

Chief Information Officer Report

April - August 2017

Information Technology | Business Intelligence

Project Description

The Business Intelligence and Data Analytics Program delivers dashboards and analytical tools to enable business users to make informed, data-driven decisions. These analytical tools enable business users to spend more time solving complex business problems and less time collecting data.

This Business Intelligence and Data Analytics program as a project has been successfully complete and operationalized. The Program has implemented (1) a streamlined Business Intelligence request process and lifecycle, (2) an enterprise dashboard environment, and (3) a comprehensive Business Intelligence Governance framework. In future years, funding for the Business Intelligence/Data Analytics program will move into the ITSB Operational Budget.

Business Benefits

- Allow team members to review operations, historical insights, and forecast future trends
- Accelerate time-to-insight and data access
- Visualize key performance indicators and metrics in a single view
- Focus on innovation and problem solving rather than data collection

Start Date: 07/01/2011**End Date:** 08/31/2017**Budget:** \$585,300**Total Expended:** \$553,000**Overall Health Status:** ★ Complete**Percent Complete:** 100%**Status Explanation:** N/A**Critical Risks/Mitigation:** None**Critical Issues/Strategy:** None**Overall Project Accomplishments:**

- Implemented the Business Intelligence Marketing Plan, including Case Studies and Focus Groups.
- Deployed nine multifaceted dashboard solutions.
- Completed Investment Office analytical dashboards.
- Completed new self-service reports and over 233 data extracts.
- Received 30 new Business Intelligence Project Requests.
- Built a big data environment to mine historical health data (15 years).

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Security Roadmap | Enterprise Identity System (EIS)

Project Description

Wave 3 of the Security Roadmap Program (SRP) Enterprise Identity System (EIS) project series will establish an Enterprise IAM Program, implement a user access and provisioning solution, and align the technical architecture to support business needs while maturing the associated Identity and Access Management (IAM) governance and administration (IGA) policies and processes.

Business Benefits

- Reduces costs by centralizing IAM across the Enterprise
- Increases the efficacy of access certification and compliance efforts for risk management
- Reduces IAM system complexity and increases overall solution sustainability
- Increases accuracy of user access requests
- Improves timeliness of authorized access to systems and data
- Improves identity lifecycle workload and process efficiencies

Start Date: 07/01/2014

End Date: 06/30/2017

Budget: \$3,327,753

Total Expended: \$3,308,375

Overall Health Status: ★ Complete

Percent Complete: 100%

Status Explanation: N/A

Critical Risks/Mitigation: None

Critical Issues/Strategy: None

Overall Project Accomplishments:

- Established a fully supported enterprise level program for the oversight of Identity Access Management (IAM). The Enterprise Program Steering Committee (EPC) adopted the IAM Program as an Enterprise Work Group with representation across the entire enterprise.
- Completed migration of all application and infrastructure access request workflows from User Access Request System (UARS) to ServiceNow. All workflow processes were converted and the UARS system put in read-only mode (soft-decommission) to access prior records for compliance with data retention regulations until the data can be archived in an alternate read only solution.
- Completed the IAM Policy and Procedure Manual that serves as the basis for IAM outreach and education and form the underlying IAM policy logic for the implementation of the centralized enterprise identity system.
- Completed all production architecture and infrastructure updates to the Identity and Access Management product stack in order to take advantage of the latest features and be ready for FY17-18 efforts to implement the identity lifecycle.
- Migrated all system/application access and identity profile user modification requests from the previous User Access Request System to ServiceNow for a single access request interface and solution. This will also support FY17-18 efforts to automate provisioning and de-provisioning of access.
- Completed all project closeout activities.

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Security Roadmap | Multi-Factor Authentication (MFA)

Project Description

The Multi-Factor Authentication project will improve system access control and identity assurance across a wide range of systems. This project will provide an additional layer of validation through multi-factor authentication services, which require more than one verification method of identity before access is granted. In addition to supplying a password, additional verification methods may include a phone call, text message, or other verification

Business Benefits

- Reduces the risk that unauthorized individuals access CalPERS information assets
- Improves compliance with new industry standards and practices
- Develops an architecture and integration approach that will enable future implementations of multi-factor authentication

Start Date: 07/01/2015**End Date:** 06/30/2017**Budget:** \$554,600**Total Expended:** \$310,411**Overall Health Status:** ★ Complete**Percent Complete:** 100%**Status Explanation:** N/A**Critical Risks/Mitigation:** None**Critical Issues/Strategy:** None**Overall Project Accomplishments:**

- Completed internal survey of all types of remote (and on premises) access to CalPERS services and systems.
- Deployed Multi-Factor Authentication on remote access of CalPERS systems and services.
- Selected a Privileged Access Management (PAM) solution to improve security of elevated privilege administrative accounts.
- Demonstrated a Proof of Concept of PAM solution to manage security of administrative accounts and systems. The solution will be built upon under maintenance and operations.
- Completed all project closeout activities.

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Security Roadmap | my|CalPERS Database Encryption (DBE)

Project Description

Assess and then implement a data protection encryption solution for the my|CalPERS database. The encryption initiative will introduce greater protections in the CalPERS information environment including increased security through encryption of sensitive data in the my|CalPERS database. This will mitigate risks identified by security assessments.

Business Benefits

- Protects sensitive member information through a data encryption solution
- Improves information security maturity
- Avoids costly litigation from breach or loss of data incidents

Start Date: 07/01/2015	End Date: 06/30/2017 08/31/2017	Budget: \$640,092	Total Expended: \$640,092
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Overall Health Status: ★ Complete	Percent Complete: 100%
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Schedule Explanation: The project schedule was extended to August 31, 2017 due to interdependencies with the Infrastructure Modernization Evaluation (IME) project timeline. The my|CalPERS database clones had to be migrated to the new platform under the IME project in order for the data to be encrypted.

Status Explanation: N/A

Critical Risks/Mitigation: None

Critical Issues/Strategy: None

Overall Project Accomplishments:

- Identified and documented where sensitive information resides within the my|CalPERS database.
- Assessed feasibility of various encryption solutions as to how they would provide protection specifically relevant to CalPERS operations.
- Implemented a database encryption solution on my|CalPERS databases.
- Developed knowledge bank of Lessons Learned and Assessment Details on database encryption solutions.
- Completed all project closeout activities.

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Pension and Health (P&H) | Actuarial Valuation System Redesign & Enhancement (AVSRE)

Project Description

The redesign and enhancement of the Actuarial Valuation System (AVS) is intended to deliver a solution that supports the business operation of the Actuarial Office (ACTO) in ensuring the ability for CalPERS to meet its pension obligations. The existing system presents challenges in terms of support, functionality, and flexibility. Supportability is challenged by enterprise risk posed by having system knowledge being limited to a few key resources and consultants. Demand has increased for more retirement valuations with greater details and complexity. In addition, actuarial standards are constantly evolving along with the regulatory environment in which CalPERS operates. Hundreds of spreadsheets and other tools are required to deliver valuations, which combined with the time-intensive, complicated data extract and fix operations places strain upon available resources. A modern system that can replace the current aging AVS solution is necessary to meet the strategic objectives of CalPERS and sustain the business goals of CalPERS for years to come.

Business Benefits

- Reduces valuation processing times
- Adds functionality to the current AVS system and provides scalability to support future responsibilities of the Actuarial team
- Improves identification and application of the correct assumptions, provisions, and decrements to valuations

Start Date: 03/09/2015**End Date:** 10/31/2018**Budget:** \$13,709,125**Total Expended:** \$3,060,668**Overall Health Status:** ● On Target**Percent Complete:** 25%**Status Explanation:** N/A

Critical Risks/Mitigation: The project continues to be impacted by the 60-day delayed start which resulted from the late completion of proof and concepts and its core technology decision. This now puts the October 2018 production launch date at risk as the system must be in place by that date to support the 2018 valuation cycle. To mitigate risk to the schedule, the team is reviewing the current implementation plan to identify scope features that are not required to perform valuation functions and can be deferred as maintenance and operations enhancements. A revised plan and recommendation will be presented for decision to the Project Sponsors and Steering Committee in October 2017.

Critical Issues/Strategy: None**Major Accomplishments:**

- Completed work resolving Additional Benefits issues for the Benefit Group concept, which replaces contract packages from the existing AVS, and established a process for benefit group/contract package decode, which is used for data conversion and data extract activities.
- Established end-to-end development infrastructure, which provides the platform to deploy the application, including web front end, application layer, batch environment and database and which will enable the project team to “right-size” the future configuration of the test and production environments.

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Security Roadmap | Identity Lifecycle Implementation

Project Description

As a prioritized strategic initiative under the Identity and Access Management (IAM) Program, the Implementation of the Identity Lifecycle and associated access controls and governance, will address and manage risk from exposure of persistent, rogue, and orphaned accounts/access following role change and/or separation from the organization.

Business Benefits

- Reduce the time to establish employee identity and provide necessary access to key systems and data upon new hire
- Address cybersecurity risk by reducing the number of rogue and orphaned accounts existing after an employee separates from CalPERS
- Address cybersecurity risk by increasing the legitimacy and accuracy of employee access to informational and physical assets
- Increase IAM awareness and understanding across the organization to support cybersecurity compliance

Start Date: 07/01/2017**End Date:** 06/30/2018**Budget:** \$954,720**Total Expended:** \$0**Overall Health Status:** ● On Target**Percent Complete:** 5%**Status Explanation:** N/A**Critical Risks/Mitigation:** None**Critical Issues/Strategy:** None**Major Accomplishments:**

- Completed charter, stakeholder register, resource assignment matrix, and schedule to ensure the project planning has a strong foundation.
- Began business analysis sessions to evaluate the process for validating the accuracy of employee access with the Human Capital Management System.

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Pension and Health (P&H) | Functional Optimization, Business Optimization

Project Description

The my|CalPERS Functional Optimization Project is an effort to develop and implement prioritized functional optimization initiatives in support of the my|CalPERS platform and infrastructure environment. These optimizations are in addition to the existing maintenance and operation needs of the my|CalPERS system. A partner vendor will work collaboratively with key CalPERS team members in the definition, development, and delivery of these optimizations.

Business Benefits

- Establish a collaborative vendor partnership in order to deliver value in support of functional optimization initiatives for the my|CalPERS system and infrastructure environment
- Expedition and improvement of services to all CalPERS customers, internal and external
- Continuous progress, quality, and performance measurement of functional optimization activities against success goals

Start Date: 10/01/2014

End Date: 06/30/2018

Budget: \$73,845,000

Total Expended: \$61,235,746

Overall Health Status: ● On Target

Percent Complete: 75%

Status Explanation: N/A

Critical Risks/Mitigation: None

Critical Issues/Strategy: None

Major Accomplishments:

- Offered members retiring on or after January 1, 2018, a simpler and easier way to choose a benefit payment option through the consolidation and renaming of their retirement choices. Detailed estimates reflecting the new retirement options became available in mid-June.
- Introduced faster, more accurate funds collections from employers through new projections reports provided by CalPERS that allow employers to accrue and report estimated employee payroll contributions each pay period.
- Reduced balance-due risks for members by improving reconciliation of Service Credit Purchase (SCP) costing and elections data with appointment and service history.

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Pension and Health (P&H) | Functional Optimization, Technical Optimization

Project Description

The my|CalPERS Functional Optimization Project is an effort to develop and implement prioritized functional optimization initiatives in support of the my|CalPERS platform and infrastructure environment. These optimizations are in addition to the existing maintenance and operation needs of the my|CalPERS system. A partner vendor will work collaboratively with key CalPERS team members in the definition, development, and delivery of these optimizations.

Business Benefits

- Establish a collaborative vendor partnership in order to deliver value in support of functional optimization initiatives for the my|CalPERS system and infrastructure environment
- Expedition and improvement of services to all CalPERS customers, internal and external
- Continuous progress, quality, and performance measurement of functional optimization activities against success goals

Start Date: 10/01/2014

End Date: 06/30/2018

Budget: \$73,845,000

Total Expended: \$61,235,746

Overall Health Status: ● On Target

Percent Complete: 75%

Status Explanation: N/A

Critical Risks/Mitigation: None

Critical Issues/Strategy: None

Major Accomplishments:

- Reduced the production run time of the Benefit Roll warrants from 12-15 hours to five hours, which allows warrants to be delivered faster to the State Controller's Office for distribution to members. New member enrollment information and member retirement requests are updated more quickly for prompt online service.
- Removed infrequently used database access features of my|CalPERS to improve online performance and simplified maintenance and operations of over 1,600 tables.
- Introduced architectural changes that separate my|CalPERS transaction processing from report creation. This separation into independent services will result in fast transaction response times while additionally allowing for dynamic creation of on demand reports.

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Information Technology | Windows 10 Upgrade

Project Description

This effort is the planning, design, testing, and implementation of the Windows 10 Operating System for the CalPERS Enterprise. The Windows 7 operating system will reach end of life (EOL) March 2020. To ensure that CalPERS is prepared, and to maximize the support cycle for the next operating system, the Enterprise Desktop Support Section (EDSS) will be delivering a wide rollout of Windows 10 in 2017. The implementation of the Windows 10 operating system will provide updated functionality and features, as well as enhanced security in order to keep CalPERS in pace with the latest technology and to ensure that CalPERS data continues to be protected.

Business Benefits

- Improved security features including, threat resistance, information and identity protection, as well as tighter access control
- Reduced system downtimes and minimal business interruption
- Improved processing capability to support applications with greater demands as they are introduced into the environment
- Decreased application testing efforts and device-related desktop support issues

Start Date: 08/24/2016	End Date: 01/19/2018 04/27/2018	Budget: \$299,910	Total Expended: \$193,569
Overall Health Status: ● On Target		Percent Complete: 65%	

Schedule Explanation: The project schedule was extended to April 27, 2018 due to delays in the testing of applications in the new operating system.

Status Explanation: N/A

Critical Risks/Mitigation: Windows 10 and Office 2016 application readiness is a continuous risk throughout the project as applications are still being discovered, as well as the need to retest applications as feature updates will be distributed to the Enterprise testers as part of the overall update strategy.

Critical Issues/Strategy: ClearCase and ClearQuest (CC/CQ), a development tool used throughout the Enterprise, is currently being tested and validated on Windows 10. If CC/CQ is not validated on schedule, many users will need to be deferred, and this could push out the overall schedule. The CC/CQ project team is actively working a web-based solution that could potentially allow many, but not all, deferred users to be upgraded.

Major Accomplishments:

- Upgraded 1,550+ PCs and laptops to Windows 10.
- Finalized Phase 2 early adopter activities to validate application compatibility and readiness.
- Began Phase 2 rollout of Windows 10 with Office 2016 of over 300 PCs.
- Provided Microsoft demonstrations of Windows 10 and Office 2016 to the Enterprise.

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Information Technology | Backup, Restoration, and Disaster Recovery (BRDR)

Project Description

The Backup, Restoration, and Disaster Recovery (BR/DR) project objective is to solicit, evaluate, procure, and implement a cost effective solution that will enable CalPERS to run its business on demand from a geographically remote location with real-time availability to its systems, data, and applications during an unplanned outage, system failure, or declared disaster.

Business Benefits

- Improves ability to perform critical business functions, such as benefit payments and member services, in the event of a declared disaster or any other long term outage
- Mitigates business risks and customer impact

Start Date: 07/01/2017**End Date:** 06/30/2018**Budget:** \$7,000,000**Total Expended:** \$0**Overall Health Status:** ▲ Warning**Percent Complete:** 10%

Status Explanation: The project is in a warning status due to the late start on solicitation and procurement. The project team elected to change to a focused solicitation strategy in order to address concerns raised over the sensitive and confidential nature of information on systems that must be shared with potential vendor community, limiting the number of participating vendors. This change caused delays in the preparation and release of the solicitation documentation and has reduced the amount of time available to implement the new solution. A Bidder's Conference was held on August 24 with the selected vendors.

Critical Risks/Mitigation: A solution may not be in place by the time that the existing contract expires on June 30, 2018. Depending on the implementation schedule proposed by the selected vendor, there may be a need to request a contract extension for the existing provider beyond the June, 30 2018 expiration. If this occurs, the intention is to negotiate a month to month, rather than a full-term agreement.

Critical Issues/Strategy: None

Major Accomplishments:

- Selected vendor participants for focused solicitation.
- Released invitation to participate in the BR/DR solicitation to five vendors.
- Finalized the project solicitation and award schedule.

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Pension and Health (P&H) | CalPERS Education Center (CEC) Redesign

Project Description

The CalPERS Education Center (CEC) Redesign Project will completely redesign the my|CalPERS sub application used by the Customer Service and Outreach Division (CSOD), which includes the Contact Center, Regional Offices and External Education teams. CSOD provides a single point of contact to help respond to all employer and member inquiries, as well as provide educational classes and resources. The CSOD representatives and CalPERS members use the CEC application to register for Member and Employer education offerings as well as retirement benefits counseling appointments at the Regional Offices. The Information Technology Branch will use internal CalPERS resources to redesign, build and replace the existing CEC application with a more efficient solution.

Business Benefits

- Streamlines appointment scheduling, class enrollment, and supports special education requests
- Provides a single interface for the CSOD team to service all CEC requests for members and employers
- Increases efficiency of CEC related call center contacts and responses to customer inquiries
- Increases the availability and accessibility of self-service educational information to educate members and employers
- Allows tracking of class enrollment, special education requests, and student demographics

Start Date: 06/24/2015	End Date: 05/31/2018 10/01/2018	Budget: \$2,196,727	Total Expended: \$791,235
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Overall Health Status: ▲ Warning**Percent Complete:** 50%

Schedule Explanation: The project was unable to recover time lost due to software development life cycle (SDLC) challenges (during the pilot) and impacts relating to the loss of a lead business analyst. The Project Sponsors and Steering Committee have approved a schedule baseline revision, extending the project's end date to October 1, 2018, with a production launch date of June 28, 2018.

Status Explanation: The project is in a warning status due to the loss of a key test analyst and continued risk associated with SDLC documentation and defect correction workload.

Critical Risks/Mitigation: The project continues to monitor and address risk associated with delayed completion of SDLC documentation and defect correction workload due for completion in September 2017. Mitigation activities have included refinement of SDLC documentation processes and the redirection of additional resources to address the ongoing workload.

Critical Issues/Strategy: As a contingency to the loss of a test analyst, the project is in the process of procuring a consultant to fill the gap until a State analyst can be hired on a permanent basis.

Major Accomplishments:

- Completed analysis to prepare to build the CEC Application using Micro Service Technology which will allow greater efficiencies in development and testing activities.
- Developed the conceptual, logical, and physical data structures to store statistical information for the Classes Group functionality. This will allow the Customer Service and Outreach Division (CSOD) to create statistical reports to measure effectiveness based on evaluation data. It will also assist in identifying educational resource needs and provide input into future CSOD initiative planning.
- Established the Classes Group functionality SDLC Business Flow documentation. This illustrates the member/employer class enrollment functionality and visual design which will be used to build and test the application prior to production launch.

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Information Technology | Infrastructure Modernization Evaluation

Project Description

The Infrastructure Modernization Evaluation (IME) project's objective is to replace the third party engineered hardware platform, which is no longer supported, reducing compatibility issues while achieving a goal of infrastructure consolidation and standardization. The IME project will adopt an open architecture that is currently supported, cost effective, and already in use at CalPERS.

Business Benefits

- Reduces hardware, software licensing, and administrative costs
- Reduces business risk and customer impact
- Improves service delivery

Start Date: 07/01/2016	End Date: 06/30/2017 10/20/2017	Budget: \$3,723,500	Total Expended: \$3,362,807
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Overall Health Status: ▲ Warning	Percent Complete: 85%
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Schedule Explanation: The project schedule was extended to October 20, 2017 due to a performance incompatibility between the virtual environment and the existing hardware infrastructure for my|CalPERS Clone Databases, necessitating unanticipated hardware replacement in order to continue the project.

Status Explanation: The project is in a warning status due to a critical platform that is experiencing hardware failures. The warning status will be lifted once we move off the platform, which is on track to be completed by September 9.

Critical Risks/Mitigation: A critical platform is experiencing hardware failures which have forced the removal of one of the two servers, creating a single point of failure risk. The mitigation was to significantly compress the remaining migration schedule and expedite the decommissioning of the platform.

Critical Issues/Strategy: None

Major Accomplishments:

- Installed and configured Hardware Appliances in preparation for the migration of my|CalPERS Clone Databases.
- Migrated all Business Intelligence databases to virtual servers.
- Completed Recovery Manager database (RMAN) migration.
- Completed my|CalPERS Clone migrations.