State of Hawaii

Department of Accounting and General Services (DAGS)

Office of Enterprise Technology Services (ETS)

HawaiiPay Project

IV&V Go Live Implementation Assessment – Group 2

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1. Document History

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1 INTRODUCTION

The State of Hawaii's (SOH) Office of the Enterprise Technology Services (ETS) acquired the services of the Public Consulting Group – Pacific Point (PCG-PP), hereafter referred to as PCG, to provide Independent Verification and Validation (IV&V) services for the HawaiiPay Project with the Department of Accounting and General Services (DAGS). These services include ongoing periodic assessment and monthly reports. IV&V reports are intended to describe key activities, current status, any findings or concerns, as well as an independent perspective of the project's current state of risk.

In software development, Go Live is the time when the system becomes available for use; it is when the tested new or modified code, configurations, data sets and all other required components of the solution moves from a test or staging environment into the production environment and users begin initiating transactions in the new system. The Go Live event is one of the most critical milestones in a technology system implementation. A successful Go Live typically depends on an array of complex factors; and an unsuccessful go-live can be very costly and can create a cascade of business problems and unnecessary delays. The factors that help foster any successful Go Live, and in turn, system implementation, include: a clear business case with executive business sponsorship and leadership, in-depth organizational change management (OCM) and training, thorough system testing, realistic timelines and thorough cutover plans, plans and mechanisms for ensuring correct data, and defined metrics for tracking progress and validating success.

This assessment describes IV&V's review of the HawaiiPay Project's Go Live event for Group 2 with a focus on evaluating expectations, best practices, lessons learned, and opportunities for future Group Go Live events. This assessment concentrates on the specific project activities as outlined in the IV&V Independent Verification and Validation Plan (IVVP). The information provided here is intended to be informative but also succinct. Since the project has been preparing for the implementation of Group 3 while providing production support for Groups 1 and 2, IV&V's approach aimed at being as non-intrusive as possible in order to avoid disruptions to the project. This section describes the purpose and background for this assessment as well as summarizes IV&V's observations resulting from this assessment. The specific supporting details for IV&V observations are elaborated in Section 1. There were no significant findings

Purpose

The purpose of this assessment is to evaluate the execution and results of the Group 2 Go Live event, which includes activities both prior to and after the event, and evaluate how successfully the project objectives were met and how effective project management practices were. In terms of results, the project stakeholders seek to understand: how technically successful the project really was in terms of satisfying all requirements and the project's main goal; how business benefits were delivered and whether they satisfied the actual intent of sponsors and stakeholders; and how to improve the future performance of the projects in the organization. Ideally, to achieve this understanding, an implementation assessment occurs after the system has been in place long enough to

allow for judgments to be made about how it will perform long-term. However, conducting a timely review helps identify potential lessons learned and previously unidentified shortfalls. These, in turn, assist the project in making improvements to process as well as the system being implemented.

Background

The HawaiiPay Project is a statewide initiative intended to modernize the current Payroll system into one integrated statewide solution. The state contracted with a system integrator (CherryRoad) to provide key management and technical services for the duration of the HawaiiPay Project. To provide the required functionality, the state chose PeopleSoft, an established commercially available off the shelf (COTS) solution. An existing instance of PeopleSoft has already been deployed for Department of Human Resources Development (DHRD). The state chose to utilize this existing instance to support all state employees.

The HawaiiPay project went live with its first population of end users defined as Group 1 in April/May 2018, a small pilot of departments, and payroll functionality. The project provided production support to Group 1 users and simultaneously continued development, testing, and implementation activities in preparation for the Group 2 Go Live. Group 2 went live in July/August 2018 with a larger user population. Due to the diversity of Group 2 with 21 departments, new Go Live issues presented themselves that were not present with the Group 1 population. Group 2 is the second of 3 planned Groups that cover the entire Hawaii state employee population. Though Group 3 only has two departments, it will include the largest population of end users at a single Go Live event. The project expects to learn and apply corrective action where needed with each, larger Group implementation. The progressive elaboration and improvement of planning and execution processes and activities is intended to significantly reduce risk at each Go Live event.

The HawaiiPay Guiding Principles include:

1. Minimize unnecessary customization to manage cost and ensure long-term supportability

2. Align and build to modern industry best practices

3. Improve and standardize processes to maximize efficiency and effectiveness and reduce risk

The HawaiiPay Project applies these principles throughout the software development life cycle and project management processes.

Summary

During the review of the plans, activities, and outputs for the Group 2 Go Live event, IV&V did not discover any critical issues and the Group 2 Go Live was executed on time, within budget. Most Go Live events experience minor glitches and this held true for the Group 2 implementation. The HawaiiPay Project team has developed a mature, skilled team and

has implemented tools, processes, and regular project management cadence that enabled the team to quickly and effectively address the issues that presented themselves during the Group 2 Go Live event. The Group 2 Go Live event was successful, increasing the user population from roughly 1,000 end users to nearly 20,000 and broadening the Call Center's scope of support responsibility from two departments to 23.

IV&V noted that, overall, the Go Live Implementation for Group 2 was well planned, executed, mitigated, and remediated, in large part, due to the project's diligence in following approved plans and processes. A few best practices are highlighted below but the Implementation Checklist in Section 3 describes many best practices that the HawaiiPay Project team has incorporated into its approach. HawaiiPay Project best practices during the Implementation Phase include:

- Development of a detailed Production Cutover Plan for Group 2 which described the communications, data and configuration migrations, data conversion, infrastructure setup, security, and business activities and updates associated with the Go Live event. The thoroughness of task identification and the level of detail documented for cutover tasks lowers risk of potential problems or delays.

- Management of stakeholders' expectations through frequent communications via various communication mechanisms. IV&V observed the HawaiiPay Project utilizing the project's website frequently and producing a monthly newsletter to ensure timely delivery of information to stakeholders. IV&V noted that the project's communications are highly informative and high quality. The project builds trust with end users by being transparent and open regarding project status, challenges, and results.

- Updated "To Be" Business Processes for Group 2 to baseline and clarify what functions and processes reside in production as well as updated System Design for Group 2 to baseline and clarify how the system was built and configured. Often agile projects forego documentation in lieu of functioning software. However, this documentation can increase the quality of OCM outreach and improves the effectiveness of operations staff responsible for maintaining the system and supporting end users.

- A defined process and schedule for coordinating multiple Go/No-Go decision points, including two checkpoints over the weekend during cutover to obtain confirmation to move forward. Expectations were well managed and decision-makers were well informed at the time a final Go/No-Go decision was due.

- Establishing and capturing benchmarks for the Call Centers' support services related to overall service such as ratings for customer satisfaction, first call resolution, and overall quality. These metrics are collected from various areas (e.g., telephone calls, HIP emails, Tier 2, Tier 3) and contribute significantly to targeting areas of additional Call Center staff training, identifying areas of process improvements, and discovering components of end user training or system functionality that need to be remediated.

However, IV&V did note a number of opportunities for the project to improve its efficiencies and reduce risk. These observations were related to the lack of best practice as indicated in the Implementation Checklist in Section 3. IV&V is aware that not all generally accepted best practices are required for a successful project, however the implementation and continual use of these practices can help boost confidence in the project's ability to meet its goals, timelines and budget. IV&V also noted that a number of key processes are highly dependent on specific individuals which may add unnecessary risk if staffing changes became necessary in key project areas. The key observations and recommendations related to process improvements for Group 3 implementation are outlined below. IV&V noted that:

- The project does not formally conduct Lessons Learned sessions including a broad selection of stakeholders to identify best practices and improvement opportunities. Since the project utilizes an agile approach, IV&V noted that process improvements gleaned from lessons learned communicated in various project forums and meetings are informally documented as they are identified and, when possible, have been immediately and successfully incorporated into the project's processes**. IV&V recommends collecting Lessons Learned activities with all levels of stakeholders** to obtain comprehensive insight to enhance potential improvements and documenting them by category with their associated outcomes.

- The project assesses implementation readiness based on schedule progress, the status of direct deposit enrollments, and the results of parallel testing. The project also utilizes readiness checklists for each department and has periodic go/no-go check-in meetings to evaluate the Group's overall state of readiness. However, **IV&V recommends documenting and aggregating the detailed implementation readiness criteria**, with acceptable performance thresholds, to monitor progress towards meeting the criteria and, ultimately, determining if/when each Group is ready for deployment.

- During and after cutover, anomalies presented themselves that the HawaiiPay Project had not seen during testing or in the Group 1 implementation. **IV&V recommends the project incorporate additional business scenario and negative testing scripts into the pre-Go Live validation processes**. To identify unanticipated business scenarios, **IV&V also recommends that Group 3 departments designate front-line staff to work with the HawaiiPay to identify as many unique scenarios as possible** in order to obtain or confirm full understanding of departments' unique business processes.

- The project has partially defined the detailed operational procedures for Group 1 and 2 and documented them in production run book; and the project is refining how or when production issues should be triaged or reprioritized distinctly from Group deployment (post implementation) or development issues. IV&V observed slight confusion regarding the priorities and the discrete differences between project support activities and production operations since the tools and resources are shared for both work streams. **IV&V recommends updating roles, responsibilities, tools, and processes to ensure clearly delineated work**

streams, including tracking activities (schedule) and metrics separately. Doing so will provide the project a clear and early indication of any gaps that may need to be addressed in the DAGS Accounting Manual. In the absence of an updated Accounting Manual, the boundaries for allowable functions for department administrators (outside DAGS) are not clearly defined which has already resulted in unpredictable behavior from payroll administrators and impacted the system's data. IV&V also noted that several manual updates are policy-related and may be unsettling to departments' current business processes. To ensure compliance with new policies, **IV&V also recommends obtaining inter-office agreements from departments** to establish a common understanding regarding the scope of the system access and capabilities.

- Task durations for cutover activities are not included in the Cutover Schedule (Plan); manual data clean-up tasks are assigned to a few key resources which could become a bottleneck for cutover activities during the Group 3 cutover. **IV&V recommends, at a minimum, designating a small, medium, or high level-of-effort indication for each cutover activity to help identify higher risk activities and evaluate them for possible mitigation**. In addition, as the Go Live event approaches, updates are made to the Cutover Schedule as they are identified by team members or during meetings without formal change management; the informal impact analysis, validation, or communication related to these schedule changes poses risk to the Go Live event. **IV&V also recommends that changes to the Cutover Schedule be treated like change requests** (i.e., be tracked and include dispositions) to ensure proper analysis and communication to all project team members and stakeholders, not just the resources executing the tasks.

- Though the CRT contract and the project's Operations and Maintenance Plan clearly describes the roles and responsibilities that will be performed during production operations, there is no documented Turnover (or Transition) Plan for managing the transition of project resources to the state and CRT managed services. In the absence of a transition plan, stakeholders may be caught unaware of activities, roles, and responsibilities they were expected to perform. **IV&V recommends the state work with CRT to develop a detailed Turnover Plan** that will help assure that the state as well as the CRT Managed Services team are ready to take over the system after each Group rollout and once the project is complete.

- IV&V also observed the CRT Managed Services team requiring assistance from the project team. This may have been prevented with structured, planned knowledge transfer from the project team to the CRT Managed Services. **IV&V recommends that the project plan for and work towards completing targeted knowledge transfer sessions and relevant documentation**, which will aid Managed Services in better understanding the current architecture, extensions and configurations.

- There is informal tracking of business or technical work arounds that have surfaced during cutover as they are tracked in a separate spreadsheet outside the project's

tools and processes. **IV&V recommends consolidating work arounds in the appropriate project tools** to heighten information sharing, broaden the analysis, facilitate prioritization and planning activities, and coordinate communications to end users regarding resolution dates.

2   APPROACH

Analysis Approach

The PCG IV&V team utilizes the *Eclipse IV&V®* Technical Assessment Methodology, depicted in Figure 1, to establish and deliver IV&V findings throughout all IV&V work products. Executing the tasks using this common methodology helps ensure that all pertinent facts are gathered, the relevant stakeholders are consulted, there is a clear understanding about any findings resultant from the assessment, and that the assessment report is objective, accurate and does not result in surprises to stakeholders.
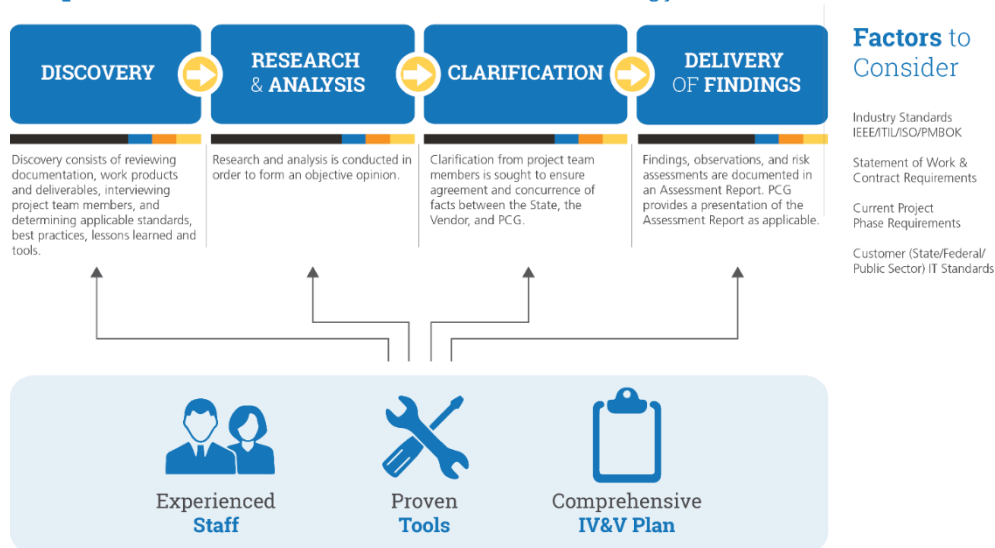

Figure 1: Eclipse IV&V® Technical Assessment Methodology

The *Eclipse IV&V®* Technical Assessment Methodology includes four primary actions:

- **Discovery —** the IV&V team reviews project documentation, work products, deliverables, along with any plans or schedules that apply. The IV&V team interviews key project team members to gain a thorough understanding of the assessment area, identifying applicable standards, best practices, and lessons learned to be used as evaluation criteria.

- **Research and Analysis —** the IV&V team conducts research and analysis of specific aspects of the component or process being assessed in order to form an evaluation of the validity of the approach. Once the initial analysis is completed, the assessment preliminary results are documented for clarification.

- **Clarification —** the IV&V team seeks clarification, as needed, from key project team members on aspects of the organization and communication processes to ensure agreement and concurrence on the results of the discovery, research, and analysis.

- **Delivery of Findings —** the IV&V team's assessment and status reports document the results of discovery, research, analysis, and clarification, presenting detailed findings and documentation of project strengths. These reports contain measurement dashboards, observations/findings, risk assessments, and risk mitigation strategies. Before the delivery of findings, they are reviewed internally by IV&V team members, so that any gaps or inconsistencies can be identified and corrected.

For this report, IV&V conducted informal interviews with various members of the HawaiiPay project team and stakeholders and reviewed various Group 2 implementation-related deliverables.

Industry Standards and Best Practices

PCG applies and abides by best practices in the information technology industry, including, but not limited to, standards and methodologies issued by:

- Institute of Electrical and Electronics Engineers (IEEE)
- The Project Management Institute's (PMI), Project Management Book of Knowledge (PMBOK®)
- Information Technology Infrastructure Library (ITIL)
- International Organization for Standardization (ISO) 9000
- National Institute of Standards and Technology (NIST)
- Center for Internet Security (CIS)

Terms and Definitions

This section contains a list of terms (i.e., abbreviations, acronyms, and notations) used in this assessment and their definitions to provide a common understanding.

Table 1: Common Terms

Term	Definition
CIS	Center for Internet Security
COTS	Customer off-the-shelf
DAGS	Department of Accounting and General Services
DHRD	Department of Human Resource Development
ETS	Office of Enterprise Technology Services
HRM	Human Resource Management

Term	Definition
HIP	Hawaii Information Portal
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
ITIL	Information Technology Infrastructure Library
IV&V	Independent Verification and Validation
IVVP	Independent Verification and Validation Plan
KPI	Key Performance Indicator
HawaiiPay	HawaiiPay Project
M&O	Maintenance and Operations
NIST	National Institute of Standards and Technology
OCM	Organizational Change Management
PCG	Public Consulting Group
PMBOK®	Project Management Body of Knowledge
PMI	Project Management Institute
PM	Project Management
PP	Pacific Point
SLA	Service Level Agreement
SME	Subject Matter Expert
SOH	State of Hawaii
TPA	Third party administrator

3   ANALYSIS

This section includes an Implementation Phase Checklist, derived from several industry standards or best practices, as well as supporting details and analysis associated with IV&V observations for each Go Live activity. There are no new IV&V findings resulting from this assessment as the project adequately demonstrated appropriate project management capabilities to successfully implement the system for Group 2 departments.

The Implementation Phase Checklist below served as a guide for evaluating the execution of project activities related to the Go Live event for Group 2. Each checklist list item includes a sampling

Implementation Phase Checklist

Table 2: Implementation Phase Checklist

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
1	The Project Management approach is fit for purpose and meets the needs of the project.	• Were stakeholders with key roles and project expectations identified? • Was project status and project information communicated to stakeholders • Was a detailed definition of scope maintained? • Were processes to manage changes using formal change control procedures maintained? • Were risks and issues which could negatively impact progress or success actively mitigated? • Were processes to manage work activities and project resources in a timely, effective manner developed?	Yes	The project appropriately established: • A suite of applicable Project Management Plans, notably the Production Cutover Plan, which provide direction, define scope, and establish the expectations surrounding project execution. • Management of stakeholders through frequent communications via various communication mechanisms (e.g., website, letters, emails) • Maintenance of requirements in a central repository (Implementation Tracker) which includes a naming convention that gives each item easily searchable meta data • Execution of change control processes and standards including a change control board, configuration management, prioritization, impact analysis, reviews and approvals for change requests • Mitigation of risks and issues to reduce negative impacts to the project and/or its stakeholders by meeting weekly to discuss the status of risks and

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
		• Were various techniques for monitoring project progress established? • Was the importance of validating and measuring project objectives and success recognized?		issues, as well as tracking opportunities and decisions • Execution of project activities and coordination of project resources in a timely manner using a daily scrum meeting to support the demands of each release, coordinate tasks across the various schedules, and heighten the rate of information exchange among team members • Monitoring of project progress through regular team status meetings and the identification and implementation of appropriate progress metrics (e.g., direct deposit enrollment statistics, service center support calls, IT pass rates for interfaces, etc.) • Validation of project objectives and success through validation and error reports for each payroll cycle
2	A Quality Management Program has been established to ensure quality control, assurance, and improvement throughout the project's life cycle.	• Is there an assigned Quality Manager to the project? • Is there a QM Plan and does it follow the prescribed methods of the PMBOK? • Did the project conduct quality planning and document quality practices? • Is the project activity monitoring and measuring project activities? What metrics are used? • Is the project actively evaluating project performance on a regular basis in order to provide	Partial	The project appropriately established: • A Quality Management Plan (as part of the Project Management Plan) • A dedicated Project Manager, who also serves as the Quality Manager, to ensure quality management processes are executed by conducting control activities and assurance reviews, and to certify that quality management standards are being adhered to • Measurement of project activity through identification and implementation of appropriate progress metrics (e.g., percent of completed requirements and user stories, test scripts

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices

		confidence that a given project will satisfy the relevant quality standards?
		
		• Is the project actively identifying better ways to increase the projects productivity, efficiency and effectiveness?
		• What type of quality reporting is being conducted by the project and how is this information being communicated and acted upon?
		• Can you provide examples of changes made to improve processes?
		• Have lessons learned been documented?
		• Is the project / Quality Manager incorporating corrective action?
				completed, defect status, training attendance, etc.)
				• Development and capture of service benchmarks for customer satisfaction, first call resolution, frequently asked help desk questions, and quality assurance
				• Incorporation of corrective action into project and operational processes to improve effectiveness and efficiency throughout development, testing and acceptance of the project deliverables
				• Inspection of work results to ensure alignment with the project scope and compliance with standards or expectations
				• Identification of best practices and improvements to be incorporated into the maintenance and operations phase
				• Mature Quality Management by preventing problems from occurring in the first place as a result of good communication, documentation, and issue resolution. Best practices utilized by the project include:
				   - Deliverable reviews
				   - Surveys, interviews, brainstorming
				   - Checklists
				   - Regular reporting
				   - Preventive and corrective action
				• The project team is efficient at identifying and quickly implementing corrective action as problems, nuances, or risks are identified

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
				However: • During and after cutover, issues presented themselves that the HawaiiPay Project had not seen during testing or in Group 1 implementation which indicates there was insufficient scenario and negative testing • The project does not formally conduct Lessons Learned activities across a broad selection of stakeholders to identify best practices and improvement opportunities

3	An Implementation Plan has been developed to facilitate the development of processes and execution of activities required to implement the new system or service in production.	• Has an overall Implementation approach agreed upon and elaborated with detailed planning?
		 • Has Implementation Readiness Criteria been defined?
		 • Is there a plan to validate the infrastructure and security in place (and tested)?
		 • Were all requirements tested and validated?
		 • Do end users know how to get support with the new system?
		 • Is there a roll-back plan?
		 • Is there an implementation communication plan?
		 • Is it defined how team members will/should capture Lessons Learned?
		 • Were the implementation criteria met?
			Partial	The project appropriately established:
				 • An Implementation Strategy which includes an approach for executing a phased implementation with three well-defined deployment groups
				 • Checklists and schedules which define the implementation tasks leading up to Go Live and are proactively managed and shared to ensure the following are project execution results are satisfactory and pose little or no risk to the Go Live event:
				   - Testing results (e.g., Parallel, Performance, and User Acceptance testing)
				   - Help Desk procedures
				   - Integration validation (for interfaces)
				   - User Readiness (e.g., training, direct deposit enrollment)
				   - Knowledge Transfer
				 • A Migration Log for managing the progression of system code and configurations between environments as additional functionality and bug

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
				fixes are developed, testing, and implemented in production
				• A Daily Scrum meeting to ensure readiness activities were coordinated and managed within available time
				• The project team validated the system through extensive testing and requirements validation activities
				• The project satisfied the implementation requirements and planned activities within the project's timeline
				• A Communication Kit for each Group deployment to support the specific implementation requirement for each Group
				However:
				• The project has loosely defined implementation readiness criteria to determine if/when each Group is ready for deployment. Instead of defining readiness criteria thresholds, readiness is assessed based on schedule progress, the status of direct deposit enrollments, and the results of parallel testing
				• The project has not updated the detailed operational procedures for Group 1 and 2 users in production; the DAGS Payroll Manual has not yet been updated
				• The project has not documented its rollback plan; but there is a procedure that can be run to perform a rollback in the system.
4	A Cutover Plan has been	• Was the project properly organized and staffed for go live?	Partial	The project appropriately established:

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
	developed to help guide the resources, processes, and activities needed to go live with the new system or service.	• Were project procedures clearly defined and followed consistently by all team members during go live? • Did stakeholders understand their role, responsibility, and authority during go live? • Were there any special go-live reporting or escalation procedures? • Were external dependencies identified for go live? • Did project staff receive adequate training as needed to support go live? • Did the project schedule encompass all of the needed tasks for the cutover? • Were project tasks clearly defined so that team members understood which tasks they were responsible for and when they were due during the cutover to go live?		• A detailed Production Cutover Plan for Group 2 which outlined communications, data and configuration migrations, data conversion, infrastructure setup, security, and business activities and updates • A Cutover Schedule, maintained separately in a stand-alone file, details the tasks for executing the Go Live event including predecessor activities • Roles and responsibilities for both state and vendor staff during the cutover period and post implementation phase • A common understanding of responsibilities related to triaging defects, system changes, organizational change, and data management • Confidence that the cutover planning took all stakeholders into consideration for Group 2 final deployment • Internal systems and cutover task owners to be ready to cutover to the new system using a detail plan of sequenced steps that are required to implement the system in production • Specific cutover support and escalation processes which were communicated to project team members • Training and knowledge transfer mechanisms to enable project team members to support the system and end users during cutover • A process for command and control of cutover activities and related problems by establishing a daily go live stand-up meeting, capturing help desk metrics, and expediting or escalating decisions

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
				• A defined process and schedule for coordinating with the Executive Steering Committee to make the decision at multiple Go/No-Go decision points, including two checkpoints over the weekend during cutover to obtain confirmation to move forward However: • Though daily communication takes place to ensure owners know their tasks, to re-assign as necessary, and to facilitate task completion in a timely manner, task durations for cutover activities are not included in the Cutover Schedule (Plan); manual cutover data clean-up tasks are assigned to a few key resources which could become a bottleneck for cutover activities during the Group 3 cutover • As the Go Live event approaches updates are made to the Cutover Schedule as they are identified by team members or during meetings without formal change management; the informal impact analysis, validation, or communication related to these schedule changes poses risk to the Go Live event
5	A Turnover Plan has been developed to identify and communicate the project's assets, processes, and	• Are project close-out requirements defined? • Has project documentation been updated (e.g., business process flows, training materials, etc.)? • Have business process workarounds been identified? Are	No	The project appropriately established: • A final, updated version of "To Be" Business Processes for Group 2 to baseline and clarify what functions and processes reside in production • A final, updated version of System Design for Group 2 to baseline and clarify how the system was built and configured

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
	activities to be finalized to close-out the project or transitioned for ongoing operations and maintenance of the system or service.	dates for resolution known for each? • Has a final report been produced which analyzes the results of the project against the project's objectives? • Has appropriate knowledge transfer occurred? • Have risk and issue registers been updated? • Is there a plan for returning resources and equipment to the organization as needed?		• A Knowledge Transfer Plan to provide structure, define the scope, and establish expectations related to the handoff of system support information from the vendor the state • A detailed Transition Plan to facilitate the turnover of hardware, software, and technical responsibilities from the project to the organization However: • There is no documented Turnover (or Transition) Plan for transitioning project resource roles and responsibilities to the organization • There is informal tracking of business or technical work arounds that have surfaced during cutover as they are tracked in a separate spreadsheet outside the project's tools and processes
6	A Business Continuity Plan has been developed to help ensure that business processes can continue during a time of emergency or disaster.	• Identify the steps to ensure technical recovery of both the application and the database, including all data • Include expectations regarding service level agreements (SLAs) before, during, and after a disaster occurs • Determine alternative processes for stakeholders in the even the system is down • Describe and prepare the communications that would be required in the event of a disaster	Yes	The project appropriately established: • A Business Continuity Plan which focuses on disaster recovery – the continuation of business in Hawaii in the event that the disaster occurs in primary CRT hosting center – and includes SLAs. CRT has successfully implemented a Disaster Recovery Data Center, and has performed multiple Disaster Recovery tests. There have been no severe or critical issues reported since CRT took over operations in May 2017.

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
		• Was the disaster recovery plan tested?		
7	A Post Implementation / Production Support Plan has been agreed upon and communicated.	• Has a Production Support (or Maintenance and Operations) Plan been developed? • Have staffing requirements and procedures for a Help Desk support center defined? • Have Help Desk staff received training • Have production Release and Configuration Management Plans been developed and approved? • Have production reports been designed, developed, and tested? • Has a process been defined for updating and maintain the Business Process diagrams or flows? • Has a defect triage and escalation processes been developed, documented, and communicated to appropriate support staff? • Is there a mechanism for tracking business work arounds and when they will be resolved? • Has production release schedule been planned and confirmed?	Partial	The project appropriately established: • An Operations and Maintenance Plan which establishes roles and responsibilities for supporting the production environment and users, the processes and support tiers for the Help Desk (or Call Center), policies and procedures for system operations, and communication protocols • Approved documentation for Release Development and Group 2 Security Configuration • A defect and problem resolution triage process including tiers, or levels, of support which define the routing of defects or problems to appropriate operations or technical staff • A post implementation development approach for incorporating both defects fixes and system enhancements in the production environment • A team of Help Desk support staff were on-boarded and trained on procedures for triaging support calls from end users • Benchmarks for the Call Center in various categories: telephone calls, HIP emails, Tier 2, Tier 3, and overall service (e.g., customer satisfaction, first call resolution, and quality assurance) • Production metrics and auditing reports to monitor the progress and quality of the production activity • A production release schedule which is aligned with the plan for Group deployment as well as

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
				production operations for both on and off cycle payroll processing
				However:
				• The project has not fully defined how or when production issues should be triaged or reprioritized distinctly from Group deployment (post implementation) or development issues
				• The boundaries for allowable functions for department administrators outside DAGS was not clearly defined which resulted in unpredictable behavior from payroll administrators (i.e., DHRD) and impacted the system's data

8	An Organizational Change Management (OCM) Plan has been developed to ensure stakeholders are prepared to adopt to the new system effectively and efficiently.	• The OCM Plan incorporates a holistic approach and includes a:
		  - readiness assessment
		  - elements to prepare for change
		  - elements to manage change
		  - elements to reinforce change
		• Stakeholders of the project are informed in ways that enable appropriate participation and completion of responsibilities to facilitate adoption of the new system
		• Parties that need to be involved with new system operations are familiar with any responsibilities they have for the new system and have sufficient knowledge and
			Partial	The project appropriately established:
				• An OCM Plan which describes the strategy, approach, scope, and activities for change management, stakeholder engagement, knowledge transfer, and training.
				• An approach for a Change Leadership Network and a Department Readiness Program (Network) to facilitate
				• A Department Change Impact Analysis for Group 2 in order to assess any gaps and impact to readiness
				• A Communication Plan which provides a framework for executing and managing project communications as well OCM communications, including maintaining a communication log
				• The "To Be" Business Processes for Group 2 to ensure proper training of end users
				• An effective structure for planning change management activities, diagnosing gaps and

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
		ability to execute those responsibilities correctly • Effective and appropriate training for stakeholders using various training mechanisms and formats to accommodate all types of learners • A communication strategy and plan for engaging stakeholders, keeping them informed, and managing their expectations		identifying correction actions, and supporting stakeholders • The integration of project change management and OCM to ensure the achievement of business results • Mechanisms to further system adoption and to demonstrate success such as including external users in test activities and grooming Super Users at each department • Communication channels with third party entities to ensure adequate coordination and transition to the new system • Methods and channels for controlling the dissemination of project information through marketing, various communications, training, and governance • Effective and comprehensive delivery of training to end users • Ongoing communications and training update to end users via the project's webpage and newsletter which includes answers to frequently asked questions, instructions for work around business functions, information regarding how to obtain help, and project metrics and status • A campaign for increasing project sponsorship across all the Group 2 department by sharing enrollment progress of all departments to all departments However: • The project lacks methods of ensuring communications from external parties are

ID	Checklist Item	Standard Measurement	Met? Yes/No/Partial	Best Practices
				appropriate and achieve required results across the scope of stakeholder though the project does provide communication guidance and requirements to help ensure communications are correct as possible.

4   FINDINGS & RECOMMENDATIONS

IV&V has affirmed as part of this assessment that the following open IV&V findings and recommendations, which are related to executing a Go Live event, continue to pose risk to the project. While the project has made progress in mitigating many of these risks and issues, IV&V continues to monitor to assure further risks are not realized. IV&V rating definitions for findings can be found in Appendix A.

Table 3: Relevant IV&V Findings as of August 31, 2018

Category	# - Title [Type]	Finding Description	Recommendation	Priority
Cost and Schedule Management	**4 - Concurrent execution and production support activities for Group Implementations [Risk]**	Executing implementation and support tasks for multiple deployment Groups running in parallel may result in less efficient use of project resources and cause an overall delay if new tasks are introduced later in the project.	• Update the schedules Group 3 with tasks and lessons identified from the Groups 1 and 2 implementations • Finalize new baseline schedule for Group 3 which confirms that all the tasks and deliverables are achievable in prescribed timeframes • Identify which tasks are production vs. project and determine the resources and processes needed to address each • Begin developing the procedures that are needed to support production operations and finalize the Maintenance & Operations Plan	Low
Operational Preparedness	**7 - High volume of manual processes at cutover [Risk]**	The number of manual processes that need to be executed during the cutover window and post implementation for future Group deployments may grow to a level of effort that cannot be accomplished during the designated timeframes thereby causing a delay in the implementation schedule.	• Continue to automate as many of the manual cutover processes as possible to help reduce the workload during cutover	Low

Category	# - Title [Type]	Finding Description	Recommendation	Priority
Cost and Schedule Management	**22 -Lack of departmental readiness could impact project budget/schedule [Risk]**	Departments transitioning to the Hawaii Information Portal (HIP) as part of the HawaiiPay project are expected to perform readiness activities and meet specified milestone deadlines. If any department does not transition to HIP by their designated rollout date, the HawaiiPay project schedule and budget could be negatively impacted.	• Ensure readiness deadlines/milestones are clearly communicated to department leaders. • Provide clear expectations regarding readiness activity deadlines and important milestones to each department. • Document missed readiness deadlines, communicate the possible consequences of missed deadlines clearly to department leaders in a timely manner to help ensure leadership is not surprised and has ample opportunity to respond and manage the risks. • Consider implementing a strategy of over-communication for departments that may have communication challenges. • Coordinate regular readiness discussions between HawaiiPay and departments that may have readiness challenges. • Regularly provide clear and timely communication to appropriate governing bodies (e.g. legislature, unions, etc.), as appropriate, to ensure they are not caught off guard by a department that is at risk of not meeting readiness requirements / deadlines. • Request the SI offer departments that are struggling to provide prerequisite files for UAT/Parallel testing a technical resource to offer in-person guidance and assistance to their technical staff.	High

Category	# - Title [Type]	Finding Description	Recommendation	Priority
Knowledge Transfer	**23 - Lack of detailed turnover plan [Issue]**	The lack of a detailed turnover plan may lead to insufficient planning and execution of important turnover activities which could lead to stakeholder confusion and cause a delay in project closure or transitioning of system support responsibilities to appropriate state staff.	• Request the SI utilize detailed checklists for turnover to ensure an effective turnover to the state and that nothing is overlooked. • State to immediately draft and take ownership of a turnover plan and request the SI review and offer guidance. • Assign turnover tasks to individuals and require task signoff by task owners once they validate tasks have been effectively completed. • Utilize readiness checkpoints and key performance indicators (KPI's) to monitor readiness effectiveness and report to project leadership. KPI's can be utilized to assure a timely and effective system turnover as well as provide project leadership an opportunity to shore up efforts when turnover efforts are not achieving expected results. • Request that SI update relevant documents to ensure effective turnover to the state for M&O.	Low

Category	# - Title [Type]	Finding Description	Recommendation	Priority
Quality Management	**25 - Insufficient data validation, checks and balances [Issue]**	Data validation processes and procedures to ensure data accuracy are insufficient and have resulted in data errors during payroll processing.	• Revisit existing data validation processes and procedures (automated and otherwise) to identify which should be implemented/enhanced and prioritized based on criticality and impact to payroll processing and stakeholder confidence. Once identified, an implementation plan can be created and implemented based on available resources to mitigate this risk. • Automated data validation support can not only increase data accuracy but also reduce the level of effort of manual processes for already constrained project resources. • Explore the feasibility of having the agencies and TPA's to validate the final payroll run data before payroll is run.	Medium

APPENDIX A: IV&V FINDINGS AND RATINGS DEFINED

IV&V attends meetings, reviews documentation, conducts interviews, and performs independent analysis in order to verify and validate project activities and progress. PCG defines a "finding" as a statement of observation that relates to the project. A finding may be classified as positive, preliminary concern, risk or issue.

- A positive finding presents a statement based on a fact that supports the project. Typically, these are raised to acknowledge adherence to standards and project guidelines that are identified as part of an assessment or evaluation. For example, a project performs additional testing (outside of testing requirements) to the benefit of the project.

- A preliminary concern is an item believed may pose risk to the project, but more analysis and a better understanding of the subject area is necessary before classifying the item as a formal risk or issue. Preliminary concerns are documented in statements which articulate the concern and indicate further analysis and/or understanding of the matter is required.

- A risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives. PCG identifies risks with negative effects and expands the definition to include both conditions which may occur and those which may not occur (e.g. lack of a well-defined requirements traceability process could lead to delivery of an incomplete system, requiring costly and time-consuming rework).

- An issue is an event, often previously identified as a risk, which has occurred and caused negative impact to the project. Issues are documented as findings which identify the event, its impact to the project, and status towards resolution.

A key to risk management is understanding all the potential risks to the project and ensuring that these risks and risk mitigation strategies are communicated to key project stakeholders on an ongoing basis. Risk analysis should begin early during project planning by determining or identifying the factors that may affect the project. Risk can impact a project in many different ways: project quality, manageability, cost, and schedule. Proper risk identification seeks to determine how the risk may affect the project and to document the project area(s) impacted by the identified risk.

Once risks are identified and characterized, both qualitative and quantitative factors are examined. Our analysis examines project conditions to determine the probability of the risk being realized and the impact to the project, if the risk is realized.

The overall risk exposure rating, or priority, is derived using the Risk Rating Matrix shown in Table 4 by finding the intersection of the probability of occurrence and the magnitude of impact on the HawaiiPay Project. The exposure rating determines the priority of each risk based on an assessment of probability of occurrence and magnitude of impact. Note that Eclipse IV&V™ incorporates "Time Horizon" (short, medium, long) into the probability score such that the more time that exists to address the risk, the lower the probability of occurrence will be.

Table 4: Risk Rating Matrix

Probability of Occurrence	Magnitude of Impact				
	1 Negligible	2 Minor	3 Moderate	4 Significant	5 Critical
5 Probable (80% – 99%)				High Risk	
4 Likely (60% – 79%)					
3 Possible (40% – 59%)		Medium Risk			
2 Unlikely (20% – 39%)	Low Risk				
1 Improbable (1% – 19%)					

The following Table 5 defines the Risk Priorities that PCG uses when identifying risks.

Table 5: Risk Rating Definitions

Risk Priority	Definition
High	Possibility of substantial impact to product quality, manageability, cost, or schedule. A major disruption is likely and the consequences would be unacceptable. A different approach is required. Mitigation strategies should be evaluated and acted upon immediately.
Medium	Possibility of moderate impact to product quality, manageability, cost, or schedule. Some disruption is likely and a different approach may be required. Mitigation strategies should be implemented as soon as feasible.
Low	Possibility of slight impact to product quality, manageability, cost, or schedule. Minimal disruption is likely and some oversight is needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.

Issue Priority is determined by its impact on the Project. PCG uses the priority levels shown in Table 6 for issues:

Table 6: Issue Rating Definitions

Issue Priority	Definition
High	The issue presents substantial impact to product quality, manageability, cost, or schedule. A catastrophic disruption is likely and the consequences would be unacceptable. A different approach is required. Mitigation strategies should be evaluated and acted upon immediately.
Medium	The issue presents moderate impact to product quality, manageability, cost, or schedule. Some disruption is likely and a different approach may be required. Mitigation strategies should be implemented as soon as feasible.
Low	The issue presents slight impact to product quality, manageability, cost, or schedule. Minimal disruption is likely and some oversight is needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.

APPENDIX B: ASSESSMENT CATEGORY DEFINED

Table 7 below lists and defines the HawaiiPay Project's assessment categories that are used throughout the project to group IV&V findings. It should be noted that, at times, findings may span more than one category.

Table 7: Assessment Category Definitions

Category	Category Description
Communications Management	Communications management is the systematic planning, implementing, monitoring, and revision of all the channels of communication within an organization, and between organizations; it also includes the organization and dissemination of new communication directives connected with an organization, network, or communications technology. Tasks defined in the communications management plan aim to gather the project information, distribute it to the stakeholders in a timely manner, and, finally, store it. This category focused on internal project communications.
Contract Management	Contract management is the oversight and management of contracts made with customers, vendors, partners, or employees. Tasks defined in contract management are aimed at ensuring compliance with the terms and conditions, as well as documenting and agreeing on any changes or amendments that may arise during its implementation or execution.
Cost and Schedule Management	Delivering a project within the time frame promised (schedule) and within the allocated budget (cost) are fundamental objectives for all projects. Schedules and budgets are interlocked, and most likely an increase in one causes an increase in the other. Tasked defined in cost management are aimed at estimating costs for changes, monitoring contract performance, and processing approvals and invoicing for contract deliverables. Tasked defined in scheduled management are aimed at estimating and sequencing work effort, establishing a schedule baseline, managing project resources' assignments and the completion of work effort, and monitoring schedule performance.
Human Resources Management	Human resource management (HRM, or simply HR) is a function in projects designed to maximize team member performance in service of the project's strategic objectives. Tasks defined in HRM are aimed at recruiting, training, developing, and monitoring project team members as well as managing their productivity, transition within the organization, knowledge transfer activities, and appropriate utilization.

Category	Category Description
Knowledge Transfer	Knowledge transfer is the practical task of transferring knowledge from one part of the organization to another. Tasks associated with knowledge transfer aim to organize, create, capture or distribute knowledge and ensure its availability for future users. Knowledge transfer includes formal and informal training, project document, and online tools which convey information need to support the implementation or operations of the new system.
Operational Preparedness	Operations management is an area of management concerned with designing and controlling the process of production and redesigning business operations in the production of goods or services. It involves the responsibility of ensuring that business operations are efficient in terms of using as few resources as needed and effective in terms of meeting customer requirements. Tasks defined for operational preparedness are aimed at establishing and confirming the readiness of the technologies, organization, and end users to stand up a new system and transition to the new operations.
Organizational Change Management	Change management is a collective term for all approaches to prepare and support individuals, teams, and organizations in making organizational change. It includes methods that redirect or redefine the use of resources, business process, budget allocations, or other modes of operation that significantly change a company or organization. Organizational change management (OCM) considers the full organization and what needs to change. Tasks defined for OCM are aimed at guiding internal and external end users to adopt the new system as seamlessly as possible. This category focuses mostly on external project team communications.
Project Organization and Management	Project management is the discipline of initiating, planning, executing, controlling, and closing the work of a project team to achieve specific goals and meet specific success criteria. The project organization is the hierarchical and/or matrixed structure created to the execute the project work. Since each project is unique, project organizations and management approaches are often customized to align with current organizational procedures, capabilities, or objectives.

Category	Category Description
Quality Management	Quality management ensures that an organization, product or service is consistent, meets project requirements and objectives, and is fit for purpose. Quality management tasks aim to plan for quality assurances and controls throughout the life of the project for not only the product or service but also the processes used to achieve it. Quality controls, or metrics, provide insight into the project's progress and highlight areas of concern that can be improved or mitigated.
Requirements Management	Requirements management is the process of documenting, analyzing, tracing, prioritizing and agreeing on requirements and then controlling change and communicating to relevant stakeholders. It is a continuous process throughout a project. Requirements management tasks are aimed at tracking and validating requirements through the project's life cycle to ensure the right system is being built.
Risk Management	Risk management is the identification, evaluation, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of unfortunate events or to maximize the realization of opportunities. Risk management tasks include identification, rating, tracking, and monitoring of both project risks and issues. Tasks also included detailed impact analysis of project risks and issues so that strategies are developed and executed to manage threats to the project.
Systems Architecture and Design	Systems Architecture links business processes to their solutions and defines how the infrastructure, applications, interfaces, batch / online processing, data flows between systems, diverse configurations, operational governance and service delivery will be integrated and managed. The architecture is used to proactively guide development and project efforts and includes: middleware, system environments, data centers, security, and network design. System architecture and design tasks include those efforts associated with building, documenting, and deploying a software solution that meets the needs of the organization and complies with organization's technology standards and policies.

Individual risks and issues are rated based upon qualitative and quantitative measures defined in the IV&V plan and shown in

Appendix A: IV&V Findings and Ratings Defined.