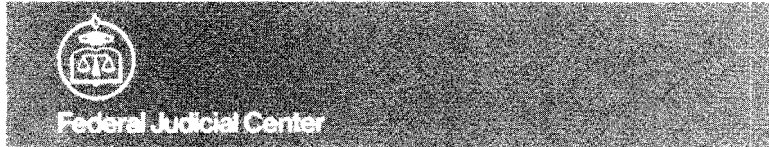

Preparing a United States Court for Automation



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1520 H Street, N.W.
Washington, D.C. 20005
Telephone 202/633-6011



PREPARING A UNITED STATES COURT FOR AUTOMATION

**By Gordon Bermant
Federal Judicial Center**

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This publication was produced in furtherance of the Center's statutory mission to develop and conduct programs of continuing education and training for personnel of the federal judicial system. The statements, conclusions, and points of view are those of the author. This work has been reviewed by Center staff, and publication signifies that it is regarded as responsible and valuable. It should be emphasized, however, that on matters of policy the Center speaks only through its Board.

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TABLE OF CONTENTS

ACKNOWLEDGMENT	v
EXECUTIVE SUMMARY	vii
I. INTRODUCTION	1
II. ORIENTING THE COURT TO AUTOMATION: ROLES OF THE CLERK AND THE FEDERAL JUDICIAL CENTER.....	3
III. SELECTING THE SYSTEM MANAGER AND OTHER KEY PEOPLE	7
IV. REVIEWING OFFICE OPERATIONS BEFORE THE COMPUTER ARRIVES.....	11
V. TAILORING TRAINING TO THE NEEDS OF THE COURT	15
VI. INSTALLING THE HARDWARE: ROLES OF THE CLERK AND THE ADMINISTRATIVE OFFICE.....	19
VII. IMPLEMENTING THE SYSTEM.....	23
VIII. USING THE AUTOMATED SYSTEM'S REPORTS	27
APPENDIX A: A List of Books to Increase One's Computer Knowledge	29
APPENDIX B: Draft Position Description for System Manager..	31
APPENDIX C: Contents of the System Administration Course ...	35

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I am indebted to William Fennell and Charles Vagner for many of the ideas presented in this document. In February 1984, Mr. Fennell distributed a *Clerk's Guide to Court Automation Planning* to the automation staffs of the Federal Judicial Center and the Administrative Office of the United States Courts and to the clerks who were participating in what was then called the Small and Medium Court Automation Project. In January 1985, Mr. Vagner presented an overview of preparations required for district court automation to the Judicial Conference's Subcommittee on Judicial Improvements; the substance of his presentation has since appeared in the June 1985 issue of the *Information and Management Bulletin* of the Clerks Division of the Administrative Office. Much of what is contained in the present document draws from these sources. Responsibility for additions, omissions, or errors, however, remains with me.

ADDENDUM TO THE ACKNOWLEDGMENT

I wish to extend particular thanks to Frank Dozier, chief of the Combined Operations Branch at the Administrative Office of the United States Courts, for his important contributions to the materials in chapter 6.

EXECUTIVE SUMMARY

The United States courts are currently in the process of restructuring the automated systems used for case management and court administration. Guided by the Judicial Conference of the United States, the Federal Judicial Center and the Administrative Office of the United States Courts have developed a five-year automation plan that is updated annually. The key feature of the plan is its high degree of decentralization: Computers will be located in the courts themselves and managed by specially trained members of the clerk's office staff.

This document is an introduction to various tasks that must be addressed before and during the installation of any of the new systems. Its purpose is to alert chief judges and clerks of court to the responsibilities that the new systems will bring with them.

The single most important individual for the successful implementation of local automation is the clerk of court. If the clerk understands and accepts the responsibility for overall management of installation and system implementation, automation will probably succeed. However, the clerk will also need the wholehearted cooperation of the chief judge of the court. They should communicate frequently and frankly about the costs and benefits of automation before proceeding. They should also work together to educate other judges in the court about the opportunities offered and requirements demanded by the new system.

The Center will aid courts in introducing awareness of automation and in planning. On-site visits, local videotape educational sessions, and seminars in Washington, D.C., on automation management are some of the services the Center provides. There are also several steps the clerk can take directly to increase the staff's automation awareness and competence.

Each court will select a system manager and backup person to assume daily responsibility for maintenance of the computer hardware and management of the programs and data the court will use. There are many advantages to selecting a system manager from among current court staff, but this will not always be possible or desirable. In any event, the system manager and backup person will travel to Washington for two weeks of intensive training at

Executive Summary

about the same time the computer hardware and software are installed.

Automation has never solved a problem caused by poor management of manual operations. The clerk should therefore check the accuracy and effectiveness of existing operations before beginning the implementation of an automated system. There are a number of tools the clerk can use to assist in this process, including flowcharting.

Clerk's office staff who are responsible for data entry must become thoroughly grounded in the system's operation. The Administrative Office, the Center, and knowledgeable visitors from other courts will help with this task by providing on-site training, videotape or computer-assisted training sessions, and tutorial and documentation manuals.

The Administrative Office will conduct a site survey to aid the clerk in preparing the court for installation of an automated system. Chapter 6 addresses the major areas of concern, ranging from the location of the computer room in the courthouse to the complexities of arranging for appropriate telecommunications with divisional offices.

"Bringing the system up" means conducting a period of parallel operations, both automated and manual, before discontinuing the manual system. The key to success at this stage is ample patience; nothing will be gained by hurrying into total reliance on the automated system. Time carefully spent at the early stages of implementation will pay dividends throughout the lifetime of the system.

Finally, the clerk and staff must take great care to validate the accuracy, timeliness, and clarity of the reports they distribute to chambers. Too much will have been invested to risk failure—the possible rejection of automation by judges and court staff—by distributing reports that are inaccurate, tardy, or difficult to follow. At this point in particular, the clerk will require the full support of the chief judge in encouraging other judges and members of chambers' staffs to use the information that the system provides.

I. INTRODUCTION

The United States courts have entered a new phase in the process of automation, characterized primarily by decentralization of the automated systems used for case management and court administration. The scope and pace of this large task are under the control of the Judicial Conference of the United States, operating through the Subcommittee on Judicial Improvements of the Committee on Court Administration.

On January 22, 1985, the Committee on Court Administration approved the *Five-Year Plan for Automation in the United States Courts*, prepared by the Administrative Office of the United States Courts and the Federal Judicial Center, for fiscal years 1985-1989. The plan describes the various automated management and administrative systems that the Center and the Administrative Office are developing and installing; it also contains a list of the courts that were scheduled for installation of the new systems at the time of the plan's publication.

The key feature of this phase of court automation is its high degree of decentralization. During the first generation of federal court automation, mainframe computers located in Washington, D.C., communicated over telephone lines with computer terminals placed in courthouses across the country (the entire system was named Courtran). The new generation of automation will take advantage of the so-called microcomputer revolution by placing relatively small, but powerful computers in the courts themselves, to be operated by specially trained members of the court staff.

In addition to installation of computers in the courts, the five-year automation plan calls for more local control of the software the courts will use. Many of the new programs are designed to be tailored by a court to its individual needs. A goal of the plan is to enable each court to become the master of its own automation—more so than has previously been possible.

With these new opportunities come new responsibilities. When all the computers were in Washington, they could be protected and maintained by professional computer scientists and operators. And as long as all the software was maintained in Washington, court staff did not need to be responsible for the details of automated data-processing management. Decentralization has changed all

Chapter I

that: Many responsibilities of Administrative Office and Center personnel will now fall directly to the staffs of the courts.

Under the automation plan, the Center and the Administrative Office will remain responsible for developing most of the programs the courts will use. After new systems have become operational, the Administrative Office will maintain their integrity and improve them as the need and the opportunity arise. The Center will offer to courts the tools required to become and remain proficient users of the new systems.

An important element in the successful implementation of an automated system is the advance preparation of the site and the staff for the system's installation. Virtually everyone in the court needs to participate in some way in this process. If the steps are clearly laid out and understood beforehand, inconvenience will be minimal and rewards will soon be forthcoming. But without careful preparation, the course of implementation can be slowed or stopped.

II. ORIENTING THE COURT TO AUTOMATION: ROLES OF THE CLERK AND THE FEDERAL JUDICIAL CENTER

Orientation by the Clerk

Experience with federal court automation during the past decade has taught that the single most important individual for the successful implementation of automation is the clerk of court. But to stress the importance of the clerk is not to imply that automation is aimed primarily at clerical functions but, rather, that the clerk plays a critical role in all aspects of the automation process. This chapter spells out the clerk's responsibilities in the preparatory stages of automation and describes some activities that have been generally successful in meeting those responsibilities.

The clerk's initial responsibility is to ensure that all the members of the extended court family understand what a new system will and will not do for them and what they must do to realize the system's potential benefits. The clerk's approach to each person in the court will of course have to be tailored to that person's position and expectations.

Moreover, a court's path to successful automation is always smoother if the clerk and the chief judge communicate frequently and candidly about the system's requirements and functions. The clerk should take the initiative in bringing the implications of automation to the chief judge's attention. The press of other business can sometimes prevent chief judges from becoming sufficiently informed about the realities of automation's impact on the court. Delay and inefficiency in system implementation can be minimized by clear and frequent briefings by the clerk.

Chief judges may wish to appoint an automation committee composed of judicial officers and support staff to consider available options in the form or contents of the automated services. The automation committee could also serve as the major conduit of information to all interested parties about how the systems will work.

A major goal of the current generation of automation is to bring case-related information to the chambers of each judge in as timely

Chapter II

a manner as possible. But judicial expectations about automation vary widely and may sometimes be beyond the reach of a system's capabilities. The clerk should become familiar with each judge's views on automation. Providing careful advance explanation to judges about a system's capabilities will make the reports the system generates more useful to judges and chambers staff.

The clerk must take several steps to prepare the staff for introduction of an automated system. The first priority is the selection of a system manager and a backup person. Selection of these important personnel is discussed in chapter 3.

Second, the clerk must have a complete grasp of the workings of the clerk's office prior to automation—particularly in large courts, the office may in fact be operating differently from the clerk's perceptions of its operation. The clerk may wish to undertake a thorough paper flow analysis of office operations in advance of the arrival of an automated system. This topic is covered more fully in chapter 4.

Third, office members who have become used to doing things "their way" will need time and training to accommodate to the introduction of automation. Perhaps the most serious mistake a clerk or staff member can make is to believe that the purpose of a computer is only to automate existing manual procedures without changing those procedures in any way.

Finally, an early orientation of office staff to automation will pay dividends throughout the implementation and operation of the system. Some clerks have used informal lunch meetings focused on automation as an effective introduction. Frequent and candid discussions about the costs and benefits of automation for each person in the office will go far toward resolving some of the human-relations problems associated with technological change.

Courts vary in their levels of knowledge and eagerness about automation. Not all courts desire a rapid move to automation, and not all that do desire it are ready for it. Some clerks are more prepared for the change to automation than their judges are, and sometimes the reverse is true. But in all cases, once a decision to proceed has been made, the clerk will be the single most important actor in determining the overall success or failure of the effort. It is the clerk's responsibility to be sure that all the other important participants have the correct expectations and information, for without these essentials the entire task will be unnecessarily difficult.

Orientation by the Center

The Federal Judicial Center will offer assistance to a court as it begins its implementation of a new system. To date, this training has consisted of a member of the Center's staff traveling to the court to discuss computer and system management fundamentals with judges, the clerk, and members of the clerk's staff. Our experience with this program suggests that it has been useful, even necessary, in some courts, but that other courts have already progressed beyond the need for explicit coverage of such basic material. As described further in chapter 5, the Center is diversifying its programs for computer awareness and preparedness training.

The clerk may wish to enhance the court's library of materials pertinent to automation. In this regard, the Center has developed a list of useful books, periodicals, and videotapes, a shortened version of which is included here as appendix A.

III. SELECTING THE SYSTEM MANAGER AND OTHER KEY PEOPLE

It would be difficult to exaggerate the importance of the system manager for the success of a court's automated operations. Only the clerk is a more important figure, for the clerk must select the manager, arrange for the manager's training in both systems and clerk's office functions, and supervise the manager's work and professional growth. As a rule, the manager should report directly to the clerk.

In this document, "system manager" refers to the person primarily responsible for the operation and maintenance of the court's computer or computers as well as for the local maintenance and enhancement of the software that the court has acquired from the Administrative Office.¹ How much technical work the manager will do personally, and how much he or she will manage through others, will depend on the size of the court, the number and sizes of computers and applications to be maintained (including, for example, a centralized word-processing and electronic mail system), and staff assignments determined by the clerk. Because the details of the manager's tasks will depend on these factors, no single position description can perfectly cover all the possibilities. Nevertheless, appendix B presents a draft description for a system manager position as it would be staffed in most courts of appeals—very large and very small circuits might require a somewhat different position description. The description is also generically applicable in medium-sized district courts that adopt full-docketing civil and criminal case management systems, as well as in medium or large bankruptcy courts using the full-docketing bankruptcy system.

There are two plausible strategies for determining the qualifications required for system administration. One strategy is to emphasize background skills in computer operations and programming,

1. A brief comment about position titles: "System administrator" was chosen initially by the Center because of its wide use within the data-processing community. As the several pilot courts working with the Center and the Administrative Office have gained experience with the activities of the key system person, they have discovered that much of his or her work is managerial and coordinative. Hence, these courts prefer the title "system manager" for this role. Undoubtedly, both terms will be in use for a while; this should not cause confusion.

Chapter III

placing knowledge of court operations in second place. The other strategy reverses these priorities, placing knowledge of court operations ahead of experience with computers. Reliance on the first strategy will probably require the court to go outside its current staff to hire a system manager.

With exceptions to be noted, the second strategy is generally preferred. Staff members who combine expert knowledge of clerk's office operations with an aptitude for working with automation are excellent system manager candidates. It is easier to learn how to administer the new systems than it is to learn the intricacies of clerk's office operations.

This is true for two reasons. First, it takes a long time to become an expert in the details of intake and docketing and in the details of federal and local rules as they apply to office operations, jury and financial functions, records archiving, Statistical Analysis and Reports Division reports, communications to chambers through courtroom deputies, personnel records, property inventories, attorney admission and status records, and the various other functions of the clerk's office. Experience is the only teacher of these duties and their relationships, and they all are potentially part of the automated functions that the clerk's office will perform. Learning how to run the automated systems and care for the machinery is a much faster task.

The second reason is not so obvious, but is equally valid. There are various sorts of background that would qualify one to work with computers or automated systems, but many of them are not germane to the work of the system manager. For example, there are only modest demands for knowledge of computer hardware and engineering in the system manager's tasks. Hiring a computer hardware expert for the job would create a waste of that person's talent and a potential personnel misfit at the center of the office's operation. Moreover, there is only a modest requirement for knowledge of computer programming in the system manager's job, particularly as "programming" has traditionally been defined. Hiring a computer programmer, especially one whose experience has been limited to automation environments very different from those of the courts, could easily lead to frustration for both the employee and the other office managers.

Exceptions to the preferred strategy do exist, however. In the largest appellate and district courts, with full complements of data-processing and centralized word-processing systems, management of automation may require a degree of technical sophistication beyond the ordinary, and the court may, therefore, have to hire from the outside. But in this case, it may be that the technical

Selecting the System Manager

expert should not be the most senior system person on staff, namely, the system manager. In these large courts, a small staff devoted to the maintenance of all system-related functions will be required. The best allocation of technical and managerial responsibilities will vary from court to court. But it will always be true that automation is in place to serve the court, whereas the converse will never be true. This truism should influence the selection of the system manager.

Regarding the manager's grade, opinion and experience to date have established the range between JSP-11 and JSP-13, depending on the size of the court, its geographic location, and the variety and complexity of automated systems to be installed there.

Finally, there should always be more than one person who knows how to do each of the critical tasks associated with administration of an automated system. The clerk will have to account for this need in designing the court's systems personnel plan.

IV. REVIEWING OFFICE OPERATIONS BEFORE THE COMPUTER ARRIVES

Imposing automation on inaccurate or inefficient office operations will only result in greater inaccuracies or inefficiencies. Clerks must resist the temptation of installing a computer system without first reviewing, and revising if required, the flow of paper through the office. This chapter describes some important areas for the clerk's consideration.

To begin, the clerk should review with the management staff the specifications and introductory documentation supplied for the automated system so that everyone is thoroughly familiar with the system's capabilities, limitations, and demands. Staff should then conduct a detailed comparison of manual and automated operations. It will be particularly important to identify points in the current operation at which there tend to be delays in the receipt of information that would negate the advantages of automation. Another important thing to know is whether all the information required for the automated system is now reaching the clerk's office at the location where it will be entered with the new system.

Mistakes in a manual system that have few problematic side effects may be quite damaging if carried into an automated system. For example, if a district court clerk's office does not monitor judicial actions on motions, then the failure by courtroom deputies to identify motions correctly on daily proceeding sheets will have few, if any, negative effects. But such errors carried into an automated full-docketing system could create serious problems. A similar situation exists with respect to correct identification of counts on criminal proceeding sheets. A full-docketing criminal system depends on the entry of counts for its Speedy Trial Act calculations; inaccurate data entry will produce misleading reports. In automated systems, previously harmless errors may become serious.

The district court clerk must have complete confidence in the skill and reliability of the courtroom deputies to play their crucial role in automation of case management. The deputies should participate in the implementation of a new system from the beginning. As the sources of critical information entering the clerk's office, they will contribute significantly to the system's chances of success.

Chapter IV

To ensure accurate, timely, and standard reporting on proceedings sheets, the clerk may wish to hold a series of meetings with the deputies to emphasize the costs of errors and tardiness. From these meetings suggestions would emerge about how potential problems could be solved or prevented; for example, the court might decide to adopt a check-off format for the sheets, thus saving deputies and data entry clerks time and effort.

Whenever case-related communication from the clerk's office to chambers is insufficient or inaccurate, chambers staff invariably build their own information-tracking systems, duplicating the paperwork that is normally accomplished in the clerk's office. In addition, some chambers staffs keep complete dockets, which doubles paperwork needlessly. The duplication of dockets is particularly wasteful when a fully automated case management system is available in the clerk's office. In order to encourage the deputies' participation, the clerk must fully involve them in planning the use of automated dockets.

Judges now differ in some practices that may require standard treatment in an automated system. One example is the calculation of excludable times in Speedy Trial Act accounting. These differences tend to be matters of habit rather than principle, and once they are pointed out, the court should be able to resolve them easily. The courtroom deputies are an excellent source of this information because they are most likely to know if differences among judges' practices exist; if differences do exist, the clerk must request that the court adopt a standard procedure for calculation. Again, the deputies should be included in any decision making regarding modification of such practices.

Judges also differ in the number and mix of case management reports they desire. Automated full-docketing systems can generate more reports than most judges will wish to see regularly; providing a surfeit of information will create resentment. The courtroom deputies are in the best position to determine which reports to bring to a judge's desk and how to set the stage for their use in chambers.

Two other points concerning information gathering deserve emphasis. First, there should be a single, central area of the courthouse at which papers are filed and distributed. The practice, in a few courts, of permitting papers to be filed in chambers is antithetical to the success of a courtwide case management system. Second, documents should be filed and docketed in proper sequence. For example, automated systems do not work well when orders pertaining to a pleading are docketed before the pleading itself has been docketed. But this is not the fault of automation—it is a symptom

of slipshod manual operation, which is highlighted when automation arrives.

Finally, divisional offices present a series of issues that will need to be resolved before automation will work successfully to tie the divisions together. For example, there will probably be differences among the divisions' manual docketing practices. As long as monthly divisional reports are created from manual dockets, little harm is done by these differences. But when the reports become automated by-products of electronic docketing, they require greater uniformity of docket data entry. Differences among divisions should be resolved before an automated system goes on-line.

V. TAILORING TRAINING TO THE NEEDS OF THE COURT

The quality of an automated system is measured in part by the ease with which it can be understood and integrated into office life. Appropriate education and training are therefore important accessories to the installed hardware and software. Three major areas of training must be addressed: automation awareness or preparedness training, system manager training, and applications training. Each training area will need a certain amount of tailoring to fit the needs of individual courts.

Automation Awareness or Preparedness Training

Courts vary widely in their degrees of need and preparedness for automation. The Center will provide an introduction to the tasks of system implementation at the time a court is scheduled by the Administrative Office to receive one or more of the new automated systems. Some courts, as full participants in the existing Courtran system, are already competent in automation and will therefore require little assistance from the Center. Other courts that will use only the simplest of the new systems may not require much preparedness training. But there are courts that will require assistance from the Center in preparing their plans to implement automation. The details of a plan, including the list of applications the court will use (case management, jury management, financial management, etc.) and the training required in the use of these applications, will be worked out by the court in cooperation with the Administrative Office.

The Center will also offer a course in Washington, D.C., designed specifically for clerks of court. This course will provide an overview of automation from a management perspective and enough technical information to allow the clerk to assess the effectiveness of the system manager and to perform basic system administration tasks in the absence of the system manager and backup person.

System Manager Training

As the person with primary responsibility for automation in the court, the system manager should receive thorough training before a computer is installed. A ten-day course in system administration, normally scheduled to precede by a brief interval the installation of a court's computer and software, will be held in Washington for the system manager and a backup person. When the team returns from the course, they should be prepared to assist in the installation and proceed to work with the system. Appendix C lists the contents of the system administration course as currently organized.

Applications (Operational) Training

The Administrative Office will provide training in the operation of the automated applications. Some of the new programs are quite simple to learn, and for those, data entry training can proceed directly from the written documentation, without any on-site training from Administrative Office staff. These include the property inventory, personnel, court reporter management, and attorney roll programs. The middle range of programs will require more training for the data entry staff; among these are the financial, jury, and STARS-Index Replacement applications. And, finally, the full-docketing case management systems for appellate, district, and bankruptcy courts will require extensive data entry training. Various methods and media will be used to meet these training needs.

Other Suggested Training Programs

The clerk should create cross-training programs to ensure that unexpected staff turnover does not leave the court suddenly lacking competent system administration or data entry personnel. No task should be covered by only one person. At the same time, there are some instances in which strict separation of tasks is an important feature of good management. This is especially true in the area of financial management, where separation of functions is an integral part of a system's security and integrity, whether it is manual or automated. Computer system security is an important part of the system administration course. (Some aspects of security are discussed in chapter 6. A more thorough treatment will appear in a subsequent Center publication.)

Finally, the clerk should participate in whatever formal or informal networks of information about automation have developed within the various courts of the circuit. Several circuits have taken local initiatives in this area and are developing good communication networks to help one another. Full utilization of these channels of communication can greatly facilitate a court's introduction and commitment to automation.

VI. INSTALLING THE HARDWARE: ROLES OF THE CLERK AND THE ADMINISTRATIVE OFFICE

Responsibility for installation of the new computer hardware is to be shared by court staff and the Equipment and Technical Services Section of the Administrative Office. In many cases, the local office of the General Services Administration (GSA) will also be required for construction, renovation, or enhancement of facilities. A representative of the Administrative Office will contact the clerk at the appropriate time to plan for a survey of the court's space in preparation for an installation. There is a good deal that the clerk and court staff can do to familiarize themselves with the substance of the survey and any activity that results from it.

The clerk and the system manager are the appropriate persons to coordinate the installation process. This chapter describes briefly the main points to consider before and during installation. (All of the information contained here will be covered in greater detail when the Administrative Office prepares its site survey.) The amount of work required will vary with a number of factors, including the age and condition of the courthouse and the space available for use as a computer room; the amount and condition of telephone equipment in the courthouse; the number of divisional offices requiring service; the size of the computer(s) and the number of peripheral devices (terminals and printers) to be installed at each location; and the efficiency of the local GSA office.

The list of considerations that follows assumes the installation of a single, relatively small system (e.g., the Four-Phase computer adopted as a standard for administrative, jury, financial, and limited case management systems). Installation of machinery intended to support a full-docketing appellate, district, or bankruptcy court system will require more elaborate preparations, but along the same lines as described below.

1. **Computer room.** The room selected to house the computer should be large enough to house the central processing and disk units (in the case of the Four-Phase, this is an area approximately the size of a standard desk top), two printers, a console screen and terminal, a desk, several filing cabinets, and enough clear space to

allow at least temporary access completely around all the components. (People frequently forget to leave themselves enough room to work comfortably behind the computer to access the input and output cables attached there.) If at all possible, future expansion of the system should be planned at the time of the installation, for it is much easier to upgrade and enhance hardware in the original location than to relocate an entire system.

An interior or other windowless space, relatively inaccessible to the court's public area, is preferable for purposes of security and temperature control. The room should not be beneath or adjacent to large sources of water, such as kitchens or bathrooms; water leakage is a significant hazard to computer equipment and the people working with it. The space should be adjacent to or near the court's major telephone connection closet. At the very least, a working FTS telephone must be installed in the computer room before the computer arrives. If possible, the room should be central with respect to the planned locations of remote terminals.

2. Computer room floor. The floor of the computer room need not be carpeted. If static electricity has been a problem in the court, however, the clerk should arrange for the installation of commercial-grade antistatic carpet; the local GSA office should be able to help with this. Courts with very large computer installations, or with computers and centralized word-processing equipment located in the same room, may need to elevate the floor to allow under-floor cabling. The Administrative Office will assist in making this decision.

3. Electrical power. "Clean" power is electricity free from fluctuations due to problems at the source of power or to large and abrupt changes in local demand. Computers are sensitive to these fluctuations, and care must be taken to ensure the stability of the computer's power supply. If the source of the court's power is known to fluctuate beyond acceptable limits, the court will need to take certain steps, which will be specified by the GSA and the Administrative Office. In any event, the computer's power line should not be shared with copiers, coffee makers, microwave or toaster ovens, or any other devices that create large and sudden power demands.

4. Air conditioning. The Administrative Office assumes that the computer room will share air conditioning with the rest of the courthouse. A special unit will not normally be required for a relatively small computer installation; the Four-Phase computer, for example, is designed to operate in an office environment of seventy degrees Fahrenheit. Nevertheless, that computer does generate a reasonable amount of heat, which must be dissipated efficiently for

the sake of the computer and the people working in the computer room, and increased local air circulation may be required. A simple fan may be sufficient, or another duct may need to be added to the central air-conditioning system.

Regardless of the size of the computer system to be installed, if the existing air conditioning is inadequate to maintain ambient computer room temperature at approximately seventy degrees or less, additional cooling capacity will have to be installed. This installation might turn out to be both costly and time-consuming; the clerk should determine its necessity as early as possible in the planning process.

5. **Windows.** If the computer must be installed in a room with windows, the clerk should take several security and temperature-control measures. Outside bars should be installed if the windows are accessible from the ground or an adjacent roof. Reflective film should be applied to the windows to reduce heat gains from sunlight. Drapes should be installed for three reasons: They improve physical security by blocking visual access, they insulate against outside heat, and they absorb sound from the printers, disk drives, and cooling fans.

6. **Doors.** Computer room doors should be constructed of metal and solid wood. Locks and bolts should be keyed apart from the regular master key system. It is recommended that only the clerk, chief deputy clerk, system manager, and backup person possess computer room keys. An important consequence of the last two points is that the cleaning crew will not have after-hours access to the computer room. It is also recommended that the space be cleaned when court staff are present to observe and assist in cleaning the immediate area of the computer and peripheral equipment. Moreover, the clerk and system manager should weigh the risks and benefits of shutting off the computer while electrical cleaning equipment is operating in the immediate vicinity. This step will eliminate the risk of undesirable electromagnetic interference or spurious electrical signals affecting the computer hardware or the information stored in it.

7. **Computer terminal connections.** The connection of peripheral devices (terminals, printers, modems) to the computer is very simple if the devices are in the computer room. The attachment of remote devices (e.g., in other parts of the court or in divisional offices) is a more technical problem that will be solved in different ways depending on court conditions. To complicate matters further, telephone company deregulation will likely involve the clerk or the system manager with more than one member of the group of telephone service providers: the local company, the hardware company,

Chapter VI

and the long-distance company, for example. But a key element in successful installation is the accessibility to phone lines from the computer room; this should be high on the list of criteria the clerk considers in determining the computer room's location. And the clerk must also remember to inform the local telephone company that some of the FTS lines entering that space will be connected to modems that will be expected to transfer data at a specified rate.

The clerk and system manager should maintain close surveillance and control during the telecommunications portion of the installation process. The number of actors involved, and the relative complexity of what they must do, will create a potential for mistakes and delays. The Administrative Office will work closely with the clerk and staff to implement an appropriate plan. Finally, however, it will rest with the clerk of court to manage the installation successfully.

VII. IMPLEMENTING THE SYSTEM

When the hardware has been installed and shaken down, the system manager will load the software that the court will use (e.g., case management, jury management, financial management, and administrative programs).

Frustrations will arise if the system manager is placed on an unrealistic schedule at this stage of the operation. The chief judge, other judicial officers, and everyone in the clerk's office should not expect the initial operation of the system to be perfect. Hardware sometimes malfunctions when it is first installed, and some forms of hardware damage will not surface until the software is loaded. The system manager should be prepared to identify the obvious forms of damage or defect, but other problems will require expert diagnosis. The system manager will have the use of maintenance information supplied by the hardware vendor and the Administrative Office.

The procedures for loading and initially testing the software will be spelled out in accompanying scripts. The system manager and backup person will also have observed these procedures during their training course, but the loading process may not work perfectly the first time. The instructions must be followed precisely, and the system manager may misinterpret a particular instruction, causing the loading to fail. Help will be available from the User Services Section of the Administrative Office. It is virtually impossible to "break" software at this stage of operation, so there is seldom cause for serious concern.

For similar reasons, the system manager should be allowed sufficient time to work with the system after the software is loaded, before moving to the next step in system implementation. Many of the lessons learned during training will need to be rehearsed repeatedly during the first few weeks following installation. In addition to establishing daily routines, the system manager must implement security measures involving passwords, levels of file protection, and the treatment of backup media. Final arrangements must be made for the locations and work station requirements of data entry clerks, and communications must be established between the new system and preexisting systems (e.g., centralized word processing for chambers, dial-out line to systems located at the

Chapter VII

Administrative Office, and so on). None of these steps is conceptually complex or burdensome, but each takes its share of time and requires careful attention to detail and, sometimes, several repetitions.

The next step is to ascertain the training levels of the data entry clerks and arrange for additional training as required. The amount of training required will vary directly with the complexity of the programs the court will use: Little will be necessary for the property inventory or personnel systems, but a great deal will be necessary for the full-docketing civil system. Time saved rushing through this stage will be consumed later in correcting the results of errors that would have been avoided with a more deliberate checking and training process.

The period of parallel manual and automated operations should last as long as required to ensure that everyone understands what the new system can and cannot do. Problems identified at this point should be fixed before proceeding further. Thus, the clerk might wish to enter a month's worth of financial data into the automated system while continuing to operate the manual system. Parallel operations are absolutely necessary for the more complex systems, including the financial and jury systems and any docketing system.

Though necessary, parallel operations are quite consumptive of office resources; therefore, they should be very carefully managed, with the goal of ending them as soon as confidence in the automated system is achieved. Working with a standard list of questions can help organize the effort. In the Western District of Texas, for example, the clerk and management staff raised numerous important questions during meetings designed to plan for and review the implementation of a new financial system. The following list of questions draws on reports of their experience.

1. Who will be responsible for each area or step of implementation? A specific person should be accountable for each step, including, among others, documenting manual-system deficiencies, establishing automated-system security, and checking the validity of data.
2. Which data will be checked in comparing the manual and automated systems? How will discrepancies be resolved?
3. Who will be responsible for the entry of the historical financial data?
4. Who will be responsible for the entry of current data after the historical data have been entered?

5. How will the validity of historical and current data be maintained and monitored?
6. What criteria will be used to determine whether the comparison of systems has validated the accuracy of the automated system?
7. What procedures will be followed to make the final move to the automated system and discontinue the manual system—that is, how will the district finally “go live”?
8. Should all divisions in the district go live at the same time, or should they be phased into the operation?
9. Should data entry be done from all division sites, or should hard-copy data be sent to the head office for entry into the automated system? If the district begins with the second method but then wishes to change to the first, what criteria should be used to determine a divisional office’s readiness for automated data entry? (Note that this question must be addressed very early in planning the implementation because it will affect the hardware and telecommunications requirements of the system.)
10. How frequently should the data base be moved from disks onto tapes, and how and where will the tapes be securely stored?
11. How does the clerk’s office meet the financial reporting requirements placed on the office by the Administrative Office?
12. Will the clerk’s office need approval from the court to proceed to live operation of the automated system?

Other courts may have other questions instead of or in addition to these. A thorough airing of these and related questions will facilitate a successful implementation effort.

VIII. USING THE AUTOMATED SYSTEM'S REPORTS

The basic maxim of data processing is "garbage in, garbage out." The phrase is a significant warning against letting the excitement and power of computer technology blind one to the blunt reality that a computer system never improves the quality of information fed to it—it just manipulates it and spits it back according to rules already established. Clerks of court who have used automation speak unequivocally on the following point: If a clerk distributes to a judge an automated-system report that is inaccurate or difficult to read, then the clerk has risked the future of the system in that court. Judges will not and should not be patient with reports that are not clear and accurate.

Risks of embarrassment or worse can be minimized by thorough and continuing attention to report validation. Validation begins with checking the substance of automated reports against the same information contained in the manual system. Obviously, if the manual system is flawed, the validation process will be suspect from the outset. This will be a particularly grim problem if the clerk's manual system is inaccurate compared with separate records maintained in chambers; the low credibility of the clerk's information will then carry over to the automated reports, and chambers staff will be disinclined to change their current record-keeping practices.

In addition to their accuracy, reports must be checked for their timeliness. The close cooperation of courtroom deputies in this regard is essential: If information does not reach the computer practically as soon as it would be entered into records kept in chambers, the automated system will come out second best every time.

The automated reports should present information in approximately the same form that the judge is already used to receiving it in. But judges must also be willing to accept certain inevitable, and unavoidable, differences in format.

An important task of both the chief judge and the clerk is to create a climate of acceptance for automated reports. No report should be submitted to judges or law clerks until the clerk and

Chapter VIII

staff are certain that the report is accurate, timely, and in an acceptable format. Rushing a report to chambers prematurely is one of the biggest mistakes a clerk can make in introducing automation to the court. Moreover, the clerk should distribute reports only to judges who request them. Providing unwanted information can lead to as much negative criticism as any sort of invalid reporting.

Several courts have had success with the gradual introduction of automated reporting. They have begun with one judge at a time, moving gradually to include others at that site. Or they have automated and validated all the reports in one division before proceeding to the next division. In general, in a multidivisional district, the clerk's home division should be the first to validate its reports.

Validation is not a one-time process, however. Staff turnover creates the need for perpetual revalidation of data entry tasks and reports. Changes in local or federal rules may require the generation of new reports or allow the elimination of existing ones. If the clerk and staff remain diligent in examining the quality of their automated reports, they will be rewarded by a gradual acceptance of the reports as the standard against which other sources of court information will be compared for accuracy. But it is certain that this accolade will not, and should not, be quick or easy to gain. Automation, after all, is initially a foreign presence in the court. Its credibility, like that of any stranger, must be earned.

APPENDIX A

A List of Books to Increase One's Computer Knowledge

VERY EASY

Ellen Richman. *Random House Book of Computer Literacy*. New York: Vintage, 1983.

EASY

Marilyn Bohl. *Information Processing*. Chicago: Science Research Associates, 1984.

H. L. Capron & Brian K. Williams. *Computers and Data Processing*. Menlo Park, Calif.: Benjamin-Cummings, 1983.

GOOD BOOK ON CARE OF HARDWARE

Rodnay Zaks. *DON'T or How to Care for Your Computer*. Berkeley: SYBEX Computer Books, 1981.

HISTORY

Stan Augarten. *BIT by BIT: An Illustrated History of Computers*. New York: Ticknor & Fields, 1984.

Katharine Davis Fishman. *The Computer Establishment*. New York: McGraw-Hill, 1982.

ADVANCED

Joseph C. Giarratano. *Foundations of Computer Technology*. Indianapolis: Howard W. Sams, 1982.

Joseph C. Giarratano. *Modern Computer Concepts*. Indianapolis: Howard W. Sams, 1982. [vol. 2 of preceding entry]

ESPECIALLY INTERESTING

Tracy Kidder. *Soul of a New Machine*. New York: Avon Books, 1981.

For additional information contact:
Howard Crockett, Federal Judicial Center

APPENDIX B

Draft Position Description for System Manager

DEFINITION

The system manager has responsibility for overseeing automation and assuring its coordination and integration with all court offices and procedures. The position has overall responsibility within the court for systems hardware and software, for training of court personnel using the systems, and for promoting cooperative efforts in the management and use of data-processing, word-processing, and data and telecommunication resources within the court.

NOTE: In most circuits, automation is expected to include:

- An automated case management information system, including case opening, docketing, calendaring, forms generation, case closing, case indexing, and statistical report generation functions;
- Three administrative support systems—attorney roll, personnel, and property inventory;
- Electronic mail among the judges' chambers, clerk's office, circuit executive's office, and office of staff counsel;
- Word processing;
- Other data-processing or telecommunication processes; and
- Associated training data bases.

OCCUPATIONAL INFORMATION

The system manager performs duties and responsibilities such as the following:

1. Participates in specifying systems equipment for the court; reviews technical specifications and evaluates proposed equipment configurations; recommends equipment placement and utilization.

Appendix B

2. Ensures proper housing, space, utilities, and physical security for system hardware and software, and related equipment; coordinates with the AO, FJC, GSA, circuit executive's office, vendors, and others as needed.
3. Works with circuit executive, AO staff, telephone companies, and other vendors to assure adequate telecommunications and data communications facilities linking various court offices and chambers and outside agencies and entities.
4. Manages implementation of new systems; conducts postimplementation evaluation to determine adequacy of performance and recommends changes.
5. Manages adaptation of New AIMS software to meet local court needs by: assuring that computer system tables and dictionaries are constructed and modified to reflect local court usages; assuring that the necessary precursors for events and the automatic scheduling and forms-generating consequences of events and relief types are specified in the dictionaries; and assuring the manipulation of a variety of subroutines within the dictionaries so that information is collected and displayed on the docket as desired by the local court.
6. Monitors existing software applications to maintain quality control; identifies, analyzes, and corrects problems.
7. Manages system maintenance activities; monitors vendor hardware maintenance performance and in-house routine housekeeping functions; monitors software maintenance in the form of new software releases from the AO and FJC, as well as local functions such as data base backups and reconfiguration.
8. Establishes systems operating procedures, protocols, and user permissions; develops and maintains local court technical and user documentation for all systems.
9. Ensures safety and integrity of data bases.
10. Audits use, response times, available capacities, and other performance characteristics of hardware systems; takes any necessary remedial action.
11. Works with judges, circuit executive, and other managers to identify system needs and objectives and to establish detailed operating procedures.

Position Description

12. Reviews changes in legislation, court rules, internal operating procedures, and applicable Administrative Office and governmentwide directives and makes appropriate systems changes.
13. Develops both long- and short-term plans and policies for systems improvement in such areas as security, quality control, productivity, system growth and enhancement, cost-effectiveness, and personnel.
14. Manages the design and production of recurring and special management reports using system capabilities, including the regular statistical reports required by the Administrative Office, regular local management reports, and special reports upon request.
15. Coordinates with the training officer and other managers to develop appropriate in-service and outside training programs in the area of automation.
16. Establishes and adjusts schedules, priorities, and deadlines for completion of objectives.
17. Acts as liaison with AO and FJC personnel, and counterparts in other circuits, to exchange information on new developments and refinements and to obtain programming assistance to modify systems software when necessary.
18. Briefs court staff and others on systems-related topics.
19. Manages a team of staff members with skills in the areas of systems analysis, systems adaptation, training, equipment operation and maintenance, data base security and maintenance, data and telecommunications, and statistics.
20. Performs other duties as assigned.

ORGANIZATIONAL RELATIONSHIP

A system manager reports directly to the clerk or, in his or her absence, to the chief deputy clerk, and manages a unit that performs specialized functions in the areas of automation and statistics.

QUALIFICATIONS

To qualify for the position of system manager, a person must be a high school graduate or equivalent and must have the following experience:

Appendix B

<i>JSP Grade Level</i>	<i>Years of General Experience</i>	<i>Years of Specialized Experience</i>	<i>Total Years of Experience</i>
11	3	3	6
12	3	3	6
13	3	3	6

NOTE: At the grade 12 level and above, one year of the required specialized experience must have been at, or equivalent to, the next lower grade in the federal service.

General Experience

Progressively responsible administrative, technical, or professional or other responsible experience that provided an opportunity to gain: (a) a general knowledge of management practices and administrative processes; (b) skill in dealing with others in person-to-person work relationships; and (c) the ability to exercise mature judgment.

Specialized Experience

Progressively responsible experience in administrative, supervisory, professional, or technical work, which provided an opportunity to acquire a knowledge of managerial principles, policies, and practices and of data-processing functions, applications, terminology, and methodology.

Educational Substitutions

Education above the high school level in accredited institutions may be substituted for the general experience on the basis of one academic year (30 semester or 45 quarter hours) for nine months of experience.

Completion of one academic year (30 semester or 45 quarter hours) of graduate study in an accredited university in such fields as business or public administration, computer science, statistics, mathematics, management, or related field may be substituted for one year of specialized experience.

Completion of a master's degree in computer science, mathematics, business or public administration, management, or related field may be substituted for two years of specialized experience.

APPENDIX C

Contents of the System Administration Course

Session	Concepts/commands
<i>Day 1</i>	
I Course overview—local system administrator roles	
II The hardware	cpu, disk drives, winchester setup, terminals, cables and connectors, cartridge loading and unloading, cartridge formatting, cartridge labels, loading paper and ribbons into the printers, security
III An introduction to data base management system concepts and terms	UNIFY, logging into applications and getting out again, screens, menus, records, codes, reports, moving through the screens
IV Data entry in UNIFY	Entering data, modifying data, deleting data, finding things with QBF
<i>Day 2</i>	
I Hands-on computer literacy	The hardware, disk, terminal, software, operating system, input, output programs, files, setting up the terminal, login, logout, date, ls, who
II Structured exercises	
III The UNIX operating system	Shell, kernel, processes, application programs, file system

Appendix C

Session	Concepts/commands
IV User's introduction to UNIX—part one	The code key, commands, arguments, cal, file, directory, file system, naming files, cat, pr, lp, echo
<i>Day 3</i>	
I User's introduction to UNIX—part two	op, mv, rm, passwd, ;, ?, *, , >, <, /, mail, write, mesg
II Structured exercises	
III User's introduction to the UNIX file system	Directories—home and working, changing the working directory, cd, pwd, ls [with options], home directory, absolute names, relative names, moving files, creating and removing directories, mkdir, rmdir
IV Structured exercises	
<i>Day 4</i>	
I The “ed” text editor—part one	Invoking the editor, entering text, leaving the editor, the ed command format, addressing lines, “.”, p, l, d, a, i, e, +, \$
II The “ed” text editor—part two	Searching text, magic characters, moving and copying lines, getting back to the shell, ^, /, m, t, s, u, w, f, r, q
<i>Day 5</i>	
I Administrative matters	Supplies ordering, getting help, getting service
II UNIX commands and files workshop	
III UNIX commands and ed workshop	

Session	Concepts/commands
IV UNIFY data entry and retrieval review	
<i>Day 6</i>	
I Attributes of UNIX files	File ownership, link count, mode, date of last change, permissions and file protection, chmod, chgrp, chown, passwd, group, inittab, rc, security
II The file system layout: a software view of the world	root, etc, usr, dev, bin, adm, usr/bin
III The user environment and modifying the user base	Security, adding users, adding groups, modifying groups, logging in as the system administrator, removing users and what to do with their files
IV Single- and multi-user modes	Security, a closer look at the /etc files, initialization, the administrator's environment, the user's environment, the power of root
<i>Day 7</i>	
I File system relationships between logical and physical devices	mount, umount, fsck, restore, u, fjc
II Some routine local system administrator activities	Powering up, powering down, booting, going back and forth between single- and multi-user modes, figuring out where you are after crashes
III On the job as local system administrator	Adding software, handling software updates
IV Common problems and how to fix them	

Appendix C

Session

Concepts/commands

Day 8

I System backups

Security, Norman, bru,
incremental backups, full
backups, file system
restoration, file recovery

II System backup workshop

III System backup exercises

Day 9

I Final half-day review

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The Federal Judicial Center is the research, development, and training arm of the federal judicial system. It was established by Congress in 1967 (28 U.S.C. §§ 620-629), on the recommendation of the Judicial Conference of the United States.

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Federal Judicial Center

Dolley Madison House
1520 H Street, N.W.
Washington, D.C. 20005
202/633-6011