



50 Million Pages

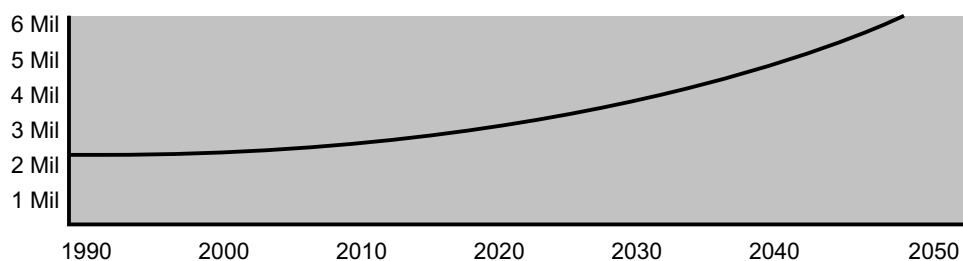
an Image-X White-Paper

For many, the internet and the digital age is seen as an end to the endless piles of paper that clog filing cabinets, in-boxes and recycling bins. In reality, both the public and private sectors are constantly increasing the amount of hard and digital documents produced, increasing the need for a competent and coherent document management system. Electronic document management is widely seen as a way to effectively control this document chaos in order to provide the necessary digital backbone for collaboration solutions, knowledge management solutions and workflow systems.

Perhaps the greatest test of any Electronic Document Management System (EDMS) is the nation's court system. The nation's courts record thousands of cases that involve high filing and data entry costs. Paper forms are subject to physical mistakes, disorder, misplacement and deterioration. An EDMS organization structure is the answer to the dilemma by providing a scalable, accurate, easy to use, efficient and cost effective solution. The ability to attract significant external use and most importantly ensure the legal authenticity of each and every document in the system is a must for any electronic document system.

The Dilemma

To better understand the unique problems that occur in the court system we turn to the Electronic Document Management Systems used by the Arizona courts. The population of the state was predicted to grow from 3,665,228 to 4,764,025 between 1990 and 1998, an increase of over 30% for that period. The Department of Economic Security predicts steady population growth during the next century, with the state's population reaching over 11 million by the year 2050. After evaluating the number of filings for Arizona we came to the conclusion that they account for about fifty percent of the population. Now this is not to say that half the people in Arizona file, but that due to multiple filings per case, a ratio for filings (not cases) to the number of people in the state is calculated at fifty percent. A growth in population goes hand in hand with an increase in filings. Here are some figures for the Arizona Courts:



Electronic document management is widely seen as a way to effectively control this document chaos in order to provide the necessary digital backbone for collaboration solutions, knowledge management solutions and workflow systems.



The previous figures show the staggering amount of filings the Arizona courts have encountered in the past ten years and the problem is only going to get more unmanageable with the predicted increase in population. Filings increased, however the number of employees decreased substantially. With the increase in filings comes a number of documents that are the lifeblood of courts. To better understand them it is useful to go through the process.

Abstract form the Arizona Court Case study:

Cases begin with an initial complaint, citation or petition in the form of a document. All subsequent actions are initiated by or are memorialized in documents, which are maintained by the Clerk's Office in case files. Courtroom clerks create a written record of court proceedings in shorthand notes and then produce a verbatim transcript if required. Exhibits introduced during court proceedings may be documentary. Judges memorialize orders and opinions in writing. Probation officers produce, collect and maintain substantial amounts of written documentation on probationers. Pretrial Services Officers write and submit reports on defendants. Almost nothing happens on a case that is not documented in writing, filed with the Clerk's Office and placed in the case file.

Case-related documents (except court reporters' notes and exhibits) are maintained in a physical case file throughout the duration of the case. New documents are indexed in the file or on an automated case management system (e.g., ACAP) so that users can determine what has been filed. Documents are placed in court case files in order of date received, attached to the case jacket by a two-pronged clasp. When a file becomes too large, a second volume is begun. In large and some medium-sized courts, case files are created, moved, stored, updated, copied and tracked by dedicated records management staff. Active files (and some disposed files) are stored on site, usually in a dedicated file room on open shelving in the courthouse. Disposed cases are purged and moved at regular intervals to off-site storage at a records storage facility operated by the court, the county or the State Department of Library and Archives. Records retention schedules specify how long records for each case type must be retained. Even after "disposition" many case files are needed again due to appeals and post-judgment activity on cases.

Case files and loose documents circulate continuously through the courthouse. Judges must review documents continually in chambers and on the bench. Case files are pulled for each calendar and brought to court by the Clerk's Office for use by the judge and the courtroom clerk. In a large court, hundreds of case files are delivered and picked up for re-shelving each day. Files are sent back and forth to off-site records storage facilities daily. Public records rooms serve attorneys and members of the public by pulling files, retrieving microfilm for viewing.

We estimate that by the time the 178,609 cases filed in the Superior Courts in 1998 are disposed, they will hold over 14 million pages. Pages in appellate cases will approach 14 million pages due to voluminous records on appeal. The 2,225,083 cases filed in the limited jurisdiction courts are estimated to amount to almost 23 million pages at disposition. Statewide, the total number of pages at disposition of all cases filed in the trial courts in 1998 can be expected to reach over 51 million pages. By any yardstick, this is an enormous amount of paper. And that is just the paper that actually gets into the files. In many courts we found that there may be multiple copies of documents. In the larger courts, attorneys often submit a courtesy copy of a pleading to the judge to ensure that the judge has adequate time for review before a hearing. Notices and minute orders or minute entries must be copied and distributed to each party. Some of the larger courts make copies of documents for immediate distribution so that more than one person can see and use the document as soon as it arrives. Probably hundreds of thousands of pages (and possibly millions of pages) of duplicate documents are shredded each year.



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To further explain the dilemma it is useful to turn to some figures:

1998: Estimated Number of Pages in 1 Year's Worth of Case Files for Superior and Appellate Cases at Disposition⁴¹

	Superior Courts Statewide			Appellate Courts		
	pages/ case	cases	pages	pages/ case	cases	pages
criminal	125	42,422	5,302,750	2612	1,673	4,369,876
civil	100	47,179	4,717,900	2612	960	2,507,520
domestic relations	45	49,543	2,229,435			
probate	35	12,633	442,155			
juv. dependency	80	4,023	321,840			
juv. delinquency	80	19,876	1,590,080			
mental health	25	2,933	73,325			
other appeals				2612	2,686	7,015,832
totals		178,609	14,677,485		5,319	13,893,228

These figures pertain only to the Superior and Appellate courts. They do not include: Justice and Municipal cases, juvenile and adult probation files, pretrial services, foster care, marriage licenses, personal files, cost related reports and other administrative records.

Other problems include lost files and missing records. Filing time and retrieval are rather slow and primitive while documents are available to only one user unless the copies are physically made. The time and cost of physical storage and reshelving is also a large problem. Many courts still use microfilm which is not only obsolete but also cumbersome and very time consuming. Attorneys must either phone for information or make the physical trip to the warehouse. With that comes the problem of storage which is getting scarce and expensive. To better understand the issue along with the benefit of implementing an EDMS system please turn to the figure below supplied by the Arizona case study:

Storage is getting scarce and expensive



Problem/Issue	EDMS Impact
<ul style="list-style-type: none"> Missing or lost files/documents. 	<ul style="list-style-type: none"> Electronic files, if indexed and backed-up properly, will not get lost.
<ul style="list-style-type: none"> Documents take a long time to get into the file (loose documents). 	<ul style="list-style-type: none"> The documents will be linked to cases as soon as they are scanned and indexed. Available to users immediately.
<ul style="list-style-type: none"> File available to only one user at a time. 	<ul style="list-style-type: none"> Electronic files are available to multiple users at the same time.
<ul style="list-style-type: none"> Documents are copied to circulate. 	<ul style="list-style-type: none"> The need for extra copies will be eliminated.
<ul style="list-style-type: none"> Pulling, transporting and re-shelving case files is labor-intensive. 	<ul style="list-style-type: none"> Electronic files could eliminate the labor, to the degree that judges and others are able to use the electronic file as a substitute.
<ul style="list-style-type: none"> Records storage space is at a premium. 	<ul style="list-style-type: none"> To the extent that an EDMS would eliminate the need for hard copy to be kept on-site or at all, the amount of records storage would be reduced.
<ul style="list-style-type: none"> Retrieving off-site records in larger courts can take from 1 to 3 days. 	<ul style="list-style-type: none"> Records stored in on-line and "near-line storage" should be accessible in from 1 to 5 seconds. Older case records must be found and loaded from off-line storage.
<ul style="list-style-type: none"> File shelving, carts and supplies are costly. 	<ul style="list-style-type: none"> Elimination or reduction of cost of equipment and supplies to the degree that electronic documents replace hard copy records.
<ul style="list-style-type: none"> A copy of the trial court record must be made for the appellate court when a case is appealed (labor-intensive and voluminous copying). 	<ul style="list-style-type: none"> If the appellate courts accept the trial court record in electronic form, the labor would be reduced and the copying eliminated.
<ul style="list-style-type: none"> Using microfilm is cumbersome and time consuming. 	<ul style="list-style-type: none"> If user-friendly retrieval methods are built into the EDMS, retrieval should be far easier and faster. Integration of EDMS-CMS is critical.
<ul style="list-style-type: none"> Distribution of notices and orders to court parties is time-consuming and paper-intensive. 	<ul style="list-style-type: none"> Automatic distribution of electronic documents to state and county agencies could be facilitated through an EDMS.
<ul style="list-style-type: none"> The public and attorneys must phone for information or make a trip to the courthouse to view records. 	<ul style="list-style-type: none"> Access over the Internet would alleviate many trips and phone calls.
<ul style="list-style-type: none"> Emergency orders may be delayed if a judge needs an old case file. 	<ul style="list-style-type: none"> On-line access to documents in disposed cases may allow for speedier action.



When the paper quantity reaches staggering numbers in the millions, it is not only expensive to take care of but is also detrimental to the environment.



First, the system should be able to convert forms from a paper to an electronic format.



Ideally the forms should be able to be filled on the fly digitally any time any where and easily be viewed on the web.

Requirements

While the population in America is multiplying exponentially, the need for an organized digital solution to paper filings is not only convenient but necessary. An Electronic Data Management System (EDMS) is the only solution to a court's filing problem. When the paper quantity reaches staggering numbers in the millions, it is not only expensive to take care of, it is also detrimental to the environment.

To maximize the potential of a EDMS, the system has to satisfy some major conditions. First, the system should be able to convert forms from a paper to an electronic format. Ideally the forms should be able to be filled on the fly digitally any-time anywhere and easily be viewed on the web. Second, secure online storage is key to a successful EDMS. This should be an electronic equivalent to your everyday filing cabinet except more organized and easier to access. Third, the ability to file a number of cases or files at once will speed the filing process tremendously. Fourth, if the industry collects fees such as a court or clerks office, the EDMS should be able to receive payments automatically. Finally the system should be integrated with different programs and provide some sort of gateway for communication between the two entities. Here are a few other requirements for the Arizona case study:

- **Convert hard copy documents to electronic form and store in an electronic document repository.**
- **Accept documents into the repository through fax and electronic filing; automatic indexing of documents using forms-based data accompanying documents or embedded in XML documents.**
- **Convert electronic documents (minute orders, opinions, orders, pre-sentence investigation reports, etc.) created by the court using word processing software to an approved file format before filing in the repository.**
- **Store and manage other types of non-document electronic objects in the repository.**
- **Create searchable text from images and PDF documents; provide full-text search and retrieval.**
- **Organize and index electronic objects to permit later retrieval and viewing.**
- **Retrieve and view documents on screen from court facility (court users) and over the Internet (public access).**
- **Create annotations on documents without altering the documents. Annotations must be able to be viewed, deleted and printed.**
- **Print page, document, case file and other document objects from the repository.**
- **Create, modify and process work through workflow applications that distribute (route) files and document electronically to other EDMS users at the same site or at remote sites (across WAN links).**
- **Restrict access to viewing electronic objects that are sealed, expunged, or confidential.**
- **Restrict the ability to add, modify, and delete documents in the repository to authorized users.**
- **Provide an electronic approval process for electronic documents and store digital signatures in the repository.**
- **Capture the print streams that produce various types of financial and case management documents and reports, calendars, notices, warrants and other types of documents produced by the court. Automatically index and store in the repository for convenient access to historical information.**
- **Create and export a record on appeal in electronic form (standard TIFF files, no annotations or proprietary elements), which can be used by the appellate court without conversion or modification.**



Products

The IMAGE-X Document Imaging System is a sophisticated industrial strength software that allows courts the flexibility to convert their intricate paper filing system to a digital network system operating in a LAN and WAN environment. The system is based on an open architecture and is independent of operating system, hardware platform and application database. The imaging system interfaces with a number of scanners and storage devices including optical drives, juke boxes and CD-ROM drives. Every component on the imaging network is considered an additional node. This allows the imaging system to grow with the requirements of the organization. Following is a brief description and features of the components that constitute IMAGE-X's Document Imaging and Management System.



IMAGEmate

IMAGEmate is a suite of software components that controls the capture, indexing and transfer of scanned images from the scanning station to the Image Server. IMAGEmate access software serves as a bridge between the existing application and IMAGEview (Image display) application. Once the unique identifiers and image manipulation keys are defined for the existing application, a link is established between IMAGEview software and the existing application. The user working on the existing database application can initiate the imaging functions such as scanning and indexing, retrieval and viewing, and printing of the scanned documents. Here is a list of features:

Seamless Integration/Greater Control: The integration does not require any modification in the existing application and is completely transparent to the user.

Ease of Use: A minimum learning curve is involved since the integration is transparent to the users.

Error Reduction/Cost Effectiveness: Errors are reduced due to digital integration

MINDS (Managed Information Networked Data Services)

The file management and tracking capabilities are provided by MINDS . The system keeps track of such information as image type (color, black & white etc.), database to which the image belongs, storage drive and platter the image file is stored on and beginning sector where the image file resides on the platter. MINDS software is the most important software component for it allows integration of imaging software with the database application and can use a wide variety of storage devices to warehouse and retrieve images. MINDS software keeps a log of all image folders and pages and the storage location. When a user makes a request for an image folder or a page, MINDS immediately retrieves the image. The user does not have to know the storage device, server, platter, or image file type. MINDS keeps track of all this information.

IMAGEnet

IMAGEnet software is a Network Communication link between MINDS and IMAGEview software. IMAGEnet software keeps live link between the two applications and allows the client applications to retrieve objects from MINDS server.

CO-Miner

CO-Miner is a specialized database, modeled for use by decision support and other business analysis software products. Data warehousing consists of a combination of multiple steps that allows collection, cleansing, organizing and evaluation of data. Most data warehouses are implemented with dimensional data models. Dimensional data models categorize the data in a multi-dimension matrix.



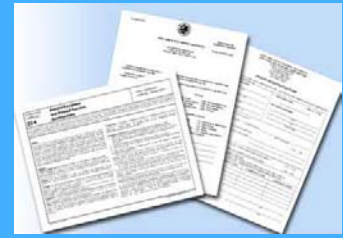
Solutions

X-Forms

X-Forms are electronic forms that have been created from paper forms. They are converted into a PDF that can be viewed using Adobe Acrobat Reader. The XML (Extensible Mark-up Language) technology is then integrated, giving the forms many unique features found only on X-Forms.

Features:

1. Auto populate forms with data from one's database They can eliminate the need for data entry by integrating X-Forms with that database.
 2. Fill in data while the forms are viewed
 3. Some forms packages do not allow a person to view the forms while data is entered. With X-Forms, the forms are visible while one enters the data and makes corrections.
 3. Make global corrections
 4. The same data field may appear multiple times on multiple forms, i.e. the Defendant's name. Making a change in one data field makes the data change in all the other matching fields.
 5. Send the forms and the data electronically
- X-Forms do not have to be printed out and mailed in order to reach their destination. You can send the data right from your desktop.
6. Create/Modify form layout in days, not weeks
- Most other form packages require weeks of work when the forms need to be modified.



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Legal Vault

LegalVault allows for a wide variety of documents online, where they can be accessed 24 hours a day from anywhere in the world. Using the LegalVault client application, one can index documents on the computer just as one would with the files on a Windows desktop.

Security

LegalVault protects the documents with 128bit encryption so that only the user, or parties the user grants authorization to, can access these documents. Security is updated regularly to insure that the documents are always protected by the latest innovations in data encryption. It is the digital equivalent to having a real vault. The documents can be accessed at the office, at home, or on the road. LegalVault allows access to documents twenty-four hours a day from anywhere in the world.

Organization

LegalVault's client application manages documents by indexing them on the computer, similar to documents in Windows. Files can be dragged and dropped from one folder to the next quickly and easily.

Paper Documents

Images of paper documents can be saved in LegalVault using either a scanner or a fax machine. Using a scanner, the LegalVault client application routes documents to your account. Using a fax machine, LegalVault creates a cover sheet with a unique barcode ID that routes the document to one's account.





One Click E-Filing, uses the Internet to get claims filed with the courts faster and more efficiently.

Electronic Documents

LegalVault allows one to save electronic documents in a wide variety of file formats, including Word, WordPerfect, TIFF, and PDF. To do this one has to login to the LegalVault Website and submit the documents directly to his or her account. LegalVault renders them in a legally authentic format that is unalterable by other users and can be viewed on any computer.

One Click E-Filing

One Click E-Filing, uses the Internet to get claims filed with the courts faster and more efficiently. One Click files hundreds of cases, with hundreds of different courts. All the required forms can be accessed and filled out online. One Click also allows one to attach additional files in a wide variety of file formats, such as Word, WordPerfect, TIFF, PDF, and much more.

Custom Tailored to the Case Management System

One Click can be integrated into any existing court case management system. After information has been entered into the system, One Click can access it and enter it into the forms automatically. One Click can also utilize the existing Word or WordPerfect templates.

Forms Made Easy

All the required forms are available online. Once the selected court with which you would like to file a claim with has been chosen, the appropriate forms are displayed. Forms can easily be filled out on screen. The information entered will appear neatly in the space provided by the form, alleviating the need to wrestle with typewriters to produce forms that often end up looking cluttered.

Global Correction

One Click's global correction feature also allows for correction of mistakes without having to redo the entire form. For example, if on a set of forms the defendant's last name has been misspelled, once you've made the correction on one of the forms, the same correction is made on all the forms where the defendant's last name appears. The information has to be entered only once.

Here's how it works

Submitting documents to the court is as easy as printing out hard copies. The only difference is instead of sending the documents to a printer, they are sent to a file where the documents will be rendered in a digital format that is legally authentic.

Once the forms have been filled out, any additional files that need to be included can be attached. One Click accepts a wide variety of file formats, including Word, WordPerfect, PDF, and TIFF. In addition to including additional exhibits, one can also include special service instructions to better ensure timely delivery to the defendant.

When the forms are complete, they are placed in a batch file containing all the cases an agency would like to file within a certain period of time. A batch of cases can be submitted daily. There is no minimum number of cases required for each batch.

The batch file is sent to a server, where each case is routed to the proper court. The batch file can contain cases that are all being filed with the same court or with different courts across the country. There is nothing to mail, fax, or photocopy. Filing fees are calculated automatically and paid online when the batch file is submitted to the court.

The documents are received electronically (or by fax, depending on the court) by the clerk. The clerk stamps them and forwards them to a process server for delivery to the defendant. When service has been completed, confirmation is sent via E-mail.



eQuickPost

eQuickPost is a secure way to exchange documents without mailing or faxing. Documents can be sent over the Internet regardless of which application they are created in. The program captures the original document exactly the way it was created retaining the format.

eQuickPost doesn't require any new software or downloads. All that is needed is a Web browser.

Once a document has been selected, eQuickPost creates an image of the document that is unalterable and legally authentic. The image is saved on a server. eQuickPost then sends a link to the image by E-mail to the recipient. When the recipient clicks the link, the document is displayed in their Web browser.

eQuickPost creates a complete audit trail that allows one to track what documents have been sent and received. It then notifies the person when the recipient has viewed the document that was sent.

Estimated ROI computation



Court Cost Analysis		
Case Costs	Non-Integrated	XML Integrated
Data Entry	\$1.50	-
Form Filling	\$1.50	\$1.50
Copying/Printing	\$0.60	-
Scanning/Archiving	\$1.00	-
Sending	\$1.50	-
Subtotal	\$6.10	\$1.50
X 1,000 Cases Per Month	\$6,100.00	\$1,500.00
X 12 Months Per Year	\$73,200.00	\$18,000.00
Yearly Savings	\$55,200.00	

District Attorney Cost Analysis		
Case Costs	Non-Integrated	XML Integrated
Data Entry	\$1.50	-
Form Filling	\$1.50	\$1.50
Copying/Printing	\$0.20	-
Scanning/Archiving	\$1.00	-
Sending	\$0.50	-
Subtotal	\$4.70	\$1.50
X 1,000 Cases Per Month	\$4,700.00	\$1,500.00
X 12 Months Per Year	\$56,400.00	\$18,000.00
Yearly Savings	\$38,400.00	

Total Enterprise Cost Analysis		
Case Costs	Non-Integrated	XML Integrated
Data Entry	\$10.50	-
Form Filling	\$7.50	\$7.50
Copying/Printing	\$1.40	-
Scanning/Archiving	\$8.00	-
Sending	\$3.50	-
Subtotal	\$30.90	\$7.50
X 1,000 Cases Per Month	\$30,900.00	\$7,500.00
X 12 Months Per Year	\$370,800.00	\$90,000.00
Yearly Savings	\$280,800.00	

Conclusion

The dilemma of paper filing has reached epic proportions. The inadequacies of paper storage and filing are not only costly and inefficient but also have unchangeable repercussions for the environment. It seems as if a sophisticated EDMS is the only solution to the problem. The E-Filing system is the cheapest and most efficient solution for the paper storage and filing problem. Regardless of what the solution may be, one thing is certain; something must be done before it is too late.