United States Government Accountability Office

Report to Congressional Committees

July 2015

DOD BUSINESS SYSTEMS MODERNIZATION

Additional Action Needed to Achieve Intended Outcomes

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Why GAO Did This Study

GAO designated DOD's multibillion dollar business systems modernization program as high risk in 1995, and since then has provided a series of recommendations aimed at strengthening its institutional approach to modernizing its business systems investments. Section 332 of the NDAA for fiscal year 2005, as amended, requires the department to take specific actions consistent with GAO's prior recommendations and included a provision for GAO to review DOD's efforts. In addition, the Senate Armed Services Committee Report for the NDAA for fiscal year 2015 included a provision for GAO to evaluate the usefulness and effectiveness of DOD's business enterprise architecture and business process reengineering processes. This report addresses both of those provisions.

In evaluating the department's compliance, GAO analyzed DOD's efforts to address open recommendations made in previous reviews. To evaluate the usefulness and effectiveness of the department's business enterprise architecture and business process reengineering processes, GAO surveyed the military department portfolio managers (24 in total) and interviewed officials. The response rate for the survey was 100 percent, making the results of the survey generalizable.

What GAO Recommends

GAO recommends that DOD utilize the results of the survey to determine additional actions that can improve management of its business process reengineering and enterprise architecture activities. DOD concurred with the recommendation.

View GAO-15-627. For more information, contact Carol R. Cha at (202) 512-4456 or chac@gao.gov.

What GAO Found

The Department of Defense (DOD) has implemented 5 of the 16 recommendations made by GAO since June 2011 to address each of the overarching provisions for improving business systems management in the *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005*, as amended (NDAA) (10 U.S.C. § 2222) (see table). For example, it has implemented the recommendation to improve the data available for its business systems by making improvements to its repositories used for tracking information about the systems. Based on GAO's analysis, the department has partially implemented the remaining 11 recommendations. Implementing all recommended actions will improve DOD's modernization management controls and help fulfill the department's execution of the act's requirements.

Status of DOD's Implementation of Prior Recommendations Associated with the Fiscal Year 2005 NDAA, as Amended, as of April 2015

NDAA Provision	Implemented	Partially Implemented	Total
Business Enterprise Architecture	1	2	3
Enterprise Transition Plan	-	1	1
Investment Management	1	3	4
Investment Certification and Approval	2	3	5
Mandated Budgetary Reporting	1	-	1
Other (Human Capital)	-	2	2
Total	**5**	**11**	**16**

Source: GAO analysis of DOD documentation. | GAO-15-627.

DOD's business enterprise architecture and process reengineering efforts are not fully achieving the intended outcomes described in statute. More specifically, portfolio managers reported through GAO's survey that the architecture was not effective in constraining system investments or enabling DOD to produce reliable and timely information for decision-making purposes, among other things. As a result, the architecture has produced limited value. Portfolio managers reported that the department's business process reengineering efforts were moderately effective in streamlining business processes, but much less so in limiting the tailoring of commercial off-the-shelf systems. They also reported that these efforts have been useful in realizing selected benefits, such as improved documentation of business needs.

Managers GAO surveyed reported various challenges that impede the department's ability to fully achieve intended outcomes, such as cultural resistance to change and the lack of skilled staff. The department has work under way to address some of these challenges; however, gaps exist and the portfolio managers provided suggestions on how to close some of them. More fully addressing the challenges cited by the portfolio managers would help the department achieve better outcomes, including greater operational efficiencies and cost savings.

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Abbreviations

CIO	chief information officer
CMO	Chief Management Officer
DCMO	Deputy Chief Management Officer
DOD	Department of Defense
NDAA	*National Defense Authorization Act*

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Congressional Committees

For decades, the Department of Defense (DOD) has been challenged in modernizing its business systems. Since the release of GAO's 1995 High Risk report, we have designated the department's business systems modernization program as high risk because of its vulnerability to fraud, waste, abuse, and mismanagement, and because of missed opportunities to achieve greater efficiencies. It continues to be on the high-risk list today.[1] In addition, we have reported[2] numerous times that significant potential exists for identifying and avoiding costs associated with duplicative functionality across the department's portfolio of defense business systems environment. According to DOD, this environment includes 2,179 business system investments and costs the department approximately $10 billion in fiscal year 2015.

Since 1995, we have made a series of recommendations aimed at strengthening DOD's institutional approach to business systems modernization and reducing the risks associated with key investments.[3] Further, Congress included provisions in the *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005* (NDAA), as amended,[4]

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

[2]*Follow-up on 2011 Report: Status of Actions Taken to Reduce Duplication, Overlap, and Fragmentation, Save Tax Dollars, and Enhance Revenue*, GAO-12-453SP (Washington, D.C.: Feb. 28, 2012); *Defense Business Systems: Further Refinements Needed to Guide the Investment Management Process*, GAO-14-486 (Washington, D.C.: May 12, 2014).

[3]See, for example, GAO, *Business Systems Modernization: Summary of GAO's Assessment of the Department of Defense's Initial Business Enterprise Architecture*, GAO-03-877R (Washington, D.C.: July 7, 2003); *Information Technology: Architecture Needed to Guide Modernization of DOD's Financial Operations*, GAO-01-525 (Washington, D.C.: May 17, 2001); and *High-Risk Series: An Overview*, GAO/HR-95-1 (Washington, D.C.: February 1995).

[4]Pub. L. No. 108-375, § 332, 118 Stat. 1811, 1851-1856 (2004), as amended by the NDAA for Fiscal Year 2015, Pub. L. No. 113-291, § 901, 128 Stat. 3292 (2014), the NDAA for Fiscal Year 2014, Pub. L. No. 113-66, § 901, 127 Stat. 672, 815 (2013), the NDAA for Fiscal Year 2013, Pub. L. No. 112-239, § 906, 126 Stat. 1632, 1869 (2012), the NDAA for Fiscal Year 2012, Pub. L. No. 112-81, § 901, 125 Stat. 1298, 1527 (2011), and the NDAA for Fiscal Year 2010, Pub. L. No. 111-84, § 1072, 123 Stat. 2190, 2470 (2009). This provision is codified in part at 10 U.S.C. § 2222.

that were consistent with our past recommendations. Among other things, section 332 of the act addresses DOD's business system investment review process, requirements for certifying and approving business systems, and calls for the development of a business enterprise architecture and associated enterprise transition plan. The act also directs the Secretary of Defense to submit an annual report to congressional defense committees on DOD's compliance with certain requirements of the NDAA for fiscal year 2005 not later than March 15 of each year, through 2016, and included a provision for us to report on an assessment of the department's actions to comply with the requirements of the act. In addition, the Senate Armed Services Committee report associated with the fiscal year 2015 NDAA called for us to examine the utility and effectiveness of DOD's business enterprise architecture and business process reengineering processes.[5]

Accordingly, our objectives were to (1) assess the actions DOD has taken to comply with section 332 of the NDAA for fiscal year 2005, as amended, and (2) determine the usefulness and effectiveness of DOD's business enterprise architecture and business process reengineering processes.

To address the first objective, we reviewed DOD documentation and interviewed department officials to examine DOD's actions to implement open recommendations from previous annual GAO reports that address compliance with the act's requirements.

For the second objective, we analyzed the fiscal year 2005 NDAA and related DOD guidance to determine intended outcomes of the business enterprise architecture and business process reengineering processes. We then developed a structured data collection instrument (survey) based on this analysis to obtain information from military department portfolio managers on the extent to which DOD has achieved intended business process reengineering and business enterprise architecture outcomes, as well as information such as benefits achieved, challenges, and improvement suggestions. We surveyed these military department portfolio managers (24 in total) and received responses from all of them. Accordingly, the survey results are generalizable. We then analyzed the results to determine staff perspectives on the usefulness and

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[5]S. Rep. No. 113-176, at 147(2014), accompanying S. 2410 and associated with H.R. 3979 that became Pub. L. No. 113-291.

effectiveness of DOD's processes. We also met with representatives from selected DOD business system programs and cognizant DOD officials to discuss their perspectives and relevant improvement efforts that are planned and under way.

We conducted this performance audit from October 2014 to July 2015, 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Additional details on our objectives, scope, and methodology are contained in appendix I.

Background

DOD is one of the largest and most complex organizations in the world. In support of its military operations, the department performs an assortment of interrelated and interdependent business functions, including logistics management, procurement, health care management, and financial management. As we have previously reported,[6] the DOD systems environment that supports these business functions is complex and error prone, and is characterized by (1) little standardization across the department, (2) multiple systems performing the same tasks, (3) the same data stored in multiple systems, and (4) the need for data to be manually entered.

For fiscal year 2015, the department requested about $10 billion for its business system investments. According to the department, as of April 2015, its environment includes approximately 2,179 business systems. Of these systems, DOD reports that, for fiscal year 2015, the department approved certification requests for 1,182 business systems covered by the fiscal year 2005 NDAA's certification and approval requirements. Figure 1 shows how many of these 1,182 covered systems are associated with each functional area.

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[6]*See, for example, GAO, DOD Financial Management: Implementation Weaknesses in Army and Air Force Business Systems Could Jeopardize DOD's Auditability Goals*, GAO-12-134 (Washington, D.C.: Feb. 28, 2012).

Figure 1: Department of Defense Business Systems Certified and Approved by Functional Area

Pie chart segments:
- 0.08% — Enterprise Information Technology Infrastructure (1)
- 0.51% — Security Cooperation (6)
- 0.93% — Other (11)
- 1.44% — Defense Security Enterprise (17)
- 6.68% — Acquisition (79)
- 9.22% — Installations and Environment (109)
- 15.14% — Financial Management (179)
- 36.89%
- 29.10%
- Logistics and Materiel Readiness (344)
- Human Resources Management (436)
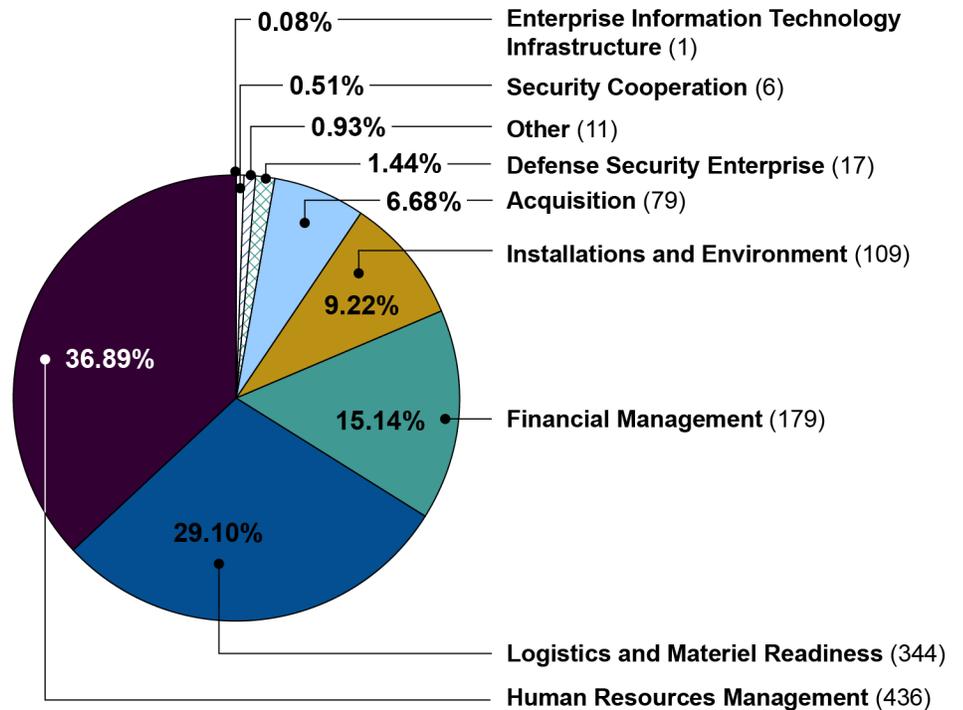
Source: GAO analysis of U.S. Department of Defense data. | GAO-15-627

DOD currently bears responsibility, in whole or in part, for about half (17 of 32) of the programs across the federal government that we have designated as high risk.[7] Seven of these areas are specific to the department,[8] and 10 other high-risk areas are shared with other federal agencies.[9] Collectively, these high-risk areas in major business

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[7]GAO-15-290.

[8]These seven high-risk areas are DOD's approach to business transformation, business systems modernization, contract management, financial management, supply chain management, support infrastructure management, and weapon systems acquisition.

[9]The 10 governmentwide high-risk areas are climate change risks, federal disability programs, technologies critical to U.S. national security interests, information systems and critical infrastructure, information sharing for homeland security, human capital, weather satellite data, Veterans Affairs Health Care, IT acquisition and operations, and real property.

operations are linked to the department's ability to perform its overall mission and affect the readiness and capabilities of U.S. military forces. As such, DOD's business systems modernization is one of the department's specific high-risk areas and is essential for addressing many of the department's other high-risk areas. For example, modernized business systems are integral to the department's efforts to address its financial, supply chain, and information security management high-risk areas.

The NDAA for Fiscal Year 2005 Requires DOD to Improve Its Management of Defense Business Systems

Congress included provisions in the fiscal year 2005 NDAA, as amended, that are aimed at ensuring DOD's development of a well-defined business enterprise architecture and associated enterprise transition plan, as well as the establishment and implementation of effective investment management structures and processes.[10] The act requires DOD to, among other things,

- establish an investment approval and accountability structure along with an investment review process;

- not obligate funds for a defense business system program with a total cost in excess of $1 million over the period of the current future-years defense program unless the approval authority certifies that the business system program meets specified conditions, including complying with the business enterprise architecture and having appropriate business process reengineering conducted;

- develop a business enterprise architecture that covers all defense business systems; and

- develop an enterprise transition plan for implementing the architecture, and identify systems information in DOD's annual budget submissions.

The fiscal year 2005 NDAA also requires that the Secretary of Defense submit an annual report to the congressional defense committees on the department's compliance with these provisions. DOD submitted its most

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[10]Section 901 of the NDAA for fiscal year 2015 converts the position of the Deputy Chief Management Officer to the position of Under Secretary for Defense for Business Management and Information, effective February 1, 2017, thereby reassigning responsibility for the defense business system investment management process and enterprise architecture under 10 U.S.C. § 2222 to this new position.

recent annual report to Congress on April 6, 2015, describing steps taken, under way, and planned to address the act's requirements.

DOD's Approach to Business Systems Modernization

DOD's approach to business systems modernization includes reviewing systems annually to ensure that they comply with the fiscal year 2005 NDAA's business enterprise architecture and business process reengineering requirements.[11] This effort includes both a certification of compliance by lower-level department authorities and an approval of this certification by higher-level department authorities. According to the act, this certification and approval is to occur before systems are granted permission to obligate funds for a given fiscal year. These efforts are to be guided by DOD's Chief Management Officer (CMO) and Deputy Chief Management Officer (DCMO). Specifically, the CMO's responsibilities include developing and maintaining a departmentwide strategic plan for business reform; establishing performance goals and measures for improving and evaluating overall economy, efficiency, and effectiveness; and monitoring and measuring the progress of the department.

The DCMO's responsibilities include recommending to the CMO methodologies and measurement criteria to better synchronize, integrate, and coordinate the business operations to ensure alignment in support of their warfighting mission and developing and maintaining the department's enterprise architecture for its business mission area. Table 1 describes selected roles and responsibilities and the composition of key governance entities and positions related to business systems modernization as they were documented for the fiscal year 2015 business system certification and approval cycle.[12]

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[11]The business systems certification and approval cycle is the part of DOD's overall effort to transform its business operations.

[12]The fiscal year 2015 business system certification and approval process refers to certifications and approvals that were to occur before systems were to obligate funds for fiscal year 2015.

Table 1: DOD Business Systems Modernization Governance Entities' Roles, Responsibilities, and Composition

Entity	Roles and Responsibilities	Composition
Deputy's Management Action Group/Defense Business Systems Management Committee[a]	Provide strategic direction and plans for the business mission area. Recommend policies and procedures required to integrate DOD business transformation and attain cross-department, end-to-end interoperability of business systems and processes. Review defense business system portfolios. Serve as approval authority for business system investments greater than $1 million. Establish policies and approve the business mission area strategic plan, the enterprise transition plan for implementation of business systems modernization, and the business enterprise architecture.	Meets at the discretion of the Deputy Secretary of Defense and is co-chaired by the Vice Chairman of the Joint Chiefs of Staff. Includes senior leadership in the Office of the Secretary of Defense, as appropriate, such as the Deputy Chief Management Officer (DCMO) and the DOD Chief Information Officer (CIO). Also includes the military department Chief Management Officers (CMO), the heads of select defense agencies, and participation by other senior management, including from the Joint Chiefs of Staff and the U.S. Transportation Command.
Defense Business Council /Investment Review Board	Oversee the DOD investment management process and conduct portfolio analysis in support of the review and certification of covered defense business system programs.[b] Review functional strategies developed by the principal staff assistants and assess component organizational execution plans. Recommend funds certification to the Deputy's Management Action Group/Defense Business Systems Management Committee. Prioritize and approve changes for inclusion in the business enterprise architecture. Support the development and implementation of the department's end-to-end framework. Validate requirements for defense business capabilities. Ensure that defense business system investments are aligned to the lines of business for the department. Support measurable improvements to the department's business objectives and generates a measurable return on investment.	Co-chaired by the DOD DCMO and the DOD CIO Membership includes: the Under Secretaries of Defense (Acquisition, Technology, and Logistics; Policy; Personnel and Readiness; Intelligence), Under Secretary of Defense (Comptroller)/Chief Financial Officer, Director of Cost Assessment and Program Evaluation, Joint Staff, DCMOs for the Army, Navy and Air Force, CIOs for the Army, Navy and Air Force.
Principal Staff Assistants	Senior advisors to the Secretary of Defense that assist in policy development, planning, resource management, fiscal, and program evaluation responsibilities. Develop functional strategies that are to describe business functions, outcomes, measures, and standards for their respective business areas.[c] Responsible and accountable for the content of their portions of the business enterprise architecture.	Under Secretaries of Defense for defined functional areas (e.g., Comptroller; Acquisition, Technology, and Logistics; Intelligence; Policy; and Personnel and Readiness; and the DOD CIO).

Entity	Roles and Responsibilities	Composition
Precertification Authority	Ensure component-level investment review processes integrate with the investment management system. Identify those component systems that require Investment Review Board certification and prepare, review, approve, validate, and transfer investment documentation as required. Assess and precertify business process reengineering and architecture compliance for component systems submitted for certification and annual review.	CMO from the Air Force, Army, Navy, the director or the equivalent from the defense agencies, and those designated by the DOD DCMO as appropriate for programs that support the business processes of more than one military department or defense agency.
Office of the DCMO	Develop and approve business systems funds certification process. Co-chair Defense Business Council /Investment Review Board with DOD CIO. Approve business system certifications (If delegated by the Deputy Secretary of Defense). Establish 4th Estate Working Group[d] to support CMO. Document the business enterprise architecture. Report certification results to Congress. Review and approve Business Plans and Business Strategies (functional strategies). Assess and, if necessary, optimize business processes and practices as directed by the DOD CMO. Issue business process reengineering guidance and ensure Precertification Authority compliance.	Composed of four directorates: (Administration; Oversight and Compliance; Management, Policy and Analysis; and Planning, Performance, and Assessment).

Source: GAO analysis of DOD information. | GAO-15-627.

[a]The National Defense Authorization Act for Fiscal Year 2015, which was signed into law in December 2014, removed the requirement for DOD to maintain the Defense Business Systems Management Committee. However, this table reflects roles and responsibilities as they applied to the fiscal year 2015 certification and approval cycle, which was completed before this act was signed into law.

[b]A covered defense business system is any defense business system program that is expected to have a total cost in excess of $1 million over the period of the current future-years defense program, which is the department's financial plan for a 5-year period.

[c]DOD has nine functional areas: financial management, acquisition, defense security enterprise, logistics and materiel readiness, installations and environment, human resources management, security cooperation, enterprise IT infrastructure, and other.

[d]The 4th Estate Working Group is to provide cross-functional review, guidance, and leadership to manage and discuss issues associated with the other defense organizations business transformation efforts and is also to provide business mission area oversight.

Within the military departments, the entities described in table 1 are supported by portfolio managers who oversee groups of business system investments within specific functional areas.[13] For example, the

[13]DOD identified a total of 24 business system portfolios that include one or more defense business system.

Department of the Navy's financial management portfolio manager is responsible for overseeing the Navy's portfolio of financial management systems.

Overview of DOD's Integrated Business Framework

In order to manage and oversee the department's business operations and approximately 1,180 covered defense business systems, the Office of the DCMO developed the Integrated Business Framework. According to officials from the office, this framework is used to align the department's strategic objectives—laid out in the *National Security Strategy*,[14] *Quadrennial Defense Review*,[15] and *Strategic Management Plan*[16]—with its defense business system investments.

Using the overarching goals of the *Strategic Management Plan*, principal staff assistants developed six functional strategies that cover nine functional areas.[17] These functional strategies are to define business outcomes, priorities, measures, and standards for a given functional area within DOD. The business objectives and compliance requirements laid out in each functional strategy are to be integrated into the business enterprise architecture.

The precertification authorities in the Air Force, Navy, Army, and other departmental organizations use the functional strategies to guide the development of organizational execution plans, which are to summarize

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[14]The *National Security Strategy* outlines the core national security interests of the United States and calls for a range of actions to implement the strategy.

[15]The *Quadrennial Defense Review* is the strategic plan for DOD and sets forth priority objectives for DOD and major actions to be taken to accomplish these objectives. The most recent review was issued in March 2014. This plan is derived from the core interests listed in the *National Security Strategy*.

[16]The *Strategic Management Plan* established specific management goals that directly support the strategic goals of the *Quadrennial Defense Review*. DOD has issued five updates to the *Strategic Management Plan* since 2008, with the most recent being issued in July 2013 and covering fiscal years 2014 and 2015. According to officials from the Office of the DCMO, the department is in the process of transitioning from an approach focused on its *Strategic Management Plan* to an approach focused on a *DOD Strategic Plan*. However, the certification and approval process for fiscal year 2015 was still guided by the existing *Strategic Management Plan* for fiscal years 2014-2015.

[17]The functional areas are acquisition, defense security enterprise, enterprise IT infrastructure, financial management, human resources management, installations and environment, logistics and materiel readiness, security cooperation, and other.

each component's business strategy for each functional area. Each plan includes a description of how the component's goals and objectives align with those in the functional strategies and the *Strategic Management Plan*. In addition, each organizational execution plan includes a portfolio of defense business system investments organized by functional area. The components submit each of these portfolios to the Defense Business Council for certification on an annual basis.

According to the department's *2015 Congressional Report on Defense Business Operations*, for the fiscal year 2015 certification and review cycle, the department empowered the military department chief management officers to manage their business systems portfolios and conduct portfolio reviews. Results were presented to the Defense Business Council and were to address topics such as major improvements and cost reductions, return on investment, risks and challenges, deviations from prior plans, and future goals.

According to DOD's investment management guidance, for the fiscal year 2015 certification and approval cycle, the Defense Business Council was to review the organizational execution plans and associated portfolios based on four investment criteria—compliance, strategic alignment, utility, and cost—to determine whether or not to recommend the portfolio for certification of funding. The Vice Chairman of the Deputy's Management Action Group/Defense Business Systems Management Committee was to approve certification decisions and then document the decision in an investment decision memorandum. These memoranda were to indicate whether an individual organizational execution plan has been certified; conditionally certified (i.e., obligation of funds has been certified and approved but may be subject to conditions that restrict the use of funds, a time line for obligation of funds, or mandatory changes to the portfolio of business systems); or not certified (i.e., certification is not approved due to misalignment with strategic direction, mission needs, or other deficiencies).

Overview of DOD's Business Enterprise Architecture

DOD's business enterprise architecture is intended to serve as a blueprint for the department's business transformation efforts. In particular, the architecture is to guide and constrain implementation of interoperable defense business systems by, among other things, documenting the department's business functions and activities and the business rules, laws, regulations, and policies associated with them. According to DOD, its architecture is being developed using an incremental approach, where each new version of the architecture addresses business mission area

gaps or weaknesses based on priorities identified by the department. The department's business enterprise architecture focuses on documenting information associated with its end-to-end business process areas (e.g., hire-to-retire and procure-to-pay). These end-to-end business process areas may occur across the department's nine functional areas. For example, hire-to-retire occurs within the human resources management functional area, while the cost management business process area occurs across the acquisition, financial management, human resources management, installations and environment, and logistics and materiel readiness functional areas.

According to DOD officials, the current approach to developing the business enterprise architecture is both a "top down" and "bottom-up" approach. Specifically, the architecture focuses on developing content to support investment management and strategic decision making and oversight (top down) while also responding to department needs associated with supporting system implementation, system integration, and software development (bottom up). Consistent with DOD's tiered approach to business systems management, the department's approach to developing its business enterprise architecture involves the development of a federated enterprise architecture, where member architectures (e.g., Air Force, Army, and Navy) conform to an overarching corporate or parent architecture and use a common vocabulary. This approach is to provide governance across all business systems, functions, and activities within the department and improve visibility across the respective efforts.

Overview of DOD's Business Process Reengineering Efforts

DOD defines business process reengineering as a logical methodology for assessing process weaknesses, identifying gaps, and implementing opportunities to streamline and improve the processes to create a solid foundation for success in changes to the full spectrum of operations. DOD's reengineering efforts are intended to help the department rationalize its covered business system portfolio, improve its use of performance management, control scope changes, and reduce the cost of fielding business capability. According to DOD officials, the department has taken a holistic approach to business process reengineering, which includes a portfolio and end-to-end perspective. It has also issued business process reengineering guidance that calls for alignment of defense business systems within the Organizational Execution Plan to its functional strategy's strategic goals.

An important component of the department's business process reengineering efforts is the problem statement development and review process. A problem statement is developed when a defense business system is seeking certification for a development or modernization effort. The statement is to include, among other things, a description of the problem that the system intends to address and a discussion of the costs, benefits, and risks of various alternatives that were considered. As part of the annual certification and approval process, problem statements are to be reviewed to support that appropriate business process reengineering has been conducted on investments seeking certification.

DOD Has Made Progress Strengthening Its Management of Business Systems, but Needs to Continue Implementing Recommended Improvements

The department has implemented 5 of the 16 recommendations that GAO has made since June 2011 to address each of the overarching provisions for improving business systems management in the fiscal year 2005 NDAA. The fiscal year 2005 NDAA, as amended, includes provisions associated with developing a business enterprise architecture and enterprise transition plan, improving the department's investment management structures and processes, improving its efforts to certify defense business systems, and mandated budgetary reporting. Since 2011, we have issued four reports in response to the act's requirement that we assess the actions taken by the department to comply with the act's provisions.[18] In those reports, we have made recommendations to address each of the act's overarching provisions for improving business systems management. Table 2 identifies the recommendations we have made since 2011 associated with the fiscal year 2005 NDAA.

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[18]See GAO-14-486, GAO-13-557, GAO-12-685, GAO-11-684.

Table 2: Fiscal Year 2005 NDAA Provisions and Associated GAO Recommendations

NDAA provision	Associated Recommendations
Business Enterprise Architecture	• Complete the transfer of functions of the Business Transformation Agency and the Office of the Assistant Secretary of Defense for Networks and Information Integration/Department of Defense Chief Information Officer (CIO) and specify when and where these functions will be transferred. (GAO-11-684)
	• Establish a policy that clarifies the roles, responsibilities, and relationships among the Chief Management Officer, Deputy Chief Management Officer (DCMO), DOD and military department CIOs, Principal Staff Assistants, military department Chief Management Officers, and the heads of the military departments and defense agencies, associated with the development of a federated business enterprise architecture. (GAO-12-685)
	• Define by when and how the department plans to develop an architecture that would extend to all defense components. (GAO-13-557)
Enterprise Transition Plan	• Define by when and how the enterprise transition plan will include key elements such as milestones, performance measures, and funding plans; dates for terminating legacy systems; a list of business systems that will be part of the target environment and a strategy for modifying them, as appropriate; and information about sequencing systems. (GAO-13-557)
Investment Management	• Ensure that the functional strategies include all of the critical elements identified in DOD investment management guidance. (GAO-13-557)
	• Select and control its mix of investments in a manner that best supports mission needs by documenting a process for evaluating portfolio performance; ensuring that portfolio assessments are conducted in key areas; and ensuring that investment management documentation includes critical information for conducting all assessments. (GAO-13-557)
	• Define criteria for reviewing defense business systems at an appropriate level in the department based on factors such as complexity, scope, cost, and risk, in support of the certification and approval process. (GAO-14-486)
	• Develop guidance requiring military departments and other defense organizations to use existing business enterprise architecture content to more proactively identify potential duplication and overlap. (GAO-14-486)
Investment Certification and Approval	• Include in DOD's annual report to Congress on compliance with 10 U.S.C. § 2222 the results of the department's business process reengineering efforts. (GAO-12-685)
	• Implement and use the business enterprise architecture and business process reengineering compliance assessments more effectively to support organizational transformation efforts by disclosing relevant information about known weaknesses; establishing milestones for completing selected validations of business enterprise architecture compliance assertions; and ensuring that appropriate business process reengineering assertions have been completed on all investments submitted for the fiscal year 2014 certification reviews prior to the certification of funds. (GAO-13-557)
	• Ensure that complete documentation, such as root cause analyses, assessments of existing interfaces for reuse opportunities, and performance metrics related to the reengineering efforts, is provided as part of the fiscal year 2014 certification and approval process for selected systems. (GAO-13-557)
	• Determine if funds were properly obligated under 10 U.S.C. 2222(a)-(b) for systems for which appropriate business process reengineering assertions were not completed. (GAO-13-557)
	• Define by when and how the department plans to align its business system certification and approval process with its Planning, Programming, Budgeting, and Execution process. (GAO-14-486)

NDAA provision	Associated Recommendations
Mandated Budgetary Reporting	• Establish a deadline for integrating the repositories and validate the completeness and reliability of information. (GAO-12-685)
Other (Human Capital)	• Include in DOD's annual report to Congress on compliance with 10 U.S.C. § 2222 an update on the office of the DCMO's progress toward filling staff positions and the impact of any unfilled positions on the ability of the office to conduct its work. (GAO-12-685) • Develop a skills inventory, needs assessment, gap analysis, and plan to address identified gaps as part of a strategic approach to human capital planning for the Office of the Deputy Chief Management Officer. (GAO-13-557)

Source: GAO analysis. | GAO-15-627.

Table 3 presents a summary of the current status of these recommendations. Appendix II provides additional information about the status of each recommendation.

Table 3: Status of Recommendations Associated with the Fiscal Year 2005 NDAA

NDAA provision	Implemented	Partially implemented	Total
Business Enterprise Architecture	1	2	3
Enterprise Transition Plan	-	1	1
Investment Management	1	3	4
Investment Certification and Approval	2	3	5
Mandated Budgetary Reporting	1	-	1
Other (Human Capital)	-	2	2
Total	**5**	**11**	**16**

Source: GAO Analysis of DOD Documentation. | GAO-15-627.

As of April 2015, the department had implemented 5 of the 16 recommendations that we have made since June 2011. For example, the department has implemented the recommendation to improve its reporting of business system data in its annual budget request. In particular, the department has established common elements in its three primary repositories used for tracking information about business systems, which allows information about individual business systems to be matched across systems. In addition, the Office of the CIO demonstrated that it conducts periodic data quality assessments. As a result, the department is better positioned to report more reliable information in its annual budget request and to maintain more accurate information about business systems to support its efforts to manage them.

In addition, the department has improved the alignment of its Planning, Programming, Budgeting, and Execution process with its business systems certification and approval process. For example, according to the department's February 2015 certification and approval guidance, Organization Execution Plans are to include information about certification requests for the upcoming fiscal year as well as over the course of the Future Years Defense Program. As a result, the department's business system certification and approval process can support better informed decisions about system certifications and inform recommendations on the resources provided to defense business systems as part of the Planning, Programming, Budgeting, and Execution process.

The department has partially implemented the remaining 11 recommendations. For example, the department's February 2015 investment management guidance, which describes DOD's business system certification and approval process, identifies four criteria and specifies the associated assessments that are to be conducted when reviewing and evaluating component-level organizational execution plans in order to make a portfolio-based investment decision. The guidance also states that return on investment should be considered when evaluating program cost. However, it does not call for the use of actual-versus-expected performance data and predetermined thresholds.

Further, the Office of the DCMO has developed a draft resource allocation plan for each of its directorates and their respective divisions. This draft plan includes staffing profiles that describe each division's needed staff competencies and qualifications. However, the Office of the DCMO did not demonstrate that it has addressed other important aspects of strategic human capital planning. For example, the office did not demonstrate that it has developed a skills inventory, needs assessment, gap analysis, and plan to address identified gaps, as called for by our recommendation. Appendix II provides additional information about the recommendations that DOD has fully and partially implemented.

Implementing the remaining 11 recommendations will improve DOD's modernization management controls and help fulfill the department's execution of the requirements of the act.

DOD Needs to Improve the Usefulness and Effectiveness of Its Business Enterprise Architecture and Business Process Reengineering Initiatives

DOD's business enterprise architecture and process reengineering efforts are not fully achieving the intended outcomes described in statute. More specifically, with respect to the architecture, portfolio managers (managers) we surveyed reported that it was generally not effective in achieving its intended outcomes and that its usefulness in achieving benefits, such as reducing the number of applications, was limited. With respect to process reengineering, managers reported these efforts were moderately effective at streamlining business processes, but less so in limiting the need to tailor commercial off-the-shelf systems.

Portfolio managers cited a number of challenges impeding the usefulness and effectiveness of these two initiatives, such as the availability of training, lack of skilled staff, parochialism, and cultural resistance to change. DOD has various improvement efforts under way to address some of these challenges; however, additional work is needed and the managers provided some suggestions for closing the gap. More fully addressing the cited challenges would help increase the utility and effectiveness of these initiatives in driving greater operational efficiencies and savings. Appendix I provides additional details about our survey methodology.

The NDAA for Fiscal Year 2005 Defines Intended Outcomes for the Business Enterprise Architecture

The fiscal year 2005 NDAA, as amended, requires DOD to develop a business enterprise architecture that covers all defense business systems and will be used as a guide for these systems. According to the act, the architecture is intended to help achieve the following outcomes:

- Enable DOD to comply with all applicable laws, including federal accounting, financial management, and reporting requirements.

- Guide, permit, and constrain the implementation of interoperable defense business systems.

- Enable DOD to routinely produce timely, accurate, and reliable business and financial information for management purposes.

- Facilitate the integration of budget, accounting, and program information and systems.

- Provide for the systematic measurement of performance, including the ability to produce timely, relevant, and reliable cost information.

The act also specifies that the department is not to obligate funds for defense business system programs that have a total cost in excess of $1 million unless the system's approval authority certifies that the program

complies with the business enterprise architecture and the certification is subsequently approved by the department's Investment Review Board.

Achieving the act's intended outcomes would contribute to the department's ability to use the architecture to realize important benefits that we and others have previously identified, such as cost savings or avoidance.[19] For example, if the architecture effectively guides, permits, and constrains the implementation of interoperable systems, that would contribute to increased information sharing and improved system interoperability. As another example, using the architecture to produce timely and reliable business and financial information would contribute to improving management decisions associated with enhanced productivity and improved business and IT alignment, among other things.

The Business Enterprise Architecture Has Produced Limited Value, According to Portfolio Managers

The majority of DOD portfolio managers we surveyed reported that the business enterprise architecture has not been effective in meeting its intended outcomes. More specifically, half of the managers surveyed reported that the business enterprise architecture was effective in enabling compliance with all applicable laws. However, fewer than 40 percent reported that the architecture was effective in helping to achieve the other outcomes called for by the fiscal year 2005 NDAA. Table 4 provides additional information on survey responses regarding the act's specific requirements.

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[19]See, for example, GAO, *Organizational Transformation: Enterprise Architecture Value Needs to Be Measured and Reported,* GAO-12-791 (Washington, D.C.: Sept. 26, 2012) and *Organizational Transformation: A Framework for Assessing and Improving Enterprise Architecture Management (Version 2.0),* GAO-10-846G (Washington, D.C.: Aug 5, 2010).

Table 4: Effectiveness of the Business Enterprise Architecture in Achieving Fiscal Year 2005 NDAA Outcomes Reported by DOD Portfolio Managers (by Percent in Agreement)

Expected business enterprise architecture outcome	Effective	Neither effective nor ineffective	Ineffective	Not applicable/no basis to judge
Enables DOD to comply with all applicable laws, including federal accounting, financial management, and reporting requirements.	50	25	17	8
Guides the implementation of interoperable defense business systems.	38	29	29	4
Permits implementation of interoperable defense business systems.	33	46	17	4
Enables DOD to routinely produce timely, accurate, and reliable business and financial information for management purposes.	25	25	33	17
Enables DOD to integrate budget, accounting, and program information and systems.	21	17	38	25
Provides for the systematic measurement of performance, including the ability to produce timely, relevant, and reliable cost information.	21	25	33	21
Constrains the implementation of interoperable defense business systems.	13	58	13	17

Source: GAO analysis of DOD survey responses. | GAO-15-627.

Note: Numbers might not add to 100 percent due to rounding.

Portfolio managers provided additional details to further explain their survey responses. Their comments included the following:

- The architecture is a standalone effort that does not drive comprehensive portfolio and business management through the various DOD components.

- The architecture is overwhelming to review and is not integrated with other activities that occur throughout the remainder of the year.

- The compliance requirements are not sufficiently defined to enable system interoperability.

Portfolio managers also reported that the usefulness of DOD's business enterprise architecture in achieving various potential benefits is limited. For example, 75 percent reported limited achievement of improved change management and 74 percent reported limited achievement of streamlined end-to-end business processes. In addition, 71 percent reported limited achievement of benefits such as a reduced number of applications, improved business and IT alignment, enhanced productivity,

and achieving financial benefits such as cost savings or cost avoidance. Table 5 summarizes the portfolio managers' survey responses.

Table 5: Benefits Achieved by the Business Enterprise Architecture Reported by DOD Portfolio Managers (by Percent in Agreement)

Benefit	Very great, great, or moderate extent	Some, little, or no extent	Not applicable/no basis to judge
Improved change management	17	75	8
Streamlined end-to-end business processes	26	74	0
Reduced the number of applications	29	71	0
Improved business and IT alignment	29	71	0
Enhanced productivity	25	71	4
Achieved financial benefits, such as cost savings or cost avoidance	21	71	8
Increased use of enterprise licenses	13	67	21
Consolidation of data centers	4	67	29
Increased information sharing	34	63	4
Improved system interoperability	34	58	8

Source: GAO analysis of DOD survey responses. | GAO-15-627.

Note: Numbers might not add to 100 percent due to rounding.

Although managers reported limited achievement of benefits, two provided specific examples of individual benefits associated with the business enterprise architecture. More specifically, one cited saving $10 million annually due to the establishment of a DOD-wide military housing system that has replaced a number of individual systems. A second reported $11.5 million in architecture-related savings through the retirement of 48 real property and financial management systems.

In addition, officials from the Office of the DCMO provided specific examples of benefits that they stated can be attributed, at least in part, to the department's business architecture. For example, according to these officials, two proposed new defense business system investments were not approved by DOD due, in part, to architecture reviews that revealed the requested capabilities were already available in existing systems.

Numerous Challenges in Achieving Intended Business Enterprise Architecture Outcomes Identified by Portfolio Managers

The surveyed DOD portfolio managers reported that their functional areas face many challenges in achieving the outcomes described in the NDAA for fiscal year 2005. The most frequently cited challenges reported were the usability of the compliance tool (79 percent), frequent changes to the architecture (75 percent), the availability of training (71 percent), the

availability of skilled staff (71 percent), parochialism (67 percent), and cultural resistance to change (63 percent). Table 6 identifies the survey responses to achieving the architecture's intended outcomes.

Table 6: Challenges to Achieving the Business Enterprise Architecture's Intended Outcomes Reported by DOD Portfolio Managers (by Percent in Agreement)

Challenge	Very great, great, or moderate extent	Slight challenge or not a challenge	Not applicable/no basis to judge
Usability of DOD's business enterprise architecture compliance tool	79	21	0
Frequent changes to the business enterprise architecture	75	21	4
Availability of training	71	25	4
Availability of skilled staff	71	25	4
Parochialism (i.e., focusing on one's own sub-organization rather than having an enterprise-wide view.)	67	29	4
Cultural resistance to change	63	33	4
Limited alignment between corporate and component business enterprise architectures	58	38	4
Business enterprise architecture compliance review process	54	46	0
Limited detail in corporate business enterprise architecture	50	46	4
Limited detail in business enterprise architecture compliance guidance	50	46	4
Quality of business enterprise architecture compliance guidance	50	46	4
Limited detail in component (e.g., military department) business enterprise architecture	48	43	9

Source: GAO analysis of DOD survey responses. | GAO-15-627.

Note: Numbers might not add to 100 percent due to rounding.

Deputy Chief Management Office Has Taken Steps to Improve Business Enterprise Architecture Content and Use, but Survey Results Indicate Additional Measures Are Needed

Officials from the Office of the DCMO, including the Lead Architect for the business enterprise architecture and the Chief of Portfolio Management, described various efforts under way to address selected challenges identified in our survey results. With regard to the top ranked challenge (usability of DOD's architecture compliance tool), the office has been working on a more robust replacement tool. As of April 2015, the office had moved architecture content and associated compliance information from its previous tool into its Integrated Business Framework-Data Alignment Portal. Further, the department plans to require all fiscal year 2016 compliance assessments to be completed in this portal environment.

According to officials from the Office of the DCMO, this change will help ensure that architecture-related information is available in the same place, which will help support more sophisticated analysis of information

about business systems. For example, by combining information about the architecture, compliance information, functional strategies, and organizational execution plans, the department could more easily conduct analyses that will help support portfolio management. According to these officials, examples of such analyses include the ability to identify the funds certified and approved for various business activities and the ability to identify systems that conduct similar system functions.

With regard to the challenge associated with limited alignment between corporate and component architectures, the officials from the Office of the DCMO stated that they intend to develop an overarching (or federated) architecture that will capture content from, and allow governance across, the department (e.g., Army, Navy, and Air Force). We previously recommended that DOD establish a plan for how it will address business enterprise architecture federation in 2013.[20]

The department's improvement efforts only address selected reported challenges. However, portfolio managers offered a number of suggestions that relate to other identified challenges that may help close gaps in these efforts. Key suggestions included:

- **Improve tools:** Four of 24 managers offered suggestions that relate to compliance tool usability. For example, one portfolio manager stated that functionality should be added to the architecture compliance tool to automatically create and build the architecture artifacts mentioned in compliance guidance using the information already included in the tool for each system. Another portfolio manager stated that there are no tools available that portfolio managers can use to analyze their portfolios relative to the architecture.

- **Provide additional training:** Two managers offered suggestions associated with additional training. For example, one manager reported that the compliance tool is not user friendly and little to no training was offered when programs were required to use it to assert compliance. As a result, this manager added that more training should be made available for using the compliance tool.

- **Start the process earlier in a system's life cycle:** One manager suggested the architecture be addressed earlier in the acquisition life

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[20]GAO-13-557.

cycle, such as in the analysis of alternatives phase, in order to help assess whether existing solutions are already employed in other areas of the enterprise. If the architecture compliance process uncovers potential duplication or overlap, it might be easier to stop development of a duplicative system earlier in its life cycle rather than waiting until a business process is more reliant on a planned system that is closer to becoming operational.

- **Establish priorities:** One portfolio manager suggested that the department develop departmental business improvement and integration priorities[21] and develop clearly understandable and verifiable compliance standards that will guide and constrain systems development to help achieve those priorities.

- **Improve guidance:** Two managers suggested that the department improve its guidance to clarify the documentation that systems developed prior to the existence of the business enterprise architecture are required to prepare to address the business enterprise architecture compliance requirement.

- **Improve content:** Seven managers offered suggestions associated with improving content. For example, one manager stated that the business enterprise architecture is large and cumbersome and incomplete in many areas.

Addressing the challenges cited by the portfolio managers could help increase the utility and effectiveness of the department's business enterprise architecture in driving greater operational efficiencies and cost savings.

The NDAA for Fiscal Year 2005 Defines Intended Outcomes for Business Process Reengineering

The fiscal year 2005 NDAA, as amended, establishes expected outcomes for the department's business process reengineering efforts. The act states that funds for covered business system programs cannot be certified and approved unless each program's pre-certification authority has determined that, among other things, appropriate business process reengineering efforts have been undertaken to ensure that the business process supported by the program is, or will be, as streamlined and

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[21]We have previously recommended that DOD document and communicate business transformation priorities. See GAO, *Defense Business Transformation: DOD Has Taken Some Steps to Address Weaknesses, but Additional Actions Are Needed*, GAO-15-213 (Washington, D.C.: Feb. 11, 2015).

efficient as practicable and the need to tailor commercial off-the-shelf systems to (a) meet unique requirements, (b) incorporate unique requirements, or (c) incorporate unique interfaces has been eliminated or reduced to the maximum extent practicable. As we have previously reported, modifications to commercial off-the-shelf systems should be avoided to the extent practicable as they can be costly to implement.[22]

Achieving the intended outcomes of the fiscal year 2005 NDAA would increase the department's ability to realize key benefits to business systems modernization. For example, reengineering business processes to be as streamlined as possible can result in increased efficiencies, a reduced number of interfaces, and decreased program costs.

DOD's Reengineering Efforts Have Moderately Helped to Streamline Business Processes and Realize Some Efficiencies, but More Work Is Needed to Fully Achieve Intended Outcomes, According to Portfolio Managers

The department's business process reengineering efforts have had mixed success in achieving their intended outcomes. Specifically, 63 percent of the portfolio managers we surveyed reported that the efforts were effective in helping to ensure that the business processes supported by the defense business systems they manage are (or will be) streamlined and efficient as practicable. As an example, one manager reported this effort highlighted the strengths and weaknesses of the systems within their specific portfolio. Another reported that their portfolio has been reduced from 147 systems to 13 due, in part, to the business process reengineering efforts.

However, the general consensus among surveyed portfolio managers was that the department's efforts were less effective in helping to limit tailoring of commercial off-the-shelf systems. Only 29 percent reported that DOD's business process reengineering efforts were effective in eliminating or reducing the need to tailor commercial off-the-shelf systems. Tailoring might be required, for example, because existing policy and guidance might limit a system's ability to conform to a specific approach for executing a business process that is already built into an individual commercial off-the-shelf system. Another reason given was that managers have limited knowledge about the commercial off-the-shelf products that are available via established enterprise licenses and this

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[22]GAO, *Cost Estimating and Assessment Guide,* GAO-09-03SP (Washington, D.C.: March 2009).

limited knowledge makes it difficult to conduct effective business process reengineering.

Table 7 provides additional information on portfolio managers' responses regarding the effectiveness of DOD's business process reengineering efforts.

Table 7: Effectiveness of Business Process Reengineering in Achieving Fiscal Year 2005 NDAA Requirements Reported by Portfolio Managers (by Percent in Agreement)

Requirement	Effective	Neither effective nor ineffective	Ineffective	Not applicable/no basis to judge
Business process supported by defense business systems are (or will be) as streamlined and efficient as practicable.	63	17	17	4
The need to tailor commercial off-the-shelf systems to meet unique requirements has been eliminated or reduced to the maximum extent practicable	29	25	38	8
The need to tailor commercial off-the-shelf systems to incorporate unique requirements has been eliminated or reduced to the maximum extent practicable.	29	25	38	8
The need to tailor commercial off-the-shelf systems to incorporate unique interfaces has been eliminated or reduced to the maximum extent practicable.	29	21	42	8

Source: GAO analysis of DOD survey responses. | GAO-15-627.

Note: Numbers might not add to 100 percent due to rounding.

Portfolio managers reported that business process reengineering has been useful in helping to achieve selected benefits. In particular, 70 percent reported that efforts have resulted in streamlined business processes. Sixty-seven percent reported that efforts have resulted in improved documentation of business needs, which is consistent with DOD's focus on developing problem statements for new capabilities. Such problem statements reflect analysis of a perceived business problem, capability gap, or opportunity. According to officials from the Office of the DCMO, they help ensure that programs are aligned with DOD's strategic needs, and also assist the department's efforts in identifying redundancies and duplication. However, only 29 percent of the portfolio managers surveyed reported that efforts to reduce program costs have been effective. Table 8 summarizes the portfolio managers' survey responses.

Table 8: Extent to Which Business Process Reengineering Benefits Were Reported by DOD Portfolio Managers (by Percent in Agreement)

Benefit	Very great, great, or moderate extent	Some, little, or none	Not applicable/ no basis to judge
Streamlined business processes	70	30	0
Improved documentation of business need	67	29	4
Increased efficiencies	54	42	4
Reduced interfaces	46	50	4
Decreased program costs	29	58	13

Source: GAO analysis of DOD survey responses. | GAO-15-627.

Note: Numbers might not add to 100 percent due to rounding.

Numerous Business Process Reengineering Challenges Identified

The surveyed DOD portfolio managers identified a range of challenges to fully achieving the business process reengineering outcomes described in the fiscal year 2005 NDAA. In particular, cultural resistance to change was the most frequently cited challenge (71 percent), followed by parochialism (i.e., focusing on one's own sub-organization rather than having an enterprise-wide view.), availability of skilled staff, and availability of training (all at 67 percent). The quality of business process reengineering compliance guidance, the compliance review process, and the timing of the reengineering relative to system development work were also reported as important challenges (all at 63 percent).

Table 9 summarizes survey responses to questions about the challenges to business process reengineering.

Table 9: Challenges to Achieving Intended Business Process Reengineering Outcomes Reported by DOD Portfolio Managers (by Percent in Agreement)

Challenge	Very great, great, or moderate challenge	Slight or none	Not applicable/no basis to judge
Cultural resistance to change	71	21	8
Parochialism (i.e., focusing on one's own sub-organization rather than having an enterprisewide view.)	67	25	8
Availability of skilled staff	67	25	8
Availability of training	67	25	8
Quality of business process reengineering compliance guidance	63	33	4
Business process reengineering compliance review process	63	33	4
Timing of business process reengineering relative to system development work	63	21	17

Source: GAO analysis of DOD survey responses. | GAO-15-627.

Note: Numbers might not add to 100 percent due to rounding

Office of DCMO Is Taking Steps to Improve Business Process Reengineering Efforts, but Survey Results Suggest Additional Action May Be Needed

DOD has taken steps to improve its reengineering efforts that may, in part, address some of the challenges identified in our survey results. With regard to parochialism (i.e., focusing on one's own sub-organization rather than having an enterprisewide view), the department is developing online tools that provide additional information to program managers, portfolio managers, pre-certification authorities, and the Defense Business Council. For example, the department's problem statement portal is to be a repository for problem statement submissions and is to be available departmentwide. In addition, the department has developed its Integrated Business Framework-Data Alignment Portal, which is to provide, among other things, additional information about individual business systems, such as information about which systems execute specific business activities and system functions.

Further, with respect to addressing the challenge associated with the business process reengineering compliance review process, the department has taken steps to help ensure improved accountability for a portion of certification and approval requests. In particular, according to officials from the Office of the DCMO, the DCMO allowed the military departments more autonomy and responsibility for reviewing their system portfolios during fiscal year 2015 certification and approval reviews. Nevertheless, as we have previously reported, and as discussed in appendix II, this process is not guided by specific criteria for elevating certain systems to the Defense Business Council that might require additional oversight.

Notwithstanding these improvement efforts, as reported in feedback by the military department portfolio managers, additional work is needed. These managers provided a number of suggestions to help address the identified challenges. Suggestions included:

- **Improve business process reengineering training:** Two portfolio managers offered suggestions that relate to improved training. For example, one manager stated that the department should establish minimum training standards.

- **Improve business process reengineering guidance:** Two managers offered suggestions associated with improved guidance. For example, one portfolio manager stated that sufficient guidance does not exist to describe meaningful business process models or how such models should be analyzed.

- **Align business process reengineering with system development activities:** One portfolio manager stated that the reengineering process should be more closely tied to acquisition milestones instead of being assessed on an annual basis.

According to GAO's standards for internal controls,[23] management should ensure that there are adequate means of obtaining information from stakeholders that may have a significant impact on the agency achieving its goals. While we did not evaluate the effectiveness of these suggestions, they may be valuable for the Office of the DCMO to consider in its ongoing and future business process reengineering improvement efforts. More fully addressing the challenges cited by the portfolio managers would help the department achieve better outcomes, including limiting the tailoring of commercial off-the-shelf systems.

Conclusions

DOD has made progress in improving its compliance with section 332 of the NDAA for fiscal year 2005, as amended. Specifically, the department has implemented 5 of the 16 recommendations that we have made since 2011 that are consistent with the requirements of the act and has partially implemented the remaining 11 recommendations. The recommendations not fully implemented relate to improving the department's investment management processes and efforts to certify defense business systems,

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[23]GAO, *Auditing and Financial Management: Standards for Internal Control in the Federal Government*, AIMD-00-21.3.1 (Washington, D.C.: Nov. 1, 1999).

among other things. Fully implementing them will help improve DOD's modernization management controls and fulfill the department's execution of the act's requirements.

Collectively, DOD's business enterprise architecture and business process reengineering efforts show mixed results in their effectiveness and usefulness in achieving the intended outcomes and benefits. Among other things, portfolio managers reported that the architecture does not enable DOD to produce reliable and timely information for decision-making purposes. Additionally, DOD's reengineering efforts are effective in streamlining business processes, but not in reducing the tailoring of commercial software products. Portfolio managers reported that various challenges exist in achieving intended outcomes and benefits, including cultural resistance, parochialism, and a lack of skilled staff. DOD has various improvement efforts under way; however, gaps exist and portfolio managers provided suggestions on how to close some of them. Until these gaps are addressed, the department's ability to achieve important outcomes and benefits will continue to be limited.

Recommendation for Executive Action

To help ensure that the department can better achieve business process reengineering and enterprise architecture outcomes and benefits, we recommend that the Secretary of Defense utilize the results of our portfolio manager survey to determine additional actions that can improve the department's management of its business process reengineering and enterprise architecture activities.

Agency Comments and Our Evaluation

We received written comments on a draft of this report from DOD's Deputy Chief Management Officer (DCMO). The comments are reprinted in appendix III.

In the comments, the DCMO concurred with our recommendation and stated that the department will use the results of our portfolio manager survey to help make improvements. The DCMO also described associated improvement efforts. For example, the DCMO stated that the department plans to restructure the Business Enterprise Architecture to focus more explicitly on the business processes being executed within the functional domains, which span all levels of the department. DOD officials also provided technical comments, which we have incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees; the Director, Office of Management and Budget; the Secretary of Defense; and other interested parties. This report also is available at no charge on the GAO website at http://www.gao.gov. If you or your staff members have any questions on matters discussed in this report, please contact me at (202) 512-4456 or chac@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 IV.

Carol R. Cha
Director
Information Technology Acquisition Management Issues

The Honorable John McCain
Chairman
The Honorable Jack Reed
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Thad Cochran
Chairman
The Honorable Richard J. Durbin
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Mac Thornberry
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Rodney Frelinghuysen
Chairman
The Honorable Pete Visclosky
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to (1) assess the actions by the Department of Defense to comply with section 332 of the *National Defense Authorization Act (NDAA) for Fiscal Year 2005*, as amended[1] and (2) determine the usefulness and effectiveness of DOD's business enterprise architecture and business process reengineering processes.[2]

To address the first objective, we identified recommendations related to DOD's business systems modernization efforts that we made in our annual reports from 2011 to 2014 (16 recommendations total) in response to the fiscal year 2005 NDAA's requirements. Though we have made recommendations in this area prior to 2011, those recommendations have since been closed. We evaluated the department's written responses and related documentation on steps completed to implement or partially implement the recommendations. Documentation we analyzed included guidance on business enterprise architecture and business process reengineering compliance, guidance on certifying and approving defense business systems, and documentation about the department's problem statement development and review process. In addition, we interviewed officials from the Office of the Deputy Chief Management Officer and the Office of the Chief Information Officer, and observed a demonstration of the Office of the Deputy Chief Management Officer's Integrated Business Framework-Data Alignment Portal tool to better understand the actions taken to address our recommendations. We also reviewed the department's annual report to Congress, which was submitted on April 6, 2015, to identify gaps or inconsistencies with the implementation of the 16 recommendations.

To address our second objective, we determined the intended outcomes of the business enterprise architecture and business process reengineering processes by analyzing the fiscal year 2005 NDAA. We also determined potential benefits associated with the processes by

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[1]Pub. L. No. 108-375, § 332, 118 Stat. 1811, 1851-1856 (2004), as amended by the NDAA for Fiscal Year 2015, Pub. L. No. 113-291, § 901, 128 Stat. 3292 (2014), NDAA for Fiscal Year 2014, Pub. L. No. 113-66, § 901, 127 Stat. 672, 815 (2013), the NDAA for Fiscal Year 2013, Pub. L. No. 112-239, § 906, 126 Stat. 1632, 1869 (2012), the NDAA for Fiscal Year 2012, Pub. L. No. 112-81, § 901, 125 Stat. 1298, 1527 (2011), and the NDAA for Fiscal Year 2010, Pub. L. No. 111-84, § 1072, 123 Stat. 2190, 2470 (2009). This provision is codified in part at 10 U.S.C. § 2222.

[2]S. Rep. No. 113-176, at 147 (2014), accompanying S. 2410 and associated with H.R. 3979 that became Pub. L. No. 113-291.

reviewing department guidance on the processes and related documentation. This includes DOD's business enterprise architecture and business process reengineering guidance, *Defense Business System Investment Management Process Guidance*, the *Business Case Analysis Template*, DOD's *Business Enterprise Architecture 10.0 AV-1 Overview and Summary Information*, the department's *Strategic Management Plan*, and the *Information Resource Management Strategic Plan* for fiscal years 2014 and 2015. We also reviewed relevant GAO reports on business enterprise architecture and business process reengineering.[3]

We then developed a structured data collection instrument (survey) to gather information on the usefulness of the two specified IT modernization management controls at DOD in achieving their intended outcomes and their effectiveness in achieving associated benefits. As part of this survey, we also developed questions to help us determine (1) challenges related to complying with the processes and (2) suggestions for achieving business enterprise architecture and business process reengineering outcomes, including suggestions for achieving these outcomes in a more cost-effective manner.

Selected questions contained a ratings scale for managers to choose a response that was consistent with the aforementioned topic areas. For example, we asked managers to rate the effectiveness of the business enterprise architecture and business process reengineering efforts using a scale containing the following choices:

- very effective,
- somewhat effective,
- neither effective nor ineffective,
- somewhat ineffective,
- very ineffective, or
- not applicable/no basis to judge.

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[3]See, for example, GAO, *Organizational Transformation: Enterprise Architecture Value Needs to Be Measured and Reported*. GAO-12-791 (Washington, D.C.: Sept. 26, 2012); *Organizational Transformation: A Framework for Assessing and Improving Enterprise Architecture Management (Version 2.0)*. GAO-10-846G (Washington, D.C.: Aug 6, 2010); and *Business Process Reengineering Assessment Guide (Version 3)*, GAO/AIMD-10.1.15 (Washington, D.C.: May 1997).

We also asked managers to identify the extent to which their portfolios
had achieved benefits associated with business enterprise architecture
and business process reengineering efforts using a scale containing the
following choices:

- very great extent,

- great extent,

- moderate extent,

- some extent,

- little or no extent, or

- not applicable/no basis to judge.

We pre-tested the questions with various DOD officials including officials
from the Office of the Deputy Chief Management Officer, and with
portfolio and program-level officials within the military departments. As a
result, we determined that the military department portfolio managers
were in the best position to answer our questions because they manage
and have a perspective across an entire portfolio of defense business
systems. Officials from DCMO's Management, Policy, and Analysis
Directorate provided us with a list of portfolio managers for the three
military departments. We did not include portfolio managers for DOD
entities outside of the military departments.

We obtained responses from all surveyed portfolio managers (24 in
total).[4] Accordingly, these results are generalizable. We analyzed and
summarized the survey results to help determine the usefulness and
effectiveness of DOD's business process reengineering and enterprise
architecture efforts, as well as related challenges and suggestions for
improvement. In addition, though we collected examples of cost savings
estimates from managers, and cite them in the report, we did not assess
the cited cost savings estimates.

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[4]Initially, 27 portfolio managers were identified as respondents. However, 3 managers
were excluded from the respondent list at DOD's request for various reasons. For
example, there were multiple managers that had been identified for one portfolio, and to
avoid duplicate responses, we asked that only 1 manager respond for that particular
portfolio.

We also met with managers of selected DOD business system programs
and other knowledgeable DOD officials to discuss their perspectives on
DOD's business enterprise architecture and business process
reengineering efforts. This included interviewing officials associated with
defense business programs from each of the military departments and
from across various business functions, including program managers,
enterprise architects, and other technical and program operations
officials. Further, when available, we reviewed documentation provided by
DOD program managers to substantiate answers provided as part of our
interviews. We also discussed the survey results with officials from the
Office of the DCMO to obtain their perspectives on the results and
discussed with these officials ongoing efforts to improve the department's
business process reengineering and enterprise architecture efforts.

The practical difficulties of conducting any survey may introduce errors,
commonly referred to as nonsampling errors. For example, difficulties in
how a particular question is interpreted, in the sources of information that
are available to respondents, or in how the survey data are analyzed can
all introduce unwanted variability into survey results. To minimize such
nonsampling errors, a social science survey specialist designed the
questionnaire in collaboration with GAO staff with subject matter
expertise. As stated earlier, the questionnaire was pre-tested to ensure
that the questions were relevant, clearly stated, and easy to comprehend.
When data from the survey were analyzed, an independent analyst
reviewed the computer program used for the analysis of the survey data.
Since this was a web-based survey, respondents entered their answers
directly into the electronic questionnaire, thereby eliminating the need to
have the data keyed into a database and avoiding data entry errors.

We conducted this performance audit from October 2014 to July 2015 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 objective.

Appendix II: Status of Related GAO Recommendations Made Since 2011

Table 10 describes the status of open GAO recommendations associated with the fiscal year 2005 NDAA's requirement that we annually assess the actions taken by the department to comply with its provisions. Since June 2011, we have made 16 recommendations to DOD regarding defense business systems. As of April 2015, the department had implemented 5, and partially implemented 11 recommendations. The table also identifies the category that we assigned to the recommendation to demonstrate its relationship to the requirements outlined in the act.

Table 10: Status of Recommendations Made Since 2011

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
GAO-11-684: *Department of Defense: Further Actions Needed to Institutionalize Key Business System Modernization Management Controls*, June 29, 2011			
1. The Secretary of Defense should expeditiously complete the implementation of the announced transfer of functions of the Business Transformation Agency and the Office of the Assistant Secretary of Defense for Networks and Information Integration/Department of Defense Chief Information Officer and provide specificity as to when and where these functions will be transferred. (Business Enterprise Architecture)	X		As we reported in May 2013,[a] the department formally disestablished the Business Transformation Agency in October 2011, completing the transfer of its various functions to other DOD entities, including the Office of the Deputy Chief Management Officer (DCMO). In addition, in January 2012, DOD announced the disestablishment of the Assistant Secretary of Defense for Networks and Information Integration and the transfer of its various functions to other DOD entities, including the DOD Chief Information Officer and Under Secretary of Defense for Acquisition, Technology, and Logistics.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
GAO-12-685: *DOD Business Systems Modernization: Governance Mechanisms for Implementing Management Controls Need to Be Improved*, June 1, 2012			
1. The Secretary of Defense should ensure that the Deputy Secretary of Defense, as the department's Chief Management Officer, establish a policy that clarifies the roles, responsibilities, and relationships among the Chief Management Officer, Deputy Chief Management Officer (DCMO), DOD and military department Chief Information Officers, Principal Staff Assistants, military department Chief Management Officers, and the heads of the military departments and defense agencies, associated with the development of a federated business enterprise architecture. Among other things, the policy should address the development and implementation of an overarching taxonomy and associated ontologies to help ensure that each of the respective portions of the architecture will be properly linked and aligned. In addition, the policy should address alignment and coordination of business process areas, military department and defense agency activities associated with developing and implementing each of the various components of the Business Enterprise Architecture, and relationships among these entities. (Business Enterprise Architecture)		X	The department has taken steps to address the intent of this recommendation. For example, the DCMO approved the Business Enterprise Architecture Configuration Control Board charter on August 19, 2013. The board includes the Business Enterprise Architecture Chief Architect and representatives from both the department's Office of the Chief Information Officer as well as the Chief Management Officer organizations of the Defense Business Council member organizations. According to its charter, the board is to be the principal body for managing the disposition of proposed architecture change requests. The board is to be supported by the Component Collaboration Forum, which is to focus on developing a path ahead for a federated business architecture. The department has also developed a draft plan for a federated architecture. However, the plan does not provide details on how DOD intends to extend architecture content across the department, including the military departments. In addition, the department has not provided details of an overarching taxonomy to be used across the enterprise or established a policy that clarifies roles, responsibilities, and relationships as called for by our recommendation.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
2. The Secretary of Defense should direct the appropriate DOD organizations to establish a deadline by which it intends to complete the integration of the repositories and validate the completeness and reliability of information. (Mandated Budget Reporting)	X		The department has taken steps to implement this recommendation. In particular, in 2013, the Office of the DCMO established the DOD Information Technology Investment Portal to serve as the authoritative data source for Defense Business Systems certification funding and approval information. In addition, the department has established common elements in its three primary repositories used for tracking information about business systems—DOD Information Technology Investment Portal, Department of Defense Information Technology Portfolio Repository, and Select & Native Programming Data Input System for Information Technology—that allow information about individual business systems to be integrated across the repositories.

Moreover, the Office of the Chief Information Officer demonstrated that it conducts periodic data quality assessments. For example, the results of the most recent assessment provided by DOD demonstrate that the number of business systems is generally consistent across its repositories. |
| 3. The Secretary of Defense should ensure that the Deputy Secretary of Defense, as the department's Chief Management Officer, direct the Deputy Chief Management Officer to include in DOD's annual report to Congress on compliance with 10 U.S.C. § 2222 the results of the department's business process reengineering efforts.

Among other things, the results should include the department's determination of the number of systems that have undergone material process changes, the number of interfaces eliminated as part of these efforts (i.e., by program, by name), and the status of its end-to-end business process reengineering efforts. (Investment Certification and Approval) | | X | The Office of the DCMO's *2015 Congressional Report on Defense Business Operations* included some information about its business process reengineering efforts, but the report did not include the department's determination of the number of systems that have undergone material process changes, the number of interfaces eliminated as part of these efforts (i.e., by program, by name), and the status of its end-to-end business process reengineering efforts. For example, the department's report to Congress stated that the Army utilized business process reengineering as part of a personnel and pay program to reengineer 157 discrete personnel processes to fit the capabilities of a commercial enterprise resource planning system. While the department's annual report included information about specific efforts, the Office of the DCMO has not yet reported on measures such as those called for by our recommendation.

According to officials from the Office of the DCMO, its annual report is not intended to provide the level of detail requested by this recommendation. Further, these officials stated that the Office of the DCMO does not perform business process reengineering assessments. Rather, the pre-certification authorities have the responsibility to perform business process reengineering. Nevertheless, regardless of who conducts business process reengineering, the department has not demonstrated that it has reported on the results of business process reengineering efforts as called for by our recommendation in either its annual report or in any other report to Congress. |

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
4. The Deputy Secretary of Defense, as the department's Chief Management Officer, should direct the Deputy Chief Management Officer to include in DOD's annual report to Congress on compliance with 10 U.S.C. § 2222, an update on the office of the DCMO's progress toward filling staff positions and the impact of any unfilled positions on the ability of the office to conduct its work. (Other – Human Capital)		X	The Office of the DCMO provided an update to GAO on the numbers of positions filled and open. In addition, officials provided documentation associated with the department's fiscal year 2016 budget request identifying information about changes in requested funds and full-time equivalent positions. Officials also identified examples of publicly available information about full-time equivalent positions that the office was seeking to fill. Nevertheless, an update on staffing and the impact of unfilled positions on the ability of the office to conduct its work has not yet been included in the annual report or in other reports to Congress.
GAO-13-557: *DOD Business Systems Modernization: Further Actions Needed to Address Challenges and Improve Accountability,* May 17, 2013			
1. The Secretary of Defense should direct the Deputy Chief Management Officer to define by when and how the department plans to develop an architecture that would extend to all defense components and include, among other things: (a) information about the specific business systems that support business enterprise architecture business activities and related system functions, (b) business capabilities for the Hire-to-Retire and Procure-to-Pay business processes, and (c) sufficient information about business activities to allow for more effective identification of potential overlap and duplication. (Business Enterprise Architecture)		X	The department has taken steps to improve the integration of Business Enterprise Architecture information with other existing information. For example, this integration is to allow the department to identify information such as mapping of existing business systems to individual Business Enterprise Architecture system functions. In addition, officials from the office of the DCMO provided a draft plan for business enterprise architecture federation, which includes steps associated with extending the architecture to all defense components. Nevertheless, officials stated that the plan is not yet complete. Moreover, the department has yet to define by when and how it will develop an architecture that extends to all defense components. Officials from the Office of the DCMO stated that they are working to federate Army business architecture information into the Business Enterprise Architecture and that this effort will inform future steps; however, that effort remains a work in progress.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
2. The Secretary of Defense should direct the Deputy Chief Management Officer to define by when and how the enterprise transition plan will include, among other things, (a) milestones, performance measures, and funding plans for all business systems expected to be part of the target architecture and each system's risks or challenges to integration;(b) time-phased end dates associated with terminating legacy systems in phases;(c) a listing of all other defense business systems (including systems that are considered to be core systems) that will be a part of the target defense business systems computing environment and a strategy for making modifications to those systems that will be needed to ensure that they comply with the defense business enterprise architecture, including time-phased milestones, performance measures, and financial resource needs; and(d) information about how systems are to be sequenced according to, among other things, dependencies among investments. (Enterprise Transition Plan)		X	The Office of the DCMO has taken steps to improve information available about its business systems. More recently, the department has established the Integrated Business Framework-Data Alignment Portal as a repository of automated information available about Functional Strategies, Organizational Execution Plans, and the business architecture. According to officials from the Office of the DCMO, this portal will be used to document, among other things, the data that are to be included in Functional Strategies and Organizational Execution Plans. Such a collective set of data may be used to generate transition plan information. However, the full implementation of this new approach remains to be seen. Moreover, the department has not provided a plan that defines when and how it will address the various elements called for in our recommendation.
3. The Secretary of Defense should direct the Deputy Chief Management Officer to ensure that the functional strategies include all of the critical elements identified in DOD investment management guidance, including performance measures to determine progress toward achieving the goals that incorporate all of the attributes called for in the department's guidance. (Investment Management)		X	DOD established performance measures in its functional strategies that addressed at least some of the five attributes called for in DOD guidance. For example, all of the fiscal year 2015 functional strategies identified examples of quantitative metrics. However, not all functional strategies identified metrics that addressed the other attributes. Specifically, the strategies did not all include performance measures that addressed the following attributes: (1) data that are tracked incrementally over a specified period, (2) a baseline for each performance measure, (3) a target against the baseline, and (4) a rationale for the identified target. In addition, DOD's fiscal year 2016 functional strategies also lacked such attributes.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
4. The Secretary of Defense should direct the Deputy Chief Management Officer to select and control its mix of investments in a manner that best supports mission needs by (a) documenting a process for evaluating portfolio performance that includes the use of actual versus expected performance data and predetermined thresholds; (b) ensuring that portfolio assessments are conducted in key areas identified in our IT investment management framework: benefits attained; current schedule; accuracy of project reporting; and risks that have been mitigated, eliminated, or accepted to date; and (c) ensuring that the documents provided to the Defense Business Council as part of the investment management process include critical information for conducting all assessments. (Investment Management)		X	The department's February 2015 investment management guidance identifies four criteria and specifies the associated assessments that are to be conducted when reviewing and evaluating component-level organizational execution plans in order to make a portfolio-based investment decision. The guidance also provides additional details regarding considering return on investment when assessing program costs. In addition, the guidance states that organizational execution plans will be assessed from various perspectives, including progress toward the target environment, business value, cost, and risk. Nevertheless, the guidance does not specify a process for conducting an assessment or call for the use of actual versus expected performance data and predetermined thresholds. In addition, the guidance does not call for documents provided to the Defense Business Council to include critical information for conducting assessments, such as information about system scalability to support additional users or new features in the future and cost in relationship to return on investment.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
5. The Secretary of Defense should direct the Deputy Chief Management Officer to implement and use the business enterprise architecture and business process reengineering compliance assessments more effectively to support organizational transformation efforts by (a) disclosing relevant information about known weaknesses, such as business enterprise architecture and business process reengineering compliance weaknesses for systems that were not certified or certified with qualifications in annual reports to Congress; (b) establishing milestones by which selected validations of business enterprise architecture compliance assertions are to be completed; and (c) ensuring that appropriate business process reengineering assertions have been completed on all investments submitted for the fiscal year 2014 certification reviews prior to the certification of funds. (Investment Certification and Approval)		X	The *2015 Congressional Report on Defense Business Operations* included some information consistent with our recommendation. For example, it contained information about weaknesses for systems that were certified with qualifications. In particular, the report stated that the department conditionally approved 29 military department and 30 defense agency requests pending Defense Business Council approval of their problem statements. The report also cited the specific systems that were conditionally approved pending approval of their problem statements. Nevertheless, it did not disclose the results of business enterprise architecture validations that were to occur as part of the certification and approval process for fiscal year 2015. In addition, according to the April 2014 guidance for investment certification and approval, upon receipt of an organization's Organizational Execution Plan, the defense business council chair was to identify generally no more than three defense business systems to be assessed from a component's portfolio. Once notified, the pre-certification authority was to have 5 working days to provide the assessment documentation used to assert business process reengineering or business enterprise architecture compliance. However, the guidance does not specify time frames or milestones for completing these validations. The Office of the DCMO also provided data from the system that maintains certification and approval information. These data showed that only two systems were certified and approved for fiscal year 2014 without a business process reengineering assertion. The office also provided additional information about these systems explaining the rationale for not conducting business process reengineering.
6. The Secretary of Defense should direct the Deputy Chief Management Officer to develop a skills inventory, needs assessment, gap analysis, and plan to address identified gaps as part of a strategic approach to human capital planning for the Office of the Deputy Chief Management Officer. (Other – Human Capital)		X	The Office of the DCMO has taken some steps to address this recommendation. For example, it has developed a draft resource allocation plan, which identifies staffing profiles for each of the office's directorates and their respective divisions. These profiles cite needed staff competencies and qualifications. However, the department has not developed a skills inventory, gap analysis, or plan to address identified gaps as part of a strategic approach to human capital planning.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
7. The Secretary of Defense should direct the appropriate authority to ensure that complete documentation, such as root cause analyses, assessments of existing interfaces for reuse opportunities, and performance metrics related to the reengineering efforts, is provided as part of the fiscal year 2014 certification and approval process for the Integrated Personnel and Pay System - Army (IPPS-A), Integrated Personnel and Pay System - Navy (IPPS-N), Air Force Integrated Personnel and Pay System (AF-IPPS), and Integrated Electronic Health Record (iEHR) investments. (Investment Certification and Approval)		X	DOD has taken some steps to address this recommendation. For example, the department demonstrated that it had completed documentation, such as root cause analyses, assessments of existing interfaces for reuse opportunities, and performance metrics related to the reengineering efforts, and that the documentation was provided as part of the certification and approval process for the Air Force Integrated Personnel and Pay System investment. However, it did not demonstrate that such documentation was fully completed and provided as part of the certification and approval process for other systems. For example, DOD only demonstrated that partial documentation had been completed and provided for the Integrated Electronic Health Record investment.
8. The Secretary of Defense should direct the appropriate authority to determine whether funds were properly obligated under 10 U.S.C. 2222(a)-(b) for systems for which appropriate business process reengineering assertions were not completed. (Investment Certification and Approval)	X		Officials from the Office of the DCMO demonstrated that the department has addressed the intent of this recommendation. Specifically, while the department did not concur with the recommendation and did not make the recommended determination, it has taken mitigating steps to help ensure compliance with business process reengineering requirements. For example, officials stated that, as part of the fiscal year 2013 certification and approval process, conditions were imposed by the investment review board requiring all components to submit a plan on how core defense business systems would become compliant with the act's business process reengineering requirement. These officials also provided documentation showing that the department tracked these conditions. In addition, the department has reported much higher levels of compliance with the act's business process reengineering requirements in subsequent annual review cycles. For example, in May 2013, we reported that, according to DOD, appropriate business process reengineering had been undertaken on only about 41 percent of the approximately 1,200 systems for the fiscal year 2013 certification reviews. In contrast, officials from the Office of the DCMO stated that only 2 systems were certified and approved during the fiscal year 2014 certification and approval cycle and 6 systems were certified and approved during the fiscal year 2015 certification and approval cycle that did not have complete business process reengineering assertions. Moreover, these officials provided justifications for why each of these systems did not have complete business process reengineering assertions.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
GAO-14-486: *Defense Business Systems: Further Refinements Needed to Guide the Investment Management Process*, **May 12, 2014**			
1. The Secretary of Defense should direct the appropriate DOD management entity to define by when and how the department plans to align its business system certification and approval process with its Planning, Programming, Budgeting, and Execution process. (Investment Certification and Approval)	X		DOD has taken steps to align its business system certification and approval process with its Planning, Programming, Budgeting, and Execution process. For example, according to the department's February 2015 certification and approval guidance, Organizational Execution Plans are to include information about certification requests for the upcoming fiscal year as well as over the course of the Future Years Defense Program. All of this information is to be considered when making certification and approval decisions. In addition, the guidance states that the chair of the Defense Business Council will make programming and budgeting recommendations to the Office of Cost Assessment and Program Evaluation and the DOD Comptroller.
2. The Secretary of Defense should direct the appropriate DOD management entity to define criteria for reviewing defense business systems at an appropriate level in the department based on factors such as complexity, scope, cost, and risk, in support of the certification and approval process. (Investment Management)		X	According to officials from the Office of the DCMO, the Defense Business Council primarily focused its attention on the non-military department business systems during the fiscal year 2015 certification and approval process. Accordingly, the council relied on military department precertification authority reviews of their respective system portfolios to support council decisions. However, the department has not defined criteria for reviewing defense business systems at an appropriate level in the department based on factors such as complexity, scope, cost, and risk, in support of the certification and approval process.

GAO report, recommendation, and category	Implemented	Partially implemented	GAO assessment
3. The Secretary of Defense should direct the appropriate DOD management entity to develop guidance requiring military departments and other defense organizations to use existing business enterprise architecture content to more proactively identify potential duplication and overlap. (Investment Management)	X		DOD has developed guidance requiring military departments and other defense organizations to use existing business enterprise architecture content to more proactively identify duplication and overlap. In particular, the department's April 2015 business enterprise architecture compliance guidance states that examining programs for potential duplication and overlap should occur during the problem statement requirements analysis process, which is to occur early in a program's life cycle. In addition, the department's December 2014 problem statement requirements validation guidance calls for an enterprise architecture analysis to be conducted that is to determine if a capability already exists within the organization or elsewhere across the DOD. If a solution already exists, the problem statement sponsor is to direct that the existing solution be reused. In addition, officials from the Office of the DCMO demonstrated that its new Integrated Business Framework-Data Alignment Portal tool can be leveraged to identify potentially duplicative systems based on business enterprise architecture compliance information that has been entered into the system.

Source: GAO analysis of DOD documentation | GAO-15-627.

[a]GAO-13-557.

Appendix III: Comments from the Department of Defense

DEPUTY CHIEF MANAGEMENT OFFICER
9010 DEFENSE PENTAGON
WASHINGTON, DC 20301-9010

June 30, 2015

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

Dear Ms. Cha:

This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) draft report GAO-15-627, "DoD Business Systems Modernization: Additional Action Needed to Achieve Intended Outcomes," dated June 5, 2015, (GAO Code 311615). The Department concurs with the recommendation. Our response to the recommendation is provided in the attachment.

The Department appreciates the opportunity to respond to your draft report. We look forward to your continued cooperation and dialog toward our common goal of improving defense business operations and achieving cost savings resulting from successful defense business systems programs throughout the DoD.

Should you have any questions, please contact Mr. Mark Doehnert, 571-372-2959, Mark.P.Doehenrt.civ@mail.mil.

Sincerely,

Peter Levine
Deputy Chief Management Officer

Enclosure:
GAO Draft Report dated June 5, 2015

**GAO DRAFT REPORT DATED JUNE 5, 2015
GAO-15-627 (GAO CODE 311615)**

**"DOD BUSINESS SYSTEMS MODERNIZATION: ADDITIONAL ACTION NEEDED
TO ACHIEVE INTENDED OUTCOMES"**

**DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATION**

RECOMMENDATION:

To help ensure that the Department can better achieve business process reengineering and
enterprise architecture outcomes and benefits, the Government Accountability Office (GAO)
recommends that the Secretary of Defense utilize the results of GAO's portfolio manager survey
to determine additional actions that can improve the Department's management of its business
process reengineering and enterprise architecture activities.

DoD RESPONSE: Concur. The Department appreciates the survey and will use the results to
help make improvements. In our restructured approach, the Department will focus on the
following improvements to our practices:

At the CMO levels of both the military departments and the DoD, the focus will be more
on management of functional IT portfolio groups rather than individual systems. This change in
focus is being communicated particularly to the OSD staff, who are following the trends that
have been practiced in the military departments.

To support that management strategy, and consistent with comments from the users, the
Department will restructure the BEA to focus more explicitly on the business processes being
executed within the functional domains, spanning all levels of the Department. These business
process descriptions will give the Department a solid foundation for evaluating overall
improvements to Department procedures and practices. Where IT investments are a possible
solution or enabler to those improvements, the same architecture work will serve to define
requirements; to drive business reengineering to take advantage of commercial solutions (while
minimizing customization); and to make program investment decisions. At the OSD level,
updated architecture techniques are being put into practice with staff members to improve skills.

At a mechanical level, the Department is reviewing and revising how the workforce at all
levels can access the BEA. The objective is to make information more readable and
discoverable, as conveyed to GAO during the annual assessment this year.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact	Carol R. Cha, (202) 512-4456 or ChaC@gao.gov
Staff Acknowledgments	In addition to the contact above, individuals making contributions to this report include Michael Holland (assistant director), Camille Chaires, Carl Barden, Susan Baker, Nabajyoti Barkakati, Wayne Emilien, Nancy Glover, James Houtz, Monica Perez-Nelson, Stuart Kaufman, Adam Vodraska, and Shawn Ward.