

Fall 2007

Analysis, Selection, and Implementation of a Case Management System for Local City Government Attorney's Office

Patricia D. Hughes
Regis University

Follow this and additional works at: <http://epublications.regis.edu/theses>



Part of the [Computer Sciences Commons](#)

Recommended Citation

Hughes, Patricia D., "Analysis, Selection, and Implementation of a Case Management System for Local City Government Attorney's Office" (2007). *All Regis University Theses*. Paper 440.

This Thesis - Open Access is brought to you for free and open access by ePublications at Regis University. It has been accepted for inclusion in All Regis University Theses by an authorized administrator of ePublications at Regis University. For more information, please contact repository@regis.edu.

Regis University
College for Professional Studies Graduate Programs
Final Project/Thesis

Disclaimer

Use of the materials available in the Regis University Thesis Collection ("Collection") is limited and restricted to those users who agree to comply with the following terms of use. Regis University reserves the right to deny access to the Collection to any person who violates these terms of use or who seeks to or does alter, avoid or supersede the functional conditions, restrictions and limitations of the Collection.

The site may be used only for lawful purposes. The user is solely responsible for knowing and adhering to any and all applicable laws, rules, and regulations relating or pertaining to use of the Collection.

All content in this Collection is owned by and subject to the exclusive control of Regis University and the authors of the materials. It is available only for research purposes and may not be used in violation of copyright laws or for unlawful purposes. The materials may not be downloaded in whole or in part without permission of the copyright holder or as otherwise authorized in the "fair use" standards of the U.S. copyright laws and regulations.

Running head: Case Management System for City Attorney's Office

ANALYSIS, SELECTION, AND
IMPLEMENTATION OF A CASE
MANAGEMENT SYSTEM FOR LOCAL
CITY GOVERNMENT ATTORNEY'S
OFFICE

Patricia D Hughes

Regis University

Abstract

This paper focuses on the business analysis, selection, and implementation of a case management system for a local government City Attorney's Office which is a document management system in addition to calendaring, notes, tasks, and billing. Their current system relies on paper document organization and as well as some electronic documentation in a simple file folder structure on a windows network file server. A business analysis review demonstrated the need for a cost effective automated business system to support and manage daily business processes, automate document creation and filing, track deadlines and tasks, and comply with new document retention and discovery requirements. In addition to the automation of business processes, the document management system added a layer of security to document access as well as control over document retention and destruction in accordance with new federal regulations. Most importantly, the time and cost savings added by the case management system has allowed the City Attorney's Office to add civil litigations to their services.

Table of Contents

Abstract ii

Table of Contents iii

List of Figures iv

List of Tables v

Chapter One: Introduction 1

 Problem Statement 1

 Review of Current Business Process Deficiencies 1

 Project Goals 3

 Project Scope 4

 Project Deliverables 6

Chapter Two: Research and Methodology 8

 Overview of Research 8

 Research Methods 8

 Vendor Research and Selection 14

 Literature Review 18

 Outcomes 20

 Summary 21

Chapter Three: Project Analysis and Implementation Approach 22

 Project Objectives 22

 Budgetary Costs Review: 22

 System Design and Implementation Approach 23

 Definition of Technical Requirements and Responsibilities 24

 System Architecture 26

 Summary 27

Chapter Four: Project Analysis and Implementation Approach 29

 Initial Implementation 29

 Significant Events and Milestones 30

 Changes to the Plan 31

 Successes and Failures 33

 Testing and Implementation: 34

 Findings and Analysis: 37

 Summary: 37

Chapter Five: Lessons Learned 39

 What Was Learned While Working on the Project? 39

 What Would Have Been Done Differently? 40

 Did the Project Meet Initial Expectations? 41

 What is the Next Evolution of the Project? 42

 Conclusions/Recommendations 42

 Summary 43

Appendix A: Training Manual 44

References 53

List of Figures

| <i>Number</i> | <i>Page</i> |
|--|-------------|
| Figure 1: Budgetary Costs Prior to Phase 1 | 22 |
| Figure 2: System Architecture Overview | 26 |

List of Tables

| <i>Number</i> | <i>Page</i> |
|---|-------------|
| Table 1: Business Analysis Requirements | 10 |
| Table 2: Vendor and Software Selections | 15 |
| Table 3: Results from Six Case Management Software Demonstrations | 16 |
| Table 4: Estimated Software Product Costs..... | 17 |

Chapter One: Introduction

Problem Statement

The City Attorney's Office lacks a supporting business system and a consistent business process which prevents the department from being as productive and effective as possible. Unlike private law firms that offer distinct services to various clients, the City Attorney's Office has a single client requiring complex and varied legal services. These services include: administration, advisory, administrative law, claims, civil litigation, and prosecution. Currently, the City Attorney's Office does not have an integrated business system to help manage their day to day business processes which results in adhoc filing and outsourcing of civil litigation services.

Review of Current Business Process Deficiencies

Among the different services provided by the City Attorney's Office, there are many business process similarities like document creation, billing, and deadlines which could be streamlined or otherwise improved. In addition, each individual service also demands specific business requirements not currently being met or are in need of improvement.

Administrative services are redundant and inefficient in many respects. The tracking of projects requires data entry in two separate database systems and billing time cannot be entered directly into either system by individual attorneys. Instead, billing documentation is gathered by administration staff and entered into an access database program. This access database program has been in use for over a decade and upgrading is a problem to poor table construction and lack of ownership. It produces basic reports but does not provide management with detailed information for planning future work, identifying duplicate work

Case Management System of CAO efforts, or assist in monitoring employee work loads. The access database has been maintained by an outside access database consultant for minor corrections and maintenance services for the past five years. A file server maintains a folder directory of older WordPerfect documents, recent MS Word documents, and Adobe documents. All City Attorney Office employees, interns, and contract attorneys have full access to the entire directory creating a security issue regarding privacy and integrity. Conversion of these documents to adobe portable document format is done to prevent modification if the document is transmitted outside of the network. In addition, a records room retains paper copies of all active projects as well as projects that have been closed for a minimum of three years. The ability to retrieve or reuse forms, templates, and documents is difficult because the documents are in different formats and time consuming because there are several locations which must be searched electronically or manually.

Half of the work effort of the City Attorney's Office is devoted to advisory services. Advisory services involves providing legal advice by researching local legislation and ordinances, evaluation of state and federal laws that affect City projects, providing guidance in technical areas such as human resources and tax issues, and advising the city manager and city departments in regard to litigation, liability, and contract negotiations. Unfortunately, work efforts are often duplicated because of problems retrieving previous related work and similar work efforts fail to be coordinated.

Administrative Law projects involve judicial hearings for permit denials or when members of the public are adversely affected by City decisions. This area of law is focused on procedures and the detailed analysis and application of the law involving document change tracking done by manual comparisons and manual correction. These business processes lack

Case Management System of CAO automation in document production, project tracking, case management and maintenance, tickler of appointments, expense tracking, and monitoring of task checklists.

Colorado law requires that a formal claim be filed with the City prior to the filing of a lawsuit against the City. This business process requires timely processing of such claims and is critical in simplifying the litigation process. The most common grounds for claims are personal and property injury, damage caused by sewer backups, and injury or damage caused by potholes in city streets. The claim process lacks document assembly automation, project and time tracking, case maintenance, calendaring tasks, and deadline tracking slowing the process and leaving the City vulnerable to additional charges or loss of the case.

Civil Litigation involves responding to lawsuits by assigning internal staff or by outside contract attorneys. The City Attorney's Office has assigned outside counsel to most of the civil litigation cases over the past 10 years because they do not have the necessary business processes and automation to handle such cases. The current system is unable to adhere to a strict court mandated litigation timeline or provide careful tracking of issues, documents, and research materials.

Project Goals

The primary goal for the City Attorney Case Management project is to implement a case management system based on a well programmed, supported, and tested document management software program. The chosen document management software system must provide appropriate and required tools to improve efficiency and help coordinate work efforts throughout the department. The preferred solution should be a document management system that provides the following essential elements:

- The ability to track projects and maintain project histories.

- A method for detailed time accounting.
- The ability to produce customizable management reports.
- A robust and customizable security.
- Automation of document assembly.
- The ability to track and alert users of deadlines and tasks.
- The ability to manage project related records.

Each of these requirements will assist the CAO staff in following cases and projects from start to finish in an electronic format that can later be queried for billing information, deadlines, and docket submissions. In addition, many documents with similar or standard information can be prepared ahead of time with auto-fill information that can be propagated from document to document automatically on a case or project basis. Formal reporting can also be produced with standard reporting templates and customizable reporting options for internal use to monitor work loads, ensure compliance, and provide information on demand by clients or the public.

Project Scope

The scope of the project includes a business analysis review, investigation of document management systems and capabilities, selection of a product, installation, and implementation. The project involved three phases and took approximately 10 months to complete. The business analysis phase took place in August 2004. Phase 1 involved a review of the business analysis, software selection, and installation beginning in August 2006 through December 2006. The implementation phase, called Phase 2, began in January 2007 and was completed in May 2007.

Case Management System of CAO

The scope of the project involved a clear timeline with set goals for the two phases:

- A review of the business analysis and current business processes.
- An analysis of the current needs and requirements.
- An investigation of available document management systems used in public and private sector.
- The selection and implementation of case management system.
- The performance of a security analysis review.
- A review of system backup schedules and testing of system restore procedures.
- A definition of service level agreements and amendment of the business continuity plan.

The business analysis review provides a full picture of the current business process detailing the strengths and weaknesses as well as the needs and desires not currently being met. These requirements include document creation, automation, management and retention control, customizable billing, time tracking, tickler system for notes and tasks, reporting, and project management. An evaluation and prioritization of these requirements was performed to help in the evaluation process of document management systems. The selection process was guided by these requirements as well as user friendliness, references, vendor support practices, and vendor longevity. The system was implemented, customized, and tested to the satisfaction of the City Attorney staff. A final evaluation of overall system stability, backup, recovery, and security was performed to restrict document access based on network login and internal application security settings. Service level agreements (SLA) defined regular maintenance and emergency support conditions between each entity; a SLA was drawn up between the vendor

Case Management System of CAO and the City as well as between the City Information Technology Department and the City Attorney's Office.

The long range goals of the City Attorney's Office were beyond the scope of the project and included increasing public access to case management files and facilitating access to past case information. In addition, scanning of documents into the new system cannot be done directly. Network resources restrict scanning to network drives and instead require that all scanned documents outside of the enterprise document management system be sent to e-mail, then saved and indexed into the case management system.

Project Deliverables

To maintain the project timeline and keep the project group coordinated and motivated, the project was broken into small milestones. Each milestone required completion at distinct stages of the project:

- The documentation of project requirements.
- The definition and ranking of software solution requirements.
- Commitment to a case management system.
- The installation of the selected hardware and software system.
- The customization of the software as needed.
- Record conversion from current access database to the new system.
- System testing.
- The documentation and training of employees on new system, procedures, and processes.

Case Management System of CAO

The documentation of project requirements defined the scope of the project along with the expected outcomes clarifying expectations of both the City Attorney Staff and project team. In addition, the project requirement document provided a concise description of essential system requirements based on the City Attorney's Office staff needs and guidance during the software evaluation process. Installation, customization, conversion, and testing from the old access database program, file system, and paper files to the new document management system was coordinated and documented between City Attorney staff, IT staff, and vendor support. Documentation of each process was created and maintained for future business continuity purposes.

Chapter Two: Research and Methodology

Overview of Research

Research was conducted by attending legal conferences, reading legal articles and journals referencing case management systems, obtaining peer recommendations from regional government attorney offices and from peers in private law firms as well as by performing an Internet search. A full review of gathered documentation was performed identifying benefits and possible problems with the implementation of a case management system. The research and review was necessary to ensure that the critical requirements concluded by the business analysis were realistic and possible. An initial list of possible software products were chosen from this review and refined to a smaller pool after a product comparison was performed against a detailed list of selection criteria. Six software vendors were selected to return and demonstrate their product, providing additional opportunity for a more detailed question and answer period on criteria that was still outstanding or incomplete. The City Attorney's Office project team members' chose LexisNexis with the product Time Matters because the product fulfilled most of the criteria and was the only product that promoted full integration and compatibility with the City's e-mail system based on the Novell product Groupwise.

Research Methods

Software products were evaluated based on the Business Analysis Project Requirements Software Solutions list. The full list of requirements can be seen in Table 1. These requirements have been rated to determine the most essential, the need to have, and would like to have requirements according to the City Attorney Office staff. Of these, there are 16

essential requirements requested which can be combined and condensed into seven broad categories:

- Customizable billing needs.
- A search tool for database information, electronic text, and imaged documents.
- Flexible time tracking with note capability which can be extracted for reporting and comparisons.
- A tickler system for deadlines and tasks according to legal case type.
- The ability to have stored documents to auto populate forms, letters, etc.
- Compatibility with electronic court document submission system.
- The ability to produce customizable reports.

Accurate and customized billing as well as time tracking is a primary concern for the department and one the old access database system was unable to support. The older system required blocks of time, but the department requires breaking billable and non-billable time into categories based on research, interviews, phone, etc. Search tools are necessary for the retrieval of case information once documents have been added into the system. Auto population of fields and forms was desired because it cuts down on document maintenance. If one field is changed, that change will be populated across all case files keeping them in sync and up-to-date. A tickler system assists the staff with court requirements for submission deadlines which can be filed electronically providing staff more time to prepare for cases.

Requirements for Software Solution

Table 1: Business Analysis Requirements

| Requirement details and prioritization of needs in six separate areas | | |
|---|---|---|
| Prioritization: 1=Essential 2=Need to have 3=Would like to have | | |
| <u>Project History and Tracking</u> | | |
| 1. | 1 | Link projects and allocate to more then one city department for billing, contacts and reporting. Project owners need to assign percentage of billing for allocation to different departments. |
| 2. | 1 | Need to search and organize the contents of projects so the information it contains is meaningful. Information may also be in a database as well as in electronic documents and images. |
| 3. | 2 | Need to capture e-mail in the project history. |
| 4. | 2 | Allow multiple people to be assigned to a single project. |
| 5. | 2 | Ability to easily reference projects that are related. A project may be related to past projects, current projects, and future projects. |
| 6. | 2 | Ability to link projects occurring in different departments. This might be a link to other systems such as planning and development services and open space. |
| 7. | 2 | Track costs incurred on a project other then staff time. There should be standard or defaults for some costs. |
| 8. | 2 | Rules need to guide project assignments so that the department becomes more consistent in how they use project numbers and how they track time against projects. |
| 9. | 3 | Symbols used to build project numbers should be meaningful. |
| 10. | 2 | Phone numbers and contact information needs to be stored so contacts can be associated to projects. |
| 11. | 2 | When projects are assigned, staff will be required to estimate the time to complete the task and the deadline. Estimates should be reevaluated and corrected. |
| 12. | 2 | If time estimates are inaccurate or if scope changes, they need to be reevaluated and system should remind staff of this issue. |
| <u>Time Tracking</u> | | |
| 1. | 1 | Time tracking has to be easy to use. |
| 2. | 1 | Need to record notes to describe how time was spent. |
| 3. | 1 | Need to reassign time if the scope of project changes. |
| 4. | 1 | Need standard billing entries such as for phone call meetings, e-mails, etc. |
| 5. | 1 | Time needs to be easy to attach to a case. |
| 6. | 1 | System needs to produce various reports. |

| <u>Workflow/Tickler systems</u> | | |
|---|---|---|
| 1. | 1 | Need to set default deadlines and tasks based on case type. Litigation: deadlines and tasks associated with Colorado Trial Calculator. Claims: deadlines and tasks associated with claim log and tracking sheet. Property acquisition. Open records requests. |
| 2. | 2 | System should remind users of approaching deadlines and tasks for projects. |
| 3. | 2 | Need to modify default deadlines and tasks. |
| 4. | 2 | Need to be able to change status of tasks from not started, in progress, or completed. |
| 5. | 2 | Ability to assign tasks to one or more users. |
| 6. | 1 | System tied to e-mail system |
| <u>Automate Document Production</u> | | |
| 1. | 1 | Need to store and retrieve standard language, contracts, and litigation. |
| 2. | 1 | Need to populate forms, letters, and other documents of project information. |
| 3. | 1 | Need to file documents for court electronically. |
| 4. | 2 | Need to link documents to projects easily and retrieve for printing or viewing. |
| 5. | 2 | Need web access to documents. |
| <u>Monitoring/Planning</u> | | |
| 1. | 1 | Need regular report on projects status by department. |
| 2. | 1 | Departmental reports showing hours spent and estimates to completion to properly allocate new projects avoiding overload conditions and improve scheduling. |
| 3. | 2 | Accurate schedule/ hours/costs estimates to each department |
| 4. | 3 | Need statistical analysis to depict work effort on past projects. |
| <u>Records Management/Access to paste case information</u> | | |
| 1. | 1 | Need to search and organize content of projects for information it contains for future research. This includes information that would be contained in a database and electronic documents and images. |
| 2. | 2 | Need to track past opinions to avoid research effort duplication. |
| 3. | 2 | Need to link projects. |
| 4. | 3 | Need to coordinated names of projects, deadlines, and tasks between departments. |

The City Information Technology Department (IT) staff team also submitted a list of requirements for any software application being considered for purchase and integration into the City network. These requirements were more generic as they must be applicable to the current and future needs of the entire City. All products were evaluated against the following criteria required by the IT Department:

- The system must be compatible with Novell and the City e-mail system GroupWise if essential.
- It must be functional in windows terminal environment; Citrix.
- The platform must be Linux, Unix, or a Windows based operating system.
- The database is preferably MS SQL server or Oracle.
- Must have adequate security within the application utilizing single sign-on or LDAP.
- The reporting tools must work with Crystal Enterprise.
- Needs to be compatible with Enterprise Records Management System.

These requirements exist because the City network utilizes a Novell operating system on top of Windows 2000 or Windows XP with the Novell Groupwise e-mail system. Any integration of additional products must be compatible with these City systems. The City has limited resources and requires a database backend with either MS SQL or Oracle to utilize internal employee experience and labor for maintenance. The main reporting tool for the City is Crystal Enterprise with experienced staff to assist with the development of customized reports and distributions through integration with web services.

After the initial product comparisons the list of products was reduced to small pool of potential solutions. Each of the final products went through a second review and evaluated against several other criteria including:

- Project Duration
- Costs
- Staff Requirements
- References
- Vendor Financial Viability
- Customer Service
- Technical Viability

It is important to assess the likelihood of project completion within a specified time period. Increase in the project duration risks turnover, delays, and project failure. In addition to the extension of project duration are additional labor costs associated with staff time and effort. Costs are also attributed through one-time and on-going costs for hardware, software, consultant time, staff time, licenses, and maintenance. Background checks on selected vendors provided information on their financial stability, years of operation, number of employees and net yearly sales to ensure that the product will be supported and has a strong position within the market place. A reference check of customer satisfaction by solicitation and non-solicitation provides an unbiased view of the type of support and service level commitments that can be expected. An unbiased review of the system assures that technology used within the system is up to date with current and possible future standards including: system interface issues, programming languages, platforms, GUI, quality assurance, and compliance with federal, state, and local government standards.

Vendor Research and Selection

Appropriate software vendors and products were selected from recommendations received while attending legal conferences, articles which referenced a vendor from the Colorado Lawyer periodical, peer recommendations in the public and private industry as well as an Internet search. An initial list of twenty vendors were considered (refer to Table 2 for the full list). The vendors and their products were evaluated based on the firm's size, market share, and response to the request for proposal requirements. Over twenty vendors responded varying in size and market presence. Six vendors were selected and contacted to discuss requirements and were invited for a demonstration of their product. After the demonstrations, the project team discussed each of the vendor products discussing how well it performed and highlighting the benefits and drawbacks of each system as seen in Table 3. From this debrief, three of these vendors were asked to return so the project team could obtain additional hands on experience with the application, further investigate the enterprise and department requirements, and obtain a personal feel for each system.

The final test drive allowed for a comparison of the individual financial costs and system requirements. The software costs and annual software maintenance fees were all very similar with a final upfront cost estimate of \$65,000. Table 4 lists the estimated costs based on the final three products. Out of the final three products, Amicus Attorney and Time Matters were the two favorites of project team. Originally, Amicus was the first choice until the project team received information that the current customers of Amicus were unhappy with the support services and support issues were still on-going during the product test drive.

Case Management System of CAO

Uncertainty about product support quality led the project team to choose LexisNexis with Time Matters as their case management system.

Full List of Vendors and Products Initially Considered

Table 2: Vendor and Software Selections

| Product/ Vendor | Market Leader for x=-sized firms | Reasons for rejection or approved for further consideration |
|--|---|---|
| 1. Abacus Law | Small | Not compliant with language, database, e-mail and remote user standards. |
| 2. Amicus Attorney/ Gavel & Gown Software | Small | Approved |
| 3. PC Law & PC Law Pro | Small | Approved |
| 4. Legal Suite | Unknown | Company and customers are in South Africa. |
| 5. PracticeMaster/ Software Technology, Inc. | Small | Approved |
| 6. Time Matters/ LexisNexis | Small | Approved |
| 7. Client Profiles | Mid-sized | Approved |
| 8. Perfect Practice/ ADC Legal Systems, Inc. | Mid-sized | Not compliant with language, database, e-mail and remote user standards. |
| 9. ProLaw/ Thomson Elite | Mid-sized | Approved |
| 10. Omega Legal/ Omega | Mid-sized | Not compliant with language, e-mail and remote user standards. |
| 11. TrialWorks / LawEx Corp. | Mid-sized | Product focus is too narrow, encompasses only litigation |
| 12. Aderant | Not listed | Focus on large world-wide business needs. |
| 13. CaseManagerPro / Solutions in Software, Inc. | Large | Compliant with standards but application is very complex, cost is beyond current budget, no government clients. |
| 14. Elite / Thomson Elite | Large | Focus on large business needs. |
| 15. Legal Files | Large | Focus on large business needs. |
| 16. Practice Manager / RealLegal | Large | Not compliant with department standards. |
| 17. PerfectLaw | Not listed in article. | Showed little interest in competing for business |
| 18. Orion | Not listed in article. | Showed little interest in competing for business |
| 19. Legal Enterprise | Not listed in article. | Showed little interest in competing for business |
| 20. JustWare | Large | Focus on large business needs. |

Case Management System of CAO

Table 3: Results from Six Case Management Software Demonstrations

| Vendor | Selected | Pros | Cons |
|---------------------------------------|----------|---|--|
| Amicus Attorney | Yes | <ul style="list-style-type: none"> ▪ Intuitive GUI, user friendly. ▪ Local government agency is a client. ▪ Local, knowledgeable support. ▪ Positive references. ▪ Compliant with most requirements. ▪ Financially sound. | <ul style="list-style-type: none"> ▪ Can probably integrate with GroupWise but requires testing. ▪ Many issues with GUI. ▪ Very small company, future support questionable. ▪ Need to learn shortcuts. ▪ Extra steps required for billing. ▪ Unable to demonstrate reporting features. |
| ProLaw Enterprise v. 11 | Yes | <ul style="list-style-type: none"> ▪ Excellent demo by paralegal with five years experience with government agency implementations. ▪ Not fully integrated with GroupWise calendar features. ▪ Good references with “Easy to implement” comments. ▪ Easy data entry and indexing. ▪ Ability to integrate with many enterprise imaging systems. ▪ Fully compliant with all requirements. | <ul style="list-style-type: none"> ▪ Non-intuitive graphical user interface (GUI). ▪ Implies that more training & user documentation required. ▪ Unhelpful Help screens & screens all look alike. ▪ Product primarily used as timekeeping & billing system. ▪ Medium to low customer service ratings. ▪ Not fully integrated with GroupWise calendar features. |
| Time Matters Enterprise v. 7.0 | Yes | <ul style="list-style-type: none"> ▪ Fully integrated with GroupWise. ▪ Intuitive GUI, user friendly ▪ Long-standing product with good market share. ▪ Compliant with most requirements. ▪ Highly customizable ▪ Internal user level security but not linked to network level | <ul style="list-style-type: none"> ▪ Screens look like spreadsheets & could be intimidating. ▪ Has a separate product for remote use. ▪ Customization is a requirement at startup |
| Client Profiles | No | <ul style="list-style-type: none"> ▪ Intuitive GUI, user friendly. ▪ Extensive functionality and customization. ▪ Easy to enter time, helpful Help, events by priority. ▪ Compliant with most requirements. ▪ Good customer references. ▪ Financially sound. | <ul style="list-style-type: none"> ▪ Does not integrate with GroupWise ▪ Recommended consulting time is longer than for other products ▪ Difficult to use, steep learning curve to understand internal system dependency for customization of forms and reports. ▪ Missing items? Some functionality not working during demo. |
| PC Law Pro v. 7.6.3 | No | | <ul style="list-style-type: none"> ▪ Entire emphasis on billing only. |
| Practice Master Premier | No | <ul style="list-style-type: none"> ▪ Synchronization with GroupWise. | <ul style="list-style-type: none"> ▪ VAR (value-added reseller) was unable to demonstrate the software. ▪ Non-preferred technical platform: Database is c-tree file-handling system with ODBC. ▪ Overall opinion: Not as easy as Amicus & Time Matters for lawyers to use. |

Comparison of the Final Three Software Products

Table 4: Estimated Software Product Costs

| Estimated Upfront Costs | | | | |
|--|---|----------|---------|----------|
| | Time Matters | Amicus | Pro Law | |
| Software (based on 20 users) | \$6,3000 | \$10,080 | \$6,000 | \$10,080 |
| Annual software maintenance | \$50/call | \$1,100 | \$2,000 | \$2,000 |
| Database server + Licenses | \$8628 per unit | | | \$17,256 |
| Database monitoring software | \$1875 per unit | | | \$3,750 |
| Data center allocation | \$700 per unit | | | \$1,400 |
| Application server (if needed) | \$5,000 (estimate) | | | \$5,000 |
| Consultant for installation & training | \$125 x 8 hrs | | | \$6,000 |
| Outside consultant for customization | \$125 x 60 hrs | | | \$7,500 |
| Staff offsite training | (\$750/class + \$750 transportation) x 2 | | | \$3,000 |
| Contingency fund | 13% of upfront costs | | | \$7,600 |
| Miscellaneous expenses | (estimate) | | | \$1,000 |
| Estimate Total of Upfront Costs | | | | \$65,000 |

Literature Review

A literature review was performed to review the current state of technology within the field of case management and document management systems utilized in law practices, their potential advantages and disadvantages, integration requirements, security, and quality assurance issues. Currently, 90% of all information is being generated in some type of digital format, but a hard copy continues to be made from a third of that information (Goss, 2007). In addition, law firms continue to face enormous costs associated with the discovery process, requiring the creation and retention of documents which may later be requested for review under a court of law (Fukitani and Kunisaki, 2007). Creating a truly paperless firm is far into the future, but current document management systems are capable of streamlining workflow processes, integrating with standard and popular business applications, and dramatically lowering discovery costs (Perry, 2006). Document management systems reduce costs by eliminating labor costs creating and manually maintaining documents by taking existing electronic document content and turning it into a new electronic document quickly and efficiently while maintaining version control (Doherty, 2004).

Document management systems were initially developed to work in conjunction with the life cycle of a document and this system has changed very little since its conception (Sprague, 1995). The life cycle begins with the capture and creation of the document from paper to an electronic version, stored, and indexed for retrieval which requires document control and quality assurance (McFadden, 2007). In electronic format, the document can be used to deliver both a digital representation of the original document and can be queried to build a knowledge database based on the contents of the documents, requiring accurate optical

Case Management System of CAO character recognition and quality assurance processes (Yacoub, 2003). Some improvements have been made such as integrating document management systems with other systems including e-mail and reporting tools, imaging workflow tools, archiving, and web interface tools making it more flexible and robust to meet new business needs. (O'Meara, 2000).

Information technology requirements can be extremely expensive but the costs saving of storing documents electronically to meet new laws cannot be ignored. Many U.S. companies were failing to maintain structured paper-based filing schemes and when records were requested organizations found it cheaper to pay regulatory fines and fees then comply with the discovery requests (Shukla, 2004). Recent passing of tougher government regulations like Sarbanes-Oxley Act of 2002, mandating how information in both electronic and paper form must be managed and retained, are adding additional cost to document storage (Doherty, 2007). Failure to follow those mandates may result in fines from thousands into the millions of dollars (Shukla, 2004), (Goss, 2007).

The modification of a business process from paper to paperless results in enormous cost savings and improved customer service, but the digitized forms have their own problems (Ryan, 1991). While many organizations benefited financially from their initial adoption of the technology, others were disappointed when early document management systems couldn't expand their functionality because of the vendor's lack of response to new business function demands (Michalski, 1991). In addition, the financial gains of adopting a document management system were displaced by electronic costs for storage, high speed network bandwidths, faster and more powerful desktop workstations, and employee training as the systems evolved and integration expanded (Gleckman, 1993). However, many of these costs have been dramatically reduced over the last ten years including low cost for high bandwidth

Case Management System of CAO and cheap powerful local workstations making document management systems easier to implement (100 Gigabit WANs, 2002). The only concern network administrators need be aware of is the server processor requirements when data encryption is added as a layer of security (Doherty, 2004).

Security is a concern for document management systems at the submission, approval, retrieval, and transmission steps. Authorization, authentication, and encryption are some basic security measures and authorization at the user level assures that only specific users have access to particular documents and are accessing them from secure workstations (Harpaz, 2005). Authentication verifies the digital signature of a user for transmission and encryption encodes documents to assure privacy and integrity (Kermaier and Morgan, 2002). Security is particularly important in the life cycle of legal documents from creation to its transmission as well as for historical reference.

Legal document management systems have specific workflow requirements which rely on a well structured and organized storage system (LaForest and Flory, 2007). Closed systems rigidly define how documents are saved and organized while open systems are more flexible but have a tendency toward entropy. Legal case document management systems require high levels of organization in an open form that includes organized drives and directories for easy backup, databases stored in parallel to documents to facilitate backups and administration, and there should be highly refined search and indexing tools for quick retrieval (Hernandez, 1999).

Outcomes

The outcome of this research proved that the City Attorney's Office fell behind in their industry and cannot compete in the competitive legal profession with their current business

Case Management System of CAO process without a case management system. Literature review defined the costs and potential fines the department may face due to their current adhoc physical record keeping processes and reinforced the need for strong document control and security methods. Software selection process should be careful chosen based on current technology standards as well as interoperability with current business processes and stability of the vendor.

As a result, the LexisNexis vendor with Time Matters Case Management System was selected. LexisNexis is a 2-tier client/server system that works with client Windows 2000 and Windows XP, Windows 2003 Server, Novell 4.0 or later, and uses MS SQL 2005. The firm is small but it has a large government and university cliental. Time Matters is the only software that promotes full integration with the Groupwise e-mail system, windows terminal services, and contains an internal security mechanism. The vendor and product also met budgetary constraints for total software purchase cost of \$6, 300.

Summary

The research conducted concluded that the City Attorney's Office would greatly benefit from a case management system. Research assisted the software selection process and aided the implementation process by providing additional insight in to the current industry processes. As a result, the final product Time Matters met 100% of the essential requirements and 75% of the need to have requirements based on the initial business analysis. Time Matters provides strong document control measures with quality assurance methods, meets interoperability standards and falls within budget based on vender published costs, estimated hardware costs, staff implementation labor costs, and the project management timeline.

Chapter Three: Project Analysis and Implementation Approach

Project Objectives

Phase 1 resulted in the selection and negotiation of the case management system for the City Attorney’s Office. Phase 2 involved the implementation of the system resulting in an annual savings of \$190,000 per year by reducing the need to hire outside counsel and increasing work process efficiency. Savings are a direct result of automation and simplification of the production of letters, agendas, reports, billing, and maintenance of assignments as well as projects. Implementation required additional setup and on-going maintenance costs which needed to be considered and reviewed.

Budgetary Costs Review

Figure 1: Budgetary Costs Prior to Phase 1

| | |
|--|---|
| Total estimated one-time external expenses..... | \$ 65,000 |
| ▪ Table 3 details list to defend costs. | |
| Total estimate for staff time and labor : | |
| • Information Technology 520 hours @ \$77 = | \$ 40,040 |
| • City Attorney’s Office 628 hours @ \$72 = | \$ 45,216 |
| Total estimated staff effort..... | \$ 85,256 |
| Total one-time estimated cost..... | \$ 150,256 |
| Estimated Ongoing Costs | |
| • Annual software maintenance fees | \$ 3,000 per year, subject to a 15% to 20% annual increase. |
| • Computer replacement fund | \$ 5,900 per year |
| • Information Technology support after first year (120 hours @ \$77) | \$ 9,240 per year |
| Total estimated ongoing costs per year..... | \$ 18,140 |

System Design and Implementation Approach

A timeline and work flow process was created to streamline the implementation and design process with the assistance of the LexisNexis case management vendor. Coordination and testing of the initial software installation required one week but the system design process required three months to establish, configure, and test. The project team established several major goals to accomplish over the set timeline:

- The installation and configuration of software on local desktops, Citrix servers, and MS SQL server.
- The design of form types.
- The conversion of current case records.
- The documentation of revised workflow procedures.
- The testing of performance, security, migration, and user acceptance.
- Test data recovery.
- To move from testing environment to production.
- To provide training with documentation to CAO staff.
- To modify existing business continuity plans to include new application.

Implementation of the program was a two pronged approach, installing the program on both the local workstations and the Citrix servers for windows terminal service environment with metadata information captured and maintained in the backend MS SQL database. System design required establishing a business process and customization of forms by the project team with City Attorney Office employee input throughout the process. The vendor provided

Case Management System of CAO assistance with design, testing, and data conversion between the old access database and file server system to the case management system. Implementation of the system required identifying internal resources for installation of the software program on a test environment server to confirm compatibility and identify any installation issues. Implementation was also performed on the Citrix environment as an option to offset on-going maintenance costs with local installations. The system design process was a team effort to establish a business process, combining their current work process with the case management document flow. Next, the project team focused on design and customization of the case management system forms and display preferences as well as adding a layer of user security and performing several data migration tests. The project team performed two usability tests with the assistance of department employees, testing the full business process from start to finish. Their reactions to the design as well as any problems were documented. The project team made corrections or modifications based on their feedback. Training was performed with the entire department and system implementation and design requirements were documented for business continuity.

Definition of Technical Requirements and Responsibilities

The Information Technology project staff team responsibilities for the enterprise edition of Time Matters required a two tier client/server setup. Server is Microsoft SQL 2005 which was already available and Windows 2000/XP operating system for workstations with 256 MB memory, and 256 MB hard drive space minimum requirements. In addition, Time Matters was setup on the existing Citrix environment. The thought process being that the local client workstation installs could be eliminated at the time of production by providing user access to

the application through the Citrix environment only with connection availability at both work and from remote locations. However, initial setup issues and network latency problems within the Citrix server environment forced the team to proceed with the two prong approach after production by installing the application on all local workstations. Therefore, system testing was performed on local network workstations and via Citrix throughout the process.

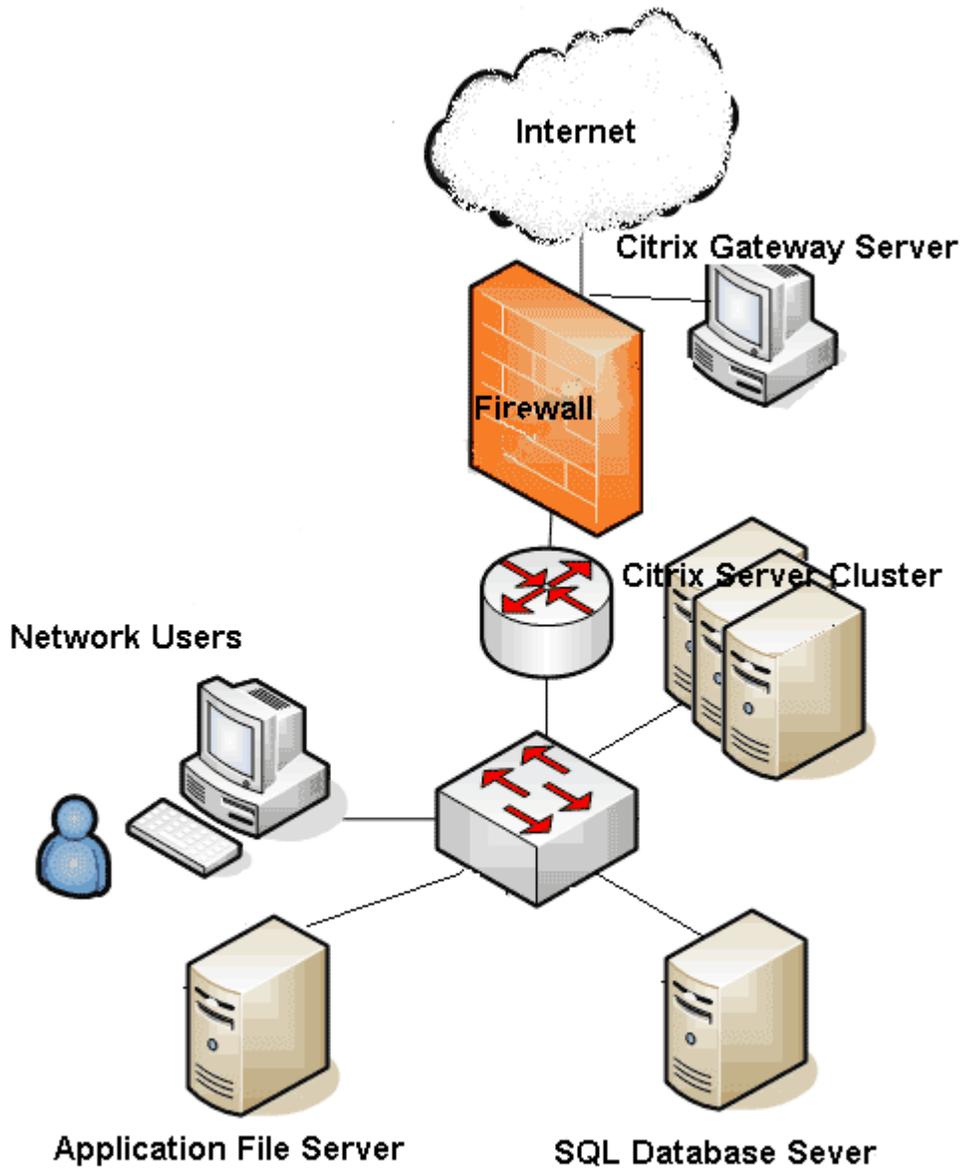
Two database environments were established, one for testing and one for the production environment. In addition, a city application developer was assigned to work with the database administrators and vendor in performing the initial import and conversion of existing files. The system administrator setup network security and performed testing of the integration of Time Matters with the city's e-mail system.

The City Attorney's Office project staff team responsibilities focused on defining and customizing the different form types for thirteen record types provide by the application. In addition, the City Attorney Office team identified subcategories and key fields for each record type to be used for searching and indexing. This process also included the design and documentation of workflows when using the system. Performance, security, migrations, user acceptance testing, and review were performed at the end of the test phase before moving on to production by the project team with the participation of the vendor.

System Architecture

Figure 2: System Architecture Overview

Below is a brief visual description of the network implementation of the Time Matter applications on local workstation, Citrix servers, and SQL server.



The system architecture is setup for redundancy by providing access externally and internally. External connections to the application and data occur by remotely connecting to the Citrix Server Gateway first, authenticating and providing access based on proper credentials. Authentication allows access to the Citrix server application cluster which connects the SQL Database Server. Internal network connections to the application can be accessed by the program being installed on a local workstation or through Citrix Server Cluster and data is stored on the SQL Server database. The SQL Server is the required database server for the Time Matter Case Management System. The server maintains both the production database and the test database. The production database is the home of the final data conversion and used for real time issues after the go live date. The production database contains the form types, system setups, and user preference values. The test database contains the same form, system, and user values but will be used for testing new upgrades, service releases, and end user training.

Summary

Time Matters was a very small business application with hardware requirements that already existed in the current environment. Implementation of the software and database setup was a straight forward process. Manual software installs were required because the vendor was unable to provide details for network packet distribution. The application data conversion was also a very straight forward process because the software included a data import and conversion tool. The design of forms and reports was the most difficult and time consuming process. It required input from the City Attorney Office employees because they were most

Case Management System of CAO
familiar with the particular needs of the City Attorney's Office business process and the needs
of the courts, other law firms, and government requirements.

Chapter Four: Project Analysis and Implementation Approach

Initial Implementation

This project began in August of 2004 with the business analysis review. The purpose of the analysis was to understand the current business workflows, identify deficiencies, and evaluate the need for a business application solution. The findings of the analysis was the need to streamline the different work processes which could help track projects and maintain histories, provided detailed billing, custom reports, automation of document assembly, tracking deadlines and tasks, and the ability to expand into litigation work rather than outsourcing. The business analysis also included cost estimates, possible business solutions, and a request for funding.

Unfortunately, the City underwent some budgetary problems and many project plans and funding requests were put on hold until the financial health of the City improved. In addition, the project was put on hold until the departments leadership position was filled after the former City Attorney retired. The project was revived in Aug 2006 when the first phase of software selection began with a commitment by City leadership through funding and by full participation by the City Attorney Office staff. The project team was assembled for the software selection process to assist in researching potential vendors and reviewing the business analysis findings from 2004. Meeting minuets were sent after each meeting to keep team members updated on action items and to provide written assignment for new items. The project manager had a standing monthly meeting with the executive advisory board to provide a detailed agenda on the project goals, accomplishments to date, next steps, and to discuss any problems or issues affecting the progress of the projects to solicit solutions and assistance.

Phase 1 was a slow process because of the large response the project team received from its request for information. The large response increased the project time required to research vendor financial stability, obtain customer reviews, and to review each product. In addition, the software selection fell behind schedule because of scheduling demonstrations and test drives around vendor schedules, team member work schedules, and a lack of team member resources due to a major legal case.

Phase 2 remained on schedule, but several testing scenarios were cut from the scope of the project at the end to ensure the go live date. Phase 2 increased the meeting schedules to two or three times a week but only selected team members were required to attend individual meetings. Meeting minutes for all meetings were sent out to the entire team, keeping everyone informed and aware of the current action tasks, problems, and completions. The technological setup of the system went quickly, but the application design of forms, setting up user accounts, linking third party applications, and testing both local and Citrix installs stressed and overloaded project team members. The project manager maintained the monthly executive advisory board meetings along with the agenda, project goals, accomplishments, and next steps.

Significant Events and Milestones

This project had five significant events and milestones. The first significant event was the completion of the business analysis review phase which was essential to obtaining funding and providing a foundation for purchasing a software solution. The second significant event was the launch of Phase 1 which began the software selection phase of the project. This was significant because there was a two year delay between the completion of the business analysis

Case Management System of CAO and the launch of Phase 1. Completion of vendor negotiation and contract signage was a milestone. This event was important because the team members were indecisive when having to choose between Amicus Attorney Pro and Time Matters. The team was leaning toward Amicus Attorney Pro as their first choice before they became aware of negative customer reviews from many clients. However, the team members were reluctant to go forward with their second choice, Time Matters, which was an equivalent product but had not fully gained the project team confidence during the product test drive. The third significant event was the launch of Phase 2 involving software implementation. Project team members had agreed on purchasing and implementing the Time Matters product and were committed to working with the vendor to customize the software, increasing its usability and improving business process efficiencies. The last significant event was the go live date which signified the completion of the project and the launch of a fully automated case management system for the City Attorney's Office.

Changes to the Plan

There were several changes to the project plan which happened early. The business analysis requirements originally listed product integration with City e-mail system as a 'would like to have' option at the end of 2004. Review of the analysis prior to Phase 1 required this condition be ranked as 'essential'. Testing of the e-mail integration didn't occur until Jan 2007 at which point incompatibility problems with the software version became a problem. This issue forced a second change which extended the software warranty period of 90 days with an expiration date of Jan 31, 2007 to February 15, 2007. Problems persisted after this date but the vendor was unwilling to extend the warranty. The 'essential' e-mail integration was tabled and

Case Management System of CAO changed to 'would like to have' until the Time Matters vendor upgraded their product compatibility from Groupwise 6.1 to the current City version of Groupwise 7.0.

A second major change required the Time Matters software be installed locally on 20+ workstations and on the city remote access system Citrix. Prior to 2006, Citrix was purely a remote access system but the Information Technology Department had been making great strides to move a number of highly utilized software products from local machines, forcing their use strictly from the Citrix servers. Along with this change was a request to test the software installation and utilization on virtual server system which would reduce the initial and on-going hardware costs. However, this change was reversed when it was discovered that the system administrators were still in the test phase for virtual machines and were not able to setup the system within the timeline of the project but it was agreed upon that the issue would be revisited next year. In addition, the pressure to use Citrix was reduced after the detection of CPU spikes, severe slowness, and system crashing issues became apparent during load testing. This change of working only from Citrix to using both Citrix and local installs forced the project to change the business requirement of remote access use from 'essential' to 'would like to have' as well.

Additional changes were made to the budget to increase consultant time assisting the project team in creating forms and reports. While the team was knowledgeable on the work flow process, the project team lacked technical understanding of the underlying structure and workflow of the application. Originally, the setup of forms and reports appeared to be a basic GUI customization, but underlining dependencies within the application slowed and frustrated the team. The time delay in the project forced a change to reduce the time allotted for design work flow testing at the end of the project in order to maintain the project timeline.

Conversion and import of old time records was reduced from conversion of all prior years to only files for 2007. These time records had multiple staff members attached, but in the conversion process, the system was limited to only one staff member assignment per record. After import and conversion, the time records staff assignments required manual correction and clean-up.

Successes and Failures

Obtaining approval and budgetary funding to continue this project after being put on hold for two years was a major success. It is difficult to pick up a project that has been put on hold for such a long period of time. There had been a number of personnel changes in both the City Attorney's Office and the Information Technology department which required extra time at the start of the project to review progress made in 2004, reevaluate the departments need as of 2006, and modify the business requirements as necessary.

There were three significant failures in the project. The Information Technology department was unable to correct the problems with the software performance on the Citrix server system. System slowness and non-responsiveness was recognized in Dec 2006 during the test drive demonstrations. These problems persisted and little attention was paid to the issue until the project team requested immediate resolution or return to focusing testing only on the local workstation installations. The system administrator was unable to resolve the problems during the time frame required, resulting in software distribution installation on 20+ workstations at the end of the project.

The second major failure involved the integration of the City e-mail system Groupwise with the Time Matters software. The vendor promoted this integration possibility, but it was not

Case Management System of CAO tested until the very end of the warranty period. Unfortunately, the software product was only compatible with early versions of Groupwise. Integrating the software and e-mail would require the City back grade their production version from 7.0 to 6.1 which was not an option. However, the vendor has strong evidence that their software is compatible with Outlook. The City may be migrating to Outlook within the next two years. If the Information Technology department makes this change or if the vendor makes efforts to increase software compatibility with current version of Groupwise, the Information Technology department will revisit this issue in an effort to resolve it.

The third significant failure was in cutting the testing time for application forms and reports at the end of the project before going live. The project team spent a great deal of time creating the forms, identifying fields, setting up search fields, and configuring auto populate fields for automated documentation production, but they left little time to test. The project manager was under pressure to start another project and the launch of that project was dependent on the completion of this project. Cutting the testing time at the end of the project timeline forced the project team to rush testing and user acceptance testing regarding major work process needs. At this time, the City Attorney's Office staff is still working to correct some of those issues with vendor consultant time.

Testing and Implementation:

Testing format sequence was established to perform a variety of business process steps to ensure usability, find errors, identify processing problems, and ensure that the expected program and processes were on target with the department user expectations. The testing

process was performed with the assistance of the vendor consultant and IT staff monitoring system resources, latency issues, and security problems.

Testing was performed according to workflows for each user role:

- A. Enter records for all form styles according to the work flow documentation.
 - 1. Do new records appear to enter quickly?
 - 2. Are there any problems entering data into any of the fields?
 - 3. Are form styles changing properly depending on the selected code?
- B. Schedule all developed chains.
- C. Utilize all developed data calculators.
- D. Run all saved searches.
- E. Run all reports and compare against design documentation.
- F. Run all merge documentation and review the documents produced.
- G. Test all third party links, especially from the standard word processor applications.
- H. Schedule calendar events and tasks.
- I. Test internal messaging features.
- J. Test personal inbox feature to ensure that it functions properly as a mapi viewer.
- K. Test document searches and document indexing.
- L. Test conflict searches.
- M. Test time/expense entries and associated reports.
- N. Test export of data to an excel spreadsheet.
- O. Test the following user security access rights:
 - 1. Access to program level settings.
 - 2. Access to records according to the user's security level.
- P. Test lists and sublist settings.
 - 1. Do all tabs appear to be in order?
 - 2. Are lists opening quickly?
 - 3. Do all quicktabs appear to be providing accurate information?
- Q. Test archiving records.
- R. Look at audit log.

Case Management System of CAO

Testing was done with the consultant's assistance to ensure the application was working at or above expected performance levels. The performance levels were measured by the number of transactions per second, the speed at which the product can execute a list of tasks, and the time it takes to enter data locally as well as from remote locations. The vendor provided a bench mark tool used at different work environments of other customers for performance evaluation.

Testing revealed no issues with time delays in the local environment, but the Citrix environment revealed a consistent time delay when switching forms. In addition, load and stress testing was performed on both environments. The local environment had no issues but the Citrix environment revealed CPU spikes as additional users logged on to the system, eventually causing the server to crash. Internal security settings were reviewed but no outstanding issues were identified. The project team created internal user profiles to restrict users from accessing or modifying case materials and documents. Profiles and user groups were created instead of on an individual basis to eliminate administrative issues or errors as well as to accommodate recent personnel turnover issues. Both data and time records were reviewed for proper conversion and to ensure data was imported correctly while maintaining data integrity. No conversion or data import issues were identified, but some manual clean-up was required in areas where more than one staff member was assigned to individual case, task, or project. Lastly, user acceptance testing was performed to introduce the rest of the CAO staff to the new software program. Feedback on usability and work flow process helped the project team refine some of the forms and reports to clarify the process, rework or eliminate fields, and increase efficiencies.

Implementation of the software required the activation of the user accounts and training. Training was performed in the test environment with the same database records as well as the same forms and reports as the production environment. The Information Technology project team members setup the training room and training database. The project team created the training documents which covered the work flow process including record types, matters, notes, tasks, e-mail, billing, journals, and contact information. City Attorney staff was asked to bring current projects to setup and enter into the test environment. After training, these same staff members were asked to go back to the office and enter the same projects into the production database. The project team felt that giving the department staff a trial run while having real work materials would personally invest them in the training session.

Findings and Analysis:

Problems experienced with the software application in the Citrix environment were not localized. Several other programs were experiencing similar issues which forced a redevelopment of the entire Citrix environment. The case management software system is currently being tested in the new Citrix environment with no performance issues at this time. Cut over from local installation to Citrix is scheduled to occur in January 2008.

Summary:

Time delays, personnel turnover, and budget issues all played a role in delaying the progress of this project. Once these issues had been resolved, the software selection process proceeded quickly. Indecision at the end of the software selection process postponed implementation. Implementation ran into compatibility issues with both the e-mail system and the Citrix system. However, both of these issues will be resolved within the near future. Testing helped

Case Management System of CAO

identify performance issues in the overall Citrix environment so software implementation was restricted to local installations. Training was performed in an identical test environment. The test environment remains viable for future testing of service release updates and form changes.

Chapter Five: Lessons Learned

What Was Learned While Working on the Project?

The software selection process of Phase 1 was extremely time consuming and overwhelming. While the larger document management systems would have provided additional functionality and were provided by larger vendors whom were more financially stable, their products were well beyond the scope and budget of this product. Many of the responses came from larger vendors which we choose not to look at because of cost. The medium sized companies were less flexible with their schedules and pushed the marketing aspect of their systems. The smaller companies where friendlier and more flexible, but they were hard to pin down on the functionality of certain aspects of the systems as well.

The political pressures from within the department caused major frustrations for project team members because it was felt that the project plan was being modified with the current administration demands without providing the necessary time and resources to succeed. While the Information Technology Departments strategic technology plan holds strong to the Novell/Groupwise platform, many software solutions are not compatible with these programs, limiting the options and functionality of any business solution selection process. Rumors of a change were enough to complete the project, but they were unsubstantiated and no agreements were signed to revisit these issues.

Team meetings are important, but more then once a week began to become time consuming, ineffective, and tiring. The project team members often expressed displeasure with the meeting schedule because they were spending more time in meetings then actually

Case Management System of CAO working on the project. The meetings became more procedural for the benefit of the project manager rather than effectively moving the project forward.

Changes made to this product were unbalanced. While the entire team agreed on changes, approximately 90% of the changes favored the Information Technology team member needs regarding functionality requests which could not be met. However, changes that affected the City Attorney's Office team members were negative in nature by reducing testing time, cutting consultant time, and cutting functionality requests for e-mail integrations and remote access. All changes were made to maintain the project timeline and/or maintain costs.

Negotiations with vendors are a tough process which requires a great deal of skill. The project manager successfully kept the vendor interested while extending the software warranty two times before LexisNexis required a commitment. In addition, the project manager did a great job at organizing the research process during Phase 1 as well as keeping the team focused on the business requirements and not the marketing aspect of additional functionality, new tools, and extra features.

What Would Have Been Done Differently?

The project started out with the project team members and staff as the client, taking into consideration their needs and work schedules. In the end, project team members were working after hours and weekends to complete the project. Bringing in a consultant to help the project team members early on in the design phase would have reduced stress and work levels as well as improving relations between the City Attorney's Office and the Information Technology department. Reduction of formal meetings to once a week should be a necessity. If the project manager needs additional updates then one-on-one meetings should be made

Case Management System of CAO with minutes distributed as necessary. The indecision of the project team in choosing between their first and second choice seemed to be delayed because of a bias by some team members based on past experience rather than on the section process research. This delay could have been eliminated if the project manager had pushed the team to make a decision rather than giving the option to continue with both vendors for an extended period of time before making a final decision.

Several of the larger issues were beyond the project team's control, but the project manager could have given more thought to these requests and possibly more resistance. Projects that involve new technologies may benefit from a project manager with more technical expertise rather than one that is more administratively focused. Also, a project debrief at the end that included the project team would have been useful for future projects. The project debriefs that occurred, if they occurred, happened only between the project manager and the executive advisor board.

Did the Project Meet Initial Expectations?

The project accomplished 85% of its initial expectations. The City Attorney's Office staff members are extremely happy with the software solution and are finding it to have an enormous impact in a positive way for administrative staff as well as the legal staff. The City Attorney's Office department projects the ability to begin taking on litigation services within the next year. However, full integration with the e-mail system is still outstanding. In addition, there is currently no remote access use of the system because other applications have taken priority.

What is the Next Evolution of the Project?

There are plans to try and implement the software solution within a new Citrix environment. The new environment has been built and three team member are using it but not on a daily basis. A more structured testing plan is scheduled for January 2008. At that time, the system can be load tested again to determine if the same slowness and unresponsiveness has been resolved. In addition, later this year the program will be installed in a virtual server environment to potentially reduce future hardware and maintenance costs. The Information Technology department is investigating the potential effect moving from a Novell environment to a pure Windows environment will have on the individual systems and the City as a whole. The move would improve the selection process for all future applications by making more programs compatible, but it will also create additional issues that should be addressed by virus and spyware solutions.

Conclusions/Recommendations

In this project, the Information Technology department modified the project plan by injecting new system requirements, failing to test the essential requirement of e-mail integration early, failing to provide adequate application development support to assist with both the software and hardware testing, and promising future solutions to unresolved issues with no concrete plan. A debrief of the project with the project team and management could have effectively highlighted these issues. In addition, the City Attorney's Office project team members needed to have a team leader that represented their needs. The project manager was an Information Technology employee and unintentionally may have made decisions that favored the department rather than the client. The City Attorney's Office lost their voice by

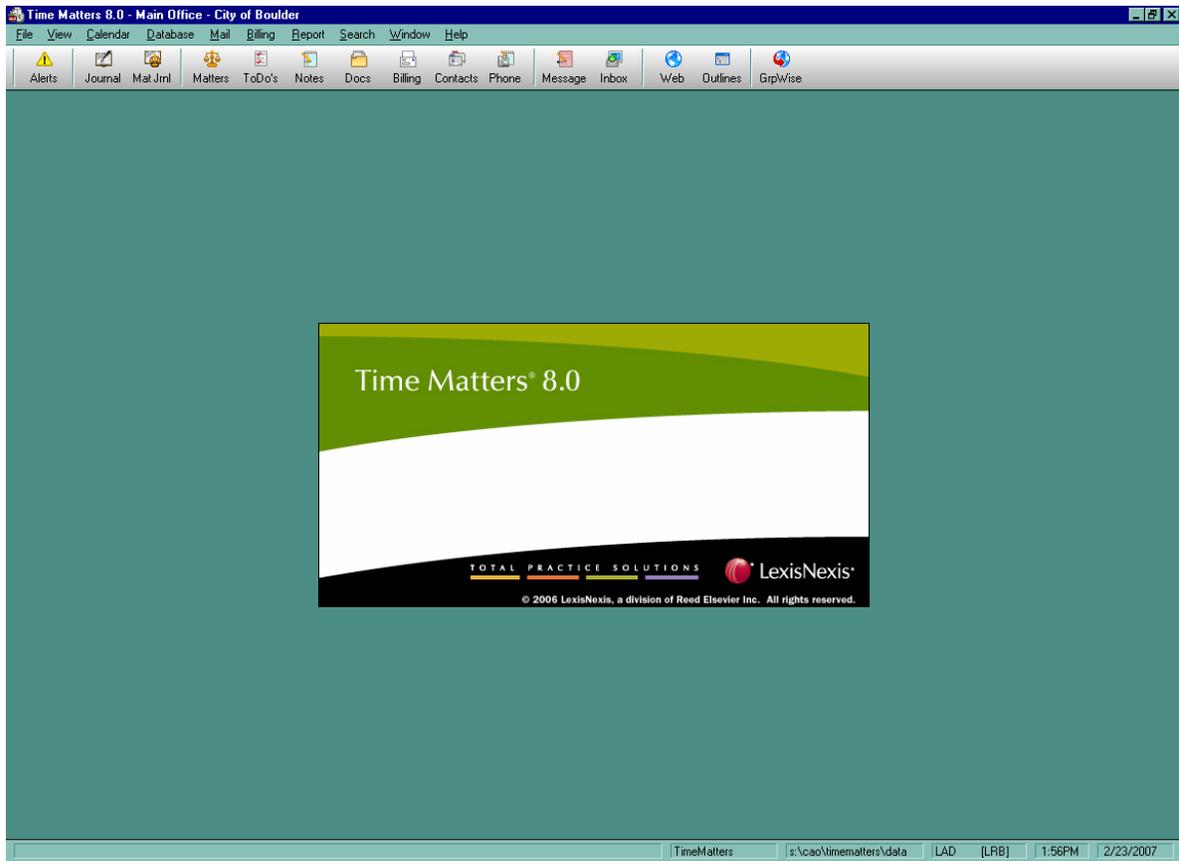
Case Management System of CAO
the end of the project, giving in to many changes that adversely affected their efforts to fully design and completely test the program.

Summary

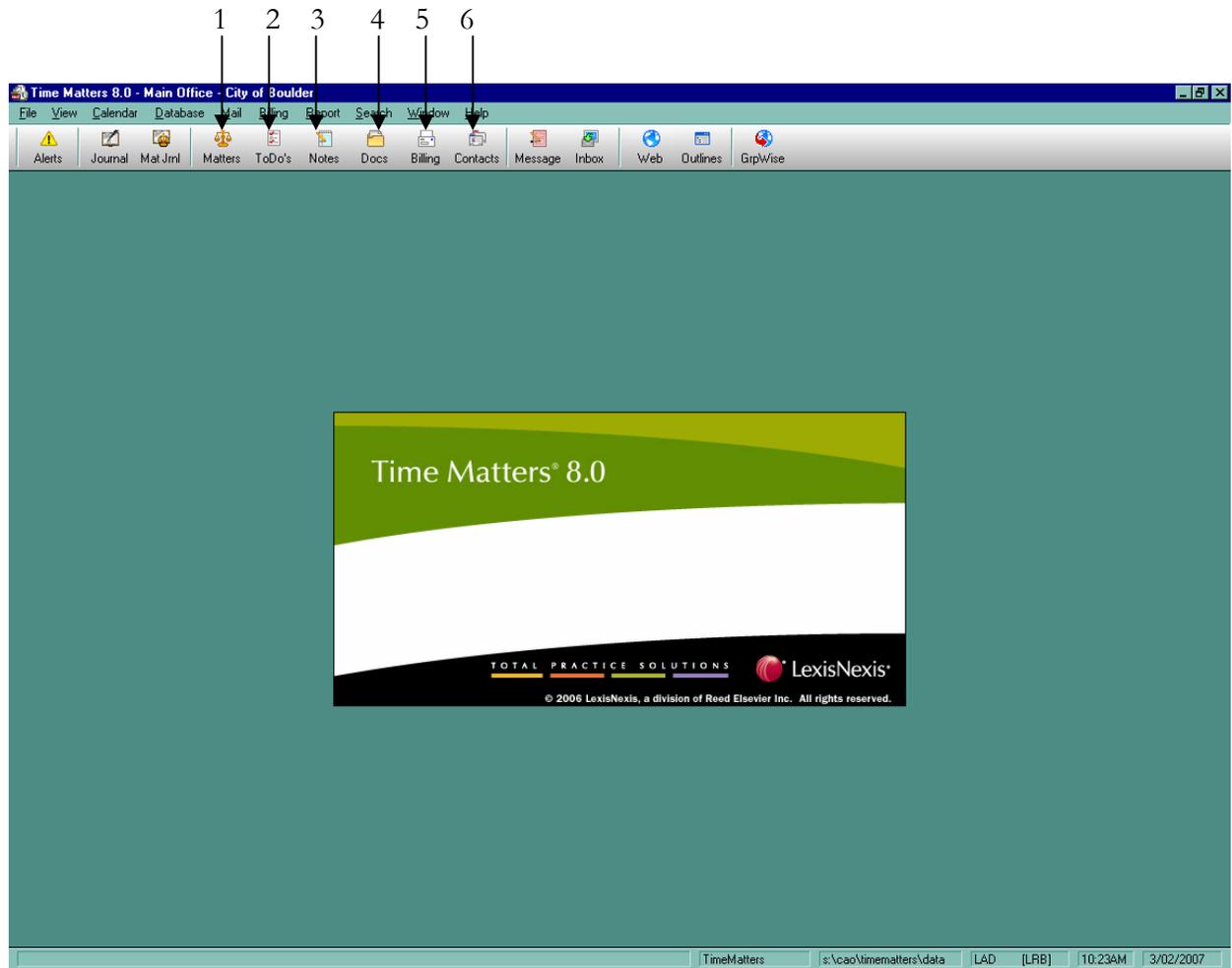
This was the first project where the author was giving the opportunity to be the network services team lead. It was very difficult to maintain focus when management continued to inject changes to the hardware setup without providing additional time or resources to succeed. Future projects could benefit from a project manager that is independent with some technical background. In addition, all projects plans should contain a project debrief at the end where the experiences of all team members is solicited.

Appendix A: Training Manual

Time Matters 8.0



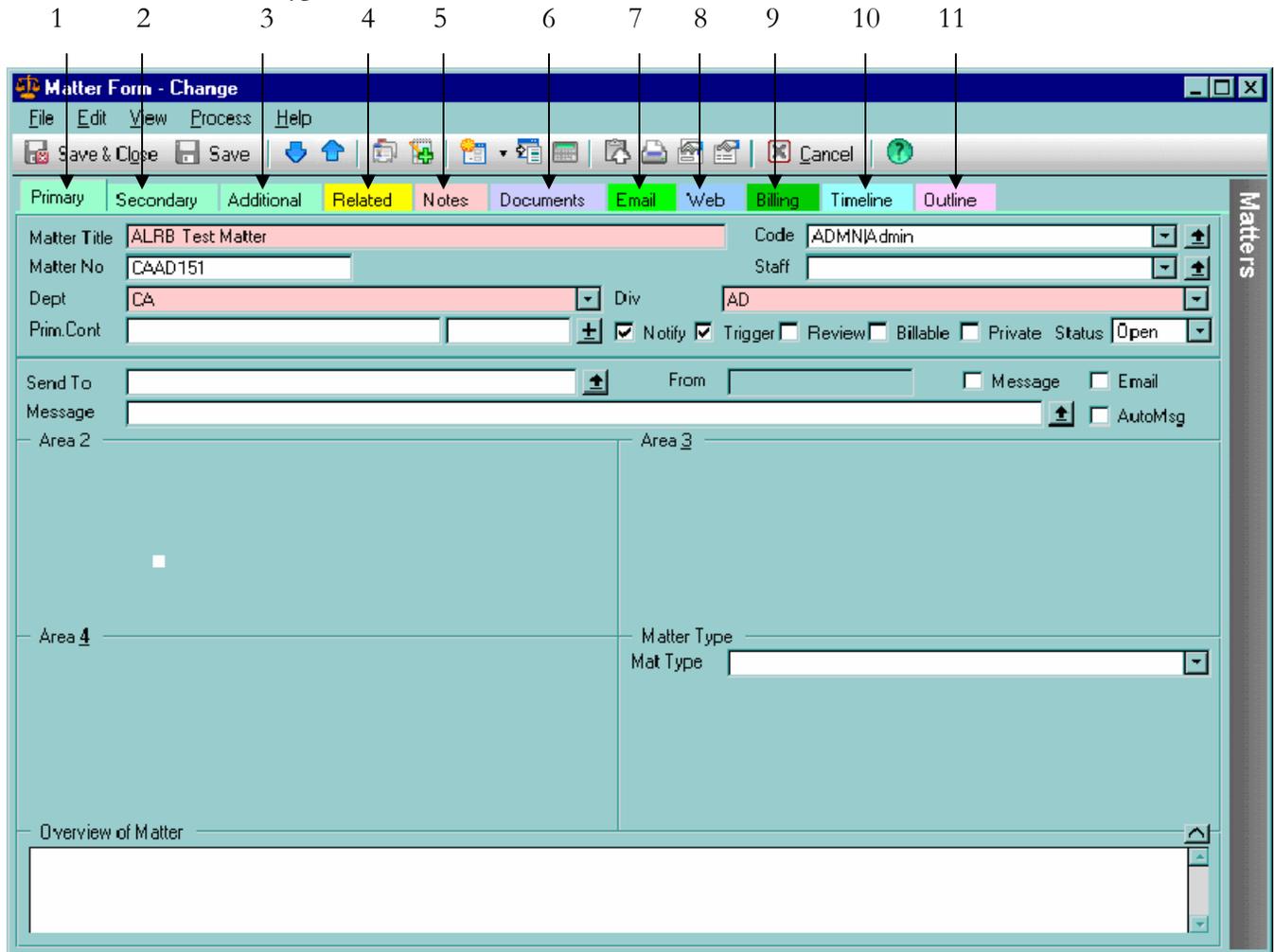
Record Types



1. Matters. These are the “Alphas.” The Matter record provides a central place to store and view all other record types (ToDos, Documents, Notes, Phone messages, Billing records) that are associated with a Matter.
2. ToDos. These are tasks that you can post to yourself or delegate to others. They have due dates associated with them.
3. Notes. Your case notes.
4. Docs. Documents that you create or save regarding a Matter.
5. Billing. Timekeeping and expense records.
6. Contacts. The Groupwise staff contacts and our CAO rolodex have been combined into this Contacts list.

Quick Tabs

There are various tabs (“Quick Tabs”) across the top of the Matter form that allows you to see all fields and the record types associated with the Matter.



1. **Primary.** The Primary, Secondary and Additional tabs contain various amounts and types of information depending on the type of Matter (General Counsel, Litigation, etc.).
2. **Secondary.**
3. **Additional.**
4. **Related.** This tab will list **all** of the associated records in the Matter.
5. **Notes.** This tab will list only the Matter’s associated Notes
6. **Documents.** This tab will list only the Matter’s associated Documents.
7. **Email.** This tab will list only the Matter’s associated Email.
8. **Web.** Not currently used.
9. **Billing.** This tab will list only the Matter’s associated timekeeping entries (Billings).
10. **Timeline.** Not currently used.
11. **Outline.** Not currently used.

Billing Form

The screenshot shows a software window titled "Billing Form - Add". The window has a menu bar with "File", "Edit", "View", "Process", and "Help". Below the menu bar is a toolbar with icons for "Save & Close", "Save", "Send Bill", and "Cancel". The main area of the window is divided into several sections. At the top, there is a "Primary" tab. Below this, there are several input fields: "Date" (3/21/2007), "Wed Time" (12:51pm-3:09pm), "Code" (empty), "Description" (empty), "Regarding" (empty), "Staff" (LRB), "Dept." (empty), "Div" (empty), "Fund" (empty), "Dept. Name" (empty), and "Contact" (empty). A large empty text area is located at the bottom of the window. On the right side of the window, there is a vertical green bar with the word "Billing" written vertically.

Fill in:

1. **Date** of timekeeping record (if different than today)
2. **Duration** of activity
3. **Code** (if you want to classify this time record)

Billing form Codes

Code choices are:

| | |
|------|----------------------------|
| ADMN | CAO Administrative Matters |
| CALL | Telephone Call |
| CNRT | Contract |
| CORR | Correspondence |
| CSAD | Case Administration |
| DISC | Discovery |
| DRFT | Draft |
| EDUC | Education |
| EXPN | Expense |
| GARR | General Arraignments |
| GENP | General Preparation |
| HEAR | Hearing |
| INVG | Investigation |
| JAIL | Jail Arraignments |
| JRCF | Jury Readiness Conference |
| MEDI | Mediation |
| NEGO | Negotiation |
| ORDN | Ordinance |
| OTHR | Other |
| PLDG | Pleading |
| PTCF | Pretrial Conference |
| RSCH | Research |
| TARR | Traffic Arraignments |
| TRIL | Trial |

Document Records Form

Code choices are:

- | | |
|------|--------------------------|
| ADMN | Administrative Documents |
| AMEM | Agenda Memo |
| BRIE | Brief |
| CORR | Correspondence |
| CRTO | Court Order |
| DEPO | Deposition |
| EVID | Evidence |
| FORM | Form |
| INVO | Invoices |
| LETT | Letter |
| MEDR | Medical Records |
| MEMO | Memo |
| ORDN | Ordinance |
| OTHR | Other |
| PLDD | Pleading (Draft) |
| PLDF | Pleading (Final) |
| RESO | Resolution |

Notes Form

Code = INTK (Intake Call)

Description = Begin with last name caller (this will help us track the note later)

Contact = The staff member who called you or other related City staff person.

Contacts Form

Full Name: Elbeth Gallery Code: CLMNIClaimant
Last: Gallery First: Elbeth Staff: HEG
Sal: Main [303] 441-1234 Fax: Alt: [303] 443-1111
Notify Trigger Review Billable Private Status
Work Info. Firm Title Address Address 2 City/ST/Zip Building/MS Personal Info. Hm Email
Work Email: gallery @msn.com Website Assistant Asst.Phone ContAdded: 3/13/2007
Address: 1234 W12th Address2 City/ST/Zip: Denver CO 82245
Comments

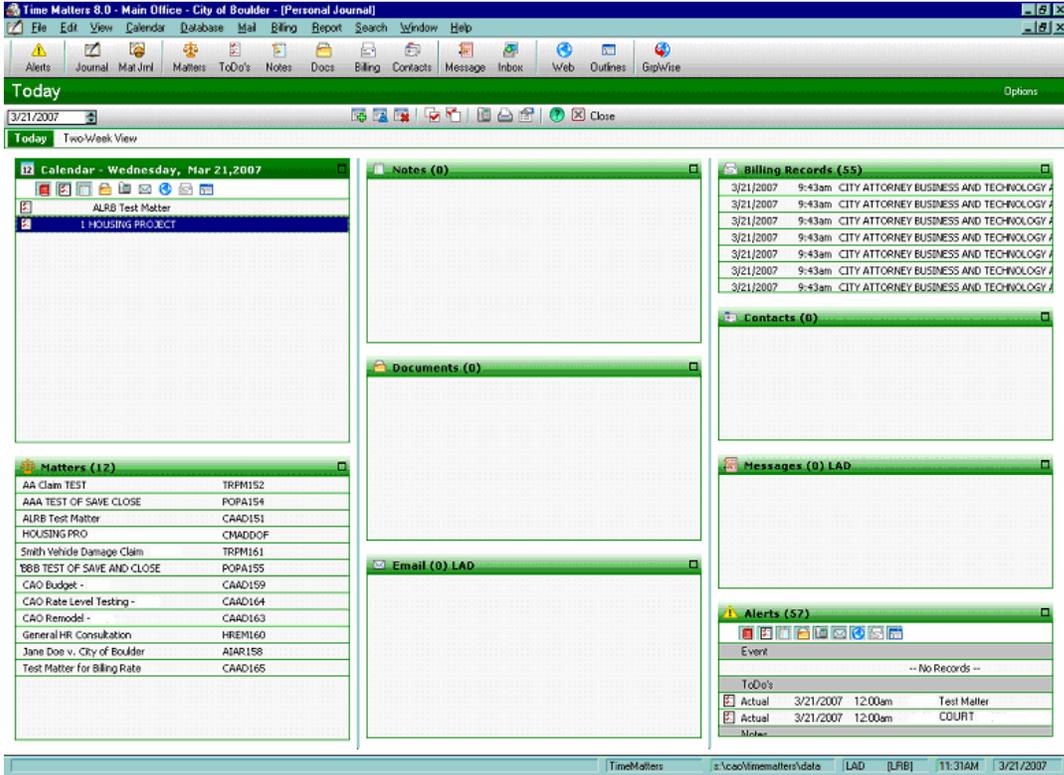
Fill in:

Code = CLMN (Claimant)

Staff = HEG

As much other information as you have: telephone numbers, address, etc.

Journals Form



Overview of the personal cases assigned, as well as the all information attached to each. To see records dated for today, the week, two weeks, the month, etc. Select different dates and date ranges to view by changing the date in the field above the tabs.

References

Doherty, S. (March 18, 2004). Drowning In Documents -- Beyond Ensuring Compliance With New Financial Laws, There Are Solid Business Reasons For Implementing A System To Manage The Data Deluge. Network Computing, p.40. Retrieved August 19, 2007, from Academic OneFile Gale:

<http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

Fujitani, R., & Kunisaki, E. (Summer 2007). Litigation in the information age: taking discovery into the digital era to comply with new federal e-discovery requirements. Journal of Investment Compliance, 8, 2. p.26(9). Retrieved August 19, 2007, from General OneFile Gale: <http://find.galegroup.com.dml.regis.edu/ips/start.do?prodId=IPS>

Gleckman, H. (1993). *The Technology Payoff*. Business Week, 56-68.

Goss, R C (Spring 2007). Hot issues in electronic discovery: information retention programs and preservation. Tort Trial & Insurance Practice Law Journal, 42, 3. p.797(29). Retrieved August 19, 2007, from Academic OneFile Gale:

<http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

Harpaz, J. (July 2005). Securing document management systems: call for standards, leadership. The CPA Journal, 75, 7. p.11 (1). Retrieved August 19, 2007, from Academic OneFile Gale: <http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

Hernandez, R. L. (Feb 1999). Cutting costs with computer technology. Trial, 35, 2. p.36 (1). Retrieved August 22, 2007, from Academic OneFile Gale:

<http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

Kermaier, A., & Morgan, J. (Dec 2002). Digital signatures and encryption: ensuring the integrity and confidentiality of your data. (Security). XML Journal, 3, 12. p.32 (4). Retrieved August 22, 2007, from Academic OneFile Gale:

<http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

LaForest, F, & Flory, A (April/June 2001). Using Weakly Structured Documents to Fill in a Classical Database. Journal of Database Management, 12, 2. p.3. Retrieved August 20, 2007, from Academic OneFile Gale:

<http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

McFadden, M. (March 2006). Push for paperless: the document control of today is an integrated system accessible anywhere, anytime. Quality, 45, 3. p.40(5). Retrieved August 20, 2007, from Academic OneFile Gale:

<http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

Michalski, G (1991). The World of Documents. BYTE. 16, 159 (14).

O'Meara, D. (Oct 2004). Buried in documents? Engineering Management, 10, 5, p241 (2).

Retrieved May 17, 2007, from

<http://ieeexplore.ieee.org/iel5/2221/19059/00880859.pdf?isnumber=19059&prod=STD&arnumber=880859&arnumber=880859&arSt=241&ared=243&arAuthor=O%27Meara%2C+D>

Perry, S. (July 24, 2006). Even paper tigers need technological taming. New Jersey Law Journal, p.NA. Retrieved August 20, 2007, from Academic OneFile Gale:

<http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

Ryan, B (1991). The World of Documents. BYTE. 16, 271 (14).

Shukla, R. (Oct 2004). The case for electronic records management: physical storage of thousands of documents is becoming passe, and companies should consider enterprise records management systems to save labor costs and provide better security. Financial Executive, 20, 7. p.50 (2). Retrieved August 19, 2007, from Academic OneFile Gale: <http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>

Sprague, R. (1995). Electronic Document Management: Challenges and Opportunities for Information Systems Managers. MIS Quarterly. 19, 29-49.

Yacoub, S (May/June 2003). Automated Quality Assurance for Document Understanding Systems. IEEE Software. 20, 76-82.

100 Gigabit WANs, MANs In Our Future?. Sept 10, 2002. eWeek, p.NA. Retrieved August 22, 2007, from Academic OneFile Gale: <http://find.galegroup.com.dml.regis.edu/itx/start.do?prodId=AONE>