

OFFICE OF AUDITS & ADVISORY SERVICES



IT PROJECT MANAGEMENT PRACTICES AUDIT

FINAL REPORT

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County of San Diego

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JUAN R. PEREZ
CHIEF OF AUDITS

June 1, 2016

TO: Mikel Haas, Chief Information Officer
County Technology Office

FROM: Juan R. Perez
Chief of Audits

FINAL REPORT: IT PROJECT MANAGEMENT PRACTICES

Enclosed is our report on the IT Project Management Practices Audit. We have reviewed your response to our recommendations and have attached them to the audit report.

The actions taken and/or planned, in general, are responsive to the recommendations in the report. As required under Board of Supervisors Policy B-44, we respectfully request that you provide quarterly status reports on the implementation progress of the recommendations. The Office of Audits & Advisory Services will contact you or your designee near the end of each quarter to request your response.

Also attached is an example of the quarterly report that is required until all actions have been implemented. To obtain an electronic copy of this template, please contact Wasim Akand at (858) 694-2248.

If you have any questions, please contact me at (858) 495-5661.

JUAN R. PEREZ
Chief of Audits

AUD:WA:aps

Enclosure

c: Tracy M. Sandoval, Deputy Chief Administrative Officer/Auditor and Controller
Damien Quinn, Group Finance Director, Finance and General Government Group
Andrew McDonald, Group IT Manager, Finance and General Government Group

INTRODUCTION

Audit Objective

The Office of Audits & Advisory Services (OAAS) completed an audit of Information Technology (IT) Project Management Practices. The objective of the audit was to determine if a project management framework for IT projects is established and operating effectively.

Background

The County of San Diego's (County) IT Project Management program is governed by the "IT and Telecommunications Services Agreement (Agreement) of January 24, 2006 by and between the County and Northrop Grumman Information Technology Incorporated" as assigned to HP Enterprise Services (HP), LLC on April 30, 2011 and as amended and restated on April 5, 2012. Project management services provided by the Agreement include the provision of standardized and industry accepted methodologies for project planning, tracking, management and reporting. These methodologies are used by HP to provide all IT project management services to the County.

Specific project management practices are defined in County of San Diego (COSD) policies produced by the HP Team's Account Project Management Office (APMO). COSD policies adhere to industry standard project management disciplines, including PM BoK, CMMI and ITIL.

The County established an IT Project Management Office (ITPMO) to assist in the successful delivery of IT projects. The ITPMO is comprised of a County Technology Manager and HP Program Manager. HP has also assigned a Project Support Office/Cross-functional Lead, Mission Assurance Project Engineer, Work Request Coordinator, and a Quality Assurance Subject Matter Expert to assist with ITPMO administration. As a joint County and HP team, the purpose of the ITPMO is to institutionalize project management industry standards, build project management maturity, inform project stakeholders, and improve IT project outcomes. The ITPMO provides tools, methodologies, and general oversight to enable IT projects to be completed on-time, within budget, and with a quality product delivered. The ITPMO also facilitates the gate review process. The purpose of the gate review process is to determine if the quality of documents produced during a given project lifecycle phase is sufficient to proceed to the next lifecycle phase with an acceptable level of performance risk. The gate review procedure is applicable to all application projects, unless specifically exempted by the County.

IT projects are initiated as a work request (WR) through a submittal process which utilizes HP's myRequest application. There are two high level categories of project WRs, including Discretionary WRs and Non-Discretionary WRs. Formal project management processes are often requested by the County for Discretionary WRs, depending upon the size and risk of the project, while formal project management processes are not used for Non-Discretionary WRs, which generally cover break-fix work.

There are three classifications of Discretionary WRs based on complexity, budget amount, and risk level.

- The Low/Medium/High Risk (LMH) classification is used for complex projects with budgets exceeding \$20K.
- The Very Low Risk (VLR) classification describes less complex projects or other types of work with a projected budget of less than \$20K.
- The Level of Effort (LOE) classification is typically used for non-project specific effort, such as program oversight, meeting attendance, and consulting.

Another project category is an unsolicited WR, which are projects proposed and submitted by HP that must be approved by the County Technology Office (CTO) prior to project initiation.

HP creates a Budget Estimate (BE) for each approved WR. The BE is a non-binding estimate for budget, scope, and period of performance based on the requirements specified in the WR by the County requestor. A BE is also used to establish a budget for the development of a Project Management Plan (PMP) in the event that the County decides to authorize and pay for the planning phase of the project.

The PMP is a detailed proposal containing information for all phases of project management including start up, planning, execution, and closedown. A PMP also contains information about project scope, cost, project schedule, assumptions, dependencies, communication plans, vendor responsibilities, and technical considerations. During instances where a PMP is not authorized, the project assumptions stated in the BE serve as the primary project planning documentation.

Projects across all frameworks (Applications, Networks, Desktop and Infrastructure) use standards project management policies and procedures that are tailored to meet the unique nature of each framework's projects. Although each framework's processes differ, there are requirements and procedures that are common to all frameworks, specified in COSD-T491 (Standards Project Management Policies and Procedures). Framework-specific policies, process and procedures are described in other documentation. According to COSD-T491, each framework at a minimum requires the following:

- Statement of Work (Network and Application projects) (SOW).
- Project Management Plan (PMP).
- Risk Assessment (RA).
- Project Communications/Status Reports (SR).
- Project Schedules (PS).

At the time of this audit, there were 79 open LMH projects with a total authorized cost of approximately \$30M. The projects were in various phases of completion and ranged from 0 to 1,365 days open.

Audit Scope & Limitations

The scope of the audit included LMH projects that were closed during FY 2013-14 to FY2014-15. The District Attorney's Office and the Sheriff's Department are not subject to the Agreement and were therefore excluded from the audit scope.

Ten discretionary projects were selected for review using a judgmental sampling approach based on project classification (LMH, VLR, LOE, and unsolicited), type (application and infrastructure), project status (closed and canceled), total authorized budget, remaining budget, and project close date. The 10 projects included 9 LMH projects and 1 unsolicited project.

Of the 10 selected projects, 5 requested additional funding ranging from \$30K to \$2M, 1 of which was ultimately cancelled. Five projects also requested changes to the initial baseline completion date, ranging from an additional 60 days to 795 days.

This audit was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing prescribed by the Institute of Internal Auditors as required by California Government Code, Section 1236.

Methodology

OAAS performed the audit using the following methods:

- Interviewed ITPMO and CTO management regarding processes and procedures relevant to IT Project Management.
- Interviewed HP management and staff responsible for providing project management services for the County.
- Reviewed industry best practices for IT project management, including the Project Management Institute's "A Guide to the Project Management Body of Knowledge" and IT control frameworks such as ISACA's Control Objectives for Information and Related Technology (COBIT 5).
- Reviewed HP COSD standards relevant to project management to determine if HP project management standards were based on industry best practices.
- Reviewed project deliverables for the sampled projects, including evidence of reviews, approvals, and stakeholder meetings, to determine if projects were completed according to HP project management procedures.
- Reviewed change request documents for the sampled projects to determine if changes to project scope, budget or deliverables were processed according to HP Change Request Procedures.

AUDIT RESULTS

Summary

Project management frameworks and processes are in place for County IT projects; however the following opportunities exist to strengthen current standards and procedures.

Finding I:

Project Management Practices Can Be Strengthened

HP's COSD Standard Project Management Policies and Procedures (COSD-T491) have not been consistently implemented for County IT projects. According to COSD-T491, each framework produces a project management plan, and all project management plans contain at a minimum, a scope statement that is agreed to by all stakeholders, a list of risks and mitigation strategies, a list of assumptions and dependencies, and a stakeholder matrix that contains roles and contact information.

For six sampled projects, the County had either waived minimum COSD requirements or did not list the requirements in the project assumptions of the BE or the PMP (see table: Missing Project Management Documentation). According to HP and ITPMO management, County and HP project managers determine requirements for an IT project on a project by project basis, focusing primarily on cost-effectiveness. Project requirements are approved by the County requestor, CTO Contracts, CTO Technical, and the respective Group IT Manager and Department Finance.

Missing Project Management Documentation

Project Title	Framework	Cost	RA	PMP
Probation Mobile Application	Application	\$412,473		
LUEG Asset Management Implementation	Application	\$87,892		
Implementation of Medication Card (Pyxis)	Application	\$153,287		
LiveWellSD.org Migration to AEM Platform	Application	\$236,772		
DHR PeopleSoft eBenefits Module Implementation	Application	\$42,460		
Migrate Internet Traffic	Infrastructure	\$37,868		
BCMS Phase 3 Project	Application	\$2,316,818		
Oracle Identity and Access Management	Infrastructure	\$692,882		
HPOM Application Monitoring Reporting Tools	Infrastructure	\$21,377		
Contracts Publishing	Application	\$366,110		
Total			6	4

Note: Blank fields indicate missing documentation

Sampled IT projects did not always have the minimum HP COSD requirements, including:

- **Risk Assessment (RA)** – Of 10 sampled projects, 6 did not have a documented risk assessment. Without formal risk management

practices, project specific risks may not be identified and mitigated throughout the life cycle of the project.

COBIT PO10.9 Project Risk Management recommends eliminating or minimizing specific risks associated with individual projects through a systematic process of planning, identifying, analyzing, responding to, monitoring and controlling areas of risk or events that have the potential to negatively impact the project. Risks faced by the project management process and the project deliverables such as project budget, timeline and quality should be established and maintained in a centralized repository.

- **Project Management Plan (PMP)** – Four sampled projects did not have a documented PMP. Without an integrated project plan, project requirements may not be delivered within the established budget and timeframe. Additionally, the activities and interdependencies of multiple projects within the County IT environment may not be understood and documented.

According to HP and ITPMO management, the BE serves as the management plan when the PMP requirement is waived. The PMP is generally waived due to cost considerations. Producing a PMP is a billable HP activity and adds to project costs, whereas generating a BE is a non-billable activity. BE projects were not subject to the same COSD project requirements and Minimum Acceptable Services Levels (MASLs) as a PMP project.

COBIT 10.7 Integrated Project Plan recommends establishing a formal, approved integrated project plan (covering business and information systems resources) to guide project execution and control throughout the life of the project. The activities and interdependencies of multiple projects within a program should be understood and documented. The project plan should be maintained throughout the life of the project and changes to it, should be approved in line with the program and project governance framework.

When project requirements are based primarily on cost, the ability to assess the quality of a project may not be prioritized. The benefits of implementing a project management process may not be achieved.

The Board of Supervisors Policy A-111 requires effective management, control, protection and integration of County of San Diego data/information and information systems through the planned application of solutions.

Recommendation: The CTO should update COSD-T491 to include a risk acceptance and approval process that documents exceptions to the minimum project requirements specified in COSD-T491.

Finding II: Post-Implementation Review Procedures Should Be Monitored

A post-implementation review was not performed for any sampled projects. According to HP and ITPMO management, post-implementation review procedures, as defined in appendix A of COSD T-491, were never implemented for any of the selected projects.

In 2014, prior to the initiation of the audit, the CTO started the Measure and Validation Initiative (MVI) to assist County departments in improving the effectiveness of IT Projects in achieving expected business objectives. As part of the initiative, the CTO developed a Business Benefits of IT Projects template. The template documents the expected benefits, baseline, and expected outcomes of an IT project prior to project initiation. Following project completion, and once sufficient time has elapsed, a post-implementation analysis is completed to document actual post-project measurements or results. The initiative, however, was piloted with the intention of departments voluntarily participating.

Without post-implementation reviews, project requirements may not function as defined in the SOW after project closure; the extent to which project objectives were met and planned benefits delivered may not be assessed; and process improvement opportunities may not be identified for use in future projects.

COBIT PO10.14 Project Closure requires that, at the end of each project, the project's stakeholder ascertain whether the project delivered the planned results and benefits. Identify and communicate any outstanding activities required to achieve the planned results of the project and the benefits of the program, and identify and document lessons learned for use on future projects and programs.

Recommendation: The CTO should monitor post implementation review procedures as defined in appendix A of COSD T-491 by requiring that project managers submit a completed post-implementation analysis, or written acknowledgment that management assumes risk of not completing the analysis.

Finding III: Phase Initiation Review Procedures Should Be Established For Infrastructure Projects

There was no evidence that infrastructure projects had completed phase initiation reviews. Of the 10 sampled projects, 3 did not have documented evidence that such reviews were performed, representing all sampled infrastructure projects.

Gate review procedures are in place for application projects, as defined in COSD-295 (Gate Review Procedures). However, infrastructure projects are categorically exempt from gate review procedures since they do not go through typical software development life cycles as application projects.

Although infrastructure projects have an atypical development life cycle, without a framework that provides adequate oversight, infrastructure projects may not be completed within its approved budget and schedule or achieve project objectives. Additionally, some County stakeholders had stated that the lack of adequate oversight over infrastructure projects have caused delays in delivering some application projects.

COBIT PO10.6 Project Phase Initiation recommends that the initiation of each major project phase should be approved and communicated to all stakeholders. Approval of subsequent phases should be based on review and acceptance of the deliverables of the previous phase, and approval of an updated business case at the next major review of the project.

Recommendation: The CTO should document the completion and acceptance of project requirements for each infrastructure project milestone discussed during monthly infrastructure review meetings.

Office of Audits & Advisory Services

C Compliance R Reliability E Effectiveness A Accountability T Transparency E Efficiency

VALUE

DEPARTMENT'S RESPONSE



County of San Diego

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May 24, 2016

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MAY 27 2016

TO: Juan R. Perez
Chief of Audits

OFFICE OF AUDITS &
ADVISORY SERVICES

FROM: Mikel Haas
Chief Information Officer

DEPARTMENT RESPONSE TO AUDIT RECOMMENDATIONS: IT PROJECT MANAGEMENT PRACTICES

Finding I: Project Management Practices Can Be Strengthened

OAAS Recommendation: The CTO should update COSD-T491 to include a risk acceptance and approval process that documents exceptions to the minimum project requirements specified in COSD-T491.

Action Plan: The CTO will ensure that provisions are included in the COSD-T491 requiring County Departments to document their reasons why they are waiving certain project steps identified in the T491. As CTO has no authority over Department managed and funded projects, CTO will recommend that Departments include the waiver information in DocVault.

Planned Completion Date: Language will be added to the T491 no later than June 30, 2016

Finding II: Post-Implementation Review Procedures Should Be Monitored

OAAS Recommendation: The CTO should monitor post implementation review procedures as defined in appendix A of COSD T-491 by requesting that project managers submit a completed post-implementation analysis, or written acknowledgment that management assumes risk of not completing the analysis.

Department Response to Audit Recommendations:

It Project Management Practices

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May 24, 2016

Action Plan: As stated previously, County Departments have authority over, and manage those projects funded from their budgets. CTO can request that Departments fund and participate in a post-implementation analysis but cannot require they be performed. CTO will have the COSD-T491 amended to include a provision for Departments to document that they are waiving the post-implementation review on a specific project.

Planned Completion Date: The COSD-T491 will be updated no later than June 30, 2016.

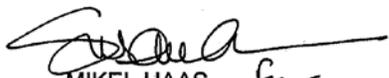
Finding III: Phase Initiation Review Procedures Should Be Established For Infrastructure Projects

OAAS Recommendation: The CTO should document the completion and acceptance of project requirements for each infrastructure project milestone discussed during monthly infrastructure review meetings.

Action Plan: CTO staff actively manage infrastructure projects through weekly project review meetings and other IT management forums. For any specific milestones associated with infrastructure projects, CTO will document in the meeting minutes or the project plan, that those milestones have been achieved.

Planned Completion Date: To be included in minutes starting July 1, 2016.

If you have any questions, please contact me at (619) 531-5570.


MIKEL HAAS
Chief Information Officer

CIO:SG:bm