

NASCIO 2007

AGILE PAYMENT SYSTEM

CALIFORNIA STATE
CONTROLLER'S OFFICE

JUNE 6, 2007



EXECUTIVE SUMMARY

The California State Controller's Office (SCO) administers apportionment programs that process, allocate, and disburse billions of dollars in payments to local governments, agencies, and special district entities. On a yearly basis, SCO processes over 30,000 payments resulting in the distribution of approximately \$40 billion to these entities. The apportionment support systems developed in the early 1990's were maintained using antiquated and, in some instances, unsupported technologies.

SCO selected a systems integration and solutions vendor (Delegata) to help manage, develop and implement the Agile Payment System (APS), a custom web-based application with corresponding business processes and technical infrastructure. Utilizing Delegata's Diamond methodology and a team-based commitment to finish the project on-time and on-budget, the team delivered an interpretive system that enables SCO to quickly and easily model their new and changing business processes. The flexible solution interprets business models and enables business owners to define and enter business rules directly into the web-based APS application. Since business rules and processes are stored as data (not implemented in code), the system does not require new programming to accommodate changes.

At the outset of the APS initiative, SCO leadership recognized that impacts on their organization and business processes would be just as significant as the changes to their technology environment. SCO required that formal Organizational Change Management (OCM) methods and tools be a component of delivery and consider the OCM approach to be one of the key contributors to the initiative's success.

Some of the primary benefits of this initiative include:

- Replaces an antiquated system that was deemed by a state control agency to be in dire on the verge of collapse
- Allows SCO to handle significant increases in workload with the existing number of staff members
- Enables staff to directly add new Apportionment Programs and modify calculations on demand without programming resources
- Provides the capability to offer multiple payments to individual payee and summarize all payments on a single Remittance Advice
- System design allows rapid expansion of system files and data repositories
- Accurately calculates apportionment payments, produces claim payment files in appropriate formats, creates claim schedules, reports, and journal entries
- Automates exchange of fund information and accounting entries for apportionment payments via direct interface with SCO's Fiscal System

In addition to managing and implementing APS utilizing proven methodologies from the Project Management Institute's (PMI's) Project Management Body of Knowledge (PMBOK) and the Rational Unified Process (RUP), the team employed formal OCM and Business Process Reengineering (BPR) methods and tools to help ensure the new processes and system were quickly and effectively adopted by SCO's business users.

1 JUSTIFICATION

1.1 Title

Agile Payment System (APS) for the California State Controller's Office (SCO).

1.2 Business Problem and Solution

1.2.1 Business Problem/Challenge

The California State Controller's Office (SCO) administers apportionment programs that process, allocate, and distribute billions of dollars in payments to local governments, agencies, and special district entities. On a yearly basis, SCO processes over 30,000 payments resulting in the distribution of over \$40 billion to these entities.

SCO's apportionment support systems (developed in the early 1990's) were maintained using antiquated, and in some instances, unsupported technologies. SCO determined that the state and local government agencies receiving apportionment payments from SCO were at risk due to the possible catastrophic failure of SCO's aging payment processing systems. Not only was the technology itself obsolete and subject to failure, but the SCO could no longer find technical resources to perform new apportionment programming or system maintenance functions. The technical resource pool within SCO was not large which created intense issues of prioritization and it became increasingly difficult to find qualified resources to work on the outdated technology components.

In addition to technology challenges and risks, legislative demands for flexibility continually exceeded the old apportionment payment system's ability to adapt to new business rules and requirements. Therefore, SCO's financial analysts were forced to create complex system 'work-arounds' and perform labor-intensive paper-based processes to ensure payment integrity and timely distribution. Additionally, fear of breaking the unsupported system began to hold back important infrastructure upgrades which placed even more burden on the small support staff.

SCO's system and process inflexibility caused challenges to the state and local government agencies that received the apportionment payment services from the SCO. For example, multiple appropriation sources and apportionment payments resulted in multiple, same day payments.

1.2.2 Solution

1.2.2.1 Overview

Based upon the critical business problems/challenges caused by the SCO's aging payment processing systems, SCO's Management demanded that a comprehensive solution be quickly and cost-effectively developed and implemented that would address the challenges while meeting their business, technology, and financial requirements. The SCO required a solution that:

- Enabled non-technical financial analysts to easily and dynamically add new (or manage changes to) apportionment payments
- Significantly improved the SCO's service capability toward the government agencies that it serves
- Reduced risks and costs for SCO stakeholders
- Was a single, integrated solution that:
 - Contained all of the needed information

- Contained all of the processes
- Was flexible to the changes introduced by the Legislature
- Required little technical involvement in its operation
- Mitigated the risk of errors

To help them meet their urgent needs, SCO selected a systems integration and solutions vendor (Delegata) to help manage, develop and implement the Agile Payment System (APS), a custom web-based application with corresponding business processes and technical infrastructure.

1.2.2.2 “Interpretive” System

APS is a “business tool” which is a unique kind of application that enables financial analysts to introduce new business rules and functions without building or modifying technical code. APS treats business rules and functions as data. Therefore, the formulas for calculations, the factors that go into those calculations, and the terms of the payment periods all become data, and represent a model of the apportionment programs. APS is an “interpretive” system; it acts on the data as intended - it interprets apportionment program models. Hence, the application code does not attempt to capture specific rules and formulas. Instead, the application code is focused on how to interpret the apportionment program models. Thus, by simply manipulating data with easy-to-use tools designed for business people, the technical code does not need to change when a new apportionment is introduced or a change to an existing apportionment is required.

1.2.2.3 Coordinated Services

APS is comprised of a collection of coordinated services. Coordination is through an Operational Control process that enables the financial analyst to schedule when apportionment processing needs to take place and to group payments together that have similar recipient lists. This capability provides the opportunity for the analyst to consolidate payments from different programs destined to the same recipient. Now that APS is implemented, this consolidation is viewed as a major service improvement by the recipients.

1.2.2.4 Business Services and Shared Services

One business service, called Claim Origination, computes the apportionment and generates the gross claim. This service enables the financial analyst to configure or model the apportionment process according to the dictates of the Legislature. Arithmetic computations, accounting transaction definitions, payment schedules, certified criteria data, contact relationships, and beneficiary lists are all treated as data by APS. APS then “interprets” the configuration without requiring operator intervention. In addition, APS provides opportunities along the way for people to validate and tune the system to accommodate real-world events.

Another business service, called Claim Processing, bundles gross claims and generates consolidated Net Claims after making adjustments and obligation payments for individual payees. This service generates a consolidated e-Claim file suitable for delivery to the Disbursements unit for final generation of the warrant or EFT payment. The adjustment mechanism and tracking of individual obligations that offset those payments is also easily configured by the analyst. In the end, very little, if any, human intervention is necessary once the configurations are established.

Business services depend upon the use of shared services. One shared service manages the contact information for all recipients and interested parties that need notification of payments made. Since all of the data needed is in a single system, contact information can be shared across multiple apportionment programs. Notification to interested parties is also one of the configuration options within APS which allows new notifications to be generated without any change in software programming.

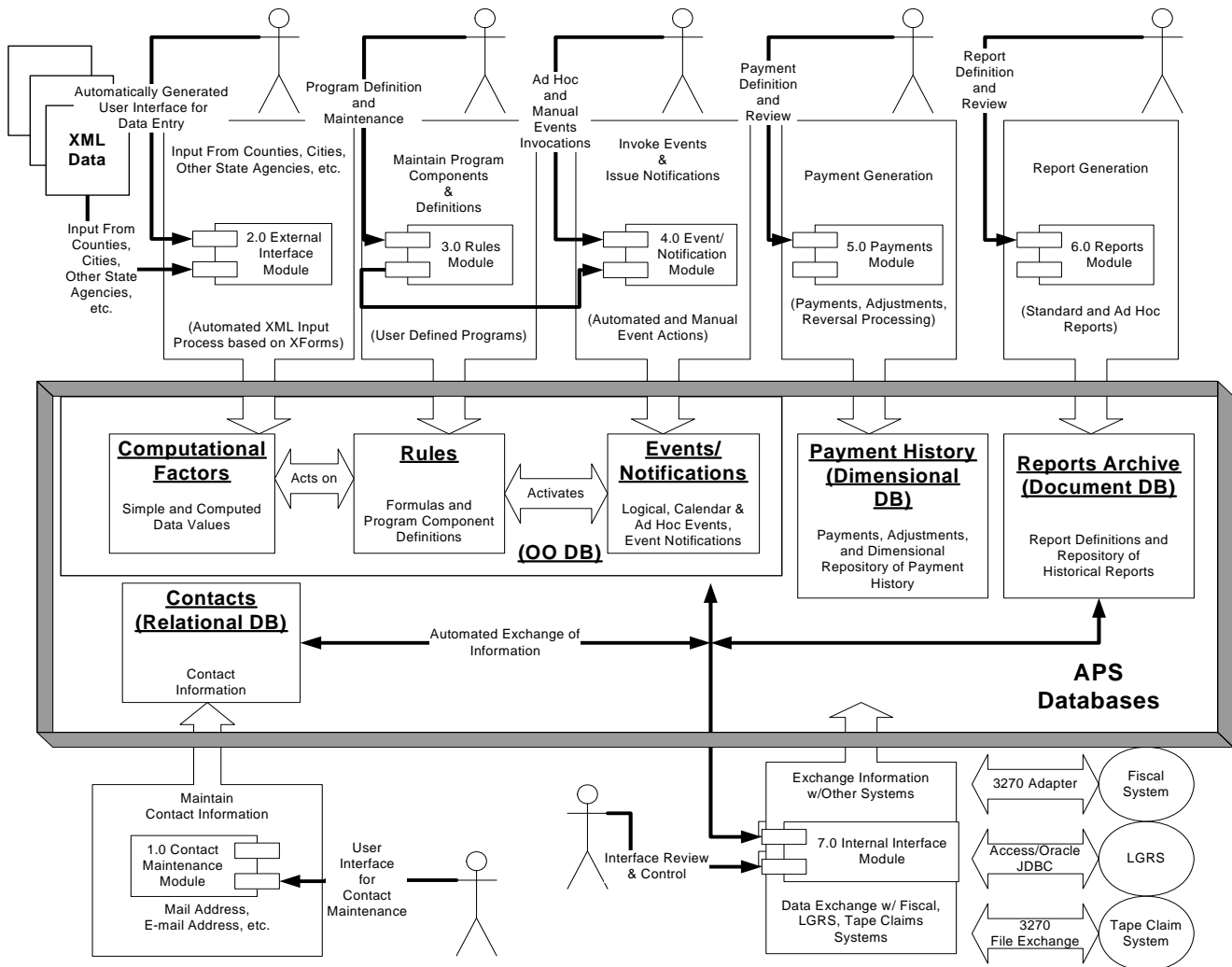
Another shared service, manages the Accounting information and interface to the state's Fiscal System. Isolating this interface in an encapsulated service allows future upgrade or replacement of the Fiscal System to be completed without impacting the rest of the APS.

Shared Services depend upon shared components which include:

- **Event/Notification Management:** E-mail notification to subscribers of events
- **Help Message Management:** System and business help editable without requiring programming change
- **Error Message Management:** User-maintained text that doesn't require a change to software

1.2.2.5 Architectural Overview

The following diagram shows all of the major components of the APS solution:



APS utilizes industry standard technologies including Java, J2EE, and Oracle. As a result, support resources are readily available in the market.

1.2.3 Time in Operation

The new APS application was successfully implemented in May, 2007 and is currently being utilized by SCO's business users to easily configure complex apportionments and accurately distribute payments to public stakeholders throughout California in a timely manner.

1.3 Significance to Improvement of Operation of Government

APS significantly improves the operation of government entities including the Auditors and Controllers at California's cities, counties, and other agencies staff by:

- Improving end-customer service
- Automating most of the apportionment processing
- Reducing workload cycles
- Automating data gathering tasks
- Establishing Electronic Funds Transfer as the standard payment mode for entities
- Consolidating payments to individual recipients
- Increasing apportionment processing flexibility
- Increasing electronic information sharing

APS significantly improves SCO's customer services capabilities through:

- Automation Opportunities:
 - **Consolidated Payments:** Multiple payment are consolidated into a single payment
 - **Remittance Advice:** Detailed account of all of the calculations and adjustments made to a payment
 - **Re-perform:** APS is designed to re-perform computations when errors are detected after payments have been made. The re-perform can retroactively compute the impact of the error over any period of time and compute the future adjustments required to correct the error
 - **EFT:** APS significantly reduces the maintenance of EFT information enabling a shift to electronic payments over the generation of warrants
- Self-Service Opportunities:
 - **Certified Data:** Data that must be supplied to the system in order to determine the distribution of the apportionment amounts can now be captured directly from certifying agents reducing transcription errors
 - **Address Changes**
 - **Banking Information Changes**

Customer service improvements enabled through the implementation of APS include:

- **Readiness of Information:** Automatically checks if all of the necessary information is available before the apportionment is run. This enables an analyst to proactively correct any problems or issues ahead of time
- **Remittance Advice:** A single, consolidated remittance advice which clearly details all of the calculations and adjustment made to a payment
- **Claim (Apportionment) History:** Maintains a "data mart" that contains all of the incremental processing involved with individual claim origination and processing
- **Increased Responsiveness:** Enables an analyst to easily answer questions and resolve issues with customers by providing complete transparency into the apportionment computation details.

1.4 Public Value

1.4.1 Recipient Benefits

APS is a highly configurable, flexible, dynamically responsive service asset for California state and local agencies that benefit from the apportionment claims and payments processed by the SCO. Apportionment payees can now receive consolidated payments and remittance advices, information that was previously delayed is now immediately available, workflow is streamlined, data integrity is improved through automated data capture, security is enhanced through a role-based access model, automated contact management functionality is provided, accountability is enhanced through comprehensive audit capabilities, ease of information access is improved through robust reporting capabilities, and a Service Oriented Architecture (SOA) model is in place that facilitates an enterprise architectural approach to future system development for SCO.

In addition, APS almost completely automates the workload for apportionment claim-origination and claim-processing tasks and enables SCO's financial analysts to configure apportionment processing without requiring the development of, or change to, software. APS captures information all along the processing lifecycle to completely expose all processes and actions. When past errors in data are discovered, APS retroactively re-computes all of the impacted past payments and makes corresponding adjustments to future payments.

1.4.2 Public and Stakeholder Value

APS delivers specific value to the public and all stakeholders through:

- Enhanced remittance advices – complete revelation of all payments, adjustments, and obligations on consolidated payments
- Enhanced data integrity through automated data capture
- Enhanced security through contact management
- Enhanced accountability through robust audit capabilities
- Enhanced informational access through robust reporting capabilities
- Enhanced enterprise architectural enablement through SOA

1.4.3 Return on Investment/Cost Avoidance

SCO annually processes over 30,000 payments resulting in the distribution of over \$40 billion to local governments, agencies, and special district entities. The APS return on investment and cost avoidance benefits include:

- Up to 80% reduction in payment reconciliation for governments, agencies and special district entities benefiting from payment consolidation
- Remittance Advice delivery reduced from 2 weeks to same day
- Up to 90% reduction in remittance advice postage and handling costs
- Significant reduction in the amount of time needed to process an apportionment claim and produce a payment
- Process improvements include:
 - Reduced time required to recalculate and process payments from claim adjustments
 - Reduced response time to legislative and inter-agency queries
 - Reduced response time to claim and payment queries
 - Increased auditable process visibility for auditing purposes without loss of process improvement benefit
 - Increased integrity through encryption and role-based security
 - Increased service capabilities through APS “What-If” scenarios
 - Improved internal ancillary business processes