



THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY

LOCATION:
*Lansing, Michigan,
United States*

YEAR:
2006

STATUS:
Laureate

CATEGORY:
Transportation

NOMINATING COMPANY:
EDS

ORGANIZATION:

Michigan Department of Transportation

PROJECT NAME:

Real Estate Workflow

Summary

The Electronic Document Management System, Real Estate Workflow Project (EDMS RE) was undertaken to automate the engineering review required for the sale of excess property by the Michigan Department of Transportation (MDOT). By converting a complex manual paper process into a fully electronic workflow using off-the-shelf document management software MDOT is saving time and money while eliminating errors. This project is paving the way for similar conversions and greater savings throughout the department.

Introductory Overview

The Michigan Department of Transportation EDMS Real Estate Workflow Project converted a lengthy and laborious paper process into a fully electronic workflow using off-the-shelf document management software to minimize implementation costs.

The sale of excess property, such as unused or abandoned right-of-way or rest area parcels, is an important means of offsetting expenses by returning an annual average of over \$4 million to a tight department budget. Prior to any such sale, approvals are needed from a wide range of managers and engineers to rule out any foreseeable department interest or alternative use for the land.

This project decreased the time needed to perform excess property disposal engineering reviews, by providing a more efficient means of doing business electronically. The result is a more streamlined, secure, and error-free method than the previous manual, paper procedure. Just as importantly, the EDMS RE workflow project is conclusively demonstrating the benefits of “transitioning to technology” and providing a prototype for similar efforts elsewhere.

In the 1990s MDOT was deliberately decentralized to provide local citizen-customers with more immediate department contact and empower department representatives in outlying areas. Restructuring resulted in a broad network of Transportation Service Centers (TSCs) and Region Offices, strengthening MDOT’s presence throughout the state.

The IT challenge has been to support that dispersed presence with the movement of information--without the need to continuously fax, overnight, or mail documents among distant



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locations. The distribution of institutional expertise that accompanied restructuring has also contributed to a critical necessity for sharing resources across the enterprise. Cumbersome paper-based systems and manual work flows no longer suffice for the task.

Early visits to various business areas, including the Real Estate Division, revealed many labor-intensive paper-driven processes ripe for revision. Some simple requests for routine information required up to a full day of research among paper records dating back to the last turn of the century. This prompted an overall strategy to begin steadily moving processes to new electronic systems using up-to-date technology, on an area-by-area basis.

C. Douglass Couto, Agency Services Information Officer, remarked, "This project has been tremendous for the Real Estate business area. The Real Estate team was interested from the start-- then we turned on the switch and they actually experienced what this system could do for them. Now they're really enthused because their life is easier. This excellent example is leading the way for expanding the use of this technology across the department. We accelerated a process that previously took months to complete, to finishing all tasks in a couple of weeks."

Project goals included automation of the review process along with email notification, document management, versioning, and sharing, while incorporating various levels of security.

This initiative went far beyond simply converting forms and documents from paper to electronic formats, by actually transforming the tasks themselves. Review, release, approval, tracking, and documentation with comments and related supporting records, are all performed electronically today.

The initial review form can be automatically populated with property information from the database and all needed legal documents and engineering diagrams added as electronic attachments. Later, the final file, including reviewers' comments, is automatically re-written to the database and backed up. Along the way, the system also streamlines completion by enabling concurrent parallel-path processing of steps that were restricted to sequential processing under the physical constraints of previous paper procedures.

In addition, over 300,000 documents (deeds, easements, and declarations of taking) were bulk loaded to the document management system to facilitate this automated process. Over 80 MDOT staff dispersed throughout the 7 Regions and 26 Transportation Service Centers statewide received software and training to use the new process. The project team received high praise from field staff for the smooth installation and helpful user guides.

Internal and external stakeholders include Region Engineers, Region Associate Delivery Engineers, Region Associate Development Engineers, Region Real Estate Agents, Region Resource Specialists, Region Property Analysts, TSC Managers, Lansing Design Division Roadside Development and Project Development, Lansing Construction & Technology, Transportation Planning Rideshare and Environmental, Lansing Traffic & Safety, Lansing Real Estate Excess Property Unit, and the Federal Highway Administration, all of whom have a part in overseeing the approval of property disposals.

Benefits

Before implementation of the EDMS, the engineering review procedure was time consuming to complete and was labor-intensive. Staff members recall one review that took almost two years to



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complete.

For each proposed sale-property, a stack of paper was generated in Lansing then shuttled back and forth between offices in the region and three Lansing locations.

1) The property analyst assembled the disposal engineering review package and individually sent it to each necessary Region reviewer.

2) The package was returned to the property analyst between each review for coordination and tracking.

3) This was repeated for each identified Lansing reviewer.

4) Once all reviews were complete, the Real Estate Division inventory coordinator entered the information into the ReSaLe database.

5) If approved, the property could finally be sold, releasing revenue for use on other transportation projects.

If a file was misplaced it meant restarting the whole process from the beginning—including reproducing all needed documents.

Today the EDMS RE workflow project has improved efficiency, integrity, and customer service by providing:

- A single managed document source (repository) with improved data and document access, sharing, versioning, security, and storage, including:

- Elimination of manual review package distribution

- Faster access and self-service capability

- Web accessibility to documents

- Concurrent document use

- Elimination of multiple document inventories

- Access control and restricted deletion

- Document life-cycle management (version control and document change history)

- Reduced paper document storage and handling

- Automated backup of single repository storage

-Automated work notification (new and missed deadline)

-Reduced step completion time

-Reduced total process cycle time

-Decreased errors (reduction of outdated, incomplete and sometimes contradictory information)

-Improved file integrity (elimination of lost files/documents)

-Faster and easier tracking of work items through the process

-Process-tracking statistics for management and measurement of process improvement



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-Database integration (automated form population and final data capture)

These advantages have become clear to participants and observers alike, gaining recognition of the results and promoting parallel projects.

The Importance of Technology

The project development team from Electronic Data Systems (EDS) configured/developed an automated workflow for the Real Estate engineering review process using FileNet Content Services, eProcess and eForms software, including integration with the Oracle (ReSaLe) database. This work did require some custom coding, such as the ASP scripting that enables the final write to the Oracle database. However, customization was intentionally kept to a minimum to reduce implementation costs and facilitate future component upgrades.

Using off-the-shelf software, the process routing, notification, and database import and export were automated, as well as storage and management of related documents. This reduced initial labor to the time needed to enter the documents into a document management system and launch a work item. Information needed for a property disposal review is also exported from the ReSaLe database to populate several fields on the work item launch form.

Routing of Real Estate review packages is automatic and concurrent, with reviewers receiving email notification when work is ready for their attention and input. All input is automatically exported to the ReSaLe database upon completion of the last workflow step. The work can also be tracked throughout the process to identify how long it takes and where it is during the processing.

Originality

Although production or application-defined automated flow systems have been used in other areas, the implementation of this flexible-path user-amendable workflow tool represents a significant first for state government. This adaptable solution not only moves the job from paper to electronic format, it takes the work from desk to desk while allowing users to control which desks based on business decisions.

In addition, new or overdue work triggers automatic notifications to each user responsible for a workflow step, both within the application and by regular e-mail. The system also tracks progress every step of the way so that within seconds those designated with "Tracker" rights can access a graphic showing the location, detailed status, and history of any work item.

The EDMS RE workflow solution is first of its kind with others soon to follow. Besides encouraging expansion of the concept to other applications within the Real Estate Division, the success of the project has already resulted in a list of managers from other areas lining up to make use of the repository or request workflow implementations.

Success

The three-phase project roll-out was accomplished on time and under budget during June, July and August of 2005, with the production version up and running on July 8. Already in the first weeks of operation, a "rush" work item was processed through 13 individual reviewers within 10



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working days. It is estimated the same task would have taken a minimum of six weeks using the previous manual process.

As noted by Teresa Vanis, the EDMS RE Project Business Lead, "We saw an immediate return on our investment by processing an urgent review in a matter of days."

The necessary statewide staff was trained using a combination of face-to-face classroom or individual instruction with various remote computing and web conferencing tools to accommodate users' schedules within the targeted time frame. Training was augmented by customized reference materials and ongoing customer support. Complete implementation to all seven Regions and Lansing staff has enabled total conversion to the new paperless process and has brought favorable comments from users. Administrators and planners appreciate the improved budgetary predictability offered by the smoother conversion of property to revenue.

"The new system works great! It's a more efficient way of doing business and has already provided tangible results," enthused Matt DeLong, MDOT Real Estate Administrator.

As of this writing, 35 workflow items appear in 75 user inboxes. Before, some of these might have taken as long as ten months to complete with an average of 90 days. The previous record for fast reviews was a full week for a review that did not require the full complement of reviewers, was driven to and from Lansing, and was literally hand-carried among reviewers' offices. Now, many reviews could be performed in as little as two days, even without personal heroic efforts. Today the speed of a review is limited only by its relative urgency, rather than by restrictions of the system. The new system's increased efficiency has already dropped average review cycle times to 47 days, including non-urgent, low-priority properties.

Vickie Weerstra, Grand Region Development Engineer, commented, "We have now used the new EDMS system, and are pleased that it allows us to meet important deadlines by expeditiously reviewing and approving the release of excess property in just days rather than months."

"I like the new EDMS system because I can easily track multiple work items which are all brought together in one place. I was able to review more than twenty excess property tracts in only one day!" added Greg Johnson, Metro Region Engineer.

Difficulty

Application of the department's standard IT project initiation methodology ensured early identification of potential obstacles. At the beginning, EDS facilitated a two-day session where business requirements and technical considerations were discovered and prioritized. This crucial step helped build consensus among the business and technical teams and fostered relationships conducive to collaboration.

Those risks identified at the start of the EDMS RE project included:

- Contracting delays
- Software compatibility with MDOT and state standards
- Software integration with ReSaLe databases
- User acceptance
- User commitment to project, e.g. testing time and effort



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-Software performance

-Management support

-Funding

Julie Gee, EDMS RE Project Manager, explained, “The challenge with this project was finding ways to bridge the organization gaps with a process that ran through dozens of offices.”

Software version compatibility issues (among Oracle, Internet Explorer, Java, and Windows) became the only unexpected barriers that arose during the course of the project. For example, a last-minute Oracle upgrade required a corresponding new version of FileNet and did cause some delays, while the statewide desktop conversion from Windows NT to XP proved somewhat less problematic.

Each risk and obstacle was handled in turn, mitigated by the tactical application of solid project management strategies and an inclusive team approach. Issue resolutions were leveraged to provide additional benefits wherever possible. For instance, the database platform conversion from Windows to Unix enabled conformity to department standards and at the same time took advantage of in-place automatic backup systems.

Prior to delivery, rigorous testing by the EDS technical team virtually eliminated any flaws before user acceptance testing—resulting in a subsequent roll-out that was smooth and error free.