

RPA Workflow Case Study

**A Case Study of the RPA Workflow
Application created for California
Department of General Services**

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Micro Eye, Inc.
Microsoft Certified Partner
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State of California
Department of General Services
Office of Human Resources
<http://www.dgs.ca.gov>

Overview

Customer Summary:

The State of California Office of Human Resources (OHR) is responsible for all employment related activities within the California Department of General Services. When any office or unit within DGS seeks to hire a new employee or change the status of an existing employee, OHR controls and manages the process.

Application Summary:

This application demonstrates the use of Exchange 2000 and the Exchange Store to manage a core workflow process utilizing a browser-based client interface. RPA Workflow is the first Exchange 2000 custom application to be deployed for the State of California. Data validation and application security are implemented via an interface with a backend Oracle database. A COM + component connects the RPA Workflow application with the ABMS Oracle database. A document repository is an integral part of the overall solution thanks to Exchange 2000's unstructured storage capabilities.

Solution Scenario:

Customer decided to use Exchange 2000 platform to build Workflow applications rather than purchase ISV workflow solutions. The customer also wanted a browser-based user interface on the client that did not require the purchase or installation of additional software.

Solution at a Glance

Business profile

The Office of Human Resources (OHR) is responsible for management of all employment related activities within the State of California Department of General Services (DGS). The customers that OHR serves are the individual offices and units within DGS. When these offices need to hire a new employee or change the status of an existing employee, OHR controls and manages the process in a workflow known as the Request for Personnel Action (RPA).

Business Challenge

Previously the RPA workflow was a paper-based workflow. This workflow required repetitive key entry procedures. It was difficult for OHR personnel to provide RPA status information to OHR customers. OHR sought to improve customer satisfaction and to automate its own internal process with a workflow built on the Exchange 2000 platform.

The process of filling a vacant position or making a change to an existing position begins when a DGS office submits a Request for Personnel Action (RPA) application to OHR. The requirements for each RPA vary depending on the type of action being requested and the affected position. The process is governed by multiple regulatory agencies so the business rules are intricate and complex. When submitting an RPA for review the originating office must supply historical personnel and position data that must be retrieved from multiple tables in the back-end ABMS database.

Given the complex rules, determining the specific requirements for a particular RPA can be challenging for the originating offices. It is also difficult to maintain accuracy when supporting data must be pulled separately from multiple tables. The result is that OHR staff must devote

considerable time correcting errors and omissions before submitted RPA applications can be accepted for review.

The approval process once an RPA is submitted follows different routing paths depending on the type of action and in some cases may take several months. This is difficult to manage without some form of automation. At any one time an office may have multiple pending RPAs at different stages of the process - it is important to be able to quickly ascertain the status of all active requests. Managers require detailed, current information for each RPA concerning the steps that have been completed and those that remain. With a paper-based system this data is simply not available - the only way for a customer to track a particular RPA is to contact OHR staff and have them report back on it.

The Office of Human Resources decided to automate the existing RPA process to more effectively serve its customers. OHR contracted with Micro Eye, Inc., a Microsoft Certified Partner, to implement a solution.

Exchange Server 2000 and the Exchange Store provide a simple and elegant way to automate the existing paper-based RPA workflow process. Exchange 2000 is capable of hosting multiple application folders which can be exposed for HTTP access as separate virtual servers. One or more content classes can be created for each folder defined by a detailed and extensible schema, and then items can be created based on the definition of that content class. Each item has a URL address and can be accessed directly through a browser, displayed as a Web Storage System Form.

For this application a Request for Personnel Action is modeled as a specific set of data fields which define the RPA content class. A top level hierarchy and application folder were created to contain items of this RPA content class. This folder is exposed by Exchange as a virtual server with the address <http://workflow/rpa>. The application is accessible on the intranet through Internet Explorer 5.0, the existing DGS browser standard. There were no additional desktop requirements for OHR or its customers eliminating client licensing, deployment and maintenance costs.

The home page for the RPA application shown below displays multiple views of items in the Exchange store. Each user sees only a filtered subset of the total data, in line with the security parameters defined by OHR.


RPA Workflow - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media Print Mail News RSS

Address <http://me3/apps/rpa/?view.view.viewdescriptorURL=%25formcontainer%25rpa%25viewbyoffice.xml> Go

Welcome to the RPA Workflow application!



Select a View:

- Active RPAs
- Grouped by Office
- Grouped by Office/Unit
- Grouped by Status
- Grouped by Type
- Cancelled RPAs

Create new RPA

- Office: Executive Office (EXEC)
- Office: Office of Fleet Administration (OFA)
- Office: Office of Human Resources (OHR)

Find RPA ID#

RPA#	Request Type	Position Title	Position	Received	Status
000124	Reclass and Fill	PERS SVS SPEC I	306-271-1303-007	1/23/2002	Created
000122	Reclass in Place	ASSOC INFO SYS AN/SPEC	306-272-1470-002	1/19/2002	PTU
000121	Reclass and Fill	OFF ASST/TYP	306-274-1379-002	1/19/2002	C&P
000120	Fill Vacancy	LABOR REL AN	306-272-9529-001	1/19/2002	Cert
000119	Fill Vacancy	ASSOC GOVT PROG AN	306-270-5393-001	1/19/2002	C&P
000118	Fill Vacancy	OFF ASST/TYP	306-274-1379-003	1/19/2002	C&P
000117	Employee Misc Chg	PERS SVS SUP I	306-271-1305-001	1/19/2002	C&P
000116	Blanket Fund	STF SVS AN/GEN	306-271-5157-933	1/19/2002	Cert
000115	Reclass and Fill	ASSOC PERS AN	306-273-5142-003	1/18/2002	Created
000114	Fill Vacancy	ASSOC PERS AN	306-271-5142-011	1/15/2002	Created
000113	Reclass and Fill	ASSOC PERS AN	306-271-5142-013	1/14/2002	Created
000112	Reclass in Place	STF SVS AN/GEN	306-271-5157-015	1/12/2002	Submitted
000111	Reclass in Place	PERS SVS SPEC I	306-271-1303-019	1/12/2002	Submitted
000110	Reclass and Fill	PERS SVS SPEC I	306-271-1303-008	1/12/2002	Submitted
000108	Reclass and Fill	CSA III	306-271-7446-004	1/12/2002	Submitted

Trusted sites

Figure 1
RPA Application Home

A COM+ component created with Visual Basic 6.0 allows the RPA application to retrieve information from the ABMS database that stores all financial and personnel records for the Department of General Services. Data access includes determination of access permissions, based on user roles defined by personnel records from this database. When a new request is created, the RPA application gets the required position and incumbent details directly from Oracle, eliminating the time consuming and error prone data-access chores for the submitting offices and simplifying the validation process at OHR.

Figure 2
Form to create a new Request for Personnel Action

Most RPAs must include one or more additional specialized documents, depending on the type of action being requested and the position to which it applies. The RPA application maintains a library of previously submitted documents in a separate Exchange application folder. Each document is an Exchange Store item that belongs to a specific content class which defines its properties. If a specific document type such as a Duty Statement is required the user can retrieve an example for the same position to use as a model.

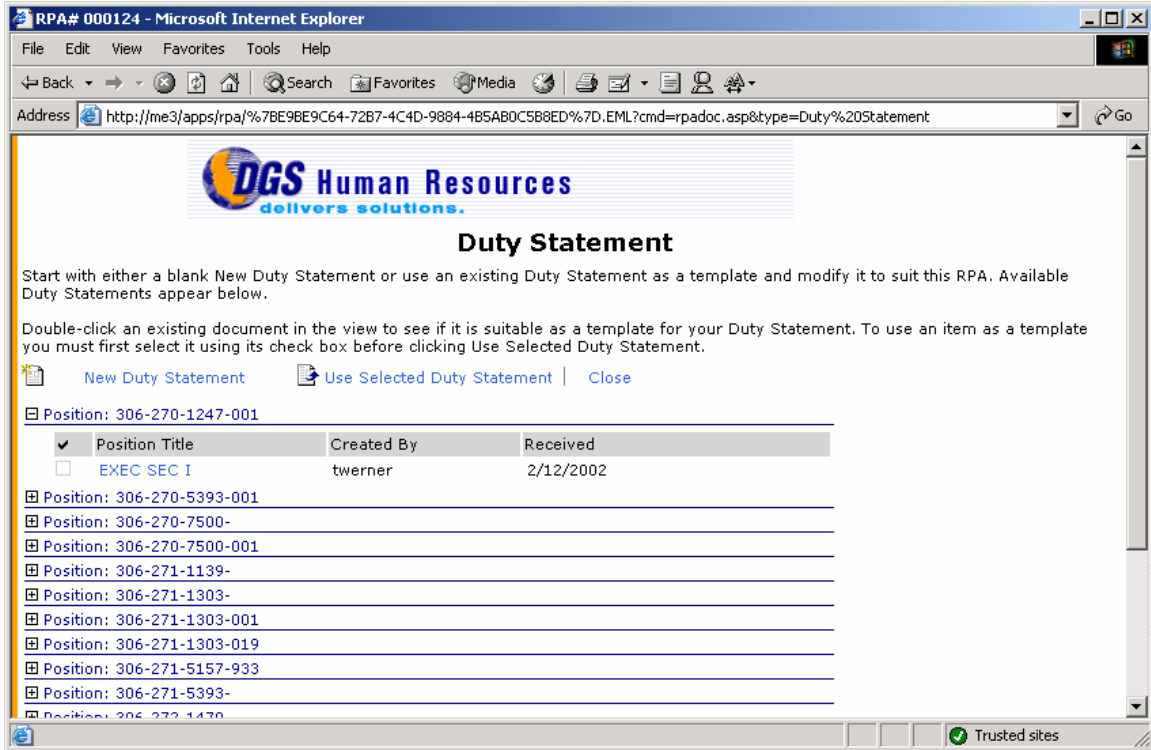


Figure 3
Filtered access to the document library

Once a Request for Personnel Action has been created and submitted by a DGS office, the approval process begins within OHR. Based on the originating office and the requirements of the specific request, the application identifies the appropriate individual for each step and manages the workflow routing.

The screenshot displays a Microsoft Internet Explorer browser window with the title "RPA# 000124 - Microsoft Internet Explorer". The address bar shows the URL: <http://me3/apps/rpa/%7BE9BE9C64-72B7-4C4D-9884-4B5AB0C5B8ED%7D.EML?cmd=rpaOHR.asp>. The page content includes the DGS Human Resources logo and the text "RPA# 000124". Below the logo are navigation tabs: "Close", "Print", "General", "Edit", "History", "C&P", "CERT", and "PTU". The main content area is titled "Workflow Status: CREATED". Underneath, there is a section for "RPA Action: Reclass and Fill" with fields for "Incumbent SSN", "Proposed Effective Date", and "Medical required" (checkbox). There are also checkboxes for "Employee Changes" with options for "Tenure" and "Time Base". The "Analyst Review" section includes a table with columns for "Evaluation" and "Comments". The "Evaluation" column has a dropdown menu set to "Insufficient". The "Comments" column contains a text area with the text "Please revise". Other fields in the Analyst Review section include "JOB", "Duty Statement", "Org Chart", "HAM Approved" (checkbox), "Transcripts Verif" (checkbox), and "HAM Type". A "Back to Top" link is visible in the top right of the Analyst Review section. The browser's status bar at the bottom indicates "Trusted sites".

Figure 4
OHR Analyst approval form - interim workflow stage

At any point during the approval process, the originating office can access the RPA's History page. This displays the current status of the request as well as the historical sequence of actions that have been or remain to be completed.

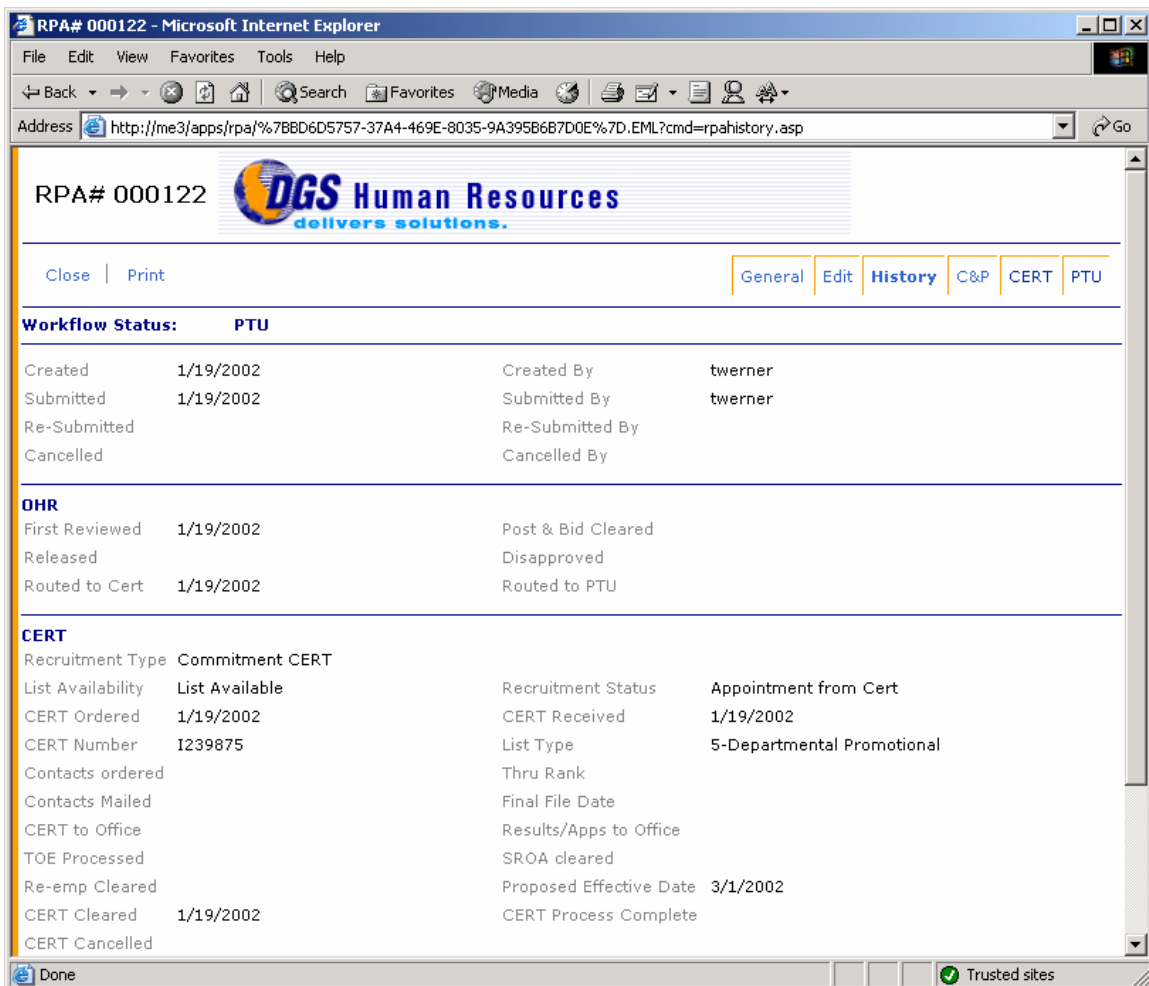


Figure 5
History page of a completed RPA

Solution

The RPA Workflow solution uses Exchange 2000 Server and Internet Explorer 5.0 to automate the Request for Personnel Action workflow process for the Office of Human Resources in the State of California Department of General Services.

Platform Requirements

Server:

- Microsoft Exchange Server 2000 SP2 or later running on Windows 2000 Server SP2 or later. The RPA Application server resides in a separate domain that is trusted by the main DGS domain. Using this configuration, it is not necessary to install Active Directory in the entire enterprise.

Client:

- Windows 98, Windows 2000, or Windows XP with Microsoft Internet Explorer 5.0 or later

Development:

- Microsoft Visual InterDev 6.0
- Microsoft Visual Basic 6.0
- Microsoft Web Storage System Explorer
- Microsoft Exchange Workflow Designer

Customer Benefits

- **Simple Deployment** The RPA application is accessed through Microsoft Internet Explorer, the DGS standard browser. No additional client software is required by OHR or its customers. The interface is simple and intuitive, requiring minimal user training.
- **Security** The system is only open to authorized users and maintains a hierarchical tree of access. Specific rights to create, edit, view or track any individual RPA are regulated based on the organizational role of the logged on user.
- **Tracking** All interested parties can quickly learn the current status of each active RPA in the workflow process, the dates for each transition from prior states, and the steps remaining to completion.
- **Data validation** The data required for each RPA depends upon the type of action requested. In addition, there are branches at each step of the process where the answer to one question determines the next valid question. The application logic validates the information supplied by users at each stage of the workflow. These validation rules must be satisfied before each change of state within the workflow process.
- **Routing** Each RPA request follows a sequence of review and approval processes defined by user choices and business rules. The workflow application automatically identifies and notifies the appropriate individuals at each step in the workflow.
- **Reduction of effort** Behind the scenes access to the Oracle personnel DBMS provides source data for the workflow process. Queries against this database accurately fill all corollary fields based on primary user input. Data transfer errors are eliminated reducing the need for manual validation by OHR. The application maintains a library of required supplemental documents for each RPA type, organized by position. These can be automatically updated with current information and incorporated into a new RPA application.