

THE CITY OF KIRKLAND, WA



Document Management Study

August 26, 2004

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DOCUMENT MANAGEMENT STUDY

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Overview

DOCUMENT MANAGEMENT STUDY

The City engaged Pacific Technologies, Inc. (PTI) to prepare a business case for implementing document management at Kirkland. Document and records management, while often thought of as equivalent, refer to related, but distinct, areas of functionality. To avoid confusion, this business case will refer to this entire body of functionality as “document management,” as described below.

◆ **Document management systems can include the following components:**

- An optical scanner and optical character recognition (OCR) system to convert paper documents into a digital format
- A database to organize and index stored documents, including electronic documents (e.g., Word files, etc.)
- A search mechanism to quickly find specific paper and electronic documents
- Library services to manage security, privileges, version control, and track history
- Automated archival and destruction according to mandated retention schedules
- Support for workflow:
 - The ability to send a document from staff member to staff member for approval or review purposes, according to pre-defined business rules
 - Appropriate for highly-structured and repetitive business processes
 - Potentially high cost, with substantial benefits

[Current Environment]

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To complete this business case, PTI reviewed City documentation, held three focus groups with City staff, and conducted several interviews with City management. The following pages present our findings, organized as follows:

- ◆ Management Findings
- ◆ Infrastructure Findings
- ◆ Business Process Findings

Current Environment: Management

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Management Findings

- ◆ **Currently, no shared definition of document management exists across the City** – understanding of document management ranges from scanning and imaging (which is in place in some departments/divisions) and use of e-Forms, to automated workflow and archival of City forms and records
- ◆ **The City has yet to determine what documents to include** in a document management program (e.g., electronic files, email, working papers, drafts, etc.)
- ◆ **The City has lots of paper** especially for Courts, the City Clerk, and Finance – in addition, the need to be responsive to City customers and a lack of confidence in current systems has resulted in multiple copies of some documents (e.g., contracts) across the City
- ◆ **Attention, awareness, and demand for public access to City documents is increasing** – at the same time, the City is experiencing heightened awareness of security/privacy issues
- ◆ **Kirkland currently outsources document storage offsite to Iron Mountain** – complicating the timely retrieval of documents for City business and responses to information requests
- ◆ **Workloads and document production will likely increase for the Police Department, Courts, and Permitting:**
 - Legal mandates: drunk driving offense-related records must be kept in perpetuity
 - King County is asking Kirkland to annex unincorporated areas, which will result in more planning activity

Current Environment: Infrastructure

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Infrastructure Findings

- ◆ **No document management infrastructure exists** – currently there is no true document management automation in place at the City, although some are using scanners for imaging of some documents and correspondence
- ◆ **Rudimentary “check-in and check out” functionality is available via “KirkNet,”** the City’s internal website – although this is seen as cumbersome by some users
- ◆ **No automated routing/workflow has been deployed** – although some City systems have this capacity (e.g., permitting), no automated workflow has been implemented
- ◆ **Very limited on site storage capacity exists** – documents are regularly moved off-site to a vendor’s facility for long-term storage:
 - Costs to the City for retrieval of needed documents were over \$15,000 in 2003
 - Oversized documents, such as plans, are difficult to store and retrieve at City facilities
- ◆ **Several of Kirkland’s core applications are readily compatible with document management applications:**
 - Hansen (maintenance management)
 - ESRI (GIS)
 - IFAS (financial management)
 - Police records management system (RMS)
 - Fire RMS
 - Accela (permit management)

Current Environment: Business Process

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Business Process Findings

- ◆ **Manual document management processes are currently coordinated through the City Clerk's office** – a manual of document management procedures is in place
- ◆ **Records and documents can't be shared effectively among staff** – City staff cannot access an electronic copy of a record simultaneously for collaboration
- ◆ **Staff are not easily able to index or access** stored documents
- ◆ **Staff report that a lot of time is spent searching for documents that are misfiled** – or lost
- ◆ **Long cycles for signatures/approvals often occur** – users cite the need for the City to more quickly approve contracts, etc.
- ◆ **The City lacks automated version control:**
 - No automatic ability to ensure only a single copy of a document exists
 - No guarantee that only the most current versions of contracts are being accessed
 - Editing of shared documents is not effectively managed electronically

Business Impacts

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The findings discussed on the preceding pages lead to the following business impacts:

- ◆ **Cost of storage and retrieval of documents** – in 2003 the City spent over \$36,000 for document storage, retrieval, and transportation
- ◆ **Reduced efficiency** – time spent searching/copying documents by staff
- ◆ **Slow approval processes** – staff cannot use automated systems to route forms and contracts for signatures
- ◆ **Diminished customer service** – for both internal and external customers
- ◆ **Occasional Court dismissals and continuances** – due to the inability to retrieve Court-required documents in a timely manner
- ◆ **Potential legal exposure** – due to the inability to track or properly archive/destroy documents
- ◆ **Inconsistent application of retention policies/procedures** – leading to possible retention of unnecessary documents and the potential destruction of necessary ones
- ◆ **Increased risk of lost documents** – causing the expense of searching for and, possibly, recreating the missing document
- ◆ **Inconsistent metadata (i.e., information about stored documents)** – leading to confusion about document contents, storage locations, owners, and retention schedules
- ◆ **Reliance on institutional memory for information about documents** – causing significant dependence on specific individuals for important information
- ◆ **Audits/public information requests are less timely** – a cost, legal liability, and customer service issue

High-level Requirements

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We discussed the most important requirements for a document management system with City staff and management during our interviews and focus groups. We present these below:

Functional:

- ◆ Ability to support and easily manage required retention schedules
- ◆ Support for “e Signatures” (i.e., online consent and agreement with the same legal validity as a written signature)
- ◆ Workflow capabilities
- ◆ Ability to link documents to GIS and permit management system
- ◆ Capable of redaction (i.e., “blocking” of sensitive content) as appropriate
- ◆ Library services
- ◆ Support for Internet access to selected documents
- ◆ Effective search capabilities

Technical:

- ◆ Ability to integrate with existing network and databases
- ◆ Adequate security and privacy controls
- ◆ Scalable – the system needs to grow as the City’s requirements change
- ◆ Must be compatible with the City’s existing technical architecture

Implementation Alternatives Considered

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The following table presents the document management implementation alternatives that PTI considered for this study.

Alternative	Description	Pros	Cons
1. "Throw-away" Pilot Project	Implement an inexpensive, lower-tier product in a single business unit	<ul style="list-style-type: none"> ◆ Lower cost for software and implementation services ◆ Provides proof of concept ◆ Lowest risk of failure 	<ul style="list-style-type: none"> ◆ Doesn't meet City's requirements ◆ Benefits only a few users ◆ Poor return on investment
2. Department-specific Implementation	Implement a full-featured document management system, beginning with a single business unit	<ul style="list-style-type: none"> ◆ Provides an opportunity to demonstrate advantages of document management with lower risk than a larger roll-out ◆ Establishes foundation for a broader implementation 	<ul style="list-style-type: none"> ◆ Restricts understanding of the technology and project support to a limited number of City staff ◆ May perpetuate "silos" of technology
3. Business Function-specific Implementation	Implement a full-featured document management system, beginning with a single business process – across all impacted business units	<ul style="list-style-type: none"> ◆ Enlists support of a broader cross section of users at the City ◆ Results in an "end-to-end" solution for a City business process ◆ Establishes foundation for a broader implementation and best "feel" for the technology 	<ul style="list-style-type: none"> ◆ Requires greater communication, advocacy, and governance across departments ◆ Potentially complex implementation carries greater risk of failure vs. alternatives 1 & 2
4. "Big Bang" Implementation	Implement a full-featured document management system, across all City departments simultaneously	<ul style="list-style-type: none"> ◆ Meets City requirements ◆ Potential for tremendous benefits to City customers and staff 	<ul style="list-style-type: none"> ◆ Highest cost alternative ◆ Highest risk alternative ◆ Implementation most disruptive to City business

Recommendations

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The Strategic Information Technology Plan prepared by PTI for the City in 2001 recommended that the City invest in a document management application. We believe that this is an appropriate time for Kirkland to address this missing element in the City's application portfolio by investing in a document management system that can scale to meet City-wide needs over time. This section expands on that recommendation.

- ◆ **We dismissed the first and fourth alternatives:**
 - A “throw-away” pilot does not address the City's business needs
 - A “big bang” implementation would be too disruptive to City services
- ◆ **We recommend alternative #3 – a business-function specific implementation that can clearly demonstrate the benefits of the technology across multiple business units**
- ◆ **Specifically, we recommend beginning with a cross-departmental implementation of this technology to support contract management:**
 - Departments most likely to see near-term benefits include:
 - Finance & Administration
 - City Clerk
 - City Attorney
 - Beginning with a focused implementation can build long-term support for the project with demonstrated success
 - Judicious application of workflow is potentially beneficial for contract management
 - City Clerk's Office to act as project sponsor – highly motivated to see this project succeed
- ◆ **Plan for eventual City-wide implementation:**
 - Costs could approach \$800,000, not including internal labor
 - A phased approach will minimize business unit disruptions

Recommendations (cont.)

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- ◆ **While Alternatives 2 (Department-specific implementation) and 3 (Business Function – specific implementation) are similar in scope, Alternative 3 costs has higher costs because it:**
 - Requires more software licenses – more business users are involved
 - Calls for additional hardware (i.e., scanning workstations)
 - Includes estimated costs for workflow analysis consulting and programming
 - Will require additional implementation hours
- ◆ **Cost estimates appear on the following page, with supporting information presented in the appendix**
- ◆ **Cost estimates presented for a City-wide implementation represent the “end-state” for the document management system:**
 - We have recommended that the City start with a limited implementation, which is less-expensive and offers lower-risk
 - Once fully implemented, the City’s total expenditures will likely be in the range of the end-state estimates

Preliminary Cost Estimates

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This page presents a range of cost estimates for document management system implementation alternatives. The table presents estimated one-time costs of software, hardware, and implementation services; one-time internal labor costs; estimated annual software and hardware support and license costs; and one-time internal labor requirements expressed as FTEs.

Implementation Scenario	Estimated One-Time Capital Costs		Estimated One-Time Internal Labor Costs		Estimated Annual License & Maintenance Costs		One-Time Internal FTE	
	Low	High	Low	High	Low	High	Low	High
A. Limited Department-Specific Implementation	\$110,000	\$150,000	\$31,875	\$135,000	\$6,000	\$8,000	0.5	1.5
B. Limited Business Function-Specific Implementation	\$270,000	\$380,000	\$127,500	\$270,000	\$16,000	\$22,000	2.0	3.0
C. City-wide Implementation (end state)	\$540,000	\$770,000	\$191,250	\$360,000	\$30,000	\$42,000	3.0	4.0

- ◆ The implementation described by Scenario A is limited to a small number of users and does not include workflow
- ◆ Scenario B corresponds to PTI's recommendation and includes a workflow component
- ◆ Scenario C represents a City-wide implementation – the potential end state
- ◆ O & M support labor is not included in the annual license and maintenance cost figure
- ◆ Costs to convert currently stored documents are estimated at .05 cents/page – if the City converts 50% of its off-site paper documents, this would total approximately \$150,000, *in addition* to the costs cited above

Implementation Considerations

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This page presents some key considerations for a successful document management implementation.

- ◆ **To ensure a successful implementation, backfill City staff as needed:**
 - Assign knowledgeable departmental staff (i.e., subject matter experts) for new systems implementations. Hire temporary staff to perform their normal job functions until the system is operational.
- ◆ **Implement workflow judiciously:**
 - Workflow initiatives can be extremely resource-intensive
 - We have seen very few public sector entities that have successfully implemented workflow

Implementation Considerations (cont.)

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This page presents additional implementation considerations.

◆ Procurement recommendations:

- Establish a project governance plan for the system procurement process
- Ensure solid internal project management to protect the City's interests
- Develop requirements for vendor qualifications, software implementation, software maintenance, etc.
- Define clear evaluation criteria and an evaluation process
- Conduct scripted vendor demos

◆ Functional recommendations:

- Maintain a single repository for data
- Develop classification schemes to ensure documents are not "misfiled" – outside assistance may be desirable
- Define metadata clearly and completely
- Take advantage of process best practices embedded in software
- Do not allow storage of "managed" documents on users' PCs
- Automate document and metadata capture as much as possible

◆ Other:

- Maintain communication and involvement with users
- Train effectively and follow up
- Establish clear roles and responsibilities for use of system
- Ensure senior management support for the project
- Define quantitative project success measures "up-front"

Potential Benefits

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This page presents potential benefits of document management for the City of Kirkland.

Tangible:

- ◆ Reduced off site storage space costs
- ◆ Reduced cost of off site document retrieval and associated staff time
- ◆ Avoidance of future hires to handle increased document related workload
- ◆ Reduced fees for printing, copying, and postage

Intangible:

- ◆ Reduced loss of files
- ◆ Time saved “not looking” for files & records
- ◆ Reduced legal exposure
- ◆ Makes “permanent” storage more feasible
- ◆ Ability to monitor document status
- ◆ Improved citizen/stakeholder satisfaction
- ◆ Consistent application of retention related policies & procedures
- ◆ Increase outside audit efficiency

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Appendices: Document Volumes

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This page presents information regarding the volume of documents currently stored and being produced annually.

Documents Currently Stored:

- ◆ **On site:** approximately 12,550,000 pages
- ◆ **Off site:** approximately 6,192,000 pages

Documents Produced Annually:

- ◆ **City Clerk:**
 - 60,000 – 80,000 pages¹ (long-term storage)
 - 6,000 electronic documents (City Clerk-specific)
- ◆ **Municipal Court: 330,000 pages**
- ◆ **Many more that are not “official” (e.g., permit, finance) – no true inventory exists**
- ◆ **There are upwards of a million electronic files (e.g., Word, Adobe, Excel, etc.) in server directories – excluding email**

2003 Document Retrieval Activity²:

- ◆ **Finance & Administration: 59 files & 94 boxes**
- ◆ **Fire & Building: 726 files & 27 boxes**
- ◆ **Information Technology: 3 files**
- ◆ **Parks & Community Services: 7 boxes**
- ◆ **Planning & Community Development: 352 files & 37 boxes**
- ◆ **Public Works: 25 files & 26 boxes**
- ◆ **Police: 175 files**

¹These are documents that have been identified by the Clerk’s office as having long-term value to the City

²These are documents delivered by the City’s current records storage vendor (Iron Mountain) upon request by the City. “Files” refer to specific records; “boxes” refers to entire boxes of records.

Appendices: Cost Estimate Detail

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Cost estimates are based on a proposal received in 2002 by the City of Kent, WA. A contingency of 20% was applied to prepare the estimates presented on page 11. The table below presents a breakdown of the cost estimates. Note that these costs do not include internal labor.

Item	Scenario A		Scenario B		Scenario C	
	Cost	Maint	Cost	Maint	Cost	Maint
Scanners	\$10,000	\$1,500	\$30,000	\$4,500	\$100,000	\$15,000
Storage	\$20,750	\$3,000	\$20,750	\$3,000	\$23,750	\$3,000
Application Software	\$7,470	\$1,121	\$22,410	\$3,362	\$63,060	\$9,459
System Software	\$7,500	\$1,125	\$52,500	\$7,875	\$52,500	\$7,875
Implementation Services	\$75,000	\$0	\$150,000	\$0	\$300,000	\$0
Training	\$5,000	\$0	\$10,000	\$0	\$40,000	\$0
Workflow Consulting	\$0	\$0	\$30,000	\$0	\$60,000	\$0
Total	\$125,720	\$6,746	\$315,660	\$18,737	\$639,310	\$35,334