WORD PROCESSING: A SURVEY OF IMPLEMENTATION PROCEDURES USED IN SELECTED SERVICE ORGANIZATIONS IN THE OKLAHOMA CITY AREA

By

LOU ASKEW DENNARD

Bachelor of Arts
Bethany Nazarene College
Bethany, Oklahoma
1975

Masters in Business Administration
Central State University
Edmond, Oklahoma
1977

Submitted to the faculty of the Graduate College
of the Oklahoma State University
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Thesis Approved:

Thesis Adviser

Dean of the Graduate College

PREFACE AND ACKNOWLEDGMENTS

Several studies have been conducted in word processing which are related to business education curriculum. It was the purpose of this study to provide some direction to companies planning to implement a word processing system by enabling those companies to see what other companies have done in the past.

My sincere appreciation is extended to Dr. Arnola C. Ownby, who provided direction and counsel and who served as my major adviser. Dr. Ownby's interest, enthusiasm, and untiring efforts are deeply appreciated.

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CHAPTER I

INTRODUCTION

Word processing has been defined in many different ways by specialists in the field of word processing. A complete definition of word processing is found in the Word Processing Curriculum Guide, prepared by Marcia A. Anderson and Robert W. Kusek (1977) for the Illinois Office of Education:

> [Word processing is] a method of producing written communication at top speed, with the greatest accuracy, the least effort, and the lowest possible cost, through the combined use of proper procedures, automated business equipment, and trained personnel (p. 1).

The International Information/Word Processing Association (hereafter referred to as IWP) has defined word processing in the "Word Processing Glossary" as

> a system of trained personnel, specific procedures, and automated equipment that provides more efficient and economical business communications; usually involves the transformation of information into readable form (p. 27).

Three major factors critical to the implementation of a word processing system are: (1) the establishment of specific procedures to be followed within the word processing center; (2) the selection of equipment by carefully assessing needs and matching equipment to those needs; and (3) the people factor, the careful matching of aptitudes and skills to the individual jobs of administrative or correspondence secretary.

Statement of the Problem

The purpose of this study was to: (1) determine the procedures most commonly used in the implementation of word processing systems; (2) identify the practices and problems related to the components of word processing--people, procedures, and equipment--in the implementation and operation of word processing centers; and (3) make recommendations to give direction to companies considering the installation of a word processing system.

Specific questions concerning implementation procedures were: (1) How was the need for word processing determined? (2) How was word processing introduced and what was the reaction of employees? (3) What is the structure of the word processing system in each organization? (5) Who uses the word processing center, and what kind of training is provided for those individuals?

Specific questions related to the components of word processing were: (1) What are the current practices and what were the problems encountered related to people--training, turnover, backup support, and employee satisfaction? (2) What are the current practices and what were the problems encountered in establishing operating procedures, including document production and distribution, productivity, and work measurement? (3) What is the current equipment status, how was equipment selected, and what were the problems encountered in equipment selection and training on the equipment?

Need for Study

Because the concept of word processing is relatively new, there is a shortage of material available regarding implementation procedures

of word processing systems. Many of the journal articles related to word processing deal with specific issues such as equipment, personnel, work measurement, etc., but few articles outline the problems that companies may encounter when implementing a word processing system. A limited number of textbooks have been written in the field of word processing, and not all of those include a section dealing with implementation procedures.

While helpful information is supplied by vendors (representatives for manufacturers of word processing equipment), companies are sometimes reluctant to seek help from vendors because they do not wish to become obligated to any particular manufacturer until a decision has been reached. In addition, companies should not limit their knowledge of implementation procedures to that supplied by vendors.

Consulting firms also supply valuable help and spot problem areas quickly because of their expertise. Yet consultants' fees are often quite costly.

Although research is currently being conducted in word processing, studies pertaining to implementation procedures and resulting in guidelines for companies moving to word processing were not found in the literature review process. Most of the related research pertained to business education curriculum change. The research in this study will be useful primarily to organizations desiring to implement a word processing system. It does not provide specific guidelines for curriculum change, although implications for business education may be drawn. The information gained from this study will provide a valuable aid to organizations planning to implement a word processing system, specificially in the areas of implementation procedures and the critical components of people, procedures, and equipment.

Scope and Limitations

The research for this study was conducted in service organizations, that is, in roganizations that do jobs for other businesses or individuals who either cannot or would rather not do the jobs for themselves. Service organizations were selected rather than goods-producing organizations because employment has grown rapidly in service organizations in recent years, whereas employment has remained relatively constant in goods-producing organizations since World War II (McCabe and Popham, 1977, p. 60). Furthermore, the projected growth in employment in service organizations exceeds that for goods-producing organizations. The increase in employment in service organizations from 1976 to 1985 is expected to be 26 percent, compared to 17 percent for goods-producing organizations (U. S. Department of Labor, 1978-79, pp. 20-21).

The research was further limited to the Oklahoma City area, defined specifically as Oklahoma City proper, not to include surburban areas such as Bethany, Warr Acres, Edmond, Moore, Midwest City, and other surrounding communities. Although these communities are in the Oklahoma City metropolitan area, generally the larger firms--those more likely to have word processing centers as defined for this study--are located in proximity to the downtown area.

Specifically, the service organizations surveyed had a word processing system consisting of a coordinated, well-planned program using specific procedures, automated business equipment, and trained personnel to produce written, verbal, or recorded information for the organization. Even though individual units of word processing equipment might be scattered throughout the organization, if specific procedures (including assignment of typing functions to word processing secretaries and

non-typing functions to administrative secretaries) were used under the direction of a supervisor, the organization qualified for this study. However, an organization having individual units of equipment scattered throughout the organization but not using specific procedures and trained personnel and not having a supervisor was not included in the study.

More specifically, to qualify as a word processing system for this study, the center had to have a supervisor. A supervisor was defined as a person who has the responsibility of directing/coordinating the activities of a group of people, thus the definition presupposed more than two employees. For this research a minimum number was established of three units of word processing equipment (three stations, three operators) within the center (if a centralized structure was used) or organization (if a decentralized or special purpose structure was used). The assumption was that an organization with fewer than three stations and one supervisor has not incorporated the requirements for a word processing system.

Information was obtained via personal interviews with supervisors and other key personnel involved in the implementation of the word processing system. Interviewees (primarily supervisors) responded to a structured questionnaire, which is included in Appendix A.

Because the implementation of a word processing system can take from several months to over a year to complete, the research was limited to those centers which have been in operation for at least one year. This length of time allowed some of the problems which occur during or following implementation to be identified and possibly solved, yet included some young centers which more recently experienced the transition to word processing.

This research was designed to outline the methods most commonly used to determine the feasibility of word processing and to determine general procedures most commonly used to implement word processing, as well as to outline problems encountered by organizations during the implementation stage. The research did not include a comprehensive inquiry into feasibility studies or implementation procedures, although general questions pertaining to both areas were included. Recommendations for improvement and standardization of those procedures, as reported by supervisors, managers, or other management personnel were solicited.

This research was also designed to determine specific problems related to people, procedures, and equipment and to report solutions to specific problems where solutions are known. The research was not designed to differentiate among makes and models of word processing equipment; all centers meeting the established criteria regardless of the brand of equipment used were surveyed. The study was designed to determine any problems related specifically to the selection of, conversion to, or application of the equipment, as well as to determine the criteria for selection of equipment. This study was not comprehensive as far as operational procedures are concerned; e.g., this research was not an in-depth study on work measurement, although the study did include some general questions related to work measurement.

Definition of Terms

For the purpose of this research, the following definitions were used:

Administrative secretary: "A secretary who specializes in handling nontyping tasks" (Cecil, 1980b, p. 315).

Administrative support system:

> One of two broad areas of specialization under word processing (the other being typing). In general, it comprises all the nontyping tasks associated with traditional secretarial work carried out under administrative supervision (Cecil, 1980b, p. 315).

Correspondence secretary: "An individual primarily responsible for transcribing dictation and producing documents on a word processing typewriter; a word processing operator" (Quible, 1980, p. 270).

Principal: "An executive or an individual in an organization who originates paperwork and needs secretarial support" (McCabe and Popham, 1977, p. 170). Also referred to as a word originator.

Service organizations: Those businesses or organizations which perform a job for another business or for individuals that "they cannot, will not, or would rather not do for themselves" (Buell, 1970, p. 41).

Station: "A work place to which an individual is assigned in a word processing center" (McCabe and Popham, 1977, p. 171).

Word originator:

> (1) A principal; an executive. (2) A person who dictates copy for transcription into final documents. (3) In general, an individual within an organization who originates paperwork and requires secretarial support" (Cecil, 1980b, p. 342).

Word processing:

> A method of producing written communication at top speed, with the greatest accuracy, the least effort, and the lowest possible cost, through the combined use of proper procedures, automated business equipment, and trained personnel" (Anderson and Kusek, 1977, p. 1).

Word processing center: "The room or area housing equipment and personnel for the production of typed documents; the centralized location in which word processing operations take place" (Cecil, 1980b, p. 343).

Word processing operator: (A correspondence secretary.) "An individual primarily responsible for transcribing dictation and producing documents on a word processing typewriter" (Quible, 1980, p. 270).

Word processing supervisor: A person who has the responsibility of directing or coordinating the activities of a group of people within the word processing center (Cecil, 1980a, p. 294, and 1980b, p. 338).

Word processing system: "The combination of specific procedures, methods, equipment, and people designed to accomplish the transition of a written, verbal, or recorded word and distributed to its ultimate user" (Anderson and Kusek, 1977, p. 1).

CHAPTER II

REVIEW OF THE LITERATURE

History of Word Processing

Actually, word processing began thousands of years ago when people first began to record, process, and distribute messages; but the term word processing originated in Germany about 1964. According to Rosen and Fielden (1977), "textverarbeitung," which literally means text processing, was coined by Ulrich Steinhilper, an office manager for International Business Machines (hereafter referred to as IBM). Steinhilper theorized that if all dictation could be given through a centralized dictation system and automatic typewriters (specifically, IBM's new Magnetic Tape Selectric Typewriter, the MTST) could produce error-free documents at high speeds (150 to 180 words per minute), businesses could save time and money. Steinhilper's theory became the dual purpose of electronic word processing--to increase productivity and, simultaneously, lower costs. Using the MTST, a typist could record information at top speed on a magnetic tape, correcting errors by backspacing and striking over; the correct form would be recorded on the tape. When a document was completely recorded, the machine would play back automatically at a speed of 150+ words per minute.

About this time (1964) the country was suffering from the "paperwork explosion." Volumes of paperwork were required to operate a business; complicating matters was the enormous amount of paperwork required by

government regulatory agencies. And office costs--including stationery, supplies, and salaries--were soaring. From 1953 to 1964, according to a survey by the Dartnell Institute of Business Research (1978), the cost of producing an "average" business letter had nearly doubled--from $1.17 to $2.32--and the costs were continuing to spiral upward. These figures were based on using the traditional face-to-face dictation method and included the dictator's time, secretary's time, nonproductive labor, fixed costs, materials costs, mailing costs, and filing costs.

Changes in Traditional Roles

The National Secretary's Association (1980, p. 6) defines a secretary as:

> An executive assistant who possesses a mastery of office skills, demonstrates the ability to assume responsibility without direct supervision, exercises initiative and judgment, and makes decisions within the scope of assigned authority.

In addition, a secretary is one who must cope with constant interruptions; receive callers to the office; answer the phone; handle incoming and outgoing calls; await instructions from the boss, yet never make the boss wait; and demonstrate initiative, flexibility, and efficiency in all tasks (McCabe and Popham, 1977, pp. 34-37). Secretaries' duties range from the simple, routine jobs of filing, routing mail, and answering telephones to more complex jobs such as answering correspondence, conducting statistical research, and writing reports. Although the traditional secretary must perform typing and stenographic functions, additional typists and stenographers often assist with the burden of communication during peak periods.

In an effort to combat rising office costs, a method was devised to utilize the secretary's time more effectively. The concept of word processing proposed some changes to the traditional secretarial, typing, and stenographer roles through the division of the secretarial responsibilities into two broad categories: typing and non-typing tasks (McCabe and Popham, 1977, p. 7). Relieved of the tedious task of typing and re-typing countless pages of material, the secretary would be able to lend additional support to management through other tasks: relieving the "boss" of some of the more routine tasks which could be performed by someone other than the boss, conducting needed research, analyzing data and compiling reports (McCabe and Popham, 1977, p. 41-2). The traditional boss-secretary relationship would change, proponents of word processing predicted, to an executive-assistant relationship for administrative (non-typing) duties. The administrative assistant would be assigned to two, three, or even more principals (McCabe and Popham, 1977, pp. 33-4). The typing duties would be assigned to a correspondence secretary (word processing secretary or typing technician). All typing would then be routed to a centralized location to be produced on automated equipment. This procedure would require a room or area to house the equipment and personnel, a word processing center. The correspondence secretary would then work for or serve a client (the client being the word originator or principal) but would report to a supervisor in the word processing center.

The adoption of specific guidelines, procedures for operating the center, would result in a word processing system. Defined by Anderson and Kusek (1977, p. 1) in the Word Processing Curriculum Guide, a word processing system is "the combination of specific procedures, methods,

equipment, and people designed to accomplish the transition of a written, verbal, or recorded word and distributed to its ultimate user."

Structure of Word Processing

A review of the literature suggests that, although early proponents of word processing systems advocated the complete separation of typing and non-typing duties, the elimination of some of the executive secretaries in the organization, and the routing of typing tasks to a centralized location (usually referred to as a centralized structure), many structural arrangements evolved other than the centralized structure.

Quible and Johnson (1980, pp. 171-2) listed three commonly used ways of organizing administrative support: (1) the augmented mode, in which an administrative secretary performs mostly administrative functions and most of the typing functions are performed in a location near the administrative support area; (2) the work group mode, in which both administrative support and word processing support serve the principals in a department (also called satellite centers); and (3) the centralized mode, in which administrative support personnel are grouped together and have a supervisor in the area, with all typing done in the word processing center.

Quible and Johnson (1980, pp. 10-11) also listed various ways in which word processing support may be structured: (1) the centralized structure, initiated by IBM, in which almost all typing is performed in a centralized word processing center and administrative support is also centralized, each center having its own supervisor; (2) the decentralized structure, in which both word processing centers and administrative support are scattered throughout the organization and each small word processing center has a supervisor; (3) the special purpose structure,

in which daily, routine correspondence is still produced by traditional secretaries and only large reports requiring heavy revisions or extensive editing or special work are done in a small word processing center; and (4) the integrated structure, in which only occasional departments or divisions of an organization can justify the cost of word processing equipment. Other structures have also evolved over the years. In essence, there is no one "best" way of structuring a word processing system in a given organization. Many companies have found that what works well in one organization does not work for another organization.

In the early stages of word processing, several companies adopted the centralized system of word processing only to find that the system did not reduce costs or increase productivity as it was designed to do. One such company, Plastics and Additives Division of Ciba-Geigy Corporation, struggled for three years with a large centralized system before switching to a smaller, work-group approach which succeeded ("Office of the Future," June 30, 1975, pp. 70). Still another company, Richardson-Merrell, Inc., of Wilton, Connecticut, adopted a flexible word processing approach, using a large correspondence center in addition to small work groups to effect a handsome annual savings ("Office of the Future," June 30, 1975, p 70).

Most authors will agree that planning for word processing is crucial to the success of the adopted structure and that commitment by top management is also essential. If top management is not committed to the change, neither will middle management, lower levels of management, nor support personnel be committed to make the proposed change work. Organizations must be willing to spend the time, effort, and money to properly plan, organize, and implement a word processing system (if it is to be effective,

increase productivity, and reduce costs) regardless of the structure that is used.

Problem Areas Related to Word Processing

Several problem areas related to feasibility, transition to word processing, and operation have been identified. Information from journal articles was helpful in formulating the questionnaire used for this study.

For example, Amport and Reis (September, 1979, p. 35) provided some valuable information for determining the feasibility of word processing. Identified in the article are some basic conditions which should exist before companies consider a change to word processing; for example:

A majority of the documents are handwritten or dictated prior to typing.

A majority of the documents include at least 25 percent copy material.

A majority of the documents are changed in some way, either after proofing by the typist or after proofing by the author.

A majority of the documents are revised within one year after initial issue or have unusual distribution characteristics.

The document files are searched repeatedly for various subjects after being issued.

Document production is evenly distributed among staff members, with high and low peaks in work load.

Document production volume is at least 3,500 pages a year.

The typing and editing work load is increasing, thus requiring addition of new staff.

At least 25 percent of the documents are over one page in length.

Collins (1975, pp. 9-11) identified several commonly missed steps that could help in the transition from feasibility study to implementation. These commonly missed steps include:

> Data collected in the feasibility study should be analyzed, current needs reviewed, and required changes in procedures made.
>
> Needs and objectives of top management and the word processing center should be formally stated and agreed upon by both word processing management and top management. Those objectives should also be communicated to the entire word processing staff.
>
> Samples of the types of work the word processing center can and will do should be distributed to principals in the organization to encourage them to use the center.
>
> Personal interviews should be conducted with the users of the center periodically--30, 45, and 90 days after the initiation of the system.
>
> Talents and tasks of the word processing staff should be matched to avoid inequitable distribution of work load, low morale, and job dissatisfaction.
>
> The word processing center should be responsive to users of the system--visibility and availability to users will enhance the value of the word processing system.

Anderson (1976, pp. 11-14) identified several problems which may surface during or after the installation of a word processing system. Some of the problems which may occur may be a result of the following:

> Lack of established career paths within the center
>
> Limited or lack of backup support in the center
>
> Uneven work flow
>
> High turnover rate
>
> Deficiencies in skills needed by word processing personnel
>
> Limited or lack of training given to management in the utilization of the center
>
> Determination of cost effectiveness of the center

Research in Word Processing

Several studies have been conducted in the areas of job dimension/task inventories of word processing personnel, competencies needed for word processing personnel, the development of career paths in word processing, and knowledges and skills needed by teachers in the field of word processing. Stelzner (1975) surveyed member companies of the New Jersey Word Processing Information Exchange concerning various personnel issues. Specifically, Stelzner determined that:

(1) the greater percentage of companies promote from within the company to recruit full-time workers. The same percentage uses a variable shift scheduling technique to eliminate overtime, utilize equipment more effectively, and eliminate the need for part-time workers.

(2) Word processing employees are given a standard typewriting test in 45 percent of the companies surveyed.

(3) Some form of training, either vendor or in-house or a combination of both exists in most companies. Training programs may also include a company manual (specific procedures and policies) and a vendor manual and may also include some supervisory training.

(4) Both titles and levels of word processing personnel, as well as salaries, vary from company to company, although the study showed that a word processing career path does exist.

Dennis (1978) conducted a study in selected organizations in the Washington-Baltimore area to determine the state of the art in equipment, procedures, and personnel and to compare the motivating potential of jobs and levels of job satisfaction of word processing personnel with normative groups. The following conclusions were reached:

(1) Various kinds of equipment were used in classroom instruction of word processing.

(2) Almost all organizations surveyed had changed the equipment in their organizations since word processing was initiated.

(3) Only five of the organizations surveyed divided personnel into administrative support secretaries and word processing/correspondence secretaries.

(4) Career paths have been established in most organizations for correspondence secretaries.

(5) Performance standards exist for word processing secretaries but not for administrative secretaries.

In addition, several studies have been conducted regarding the implementation of word processing in the area of curriculum, both for secondary and post-secondary institutions. But few studies have dealt with the implementation of word processing in business organizations.

A study to determine the status of word processing centers within the Urban Corridor of Virginia was conducted by Marietta Spring (1977). In the study Spring identified factors in the word processing conversion process, typing and non-typing tasks performed in the centers, and the employment tests administered by the centers. Nineteen organizations with word processing centers participated in the study. Conclusions reached which are pertinent to this research follow:

(1) Upper-level management was responsible for the decision to convert to a word processing system in most of the organizations surveyed.

(2) Most organizations sought the help of a sales representative (vendor) for the conversion process.

(3) The major problem encountered in the conversion process was reluctance on the part of personnel to accept the word processing concept.

(4) Line counting was the most frequently used form of work measurement.

(5) The majority of the companies surveyed had not adopted the administrative support function.

Similarly, Rohrer (1978) conducted a study to determine the current status of word processing in the Pittsburgh, Pennsylvania, area. This study also aimed at identifying implications for business education curriculum change. The study was conducted by a questionnaire mailed to companies with headquarters in the Pittsburgh area. Most of the findings of this research dealt with implications for business curriculum; only three of the findings are pertinent to this research:

(1) The most frequently used structure of the word processing center was the small satellite center which served only one department.

(2) Only 41.67 percent of the companies surveyed also had administrative support systems.

(3) A wide variety of typing tasks were performed by the word processing centers.

Claffey's (1979) study of word processing in 15 selected firms found that word processing centers varied in organization, purpose, and operation. The study also showed that most supervisors of the centers studied believed that manufacturers' training programs were adequate for learning word processing equipment. Other findings of this study were relevant to the business education curriculum.

McCrary (1979) conducted a study to identify factors associated with the effective implementation of word processing centers and to draw implications for both management and business educators. The following information was sought:

(1) Factors associated with the effective implementation of word processing

(2) Suggestions to aid management in implementation

(3) Modifications for education to meet the needs of management

To obtain the information, McCrary interviewed word processing center managers, principals, and college management teachers. McCrary compared the similarities and differences among the participating organizations and found the following:

(1) Implementation methods vary from company to company. Effective implementation depends mostly on the positive attitudes of the people involved in the conversion.

(2) The nature of the work processed in a particular firm appeared to be related to the effective implementation of word processing.

McCrary made the following recommendations:

(1) Management should consider word processing as a change in organizational structure that affects the entire organization.

(2) Curricular offerings should be studied and modified to prepare students for the changing business office.

The conclusions reached in this study appeared to be of a general nature rather than to list specific factors associated with implementation procedures.

Other research related to word processing investigated questions pertinent to curriculum change. The results are beneficial to schools rather than to businesses planning to implement a word processing system.

CHAPTER III

METHODOLOGY

The research process was initiated by developing key questions relating to implementation procedures and to the components of word processing. The key questions were an outgrowth of the following: (1) numerous personal visits to word processing centers and discussions with the supervisors, (2) visits with several vendors of word processing equipment in the Oklahoma City area, (3) participation in the Southwest Computer Conference in Oklahoma City for two years (conference included special seminars on word processing and exhibits of word processing equipment), and (4) extensive reading about word processing in textbooks, journal articles, pamphlets, brochures, and dissertation abstracts. From the information gleaned from these sources, a questionnaire seeking information about implementation procedures and the components of word processing was developed.

Following the construction of the questionnaire, a pilot study was conducted. Two large organziations with word processing centers participated in the pilot study. Both the center supervisors and management personnel interviewed for the pilot study indicated that businesses could be served by a study which provided guidelines for companies considering the installation of a word processing system. In addition, the individuals interviewed provided valuable suggestions for refinement of the questionnaire. From the results of the pilot study, the questionnaire was

refined. A two-part, structured questionnaire (Appendix A) was prepared, using specific questions to determine the following: How was the need for word processing determined? How was word processing introduced and what was the reaction of employees? What is the structure of the word processing system? What are the critical components in planning for the conversion to word processing? Who uses the center, and what kind of training is provided for those individuals?

Specific questions were developed related to the components of word processing. For example, what are the current practices and what were the problems encountered related to people, including training, turnover, backup support, and employee satisfaction? What are the current practices and what were the problems encountered in establishing operating procedures (including document production and distribution), productivity and work measurement? What is the current equipment status, how was the equipment selected, and what were the problems encountered in equipment selection and training on the equipment? The questionnaire was used to conduct personal interviews of word processing center supervisors and/or other key personnel who participated in the word processing implementation process.

Considering the limitations of size, length of operation, and geographical location, a list of service organizations was compiled using the following processes:

1. As an Assistant Professor at Bethany Nazarene College, the researcher has made numerous contacts with supervisors of word processing centers in the Oklahoma City area to assist in the teaching of a word processing class through field trips to word processing installations; thus a number of centers was known by the researcher to exist and the supervisors were known to be willing to participate in the study.

2. Contacts were made with vendors in the Oklahoma City area with whom the researcher has worked on previous occasions in conjunction with a word processing class. Because the vendors cannot supply customers' names, they were asked to contact their customers and ask if those customers would be willing to participate in the study. If the customers agreed, they either allowed the vendor to give their names to the researcher or personally contacted the researcher.

3. As a charter member of the Central Oklahoma Chapter of IWP, the researcher was involved in the first organizational meetings and possessed a list of potential IWP members. (Membership in IWP is restricted to managers/supervisors of the word processing centers, vendors, and educators.) Contacts were made with those supervisors on the membership list.

4. Supervisors of existing centers with whom the researcher has worked on various occasions very generously supplied information about other word processing installations in the metropolitan area.

5. Telephone calls were made by the researcher to service organizations in the metropolitan area large enough to support a word processing center.

The original list was comprised of approximately 50 companies which were believed to have one or more units of word processing equipment. Telephone contacts were made to all of the companies to determine which ones met the criteria for this study. Fifteen organizations met the established criteria, and it is the belief of the researcher that these fifteen organizations comprised the total population. According to West (1977, p. 9), "an entire population of manageable size might be surveyed." Because the population of 15 was a manageable size, all of the organizations meeting the criteria listed in the "Scope and Limitations" section of the study were surveyed.

Word processing center supervisors and/or other key personnel responsible for the decision to initiate a word processing system were contacted and appointments made for the interviews. Other key personnel refers to: (1) people who assisted in the decision to initiate word processing in their organizations, (2) people who assisted in the implementation of the

system, and (3) people who were identified as being in supervisory positions in the center, either supervisors or managers. In the event that the supervisor/manager was not involved in the decision to initiate word processing or not involved in the implementation of the system, both the current supervisor/manager, previous supervisor/manager where available, and other key individuals were interviewed to ensure accurate reporting of information. Interviews were arranged over a two-week period in July and August, 1980. The interviews were scheduled to last approximately one hour and fifteen minutes.

To initiate the interview, some background information was given to each interviewee; e.g., the purpose of the study and the criteria for the selection of centers to be included in the study. A copy of the questionnaire was given to each respondent during the interview to aid in answering the questions and to expedite the interview. The respondent was asked to read the questions as they were read by the interviewer and to indicate his/her response. The responses were marked by the researcher. After all questions were asked and responses were recorded, the interviewees were given an opportunity to make additional comments and suggestions relevant to the research or to the installation of the word processing system.

After all interviews had been conducted, a thank-you letter was mailed to each respondent. A copy of the letter is included in Appendix B.

Tabulation of the responses began immediately after all interviews had been completed; this function was performed manually by the researcher. The first step was a simple tabulation of the responses and recording on a master questionnaire, followed by rankings where required and calculation of percentages.

A summary of findings and items of special interest are included in Chapter IV. The summary, conclusions, and recommendations are discussed in Chapter V.

CHAPTER IV

FINDINGS

The questionnaire was administered to 15 supervisors and/or other key personnel involved in the implementation of their company's word processing system. The first section of the chapter deals with implementation procedures used in the organizations surveyed; the second section pertains to the components of word processing--people, procedures, and equipment.

Implementation

Specific questions to be answered in this section are: (1) How was the need for word processing determined? (2) How was word processing introduced and what was the reaction of employees? (3) What is the structure of the word processing system in your organization? (4) What are the critical components in planning for the conversion to word processing? (5) Who uses the center, and what kind of training is provided for those individuals?

Determination of Need

Of the companies surveyed, just over half indicated that the decision to change to word processing resulted from suggestions from individuals within the organization other than management (Figure 1), while in about one-fourth of the cases the decision was made by top management. In

80 percent of the organizations, a study was conducted to determine if word processing was feasible for the organization (Figure 2).

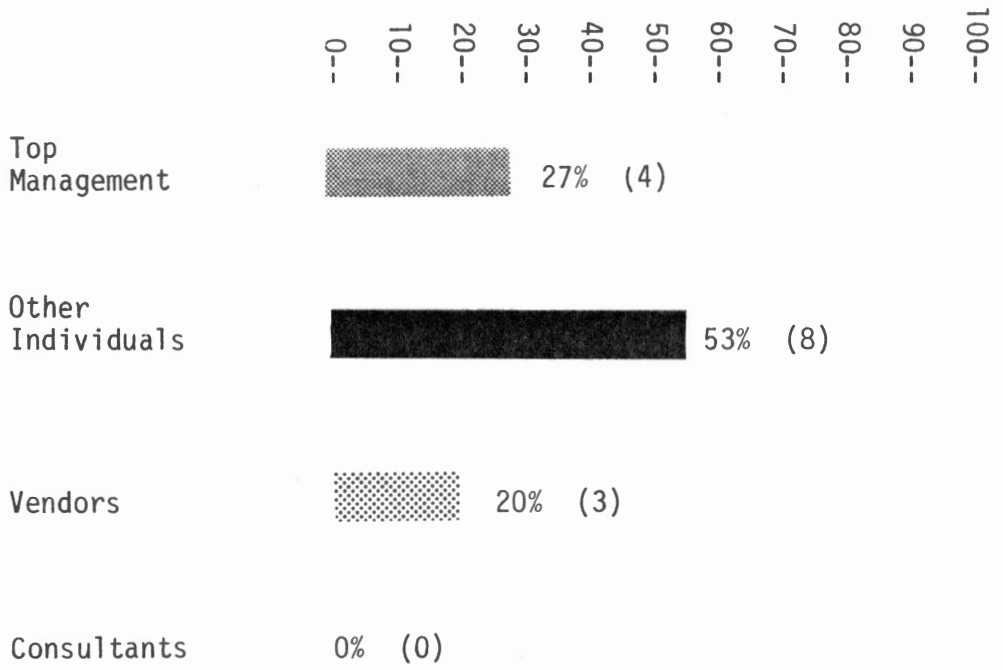


Figure 1. How Was the Decision Made to Change to Word Processing?

Figure 2. Was A Study Conducted to Determine if Word Processing Was Feasible?

In 67 percent of the organizations conducting a study, the study was conducted by a vendor; in 42 percent of the organizations, the study was conducted by a task force of individuals within the company (Table I). The organization listed in the 8 percent "Other" category used vendor and task force instead of a combination of vendor, task force, and consultant. Only one company used a consultant in addition to the task force of individuals within the organization and a vendor.

TABLE I

PERSONS CONDUCTING THE STUDY

Responses	Percentage	Number
Vendor	67%	(8)
Task force within the company	42%	(5)
Combination task force, vendor, and consultant	08%	(1)
Other	08%	(1)

Of the twelve organizations that conducted a study, most used more than one method, as is indicated by the responses in Table II: 25 percent presented a questionnaire to secretaries and to principals; 42 percent analyzed the work through the use of "action paper" or other copies of actual work; 33 percent observed the secretaries through a committee or task force; 58 percent analyzed correspondence and file materials. The

response indicated by "Other" represented a company whose management group had made an analysis without the aid of vendor, consultant, or task force.

TABLE II

METHODS USED FOR THE STUDY

Responses	Percentage	Number
Questionnaire presented to secretaries and principals	25%	(3)
Use of "action paper" or other copies of actual work	42%	(5)
Observation of secretaries by committee or others	33%	(4)
Analysis of correspondence or other file materials	58%	(7)
Other	08%	(1)

Only three organizations, as noted in Figure 2, p. 26, indicated that a feasibility study was not conducted. The top-ranked method for determination of need for those organizations was the need for increased production to meet the goals of the organization. The method ranked second highest was the need for frequent, heavy revision of work. Other factors affecting the decision to initiate word processing were the need for new, more efficient equipment with faster output and frequent use of temporary help to meet increased work loads. It should also be noted

that in all three organizations not conducting a feasibility study, the current center evolved from a single unit of word processing equipment (purchased several years ago) to the current word processing center. Because only three companies responded to this question, a point value system was used to determine the ranking. Points were assigned to numbers: 1 = 30, 2 = 20, 3 = 10. Thus rankings were calculated on the basis of descending order of point value, shown in Table III.

TABLE III

DETERMINATION OF NEED FOR WORD PROCESSING

Ranking	Responses	Points
1.	Need for increased production to meet goals of organization	60
2.	Need for frequent, heavy revision of work	40
3.	Frequent use of temporary help to meet increased work load	30
4.	Need for new, more efficient equipment with faster output	20

The number-one condition existing in the organization which led to the installation of a word processing system was the length of the documents; i.e., a majority of the documents were over one page in length. Ranked second highest were the existence of peak and valley work loads and the need for additional staff to handle the increasing work loads.

Ranked fourth were the following: the required revision of documents; i.e., the majority of the documents required some revision, and requirements for copy material; i.e., a majority of the documents included at least 25 percent copy material. Ranked sixth was handwritten documents; i.e., a majority of the documents were handwritten, illustrated in Table IV.

TABLE IV

EXISTING CONDITIONS IN ORGANIZATIONS PRIOR TO WORD PROCESSING

Ranking*	Conditions	Percentage	Number
1.	Majority of documents were over one page	22%	(4)
2.	Peak and valley work loads occurred	20%	(3)
	Additional staff needed for increasing work	20%	(3)
4.	Majority of documents required some revision	13%	(2)
	Majority of documents had 25% copy material	13%	(2)
6.	Majority of documents were handwritten	07%	(1)

*Rankings were determined by the total number of "one" rankings for each response.

Introduction of Word Processing

According to the supervisors interviewed, when word processing was announced employees reacted in a variety of ways: a third of the organizations indicated that the primary reaction was resistance to change, over one-fourth demonstrated enthusiasm, some were skeptical, a few experienced anxiety, and only one indicated that fear of loss of job was the primary reaction (Table V).

The supervisors interviewed perceived that management's reaction to word processing was somewhat different. Over one-half of the organizations responded that management was enthusiastic, some were resistant to change, a few were skeptical, one demonstrated apathy, and one feared loss of a secretary (Table V).

TABLE V

REACTION OF EMPLOYEES/MANAGEMENT TO WORD PROCESSING

Reactions	Employees		Management	
Apathy	0%	(0)	07%	(1)
Enthusiasm	27%	(4)	53%	(8)
Resistance to change	33%	(5)	20%	(3)
Skepticism	20%	(3)	13%	(2)
Anxiety	13%	(2)	--	--
Fear of losing jobs	07%	(1)	--	--
Fear of losing secretaries	--	--	07%	(1)

(More than one response was appropriate)

While a third of the organizations took no measures to eliminate or relieve anxiety among the employees to be affected by the change which word processing would bring, other organizations used a variety of procedures. Close to one-half communicated frequently about the impending change to employees, a third sought input from employees, a third offered seminars or equipment demonstrations for employees, and some announced job openings in the word processing centers (Table VI). The five respondents to "Other" indicated that the organization did nothing to eliminate/relieve anxiety among employees to be affected by word processing.

TABLE VI

PROCEDURES USED TO ELIMINATE/RELIEVE ANXIETY

Procedures Used	Percentage*	Number
Frequent communication about project to employees	40%	(6)
Input sought from employees	33%	(5)
Seminars/equipment demonstrations for employees	33%	(5)
Job opening announcements	13%	(2)
Other	33%	(5)

*More than one response by some organizations resulted in a number total greater than 15 and a percentage total greater than 100.

Structure of the Word Processing System

Structure of the word processing centers varied. Well over half of the organizations visualized their centers as centralized systems; a small percentage claimed special purpose structures, and a very small percentage were decentralized (Figure 3). From the researcher's observations, however, none of the centers was truly centralized; that is, none of the centers had a separate administrative support system which served the entire company with the word processing system also serving the entire company. Actually, none of the word processing centers served the entire organization, although several supervisors indicated that they would be moving in that direction in the future. Most centers served only a select group, department, division, or region; and the center was centralized within that group, department, division, or region.

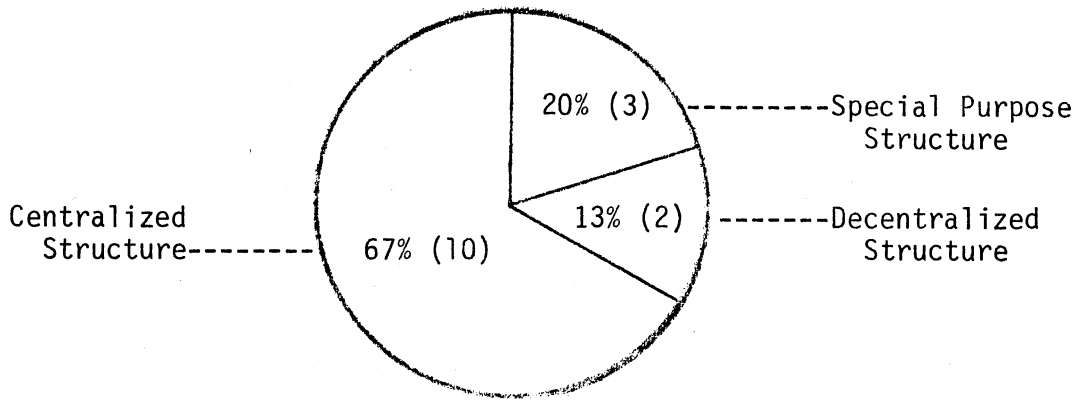


Figure 3. What Is the Structure of the Word Processing Center?

Management decision determined the structure of the word processing center for one-third of the organizations; in another third the nature of the work processed in the department determined the structure. Volume of work determined the structure in slightly over one-fourth, while variation of needs from department to department determined the structure in the remaining few centers (Table VII).

TABLE VII

METHODS USED TO DETERMINE STRUCTURE OF THE CENTERS

Rank	Methods Used	Percentage	Number
1.	Management decision	33%	(5)
	Nature of work in department	33%	(5)
3.	Volume of work	27%	(4)
4.	Variation of needs in departments	07%	(1)

Over half of the organizations indicated that the structure of the word processing center had not changed from the original structure (Figure 4), and just under half of the supervisors interviewed indicated that the organization could be better served using a structure other than that which is currently used (Figure 5). Reasons for this response varied; however, most of the responses indicated that total centralization would yield higher productivity and would better serve the entire organization.

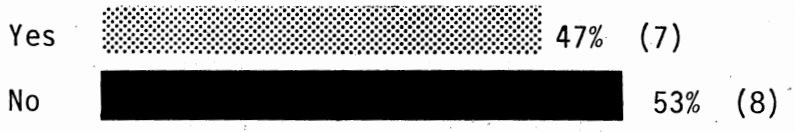


Figure 4. Has the Structure Changed from the Original Structure?

Figure 5. Could the Organization Be Better Served Using Another Structure?

Conversion to Word Processing

The length of time between the decision to initiate word processing and the establishment of the center varied from 0 - 6 months to over 18 months. Over half of the respondents indicated a timetable of 0 - 6 months; approximately one-fourth indicated a timetable of 7 - 12 months. A very small percentage of the organizations adopted a timetable of 13 - 18 months, and a small percentage of the organizations adopted a timetable of longer than 18 months (Table VIII). The adopted timetable was satisfactory in nearly three-fourths of the organizations (Figure 6).

Where the timetable was not satisfactory, the cause was attributed to not allowing enough time for various phases, as noted in Table IX. One company responded that the reason for an unsatisfactory timetable was due to a delay in getting the equipment--a delay for which the company had not made adequate allowance. Another company reported a delay in acquiring output equipment which prevented operators from obtaining feedback from work keyed into the terminals; the CRT screens were in use for some time prior to the acquisition of output equipment (printers).

TABLE VIII

CHANGEOVER TIMETABLE FOR CENTERS

0 - 6 months	7 - 12 months	13 - 18 months	18+ months
53%	27%	07%	13%
(8)	(4)	(1)	(2)

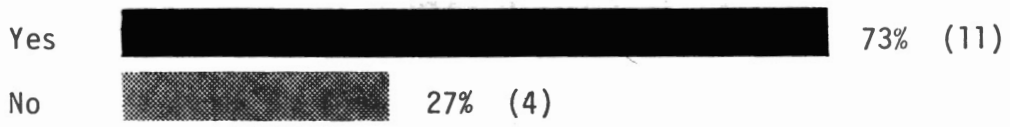


Figure 6. Was the Timetable Adopted Satisfactory?

TABLE IX

REASONS FOR UNSATISFACTORY TIMETABLE

Responses	Percentages*	Number
Too much time allowed for various phases	0%	(0)
Not enough time allowed for various phases	50%	(2)
Other (delay in getting equipment)	50%	(2)

*Base = four companies indicating an unsatisfactory timetable.

Implementation of the word processing system was staggered in a large majority of the organizations surveyed (Figure 7). This factor probably influenced to a great extent the number and kinds of problems experienced by those organizations in the conversion process.

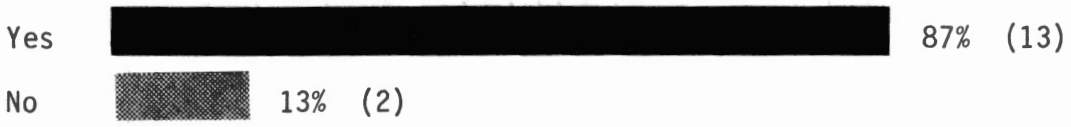


Figure 7. Was the Implementation Staggered; That Is, Was Word Processing Initiated Or Users Acquired In One Department, Then Another, Then Another?

A majority of the supervisors surveyed felt that adequate preparation was made for the site of the word processing center, as shown in Figure 8. Of those who indicated that adequate preparation was not made, all indicated that inadequate planning for the physical layout of equipment (space, traffic flow, partitioning, acoustics, etc.) was the key factor (Table X). One-third responded that a lack of sufficient power requirements occurred; a third indicated a failure to address environmental needs such as temperature, dust, and humidity; and some indicated a lack of communication from vendor to user about the needs for the center regarding equipment, indicated by "Other " in Table X.

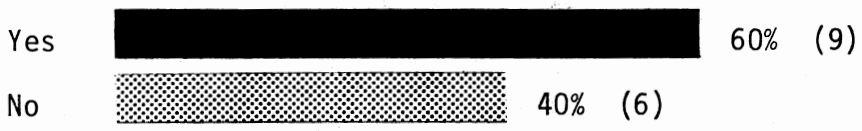


Figure 8. Was Adequate Preparation Made for the Site of the Word Processing Center?

In the conversion to word processing, the principal problems experienced were with procedures. Problems with people ranked second, and problems with equipment and "Other" problems ranked third, as shown in Table XI. One supervisor ranked people and procedures first, resulting in a percentage total greater than 100 and a number total greater than 15. One company indicated that the changeover represented a slow learning process for which the company simply was not prepared, and this was the principal problem; another company indicated that no problems had been

encountered. These responses are represented by "Other" in Table XI. Both people and procedural problems were encountered by another company.

TABLE X

REASONS FOR INADEQUATE PREPARATION OF SITE

Responses	Percentages*	Number**
Inadequate planning for equipment layout	100%	(6)
Insufficient power requirements	33%	(2)
Failure to address environmental needs	33%	(2)
Other	17%	(1)

*Percentage totals exceed 100 because of multiple responses.

**Base = six supervisors who responded that adequate preparation was not made for the site of the word processing center.

TABLE XI

PROBLEMS EXPERIENCED IN CENTERS

Rank	Problems	Percentages	Number
1.	Problems with procedures	47%	(7)
2.	Problems with people	33%	(5)
3.	Problems with equipment	13%	(2)
	Other	13%	(2)

Of those problems still existing in the center at the time of the interview, problems with people ranked highest. Problems with procedures ranked second, and problems with equipment ranked third. About half of the centers surveyed indicated that no problems currently exist. Those responses are indicated by "Other" in Table XII.

TABLE XII

PROBLEMS CURRENTLY EXISTING IN CENTERS

Rank	Problems	Percentages	Number
1.	Other - no problems currently exist	53%	(8)
2.	Problems with people	27%	(4)
3.	Problems with procedures	13%	(2)
4.	Problems with equipment	07%	(1)

Users of the Center

The first question in this section directed to users of the center asked for the number of managers/officers, both top and middle management, in the organization. The question was intended to reveal if the number of private secretaries to managers had been reduced. Of the total number of 1,007 approximately 302 still have private secretaries. The ratio of principals to secretaries is 3:1. If we could assume that all of the managers had private secretaries before word processing was initiated,

the reduction in work force would be significant. Or if we could assume a ratio of 2:1, principals to secretaries, prior to the introduction of word processing, this would still represent a significant savings in salaries through reduction in work force. These statistics were not made available, however; and these assumptions cannot be verified. One company, however, did move about 30 women, former secretaries, to a newly created department which had been needed for some time. This move, made possible because of the introduction of word processing in that organization, resulted in a significant savings for the company.

More than half of the supervisors interviewed indicated that the center is open to everyone. However, as is indicated in Table XIII, not everyone uses the center.

TABLE XIII

USERS OF THE WORD PROCESSING CENTER

Users of the Center	Percentage*	Number*
Top management principals	40%	(6)
Middle management principals	40%	(6)
Those with private secretaries	33%	(5)
Those without private secretaries	33%	(5)
Some of the secretaries	20%	(3)
All of the secretaries	0%	(0)
Center is open to everyone	60%	(9)

*Total percentages exceed 100 and total numbers exceed 15 because of multiple responses.

The methods employed to encourage people to use the word processing centers ranged from highs of indirect advertising and voluntary use to lows for open house, direct advertising, and management mandate, as is shown in Table XIV.

TABLE XIV

METHODS USED TO ENCOURAGE USE OF THE CENTER

Methods	Percentage*	Number*
Management mandate	20%	(3)
Voluntary Use	60%	(9)
Direct advertising	20%	(3)
Indirect advertising	73%	(11)
Open house	20%	(3)

*Total percentages exceed 100 and total numbers exceed 15 because of multiple responses.

While many of the companies interviewed provided no training to management regarding the use of the word processing center prior to the opening of the center, other organizations used a variety of training methods including orientation sessions, used by 40 percent of the companies; vendor presentations/demonstrations, used by a third; open house in the center and staff meetings, used by a few; and seminars and films, each used by only one organization (Table XV).

TABLE XV

MANAGEMENT TRAINING FOR USE OF THE CENTER

Training Provided	Percentage*	Number*
Seminars	07%	(1)
Open house in the word processing center	13%	(2)
Staff meetings	13%	(2)
Vendor presentations/demonstrations	33%	(5)
Orientation sessions	40%	(6)
Films	07%	(1)

*Multiple responses resulted in a percentage total greater than 100 and a number total greater than 15.

Currently over one-third of the organizations does not furnish any training for users; however, nearly half of the organizations have an orientation session with the supervisor for new users, a third furnish a manual to users, some offer an open house for new users, and one shows a film about the center to new users (Table XVI). Although a variety of training methods was used, a majority of the supervisors felt that training for users was not adequate (Figure 9).

Most of the word processing supervisors depend on verbal feedback from users to determine if the needs of the organization are being met by the center; only a small percentage indicated that surveys were conducted periodically by the center. One company made no attempt to determine if the needs were met, and another indicated that the needs were not being met (responses marked "Other" and explained to the interviewer). This

TABLE XVI

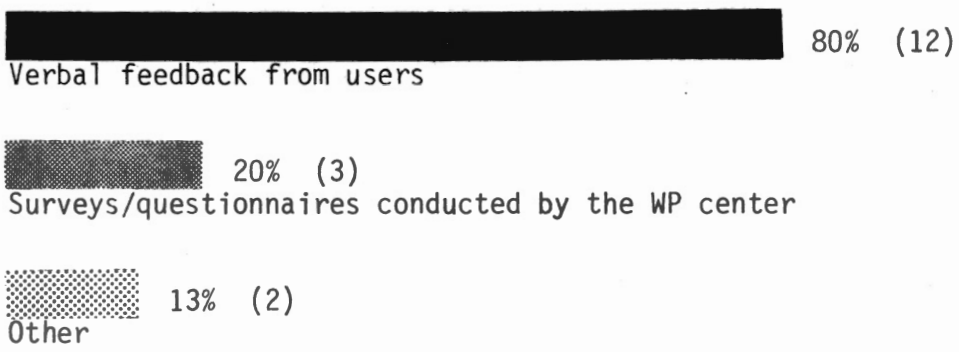
TRAINING PROVIDED FOR USERS

Methods of Training	Percentage*	Number*
Film about the center	07%	(1)
Open house	20%	(3)
Orientation with supervisor	47%	(7)
Manual furnished to users	33%	(5)
No training is given	40%	(6)

*Percentage and number totals exceed base because of multiple responses.

Figure 9. Is the Training Provided for New Users Adequate?

point did not seem to be of primary concern, however, in that no hard data were collected to substantiate this claim. Responses to this question are illustrated in Figure 10.



(Multiple responses resulted in totals and percentages greater than base.)

Figure 10. How Do You Determine If Organizational Needs Are Met?

People, Operating Procedures, and Equipment

Section Two asked specific questions related to the components of word processing. Key questions to be answered were: (1) What are the current practices and what problems were encountered related to people--training, turnover, backup support, and employee satisfaction? (2) What are the current practices and what problems were encountered in establishing operating procedures, including document production and distribution, productivity, and work measurement? (3) What is the current equipment status, how was equipment selected, and what problems were encountered in equipment selection and training on the equipment?

People

Training. Training for new employees is limited primarily to equipment training and in-house orientation sessions. All of the companies surveyed indicated that equipment training was conducted, and a large majority indicated that in-house orientation sessions were conducted. A few of the centers indicated that either a company orientation or company manual furnished to the new employee was the extent of the training provided, represented by "Other" in Table XVII. One company uses a company film, and one center uses a word processing film for training new employees in the center (Table XVII).

TABLE XVII

TRAINING PROVIDED FOR NEW EMPLOYEES

Kinds of Training	Percentage*	Number*
Company film	07%	(1)
Word processing film	07%	(1)
In-house orientation session	87%	(13)
Equipment training	100%	(15)
Other	20%	(3)

*Percentage and number totals exceed base because of multiple responses.

New employees do not come equipped with all the necessary skills, however. The need for language arts training was ranked at the top of the list of needs for new employees coming into the word processing center. The need for skills refresher courses was ranked second, and the need for human relations skills was ranked third. One supervisor indicated both language arts training and skills refresher courses were high ranking needs, resulting in a percentage and number total greater than the base. Two supervisors indicated that new employees were not lacking in any area, represented by "Other" in Table XVIII.

TABLE XVIII

NEEDS OF NEW EMPLOYEES

Rank	Needs Identified	Percentage	Number
1.	Language arts training	47%	(7)
2.	Skills refresher courses	27%	(5)
3.	Human relations skills	13%	(2)
	Other (not lacking in any area)	13%	(2)
--	Decision making techniques	0%	(0)

Turnover. As perceived by the supervisors, no significant amount of turnover was experienced in the word processing center or in the administrative support system during the first few months after conversion to word processing in most of the organizations (Figure 11).

Figure 11. During the First Few Months After Conversion to Word Processing, Did You Experience A Significant Amount of Turnover in the Administrative Support System? In the Word Processing Center?

Comparing the word processing center with other secretaries in the organization, more than half of the supervisors indicated that the turnover rate remained about the same; a few noted an increase in turnover in the word processing center compared to other secretaries, and two noted a decrease in turnover among word processing secretaries in comparison to other secretaries in the organization (Figure 12).

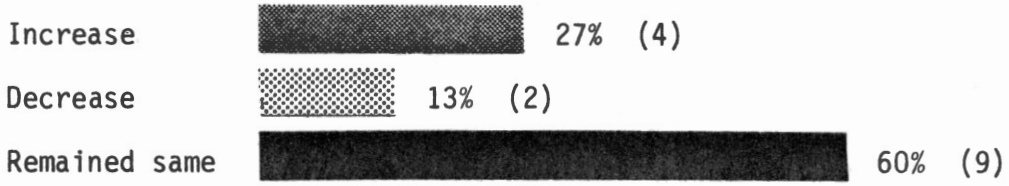


Figure 12. How Did the Turnover Rate in the Word Processing Center Compare With Other Secretaries in the Organization?

The number-one reason for employees leaving the word processing center was attributed primarily to better opportunity elsewhere. Additional reasons for leaving were skills and talents not matched to word

processing, family responsibilities and "Other," ranked second; and relocation, ranked fifth. One company indicated that in the total years of operation of the center, no employees had left the center. Another company attributed the reasons for separation equally to better opportunity and relocation. Table XIX shows ranking of reasons for separation.

TABLE XIX

REASONS FOR LEAVING THE WORD PROCESSING CENTER

Rank	Reasons	Percentage	Number
1.	Better opportunity elsewhere	53%	(8)
2.	Skills/talents not matched to WP	13%	(2)
	Family responsibilities	13%	(2)
	Other	13%	(2)
5.	Relocation	07%	(1)

Backup Support. Provisions for backup support in the word processing center have been made primarily through cross training by equipment and by subject matter, a procedure used by approximately three-fourths of the organizations surveyed. Temporary help from agencies is employed in many of the companies, while some companies use former employees as part-time personnel for backup support (Table XX).

TABLE XX

PROVISIONS FOR BACKUP SUPPORT IN THE CENTER

Provisions for Backup Support	Percentage*	Number*
Shift scheduling	07%	(1)
Cross training by equipment	74%	(11)
Cross training by subject matter	74%	(11)
Part-time personnel	20%	(3)
Temporary (agency) personnel	40%	(6)
Other	13%	(2)

*Percentage and number totals exceed base because of multiple responses.

The provisions for backup support were established in a majority of the organizations at the outset of the word processing installation; however, some of the centers established provisions for backup support only as a result of a crisis situation. One company, however, established some provisions at the outset and others as the result of a crisis situation (Table XXI).

Employee Satisfaction. Employee satisfaction is of high priority in most of the organizations, some of whom have taken very positive steps to ensure satisfaction of the workers in the centers. For example, an open climate is claimed by a large majority of the centers. In a majority of the centers merit pay is employed, and the centers have a provision for feedback from users directly to the operators; just under half of the centers have established career paths (Table XXII).

TABLE XXI

ESTABLISHMENT OF BACKUP SUPPORT

Responses	Percentage	Number
Established at outset	53%	(8)
Result of a crisis situation	40%	(6)
Provisions established at outset and result of a crisis	07%	(1)

TABLE XXII

MEASURES TO ENSURE EMPLOYEE SATISFACTION

Measures Used	Percentage	Number
Established career paths	47%	(7)
Provision for direct user feedback	53%	(8)
Merit pay	60%	(9)
Open climate in the center	87%	(11)
Other	20%	(3)

*Multiple responses resulted in percentage and number totals greater than the base.

Employee morale is measured in most of the organizations by observation of worker attitude (ranked Number One by 13 of the 15 companies). Productivity records are also a strong indicator of employee morale, and these records are kept by over half of the centers. Nearly half of the centers relied on input from others outside the center as a measurement, although this was not the primary method of measurement. Rankings are shown in Table XXIII.

TABLE XXIII

METHODS FOR MEASURING EMPLOYEE MORALE

Rank	Methods Used	Percentage	Number
1.	Observation of worker attitude	87%	(13)
2.	Productivity records	07%	(1)
3.	Input from others outside the WP center	07%	(1)
--	Turnover rate	0%	(0)

(Rankings were determined by the number of "Number One" responses for each method.)

Feedback from users, both positive and negative, is obtained primarily by routing through the supervisor, second by personal or phone contact from users directly to operators, shown in Table XXIV. Feedback was obtained in all organizations. Other indications of positive feedback were flowers, candy, and thank-you notes from users directly to the word

processing center or to individual operators. Table XXIV illustrates user feedback.

TABLE XXIV

METHODS FOR OBTAINING USER FEEDBACK

Rank	Negative		Methods	Positive	
1.	67%	(10)	Personal/phone user contact	60%	(9)
2.	33%	(5)	Feedback through supervisor	40%	(6)

Other people problems not referenced by specific questions included the usual people problems; e.g., negative employee attitudes, jealousy, gossip, age of supervisor (too young), conflict resulting from the close atmosphere. One company indicated a strong conviction that the pool environment creates problems rather than reduces problems. Another problem voiced by two managers was the lack of supervisory material from which to draw; those persons who have the capability for supervisory positions are often lured away from the word processing field by enticing salaries, status, and prestige of the private secretarial positions. Most of the problems the managers and supervisors faced, however, could be attributed to ordinary personnel problems.

Operating Procedures

General Procedures. Almost half of the responses concerning the procedures manual were recorded in the "Other" category, with two companies having a departmental manual only for the center, two companies having a manual in progress, and two companies having a manual in the past but not currently using the manual (although policies and procedures originally outlined in the manual are still being followed), and one company having a manual for users only. A third of the centers use a separate procedures manual for users and standard operating procedures (SOP) manual for operators, and over half reported they do not use a manual (Table XXV). Some indicated they did not use a manual but qualified their answer with a response which was also recorded in the "Other" category, resulting in percentage and number totals greater than the base.

TABLE XXV

PROCEDURES MANUALS USED IN CENTERS

Procedures Manuals Used	Percentage	Number
Separate manual for users and SOP for operators	33%	(5)
Joint manual for users and for operators	0%	(0)
Do not use a manual	53%	(8)
Other	47%	(7)

The kind of work processed in the center varies; however, repetitive documents, specialized documents such as manuals and reports, lengthy documents, and heavy revision documents are produced in three-fourths of the centers surveyed. A majority of the centers produce dictation material, just over half produce forms, just under half produce general correspondence, and a small percentage indicated other kinds of work processed in the word processing center not listed on the questionnaire. Twenty percent of the centers reportedly produce all typing, yet none of the centers surveyed indicated that "no typing is done by other secretaries." Rather, those companies indicated that the work processed by other secretaries in the organization was of a lighter nature; generally, light typing or overflow typing, forms, some dictation, and some general correspondence. Table XXVI illustrates the kinds of work produced in the word processing centers and the kinds of work produced by other secretaries in the organizations.

The determination of who would continue to work as an administrative secretary and who would move to the word processing center was made by secretarial option in a greater percentage of the organizations surveyed; management decision was the determining factor in just over one-fourth; and in a third of the companies, no changes from administrative secretary to correspondence secretary were made; i.e., new personnel were hired to staff the word processing center (Figure 13). Previous word processing experience was a factor only in those organizations where secretarial option was the method of determination.

Document Production and Distribution. The methods used to determine the kinds of work to be processed in the center and the work to be processed by other secretaries in the organization are ranked in order as

TABLE XXVI

KINDS OF WORK PRODUCED

Kind of Work	WP Center		Other Secretaries	
	Percentage	Number	Percentage	Number
All typing	20%	(3)	--	--
No typing done by others	--	--	0%	(0)
Light/overflow typing	--	--	53%	(8)
General correspondence	40%	(6)	73%	(11)
Repetitive documents	73%	(11)	0%	(0)
Dictation	60%	(9)	60%	(9)
Specialized documents	73%	(11)	07%	(1)
Lengthy documents	73%	(11)	07%	(1)
Forms	53%	(8)	40%	(6)
Heavy revision documents	73%	(11)	07%	(1)
Other	13%	(2)*	20%	(3)**

*Customer billings, lists, statistical tables

**Minutes of meetings, expense books, some reports

Note: Because of multiple responses, the percentage total is greater than 100 and the number total is greater than 15.

shown in Table XXVII. Various other methods have been used to determine what should be processed in the center and what should be processed by other secretaries in the organization; e.g., number of copies needed, one-time versus repetitive documents, and weight of letterhead have all been used on occasion. However, these methods do not represent the primary method used by the organizations for selection of work to be produced in the word processing center.

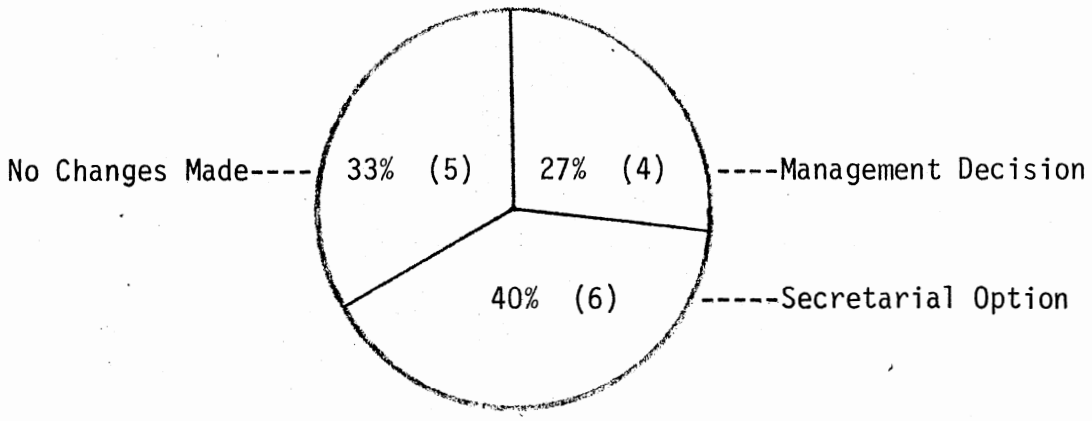


Figure 13. How Did the Organization Determine Who Would Continue Working As An Administrative Secretary and Who Would Move to Word Processing?

Work arrives at the word processing center through mail/delivery systems in all of the centers and through dictation systems in nearly all of the centers, shown in Table XXVIII. Work also arrives in various forms: most centers receive dictated material; all centers receive rough draft, handwritten and copy material; and a fourth of the centers accept

TABLE XXVII

METHODS USED TO DETERMINE WORK TO BE PROCESSED

Rank	Methods Used	Percentage	Number
1.	Management decision	33%	(5)
2.	Center supervisor's decision	20%	(4)
2.	Backlog or volume of work to be processed in the department	20%	(4)
4.	Amount of revision necessary	17%	(2.5)*
5.	Length of document	10%	(1.5)*

*This figure represents a split (50 - 50) vote.

TABLE XXVIII

HOW WORK ARRIVES AT THE CENTER

Method of Delivery	Percentage*	Number*
Mail/delivery system	100%	(15)
Dictation System	80%	(12)

*More than one response may have been appropriate.

telephone requests for processing of pre-recorded information. These methods are demonstrated in Table XXIX.

TABLE XXIX

FORMS OF WORK RECEIVED BY CENTERS

Kinds of Work	Percentage*	Number*
Dictated material	80%	(12)
Rough draft, handwritten	100%	(15)
Copy material	100%	(15)
Telephone requests	27%	(4)

*More than one response was appropriate; therefore, the percentage and number totals exceed the base.

As was illustrated in Table XXV, p. 54, over half of the centers responded that they do not have (use) a manual. A third of the centers indicated that dictation procedures are outlined in the manual, while a small percentage indicated that dictation procedures are not outlined in the manual (Table XXX).

Dictation procedures are followed in a third of the organizations, corresponding with the number who indicated that dictation procedures are outlined in the manual. No apparent problems exist regarding the use/non-use of dictation procedures (Table XXX).

TABLE XXX

USE OF DICTATION PROCEDURES

Dictation Procedures	Outlined in Manual		Followed	
Yes	33%	(5)	33%	(5)
No	13%	(2)	--	--
Do not have a manual	53%	(8)		

The work is categorized by a variety of methods when it reaches word processing; however, all of the organizations have established departmental priorities for work to be processed. A majority of the centers use the first-in, first-out method of assigning priorities; but a majority also categorize work to be processed as rush. A third use the category routine, and almost a third categorize by revision (Table XXXI). One company does not categorize the work except for departmental priority; rather, a final completion date is written on the instruction slip which accompanies the document. The operator simply works to that completion date.

In a majority of the centers the work is logged in either by the supervisors, by individual operators, or by lead operators or assistant supervisors. However, 40 percent of the centers do not log the work in, shown in Figure 14.

In most of the centers all operators produce all kinds of work. A few centers assign the work based on categories other than those listed

TABLE XXXI

METHODS OF CATEGORIZING THE WORK

Methods Used	Percentage*	Number*
Departmental priority	100%	(15)
First-in, first-out	67%	(10)
Rush	60%	(9)
Routine	33%	(5)
Revision	27%	(4)
Other	07%	(1)

*More than one response was appropriate; therefore, the percentage and number totals are greater than the base.

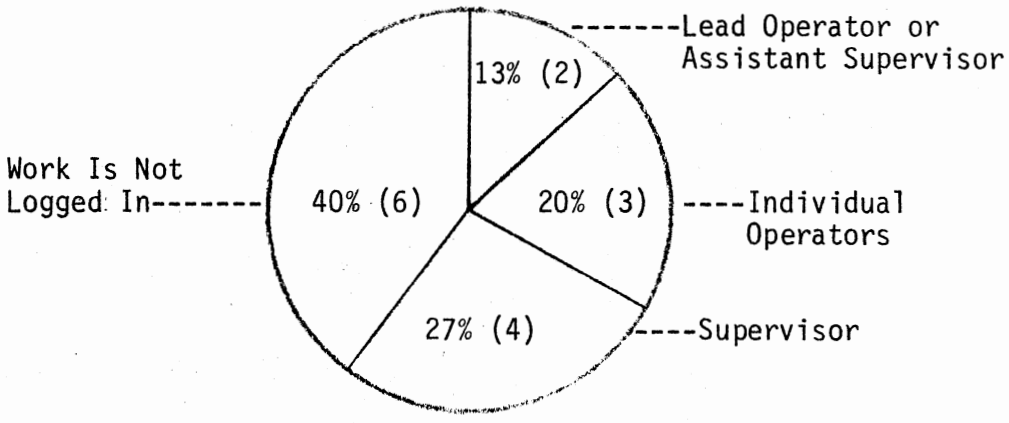


Figure 14. Who Logs the Work In When It Reaches the Center?

on the questionnaire, such as assignment by repetitive documents, assignment to dictation, assignment to legal documents, or assignment to forms. Although most supervisors reported that all operators produce all kinds of work, in some of those centers certain individuals are also assigned primarily to certain kinds of work. The conclusion here is that all operators can produce all kinds of work, although this may be more theory than actual practice. Table XXXII illustrates the percentage of centers using the specific categories listed.

TABLE XXXII

DISTRIBUTION OF WORK

Distribution of Work	Percentage*	Number*
All operators produce all work	87%	(13)
One person for statistical typing	20%	(3)
One person for heavy revisions	07%	(1)
One person for confidential work	27%	(4)
One person for proofreading	07%	(1)
Other	13%	(2)

*More than one response was appropriate; therefore, the percentage and number totals are greater than the base.

As is illustrated in Figure 15, an instruction slip accompanies all documents in a majority of the centers. The instruction slip is useful

in the logging function. (Note that only 60 percent log the work in, but 67% require instruction slips.)

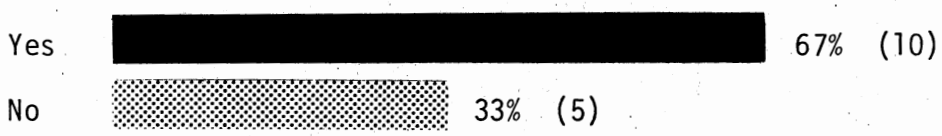


Figure 15. Does An Instruction Slip Accompany All Documents?

The work is proofed primarily by individual operators. Multiple proofing exists in some centers, however; for in some centers regardless of who has proofed the work, the supervisor also proofs the work. Exchanging work to be proofed between operators is also practiced. In a small percentage of the organizations, the ultimate responsibility lies with the originator rather than with the word processing center, and proofing is done by the originator. This response was recorded in the "Other" category in Table XXXIII.

First-time, final document production is not a goal to be achieved in approximately one-fourth of the centers. A third of the centers, however, strive for first-time, final production on all documents; a third strive for first-time, final production on all except lengthy or special revision documents; only one center strives for first-time, final document production on dicated material, shown in Figure 16. None of the centers strive for first-time, final document production on general correspondence.

TABLE XXXIII

PROOFING OF WORK IN THE CENTER

Proofreaders	Percentage*	Number*
Supervisor	33%	(5)
Person assigned to proofing	13%	(2)
Operators proof other's work	27%	(4)
Operators proof own work	73%	(11)
Other	13%	(2)

*Percentage totals and number totals exceed base because of multiple responses.

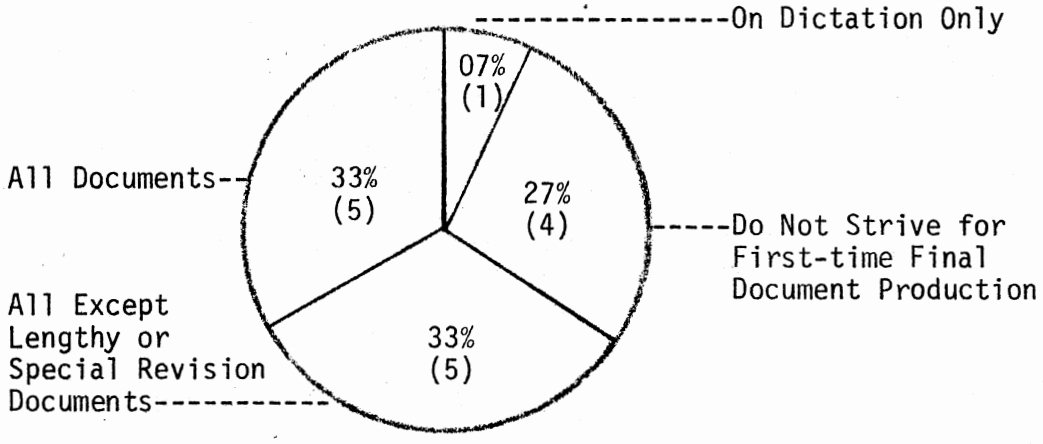


Figure 16. Do You Strive for First-time, Final Production?

Average turnaround time is 5 - 8 hours in a majority of the centers surveyed. A small percentage of the centers indicated a turnaround time of 0 - 4 hours; a small percentage strive for a turnaround time of more than 2 days; and a very small percentage strive for a turnaround time of 2 days. Some organizations indicated that specialized documents are not figured with average turnaround time; these documents require more than two days. Table XXXIV illustrates turnaround time.

TABLE XXXIV

DOCUMENT TURNAROUND TIME

Turnaround Time	Percentage	Number
0 - 4 hours	13%	(2)
5 - 8 hours	67%	(10)
2 days	07%	(1)
More than 2 days	13%	(2)

Uneven work flow is handled primarily through informal verbal communication between users and the centers and by priority scheduling from user departments. Only a few of the supervisors request backlog information from users. One supervisor reported a steady flow of work at all times. Methods of handling uneven work flow are illustrated by rank order and by percentage and number of centers using each method (Table XXXV).

TABLE XXXV

METHODS USED FOR HANDLING UNEVEN WORK FLOW

Rank	Methods	Percentage*	Number*
1.	Informal verbal communication between users and the WP center	73%	(11)
2.	Priority scheduling from user departments	67%	(10)
3.	Requests for peak load information from users	27%	(4)
4.	Cross training of operators and administrative support personnel	13%	(2)
	Other: Continuous work flow; continue working until caught up	13%	(2)
6.	Published reports of upcoming peak and slack times for the center	07%	(1)

*Multiple responses were appropriate; percentage and number totals are greater than the base.

Productivity and Work Measurement. A majority of the centers surveyed apply some measurement standards to the production in the center; however, nearly one-fourth of the centers do not measure productivity, as is demonstrated in Figure 17. The most common form of measurement is lines per month, by operator and by center. In those centers where work measurement is practiced, work is measured by both individual operators and supervisors.

Employee productivity is a tool used directly for evaluative purposes in nearly half of those companies using productivity measurement, and a large majority use productivity indirectly for evaluative purposes, as is

illustrated in Table XXXVI. Two of the supervisors, while not measuring productivity in their centers, indicated that indirect (visual) observation is used for evaluative purposes. Two supervisors indicated that the question was not applicable because they did not measure productivity in their centers; those responses were recorded as "Not Used For Evaluative Purposes."

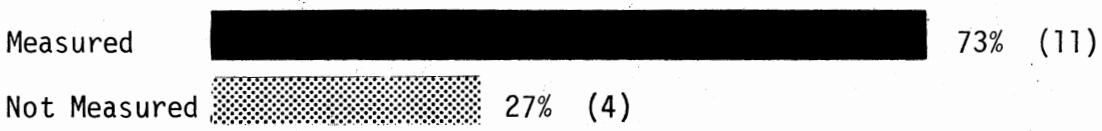


Figure 17. Is Productivity Measured?

TABLE XXXVI

USE OF PRODUCTIVITY MEASURE FOR EVALUATIVE PURPOSES

Responses	Percentage	Number
Directly	33%	(5)
Indirectly	53%	(8)
Not Used for Evaluative Purposes	13%	(2)

Allowances are made for kinds of work produced by straight count of lines/pages in nearly half of the centers, by weighted count in a small percentage of the centers, and by set standards for particular jobs in a small percentage of the centers. No allowance is made for kinds of work produced in approximately one-fourth of the centers, as illustrated in Figure 18.

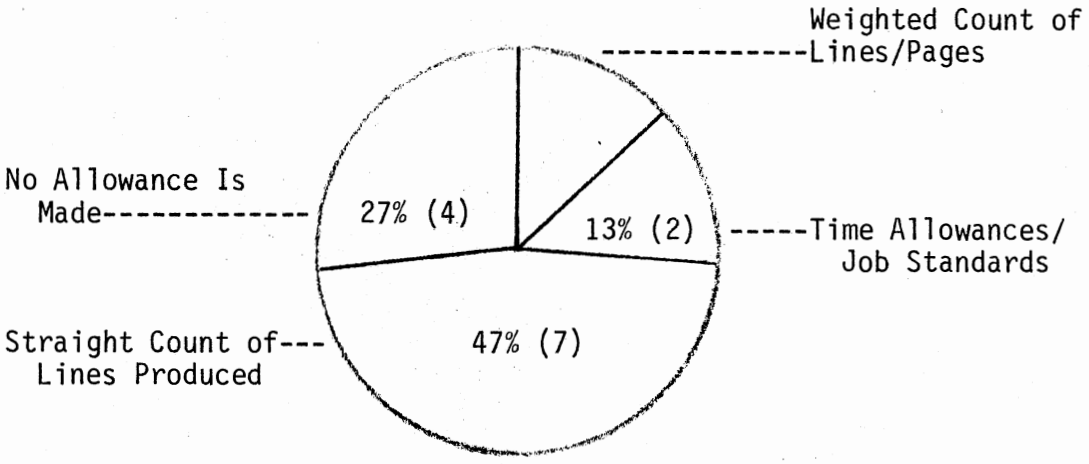


Figure 18. Are Allowances Made for the Kinds of Work Produced?

In addition to the structured questions pertaining to procedures of operation in the word processing centers, exactly one-third reported having experienced no other problems. Other centers listed a variety of procedural problems, however, ranging from problems resulting from having no standardized procedures to the extreme of perhaps having procedures which are too complex. Following are the procedural problems noted by the center supervisors:

1. Need for better proofreading system.

2. Need for direct advertising to inform people about the center.

3. Need for training program for users.

4. Need for procedures manual.

5. Need for established procedures for individual user departments.

6. People (users) not yet comfortable taking work to the center; they still prefer to work through a liaison.

7. Need for system monitor for logging dictation work.

8. Lack of established procedures regarding rush work; specifically, problems arise over whose work has priority.

9. Unrealistic approach by management to the proper use of this kind of equipment; people/departments who need help still do not have it, yet work is processed in the word processing center which could be processed by administrative secretaries in the organization.

10. Center is expected to justify costs while other secretaries in the organization are not required to justify costs.

11. Procedures used may be too complex; work measurement methods currently in use take too much time.

12. Need a procedures manual for new employees; lack of information for new employees requires more supervisory time than it should.

13. Not enough time to implement procedures needed.

14. Not enough people to run dual system.

15. One department insists on different procedures for its needs; center supervisor wishes to standardize.

Equipment

Equipment Status. Of those companies surveyed, most are currently using the same brand of equipment that was used at the outset of the word

processing center. The remaining few listed need for compatibility, need for communication with other existing equipment in the company (e.g., communication with the home office or corporate headquarters), and the need to improve turnaround time as reasons why equipment changes were made. Figure 19 illustrates status of equipment brands.

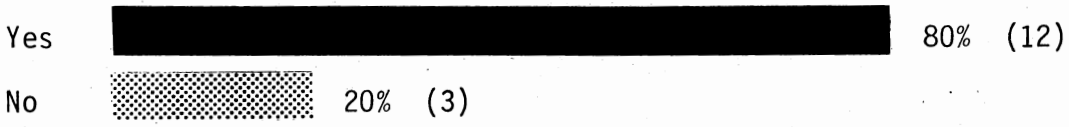


Figure 19. Is the Same Brand of Equipment Currently Being Used That Was Used at the Outset of Word Processing In Your Organization?

Nearly all of the word processing centers have upgraded their equipment since the establishment of the center, primarily for the purposes of increased storage and increased output to handle increasing work load (Figure 20). Only one center had not added equipment, and that center had been in operation only one year; thus the center was opened with newer, more advanced equipment than some of the other centers currently have.

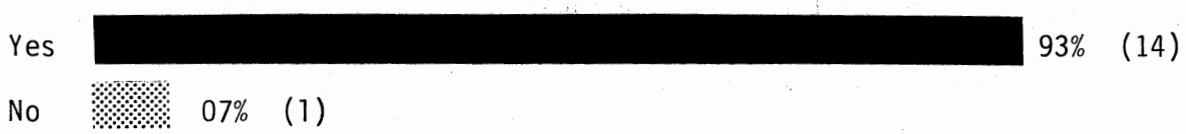


Figure 20. Has the Equipment Been Upgraded or Additional Equipment Been Added Since the Establishment of the Center?

Three-fourths of the supervisors felt that the equipment was meeting the needs of the center. The remaining fourth identified needs ranging from software packages to aid forms control and an optical reader to read and record typed pages to the more common response of "need of additional equipment to handle increasing volume of work in the center." A majority of the center supervisors felt that the equipment was meeting the needs of the organization, although several expressed the need to interface with the computer and a belief that the center could probably serve the organization more effectively (Table XXXVII).

TABLE XXXVII

COMPARISON OF EQUIPMENT TO CURRENT NEEDS

	Yes		No	
Equipment Meeting Needs of Center	73%	(11)	27%	(4)
Equipment Meeting Needs of Organization	60%	(9)	40%	(6)

Plans are being made in most of the centers to acquire additional equipment (Figure 21). Most of those planning for new equipment have identified to management the particular need to be filled; i.e., the specific unit/units of equipment to be purchased, such as an optical reader, laser printer, display writer, etc.

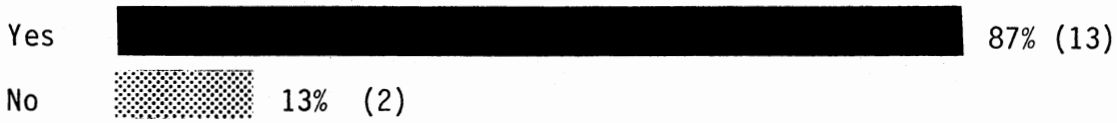


Figure 21. Are Plans Being Made To Acquire Additional Equipment At This Time?

Equipment Selection. The number-one criterion for selection of equipment in the center was capabilities/features of the equipment. Ranked second most important criteria were speed of production, cost of equipment, and corporate management decision. One company indicated that salespeople (vendors) were the important criterion. Another company simply followed the lead of other similar organizations in the state, noted as "Other" in Table XXXVIII. While some consideration was given in some companies to service/maintenance contracts, work to be produced in the center, and to training time, none of these factors was ranked by any company as a number-one criterion for selection of equipment.

Few difficulties were encountered in matching equipment capabilities to the centers' needs. In a small percentage of the centers, the equipment had fewer capabilities than were needed, but in no instance did the equipment have more capabilities/features than were needed, as noted in Table XXXIX. In one instance the center had outgrown the equipment's capabilities by the time the center had opened; in addition, the need for more sophisticated features was immediately recognized. In another center the storage capacity was limited such that two operators could not work on two large projects simultaneously. Still another center was set up

TABLE XXXVIII

CRITERIA FOR SELECTION OF EQUIPMENT

Rank	List of Criteria	Percentage	Number
1.	Capabilities/features of equipment	47%	(7)
2.	Speed of production	13%	(2)
	Corporate management decision	13%	(2)
	Cost of equipment	13%	(2)
5.	Salespeople (vendors)	07%	(1)
	Other (followed lead of others)	07%	(1)

TABLE XXXIX

COMPARISON OF EQUIPMENT TO CENTER NEEDS AT OUTSET

Comparison	Percent	Number
Equipment matched to center needs	80%	(12)
Fewer capabilities than needed	20%	(3)
More capabilities than needed	0%	(0)

so that only one processor could access the printer at the outset, which proved to be a problem of immediate urgency.

Nearly all of the centers leased their word processing equipment at the outset, although a very few centers leased some equipment and purchased other equipment at the outset (Table XL). A very few centers rented equipment on a short-term basis.

TABLE XL

METHOD OF ACQUISITION OF EQUIPMENT

Method Used	Percentage	Number
Lease	87%	(13)
Purchase	13%	(2)*
Rent	13%	(2)

*Reflects purchase in addition to lease

Renting was not a satisfactory arrangement for one center; the supervisor noted that it was cheaper to lease, then purchase. Another found that renting was a satisfactory arrangement. The remainder of the companies, nearly all, found the lease plan to be satisfactory (Figure 22).

Figure 22. Was the Method of Acquisition Satisfactory?

Equipment Training. All of the supervisors interviewed indicated that they train operators for their equipment. Word processing is new enough to this metropolitan area that it is often difficult to find experienced operators, although the supervisors were all in agreement that hiring experienced operators would be their preference. When it is possible to do so, experienced operators are hired; however, at present the usual procedure is to train new employees for their particular equipment.

In-house training is conducted in nearly all of the centers; and supervisor-directed training is given in most of the centers, with approximately three-fourths of the centers also using a self-paced manual. Very few centers use off-campus training facilities, although some are used in conjunction with in-house training. Table XLI illustrates the training procedures for new operators.

The arrangement for training operators is satisfactory in approximately three-fourths of the centers. Of the remaining fourth who reported that training was not satisfactory, all of those centers used some method of in-house training; yet the reasons why the training was not satisfactory were all linked to lack of time to train in an adequate manner, the need for training in a non-traffic location, the need for uninterrupted training periods, and the like (Figure 23).

TABLE XLI

METHODS FOR TRAINING NEW OPERATORS

Method of Training	Percent*	Number*
On location (in house)	93%	(14)
Off campus (at vendor's)	20%	(3)
Supervisor directed	87%	(13)
Self-paced manual	73%	(11)

*Percent and number totals reflect multiple responses.

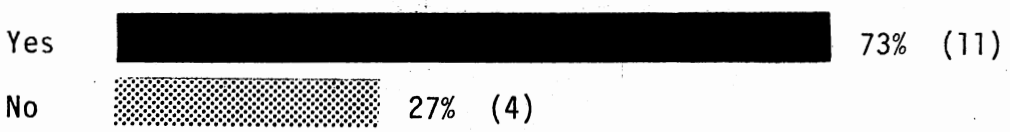


Figure 23. Is the Training Arrangement Satisfactory?

Training time varies from center to center, depending on the kind of equipment used, although over half of the supervisors indicated that one week of training was adequate. Slightly over one-fourth of the supervisors indicated the approximate training time was two weeks. A few of the supervisors noted training time of two days or less, and one company trained for only three days. One supervisor noted that one unit of equipment required training time of only one week, while another unit in the center required training time of two weeks. This response resulted in percentage and number totals greater than the base (Table XLII).

TABLE XLII

TRAINING TIME FOR OPERATORS

	Two Days Or Less	One Week	Two Weeks	Other
Percentage	20%	53%	27%	07%
Number of centers	(3)	(8)	(4)	(1)

Slightly more than half of the supervisors interviewed indicated that no additional equipment problems had been encountered. The major problem, experienced by a large majority of the centers which had encountered problems, was the amount of equipment downtime. Several expressed the opinion that the constant demand on the equipment was responsible for the excessive downtime. Other problems such as the age of the equipment (and need for equipment to be rebuilt), inability to get parts, and inexperienced repairmen were noted. One company experienced a variety of problems: printer problems, software problems, lack of communication between repair technicians and operators or supervisors of the center, poor support from vendor, lack of training from vendor's training instructor for user company, customer representative not adequately educated for the system being implemented, and software not properly adapted to the center's needs. Equipment in this company was installed one full year before the center realized any benefit from it; in addition, the vendor's user manual was inadequate and obsolete. That center is now operating fairly smoothly; however, the center still has several months' backlog of work to be processed.

Chapter V provides a summary of key questions and conclusions drawn from the study. The chapter also includes recommendations for organizations planning to implement a word processing system and recommendations for further research.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to: (1) determine the procedures most commonly used in the implementation of word processing systems; (2) identify the practices and problems related to the components of word processing--people, procedures, and equipment--in the implementaion and operation of word processing centers; and (3) make recommendations to give direction to companies considering the installation of a word processing system.

The study was limited to 15 selected service organizations; that is, service organizations in the Oklahoma City area which had an existing word processing center with at least three units of equipment. In addition, the study was limited to those centers that had a supervisor and to those centers that had been in operation for at least one year. Supervisors and other key personnel involved in the implementation of the word processing system were interviewed to obtain the data.

Included in this chapter are: (1) a summary of key questions immediately followed by conclusions drawn from the study, (2) a comparison of the findings of this research with that of earlier studies conducted in word processing, (3) recommendations for companies considering the installation of a word processing system, and (4) recommendations for further research.

Summary and Conclusions

Implementation Procedures

Specific questions were addressed to implementation procedures of the word processing centers. The issues dealt with were related to the initial stages of word processing implementation: determination of need, introduction to and reaction to word processing by employees, structure of the centers, conversion to word processing, and users of the centers.

Determination of Need. Although most of the organizations surveyed conducted a study to determine if word processing was feasible for their organizations, the decision to evaluate word processing and ultimately to adopt word processing was a direct result of suggestions made by individuals in the organization other than top management in more than half of the organizations surveyed. In addition, employees played an important role in feasibility studies through task forces and planning committees. These statistics indicate that management is willing to listen to and does indeed act upon suggestions or leads from employees for improvements in the organization, especially where productivity is concerned. Employees should, therefore, be aware of the organization's needs, be thoroughly familiar with possible solutions to problems, and be willing to make suggestions that will profit the organization as well as the employee.

Generally speaking, management is not willing to expend large amounts of money without a thorough investigation of the problem and alternative solutions, as indicated by the number of companies conducting feasibility studies. A feasibility study not only shows if word processing is feasible, but it also shows management where word processing is needed most and in what areas or departments the use of word processing equipment can

most profitably be used. Although a variety of methods was used to conduct the studies, most organizations used some form of analysis of actual work processed in the department or division considering word processing. The questionnaire method, usually involving a questionnaire presented both to secretaries and to principals, was not widely used. Where feasibility studies were not conducted, the organizations simply realized the need for increased output and sought word processing as a method to improve productivity and meet company goals.

Introduction to and Reaction to Word Processing. In many of the organizations surveyed, management chose to communicate with employees in an attempt to relieve anxiety about the impending change. Other methods used to eliminate or relieve anxiety included seminars and equipment demonstrations, input sought from employees, and job opening announcements. From the observations of the researcher and the careful analysis of the questionnaire results, it was concluded that these organizations--the ones that involved employees in the entire process--made the smoothest transitions with employees who were enthusiastic and interested in the project. Those organizations that took no measures to eliminate or relieve anxiety among employees to be affected by word processing were the ones that met with the most resistance; other reactions in these organizations also included skepticism, anxiety, and limited enthusiasm.

While it is not always possible to allow employees a voice in the decision-making process, the organization that communicates with employees about any change which will dramatically affect the work routine is the one that will receive the most cooperation from employees and the one whose plans will be more smoothly implemented. Some resistance to change will always be present, but that resistance can be positively affected if

employees know what to expect and, in addition, how any change will affect their positions with the organization. It is the belief of the researcher that the organizations whose employees experienced resistance to change, anxiety, skepticism, and fear of losing jobs or fear of losing secretaries could have prevented, or at least reduced, those frustrations if some precautionary measures had been taken.

Structure of the Word Processing Centers. Although early proponents of word processing systems advocated the complete separation of typing and non-typing duties and the elimination of some of the executive secretaries in the organization (called the centralized structure), many other structural arrangements have evolved, four of which were described in Chapter II. None of the organizations surveyed had completely separated the typing and non-typing functions, and none of the organizations had a separate administrative support system. Actually none of the word processing centers served the entire organization, although several supervisors indicated that they would be moving in that direction in the future. Most centers served only a select group, department, division, or region, and the center was centralized within that department, division, or region. The centers surveyed would be categorized in the following two structures: (1) the special purpose structure, in which daily, routine correspondence is still produced by traditional secretaries and only large reports requiring revisions or extensive editing or special work is done in the small word processing center; and (2) the integrated structure, in which only occasional departments or divisions of an organization can justify the cost of word processing equipment. More than half of the respondents were satisfied with the present structure, yet most of those not satisfied with the present structure felt that total centralization

would yield higher productivity and would better serve the entire organization.

Typing done (work produced) in most centers parallels, for the most part, that which is done by other secretaries in the organization, with the exception of lengthy or heavy revision documents or repetitive documents, which are done in the word processing centers. Yet in a truly centralized system, only light or overflow typing is done by the administrative secretaries, with most of their work being of an administrative nature.

Conversion to Word Processing. Planning is the key to a successful conversion, and that planning involves the entire organization, not just the word processing center. A thorough study of company needs should be conducted both in the area of feasibility of word processing and in the physical layout of the center. Such factors as allowance for expansion, adequate power outlets, and environmental needs (temperature and humidity) should be considered. Key factors which affect the successful implementation of a word processing system are:

(1) Allow an adequate length of time for the changeover, rather than trying to make the change overnight. Most of the centers took several months to make the conversion. Planning should include time allowance for acquisition of equipment and personnel, training on equipment, assignment of personnel to specific duties if required, education of users, and establishment of procedures for users and for personnel in the center.

(2) Stagger the implementation of word processing in the organization. Implementation was most often staggered in the organizations surveyed; that is, word processing was initiated or users acquired in one department, then another, then another. When implementation is staggered,

the problems which inevitably arise can be worked out in each department before new assignments are acquired from new user departments.

(3) Make adequate preparation for the site of the center. This preparation should include physical layout, environmental concerns, and allowance for expansion. Word processing employees should not be made to feel that they are "stuck in a corner somewhere" away from other employees. Yet the center should not be located in the middle of a traffic flow, as was one center visited by the researcher. To create a smooth and functional work flow, physical location of the center and physical layout of equipment within the center are important. The center should be made as sound proof as possible to prevent disruption of the work of the center employees by other employees, as well as disruption of other employees by the noise of the word processing equipment. One supervisor indicated that at the outset, the dictation section of the word processing center was located adjacent to the main filing section, and conversation between/among file clerks created difficulties for those correspondence secretaries trying to concentrate on dictation. The relocation of the dictation section solved the problem. The arrangement of the stations as well as the location of the center can attribute to the privacy needed by the word processing center employees.

(4) Identify environmental needs of the equipment, such as temperature and humidity requirements, in advance so that adequate preparation can be made before the equipment is installed. One center visited by the researcher had relocated three times in an effort to find a location in which a comfortable temperature could be maintained. Another center found that, although a separate room had been established for the center, no allowance had been made for special power requirements of the equipment,

and thus another delay in conversion was experienced. Careful consideration of the four preceding factors will aid in the transition to a word processing system.

Users of the Center. The survey indicated that top management and middle management with or without private secretaries, as well as some of the secretaries in the organizations, use the word processing centers. The most common form of training for new users was the orientation session with the center supervisor, although some organizations do furnish a manual for users and some centers have an open house for users periodically. Prior to the opening of the center in many of the companies surveyed, no training was given regarding the use of the center. Those companies still do not provide any training for new users, yet over half of the companies surveyed reported that the training provided for new users was not adequate. More extensive use could be made of other types of new user training such as a film about the center, open house in the center, and a manual furnished to new users in addition to the orientation session with the center supervisor. In addition, more extensive use could also be made of direct advertising. Few centers take advantage of the opportunity to advertise by sending samples of work which the center can do by providing statistics on turnaround time and reduction in costs when work is processed by the center or by using surveys/questionnaires to determine if the needs of the organization are met through the services of the center. It is the belief of the researcher that more work would probably be forwarded to the center if the principals were aware that certain kinds of work could be processed by the center more economically, more quickly, and with greater ease. Advertising can be beneficial to the center and to the organization; however advertising seems to be an

untapped resource in most of the organizations which were surveyed. And advertising can be helpful to the experienced user as well as to the new user.

Components of Word Processing

Key factors in any word processing system are the components of word processing--people, procedures, and equipment. Thus, the target issues dealt with in this section included people (employees in the center), procedures of operation within the center, and matters of concern related to equipment. Problems with procedures were most critical at the inception of the center. When those problems subsided, problems with people, which were possibly underlying problems all along, surfaced. Following is a summary of the questions related to the components of word processing.

People. In training new employees one organization surveyed used, in addition to the regular in-house orientation session with the center supervisor, a standard operating procedures (SOP) manual for operators, equipment training, and an in-house prepared video tape about the company's word processing center. This program provided the new employee an overall view of the purpose and capabilities of the center. This center was an exception, however, in the variety of procedures used for training new employees. Equipment training and in-house orientation sessions with the center supervisor were the two predominant methods of training provided for new employees in most of the centers.

Turnover was not a significant problem in the centers surveyed. The majority of personnel left for the usual reasons: better opportunity elsewhere, family responsibilities, relocation, and various other reasons.

Only one separation was attributed to a change from administrative secretary to a correspondence secretary, a change which was brought about by a management mandate. In this instance, the employee felt that the word processing secretary's job to which she had been assigned was very demeaning and a serious blow to her ego. Although this was an isolated instance, only one instance is necessary to point out the significance of carefully matching the aptitudes and skills to the individual job of administrative secretary or correspondence secretary.

Although turnover does not seem to be a major problem according to the responses, the reasons for which employees left should be of major interest to the organizations surveyed and to future word processing center supervisors/managers. The number-one reason employees have left word processing centers, according to the results of this survey, was "better opportunity elsewhere." Better opportunity elsewhere could mean that salaries were too low or that the jobs provided little opportunity for advancement; however, it should also be noted that "better opportunity elsewhere" seems to be a "catch-all" response which provides an easy way for both employees and supervisors to save face. Had former employees answered the question, it is very likely that the responses might have been different.

All of the centers surveyed seemed to have handled the problem of backup support very well through cross training by equipment and by subject matter and through the use of temporary people from agencies. However, just over half of the organizations surveyed established the provisions for backup support at the outset of the center. This should be a strong emphasis in the planning for a word processing center; i.e., what do you do when key employees are out? Establishing the provisions

for backup support at the outset will help to ensure that the word processing center maintains a smooth work flow with no loss in productivity when employees are ill, on vacation, or in case of permanent separation without adequate notice.

Employee satisfaction can be a serious problem; however, several of the centers have taken very positive steps to improve morale through established career paths, merit pay, open climate (a supportive climate, one in which open communication is promoted, where feedback is encouraged and even solicited, for example), and various other plans. It was not noted if these measures were initiated at the outset or after some problems had occurred. One center uses sound-proof carrels, plants, carpeting and spacious physical layout in an effort to improve employee satisfaction. Another center which claimed an open climate actually demonstrated a closed climate through physical arrangement of equipment and desks, office decor, and limited space. The manager's desk was placed at the front of the room facing all operators' stations, much like the traditional "classroom," giving the feeling that the manager must keep a constant watch over the employees (this, in fact, she did). This center reported a turnover three times that of any of the other organizations surveyed. Perhaps an analysis of the pseudo-open climate, the routing of feedback from users directly to correspondence secretaries rather than through the supervisor, the establishment of career paths, and the elimination of other negative factors would help to decrease the turnover in that center. These factors all play a very important part in the satisfaction of the employees.

Procedures. Over half of the centers found it necessary to publish procedures for operators and users of the centers, and those centers have

a manual either in operation or in progress. In a typical manual, steps are outlined to identify how the proposed document arrives at the center, who produces the document and what format is to be followed, who edits the document, how the document is to be distributed, and how the costs of production are to be distributed. An instruction slip accompanies all documents in a large majority of the centers surveyed; the instruction slip gives regular as well as special instructions by the author of the document. Priorities are established about the production of the work: Is the work produced in a first-in, first-out method, or do some types of work merit special handling? These factors would, of course, influence the turnaround time of the document. Over half of the centers log the work in as it arrives at the center and have established procedures regarding who processes what work, how the work is categorized, document distribution, cost distribution, and other necessary prodedures.

Of the centers who do not currently have a manual in use, only two gave an indication that a manual was neither in progress nor was needed. These two organizations do, however, have established procedures for document production and distribution, categories of work to be produced, editing and proofing of the document--in general, all the procedures which are usually outlined in a procedures manual.

Work measurement standards are applied in three-fourths of the centers surveyed, and employee productivity is used indirectly for evaluative purposes in three-fourths of the centers. Two of the centers not using work measurement are the two centers which also do not use a procedures manual. The remaining two centers have a unique purpose: one is a legal firm in which individual operators are assigned to a particular lawyer to do a particular kind of legal work. The other is a center which

is unique in that the center processes only specialized documents, lengthy documents, or heavy revision documents; does not require instruction slips on documents to be produced; and does not use a manual, yet follows specific procedures. The supervisor of this center reported a turnover rate of "zero" (has lost no employees) and that the center has encountered no "people" problems. All operators in this center produce all kinds of work, proof their own work, and strive for first-time, final document production on all documents. Work is not measured by lines, by pages, or by job standards, yet employee productivity is used indirectly for evaluation.

Equipment. Most of the centers are using the same brand of equipment with which they started, but have upgraded or added to their equipment. Only one center had not upgraded or added to its equipment, and that center had been open only one year. Reasons for upgrading or adding equipment included need for compatibility with other equipment in the corporation, need for increased storage space, and the need to improve production to handle increasing volume.

Equipment was selected primarily on the basis of capabilities/features of the equipment, and few difficulties were encountered in matching equipment capabilities to center needs. Production speed was also strongly considered for equipment selection.

Results of the study showed that of the centers surveyed, only two had purchased equipment. These two purchases were made in addition to equipment which was leased, so that in effect the centers' options were not reduced by the purchase of equipment. All options available to a company, and particularly the leasing options for equipment that could quickly become obsolete, should be investigated prior to commitment to

a contract. If equipment is purchased, some key factors to be considered are compatibility with other existing equipment in the organization, for example, at the corporate headquarters; communication capabilities for communicating with other equipment in the organization; and storage space beyond what is currently needed. As previously noted, most of these factors contributed to the acquisition of new or additional equipment for some companies.

Difficulties encountered in the training for equipment were related primarily to in-house training. Problems were due to a lack of time for training operators adequately, to which a shortage of qualified operators in the area contributes; the need for training periods uninterrupted by other demands for production; and the need for a special location for training, which would also call for additional equipment reserved just for training, an additional expense that probably could not be justified in most companies.

Comparison with Other Studies

The results of this research support several of the findings of an earlier study by Spring (1977), conducted to determine the status of word processing centers within the Urban Corridor of Virginia. Although Spring identified several other factors regarding the word processing conversion process, the following factors are supported by this current research:

(1) The majority of the companies surveyed had not adopted the administrative support function.

(2) Spring indicated that most organizations sought the help of a sales representative (vendor) for the conversion process, and the findings of this research are similar; i.e., well over half of the organizations

reported that a vendor was involved in conducting the feasibility study, sometimes with the aid of a task force of individuals within the company.

(3) Spring's study showed that line counting was the most frequently used form of work measurement. This study also supported those findings; this study showed that the most common form of measurement is lines per month, by operator and by center.

Some differences in the findings also exist:

(1) While Spring indicated that upper level management was responsible for the decision to convert to a word processing system in most of the organizations surveyed, the current research showed that over half of the organizations surveyed indicated that the decision to change to word processing was a result of suggestions from individuals within the organization other than top management.

(2) While Spring's study revealed that the major problem in the conversion process was reluctance on the part of personnel to accept the word processing center, the results of this study indicate that the number-one problem was related to procedures used in the center.

Results of this study also support findings of a study conducted by Rohrer (1978) to determine the status of word processing in the Pittsburgh, Pennsylvania, area. Although most of the study was aimed at identifying implications for business education curriculum change, some findings are pertinent to this research:

(1) Rohrer reported that the most frequently used structure of the word processing center was the small satellite center which served only one department. This research found, also, that most centers served only a select group, department, division, or region of the organization. However, this researcher categorized the centers under the special purpose structure and the integrated structure.

(2) A wide variety of typing tasks was found to be performed by the word processing center in both the Rohrer study and the current research.

This research also supports a finding of Stelzner (1975) that some form of training, either vendor or in-house or a combination of both, exists in most companies. Stelzner also reported that training programs may also include a company manual and a vendor manual and may also include some supervisory training, a finding also supported by this research.

Dennis (1978) determined that almost all organizations surveyed had changed the equipment in their organizations since word processing was initiated. The current research indicated that most of the centers are still using the same brand of equipment, although they have added to or upgraded their equipment.

Dennis also reported that only five of the organizations surveyed divided personnel into administrative support secretaries and word processing/correspondence secretaries. This research reported that none of the organizations surveyed had adopted the administrative support function.

Other studies related to word processing include a study by Claffey (1979), who found that word processing centers varied in organization, purpose, and operation, a finding also supported by this research. McCrary (1979) recommended that management consider word processing as a change in organizational structure that affects the entire organization. A similar recommendation for management is made by the author of this research in that the author suggests that a formal agreement between management and word processing management be reached which incorporates goals and objectives for the center as well as long-range planning for the center, goals to be accomplished by the center, and a master strategy

for the organization which integrates word processing into the overall goals of the organization. This recommendation follows in the section "Recommendations to Management."

Recommendations to Management

Based on the findings of this study and observations of the researcher, several recommendations are made to assist companies in formulating guidelines to implement a word processing system. Recommendations are made to management regarding feasibility studies, open communication to employees about word processing, adequate planning for the project, training program for new users of the word processing system, and the use of an advertising program. Additional recommendations are made regarding a training program for new employees, employee retention, use of specific procedures in the center, analysis of equipment needs, setup time for new files, and development of a master plan.

Feasibility Study

A feasibility study which incorporates a careful analysis of actual production (work produced) is recommended. Methods commonly used by companies to conduct feasibility studies and recommended by this researcher include the analysis of correspondence or other file materials, the use of "action paper" or other copies of actual work, and the observation of secretaries by planning committee members. Employees should be involved in the study to promote interest and enthusiasm. To be most effective, the study should include all departments/divisions of an organization. Team or committee assignment is recommended over personal assessment of work to ensure accurate, unbiased reporting of information. For example,

secretaries should not be asked to assess their own production as the only documentation for determining need for a word processing system. Objective analysis by a committee would likely provide more reliable data.

Open Communication to Employees

Communicate openly with employees from the outset about the possible change to word processing to relieve anxiety about the change. Typical positive reactions such as enthusiasm and cooperation are the result of involving the employees who will be affected most by the change, of seeking input from those employees, and of keeping the employees well informed. Typical negative reactions such as resistance to change, anxiety, skepticism, fear of losing jobs and fear of losing secretaries can result unless open communication about the project is maintained. Several methods can be incorporated to overcome resistance to change and to relieve anxiety:

(1) Word processing seminars are frequently offered in most major cities across the nation. These seminars may be conducted by individuals or by organizations such as the American Management Association, Datapro Research Corporation, or by publishers such as John Wiley & Sons, Inc., or the Business Education Division of Dun & Bradstreet. Seminars or short courses are sometimes offered in nearby colleges or universities; these short courses might deal with the concepts of word processing and might also provide equipment training for new employees if needed.

(2) Equipment demonstrations should be sought from several vendors. Most equipment vendors are eager to demonstrate their equipment and will arrange a time for a session with several representatives of a company to observe the equipment, to experiment with the equipment, and ask questions.

Some vendors will even bring the equipment to the company location for the demonstration. Organizations considering word processing should find out as much as possible about the capabilities and features of several brands of equipment prior to making the final selection of equipment. Additional suggestions will be provided in this text regarding equipment selection.

(3) Films about word processing are available through major university media centers such as Illinois University, Indiana University, and others. The films can be rented for a nominal fee ranging from $15 upward and can be retained for approximately three days with one rental fee. This type of film usually relates to the concepts of word processing, although some manufacturers have films related to specific units of equipment.

(4) Job opening announcements can be posted on the company bulletin board. The posting of job opening announcements allows any individual within the company to apply for various positions in the word processing center prior to public announcements for job openings.

(5) Visits to existing centers can easily be arranged by making contacts with center supervisors in the area. Most supervisors are willing to show their center to visitors and will readily answer questions and make recommendations to future supervisors. It has also been the experience of the researcher that most supervisors will readily share information regarding problems relative to the operation of the center, as well as to point out special concerns or special advantages of the center. Generally the tour of the facilities will include demonstrations of the equipment and suggestions for application of equipment to company needs.

(6) Professional organizations are a source of information about and introduction to word processing. Many major cities now have a chapter of the International Information/Word Processing Association (IWP). Other organizations such as the Word Processing Specialists, a group which organized recently in the Oklahoma City area and is designed to promote exchange of information among operators of word processing equipment, can provide helpful information about word processing.

(7) Subscriptions to word processing journals provide invaluable information to a company. Some publications which are recommended are: Words, published by the International Information/Word Processing Association; Word Processing Systems and Word Processing World, both published by Geyer-McAllister. Some manufacturers of word processing equipment also publish bulletins such as Word Processing, published by IBM. These journals provide information about work measurement, cost distribution, analyses of equipment, word processing personnel, and other subjects related to word processing systems. Other publications such as The Office and Modern Office Procedures include feature articles about word processing, as well as regular columns featuring word processing topics. The journals can be provided for those who will be part of the word processing center, either supervisors or operators. These publications will also be excellent reference material once the center is established.

The incorporation of some or all of the preceding suggestions should help to ensure understanding about the project and will very likely create enthusiasm for the project. Further, informed employees usually are not as resistant to change as uninformed employees.

Adequate Planning for the Project

Planning for the word processing center should involve the entire

organization, and thorough planning is the key to a successful conversion. Adequate planning should include the following:

(1) Careful selection of physical location of the center. Location of the center should contribute to a functional work flow within the organization. Based on observations of the researcher, the word processing center should be an enclosed room or area which is completely sectioned off (by floor-to-ceiling walls as opposed to partial or movable walls) from the general traffic flow. Several advantages will result from this type of arrangement, including provision for security of equipment and files, provision for some privacy for the word processing center employees and provision for special environmental concerns, which will be discussed later in this section. Some allowance should be made for expansion of the center. As new user departments are added, it is possible that additional equipment will be needed; thus, adequate space should be allowed at the outset. One center visited by the researcher was located in a hot, noisy, and cramped high-traffic area. It was obvious that careful planning had not been a critical factor in establishing that particular center.

(2) Analysis which leads to functional layout of the center. A smooth work flow should be created by the location of the center as well as by the layout of the center. Such factors as the location of the in/out basket (usually placed near the entrance and near the supervisor's desk), location of the dictation system (usually placed in a central location promoting easy access to all operators), location of noisy, high-volume equipment (usually placed in a remote location), and arrangement of the individual work stations should be considered. The physical arrangement should allow people room to move freely within the center, yet also allow for some privacy for individual operators.

(3) Adequate power requirements for equipment. Communication from the vendor to the organization in advance of the installation of equipment should include information regarding special power requirements of the equipment. In addition, adequate planning should also consider the number of power outlets, as well as proper amperage to supply power to the word processing equipment to prevent interruptions caused by overloaded electrical circuits.

(4) Provision for environmental needs of personnel and equipment. In addition to electrical requirements of the equipment, temperature and humidity requirements should be outlined prior to the installation of equipment. Most computer-based equipment requires a certain humidity level. This information should be provided by the vendor to the center in advance of the installation. In addition, some provision should be made to maintain a comfortable temperature for personnel. Most word processing equipment generates heat; therefore, a cooler-than-normal temperature may be required for the word processing center to maintain a comfortable temperature within the center. Word processing equipment is also known to be noisy, and some precautions should be taken to sound proof the center. Sound absorbing panels, individual carrels, and carpeting can be used to good advantage.

(5) Adequate length of time for the changeover. The establishment of a timetable would aid in the planning for the following factors:

(a) Allowance for acquisition of equipment. While some vendors can deliver equipment immediately, others have a lead time of three to six months before delivery. The needs of the organization should be carefully considered in relation to the ability of the manufacturer to deliver the equipment. One company surveyed experienced a delay in getting their

equipment; and while all delays cannot eliminated, some can be prevented by proper planning. The delay experienced by that particular company created numerous problems.

(b) Procurement and assignment of personnel. Because it is not always possible to hire on short notice the personnel needed for specific positions, the company should not wait until the last minute to initiate the hiring procedure. If changes are to be made within the company, some consideration should be given to the departments from which the employees will be transferred so that a hardship is not created in any department.

(c) Education of users. Several methods for new user training programs are discussed in the following section. However, it would be well for the organization to communicate openly with the entire staff about the installation of a word processing system to promote interest and acceptance of the system once it is initiated. Advertising about the center prior to its opening can help to promote the center. For example, if the principals are aware that certain kinds of work can be processed by the center more economically and more quickly and with greater ease, more work would probably be forwarded to the center. Several of the supervisors indicated to the researcher that advertising, though used by few of the centers, could aid both the center and the principals.

(d) Training of new personnel. One company used a combination of an in-house orientation session with the supervisor, SOP manual for operators, equipment training, and an in-house prepared video tape about the company's word processing center in the training of new employees. This program is an excellent method of training for new center employees. If the preparation of a video tape or other company film is not feasible

(either because of economic or other considerations), an off-campus training course in word processing would be an acceptable substitution for new employees to familiarize them with the concepts of word processing. This training course, perhaps a short course offered by a nearby community or four-year college or a vocational-technical school, might also provide equipment training for new employees. The time required for equipment training varies, however a majority of the companies surveyed indicated that one week was the approximate training time required. This time estimate allows an operator to become familiar with the basic operation of the equipment; additional time must be allowed for proficiency.

(e) Establishment of procedures for users and operators. Although most of the procedures can be outlined at the outset, some changes will probably need to be made once the center is in full operation. Careful planning prior to the center's establishment will reduce the number of changes necessary and will aid in the smooth functioning of the center.

The establishment of a timetable with consideration for the preceding factors will aid the entire organization in the planning for a word processing system. As much as possible, the timetable should be adhered to, although some flexibility should be written into the published schedule.

(6) Provision for possible staggering of new user acquisitions. The timetable could also incorporate a provision for the staggering of new user acquisitions; new user departments would have some idea of when to expect relief from heavy work loads through the use of the word processing center. As new users are acquired, operators will gain additional experience in operating the equipment, as well as in application of the

equipment capabilities to users' needs. The adoption of a staggered acquisition system would prevent the center from being "swamped" at the outset when operation in the center is normally slower than usual. As with the overall timetable for implementation of the system, the timetable for new user acquisitions should provide some flexibility into the schedule.

Training Program for New Users

The results of the study indicated that of the centers reporting that training for new users was not adequate, over half have no training for new users; the remainder use limited new user training procedures. In addition to the usual orientation session with the supervisor and use of a manual for users, it is the recommendation of this researcher that some of the following methods be used for training new users prior to the opening of the center and after the center is opened:

(1) Film about the center or about word processing. One of the center supervisors interviewed had planned and produced a video tape for training new employees and for training new users. The cost to produce the video tape was estimated at about $500; however, inflation would probably increase the price somewhat. If it is not feasible for the company to produce its own video tape, commercial tapes and films are available which would explain the general concepts of word processing.

(2) Open house in the word processing center. Some of the centers surveyed used a periodic open house to advertise their center. Although some people outside the organization are invited, the primary purpose of the open house is to give potential users an opportunity to see the center, to see the equipment, and to see some application of the equipment

to individual users' needs. The open house is also recommended to promote good will between the center and the users.

(3) Seminars or staff meetings about word processing. Key personnel from the word processing center could be prepared to give information and answer questions about the word processing center in regular staff meetings or in informal meetings or seminars. The individual who conducts the meeting should be one who has established credibility in the organization and who is knowledgeable in the field of word processing and about the center's operations.

(4) Vendor presentations and equipment demonstrations. These presentations could most effectively be used prior to the opening of the word processing center. After the establishment of the center, the open house precludes the need for vendor demonstrations.

The preceding suggestions for new user training may also be incorporated when new capabilities or features of the equipment are added or when new equipment is acquired. Other advertising techniques, to be discussed in the following section, may also be incorporated.

Advertising Program

Take advantage of the opportunity to advertise by sending samples of work the center can and will process to users or to potential users. Further the advertising program by attempting to find out what people need, what upcoming projects are planned, and by suggesting ways to help meet users' needs through the word processing center. Surveys and questionnaires can be a valuable aid to the center and ultimately to the organization. If cost analyses are available for certain kinds of work processed, that information should be made available to users.

Training Program for New Employees

Care should be taken to plan for and provide a thorough training program for new employees of the center. Some of the methods suggested for new users are also applicable to new employees, and all of the methods suggested have been discussed in preceding paragraphs of this chapter. Those methods are:

(1) Film or video tape about the center and word processing concepts

(2) Orientation with center supervisor or assistant supervisor (to be used in conjunction with other methods of training)

(3) Visits to other word processing centers

(4) Equipment training, either in-house or off-campus

(5) SOP manual for operators

(6) Off-campus training course in word processing through local colleges, universities, or vocational-technical schools

Employee Retention

Take definite steps to retain employees in the center and provide incentives for retention by incorporating some or all of the following suggestions:

(1) Higher salaries (According to IWP's 1979 Salary Survey, salaries for a word processing secretary are lower than those of an administrative secretary.)

(2) Established career paths with opportunity for advancement

(3) Incentive programs (either company-wide programs or in-house programs designed to increase production)

(4) Upgraded job titles and written job descriptions

(5) Profit-sharing plan

(6) Retirement plan

(7) Merit pay

(8) Reasonable expectations of employees including realistic work load and provision for backup support during peak loads and other times

(9) Pleasant working conditions--office decor, physical arrangement of the center, comfortable temperature, etc.

(10) Open climate within the center and the organization

Established Procedures

Establish written procedures to be followed by the users and the operators. Identify factors pertinent to document production and distribution, productivity, and work measurement (these were discussed in "Summary and Conclusions").

Equipment Needs Analysis

Prior to the acquisition of equipment, make a careful assessment of organizational needs, volume of work to be processed, turnaround time expected, number of units of equipment needed, production speed needed in relation to capabilities of equipment being considered, and method of equipment acquisition. Allow for future acquisition of additional users, company growth, and center growth; i.e., an important consideration in equipment selection is the future needs of the center and of the organization. Equipment that is selected on the basis of current needs with no consideration for future needs may well be outgrown by the time the center is opened. If the equipment is purchased, the selection could severely limit the production capabilities and cost effectiveness of the center. If the equipment is leased, however, the center need not struggle for a

lengthy period of time without adding to or upgrading the equipment. If equipment is purchased, a key factor to consider is compatibility; i.e., is the equipment compatible with, for example, equipment that is used at corporate headquarters of the company? Another factor to be considered is communication capabilities: if the equipment does not have communication capabilities, can those capabilities be added at a later date, or must new equipment be purchased? Storage capacity is also a key factor. While staggering the acquisition of new user departments is recommended, equipment should be selected with future storage needs in mind, particularly if some user departments require a great deal of storage.

Setup Time for New Files

Allow adequate time for setting up new files. The initial setup of files on a new system takes much longer than actual production of work when the files can be quickly and easily accessed. This step in the process is most time consuming, but the careful, indeed cautious, recording of information on equipment at the outset can save precious hours later when the center is in full operation. Extra time should be allowed at this stage before the work load builds up--thus, another reason for staggering acquisition of new user departments.

Development of a Master Plan

A formal agreement between the word processing center manager and top management, incorporating goals and objectives of the center, should be established. Included in this agreement should be answers to the following questions: What does management expect to accomplish through

word processing? What is expected of the word processing center? How much support can the word processing center expect from management?

Develop a master strategy which incorporates word processing; i.e., how does the company plan to accomplish some of its organizational goals through word processing? Increased office productivity is a must for the future, and management must make every effort to reduce office costs through improved methods of production and less costly means of production.

Engage in long-range planning for the word processing center. Where does the center plan to be in five years? In ten years? Certainly new equipment with capabilities beyond our greatest expectations will be available in five or ten years, and existing equipment will be obsolete. Yet the center, to be effective and efficient, must engage in long-range planning; the center must know where it is headed. An information reporting system that provides the information needed for management review, including cost analysis; distribution; production per month, per quarter, per year; and cost justification is crucial. The system should provide only that information which is necessary for justification of the center for accurate long-range planning.

A master plan, agreed upon by the word processing manager and by top management, will ensure management's support when new or additional equipment is needed, when expansion is required, when additional personnel is crucial to the efficient operation of the center. Over time the plan will be modified, expanded, and perhaps revamped many times. But there is no substitute for sound planning. Word processing centers, like organizations, cannot survive without a well developed plan.

Recommendations for Further Research

Implications for further research could be drawn from any of the key questions discussed in this chapter. For example, a wide-scale study could be conducted to compare only the methods used for the feasibility studies. Other recommendations for further research include:

(1) A survey of methods used for cost justification, either wide-scale or restricted, could be conducted. This information would be helpful to new supervisors of word processing centers.

(2) A study to measure employee morale (satisfaction/dissatisfaction) through a questionnaire presented to operators in the word processing centers should be made. This study would be applicable in particular to those centers having reported an open climate. A study could also be conducted using new subjects and administering a questionnaire to supervisors and operators. The purpose of the study would be to determine if the workers and the supervisors perceived the centers as having open climates. A secondary purpose would be to determine the level of satisfaction/dissatisfaction of workers in the centers.

(3) A study to measure satisfaction/dissatisfaction of correspondence secretaries as compared to administrative secretaries would give insight into the problems associated with recruitment and retention of word processing secretaries.

(4) A comparison of operating procedures, including document production and distribution and work measurement would provide helpful information to center supervisors for streamlining center procedures and thus more efficient operation within the center.

(5) A study of entrance requirements for new word processing center personnel, including tests administered, experience levels required, and

other factors concerned with entry level positions would be helpful to business educators in planning business education curriculum to fit the needs of the community.

(6) A study of job titles, descriptions, and corresponding salaries, either wide scale or restricted, would provide the necessary information for upgrading positions in the word processing center. If the study was conducted on a restricted scale, the results could be compared with the results of the IWP's national survey, which is conducted annually.

Other studies relative to the components of word processing should be conducted. For example, an in-depth study regarding work measurement procedures would provide helpful information for supervisors. And in addition to the foregoing recommendations which would aid organizations or center supervisors, studies should be conducted relative to business education and curriculum change. The purpose of this study, however, was to determine implementation procedures most commonly used; to identify practices and problems related to people, procedures, and equipment in the implementation and operation of the centers; and to provide some direction to organizations considering the installation of a word processing system.

It is the belief of the researcher that the study has provided sound recommendations for management considering word processing. Although no two organizations are alike, and thus no two centers will be exactly alike, the recommendations made from the results of this study should prove helpful to any size organization with any volume of work to be produced.

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APPENDIX A

QUESTIONNAIRE USED FOR INTERVIEWS

INTERVIEW GUIDE

Note: More than one response may be appropriate for some of the questions. Where appropriate, the responses may be ranked in order of significance.

SECTION ONE - IMPLEMENTATION

Determination of Need

1. How was the decision made to change to WP?
   ___suggested or mandated by top management
   ___suggested by other individuals in the organization
   ___suggested by vendors
   ___suggested by consultant

2. Was a study conducted to determine if WP was feasible for your organization?
   ___yes
   ___no

3. If a feasibility study was not conducted, how was a need for WP indicated?
   rank order
   ___mandate from top management
   ___frequent use of temporary help to meet increased work load
   ___need for new, more efficient equipment with faster output
   ___need for frequent, heavy revision of work
   ___other

4. If a study was conducted, who conducted the study?
   ___task force or planning committee of individuals within the company
   ___consultant or consulting firm
   ___vendor
   ___combination task force, vendor, and consultants
   ___other

5. What methods were used to conduct the study?
   ___questionnaire presented to secretaries and to principals
   ___use of "action paper" or other copies of actual work
   ___observation of secretaries by committee or others
   ___analysis of correspondence or other file materials

6. Which of the following conditions existed in your organization prior to the installation of a WP system?

rank order
___majority of the documents were over one page in length
___majority of the documents were handwritten
___majority of the documents included at least 25% copy material
___majority of the documents required some revision
___majority of the documents were repetitive
___peak and valley work loads occurred
___additional staff required to handle increasing work load

Introduction of WP to Your Organization

7. What was the reaction of employees when WP was announced?

rank order
___apathy
___enthusiasm
___resistance to change
___skepticism
___anxiety
___fear of losing jobs
___other

8. What was the reaction of management when WP was announced?

rank order
___apathy
___enthusiasm
___resistance to change
___skepticism
___fear of losing secretary
___other

9. What procedures did your organization follow to eliminate or relieve anxiety among those employees affected by WP?

___frequent communication about the project to employees
___input sought from employees
___seminars/equipment demonstrations offered for employees
___job opening announcements
___other

10. What is the structure of the WP center?

___centralized
___decentralized
___special purpose structure
___integrated approach
___other

11. What methods were used to determine the structure of the WP center?

rank order
___management decision
___need for extreme confidentiality in each department
___nature of work processed in the organization
___variation of needs from department to department
___volume of work
___other

12. Has the structure changed from the original structure?
___yes
___no

13. Could the organization be better served using another structure?
___yes
___no

If yes, please explain.

Conversion to WP

14. What was the changeover timetable (length of time between the decision to initiate WP and the establishment of the center)?
___0--6 months
___7--12 months
___13--18 months
___longer than 18 months

15. Was the timetable adopted satisfactory?
___yes
___no

16. If not, why not?
___too much time allowed for various phases
___not enough time allowed for various phases
___other

17. Was the implementation staggered; that is, was WP initiated or users acquired in one department, then another, then another?
___yes
___no

18. Was adequate preparation made for the site of the WP center?
___yes
___no

19. If not, why not?
___inadequate planning for physical layout of equipment (space requirements)
___lack of sufficient electrical power requirements
___failure to address environmental needs: temperature, dust, humidity
___other

20. What kinds of problems did you experience in the changeover to WP?
rank order
___problems with people
___problems with procedures
___problems with equipment
___other

21. Which of those problems still exist in the WP center?

rank order
___problems with people
___problems with procedures
___problems with equipment
___other

Users of the Center

22. How many managers/officers (top and middle management) are in the company?

_____

23. How many managers still have private secretaries?

_____

24. Who uses the WP center?
___top management principals
___middle management principals
___those with private secretaries
___those without private secretaries
___some of the secretaries
___all of the secretaries
___center is open to everyone
___other

25. How do you get people to use your center?
___management mandate
___voluntary use
___direct advertising (samples of work sent to potential users)
___indirect advertising (word of mouth)
___other

26. Prior to the opening of the center, what kind of training was given to management regarding the use of the center?
___seminars
___open house in the WP center
___staff meetings
___vendor presentations/demonstrations
___orientation sessions
___films
___other

27. What kind of training is currently provided for users of the center?
___film about the center
___open house
___orientation session with the supervisor
___manual furnished to the users
___no training is given

28. Is the training provided for new users adequate?
___yes
___no

29. How do you determine if the needs of the organization are being met?
___verbal feedback from users
___surveys/questionnaires conducted by the WP center
___other

SECTION TWO - PEOPLE, OPERATING PROCEDURES, AND EQUIPMENT

PEOPLE

Training

30. What training is currently provided for new employees in your center?
___company film
___word processing film
___in-house orientation session
___off-campus training course in WP
___no training is offered
___equipment training
___other

31. Which of the following represent deficiencies for new employees coming in to the WP center?
rank order
___skills deficiencies (typing, etc.)
___language arts
___human relations skills
___decision making techniques
___other (please explain)

Turnover

32. During the first few months after conversion to WP did you experience any significant amount of turnover in the administrative support system?
___yes
___no

33. Did you experience any significant amount of turnover in the WP center?
___yes
___no

34. Comparing the WP center to other secretaries in the organization, did the turnover rate--
___increase
___decrease
___remain about the same

35. Of those who left the WP center, for what reasons did they leave?
rank order
___skills and talents not matched to WP
___better opportunity elsewhere
___family responsibilities
___relocation
___other

Backup Support

36. What provisions have been made for backup support in the WP center?
___shift scheduling
___cross training by equipment
___cross training by subject matter
___part-time personnel
___use of temporary people from agencies
___other

37. Were these provisions established at the outset or as a result of a crisis situation?
___established at outset
__-result of a crisis situation

Employee Satisfaction

38. What measures have been taken to ensure employee satisfaction in the WP center?
___established career paths
___provisions for feedback from users directly to operators
___merit pay
___open climate within the center
___other

39. How do you measure employee morale in your center?
rank order
___observation of worker attitude
___productivity records
___input from others outside the center
___turnover rate
___other

40. How do operators in your center obtain negative feedback (problems, complaints) from users?
rank order
___personal or phone contact from users
___feedback routed through supervisor
___feedback not obtained
___other

41. How do operators in your center obtain positive feedback (appreciation, compliments) from users?
rank order
___personal or phone contact from users
___feedback routed through supervisor
___feedback not obtained
___other

Final

42. What other "people" problems have you encountered in the WP center?

OPERATING PROCEDURES

General Procedures

43. What kind of procedures manual do you use for your WP center and users?
___separate procedures manual for users and SOP for operators
___joint manual for users and for operators
___do not use a manual
___other

44. How did the organization determine who would continue working as an administrative or private secretary and who would move to WP?
___no changes were made
___management decision
___secretarial option
___previous WP experience
___other skills
___seniority
___other

45. What kinds of information/work are processed in your center?
___all typing
___general correspondence
___repetitive documents
___dictation
___specialized documents (manuals, reports, etc.)
___lengthy documents
___forms
___heavy revision documents
___other

46. What kinds of typing do the administrative secretaries produce?
___no typing is done by the other secretaries
___light typing or overflow typing
___general correspondence
___repetitive documents
___dictation
___specialized documents (manuals, reports, etc.)
___lengthy documents
___heavy revision documents
___forms
___other

Document Production and Distribution

47. What methods were used to determine the kinds of work to be processed in the center and the work to be processed by other secretaries?
rank order
___length of document
___amount of revision necessary
___backlog or volume of work to be processed in the department
___management decision
___center supervisor's decision
___no difference in work produced
___other

48. How does the work arrive at your center?
___mail/delivery system
___dictation system

49. In what form does the work arrive?
___dictated material
___rough draft, handwritten
___copy material
___telephone requests
___other

50. Are dictation procedures outlined in the manual?
___yes
___no
___do not have a manual

51. Are procedures followed?
___yes
___no

If no, please explain.

52. How is the work categorized when it reaches your center?
___rush
___revision
___routine
___first-in, first-out
___department/individual priority
___other

53. Who logs the work in when it reaches your center?
___supervisor
___lead operator or assistant supervisor
___individual operators
___work is not logged in

54. Does an instruction slip accompany all documents?
___yes
___no

55. How is the work distributed within the center; who produces what?
___one person for heavy revisions
___one person for statistical typing
___one person for confidential work
___one person for proofreading
___all operators produce all kinds of work
___other

56. Who proofs the work?
___supervisor
___person assigned only to proofing
___assistant supervisor
___operators proof each other's work
___operators proof own work
___other

57. Do you strive for first-time, final document production?
___all documents
___general correspondence
___all except lengthy or special revision documents
___do not strive for first-time, final copies

58. What is the average turnaround time for a document?
___0--4 hours
___5--8 hours
___2 days
___more than 2 days

59. How do you handle uneven work flow?
___priority scheduling from user departments
___published reports of upcoming peak and slack times for the center
___use of part-time operators and administrative support personnel
___informal verbal communication between users and center
___requests for peak load information from users
___other

Productivity and Work Measurement

60. How is productivity measured in your center?

___lines	___per hour	___by operator
___pages	___per day	___by center
	___per week	
	___per month	
	___per year	

___established job standards
___work is not measured

61. Who measures the work?
___individual operators
___supervisors
___assistant supervisor
___equipment counted
___other

62. Is employee productivity used for evaluative purposes (raises, promotions, merit pay)?
___directly
___indirectly
___not used for evaluative purposes

63. Are allowances made for the kinds of work produced?
___straight count of lines/pages produced
___weighted count of lines/pages produced
___other
___no allowance is made

64. What other kinds of problems have you encountered regarding procedures of operation in the WP center?

EQUIPMENT

Equipment Status

65. Is the same brand of equipment currently being used that was used at the outset of WP in your organization?
___yes
___no

66. If not, please list the reasons why equipment changes were made.

67. Has the equipment been upgraded or has additional equipment been added since the establishment of your center?
___yes (please explain)
___no

68. Is the equipment currently meeting the needs of your center?
___yes
___no (please explain)

69. Is the equipment currently meeting the needs of your organization?
___yes
___no (please explain what is needed)

70. Are plans being made to acquire additional equipment at this time?
___yes
___no

If yes, please explain.

Equipment Selection

71. What criteria were used for the selection of your equipment?

rank order

___service/maintenance contract
___salespeople
___cost of equipment
___capabilities/features of equipment
___speed of production
___training time
___work to be produced in the center
___corporate management decision
___other

72. Did the equipment selected meet the needs of your center at the outset?
___equipment had more capabilities/features than needed
___equipment had fewer capabilities/features than needed
___equipment capabilities were matched to center's needs

73. If additional capabilities were needed, please explain.

74. Did you purchase, lease, or rent your equipment at the outset?
___purchase
___lease
___rent

75. Was this arrangement satisfactory?
___yes
___no

If not, why not?

Equipment Training

76. Do you hire only experienced operators or do you train for your equipment?
___hire only operators experienced on your equipment
___train operators for your equipment

77. If you train operators, how is the training conducted?
___on location (in-house)
___off campus (at vendor's)
___supervisor-directed training
___self-paced manual

78. What is the approximate equipment training time for an operator?
___two days or less
___one week
___two weeks
___other

79. Is the arrangement for training operators satisfactory?
___yes
___no

If no, please explain.

80. What other equipment problems have you encountered in the WP center?

APPENDIX B

THANK-YOU LETTER TO RESPONDENTS

September 8, 1980

Ms. Sandy Webb
Liberty National Bank
P. O. Box 25848
Oklahoma City, Oklahoma 73103

Dear Sandy:

Thank you for your willingness to participate in my doctoral study of word processing systems this past summer. I appreciate your taking time from a busy schedule to be interviewed. Your participation, along with the participationg of several other word processing supervisors, enabled me to gather data which I believe will be helpful in the future to other organizations planning to implement a word processing system.

Any information which you supplied will be held in strict confidence; the final reporting will be by percentages. When the study is completed (hopefully by the month of May), I will furnish to you a copy of the results.

I sincerely appreciate your cooperative attitude and your interest in the study. If I may be of help to you in the future, please call me.

Sincerely,

Lou A. Dennard
Assistant Professor
Division of Business
Bethany Nazarene College

789-6400, Ext. 296

VITA

Lou Askew Dennard

Candidate for the Degree of

Doctor of Education

Thesis: WORD PROCESSING: A SURVEY OF IMPLEMENTATION PROCEDURES USED IN SELECTED SERVICE ORGANIZATIONS IN THE OKLAHOMA CITY AREA

Major Field: Business Education

Biographical:

Personal Data: Born in Raymondville, Texas, August 16, 1939, the daughter of Leon Kent and Anna Ruth Llewellyn Askew.

Education: Attended elementary school at both Helena and Cherokee, Oklahoma, Public Schools; graduated from Helena High School, Helena, Oklahoma, in May, 1957. Graduated Magna Cum Laude with Bachelor of Arts degree (A.B. Functional/Business) from Bethany Nazarene College, Bethany, Oklahoma, in May, 1975. Received the Masters in Business Administration from Central State University, Edmond, Oklahoma, in December, 1977; and completed requirements for the Doctor of Education degree at Oklahoma State University, Stillwater, Oklahoma, May, 1981.

Professional Experience: Employed in Dallas, Texas; Clinton, Oklahoma; and Oklahoma City, Oklahoma metropolitan area banks as proof operator, teller, and head teller, respectively, 1959 - 1969. Served as head cashier in Business Office at Bethany Nazarene College 1970 - 1973; executive secretary to Business Manager at Bethany Nazarene College 1973 - 1976; taught part-time in the Division of Business at Bethany Nazarene College 1974 - 1976. Full-time faculty member at Bethany Nazarene College 1976 to present, currently Assistant Professor and Chairman of the Department of Administrative Services, Division of Business, Bethany Nazarene College, teaching in the areas of office administration, business education, general business, management, and communication.

Professional Organizations: Member of National Business Education Association, Oklahoma Business Education Association, American Business Communication Association; charter member of Central Oklahoma Chapter of IWP, member of Delta Pi Epsilon, Delta Mu Delta, Delta Kappa Gamma, Beta Gamma Sigma, Phi Beta Lambda, and Phi Delta Lambda.