



Report to the Subcommittee on
Oversight and Management Efficiency,
Committee on Homeland Security,
House of Representatives

February 2016

HOMELAND SECURITY

Oversight of Neglected Human Resources Information Technology Investment Is Needed

GAO Highlights

Highlights of [GAO-16-253](#), a report to the Subcommittee on Oversight and Management Efficiency, Committee on Homeland Security, House of Representatives

Why GAO Did This Study

DHS's human resources administrative environment includes fragmented systems, duplicative and paper-based processes, and little uniformity of data management practices, which according to DHS, are compromising the department's ability to effectively carry out its mission. DHS initiated HRIT in 2003 to consolidate, integrate, and modernize DHS's human resources information technology infrastructure. In 2011, DHS redefined HRIT's scope and implementation time frames.

GAO was asked to review DHS's efforts to implement the HRIT investment. GAO's objectives included, among others, evaluating the progress DHS has made in implementing the HRIT investment. GAO compared HRIT's goals and scope to the investment's actual accomplishments, and compared DHS's planned schedule for implementing strategic improvement opportunities (key areas identified by DHS as needing improvement) against its current schedule.

What GAO Recommends

GAO is making 14 recommendations to DHS to, among other things, address HRIT's poor progress and ineffective management. For example, GAO recommends that the HRIT executive steering committee is consistently involved in overseeing and advising the investment. In addition, GAO recommends DHS evaluate the HRIT investment to determine whether its goals are still valid and reflect the department's priorities. DHS concurred with all 14 recommendations and provided estimated completion dates for implementing each of them.

View [GAO-16-253](#). For more information, contact Carol R. Cha at (202) 512-4456 or ChaC@gao.gov, or Rebecca S. Gambler at (202) 512-6912 or GamblerR@gao.gov.

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What GAO Found

The Department of Homeland Security (DHS) has made very little progress in implementing its Human Resources Information Technology (HRIT) investment in the last several years. This investment includes 15 improvement opportunities; as of November 2015, DHS had fully implemented only 1, see table below.

Status and Planned Completion Dates for Implementing the 15 Strategic Improvement Opportunities, as of November 2015

Strategic improvement opportunity name	Status	Original planned completion ^a	Current expected completion date
1. Data management and sharing	◐	September 2014	Unknown
2. Performance measures tracking and reporting	○	December 2012	Unknown
3. Personnel action processing	◐	September 2013	Unknown
4. Human resources document management	◐	September 2014	Unknown
5. End-to-end hiring	○	December 2016	Unknown
6. Performance management	◐	December 2012	Unknown
7. Off-boarding process	○	December 2012	Unknown
8. Policy issuances and clarification	○	June 2015	Unknown
9. Payroll action processing	◐	June 2014	Unknown
10. HRIT deployment process	○	September 2012	Unknown
11. Knowledge management	○	December 2014	Unknown
12. Training	○	June 2015	Unknown
13. Communication and collaboration among Components	○	December 2012	Unknown
14. On-boarding process	○	December 2012	Unknown
15. HRIT intake process	●	December 2011	Implemented October 2011

Key: ●Fully implemented ◐Partially implemented ○Not yet started

Source: GAO analysis of data provided by DHS officials.

^aDates reflect the last month of the quarter in which the opportunities were planned to be complete.

HRIT's limited progress was due in part to the lack of involvement of its executive steering committee—the investment's core oversight and advisory body—which was minimally involved with HRIT, such as meeting only one time during a nearly 2-year period when major problems, including schedule delays, were occurring. As a result, key governance activities, such as approval of HRIT's operational plan, were not completed. Officials acknowledged that HRIT should be re-evaluated and took early steps to do so (i.e., meeting to discuss the need to re-evaluate); however, specific actions and time frames have not been determined. Until DHS takes key actions to re-evaluate and manage this neglected investment, it is unknown when its human capital weaknesses will be addressed.

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Abbreviations

CBP	U.S. Customs and Border Protection
CMMI-ACQ	Capability Maturity Model® Integration for Acquisition
DHS	Department of Homeland Security
FEMA	Federal Emergency Management Agency
FLETC	Federal Law Enforcement Training Center
HRIT	Human Resources Information Technology
ICE	U.S. Immigration and Customs Enforcement
IT	information technology
OCHCO	Office of the Chief Human Capital Officer
OCIO	Office of the Chief Information Officer
PALMS	Performance and Learning Management System
PMBOK®	Project Management Body of Knowledge
PMO	program management office
TSA	Transportation Security Administration
USCG	U.S. Coast Guard
USCIS	U.S. Citizenship and Immigration Services
USM	Under Secretary for Management

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February 11, 2016

The Honorable Scott Perry
Chairman
The Honorable Bonnie Watson Coleman
Ranking Member
Subcommittee on Oversight and Management Efficiency
Committee on Homeland Security
House of Representatives

The Honorable Jeff Duncan
House of Representatives

Since the Department of Homeland Security (DHS) was created in 2002 and merged 22 agencies into one department with eight components, its human resources environment has included fragmented systems, duplicative and paper-based processes, and little uniformity of data management practices. According to DHS, these issues are compromising the department's ability to effectively and efficiently carry out its mission to, among other things, enhance security and respond to disasters. For example, according to DHS, while it is imperative that it respond quickly to emergencies, catastrophic events, and threats, and deploy appropriately trained, certified, and skilled personnel during these events, the department's inefficient and disjointed hiring process has limited the department's hiring abilities.

To address these issues, DHS initiated the Human Resources Information Technology (HRIT) investment in 2003 to consolidate, integrate, and modernize the department's IT infrastructure that supports human resources. One of the types of human resources programs to be addressed through the HRIT umbrella was management of department-wide employee performance and learning—referred to as the Performance and Learning Management System (PALMS). This program is designed to implement an enterprise-wide employee performance management and appraisal solution that is to automate the department's primarily paper-based performance management processes. In addition, PALMS is to provide a system that will consolidate nine existing learning management systems into one system and enable comprehensive training reporting and analysis across the department.

In light of HRIT’s expected role in transforming the department’s human resources processes and system environment, you asked us to review DHS’s efforts to implement the investment. Our objectives were to (1) evaluate the progress DHS has made in implementing the HRIT investment and how effectively DHS managed the investment since completing the Human Capital Segment Architecture in August 2011, (2) describe whether DHS has justified its investment in the PALMS program, (3) determine whether PALMS is being implemented enterprise-wide, and (4) evaluate the extent to which PALMS is implementing selected IT acquisition best practices.

To address the first part of our first objective—to evaluate the progress DHS had made in implementing the HRIT investment—we compared HRIT’s goals, scope, and implementation time frames to the investment’s actual accomplishments. We also compared DHS’s planned schedule for implementing the improvement opportunities and projects, as of August 2011, against DHS’s current planned schedule for implementing them. For the second part of our first objective—to evaluate how effectively DHS has managed the investment—we analyzed documentation, such as the investment’s schedule, program management briefings, DHS’s Human Capital Segment Architecture blueprint, cost estimates, and budget documentation, and compared them against relevant cost and schedule best practices identified by GAO, the Software Engineering Institute at Carnegie Mellon University, and the Project Management Institute, Inc.¹ To determine the amount spent to date on HRIT, we asked officials from DHS headquarters and the components to provide expenditure information on HRIT since the investment began in 2003; officials were unable to provide complete information. As such, we were unable to identify the total amount spent on the investment and discuss this limitation further in the report.

In addressing our second objective, we analyzed documentation, such as the program’s business case and the documented analysis of alternatives

¹GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009); GAO *Schedule Assessment Guide: Best Practices for Project Schedules*, [GAO-16-89G](#) (Washington, D.C.: Dec. 22, 2015); Software Engineering Institute, *Capability Maturity Model® Integration for Acquisition (CMMI-ACQ), Version 1.3* (Pittsburgh, Pa.: November 2010); and Project Management Institute, Inc., *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Fifth Edition*, (Newton Square, Pa.: 2013). “PMBOK” is a trademark of the Project Management Institute, Inc.

that was conducted to identify recommended approaches for pursuing a commercial off-the-shelf learning management system. We used this information to determine the various alternative solutions that DHS assessed for delivering enterprise-wide performance and learning management capabilities and justifying its investment in PALMS. Additionally, we reviewed program management briefings provided to the HRIT Executive Steering Committee that outlined, for example, the proposed solution and rationale for such a solution.

To address our third objective, we analyzed the program's acquisition plan and original schedule for implementing the system department-wide, and compared it against program status documentation and the program's current implementation schedule, as of November 2015.

Lastly, for our fourth objective, we analyzed the program's IT acquisition documentation (e.g., acquisition plan and risk logs) and compared it to relevant project planning, project monitoring, and risk management best practices as identified by CMMI-ACQ, the PMBOK® Guide, and GAO.² Additionally, we interviewed officials from HRIT, PALMS, the Office of the Chief Information Officer (OCIO), the Office of the Chief Human Capital Officer (OCHCO), and DHS's eight components to obtain additional information on the program's IT acquisition processes in these areas.

We conducted this performance audit from March 2015 to February 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. See appendix I for a more detailed discussion of our objectives, scope, and methodology.

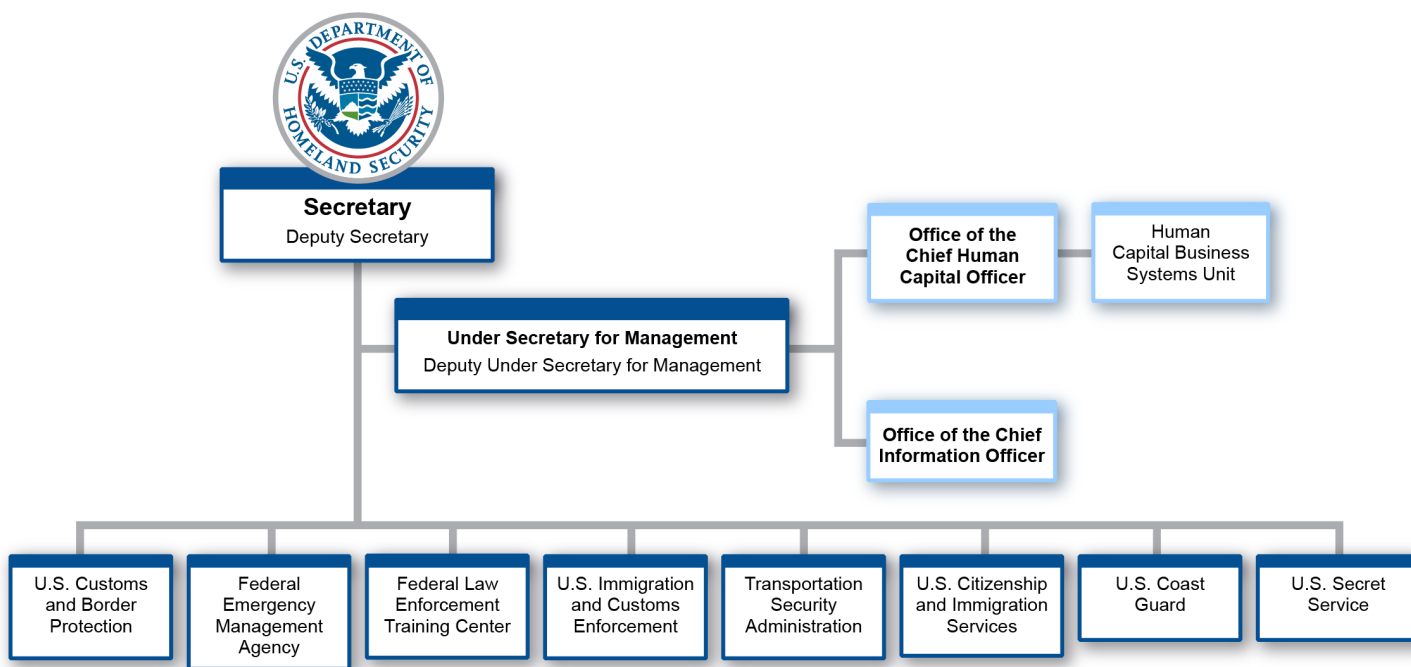
Background

DHS's mission is to lead the unified national effort to secure America by preventing and deterring terrorist attacks and protecting against and responding to threats and hazards to the nation, among other things. Created in 2002, DHS merged 22 agencies and offices that specialized in one or more aspects of homeland security. The intent behind the merger

²CMMI-ACQ; the PMBOK® Guide; [GAO-16-89G](#); and [GAO-09-3SP](#).

that created DHS was to improve coordination, communication, and information sharing among these multiple federal agencies. Each of these agencies is responsible for specific homeland security missions and for coordinating related efforts with its sibling components, as well as external entities. Figure 1 shows a simplified and partial DHS organizational structure.

Figure 1: Simplified and Partial DHS Organizational Structure



Source: GAO analysis of U.S. Department of Homeland Security data. | GAO-16-253

Within the department’s Management Directorate, headed by the Under Secretary for Management (USM), are the OCHCO and OCIO. The OCHCO is responsible for department-wide human capital policy and development, planning, and implementation of human capital initiatives. The OCIO is responsible for departmental IT policies, processes, and standards, and ensuring that IT acquisitions comply with DHS IT management processes, among other things.

Oversight of DHS's Acquisition Programs

DHS acquires IT and other capabilities that are intended to improve its ability to execute its mission. DHS classifies these acquisition programs into three levels that determine the extent and scope of required project and program management, the level of reporting requirements, and the acquisition decision authority. Specifically, DHS policy defines acquisition programs as follows:

- Level 1 major acquisition programs are expected to cost \$1 billion or more over their life cycles.
- Level 2 major acquisition programs are expected to cost at least \$300 million over their life cycles.
 - Special interest programs, without regard to the established dollar thresholds, are designated as Level 1 or Level 2 programs. For example, a program may be raised to a higher acquisition level if its importance to DHS's strategic and performance plans is disproportionate to its size or it has high executive visibility.
- Level 3 programs are those with life-cycle cost estimates less than \$300 million and are considered non-major.

As outlined in DHS's Acquisition Management Directive 102-01, DHS's Chief Acquisition Officer—the USM—is responsible for the management and oversight of the department's acquisition policies and procedures.³ The Deputy Secretary, USM, and Component Acquisition Executives are the acquisition decision authorities for DHS's acquisition programs. For Level 1 programs, the acquisition decision authority may be either the Deputy Secretary or USM; for level 2 programs, the acquisition decision authority may be either the USM or a Component Acquisition Executive; and for Level 3 programs, a Component Acquisition Executive is the acquisition decision authority.

As of March 2015, the department had 72 major acquisition programs and 42 non-major acquisition programs.

³The Secretary of DHS designated the USM the department's Chief Acquisition Officer in April 2011. DHS Instruction Manual 102-01-001, "Acquisition Management Instruction/Guidebook" (Oct. 1, 2011).

DHS's Management of Human Capital Is a High-Risk Effort

In 2003, we designated the transformation of DHS as high risk because it had to transform 22 agencies—several with major management challenges—into one department.⁴ We emphasized that failure to effectively address DHS's management and mission risks could have serious consequences for U.S. national and economic security.

In 2007 and 2009, in reporting on DHS's progress in addressing the high-risk area since its creation, we found that DHS had made more progress in implementing its range of missions than its management functions—such as in the areas of IT and human capital—and that continued work was needed to address an array of programmatic and management challenges.⁵ Since then, DHS had continued to make important progress in strengthening and integrating its management functions; however, significant work remained for DHS to improve in these areas. For example,

- As of September 2015, DHS had taken steps to identify current and future human capital needs, including the size of the workforce, its deployment across the department and components, and the knowledge, skills, abilities, and diversity needed; however, DHS had yet to fully implement its workforce planning model that was intended to allow the department to plan for its current and future organizational and workforce needs.
- In February 2015, we reported that while DHS established a human capital strategic plan in 2011 and made progress in implementing it, the department had considerable work ahead to improve employee morale, which has decreased each year since 2011.⁶ For example, the Office of Personnel Management's 2014 Federal Employee Viewpoint Survey data showed that DHS's scores continued to decrease in all four dimensions of the survey's index for human capital accountability and assessment.

⁴GAO, *High-Risk Series: An Update*, [GAO-03-119](#) (Washington, D.C.: Jan. 1, 2003).

⁵GAO, *High-Risk Series: An Update*, [GAO-07-310](#) (Washington, D.C.: Jan. 31, 2007) and *High-Risk Series: An Update*, [GAO-09-271](#) (Washington, D.C.: Jan. 22, 2009).

⁶GAO, *High-Risk Series: An Update*, [GAO-15-290](#) (Washington, D.C.: Feb. 11, 2015).

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- While the department had made progress in implementing its IT Strategic Human Capital Plan for fiscal years 2010 through 2012, in January 2015 DHS shifted its IT paradigm from acquiring assets to acquiring services, and acting as a service broker (e.g., an intermediary between the purchaser of a service and the seller of that service). According to DHS officials in May 2015, this paradigm change will require a major transition in the skill sets of DHS's IT workforce, as well as the hiring, training, and managing of those new skill sets; as such, this effort will need to be closely managed in order to succeed.
 - Moreover, as of September 2014, DHS faced challenges in integrating employee training management across all the components, including centralizing training and consolidating training data into one system. According to DHS officials, the department planned to address these limitations through the development and deployment of HRIT's PALMS program.

Overview of DHS's Human Resources Information Technology Investment

Since DHS was created, the department's human resources environment has included fragmented systems, duplicative and paper-based processes, and little uniformity of data management practices. According to DHS, these limitations in its human resources environment are compromising the department's ability to effectively and efficiently carry out its mission.⁷ For example,

- While it is imperative that DHS responds quickly to emergencies, catastrophic events, and threats, and deploys appropriately trained, certified, and skilled personnel during these events, according to DHS, the department's hiring process involves numerous systems and multiple hand-offs which result in extra work and prolonged hiring.⁸ This inefficient process is one factor that could have contributed to the skill and workforce gaps that we have previously identified. For example, in April 2015, we reported that 21 of the 22 major acquisition programs we reviewed faced shortfalls in their program office workforce in fiscal year 2014.⁹

⁷DHS, *Human Capital Segment Architecture Blueprint, Version 1.0* (Aug. 9, 2011).

⁸DHS, *OCHCO/OCIO Business Justification for HRIT Consolidation and Modernization* (Feb. 1, 2008).

⁹GAO, *Homeland Security Acquisitions: Major Program Assessments Reveal Actions Needed to Improve Accountability*, [GAO-15-171SP](#) (Washington, D.C.: Apr. 22, 2015).

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- According to DHS, the department does not have information on all of its employees, which reduces its abilities to strategically manage its workforce and best deploy people in support of Homeland Security missions.¹⁰
 - According to DHS, reporting and analyzing enterprise human capital data are currently time-consuming, labor-intensive, and challenging because the department's data management largely consists of disconnected, standalone systems, with multiple data sources for the same content.¹¹ As one example, we reported in 2014 that DHS could not provide complete information on how much it had spent on administratively uncontrollable overtime to its personnel from fiscal years 2008 through 2014.¹² Specifically, certain components could not provide information such as duty location or payments for certain years.

To address these issues, in 2003, DHS initiated the HRIT investment, which is intended to consolidate, integrate, and modernize the department's and its components' human resources IT infrastructure. These components include U.S. Customs and Border Protection (CBP), the Federal Emergency Management Agency (FEMA), the Federal Law Enforcement Training Center (FLETC), U.S. Immigration and Customs Enforcement (ICE), the Transportation Security Administration (TSA), U.S. Citizenship and Immigration Services (USCIS), the U.S. Coast Guard (USCG), and the U.S. Secret Service.

HRIT is managed by DHS's Human Capital Business Systems unit, which is within OCHCO and has overall responsibility for HRIT. Additionally, OCIO plays a key supporting role in the implementation of HRIT by reviewing headquarters' and components' human resources investments, identifying redundancies and efficiencies, and delivering and maintaining enterprise IT systems.

¹⁰DHS, *Human Capital Segment Architecture Blueprint, Version 1.0* (Aug. 9, 2011).

¹¹DHS, *Human Capital Segment Architecture Blueprint, Version 1.0* (Aug. 9, 2011).

¹²GAO, *Department of Homeland Security: Continued Action Needed to Strengthen Management of Administratively Uncontrollable Overtime*, [GAO-15-95](#) (Washington, D.C.: Dec. 17, 2014).

From 2003 to 2010, DHS made limited progress on the HRIT investment, as reported by DHS's Inspector General.¹³ This was due to, among other things, limited coordination with and commitment from DHS's components. To address this problem, in 2010 the DHS Deputy Secretary issued a memorandum emphasizing that DHS's wide variety of human resources processes and IT systems inhibited the ability to unify DHS and negatively impacted operating costs. The memorandum stated that, without an enterprise operating model, support for DHS's core mission was at risk and valuable workforce management information remained difficult to acquire across the department. Accordingly, the Deputy Secretary stated that DHS could no longer sustain a component-centric approach when acquiring or enhancing human resources systems, and prohibited component spending on enhancements to existing human resources systems or acquisitions of new solutions, unless those expenditures were approved by OCHCO or OCIO. The memorandum also directed these offices to develop a department-wide human resources architecture.

In 2011, in response to the Deputy Secretary's direction, DHS completed an effort called the Human Capital Segment Architecture, which, according to DHS, defined the department's current (or as-is) state of human capital management processes, technology, data, and relevant personnel. Further, from this current state, the department developed a comprehensive future state (or target state) and a document referred to as the Human Capital Segment Architecture blueprint that redefined the HRIT investment's scope and implementation time frames. As part of this effort, DHS conducted a system inventory and determined that it had 422 human resources systems and applications, many of which were single-use solutions developed to respond to a small need or links to enable disparate systems to work together. DHS reported that these numerous, antiquated, and fragmented systems inhibited its ability to perform basic workforce management functions necessary to support mission critical programs.

To address this issue, the blueprint articulated that HRIT would be comprised of 15 strategic improvement opportunity areas (e.g., enabling seamless, efficient, and transparent end-to-end hiring) and outlined 77

¹³DHS Office of Inspector General, *Management Oversight and Component Participation Are Necessary to Complete DHS' Human Resource Systems Consolidation Effort*, OIG-10-99 (Washington, D.C.: July 1, 2010).

associated projects (e.g., deploying a department-wide hiring system, establishing an integrated data repository and reporting mechanism, and developing a centralized learning center for all personnel action processing information) to implement these 15 opportunities. Each opportunity area includes from 1 to 10 associated projects. Table 1 summarizes the scope of the 15 strategic improvement opportunities—listed in the order of DHS’s assigned priority—and identifies their original planned completion dates, as of August 2011 when the blueprint was issued.

Table 1: Scope and Original Planned Implementation Dates for the 15 Strategic Improvement Opportunity Areas, as Outlined in DHS’s August 2011 Human Capital Segment Architecture Blueprint

Strategic improvement opportunity area name (number of associated projects)	Problem/solution approach	Original planned completion date in Human Capital Segment Architecture blueprint ^a
1. Data management and sharing (5)	<p>Problem: Inability to support enterprise reporting and data quality issues, among other things.</p> <p>Solution approach: Develop, execute, and supervise plans, policies, programs, and processes that control, protect, deliver, and enhance the value of data and information assets.</p>	September 2014
2. Performance measures tracking and reporting (3)	<p>Problem: Enterprise-level performance information not available and lack of standardized performance measures across the components, among other items.</p> <p>Solution approach: Establish ongoing monitoring and reporting of program accomplishments, particularly in the area of progress towards pre-established goals.</p>	December 2012
3. Personnel action processing (10)	<p>Problem: Significant costs associated with maintaining seven different systems for personnel action requests, and loss of efficiency due to duplicative data entry into multiple systems, among other things.</p> <p>Solution approach: Establish the process necessary to appoint, separate, or make other personnel changes, which serve as a foundation for all human resources functions.</p>	September 2013
4. Human Resources document management (8)	<p>Problem: Accessibility challenges and fragmented systems are unable to support new business requirements, among other things.</p> <p>Solution approach: Enable accessibility, work processes, storage, and searchability of case file management contents within human resources activities.</p>	September 2014
5. End-to-end hiring (9)	<p>Problem: Hiring process involves numerous systems and multiple hand-offs, resulting in extra work and delayed hiring, among other things.</p> <p>Solution approach: Establish workforce planning, recruitment, hiring, security and stability, and orientation.</p>	December 2016

Strategic improvement opportunity area name (number of associated projects)	Problem/solution approach	Original planned completion date in Human Capital Segment Architecture blueprint ^a
6. Performance management (3)	<p>Problem: Portions of performance management are done manually throughout all components, and there is a lack of reporting capabilities and transparency into the performance management process, among other things.</p> <p>Solution approach: Create a process to support the attainment of DHS's organizational goals by promoting and sustaining a high-performance culture. Accomplished through the issuance of employee performance work plans.</p>	December 2012
7. Off-boarding process (1)	<p>Problem: No standardized approach to off-boarding at DHS and there are time lags before selected systems recognize that an employee has left DHS, which poses a high risk of security infractions, among other things.</p> <p>Solution approach: Establish a process through which an employee is formally separated from employment in the federal government, including canceling badges, credentials, and passwords, removing the employee from the payroll, and initiating back-fill process.</p>	December 2012
8. Policy issuances and clarification (4)	<p>Problem: Policies are deployed without fully understanding HRIT and reporting implications, and components' participation in policy discussions is not consistent, among other things.</p> <p>Solution approach: Create a process for promulgating new policies and standards to improve compliance and enhance efficiency, as well as streamline and enhance existing policies so that they are clearer and easier to follow.</p>	June 2015
9. Payroll action processing (6)	<p>Problem: Inadequately trained timekeepers negatively impact payroll and three systems are used to initiate payroll actions, among other things.</p> <p>Solution approach: Establish a process for conducting those actions that impact an employee's pay, including personnel actions, payroll actions, and timekeeping.</p>	June 2014
10. HRIT deployment process (4)	<p>Problem: Expectations with regard to system requirements and the potential need to customize system solutions do not align with overall delivery related to commercial off-the-shelf products; and lack of transparency around project plans and schedules related to overall delivery, among other things.</p> <p>Solution approach: Create a process for the activities DHS's Human Capital Business Systems unit undertakes to implement enterprise HRIT systems to components, including coordination of initiation and approval processes within DHS governance structures.</p>	September 2012
11. Knowledge management (7)	<p>Problem: No effective enterprise search capability and lack of department-wide visibility of stove-piped content with restricted access, among other things.</p> <p>Solution approach: Establish a solution for capturing, retaining, sharing, and disseminating essential knowledge across DHS's community of human resources professionals in their respective components.</p>	December 2014
12. Training (4)	<p>Problem: Training varies greatly from component to component, and current junior-level human resources specialists are not as well trained in core human resources skills as their predecessors, among other things.</p> <p>Solution approach: Create a systematic process for teaching employees work-related skills and guiding them to adopt cultural changes.</p>	June 2015

Strategic improvement opportunity area name (number of associated projects)	Problem/solution approach	Original planned completion date in Human Capital Segment Architecture blueprint ^a
13. Communication and collaboration among components (5)	<p>Problem: Lack of an integrated plan for OCHCO communication, and lack of regular communication across DHS, among other things.</p> <p>Solution approach: Establish a process for sharing information in response to data calls, audits, Congressional requests, or the simple requirements of day-to-day business, along with the process of components working together to solve common challenges.</p>	December 2012
14. On-boarding process (6)	<p>Problem: Multiple, duplicative systems used to track on-boarding activities and no standardized, automated capability to trigger on-boarding activities, among other things.</p> <p>Solution approach: Create a process for the activities that occur from after the conclusion of pre-employment (when security and any necessary medical screenings are completed) to when an official Entrance on Duty date is established and provisioning (ensuring new employees have the tools to do their job) is scheduled.</p>	December 2012
15. HRIT intake process (2)	<p>Problem: No enterprise-wide HRIT governance process for determining whether to pursue a project.</p> <p>Solution approach: Establish an overall governance process to determine project initiation based on business needs, preliminary definition, review, and decision along various defined IT paths.</p>	December 2011

Source: Data provided by DHS. | GAO-16-253

^aThese dates reflect the last month of the quarter in which the strategic improvement opportunities were planned to be complete, as identified in the Human Capital Segment Architecture Blueprint.

HRIT's only ongoing program is called PALMS and is intended to fully address the Performance Management strategic improvement opportunity area and its three associated projects. PALMS is attempting to implement a commercial off-the-shelf software product that is to be provided as a service¹⁴ in order to enable, among other things, comprehensive enterprise-wide tracking, reporting, and analysis of employee learning and performance for DHS headquarters and its eight components. Specifically, PALMS is expected to deliver the following capabilities:

- *Learning management.* The learning management capabilities are intended to manage the life cycle of learning activities for all DHS employees and contractors. PALMS is intended to, among other

¹⁴For software provided as a service, a consumer uses a provider's applications that are accessible from various client devices through an interface such as a web browser (e.g., web-based e-mail). The consumer does not manage or control the underlying infrastructure or the individual application capabilities.

things, act as a gateway for accessing training at DHS and record training information when a user has completed a course. Additionally, it is expected to replace nine disparate learning management systems with one unified system.

- *Performance management.* The performance management capabilities are intended to move DHS's existing primarily paper-based performance management processes into an electronic environment and capture performance-related information throughout the performance cycle (e.g., recording performance expectations discussed at the beginning of the rating period and performance ratings at the end of it).

Each component is responsible for its own PALMS implementation project, and is expected to issue a task order using a blanket purchase agreement that was established in May 2013 with an estimated value of \$95 million.¹⁵ Before implementing PALMS, each component is completing a fit-gap assessment to, among other things, identify any requirements and critical processes that cannot be met by the preconfigured, commercial off-the-shelf system. If such component-specific requirements are identified, the component must then decide whether to have the vendor customize the system.

The headquarters PALMS program management office (PMO) is responsible for overseeing the implementation projects across the department. Additionally, OCIO is the Component Acquisition Executive responsible for overseeing PALMS.¹⁶

In addition to implementing projects intended to address the strategic improvement opportunities in the blueprint, the HRIT investment also carried out the following two projects that were not included in the blueprint:

¹⁵A blanket purchase agreement is a method of filling anticipated repetitive needs for supplies or services by establishing "charge accounts" with qualified sources of supply. These agreements between agencies and vendors have terms in place for future use and agencies issue individual orders to fulfill requirements for goods and services as they arise; funds are obligated when orders are placed.

¹⁶Component Acquisition Executives are the senior acquisition officials within the components, responsible for, among other things, acting as the acquisition decision authority for Level 3 programs and establishing component-level acquisition policy and processes.

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- **Balanced Workforce Assessment Tool:** This project provided an enterprise-wide tool to automate the formerly paper-based balanced workforce strategy process to determine the appropriate mix of federal employees and contractor employees required to fulfill a specific work function in the government. DHS deployed this tool beginning in September 2013.
 - **Workers Compensation – Medical Case Management Services:** This project provided an enterprise-wide contract to enable nurses to execute case management processes and facilitate the case management activities to be performed by DHS human resources staff. As part of this, the project provided access to a web application where DHS workers' compensation coordinators could work on cases with nurses. As of March 2015, the tool had been implemented at six components.

Best Practices for Planning and Managing IT Acquisition Programs

Entities such as the Project Management Institute, the Software Engineering Institute at Carnegie Mellon University, and GAO have developed and identified best practices to help guide organizations to effectively plan and manage their acquisitions of major IT systems.¹⁷ Our prior reviews have shown that proper implementation of such practices can significantly increase the likelihood of delivering promised system capabilities on time and within budget.¹⁸ These practices include, but are not limited to:

- **Project planning:** Establishes project objectives and outlines the course of action required to attain those objectives. It also provides a means to track, review, and report progress and performance of the project by defining project activities and developing cost and schedule estimates, among other things.

¹⁷Software Engineering Institute, *Capability Maturity Model® Integration for Acquisition (CMMI-ACQ), Version 1.3* (Pittsburgh, Pa.: November 2010); Project Management Institute, Inc., *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Fifth Edition* (Newton Square, Pa.: 2013); and GAO, *Executive Guide: Information Technology Investment Management, A Framework for Assessing and Improving Process Maturity*, [GAO-04-394G](#) (Washington, D.C.: March 2004).

¹⁸See, for example, GAO, *Information Technology: Foundational Steps Being Taken to Make Needed FBI Systems Modernization Management Improvements*, [GAO-04-842](#) (Washington, D.C.: Sept. 10, 2004) and *Information Technology: FBI Is Implementing Key Acquisition Methods on Its New Case Management System, but Related Agencywide Guidance Needs to Be Improved*, [GAO-08-1014](#) (Washington, D.C.: Sept. 23, 2008).

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- **Project monitoring and control:** Provides an understanding of the project's progress, so that appropriate corrective actions can be taken if performance deviates from plans. Effective practices in this area include, among other things, determining progress against the program plan and conducting program management reviews.
 - **Risk management:** Establishes a process for anticipating problems and taking appropriate steps to mitigate risks and minimize their impact on program commitments. It involves identifying and documenting risks, categorizing them based on their estimated impact, prioritizing them, developing risk mitigation strategies, and tracking progress in executing the strategies.

DHS Has Made Very Little Progress in Implementing HRIT; Investment Lacked Effective Management

DHS has made very little progress in delivering planned HRIT capabilities, such as end-to-end hiring and payroll action processing. While the vast majority of HRIT capabilities (called strategic improvement opportunities) were to be delivered by June 2015, only 1 has been fully implemented, and the completion dates for the other 14 are currently unknown. These delays are largely due to unplanned resource changes and the lack of involvement from the executive oversight committee. In addition, the department did not effectively manage the investment. For example, DHS did not update or maintain the HRIT schedule, have a life-cycle cost estimate, or track all associated costs. Moreover, the strategic planning document—referred to as the Human Capital Segment Architecture Blueprint—has not been updated in approximately 4.5 years and, as a result, the department does not know whether it is reflective of current priorities and goals. As a result of DHS's ineffective management and limited progress in implementing this investment, the department is unaware of when critical weaknesses in the department's human capital environment will be addressed, which is, among other things, impacting DHS's ability to reduce duplication and carry out its mission.

Limited Progress Has Been Made in Implementing HRIT

DHS has made very limited progress in addressing the 15 strategic improvement opportunities and the 77 associated projects included in HRIT. According to the Human Capital Segment Architecture Blueprint, DHS planned to implement 14 of the 15 strategic improvement opportunities and 68 of the 77 associated projects by June 2015; and the remaining improvement opportunity and 9 associated projects by December 2016. However, as of November 2015, DHS had fully implemented only 1 of the strategic improvement opportunities, which included 2 associated projects. This improvement opportunity established an enterprise-wide governance process for evaluating HRIT projects and

proposals prior to funding them. This process is referred to as the investment intake process and is intended to help encourage the use of enterprise-level investments, rather than component-specific investments, by preventing components from investing in duplicative systems when an existing DHS capability can meet a particular business need. Table 2 summarizes the implementation status and planned completion dates of the strategic improvement opportunities—listed in the order of DHS’s assigned priority—as of November 2015.

Table 2: Status and Planned Completion Dates for Implementing the 15 Strategic Improvement Opportunities, as of November 2015

Strategic improvement opportunity name (number of associated projects)	Status	Original planned completion date in Human Capital Segment Architecture Blueprint ^a	Current expected completion date
1. Data management and sharing (5)	●	September 2014	Unknown
2. Performance measures tracking and reporting (3)	○	December 2012	Unknown
3. Personnel action processing (10)	●	September 2013	Unknown
4. Human resources document management (8)	●	September 2014	Unknown
5. End-to-end hiring (9)	○	December 2016	Unknown
6. Performance management (3)	●	December 2012	Unknown
7. Off-boarding process (1)	○	December 2012	Unknown
8. Policy issuances and clarification (4)	○	June 2015	Unknown
9. Payroll action processing (6)	●	June 2014	Unknown
10. Human Resources Information Technology deployment process (4)	○	September 2012	Unknown
11. Knowledge management (7)	○	December 2014	Unknown
12. Training (4)	○	June 2015	Unknown
13. Communication and collaboration among components (5)	○	December 2012	Unknown
14. On-boarding process (6)	○	December 2012	Unknown
15. Human Resources Information Technology intake process (2)	●	December 2011	Implemented in October 2011

Key: ● Fully implemented, meaning that the objective of the opportunity area was met. ● Partially implemented, meaning that officials identified at least one project that was underway or completed related to the opportunity area, but did not report that the opportunity area was fully implemented. ○ Not yet started, meaning that officials did not identify any projects that were underway or completed related to the opportunity area.

Source: GAO analysis of data provided by DHS officials. | GAO-16-253.

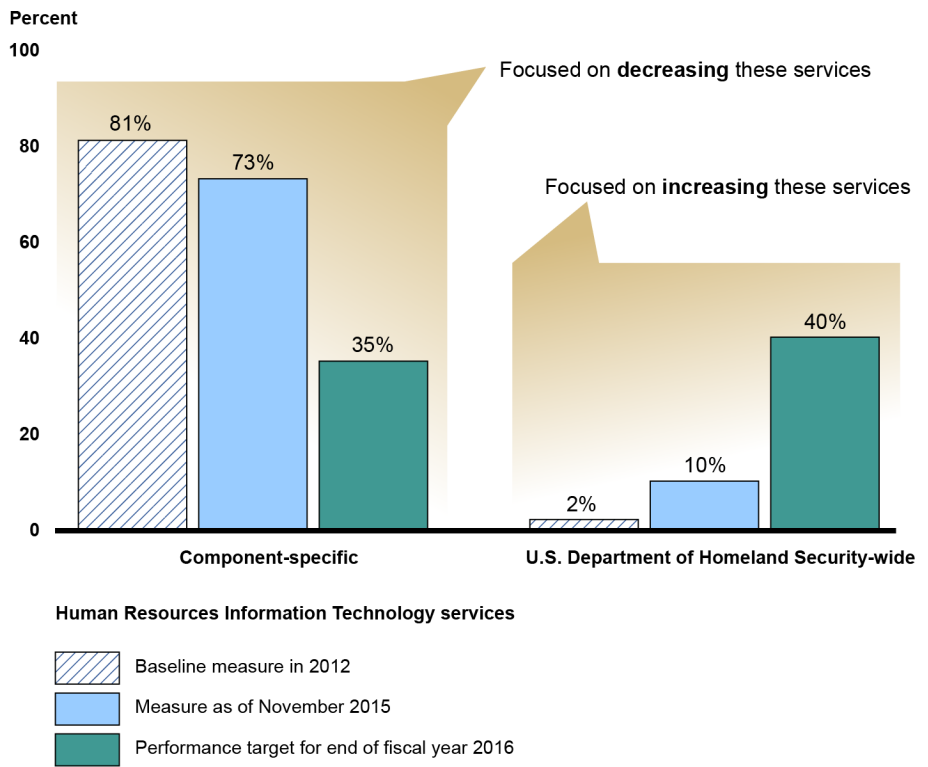
^aThese dates reflect the last month of the quarter in which the strategic improvement opportunities were planned to be complete, as identified in the Human Capital Segment Architecture Blueprint.

DHS has partially implemented five of the other strategic improvement opportunities, but it is unknown when they will be fully addressed. For example, DHS's PALMS program is intended to fully address the blueprint's strategic improvement opportunity for Performance Management; however, while progress to implement PALMS has been made, many actions remain before it can be fully implemented and it is unknown when those actions will be taken (discussed in more detail later). Further, HRIT officials stated that DHS has not yet started to work on the remaining nine improvement opportunities, and the officials did not know when they would be addressed.

Additionally, DHS developed an HRIT strategic plan for fiscal years 2012 through 2016 that outlined the investment's key goals and objectives, including reducing duplication and improving efficiencies in the department's human resources processes and systems. The strategic plan identified, among other things, two performance metrics and associated targets for delivering human resources IT services across DHS. These performance metrics were focused on reductions in the number of component-specific human resources IT services provided and increases in the number of department-wide HRIT services provided by the end of fiscal year 2016.

However, DHS has also made limited progress in achieving these two performance targets. Figure 2 provides a summary of HRIT's progress towards achieving its service delivery performance targets.

Figure 2: Human Resources Information Technology’s Progress towards Achieving Its Performance Targets, as of November 2015



Source: GAO analysis of data provided by U.S. Department of Homeland Security officials. | GAO-16-253

Specifically,

- DHS’s goal is to reduce its component-specific HRIT services by 46 percent—from 81 percent to 35 percent—however, it had reduced these services by 8 percent as of November 2015, according to OCHCO officials.
- Additionally, while DHS is aiming to increase its DHS-wide HRIT services by 38 percent—from 2 percent to 40 percent—as of November 2015, OCHCO officials stated that the department had increased these services by 8 percent.

Key causes for DHS’s lack of progress in implementing HRIT and its associated strategic improvement opportunities include unplanned resource changes and the lack of involvement of the HRIT executive steering committee. These causes are discussed in detail below:

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- *Unplanned resource changes.* DHS elected to dedicate the vast majority of HRIT's resources to implementing PALMS and addressing its problems, rather than initiating additional HRIT strategic improvement opportunities. Specifically, PALMS—which began in July 2012—experienced programmatic and technical challenges that led to years-long schedule delays.¹⁹ For example, while the PALMS system for headquarters was originally planned to be delivered by a vendor in December 2013, as of November 2015, the expected delivery date was delayed until the end of February 2016—an over 2-year delay. HRIT officials explained the decision to focus primarily on PALMS was due, in part, to the investment's declining funding stream. However, in doing so, attention was concentrated on the immediate issues affecting PALMS and diverted from the longer-term HRIT mission.
 - *Lack of involvement of the HRIT executive steering committee.* The HRIT executive steering committee—which is chaired by the department's Under Secretary for Management and co-chaired by the Chief Information Officer and Chief Human Capital Officer—is intended to be the core oversight and advisory body for all DHS-wide matters related to human capital IT investments, expenditures, projects, and initiatives. In addition, according to the committee's charter, the committee is to approve and provide guidance on the department's mission, vision, and strategies for the HRIT program.

However, the executive steering committee only met once from September 2013 through June 2015—in July 2014—and was minimally involved with HRIT for that almost 2 year period. It is important to note that DHS replaced its Chief Information Officer (the executive steering committee's co-chair) in December 2013—during this gap in oversight. Also during this time period HRIT's only ongoing program—PALMS—was experiencing significant problems, including schedule slippages and frequent turnover in its program manager position (i.e., PALMS had five different program managers during the time that the HRIT executive steering committee was minimally

¹⁹PALMS PMO officials attributed these slippages to multiple causes, including, among other things, the vendor's commercial off-the-shelf system not meeting certain requirements that it was expected to meet, thereby requiring the vendor to customize the system to meet those requirements. As of November 2015, according to PALMS headquarters PMO officials, DHS had 483 baseline requirements, 32 of which needed customizations, and 5 of these 32 requirements still needed to be fully addressed by the vendor. DHS expected these requirements to be met by the end of February 2016.

involved). As a result of the executive steering committee not meeting, key governance activities were not completed on HRIT. For example, the committee did not approve HRIT's notional operational plan for fiscal years 2014 through 2019.²⁰ OCHCO and OCIO officials attributed the lack of HRIT executive steering committee meetings and committee involvement in HRIT to the investment's focus being only on the PALMS program to address its issues, as discussed earlier. However, by not regularly meeting and providing oversight during a time when a new co-chair for the executive steering committee assumed responsibility and PALMS was experiencing such problems, the committee's guidance to the troubled program was limited.

More recently, the HRIT executive steering committee met in June and October 2015, and OCIO and OCHCO officials stated that the committee planned to meet quarterly going forward. However, while the committee's charter specified that it meet on at least a monthly basis for the first year, the charter does not specify the frequency of meetings following that year. Furthermore, the committee's charter has not been updated to reflect the increased frequency of these meetings.

As a result of the limited progress in implementing HRIT, DHS is unaware of when critical weaknesses in the department's human capital environment will be addressed, which is, among other things, impacting DHS's ability to carry out its mission. For example, the end-to-end hiring strategic improvement opportunity (which has an unknown implementation date) was intended to streamline numerous systems and multiple hand-offs in order to more efficiently and effectively hire appropriately skilled personnel, thus enabling a quicker response to emergencies, catastrophic events, and threats. As another example, the data management and sharing strategic improvement opportunity (which also has an unknown implementation date) was intended to enable the department to have visibility of all its employees, to improve its ability to strategically manage its workforce, and best deploy people in support of DHS missions. Therefore, until HRIT's executive steering committee effectively carries out its oversight responsibility, DHS will be limited in its ability to improve HRIT investment results and accountability.

²⁰HRIT's notional operational plan for fiscal years 2014 through 2019 identified the high-level projects and activities that HRIT planned to fund each year and the planned phase of each project (e.g., planning, acquisition, operations and maintenance).

HRIT Lacked a Current Schedule, Life-Cycle Cost Estimate, and Cost Tracking

DHS Did Not Update or Maintain the HRIT Schedule

According to the GAO Schedule Assessment Guide, a key activity in effectively managing a program and ensuring progress is establishing and maintaining a schedule estimate. Specifically, a well maintained schedule enables programs to gauge progress, identify and resolve potential problems, and forecast dates for program activities and completion of the program.²¹

In August 2011, DHS established initiation and completion dates for each of the 15 strategic improvement opportunities within the Human Capital Segment Architecture Blueprint. Additionally, HRIT developed a slightly more detailed schedule for fiscal years 2014 through 2021 that updated planned completion dates for aspects of some strategic improvement opportunities, but not all.

However, DHS did not update and maintain either schedule after they were developed. Specifically, neither schedule was updated to reflect that DHS did not implement 13 of the 15 improvement opportunities by their planned completion dates—several of which should have been implemented over 3 years ago. HRIT officials attributed the lack of schedule updates to the investment’s focus shifting to the PALMS program when it started experiencing significant schedule delays. Without developing and maintaining a current schedule showing when DHS plans to implement the strategic improvement opportunities, DHS and Congress will be limited in their ability to oversee and ensure DHS’s progress in implementing HRIT.

HRIT Did Not Have a Life-Cycle Cost Estimate

OMB requires that agencies prepare total estimated life-cycle costs for information technology investments.²² Program management best practices also stress that key activities in planning and managing a program include establishing a life-cycle cost estimate and tracking costs

²¹GAO-16-89G.

²²OMB, *Fiscal Year 2016, Capital Planning Guidance* (Washington, D.C.: May 2014).

expended.²³ A life-cycle cost estimate supports budgetary decisions and key decision points, and should include all costs for planning, procurement, and operations and maintenance of a program.²⁴

OCHCO officials stated that a draft life-cycle cost estimate for HRIT was developed, but that it was not completed or finalized because detailed projects plans for the associated projects had not been developed or approved. According to the HRIT blueprint, OCHCO roughly estimated that implementing all of the projects could cost up to \$120 million. However, the blueprint specifies that this figure did not represent the life-cycle cost estimate; rather it was intended to be a preliminary estimate to initiate projects. Without a life-cycle cost estimate, DHS has limited information about how much it will cost to implement HRIT, which hinders the department's ability to, among other things, make budgetary decisions and informed milestone review decisions.

DHS Did Not Track All Costs Incurred on HRIT

According to CMMI-ACQ and the PMBOK® Guide, programs should track program costs in order to effectively manage the program and make resource adjustments accordingly. In particular, tracking and monitoring costs enables a program to recognize variances from the plan in order to take corrective action and minimize risk.²⁵

However, DHS has not tracked the total actual costs incurred on implementing HRIT across the enterprise to date. Specifically, while the investment received line item appropriations for fiscal years 2005 through 2015 which totaled at least \$180 million,²⁶ DHS was unable to provide all cost information on HRIT activities since it began in 2003, including all government-related activities and component costs that were financed through the working capital fund, which, according to DHS officials from multiple offices, were provided separately from the at least \$180 million

²³CMMI-ACQ, *Project Planning and Project Monitoring and Control Process Areas*; PMBOK® Guide, *Project Cost Management*; and [GAO-09-3SP](#).

²⁴[GAO-09-3SP](#).

²⁵CMMI-ACQ, *Project Monitoring and Control Process Area*; PMBOK® Guide, *Project Cost Management*.

²⁶Appropriations acts passed for fiscal years 2003 through 2004 did not include a line item appropriating specific funds to HRIT and DHS officials were unaware of how much had been appropriated for those years.

appropriated specifically to HRIT.²⁷ OCHCO officials attributed the lack of cost tracking to, among other things, the investment's early reliance on contractors to track costs, and said that the costs were not well maintained nor centrally tracked, and included incomplete component-provided cost information. The components were also unable to provide us with complete information. For example,

- FEMA officials stated that it would require a significant administrative effort to identify how much it has spent on HRIT since inception in 2003 because of the way their financial system obligates and expends funds for Working Capital Fund activities.
- USCG officials also said that compiling its expenditure information for fiscal years 2003-2009 would require a substantial administrative effort, including reviewing a significant number of paper files.
- USCIS was unable to identify its HRIT-related expenditures for fiscal years 2003-2010.

Without tracking all costs associated with HRIT, including components' costs, stakeholders are limited in making informed resource decisions, and DHS cannot provide complete and accurate information to assist congressional oversight.

HRIT's 2011 Blueprint May Not Be Valid and Reflective of DHS's Current Priorities and Goals

According to the HRIT executive steering committee's charter, the Under Secretary for Management (as the chair of the committee) is to ensure that the department's human resources IT business needs are met, as outlined in the blueprint. Additionally, according to the GPRA (Government Performance and Results Act) Modernization Act of 2010, agency strategic plans should be updated at least every 4 years. While this is a legal requirement for agency strategic plans (the Human Capital Segment Architecture blueprint does not fall under the category of an "agency strategic plan"), it is considered a best practice for other strategic planning documents, such as the blueprint.

²⁷The working capital fund is available to DHS for expenses and equipment necessary for maintenance and operations of administrative services that the Secretary of Homeland Security determines would be performed more advantageously as central services. Pub. L. No. 108-90, 117 Stat. 1137, 1153, § 506 (2003).

However, the department issued the blueprint in August 2011 (approximately 4.5 years ago) and has not updated it since. As a result, the department does not know whether the remaining 14 strategic improvement opportunities and associated projects that it has not fully implemented are still valid and reflective of DHS's current priorities, and are appropriately prioritized based on current mission and business needs. Additionally, DHS does not know whether new or emerging opportunities or business needs need to be addressed.

Officials stated that the department is still committed to implementing the blueprint, but agreed that it should be re-evaluated. To this end, following a meeting we had with DHS's Under Secretary for Management in October 2015, in which we expressed concern about HRIT's lack of progress, OCHCO and OCIO officials stated that HRIT was recently asked by the Deputy Under Secretary of Management in late October 2015 to re-evaluate the blueprint's strategic improvement opportunities and to determine the way forward for those improvement opportunities and the HRIT investment. However, officials did not know when this re-evaluation and a determination for how to move forward with HRIT would occur, or be completed.

Further, according to OCIO officials, DHS has not updated its complete systems inventory since it was originally developed as part of the blueprint effort, in response to a 2010 Office of Inspector General report that stated that DHS had not identified all human resource systems at the components. This report also emphasized that without an accurate inventory of human resource systems, DHS cannot determine whether components are using redundant systems.²⁸ Moreover, OCIO officials were unable to identify whether and how its inventory of human resources systems had changed.

Until DHS establishes time frames for re-evaluating the blueprint to reflect DHS's HRIT current priorities and updates its human resources system inventory, the department will be limited in addressing the inefficient human resources environment that has plagued the department since it was first created.

²⁸DHS Office of Inspector General, *Management Oversight and Component Participation Are Necessary to Complete DHS' Human Resource Systems Consolidation Effort*, OIG-10-99 (July 2010).

DHS Justified Its Investment in the PALMS Program

DHS took several steps to justify its investment in the PALMS program for both of the program's two main purposes (the learning management capabilities and the performance management capabilities) through multiple mechanisms. Specifically, although existing DHS guidance did not require an analysis of alternatives²⁹ for PALMS because it is a Level 3 acquisition program,³⁰ the department initiated such an analysis in 2010 to identify recommended approaches for pursuing a commercial off-the-shelf learning management system to replace the components' nine existing learning systems. According to the analysis of alternatives, the nine systems at the department were disconnected from each other and did not exchange information. The components had independently purchased these learning management systems and, in some cases, had done so before DHS was established in 2002. However, DHS determined that a unified strategy for learning management systems at the department was needed, rather than disparate, component-centric efforts. In particular, DHS determined that such a strategy was necessary to provide, among other things, improved reporting, greater automation, less duplication and redundancy of training courses, better governance, and streamlined IT infrastructure.

The analysis of alternatives, which was performed by the Homeland Security Studies and Analysis Institute,³¹ included, among other things, an assessment of six alternative approaches, including status quo, implementation of two systems from separate vendors (allowing components to choose which system to use), and implementation of a single system (either centrally managed by DHS or individually managed by each component). As part of the analysis, the Institute assessed the alternative approaches based on five evaluative categories, including cost, benefits, and risks. Based on the analysis of alternatives process, the institute recommended that DHS adopt a single enterprise-wide,

²⁹An analysis of alternatives is intended to help identify the most promising acquisition approach by comparing alternative solutions' costs and operational effectiveness.

³⁰DHS's guidance was subsequently revised and reissued in July 2015. DHS, *DHS Acquisition Management Directive 102-01-003* (July 2015).

³¹The Homeland Security Studies and Analysis Institute is a federally funded research and development center that provides the government with expertise to conduct, among other things, crosscutting mission analysis, strategic studies and assessments, and operational analysis across the homeland security enterprise.

centrally managed learning management system as the most cost-effective approach to providing such a capability to the department.

Regarding the second purpose of PALMS—enabling performance management capabilities—the August 2011 Human Capital Segment Architecture Blueprint called on DHS to conduct an analysis of alternatives to identify the preferred approach for such a solution.³² Officials stated that DHS leadership ultimately determined that such an analysis for a performance management solution was unnecessary because the requirement for DHS to automate performance management functions across the department was the same as it was during DHS's prior attempt to pursue an automated performance management system for instituting pay-for-performance—an effort that was ultimately abandoned.³³

Therefore, instead of conducting an analysis of alternatives on performance management system approaches for DHS enterprise-wide adoption, in January 2012, departmental leadership made an executive decision on the approach based on the findings of a December 2011 request for information from industry. In particular, the accumulated industry information highlighted that vendors for an enterprise-wide learning management solution could in most cases also provide a system that integrated performance management capabilities. This industry information validated DHS officials' understanding that a combined solution for learning and performance management at the department was consistent with prevailing industry offerings. According to OCHCO officials, the department's request for information from industry to help justify its preferred approach allowed for competition within industry for supplying a solution to the department. As part of the department's considerations, officials had determined that this competition could better

³²As discussed earlier, the blueprint included a strategic improvement opportunity for developing an enterprise-wide performance management system. The blueprint did not address the development of an enterprise-wide learning management system, as the analysis of alternatives for learning management was already in development at the time the blueprint was developed.

³³DHS had stopped using this prior automated pay-for-performance, performance management system authorized by 5 U.S.C. § 9701 (the Homeland Security Act of 2002)—called MaxHR—because DHS's fiscal year 2009 Appropriations Act directed that no further funds be spent on any Human Resource Programs authorized by section 9701. Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009, Pub. L. No. 110-329, 122 Stat. 3574, 3684, § 522 (2008).

help to reduce overall implementation costs for a consolidated learning and performance management system, versus adopting, without competition, one of the components' existing learning or performance management systems for DHS enterprise-wide deployment.

Additionally, OCHCO officials stated that they contacted other federal departments to determine whether existing shared services could be used by DHS to establish an integrated system for learning and performance management, but DHS determined that other departments' contracts with service providers could not be modified to allow DHS to use the same services.

Based on the collective results of the learning management system analysis of alternatives and the request for information from industry on performance management systems, the HRIT executive steering committee exercised its executive decision-making authority and decided that an integrated, enterprise-wide learning and performance management system should be pursued for adoption at the department. DHS's integrated solution is now being implemented by the PALMS program. By providing the executive steering committee with enough information for determining this preferred approach for the department, DHS justified its investment in the PALMS program.

Selected PALMS Capabilities Have Been Deployed to Headquarters and Two Components; but Full Implementation at Four Components Is Not Currently Planned

As previously mentioned, PALMS is intended to provide an enterprise-wide system that offers performance management capabilities, as well as learning management capabilities to headquarters and each of its components. As such, DHS headquarters PMO and the components estimate that, if fully implemented across DHS, PALMS's learning management capabilities would be used by approximately 309,360 users, and its performance management capabilities would be used by at least 217,758 users. Table 3 identifies the total estimated number of planned users for both PALMS's learning management capabilities and performance management capabilities if PALMS is fully implemented department-wide.

Table 3: Estimated Number of Performance and Learning Management System (PALMS) Planned Users at Each Component if Fully Implemented, as of November 2015

Component	Estimated number of planned learning management users	Estimated number of planned performance management users
Federal Emergency Management Agency	14,000	To be determined – at least ~8,400 ^a
Federal Law Enforcement Training Center	2,000	1,200
Headquarters	41,500	41,500
Transportation Security Administration	70,000 ^b	59,158 ^b
U.S. Citizenship and Immigration Services	24,000	14,000
U.S. Coast Guard	60,000 ^{b, c}	8,000 ^b
U.S. Customs and Border Protection	67,360	60,000
U.S. Immigration and Customs Enforcement	24,000	19,000 ^{a, b}
U.S. Secret Service	6,500	6,500
Total	309,360	217,758

Source: Data provided by DHS officials. | GAO-16-253

^aAs of November 2015, Federal Emergency Management Agency and U.S. Immigration and Customs Enforcement officials stated that they were not currently planning to implement the performance management capabilities of PALMS. However, if the Federal Emergency Management Agency decides at a later date to implement PALMS, officials stated that the number of users would be ~8,400, but would be substantially more if the system is able to accommodate the component's performance management requirements for Reservists, which are a type of incident management responder, hired as temporary, intermittent employees.

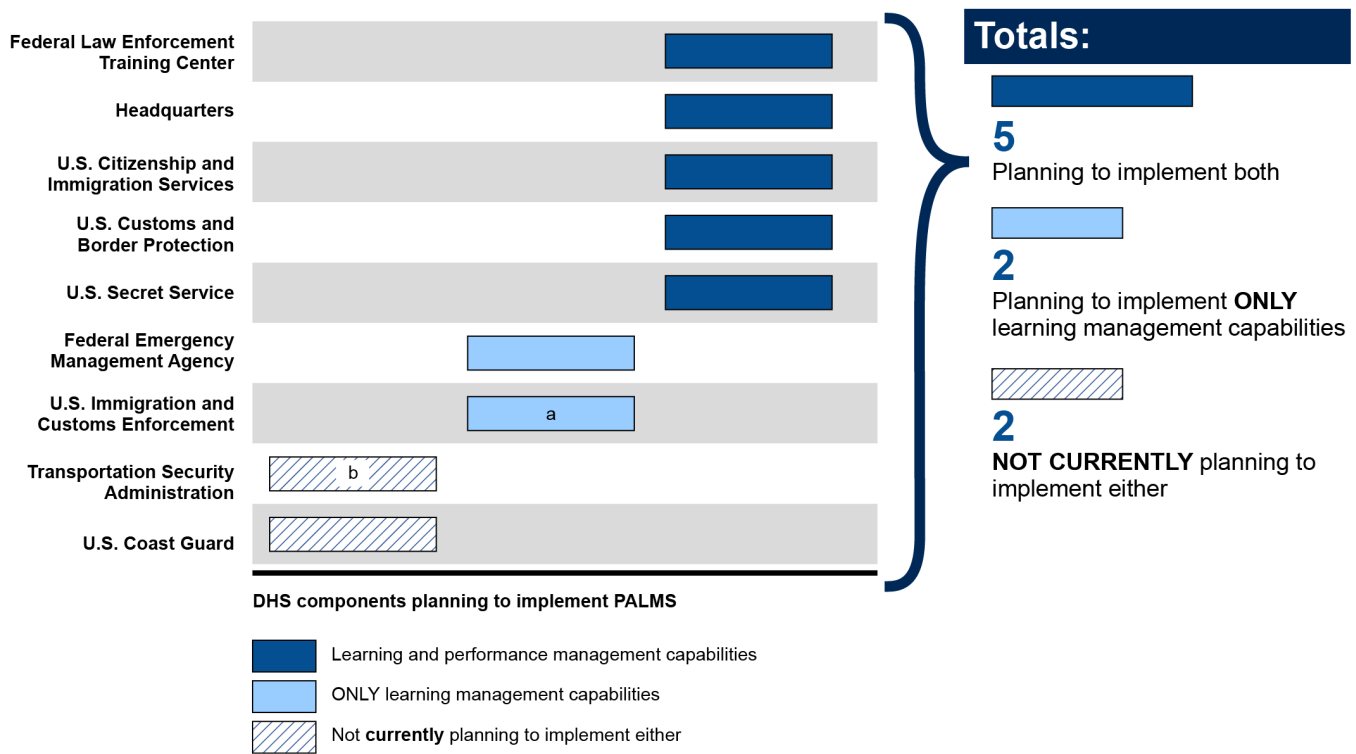
^bAs of November 2015, officials from these components stated that their components were not currently planning to implement either the learning or performance management capabilities of PALMS. These user estimates from Transportation Security Administration and U.S. Coast Guard officials represent those components' users if they decide to implement PALMS. According to Transportation Security Administration officials, as of January 2016, the administration was in the process of conducting its fit-gap analysis to determine whether it will implement PALMS's learning and/or performance management capabilities. Officials expected the fit-gap assessment to be completed by the end of March 2016. U.S. Immigration and Customs Enforcement officials stated that they are waiting for the vendor to demonstrate that all requirements have been met—which is expected to occur by the end of February 2016.

^cAccording to officials, the estimate of 60,000 learning management users includes U.S. Coast Guard's military users; if PALMS is unable to meet these users' requirements, then the planned number of users is 8,500 (if U.S. Coast Guard decides to implement PALMS for these users—see footnote b above).

However, there is uncertainty about whether the PALMS system will be used enterprise-wide to accomplish these goals. Specifically, as of November 2015, of the eight components and headquarters, five are planning to implement both PALMS's learning and performance management capabilities (three of which have already implemented the

learning management capabilities—discussed later), two are planning to implement only the learning management capabilities, and two components are not currently planning to implement either of these PALMS capabilities, as illustrated in figure 3.

Figure 3: Components Planning to Implement Performance and Learning Management System (PALMS), as of November 2015



Source: GAO analysis of data provided by U.S. Department of Homeland Security (DHS). | GAO-16-253

^aU.S. Immigration and Customs Enforcement officials stated that, before they will decide whether to implement PALMS's performance management capabilities, they are waiting for the vendor to demonstrate that all requirements have been met—which is expected to occur by the end of February 2016.

^bAccording to Transportation Security Administration officials, as of January 2016, the administration was in the process of conducting its fit-gap analysis to determine whether it will implement PALMS's learning and/or performance management capabilities. Officials expected the fit-gap assessment to be completed by the end of March 2016.

Officials from FEMA, TSA, ICE, and the USCG cited various reasons for why they were not currently planning to fully implement PALMS, which include:

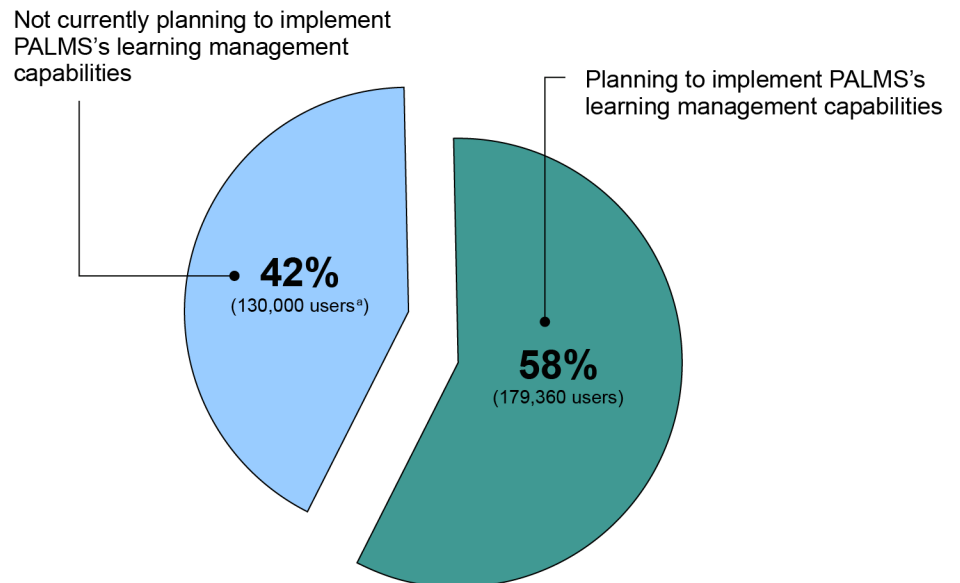
- FEMA and ICE officials stated that they were not currently planning to implement the performance management capabilities because the program had experienced critical deficiencies in meeting the performance management-related requirements. FEMA officials stated that they do not plan to make a decision on whether they will or will not implement these performance management capabilities until the vendor can demonstrate that the system meets FEMA's needs; as such, FEMA officials were unable to specify a date for when they plan to make that decision. ICE officials also stated that they do not plan to implement the performance management capabilities of PALMS until the vendor can demonstrate that all requirements have been met. PALMS headquarters PMO officials expected all requirements to be met by the vendor by the end of February 2016.
- TSA officials stated that they were waiting on the results of their fit-gap assessment³⁴ of PALMS before determining whether, from a cost and technical perspective, TSA could commit to implementing the learning and/or performance management capabilities of PALMS. TSA officials expected the fit-gap assessment to be completed by the end of March 2016.
- USCG officials stated that, based on the PALMS schedule delays experienced to date, they have little confidence that the PALMS vendor could meet the component's unique business requirements prior to the 2018 expiration of the vendor's blanket purchase agreement. Additionally, these officials stated that the system would not meet all of its learning management requirements for about 31,000 auxiliary volunteer members and certain other employee groups. Further, although the fit gap assessment for implementing PALMS at USCG had not been fully completed, the component's officials stated that the system would likely not fully meet the performance management requirements for all of USCG's military

³⁴Before implementing PALMS, each component is completing a fit-gap assessment to, among other things, identify any requirements and critical processes that cannot be met by the preconfigured, commercial off-the-shelf system. If such component-specific requirements are identified, the component must then decide whether to have the vendor customize the system.

components. Due to the component's uncertainty, the officials were unable to specify when they plan to ultimately decide on whether they will implement one or both aspects of PALMS.

As a result, it is unlikely that the department will reach its expected user estimates as presented in table 3, and meet its goal of being an enterprise-wide system. Specifically, as of November 2015, the components estimate 179,360 users will use the learning management capabilities of PALMS (not the 309,360 expected, if fully implemented). Figure 4 shows the percentage of expected users from components currently planning to implement PALMS's learning management capabilities in comparison to the total expected users if PALMS was fully implemented, as of November 2015.

Figure 4: Percentage of Total Expected Users from Components Planning to Implement the Learning Management Capabilities of Performance and Learning Management System (PALMS), as of November 2015

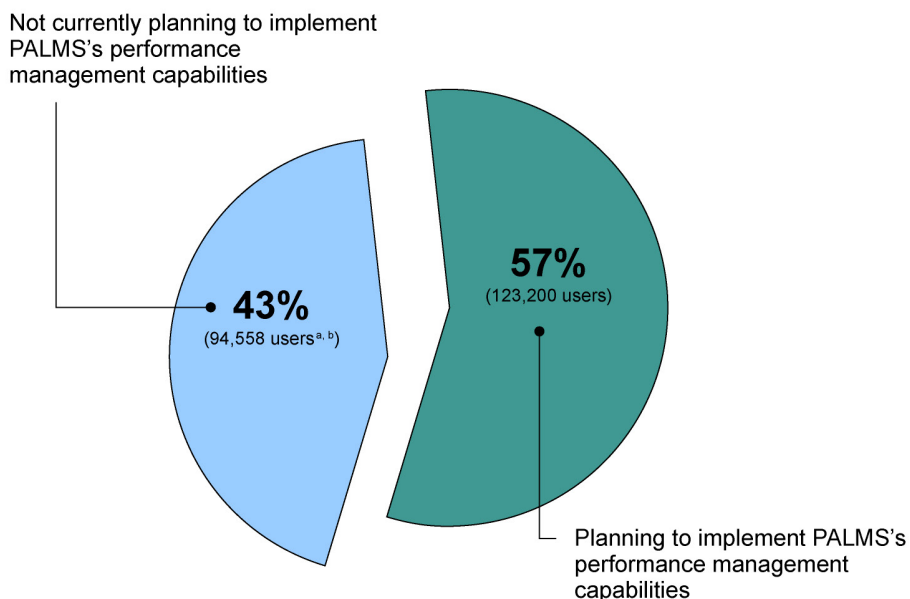


Source: GAO analysis of data provided by U.S. Department of Homeland Security officials. | GAO-16-253

^aAccording to Transportation Security Administration officials, as of January 2016, the administration was in the process of conducting its fit-gap analysis to determine whether it will implement PALMS's learning and/or performance management capabilities. Officials expected the fit-gap assessment to be completed by the end of March 2016. U.S. Immigration and Customs Enforcement officials stated that they are waiting for the vendor to demonstrate that all requirements have been met—which is expected to occur by the end of February 2016.

Additionally, as of November 2015, the components estimate 123,200 users will use the performance management capabilities of PALMS (not the 217,758 expected, if fully implemented). Figure 5 shows the percentage of expected users from components planning to implement PALMS’s performance management capabilities in comparison to the total expected user estimate if fully implemented as intended.

Figure 5: Percentage of Total Expected Users from Components Planning to Implement the Performance Management Capabilities of Performance and Learning Management System (PALMS), as of November 2015



Source: GAO analysis of data provided by U.S. Department of Homeland Security officials. | GAO-16-253

^aIf the Federal Emergency Management Agency were to implement PALMS’s performance management capabilities, officials stated that the number of users would be approximately 8,400, but would be substantially more if the system is able to accommodate the component’s performance management requirements for its Reservists.

^bAccording to Transportation Security Administration officials, as of January 2016, the administration was in the process of conducting its fit-gap analysis to determine whether it will implement PALMS’s learning and/or performance management capabilities. Officials expected the fit-gap assessment to be completed by the end of March 2016. U.S. Immigration and Customs Enforcement officials stated that they are waiting for the vendor to demonstrate that all requirements have been met—which is expected to occur by the end of February 2016.

Of the seven components and headquarters that are currently planning to implement the learning and/or performance management aspects of PALMS, three have completed their implementation efforts of the learning management capabilities and deployed these capabilities to users

(deployed to CBP in July 2015, headquarters in October 2015, and FLETC in December 2015); two have initiated their implementation efforts on one or both aspects, but not completed them; and two have not yet initiated any implementation efforts, as of November 2015.

As a result, PALMS's current trajectory is putting the department at risk of not meeting its goals to perform efficient, accurate, and comprehensive tracking and reporting of training and performance management data across the enterprise; and consolidating its nine learning management systems down to one. Accordingly, until FEMA decides whether it will implement the performance management capabilities of PALMS and USCG decides whether it will implement the learning and/or performance management capabilities of PALMS, the department is at risk of implementing a solution that does not fully address its problems. Moreover, until DHS determines an alternative approach if one or both aspects of PALMS is deemed not feasible for ICE, TSA, FEMA or the USCG, the department is at risk of not meeting its goal to enable enterprise-wide tracking and reporting of employee learning and performance management.

PALMS Program Had Made Mixed Progress in Implementing Key IT Acquisition Best Practices

HRIT's PALMS program varied in its implementation of IT acquisition best practices for project planning, project monitoring, and risk management.³⁵ Specifically, the program management office had implemented selected IT acquisition best practices in each of these areas; however, the program had not developed complete life-cycle cost and schedule estimates. Additionally, the PALMS PMO did not monitor total costs spent on the program or consistently document the results from progress and milestone reviews. Further, the program management office had not fully implemented selected risk management practices. Without fully implementing effective acquisition management practices, DHS is limited in monitoring and overseeing the implementation of PALMS, ensuring that the department obtains a system that improves its performance management and learning management weaknesses, reduces duplication, and delivers within cost and schedule commitments.

³⁵CMMI-ACQ; PMBOK® Guide; [GAO-09-3SP](#); and [GAO-16-89G](#).

DHS and the PALMS PMO Had Not Fully Implemented Selected Project Planning Best Practices

PALMS Lacked a Life-Cycle Cost Estimate

According to GAO's Cost Estimating and Assessment Guide, having a complete life-cycle cost estimate is a critical element in the budgeting process that helps decision makers to evaluate resource requirements at milestones and other important decision points.³⁶ Additionally, a comprehensive cost estimate should include both government and contractor costs of the program over its full life cycle, from inception of the program through design, development, deployment, and operation and maintenance to retirement of the program.

However, according to PALMS PMO officials, they did not develop a life-cycle cost estimate for PALMS. In 2012 DHS developed an independent government cost estimate to determine the contractor-related costs to implement the PALMS system across the department (estimated to be approximately \$95 million); however, this estimate was not comprehensive because it did not include government-related costs. As a result, DHS was not able to determine the impact on cost when the PALMS program experienced problems (discussed in more detail later), since the baseline cost estimate was incomplete. PALMS PMO officials stated that PALMS did not develop a life-cycle cost estimate because the program is a Level 3 acquisition program and DHS does not require such an estimate for a Level 3 program. However, while DHS acquisition policy does not require a life-cycle cost estimate for a program of this size, we maintain that such an estimate should be prepared because of the program's risk and troubled history. Without developing a comprehensive life-cycle cost estimate, DHS is limited in making future budget decisions related to PALMS.

³⁶[GAO-09-3SP](#).

PALMS's Schedule Was Incomplete and Inaccurate

As described in GAO's Schedule Assessment Guide, a program's integrated master schedule is a comprehensive plan of all government and contractor work that must be performed to successfully complete the program. Additionally, such a schedule helps manage program schedule dependencies.³⁷ Best practices for developing and maintaining this schedule include, among other things, capturing all activities needed to do the work and reviewing the schedule after each update to ensure the schedule is complete and accurate.

While DHS had developed an integrated master schedule with the PALMS vendor, it did not appropriately maintain this schedule. Specifically, the program's schedule was incomplete and inaccurate.

- While DHS's original August 2012 schedule planned to fully deploy both the learning and performance management capabilities in one release at each component by March 2015, the program's September 2015 schedule did not reflect the significant change in PALMS's deployment strategy and time frames. Specifically, the program now plans to deploy the learning management capabilities first and the performance management capabilities separately and incrementally to headquarters and the components. However, the September 2015 schedule reflected the deployment-related milestones (per component) for only the learning management capabilities and did not include the deployment-related milestones for the performance management capabilities.

In September 2015, PALMS officials stated that the deployments related to performance management were not reflected in the program's schedule because the components had not yet determined when they would deploy these capabilities. Since then, two components have determined their planned dates for deploying these capabilities, but seven (including headquarters) remain unknown. As a result, the program does not know when PALMS will be fully implemented at all components with all capabilities. Table 4 provides a comparison of the program's initial delivery schedule, as of August 2012, to the program's latest schedule, as of November 2015.

³⁷ [GAO-16-89G](#).

Table 4: Delivery Schedule Identified in Performance and Learning Management System’s (PALMS) Original August 2012 Schedule and the Current Deployment Strategy and Schedule for PALMS, as of November 2015

Component	August 2012 delivery schedule (including both learning and performance management capabilities)	Current delivery schedule for PALMS learning management capabilities	Current delivery schedule for PALMS performance management capabilities
Federal Emergency Management Agency ^a	September 2014	December 2016	Unknown
Federal Law Enforcement Training Center Headquarters	September 2013	December 10, 2015*	Unknown
Transportation Security Administration ^a	September 2013	Unknown	Unknown
U.S. Citizenship and Immigration Services	September 2014	March 2016	October 2017
U.S. Coast Guard ^a	March 2014	Unknown	Unknown
U.S. Customs and Border Protection	March 2015	July 13, 2015*	Unknown
U.S. Immigration and Customs Enforcement ^a	March 2014	April 2016	Unknown
U.S. Secret Service	September 2014	May 2016	July 2016

Source: Data provided by DHS officials. | GAO-16-253

*Represents actual date.

^aAs of November 2015, the Federal Emergency Management Agency and U.S. Immigration and Customs Enforcement were not planning to implement the performance management capabilities of PALMS. Transportation Security Administration and the U.S. Coast Guard were not currently planning to implement either the learning or performance capabilities of PALMS. According to Transportation Security Administration officials, as of January 2016, the administration was in the process of conducting its fit-gap analysis to determine whether it will implement PALMS’s learning and/or performance management capabilities. Officials expected the fit-gap assessment to be completed by the end of March 2016. U.S. Immigration and Customs Enforcement officials stated that they are waiting for the vendor to demonstrate that all requirements have been met—which is expected to occur by the end of February 2016.

- Moreover, the schedule did not include all government-specific activities, including tasks related to employee union activities (such as notifying employee unions and bargaining with them, where necessary) related to the proposed implementation of the

performance management capabilities.³⁸ For example, time frames for when DHS planned to notify employee unions at DHS headquarters, FLETC, and USCIS were not identified in the schedule. In September 2015, PALMS program officials stated that certain government-specific tasks were not included in the schedule because the integrated master schedule was too big and difficult to manage, so the program decided to track certain government activities, such as union negotiation activities, separately. However, without an integrated master schedule that includes all government and contractor work that must be performed, the program is at risk of failing to ensure schedule dependencies are appropriately managed and that all essential activities are completed.

- Additionally, the August 2015 schedule had incorrect completion dates listed for key activities. For example, DHS reported in the schedule that the actual finish date for deploying the learning management capabilities of the PALMS system at CBP was February 17, 2015; however, according to CBP officials, they did not deploy these capabilities until July 2015. In September 2015, program officials acknowledged our concerns and attributed the inaccurate dates to a lack of oversight; subsequently, the program took actions to update the dates.

Without developing and maintaining a single comprehensive schedule that fully integrates all government and contractor activities, and includes all planned deployment milestones related to performance management, DHS is limited in monitoring and overseeing the implementation of PALMS, and managing the dependencies between program tasks and milestones to ensure that it delivers capabilities when expected.

³⁸In accordance with Title 5, Chapter 71 of the United States Code, implementing regulations and relevant Executive Order, federal agencies are to notify their unions and offer them the opportunity to negotiate on policies and practices that would affect working conditions. As such, each DHS component must determine whether implementing PALMS would affect working conditions and, if so, notify their unions.

PALMS Had Implemented
Selected Project
Monitoring Best Practices,
but Did Not Implement
Others

The PALMS PMO Did Not
Monitor Total Costs

According to CMMI-ACQ and the PMBOK® Guide, a key activity for tracking a program's performance is monitoring the project's costs by comparing actual costs to the cost estimate.³⁹ The PALMS PMO—which is responsible for overseeing the PALMS implementation projects across DHS, including all of its components—monitored task order expenditures on a monthly basis. As of December 2015, DHS officials reported that they had awarded approximately \$18 million in task orders to the vendor.

However, the program management office officials stated that they were not monitoring the government-related costs associated with each of the PALMS implementations. The officials stated that they were not tracking government-related implementation costs at headquarters because many of the headquarters program officials concurrently work on other acquisition projects and these officials are not required to track the amount of time spent working specifically on PALMS. The officials also said that they were not monitoring the government-related costs for each of the component PALMS implementation projects because it would be difficult to obtain and verify the cost data provided by the components. We acknowledge the department's difficulties associated with obtaining and verifying component cost data; however, monitoring the program's costs is essential to keeping costs on track and alerting management of potential cost overruns.

³⁹CMMI-ACQ, *Project Monitoring and Control Process Area*, and the PMBOK® Guide, *Project Cost Management*.

The PALMS PMO Did Not Consistently Document the Results from Performance Reviews

Additionally, because DHS did not develop a comprehensive life-cycle cost estimate for PALMS that included government-related costs,⁴⁰ the program management office was unable to determine cost increases to the program because it could not compare actual cost values against a baseline cost estimate. For example, program officials were unable to identify how much the program's cost estimate had increased when the implementation at headquarters experienced schedule delays to address deficiencies identified during testing. Without tracking and monitoring all costs associated with PALMS, the department will be unable to compare actual costs against planned estimates and thus, will be limited in its ability to fully monitor the program, which is essential for alerting the program to possible cost overruns and prompting corrective actions.

According to CMMI-ACQ and the PMBOK® Guide, key activities in tracking a program's performance include conducting and documenting the results from progress and milestone reviews to determine whether there are significant issues or performance shortfalls that need to be addressed.⁴¹

Although the PALMS PMO conducted reviews to monitor the program's performance, it did not consistently document the results of its progress and milestone reviews. For example,

- The PALMS PMO did not document the results of the status updates that the PMO provided to DHS executives during its bi-weekly integrated project team meetings, so it is unclear whether the program was appropriately monitoring the progress of all government-specific activities.
- According to PALMS PMO officials, PALMS achieved Initial Operating Capability—which was specified in the contract to be the point when the contractor would deliver an initial set of requirements to the

⁴⁰As discussed earlier, PALMS PMO officials stated that PALMS did not develop a life-cycle cost estimate because the program is a Level 3 acquisition program and DHS does not require such an estimate for a Level 3 program; however, developing a life-cycle cost estimate is a best practice described in GAO's *Cost Estimating and Assessment Guide*. Additionally, while DHS acquisition policy does not require a life-cycle cost estimate for a program of this size, we maintain that such an estimate should be prepared because of the program's risk and troubled history.

⁴¹CMMI-ACQ, *Project Monitoring and Control Process Area*, and the PMBOK® Guide, *Project Integration Management*.

government—in January 2015; however, the review for this major milestone was not documented. In September 2015, program officials stated that the results were not documented because this milestone did not align with the typical Initial Operating Capability milestone that is defined in DHS acquisition guidance. Specifically, DHS’s guidance defines it as when capabilities are first deployed to end users (PALMS capabilities were not deployed to any users until July 2015). Nevertheless, PALMS’s achieving Initial Operating Capability in January 2015 was still considered a major milestone that prompted a review. However, without documenting the results of the milestone review, it is unclear whether any action items were identified during this review and, if so, whether they have all been appropriately managed to closure.

- Although CBP officials stated that the results of their progress reviews with the vendor were typically documented, CBP was unable to provide the results of the milestone review conducted prior to deploying the PALMS learning management capabilities in July 2015. As such, it is unclear whether any action items were identified during this review and, if so, whether CBP had appropriately managed them to closure.

In the absence of documenting PALMS’s progress and milestone reviews, including all issues and corrective actions discussed, the program cannot demonstrate that these issues and corrective actions are appropriately managed.

The PALMS PMO Had Implemented Selected Risk Management Best Practices, but Lacked Others

PALMS Was Not Regularly Tracking the Status of Its Risks and Mitigation Efforts

According to CMMI-ACQ and the PMBOK® Guide, key risk management practices include identifying risks, developing mitigation plans, and regularly tracking the status of risks and mitigation efforts.⁴² In particular,

⁴²CMMI-ACQ, *Risk Management Process Area*; and the PMBOK® Guide, *Project Risk Management*.

identifying risks and periodically reviewing them is the basis for sound and successful risk management. Additionally, risk mitigation plans should be developed and implemented when appropriate to proactively reduce the potential impact if a risk were to occur.

While PALMS officials had identified program risks, developed associated mitigation plans, and documented them in the HRIT investment-level risk log (which is intended to be the centralized log containing all PALMS risks and mitigation plans, including both government- and vendor-identified risks⁴³), the program did not consistently maintain this log. Specifically, the PALMS risks in this log were out of date, the log did not accurately capture the status of all of the risks identified by the program, and it was unclear which risks and associated mitigation plans were being assessed on a monthly basis. For example,

- In the May 2015 risk log, 16 of the 17 active PALMS risks stated that the last time any action was taken to mitigate or close any of these risks was in 2014. However, the mitigation strategy details for 5 of these active risks included information related to decisions made in 2015. As such, it was unclear which risks and mitigation plans were regularly assessed and updated in the risk log, and when actions were last taken on each of the risks.
- One of the high-impact and high-probability risks from the May 2015 risk log stated that DHS needed to determine an interim solution for consolidating human resources-related data from DHS's components by December 2014; however, the status of this risk had not been updated since August 2014 and it was unclear whether this was still a risk or had been realized as an issue.

Additionally, while the HRIT investment-level risk management plan identified that the PALMS program was to, among other things, generate weekly status reports to document the status of decisions made during risk review meetings and identify planned completion dates for each step of the risk mitigation plans, the program was not always complying with these processes.⁴⁴ For example, the program was not developing the

⁴³PALMS risks identified by the vendor are also documented and maintained in a separate vendor-developed risk log.

⁴⁴As discussed later, the PALMS vendor also developed a separate risk management plan that documented how vendor-identified risks are to be maintained in the vendor-developed risk log.

required weekly risk status reports or identifying planned completion dates for its risk mitigation plan steps.

Program officials acknowledged that the PALMS risks in the HRIT risk log were out of date and inaccurate, and the program was not complying with all of the documented processes in the HRIT risk management plan. Program officials attributed this to, among other things, the PMO's focus being on meeting upcoming deadlines; as such, implementing certain processes identified in the HRIT risk management plan were not a priority. However, by not carrying out these key risk management functions, program officials introduced additional risk to the program.

In October 2015 and in response to us identifying these issues, PALMS officials stated that they were in the process of validating and updating the risks and mitigation plans in the HRIT risk log to address these issues, as well as were updating their risk management processes to align with the documented processes in the HRIT risk management plan. The program completed this validation update process in October 2015; however, the updated log continued to have these issues. For example, the PALMS PMO had not yet identified the planned completion dates for each mitigation step (where appropriate). Further, this updated log—which is intended to be the program's centralized log of all government- and vendor-identified PALMS risks—did not contain all of the vendor-identified risks. For example, two component-specific risks that were identified in the vendor-maintained risk log were not included in the program's centralized risk log. As such, it is unclear whether the program is appropriately managing these risks. Until a comprehensive risk log is established that accurately captures the status of all risks (including both government- and vendor-identified risks) and mitigation plans, and includes planned completion dates for each mitigation step (where appropriate), the program is limited in effectively managing all of its risks.

The PALMS PMO Did Not Prioritize the Program's Risks or Document Criteria for Elevating Component Risks

According to CMMI-ACQ and PMBOK® Guide risk management best practices, effective risk management includes evaluating and categorizing risks using defined risk categories and parameters, such as probability and impact, and determining each risk's relative priority. Risk prioritization helps to determine where resources for risk mitigation can be applied to provide the greatest positive impact on the program. The parameters for evaluating, categorizing, and prioritizing risks should include defined thresholds (e.g., for cost, schedule, performance) that, when exceeded, trigger management attention and mitigation activities. These risk parameters should be documented so that they are available for

reference throughout the life of the project and are used to provide common and consistent criteria for prompting management attention.⁴⁵

While the PALMS program had categorized its risks and assigned parameters to them, including probability and impact, the program did not prioritize its risks or document criteria for elevating them to management. Specifically, the PALMS PMO did not use the assigned parameters to determine each risk's relative priority and overall risk level (i.e., high, medium, and low). PALMS officials acknowledged in June 2015 that the risks were not prioritized in the logs, but said, based on the experience of the PALMS PMO staff, officials are able to determine each risk's priority by reviewing the assigned probability and impact parameters. However, this is an inadequate method for managing risks. Specifically, it introduces unnecessary subjectivity by relying heavily on officials to make prioritization decisions, rather than using the assigned parameters to determine and document each risk's relative priority.

Additionally, the program had not documented criteria for elevating component risks to the program management office. As mentioned earlier, each component is responsible for overseeing its own PALMS implementation project, while the program management office at headquarters is responsible for overseeing the implementation projects across the department. According to program officials, as part of this effort, each component is to follow the risk management processes documented in PALMS's vendor-developed risk management plan (which is a separate plan from the HRIT-level risk management plan used by the program management office, as discussed earlier). While the PALMS vendor-developed risk management plan directed each component to track risks in a component-specific risk register, the plan did not establish criteria for when component-level risks need to be elevated to the PALMS PMO at headquarters.

In September 2015, the PALMS program manager stated that all component-level risks that are rated red (i.e., high-probability and high-impact risks) are reported to headquarters. However, this guidance was not documented and, as such, the PALMS PMO did not have reasonable assurance that the components were knowledgeable about which risks to

⁴⁵CMMI-ACQ, *Risk Management Process Area*; and the PMBOK® Guide, *Project Risk Management*.

elevate, and whether the components were appropriately elevating such risks. Program officials were unable to explain why this criterion was not documented, but in response to our concern, the program officials directed the vendor to update the PALMS risk management plan to document this criterion; the vendor completed this update in October 2015. In particular, the plan now specifies that all component-level risks that could impact when the PALMS system is to be deployed at each of the components should be elevated to the PALMS PMO and given a priority of high.

Documenting the criteria for when risks need to be elevated to the PALMS PMO should help ensure that all appropriate risks are being elevated for review. However, until the program prioritizes its risks by determining each risk's relative priority and overall risk level, DHS is hampered in its ability to ensure that the program's attention and resources for risk mitigation are used in the most effective manner.

Conclusions

Although the HRIT investment was initiated about 12 years ago with the intent to consolidate, integrate, and modernize the department's human resources IT infrastructure, DHS has made very limited progress in achieving these goals. HRIT's minimally involved executive steering committee during a time when significant problems were occurring was a key factor in the lack of progress. This is particularly problematic given that the department's ability to efficiently and effectively carry out its mission is significantly hampered by its fragmented human resources system environment and duplicative and paper-based processes.

Moreover, DHS's ineffective management of HRIT, such as the lack of an updated schedule and a life-cycle cost estimate, also contributed to the neglect this investment has experienced. Until DHS, among other things, maintains a schedule, develops a life-cycle cost estimate, tracks costs, and re-evaluates and updates the Human Capital Segment Architecture blueprint, the department will continue to be plagued by duplicative systems and an inefficient and ineffective human resources environment impacting in its ability to perform its mission.

Additionally, until the PALMS program effectively addresses identified weaknesses in its project planning, project monitoring, and risk management practices and implements PALMS department-wide, DHS's performance management processes will continue to be cumbersome, time-consuming, and primarily paper-based. Further, DHS will be limited in efficiently tracking and reporting accurate, comprehensive performance

and learning management data across the organization, and could risk further implementation delays.

Recommendations for Executive Action

To ensure that the HRIT investment receives necessary oversight and attention, we are recommending that the Secretary of Homeland Security direct the Under Secretary of Management take the following two actions:

- Update the HRIT executive steering committee charter to establish the frequency with which HRIT executive steering committee meetings are to be held.
- Ensure that the HRIT executive steering committee is consistently involved in overseeing and advising HRIT, including approving key program management documents, such as HRIT's operational plan, schedule, and planned cost estimate.

To address HRIT's poor progress and ineffective management, we are recommending that the Secretary of Homeland Security direct the Under Secretary of Management to direct the Chief Human Capital Officer to direct the HRIT investment take the following six actions:

- Update and maintain a schedule estimate for when DHS plans to implement each of the strategic improvement opportunities.
- Develop a complete life-cycle cost estimate for the implementation of HRIT.
- Document and track all costs, including components' costs, associated with HRIT.
- Establish time frames for re-evaluating the strategic improvement opportunities and associated projects in the Human Capital Segment Architecture Blueprint and determining how to move forward with HRIT.
- Evaluate the strategic improvement opportunities and projects within the Human Capital Segment Architecture Blueprint to determine whether they and the goals of the blueprint are still valid and reflect DHS's HRIT priorities going forward, and update the blueprint accordingly.
- Update and maintain the department's human resources system inventory.

To improve the PALMS program's implementation of IT acquisition best practices, we are recommending that the Secretary of Homeland Security direct the Under Secretary of Management to direct the Chief Information Officer to direct the PALMS program office to take the following six actions:

- Establish a time frame for deciding whether PALMS will be fully deployed at FEMA and USCG, and determine an alternative approach if the learning and/or performance management capabilities of PALMS are deemed not feasible for ICE, FEMA, TSA, or USCG.
- Develop a comprehensive life-cycle cost estimate, including all government and contractor costs, for the PALMS program.
- Develop and maintain a single comprehensive schedule that includes all government and contractor activities, and includes all planned deployment milestones related to performance management.
- Track and monitor all costs associated with the PALMS program.
- Document PALMS's progress and milestone reviews, including all issues and corrective actions discussed.
- Establish a comprehensive risk log that maintains an aggregation of all up-to-date risks (including both government- and vendor-identified) and associated mitigation plans. Additionally, within the comprehensive risk log,
 - identify and document planned completion dates for each risk mitigation step (where appropriate), and
 - prioritize the risks by determining each risk's relative priority and overall risk level.

Agency Comments and Our Evaluation

We received written comments on a draft of this report from the Director of DHS's Departmental GAO-OIG Liaison Office. The comments are reprinted in appendix II.

In its comments, the department concurred with our 14 recommendations and provided estimated completion dates for implementing each of them. For example, by April 30, 2016, the Under Secretary of Management plans to ensure that the HRIT executive steering committee is consistently involved in overseeing and advising HRIT and the committee

is expected to be reviewed quarterly by the Acquisition Review Board.⁴⁶ These planned actions, if implemented effectively, should help DHS address the intent of our recommendations.

We also received technical comments from DHS headquarters and component officials, which we have incorporated, as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the Secretary of Homeland Security and other interested parties. In addition, this report is available at no charge on the GAO website at <http://www.gao.gov>.

Should you or your staffs have any questions on information discussed in this report, please contact Carol Cha at (202) 512-4456, ChaC@gao.gov or Rebecca Gambler at (202) 512-6912, GamblerR@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix III.



Carol R. Cha
Director, Information Technology Acquisition Management Issues



Rebecca S. Gambler
Director, Homeland Security and Justice

⁴⁶DHS's Acquisition Review Board is responsible for reviewing major acquisition programs for proper management, oversight, accountability, and alignment with the department's strategic functions at acquisition decision events and other meetings as needed.

Appendix I: Objectives, Scope, and Methodology

Our objectives were to (1) evaluate the progress the Department of Homeland Security (DHS) has made in implementing the Human Resources Information Technology (HRIT) investment and how effectively DHS has managed the investment since completing the Human Capital Segment Architecture in August 2011, (2) describe whether DHS has justified its investment in the Performance and Learning Management System (PALMS) program, (3) determine whether PALMS is being implemented enterprise-wide, and (4) evaluate the extent to which PALMS is implementing selected information technology (IT) acquisition best practices.

To address the first part of our first objective—to evaluate the progress DHS had made in implementing the HRIT investment—we compared HRIT’s goals, scope, and implementation time frames (as defined in the Human Capital Segment Architecture Blueprint, which was completed in August 2011) to the investment’s actual accomplishments. Specifically, we compared the completed and in-progress HRIT projects against the strategic improvement opportunities and projects that were outlined in the blueprint to determine which of the improvement opportunities and projects had been fully implemented or were in-progress. We also compared DHS’s planned schedule for implementing the improvement opportunities and projects against DHS’s current planned schedule for implementing them as of November 2015. Additionally, we interviewed DHS officials from the HRIT investment, Office of the Chief Information Officer (OCIO), Office of the Chief Human Capital Officer (OCHCO), and DHS’s components to discuss the steps taken to implement HRIT, address the strategic improvement opportunities and projects in the blueprint, and meet the goals of the investment.

In addressing the second part of our first objective—to evaluate how effectively DHS managed the investment—we analyzed documentation, such as the investment’s planned and updated completion dates, program management briefings, the blueprint, cost estimates, and budget documentation, and compared it against relevant cost and schedule best practices identified by GAO, CMMI-ACQ, and the PMBOK® Guide. These best practices included developing and maintaining a schedule estimate;

developing a life-cycle cost estimate; and tracking program expenditures.¹ To determine the amount spent to date on HRIT, we asked officials from DHS headquarters and each of the eight components to provide expenditure information on HRIT since the investment began in 2003; officials were unable to provide complete information.² As such, we were unable to identify the total amount spent on the investment and discuss this limitation earlier in the report.

We also analyzed DHS's human capital investment guidance, including the 2010 Deputy Secretary memorandum that prohibited component spending on enhancements to existing human resources systems or acquisitions of new human resources solutions, unless those expenditures have been approved by OCHCO or OCIO,³ and compared it to the components' current investments in human resources systems, such as those listed in DHS's fiscal year 2016 human capital portfolio. Additionally, we interviewed officials from the OCIO, OCHCO, and DHS's eight components to obtain additional information on how HRIT reduced or will reduce duplicative human resources systems.

To describe whether DHS justified its investment in the PALMS program, we analyzed documentation, such as the program's business case and the documented analysis of alternatives that was conducted to identify recommended approaches for pursuing a commercial off-the-shelf learning management system. We used this information to determine the various alternative solutions that DHS assessed for delivering enterprise-wide performance and learning management capabilities. Additionally, we reviewed program management briefings provided to the HRIT Executive

¹GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009); GAO *Schedule Assessment Guide: Best Practices for Project Schedules*, [GAO-16-89G](#) (Washington, D.C.: Dec. 22, 2015); Software Engineering Institute, *Capability Maturity Model® Integration for Acquisition (CMMI-ACQ), Version 1.3* (Pittsburgh, Pa.: November 2010); and the Project Management Institute, Inc., *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Fifth Edition*, (Newton Square, Pa.: 2013). "PMBOK" is a trademark of the Project Management Institute, Inc.

²The eight components included U.S. Customs and Border Protection, Federal Emergency Management Agency, Federal Law Enforcement Training Center, U.S. Immigration and Customs Enforcement, Transportation Security Administration, U.S. Citizenship and Immigration Services, U.S. Coast Guard, and U.S. Secret Service.

³*DHS Enterprise Human Resources Processes, People, and Technology* Memorandum, dated January 15, 2010.

Steering Committee that outlined, for example, the proposed solution and rationale for such a solution. We also interviewed appropriate DHS and PALMS officials for further information regarding the process DHS used to conduct the analysis of alternatives and other steps the department took to determine its preferred solution, including determining whether DHS could use existing shared services that were being used by other federal agencies.

To determine whether PALMS is being implemented department-wide, we analyzed the program's acquisition plan and original schedule for implementing the system department-wide, and compared it against actual program status documentation and the program's current implementation schedule. We also obtained and analyzed information from DHS officials, the PALMS headquarters program management office and DHS's components on each component's implementation of PALMS, including identifying which PALMS capabilities each component planned to implement, the number of planned PALMS users, and their reported causes for why certain components were not currently planning to implement PALMS.

To evaluate the extent to which PALMS implemented selected IT acquisition best practices, we analyzed the program's IT acquisition documentation and compared it to relevant project planning, project monitoring, and risk management best practices—including CMMI-ACQ and PMBOK® Guide practices, and best practices identified by GAO.⁴ Specifically, we analyzed program documentation, including the acquisition plan, requirements management plan, risk management plan, cost and schedule estimates, program management review briefings, meeting minutes, risk logs, and risk mitigation plans to determine the extent to which the program's acquisition processes were consistent with the best practices. Additionally, we interviewed officials from HRIT, PALMS, OCIO, OCHCO, and DHS's eight components to obtain additional information on the program's risk management, project planning, and project monitoring processes.

To assess the reliability of the data that we used to support the findings in this report, we reviewed relevant program documentation to substantiate evidence obtained through interviews with agency officials. We

⁴CMMI-ACQ, PMBOK® Guide, [GAO-16-89G](#), and [GAO-09-3SP](#).

determined that the data used in this report were sufficiently reliable, with the exception of expenditure information provided by the HRIT investment and selected risk data provided by the PALMS program. We discuss limitations with these data in the report. We have also made appropriate attribution indicating the sources of the data.

We conducted this performance audit from March 2015 to February 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528



**Homeland
Security**

January 21, 2016

Carol R. Cha
Director, Information Technology Acquisition Management Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Draft Report GAO-16-253, "HOMELAND SECURITY: Oversight of Neglected Human Resources Information Technology Investment Is Needed"

Dear Ms. Cha:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO's) work in planning and conducting its review and issuing this report.

It is important to note that the Department is already taking actions to evaluate the Human Resources Information Technology (HRIT) investment and address the shortcomings. For example, on December 21, 2015, the Acquisition Review Board (ARB) reviewed the HRIT Portfolio for the purpose of identifying progress since the 2010 baseline and the status of the 15 Strategic Improvement Opportunities (SIOs), and for leadership to provide direction to the HRIT Portfolio going forward. The Under Secretary for Management/Chief Acquisition Officer subsequently signed an Acquisition Decision Memorandum enumerating ARB decisions and directing specific actions to the DHS Office of the Chief Information Officer (OCIO), Office of the Chief Human Capital Officer (OCHCO), Office of the Chief Financial Officer (OCFO), and Office of Program Accountability and Risk Management (PARM). These actions include:

- Realignment of HRIT resources and functions to OCIO;
- Re-establishment of the HRIT Executive Steering Committee (ESC) with an updated charter and designated co-chairs;
- Documentation requirements for the SIOs;
- Next steps for the ESC; and
- Quarterly Program Reviews to the ARB.

The draft report contained 14 recommendations with which the Department concurs. Specifically, GAO recommended that the Secretary of Homeland Security direct the Under Secretary for Management (USM) to:

Recommendation 1: Update the HRIT ESC charter to establish the frequency with which HRIT ESC meetings are to be held.

Response: Concur. The USM will ensure that the HRIT ESC charter is updated to establish quarterly meetings of the HRIT ESC. Estimated Completion Date (ECD): February 29, 2016.

Recommendation 2: Ensure that the HRIT ESC is consistently involved in overseeing and advising HRIT, including approving key program management documents, such as HRIT's operational plan, schedule, and planned cost estimate.

Response: Concur. The USM will ensure that the HRIT ESC is consistently involved in overseeing and advising HRIT, including approving key program management documents, such as HRIT's operational plan, schedule, and planned cost estimate. The HRIT ESC will be reviewed quarterly by the ARB, under the direction of the Deputy Under Secretary for Management. ECD: April 30, 2016.

Recommendation 3: Direct the Chief Human Capital Officer to direct the HRIT investment to update and maintain a schedule estimate for when DHS plans to implement each of the strategic improvement opportunities.

Response: Concur. The DHS Chief Information Officer (CIO) will update and maintain a schedule estimate for when it plans to implement each of the strategic improvement opportunities. Further details will be provided after the realignment of the HRIT investment has occurred. ECD: April 30, 2016.

Recommendation 4: Direct the Chief Human Capital Officer to direct the HRIT investment to develop a complete life-cycle cost estimate for the implementation of HRIT.

Response: Concur. The CIO will direct development of a complete life-cycle cost estimate for the implementation of the HRIT ESC-approved strategic improvement opportunities within HRIT. ECD: June 30, 2016.

Recommendation 5: Direct the Chief Human Capital Officer to direct the HRIT investment to document and track all costs, including components' costs, associated with HRIT.

Response: Concur. The CIO will direct the HRIT investment to document and track all costs associated with HRIT, including components' costs. ECD: October 31, 2016.

Recommendation 6: Direct the Chief Human Capital Officer to direct the HRIT investment to establish time frames for re-evaluating the strategic improvement opportunities and associated projects in the Human Capital Segment Architecture Blueprint and determining how to move forward with HRIT.

Response: Concur. The CIO will direct the HRIT investment to establish timeframes for re-evaluating the strategic improvement opportunities and associated projects in the Human Capital Segment Architecture Blueprint and determine how to move forward with HRIT. ECD: February 29, 2016

Recommendation 7: Direct the Chief Human Capital Officer to direct the HRIT investment to evaluate the strategic improvement opportunities and projects with the Human Capital Segment Architectures Blueprint to determine whether they and the goals of the blueprint are still valid and reflect DHS's HRIT priorities going forward, and update the blueprint accordingly.

Response: Concur. The CIO will direct the HRIT investment to evaluate the strategic improvement opportunities and projects with the Human Capital Segment Architectures Blueprint to determine whether they and the goals of the blueprint are still valid and reflect DHS's HRIT priorities going forward, and update the blueprint accordingly. ECD: April 30, 2016.

Recommendation 8: Direct the Chief Human Capital Officer to direct the HRIT investment to update and maintain the department's human resources system inventory.

Response: Concur. The CIO will direct the HRIT investment to update and maintain the Department's human resources system inventory. ECD: October 31, 2016.

Recommendation 9: Direct the Chief Information Officer to direct the Performance and Learning Management System (PALMS) program office to establish a time frame for deciding whether PALMS will be fully deployed at FEMA and USCG, and determine an alternative approach if PALMS is deemed not feasible for ICE, FEMA, TSA or USCG.

Response: Concur. The DHS OCIO PALMS Program Office will establish a time frame for a deployment decision of PALMS for the components specified. ICE is in the process of learning management implementation and is scheduled to be completed on April 5, 2016. The ECD for FEMA, TSA and USCG is April 30, 2016.

Recommendation 10: Direct the Chief Information Officer to direct the PALMS program office to develop a comprehensive life-cycle cost estimate, including all government and contractor costs, for the PALMS program.

Response: Concur. The OCIO PALMS Program Office will provide an updated life cycle cost estimate for all government and contractor costs based on DHS ARB requirements for a Level 3 program. ECD: May 30, 2016.

Recommendation 11: Direct the Chief Information Officer to direct the PALMS program office to develop and maintain a single comprehensive schedule that includes all government and contractor activities, and includes all planned deployment milestones related to performance management.

Response: Concur. The OCIO PALMS Program Office will develop and maintain a single comprehensive schedule that includes all government and contractor activities, and includes all planned deployment milestones related to performance management. ECD: May 30, 2016.

Recommendation 12: Direct the Chief Information Officer to direct the PALMS program office to track and monitor all costs associated with the PALMS program.

Response: Concur. The OCIO PALMS Program Office will track and monitor all costs associated with the PALMS program. ECD: March 30, 2016.

Recommendation 13: Direct the Chief Information Officer to direct the PALMS program office to document PALMS's progress and milestone reviews, including all issues and corrective actions discussed.

Response: Concur. The OCIO PALMS Program Office will document PALMS's progress and milestone reviews, including publishing meeting notes, and all issues and corrective actions discussed. ECD: February 29, 2016.

Recommendation 14: Direct the Chief Information Officer to direct the PALMS program office to establish a comprehensive risk log that maintains an aggregation of all up-to-date risks (including both government and vendor-identified) and associated mitigation plans. Additionally, within the comprehensive risk log,

- Identify and document planned completion dates for each risk mitigation step (where appropriate).
- Prioritize the risks by determining each risk's relative priority and overall risk level.

Response: Concur. The OCIO PALMS Program Office will establish a comprehensive risk log that maintains an aggregation of all up-to-date risks (including both government and vendor-identified) and associated mitigation plans, as well as the additional requirements identified within the comprehensive risk log. ECD: January 29, 2016.

Again, thank you for the opportunity to review and comment on the draft report. Technical comments were previously provided under separate cover. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,



Jim H. Crumpacker, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contacts

Carol R. Cha at (202) 512-4456 or ChaC@gao.gov, or
Rebecca S. Gambler at (202) 512-6912 or GamblerR@gao.gov

Staff Acknowledgments

In addition to the contacts named above, the following staff also made key contributions to this report: Shannin O'Neill, Assistant Director; Christopher Businsky; Rebecca Eyler; Javier Irizarry; Emily Kuhn; and David Lysy.

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