

Chapter 5: Court Workflow

This chapter documents differences and similarities between workflow in courts that use paper and electronic filing, including the effects of the development of case management technology on paper flow. It also addresses how paper filing will continue in an electronic filing system—the inevitable need to scan paper for parties who lack the means or capability to interact with the courts electronically.

The usual approach to describing workflow is to follow a single piece of paper sequentially through processing steps. While this method provides a good general view of paper flow, it does not reflect the way courts actually work. The division of labor in a clerk's office places related functions together and processes many documents in batches. In other words, a more accurate view of court workflow is gained by examining functions performed by people in the office, not by determining the path a piece of paper has followed. For that reason, this chapter compares differences and similarities between manual and electronic filing systems based on workflow functions. It also examines the use of paper in a fully electronic system.

Differences and Similarities Between Paper and Electronic Workflow Processes

Work necessary to process information is not the same as work required to process paper, the current medium of exchange of information. The implementation of electronic filing introduces a new medium of exchange, but not necessarily new information. Paper processing steps are replaced by more efficient procedures for processing electronic documents, although the information being moved can be the same. It is important to distinguish between *what* is being moved and *how* it is being moved.

This discussion of workflow is organized into four subsections: information processing, paper processing, information processing in a mixed paper and computer world, and electronic document processing. The reason for examining the mixed environment is because the case management system replaces many of the indexing and reporting portions of the paper systems, while leaving case filing systems intact.

Information processing

Information processing is very similar in paper and electronic court environments. A judge, for example, reviews the content of a document and decides whether to grant or to deny a motion. The vehicle used for presenting the information to the judge, be it ink on paper or electronic pixels on a monitor, makes little difference in what is done with the information. Information processing is, then, largely unaffected by the introduction of electronic filing.

On the other hand, electronic information in a court document can be linked directly to other information, making access much easier and quicker. A footnote in a court opinion may refer to a statute or another case. In a paper environment, it may be necessary to retrieve another book (that may or may not be available) to check the reference. In an electronic world, a simple mouse click will make the case or statute appear. Lawyers and judges may have more information available to them with electronic filing, since the barrier of access time has all but been eliminated.

Electronic filing also may affect information quality. When people complete paper forms, they may leave out information or make mistakes that go undetected. When people enter the same information into a computer screen, they may receive immediate feedback if there is an error, allowing them to correct it. In the same way, a document

filing system can provide a lawyer with nearly instant feedback if certain types of problems exist, which should result in higher quality filings.

In addition, documents submitted electronically can provide data to a case management system automatically. This reduces data entry, another potential source of error. It also lowers operational costs significantly.

Information processing in the legal system, then, is enhanced, even if document content does not change. Electronic text and data are available sooner, usually are more complete, and often are more accurate.

Paper processing

"All records go through the same four-stage cycle: creation or receipt; maintenance; retrieval, use, and distribution; and disposition."¹⁴⁶

All of these steps have costs. The medium, paper, has huge costs. Nicholas Negroponte, in his book *Being Digital*,¹⁴⁷ discusses the costs and benefits of converting the atoms of paper and commerce to the bits of the digital world. He starts by discussing the cost and effort of moving "Evian" water (atoms) from France to a meeting in California. He remarks:

"In the case of Evian water, we were shipping a large, heavy, and inert mass, slowly, painfully, and expensively, across thousands of miles, over a period of many days. When you go through customs you declare your atoms, not your bits."

The current paper-based filing system must be analyzed and dissected to better understand the benefits of electronic filing and storage processes, and working with bits instead of atoms.

¹⁴⁶ Skupsky, Martin, Grumer, and Wolfe, *Comparative Record Management Systems and the Courts: Manual and Automated Alternatives*, NCSC publication number R0044, p. 8 (Williamsburg, National Center for State Courts, 1980).

¹⁴⁷ Nicholas Negroponte, *Being Digital* (London, Hodder & Stoughton, 1995).

Creation or receipt

Documents generally are created by attorneys and others outside the court. A Prince George's County, Maryland project estimated the cost of document preparation at approximately \$25. This included printing, copying, envelope preparation, and postage. This cost did not include fast delivery services, such as walking the document to the court, courier service or overnight express delivery.

Attorneys increasingly recognize the cost of document preparation and use document production software based on word processing programs. For example, one company offers a complete set of bankruptcy forms in electronic form to speed document creation. These forms step the attorney through the process to ensure accuracy. Since the forms are also templates, just as with paper forms, the attorney does not have to create the entire document, thus saving time and money. This provides a competitive advantage to more efficient attorneys.

Paper-based court information systems can be divided into two categories, information tracking and file maintenance. Courts record documents, the history of the case, in registries, dockets, calendars, name indexes, and financial records. This category of court record was designed to improve information retrieval, create summaries of actions and, most important, provide process control. This was needed because the court case file, as it moved from office to office, served as the workflow control for the case decision process. If the file couldn't be found, the registry or docket could provide information about the status of the case and who might have the file.

Receipt and initiation of a new case is a particularly work-intensive task in court clerk's offices. This is because both the processing tracking system and the file maintenance system must be set up for the case. In some courts, specialized files have

been pre-printed with a form on the file jacket to assist in organizing the information.

The files also may have color-coded numbers on the tab. Both of these methods are an attempt to make the file folder a useful work tool in order to summarize information and prevent misfiling.

Maintenance

The second general record area is the court file, which contains detailed information regarding the case, including signed documents and orders. The maintenance of the file is of paramount importance since this record contains the information needed by the judge to make decisions. Paper files are expensive and difficult to handle, organize, move, and find. Case files often contain hundreds, if not thousands, of pages of documents. These documents are usually punched with holes and fastened to the case file so that they do not fall out. Once more than a few pages are attached to the folder, it becomes unwieldy to navigate through the documents.

A National Center for State Courts report pointed out other problems with paper records management.¹⁴⁸ These include:

- Court personnel use longhand or dictation to a stenographer to originate text for typing, at a cost that can be four to six times that of machine dictation.
- Courts use manual and electric typewriters to type repetitively the same information.
- Courts fail to control the use of copier equipment, resulting in unnecessary copies and a progressive degradation of copy quality.
- Courts record the same information in multiple court records.
- Courts lack basic information regarding their record systems, such as volume of records, access to records, efficiency of equipment, and supplies used.
- Courts use outdated and inefficient filing equipment and fail to match supplies properly with the installed equipment.

¹⁴⁸ Skupsky, Martin, Grumer, and Wolfe, *Comparative Record Management Systems and the Courts: Manual and Automated Alternatives*, NCSC publication number R0044 (Williamsburg, National Center for State Courts, 1980).

- Courts store and protect closed records improperly, utilize storage space poorly, and often store records with potentially destructive water pipes and water sprinklers overhead and fire hazards nearby.
- Courts resist change to new technology that will improve the productivity and effectiveness of the courts with no net increase in cost over a period of years.
- Courts retain voluminous records much longer than the interest of justice requires.

Although progress has been made, these comments are often as true in 1998 as they were in 1980.

Retrieval, use and distribution

Not only does the court have to distribute information within the courthouse; it must communicate with the attorneys, law enforcement, jails, corrections, probation and other participants in the legal system. The Maricopa County, Arizona clerk's office had a postage budget of approximately \$400,000 in FY 1997-98. While a significant portion of these expenses was for child support checks, the court was sending a lot of other mail as well.

As noted in *Records Management*,¹⁴⁹ working with case files within the courthouse has particular challenges. Courtroom uses, inquiry response and daily updating of case files are common reasons for accessing records. If record retrieval time is high due to untrained personnel, improperly located file stations, a deficient numbering system, or misfiling, needless personnel time is wasted and records management costs increase. Standard procedures for filing and transporting case files to and from courtrooms can help avoid these problems. Lost files create delays in case processing and impair the administration of justice.

¹⁴⁹ Ernest H. Short and Charles Doolittle, *Records Management*, p.13 (Washington, US Department of Justice Law Enforcement Assistance Administration, 1979).

In *The Promise of Electronic Filing*, presented at the 1996 ABA TechShow in Chicago, Illinois, Judge Arthur M. Monty Ahalt¹⁵⁰ reported that in the Prince George's County Circuit Court:

"Each file is moved to a Judge at least five times before it is closed. Thus, the 40,000 cases filed each year must move at least 200,000 times. A study conducted during the Court's building program revealed that those 200,000 moves costs \$880,000 each year in personnel and other operational costs. Of course, when the case load grows to 65,000 cases in the year 2000, there will be 325,000 moves which will cost in the excess of \$1 million." (p.3)

Thus the bill for paper filing continues to mount.

Disposition

The "tomb" of records is the archive. States, counties and localities all have significant physical plant and financial resources tied up in storing and archiving case files. A study of the Iowa courts by the National Center for State Courts found that 79% of older inactive case files are stored within the courthouse.¹⁵¹

Courthouses, whether new or historic, are very expensive warehouses. In 1998, a new courthouse cost an average of \$200 per square foot to build, based on construction costs for both urban and rural areas. Since courts housing the larger collections of records are located predominantly in urban areas with substantially higher construction costs, there is little doubt that this is very expensive real estate to be consumed by files. Because the majority of these files are accessed infrequently (if at all), this expense becomes even more significant. In *A Guide to Court Records Management*,¹⁵² the author cites a typical record inventory for a court. In that inventory he found that 1,988 square

¹⁵⁰ AMAHALT@virtualcourthouse.com.

¹⁵¹ Thomas G. Dibble, Michele Panker-Beresh, James R. James, *Iowa Court Records Management Project Final Report* (Williamsburg, National Center for State Courts, 1990).

¹⁵² Thomas G. Dibble, *A Guide to Court Records Management*, p. 31 (Williamsburg, National Center for State Courts, 1986).

feet of floor space was consumed by inactive case records, compared to only 301 square feet for active records. If the court had to pay even a low commercial real-estate price of \$14 per square foot annually, it would cost taxpayers more than \$32,000 per year just for the space to store records for this court.

Microfilm and microfiche have been the answer to many archival problems of the courts. However, as Mr. Dibble states in *A Guide to Court Records Management*:

“Micrographics should be approached with the same care and consideration as the development and installation of a computer system. These technologies are cost-effective in the appropriate applications but can consume large amounts of money and resources with little benefit when inappropriately applied.¹⁵³”

It should be noted that microfilm does not release the court from the need for a good records retention policy. Mr. Dibble goes on to state that,

“It should not be assumed that every document in the case file must be filmed; a purging list can often reduce the sheer bulk of case files by 50 percent to 75 percent.”

Just as with physical records, microfilm and electronic files must be evaluated for their value as historical or long-term records. It was noted in the Iowa study that “judgments and decrees” are the most often sought historical documents.¹⁵⁴ If this is so, then abstracters are the primary clients for this information and the court should plan for appropriate access.

¹⁵³ Thomas G. Dibble, *A Guide to Court Records Management*, p. 50 (Williamsburg, National Center for State Courts, 1986).

¹⁵⁴ Thomas G. Dibble, Michele Panker-Beresh, James R. James, *Iowa Court Records Management Project Final Report*, p. 11 (Williamsburg, National Center for State Courts, 1990).

Document System Evaluation

The *Comparative Record Management Systems and the Courts: Manual and Automated Alternatives*¹⁵⁵ contains an excellent checklist for evaluating a court document management system. This checklist is as valuable for courts planning for electronic filing as for those who wish to improve their manual systems.

Gathering Information

Once the general objectives have been defined, the systems analyst must gather all relevant information. This is accomplished through interviewing court personnel, funding agencies, and archivists; inspecting records and facilities; and monitoring workflow and operations. Statutes and court rules must be examined to determine legal requirements relating to records. Some of the questions that should be considered include the following:

- What records are created?
- What records are received?
- What is the legal basis for each type of record?
- What is the legal, administrative, fiscal, and historical value of the individual records?
- How often are the records updated?
- How frequently are the records needed?
- How are the records used? For what purpose?
- What is the sequence and indexing scheme of the files?
- Are facilities, equipment, and space available for records storage?
- What is the total volume of records in filing inches?
- What is the total anticipated annual volume of records in coming years?

The Trial Court Performance Standards¹⁵⁶ add some reasons for good records management policies and procedures:

Standard 3.6 Production and Preservation of Records

Records of all relevant court decisions and actions are accurate and properly preserved.

¹⁵⁵ Skupsky, Martin, Grumer, and Wolfe, *Comparative Record Management Systems and the Courts: Manual and Automated Alternatives*, NCSC publication number R0044, p. 10 (Williamsburg, National Center for State Courts, 1980).

¹⁵⁶ Bureau of Justice Assistance. *Trial Court Performance Standards with Commentary* (Washington: U.S. Department of Justice, 1997).

Commentary

FAIRNESS, EQUALITY, AND INTEGRITY depend in substantial measure upon the accuracy, availability, and accessibility of records. Standard 3.6 requires that trial courts preserve an accurate record of their proceedings, decisions, orders, and judgments. Relevant court records include indexes, dockets, and various registers of court actions maintained for the purposes of inquiry into the existence, nature, and history of actions at law. Also included are the documents associated with particular cases that make up official case files as well as the verbatim records of proceedings.

Preservation of the case record entails the full range of responsible records management practices. Because records may affect the rights and duties of individuals for generations, their protection and preservation over time are vital. Record systems must ensure that the location of case records is always known, whether the case is active and in frequent circulation, inactive, or in archive status. Inaccuracy, obscurity, loss of court records, or untimely availability of such records seriously compromises the court's integrity and subverts the judicial process.

Information processing in a mixed environment

Fortunately, it is not necessary to make the transition from a paper-based system to a completely electronic one in a single leap. For more than two decades, courts gradually have increased their reliance on an intermediate technology, the case management system. Electronic filing and document management systems will not replace today's data systems, but will change their role to one of an index to electronic documents, much like the old docket books and index cards served the paper files.

An automated case management system can assist in this purging of documents by marking the events recorded in the case with an archive or purge default flag in the associated document or case management database. The purge flag would assist greatly in the maintenance; archiving and purging of the case file and the purge could be overridden, if desired by the court.

One point to consider is the constant rate of technological change. In 1998, the change from CD-ROM technology to DVD or some derivative that has greater storage

capacity is beginning. Optical media that can store information at 100 megabytes per square inch of surface are reportedly being developed. It is safe to say that storage media capacity will continue to expand in the future.

It also is necessary to recognize that the operating system programs that organize the bits and bytes on the storage media will change and expand in the future along with the data formats and application software. All of these changes mean one thing: it may not be practical to commit long-term and "permanent" archives to digital media.

But what is the alternative? One possibility is computer output micrographics, known as *COM* in the records management world. Recognizing that court cases are rarely retrieved from archives, the lowest cost, lowest technology solution seems to be the best alternative at this time. *COM* is produced in a manner similar to a laser printer. Instead of printing to paper, the system displays the print image on a high-resolution device and captures it on the microfilm or microfiche. While *COM* output is not as space efficient as CD-ROM or similar digital media, with proper storage the information will be available a century from now.

Simply put, a *COM* image can be viewed through magnification. Electronic or laser images require the correct hardware and software to be available. Think of the computers of only 20 years ago, such as the Apple II and dedicated word processors, and you will understand this point.

What about converting the data as the systems and software change? It would require extreme vigilance, rigidly enforced procedures, and a commitment of financial and systems resources to ensure consistent conversion of the ever-growing library of information. Over time courts make significant changes to the types of information captured in their databases and to the organization of the databases. Such changes add

complexity to the process of converting existing records to a new retrieval system. Each time conversion occurs, all records, including those dating back to the earliest digital archive, would have to be converted. Over the years a given record may be read, converted, and rewritten many times, even if no one ever needed to see it. The COM approach, on the other hand, would not require old archives to be converted.

Perhaps in the future, digital capacity will grow beyond what currently is possible so that all the information is stored in on-going, upgraded systems. Under such an approach, nothing would be "thrown away" or archived from the active information system or network, even though data organization would be managed to optimize retrieval time for more active files. Until that time comes, solid alternatives must be selected to address archiving needs.

Case management systems

The recording and scheduling functions of the court often are referred to as case management. Paper-based case management systems often consist of a docket book or register to record the documents and events that have been held in a particular case. This register is usually supplemented with index cards that record information related to the parties. The court would create an index card for "Jane Doe" that lists the cases that she is involved in and, often, financial records and obligations owed. The other major piece of case management systems is the case file where documents are stored. In some courts the case files are pre-printed with a form to list contents and indicate case status and workflow. Automated case management and its relation to electronic filing are discussed below. At this point, it is sufficient to say that the computer is a much more flexible tool than the paper and pen systems that courts are abandoning.

First-generation case management systems

Courts that implemented a case management system in the 1970s or '80s may have difficulty tying these legacy systems to an electronic filing system. There are several reasons for these problems.

First, COBOL and other older computer languages and systems required that the entire court's workflow be defined step-by-step. This was done so that the data and workflow could be programmed into the computer system. The major problem with COBOL and other languages was that it took considerable time to create this programming. An even bigger problem arose when the process changed. These older computer languages often require that the entire program be changed to reflect the new process, which is both time-consuming and expensive.

As a result, two strategies emerged in writing these older court case management systems. First, the software was written in a general way to capture key information and to generate required reports. This approach meant that the court's staff would work around the limitations of the computer system with paper files and notes. The second strategy was to have a computer programming staff available to modify and enhance the system as needed. Both approaches necessitated significant additional personnel resources and related costs.

Second, older case management systems often suffered from the lack of a relational database system in which to store data. Data was stored in "flat files" that can be thought of as long sentences without punctuation. Information is readable, but not easily readable. Therefore, translators, which we call programs, would add, insert and retrieve data from these "sentences." The most significant problem is that it is difficult to connect different pieces of data with this kind of program storage system. Why is this important?

Courts relate many pieces of information together to reflect the complexity of a case. Further, courts relate different persons to all the cases in which they are involved. Practicing attorneys are excellent examples, because they are related to several different cases in different ways. In addition, the hierarchical nature of these archaic data structures required a significant amount of redundant data entry.

If a court uses an older case management system in which data is stored in “flat” or indexed-sequential files, then it will not be easy to use the case management system as a document indexing system. It is a difficult task to link advanced technologies to these obsolete systems. Courts should consider replacing them before pursuing any type of document management solution.

New case management systems

New case management systems use a table-driven approach to perform functions such as workflow. Tables also are used to validate data entered in the case management system. Tables can be thought of as containers of similar information. For example, case type designations, such as civil, criminal, domestic relations, family, probate, and chancery, can be coded and stored in the case type table. There can be hundreds of tables in a modern case management system. The good news regarding this trend is that court managers easily can modify the tables to reflect changes in the workflow of the court. The challenge is that someone must understand the interrelationships between data, tables and workflow.

The most important aspect of these new designs is that the tables define events. Events can include filing or issuing documents, scheduling hearings or trials, and recording financial information or transactions. When events reflect documents, the case

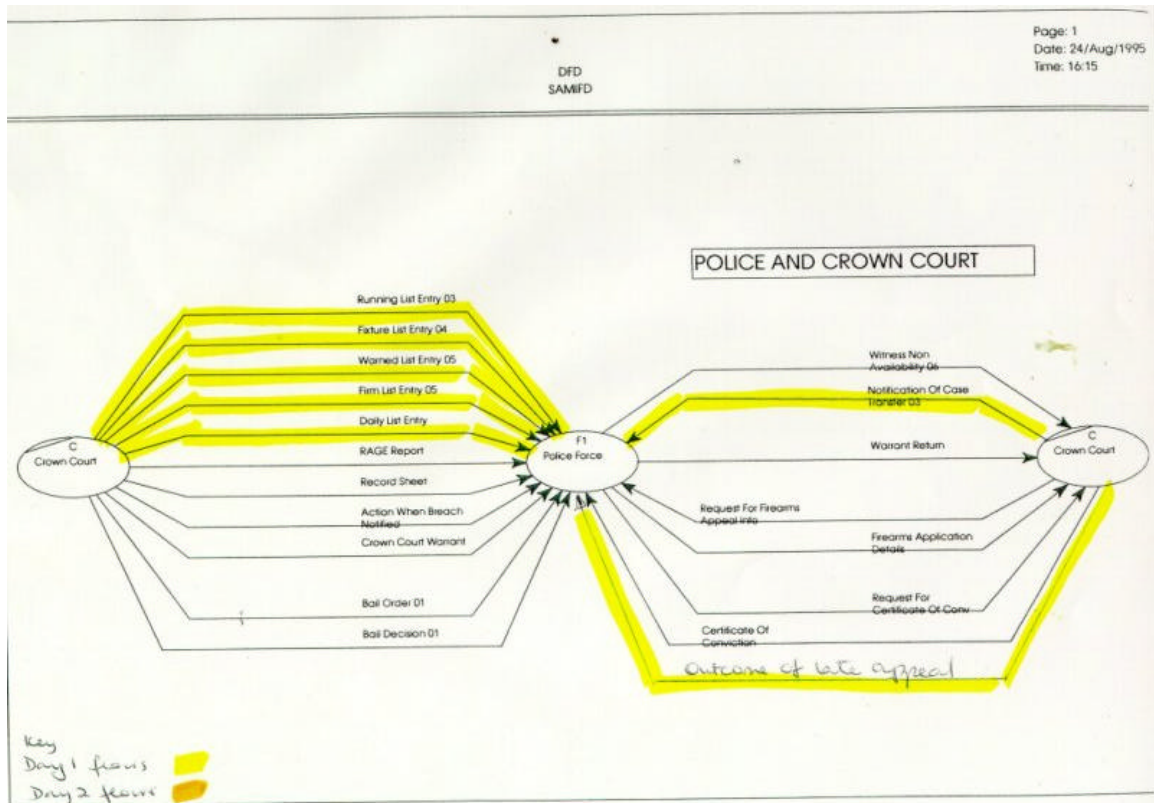
management system contains the description of the documents. More importantly, the tables can define what to do with those documents.

Tables also can define workflow by identifying the next event to be scheduled and documents to be produced. For example, when a document is received, the court records this event in the case management system. The type of document determines subsequent actions the court will take. Perhaps a filing fee is assessed, a hearing is scheduled, and notices are produced. Thus, the tables make workflow flexible and controllable within the court. Court managers will be able to manage both the court organization and automated systems. In the near future, we also will see sophisticated multi-branching workflow capabilities being designed into case management systems.

Note that in addition to automating workflow within the court, it is just as important to automate workflow between the court and the outside entities with which it transacts business. These include government agencies such as law enforcement, prosecutors, public defenders, corrections, probation, social services, and education systems, in addition to private attorneys and citizens. The court, being at the hub of scheduling and decision making has the opportunity to develop and coordinate workflow and information exchange standards though court rule for the entire justice system.

It is important for the court to understand the paper flow and workflow between organizations. A good example of a simple but effective representation of workflow was completed by England's Home Office in their CCCJS project. A copy of one flow set between the police and crown court is shown below.¹⁵⁷

¹⁵⁷ See Appendix A for an article about the Hampshire pilot project.



Form and format of information

It is also important to note that courts traditionally have governed the form and format of information presented. A simple example is the traditional case "header" format shown below:

The Court of Somewhere
Division 1

In the matter of:

J. Q. Citizen)
)
 Vs.)
)
 I. M. Respondent)
)

Case Number: 99-1234

Courts have designated this format to convey information in an orderly manner. In keeping with this tradition, courts can and should continue this practice with electronic filing and communication systems.

One example of courts controlling the format of documents is a project in Ontario, Canada. This project uses word processing forms and document templates to present information to the courts. The court provides the forms and templates to attorneys at no cost. These forms and templates provide an organized foundation for documents to be submitted to the court, conforming to the court's rules. This court has gone one step further by providing the first step in an electronic format, in this case a word processing document. There are several advantages to courts providing this guidance:

1. The courts control the organization of the information.
2. The courts control the "look" of the document.
3. The courts can mark data fields within the documents that can assist in data entry.

The single biggest drawback to this approach is that by basing the system upon a couple of versions of word processing software, it will be difficult to change and upgrade the forms and templates in the future. This is due to incompatibilities of the upgraded word-processing software over time. Another drawback is the courts only endorse one or two private, commercial word-processing programs. Restraint of trade is a concern.

Whatever the format selected for electronic documents, courts or their service providers must be responsible for making those documents retrievable through the current access technology in use by their clients.

Electronic document processing

A fully electronic system will offer tremendous advantages to the court. This subsection describes how the paper and paper/case management system approaches of the past will yield to dramatically more efficient, effective processes.

When proper re-engineering is incorporated, the processing of electronic documents will be very different than the processing of paper documents. The most commonly used data fields in case management systems likely will be automatically fed by the electronic filing system once an electronic document has been validated and accepted. Typically, either the filing party will provide that information as part of the filing process (perhaps through a step-by-step data entry procedure using a “wizard” software utility) or the data within the document will be marked or “tagged” so that the computer can find it.

The clerk’s office also will no longer move paper from the file room to chambers or the courtroom. Instead, they will manage the flow of information either through the electronic filing system, electronic mail or the case management software.

It also is likely that court staff will be involved with "linking" documents and information within documents to a case. Instead of linking information only by the case number, documents will be linked to persons, families, companies, and other identifiers. Some linking will be done automatically by computer, while court staff will accomplish other linking.

Why would a court want to establish such links? It is becoming increasingly important, in order for justice to be achieved, to understand the bigger picture involving a particular person. For example, one individual may have been involved in traffic, civil, domestic relations, and criminal court. Without understanding the person’s history and

obligations, ineffective decisions could be made. This is the beginning of what is termed "decision support," which organizes information for the decision-maker, the judge.

Courts can realize significant gains in efficiency through electronic filing, with resulting savings in operational costs. In 1997, the Shawnee County, Kansas court¹⁵⁸ compared manual versus electronic workflow. A summary of their findings for processing documents received by the court is shown in the table below:

Time and Estimated Savings per 100 Documents Processed

Process	Manual processing time in hours	Electronic filing	Staff time savings in hours	Staff savings @ \$30,000 salary plus 30% benefits
Case Filed and fees collected	1.00	5.5 minutes	0.93	\$21.14
Petition checked for completeness	0.75	included above	0.75	\$17.05
Data entry	3.25	3.3 minutes	3.20	\$72.73
Summons issued	1.00	included above	1.00	\$22.73
Summons signed	1.25	included above	1.25	\$28.41
Docket fees rung by cashier	1.00	automatic	1.00	\$22.73
Receipt mailed by attorney	0.25	automatic	0.25	\$5.68
Documents filed	1.00	automatic	1.00	\$22.73
Summons carried to sheriff	0.25	automatic	0.25	\$5.68
Total	9.75 hours	8.8 minutes	9.63 hours	\$218.86

Staff savings estimated by this report were based on the salary and benefits shown above. It is important to note that the estimated savings reported by the Shawnee County court is for 100 *documents*, not cases.

¹⁵⁸ <http://www.shawneecourt.org>.

A number of years ago, a study of the Maricopa County, Arizona Superior Court file system was made by the NCSC. It revealed that an average of a little more than 19 documents were filed per case. According to the *Arizona Courts Data Report 1996*, Maricopa County received 95,619 cases. If 19 documents are received per case then more than 1.8 million documents were received that year. If the savings from Shawnee County were applied to this equation, the potential savings would be more than \$3.9 million for this one court. Furthermore, this does not begin to consider the maintenance costs of the files in the courts or the re-engineering benefits of the electronic filing system.

How Paper Will Be Handled in an Electronic System

Despite the best efforts of courts to conduct business with law firms and individuals electronically, paper will continue to be used in judicial processes for the foreseeable future. Pro se (or pro per) litigants constitute a growing proportion of court users, particularly when the cost of representation exceeds the amount in controversy in a civil action or the potential fine in a criminal or traffic case. Many of these litigants who represent themselves cannot afford, or lack the ability, to use computer systems. These individuals have the same right to access court services as those represented by technologically sophisticated law firms, so courts must continue to accept handwritten, paper pleadings.

In the beginning, courts will maintain paper files along with electronic case files residing in document management systems. Over time, more and more cases will be filed electronically, and work on those originally filed on paper will be completed, producing an increasing inventory of electronic cases. At some point, it will be cost-effective for

the court to convert its paper case files to an electronic form and abandon the parallel systems.

As part of this process, courts can begin to convert paper to an electronic form upon receipt, using scanners, optical character recognition software, and handwriting recognition systems.

Even after courts are conducting their business electronically, paper will still be necessary. Those pro se litigants who cannot provide electronic documents to the court also cannot receive electronic service or view case information resources, so courts must continue to generate paper for these individuals.

Summary

Electronic filing promises speed, efficiency, productivity, and effectiveness. Unfortunately, a paperless system is beyond our grasp for the foreseeable future. Nonetheless, courts and law firms must prepare for a gradual transition that could take many years.

