in line with the findings of previous researchers as indicated in the literature review. Collectors are now able to devote more of their resources to the task of collecting and less time is needed for "maintenance" functions. If this were extended to average work situations where the computer is used as an integral part of the job, then job descriptions would be shorter and more precise. A larger part of a given job becomes the actual execution of the task. Clearly, this would
have a profound affect on the nature of work. 
Significantly, in the working of this organization, 
according to Goldhaber's (1984) description of 
liaisons and isolates, this organization is one with 
a preponderance of liaisons. These issues provide 
the basis for further research in this area. 

General Information. 

The open-ended questions are as follows: 

36. In what ways do you now use the computer 
for which you were not originally 
trained? 

37. What suggestions do you have for 
improving any or all of the systems that 
you work with? 

Eight people gave a response to Question 36. Five 
people mentioned using the system to check on 
accounts and keeping them up to date as part of their 
response. Three people said they used the system to 
schedule times to call back customers. Question 36 
was asked to obtain information about issues of 
innovations. Clearly not enough of those sampled 
responded to get any coherent impression of 
innovation in this organization.
Likewise with Question 37, eight people wrote an open-ended response. Four people wrote about improving system interaction in their response, and four people mentioned making the systems more amenable to actual job functions. Although the number of responses to these questions was small, the fact that all answers fell into two categories is interesting to note and may indicate an area of further exploration for management concerns or future research.

Limitations

This study was conceived and constructed with the hope of obtaining additional information about the nature of organizational communication and its relationship to the use and impact of technology. In large part that goal was achieved, although several things would have contributed to a more comprehensive study with even more useful results.

The sample size for this study was one hundred employees. While that number is certainly large enough to draw reliable general observations, a larger sample would have allowed for a more in-depth and systematic study of the three research questions because the likelihood of having so many empty
categories would have been less. This would have resulted in the possibility of using more rigorous and statistically significant measures.

In addition, gathering data from respondents who work outside of the collection department would have added perspective to this study. By doing research outside the department, some possible idiosyncrasies of this particular department could have been weeded out, thus adding to the usefulness of the study.

Conclusion

This study presents an overall positive impact for the use of communication technology in this institution. As in the Picot (1984) study, there is a positive sense of new technology and its effect on task performance at Maryland Bank NA. The expectations of management for this technology appear to have been met to a large degree. The three areas of focus for this study--use, environment and productivity-- have obviously been affected by the introduction of technology.

With the information garnered in this study, further research can be pursued in the area of the
three research questions. If similar studies are conducted in other banking institutions, collection agencies as well as other industries, then analysis can be done to formulate more specific research questions and hypothesis on technology, communication and organizations. These studies should address the concerns previously listed in this chapter. Addressing the research questions separately could allow for an opportunity for a more rigorously scientific examination using the information gathered in this study as a basis for asking questions.

While it is not within the scope of this study to provide conclusive answers for the three posed questions, this study does provide a basis to develop further questions about the links between communication and organizational technology.
Appendix A

March 20, 1992

This questionnaire is designed to discover the ways that people use computers in the work place. The results of the questionnaire will be used to explore how various systems affect the work environment and how the use of computers affects communication networks. The information collected will be used as part of a masters thesis in partial fulfillment of the requirements for the Master of Arts degree in communication at the University of Delaware.

You are not obligated to answer any questions on the questionnaire. You may choose to decline to answer any or all questions or discontinue participation at any time. While the departmental answers may be examined to discover general trends at no time will individuals be identified to discover answers to specific questions. The results of your answers and your identity are entirely confidential. Your participation is appreciated. The questionnaire should take approximately 15 minutes to complete.

Thank You,

Stephanie M. Pompey
University of Delaware
QUESTIONNAIRE

1. Your age is-
   a. Under 21
   b. 21-25
   c. 26-30
   d. 31-35
   e. over 35

2. You have been working for MBNA America-
   a. less than one year
   b. 1-3 years
   c. 4-6 years
   d. over 7 years

3. You have been working in the customer assistance department for MBNA America-
   a. less than one year
   b. 1-3 years
   c. 4-6 years
   d. over 7 years

4. You are-
   a. male
   b. female

5. You work at MBNA America-
   a. full time
   b. part time

6. Did you have experience working on computers before working here-
   a. no
   b. less than one year
   c. 1-4 years
   d. 4-8 years
   e. over 8 years

7. Do you currently supervise people-
   a. yes
   b. no
How often do you work on the following systems?

8. CTA-
   a. not at all
   b. once a month
   c. once a week
   d. almost everyday

9. OCM-
   a. not at all
   b. once a month
   c. once a week
   d. almost everyday

10. MIS-
    a. not at all
    b. once a month
    c. once a week
    d. almost everyday

11. Who do you spend most of the work day communicating with?
    a. supervisors
    b. co-workers (peers)
    c. customers
    d. outside vendors.

12. Which system do you use to communicate with the largest number of people?
    a. CTA
    b. OCM
    c. MIS

13. How often do you use the computer to help you communicate?
    a. seldom
    b. sometimes
    c. frequently
    d. almost always

How much do the following systems increase your ability to collect money?

14. CTA
    a. not at all
    b. somewhat
    c. a great deal
15. OCM  
a. not at all  
b. somewhat  
c. a great deal  

16. MIS  
a. not at all  
b. somewhat  
c. a great deal  

17. If you use more than one system which do you feel is most helpful in collecting money-  
a. CTA  
b. OCM  
c. MIS  

18. If you have a problem performing one of your daily tasks who do you most often turn to for help-  
a. co-worker  
b. supervisor  
c. someone outside your department  

19. How often do you require a hard copy of the work you do on a computer-  
a. seldom  
b. sometimes  
c. frequently  
d. almost always  

20. If you need assistance in performing one of your daily tasks who would you most likely go to for help-  
a. peer  
b. your manager  
c. someone outside your department  

21. How often do you look at the statistical information made available by TBT-  
a. almost never  
b. weekly  
c. biweekly  
d. daily  

22. On which system do you communicate with the largest number of people-  
a. CTA  
b. OCM  
c. MIS
23. Overall, which computer system do you rely on most to assist you with your job functions—
   a. CTA
   b. OCM
   c. MIS

24. If you use the MIS system how often do you use it for inter departmental communication
   a. everyday
   b. at least 3 times per week
   c. once a week
   d. less than once per week
   e. I do not use it

25. If you use the MIS system how often do you use it for non collection related communication—
   a. everyday
   b. at least 3 times per week
   c. once a week
   d. less than once per week

How comfortable do you feel using—

26. CTA
   a. very comfortable
   b. somewhat comfortable
   c. not at all comfortable

27. OCM
   a. very comfortable
   b. somewhat comfortable
   c. not at all comfortable

28. MIS
   a. very comfortable
   b. somewhat comfortable
   c. not at all comfortable

29. How many people do you usually talk to in one hour
   a. less than 2
   b. 3-8
   c. 9-14
   d. 15-20
   e. over 20

30. Do you feel that the use of computers eliminates tedious parts of your job that you would rather not do—
   a. yes
   b. no
31. How often do you use the computer to assist your communication-
   a. almost never
   b. sometimes
   c. often
   d. almost always

32. Do you normally work-
   a. 40 or more hours per week
   b. less than 40 hours per week

For the following three questions work environment refers to the physical setting in which you work. (for example, desk position, noise, space etc.)

33. Does your work environment make it easy to talk with co-workers-
   a. not at all
   b. somewhat
   c. a great deal

34. Does your work environment make it easy to talk with supervisors-
   a. not at all
   b. somewhat
   c. a great deal

35. Does your work environment make it easy to talk with customers-
   a. not at all
   b. somewhat
   c. a great deal

36. Do you normally work-
   a. 40 or more hours per week
   b. less than 40 hours per week

37. In what ways do you now use the computer that you were not originally trained?

38. What suggestions do you have for improving any or all of the systems that you work with?
REFERENCES


