Report to Department of Defense
Chief Information Officer

July 31, 2019

IMPROVING FITARA COMMUNICATIONS

DoD CIO's embrace of Federal IT Acquisition Reform Act (FITARA) is having a positive impact on transparency, decision making and risk management, but needs to standardize on a data model and automate the process.

IT-Acquisition Advisory Council

Highlights

Why IT-AAC Did This Study

The Information Technology Acquisition Advisory Council (ITAAC) is a public/private partnership of concerned citizens, public interest groups, private sector sponsors and government partners working together to serve as a catalyst for positive change and evolution in the Information Technology Acquisition System to meet the demands of the 21st century.
Our mission is to provide Congress, White House, and Executive Branch IT Leadership with a trusted collaborative structure and Transformation Roadmaps for Streamlining the IT Acquisition Process, assuring critical mission elements that are highly dependent on IT (Info Sharing, Cyber-Security, E-Health, E-Gov, E-Biz, and Green IT). The IT-Acquisition Advisory Council is a 501(C)6 Standards Consortium with the participation of transformation minded senior leaders from government, academia, industry and public interests.

This Study Examines DoD's FITARA communications with both internal and external stake holders, looking at improving FITARA stake holder metrics and measures. Since engaging, DoD's FITARA score has vastly improved from F to C+, yet more can be done.

The Study recommends clarifying stakeholder roles and responsibilities, codifying FITARA data model, and automating the TBM and Dashboard.

DOD CIO FITARA ROADMAP

The DoD CIO's new Digital Modernization Strategy and full embrace of FITARA represents a landmark for the future of Defense IT.

Executive Summary

The DoD CIO's June 2019 *Digital Modernization Strategy* outlines a compelling vision for transforming legacy IT systems and moving the department into the Digital Age, and coupled with its embrace of FITARA, evidence suggests the DoD is on the right path for the first time in over a decade.

- The Strategy recognizes the importance of leveraging commercial IT innovations and best practices, cornerstones of FITARA.
- The Strategy acknowledges important trends in private sector IT modernization, which will require alternative approaches to IT acquisition and management.
- DoD's significant improvement in FITARA scores, from F to C+, reflects a much leadership commitment to change, and a fundamental shift from fragmented efforts of the past.
- GAO and House Government Oversight Committees welcome DoD's willingness to change and have shown a willingness to consider new metrics and measures that better align with mission outcomes.
- IT-AAC Benchmark of FITARA best practices suggests a greater standardization of data collected from key stakeholder across the IT lifecycle management, to improve the quality and reliability to both reporting and IT management disciplines.
- Initial investigations of automation approaches point to new EO 13800 and IT MGT Act that calls for Agile Acquisition Methods and Technology Business Management Frameworks that can codify the data collection and compliance reporting.
- The Deputy Chief Management Officer (DCMO) has rolled out an initial phase of Technology Business Management (TBM) for the department via a GOTS tool developed by Boston Consulting Group called CODE. This should form a foundation for a COTS framework that can use AI for data collection, reducing the burden on DoD stakeholder, while improving confidence of external stakeholders that the data is reliable and evidence based.

The IT-AAC 3-month FITARA improvement task allowed for some initial investigation into both communications with external stakeholders and opportunities to automate current processes. Discussions with GAO FITARA leads suggested that the automation challenge was very large and would need a much greater investment in time and resources. These constraints were compounded by a lack of availability of key stakeholders (peak vacation time), and inability to secure a stakeholder meeting that was in the planning stage.

As IT-AAC suggests a follow-on task that takes this initial study into a full scape FITARA automation effort, based on guidance from GAO, OMB and House

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FITARA INTRODUCTION

Over the past two decades, Federal agencies have wasted billions of dollars on failed IT investments.[1] Core to this problem may be traced back to how IT systems are acquired and managed leading to numerous legislative and White House mandates framed in Clinger Cohen Act (CCA), NDAA Section 804/893, IT MGT Act, EO 13800 and the Federal Information Technology Acquisition Reform Act (FITARA), the cornerstone for sustainable IT Reforms. A large and perhaps more significant cause of such extensive failure is the way these systems are acquired: using massive, whole-system, customized, proprietary, multiyear contracts with teams of vendors following acquisition guidelines written to optimize the manufacture of aircraft carriers, fighter jets, and armored personnel carriers, and subject to additive rules that attempt to cope with emerging cyber threats and issues.

> *"Weapons systems depend on stable requirements, but with IT, technology changes faster than the requirements process can keep up … It changes faster than the budget process and it changes faster than the acquisition milestone process. For all these reasons, the normal acquisition process does not work for information technology."* **Bill Lynn**
> **Prior Deputy Secretary of Defense**

These legacy acquisition and management processes follow rules that were applicable in times when military and government innovation drove commercial innovation. From World War II to the middle of the 1990s, this paradigm was arguably still the norm in information technology. The Defense Advanced Research Projects Agency invented the Internet; advancements in computing speed and power were driven by the needs of the space program, weather prediction, and similar massively complex systems where the Federal Government played the lead, if not the only, role. The rules behind legacy acquisition systems were designed for the purpose of safeguarding the public trust and minimizing the waste, fraud, and abuse in massive programs at the cutting edge of scientific knowledge and manufacturing technology.

In the early days of government information technology, the situation appeared the same. Each aspect of an agency's mission appeared to be a unique need, requiring a unique solution, built from the bottom up by teams of software and hardware developers working at the leading edge of their crafts. But that is no longer the case, as evidenced by the challenges facing the implementation of Healthcare.gov, which brought to light the need to transform Federal IT procurement processes and led to the signing of the Federal Information Technology Acquisition Reform Act (FITARA) which was part of the FY 2015 NDAA.

[1] *Information Technology: Additional Actions and Oversight Urgently Needed to Reduce Waste and Improve Performance in Acquisitions and Operations*, GAO-15-675T (Washington, DC: U.S. Government Accountability Office, June 10, 2015) 2.

Instead, today's leading-edge information technology solutions are spurred by innovation in the commercial marketplace, with government and military often the recipients, not the developers, of the cascading benefits. Requirements that once appeared to be unique to large government programs turned out to be common to many transactions in the commercial marketplace. The systems that support these transactions have been developed to such a degree that they are available as commodities—tested, proven, modular, and interoperable capabilities priced to satisfy a highly competitive market. Many of the requirements that once seemed to require a bespoke, proprietary agency-defined solution are available as reliable services from cloud providers, purchasable by the unit or by the year. The Federal Government's standing as the primary IT customer for many vendors has eroded, as vendor business models focus on selling standardized products rather than customizing them to match legacy, government-specific approaches.

> *"The inability to effectively acquire information technology systems is critical to national security.... The development of a new acquisition process, coupled with clear roles and responsibilities of key decision makers, and an experienced leadership and workforce, are important elements of the solution."*
>
> **Defense Science Board, 2009**

But the legacy Federal acquisition system still buys information systems the way it buys missile systems, creating complexity where simple solutions would suffice, and forcing static architectures that are overtaken by advancements in the marketplace before the blueprint ink is fully dry.

In this environment, agile IT acquisition isn't just a change in processes, it's a fundamental change in philosophy, stake holder communications and culture. This report focuses on FITARA external communications processes that feed the oversight of FITARA and accompanying guidance, close existing gaps in IT acquisitions, and provide the information needed for evidence-based and risk-informed decision making that keeps pace with the evolving IT environment. For DoD CIO's new approach to deliver results, these processes and communications can't just be followed by rote—they need to be understood, embraced, and tailored to produce affordable, effective, and timely IT acquisition and management decisions. The DoD CIO has made great strides in its communications and governance since Mr. Deasy took the reins of the DoD CIO, leading to a first ever C+ FITARA Score. Yet, more needs to be done to drive better outcomes, not just better grades.

IT-AAC's recommendations are grouped into governance improvements, communication process improvements, supporting disciplines, and process automation. Within each area, there are overarching transformation actions that will be needed to automate FITARA reporting.

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PREREQUISITES FOR SUSTAINABLE DOD IT REFORM

DoD CIO has made greater strides in advancing Defense IT Reforms than the past four CIOs combined. However, if the Secretary of Defense (SECDEF) must meet several key prerequisites to successfully implement FITARA communications process improvements and achieve sustainable reforms.[2] They are identified in bold text and described in the paragraphs below. These prerequisites are either underway at DoD or embedded in this FITARA Roadmap.

Understanding and embracing the intent of FITARA and removing waivers of TITLE10. DoD CIO leadership has already achieved this prerequisite through its acceptance of FITARA as a key objective. Since the signing of the Clinger Cohen Act of 1995, key DoD Mission owners averted compliance with IT Reforms based on Title10 waivers, undermining the DoD CIO's authority. This was compounded when the DoD CIO was not Senate Confirmed, nor reported up to the Secretary of Defense.

Leadership resolve to address these challenges. This project and the shared interest in its results among DoD IT acquisition stakeholders demonstrates a shared resolve to identify and make improvements that will help DoD effectively manage the risks associated with IT acquisitions and improve the success of IT programs and projects.

Resources, experience, expertise, and tools to implement change. Tasks B and C provide the starting point to address this need, including examples of previous agile IT acquisition implementations that may be leveraged and Interoperability Clearinghouse (ICH) options for required expertise and knowledge resources.

Effective change management. Four dimensions of change management (illustrated in Figure 1) are needed to effect sustainable IT acquisition reform (described below with leading agile acquisition practitioners noted in parentheses).

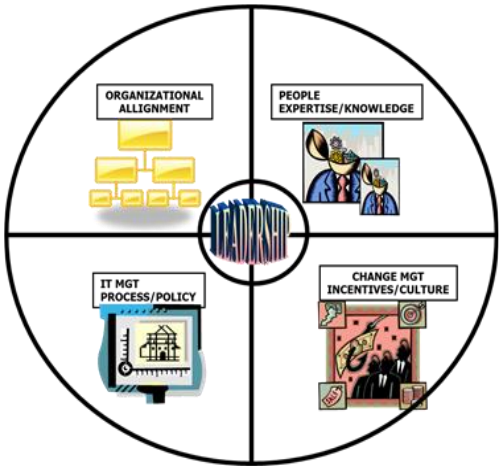

Figure 1: Prerequisites supporting agile IT acquisition implementation

- **Organizational alignment:** establish and communicate clear lines of authority and accountability by ensuring that organizations have the authorities needed to

[2] Prerequisites must be in place to support agile acquisition implementation. They are outside the scope of this project.

execute their assigned reporting responsibilities regarding IT investments, modernization efforts, and related investments.

- **People and workforce expertise and knowledge improvement:** train, mentor and equip the DoD FITARA Stakeholder to support the new FITARA ecosystem. Provide just-in-time access to subject matter experts (SMEs) to fill IT expertise and knowledge gaps that have been called out by numerous DoD leaders, study groups and Sr. Advisors. Leverage public-private partnerships to provide exposure to real-world innovations, best practices, and lessons learned.

- **IT management and policy updates:** establish risk-based decision analytics and performance metrics to enable sound, fact-based investment decisions. Communicate concerns in FITARA reporting, associated metrics and changing FITARA landscape with GAO and Congressional Oversight Committees to better align reporting with outcomes. This updated policy must detail the scope of DoD's embrace of FITARA, the roles and responsibilities of all combatant commands, services and Fourth Estate, and how their programs will be put under DoD CIO oversight.

- **Culture and incentives:** establish value streams, reward risk takers, drive 80% solutions, maximize use of commercial off-the-shelf (COTS) products, encourage innovation and accept small failures—all of which deliver mission outcomes. FITARA encourages incremental, agile delivery of IT capabilities, discouraging "big bang" ACAT 1 systems. However, there are many major IT programs of record that are unlikely to adapt to these new mandates, and that are funded directly by Congress. DoD CIO must create incentives to encourage broader FITARA embrace.

This FITARA Road Map recommends a set of low-cost, high-impact change management actions the DoD OCIO and Chief Management Officer (CMO) might consider to achieve significant return on investment and/or cost savings over the next 12 months. These proposed actions target process, workforce, management and cultural impediments to agile IT acquisition.

A standardized, automated FITARA framework. On February 9, 2016, the White House released its Cybersecurity National Action Plan, which calls for rapid modernization of legacy systems that are insecure and are expensive to maintain.[3] As part of this plan, the OMB Office of Federal Procurement Policy has proposed establishment of a standardized decision analytics framework to guide decision makers towards investment

[3] Whitehouse.gov, "Fact Sheet: Cybersecurity National Action Plan." February 9, 2016. Accessed February 26, 2016. https://www.whitehouse.gov/the-press-office/2016/02/09/fact-sheet-cybersecurity-national-action-plan.

decisions that will avert risks in legacy systems and in the supply chain. Decision analytics is part of the AAF described in this road map.

Finally, misconceptions about the relationship between agile development and agile acquisition have caused confusion in some discussions during this project. To clarify: **agile acquisition is a prerequisite for effective implementation of agile development.**

STAKEHOLDER COMMUNICATIONS AND DATA DRIVEN DECISION MAKING

To achieve greater agility and transparency in the DoD IT acquisition lifecycle (DoD 5000, Agile Acquisition, OTA's, etc.), IT-AAC recommends creating a standardized data model to streamline the acquisition information development and sharing, and to facilitate subsequent process automation, if desired. The model identifies key elements of information and data exchanges. Use of this data model will improve linkages among related activities, including portfolio management, Capital Planning and Investment Control (CPIC) and other OMB reporting, solution architecture development, and IT planning. Automating any legacy process requires establishment of a standardized information exchange and data model, and mapping to existing data sources that would eventual feed into the FITARA Dashboard and periodic oversight reporting needs.

Figure 2 presents a strawman data model representing the type of information that DoD PMs and Component CIOs will need to capture as their programs move through the agile IT acquisition processes. The data model helps provide structure and consistency for the data collection process. This basic information will need to be captured to satisfy many reporting and analysis requirements captured by FITARA and the DoD CIO Dashboard.

In addition, using the architecture process to identify individual operational elements and sub-elements of programs will provide more detailed insights to estimate lifecycle costs and performance risks. When these estimates are based on subjective rather than fact-based estimates, it becomes difficult for programs to establish achievable cost and schedule baselines. This breakdown will also make it easier to see how many of the same elements DoD needs to buy or support across multiple programs and where a common infrastructure can be established to reduce duplication of investments.

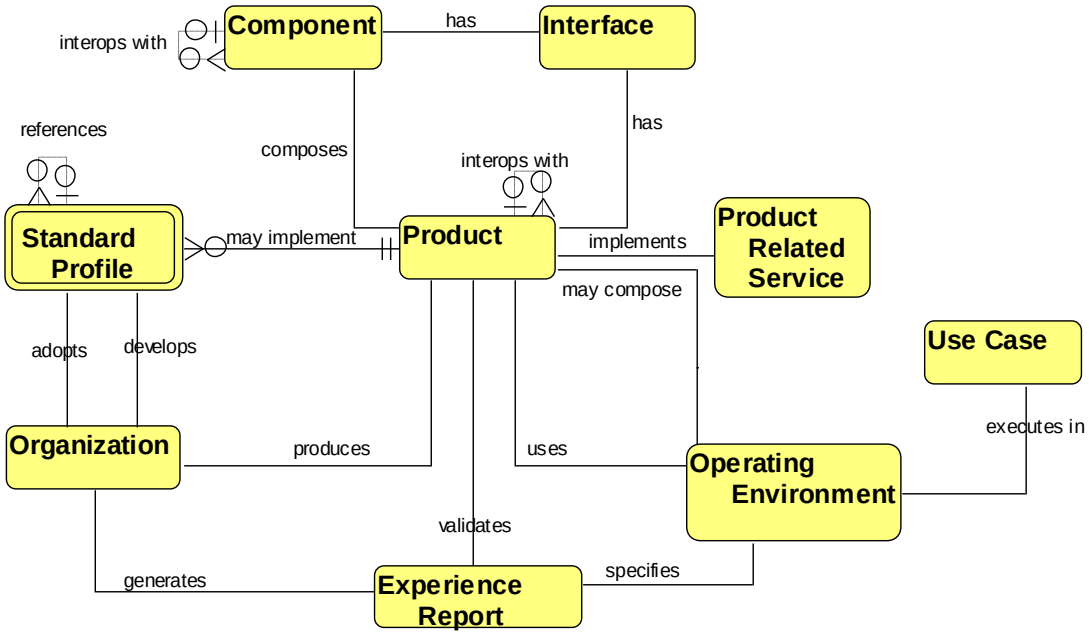

Figure 2: Strawman data model

When considering automating the data collection process or using an automated asset management or portfolio management tool to improve operations, this data model will help guide implementation and automation decisions. At a minimum, a central repository for either this information structure is needed to support IT acquisitions. Using this data model would help DoD identify opportunities to achieve greater economies of scale (e.g., with enterprise license agreements) and standardization in its acquisitions as required by GAO, OMB and Congress.

The proposed data elements:

- Product—a COTS, Government off-the-shelf, or open-source module that is at its lowest level of decomposition.
- Standard profile—decomposes the core functions of a specific technology layer and the interfaces to access these "services." The standard profile helps establish a common ontology for describing various architecture layers and interdependencies, and to improve future interoperability between layers.
- Product-related service—details product function and service areas in terms of function points (if possible); includes SLAs and OLAs.
- Component—a module or computing asset that provides a service needed for the system to operate.

- Interface or application program interface (API)—a connection that accesses the capabilities and enables modularity of design.
- Organization (e.g., an independent software vendor)—an entity that manufactures, supports, and/or maintains the product.
- Operating environment—classifies the layers in the ISO model that the product operates.
- Use case—a way of describing how a suite of products can work together to support a mission thread or capability in a user context.
- Experience report—a written document, including testing data and third-party references, to capture leading practices and lessons learned of an early adopter. This information is key for mitigating decision risk and normalizing ("de-hyping") the use of emerging technology.

These data elements are needed to document what product (or service) is being acquired, from what vendor, for what purpose, and the experiences of other users with the product or service to inform acquisition decisions. The new Data Act compliments both FITARA and the IT MGT Act, and ties to the Presidential Order 13800/13838.

WHY OUTCOMES ARE MORE IMPORTANT THAN SCORES

With the dual goals in mind of improving external communications, and automating the FITARA processes, one must look first at the qualify of the data collected, information exchanges and the alignment with core FITARA goals; driving better IT outcomes. Several age-old adages' come to mind;

- Measure what matters (Doerr)
- Garbage in, garbage out
- Efficiency is doing things right, effectiveness is doing the right things (Drucker)
- Culture eats strategy every day for breakfast (Drucker)
- You can't solve today's problems with the same thinking that got you there (Einstein)

After conducting numerous interviews with key stake holders from Congress, GAO, Agency CIOs and SMEs, there are growing concerns about the relationship between FITARA data calls, and agency efforts to improve IT acquisition and management outcomes. This challenge is exemplified by the fractured IT governance and oversight

structure across Congress and the Department of Defense, each seeking reports to satisfy overlapping oversight needs. DoD PMs and Component CIOs have to report back to the multiple oversight organizations on many of the same programs, keeping them from performing essential management activities; CMO, A&S, DoD CIO, and CAPE. FITARA and new NDAA directives have sought to reduce this confusion and find this essential for better IT outcomes across DoD.

IT-AAC recommends a coordinated effort by the DoD CIO and his Congressional Affairs office that would identify shared oversight interests and establish new performance metrics that better align the reporting process with desired outcomes. Interviews with agencies gaining both high FITARA scores plus a track record of guiding successful IT programs have revealed an embrace of emerging industry standards around Agile Acquisition Methods (AAM), Technology Business Management (TBM), and Supply Chain Risk Management (SCRM). These data driven models can help shift DoD away from Weapon Systems models that do not provide the optimal set of metrics associated with real world program risks. DoD's FITARA reporting can better align with program outcomes by standardizing on a common data model and using modern TBM and Dashboard products that can reduce bureaucratic oversight activities.

In short, here are several recommendations the DoD CIO should consider to achieve the desired outcomes sought by FITARA, driving a more agile, resilient enterprise that delivers IT enabled mission outcomes.

ACTION 1 – METRICS AND MEASURES

FITARA Reporting, Scoring and Communications today are based on a set of changing metrics that continue to evolve and mature, especially those that are unique to National Security. As Mr. Deasy is the first CIO to fully embrace both FITARA and Clinger Cohen Act, we have found several gaps in the current measures and metrics being sought by GAO and the HGOC overseers. FITARA was conceived to improve the IT management and acquisition of major IT investments, yet many agencies continue to see it as another compliance routine. This would be a mistake, as we have seen significant improvements in Civil Agency IT program outcomes whom have embraced FITARA as a way of changing processes, cultures and incentives. DoD CIO has made great strides in the right direction and should build on its small but significant investments by establishing better metrics and measure needed for more effective governance of high risk IT programs. A recent Defense Business Board report suggests that major IT programs are failing to deliver measurable value over 80% of the time.

ACTION 2 – COMMON FITARA DATA MODEL NEEDED TO IMPROVE COMMUNICATIONS

DoD CIO's broadly recognized embrace of FITARA has already resulted in a significant improvement in its recent score (F to C+), which demonstrates to all stakeholders a commitment to long sought IT Reforms, Transparency and Embrace of Commercial Best Practices. DoD's progress can continue with a greater standardization on information exchanges, data collection and dashboards that should rely on authoritative information sources. With Congress, GAO and OMB demanding different data and modifying FITARA scoring models, it is critical for the DoD CIO and DCMO to encourage stability in both the kind of data, and supporting metrics feeding both internal and external FITARA reporting. This new data model should align with the broader set of information needed to guide IT investment and modernization decisions, supporting other disciplines related to FITARA; IT Information Management (ITIM), CPIC, Supply Chain Risk Management (SCRM), Modular Open Systems Architecture (MOSA), Performance Based Contracting, and Service Level Management.

ACTION 3 – AGILE ACQUISITION METHODS

DoD's Digital Modernization Strategy describes a bold new approach to IT modernization that aligns with IT MGT Act and FITARA goals. Implementation of this strategy will require fundamental changes in how DoD acquires and manages its IT portfolio, including an embrace of alternative IT sourcing methods that align with the rule of law. Numerous study groups, science board and trade groups have called out the DoD 5000 and related acquisition models as a root cause of most IT program, because it focuses on compliance and applies a modified Weapon Systems Approach. Though this fact may not seem relevant to the IT-AAC FITARA tasking, it does address a flawed source of data that will feed both internal and external communications and reporting.

Updated IT Reform Policies are mandating that Federal Agencies embrace Agile Acquisition and other commercial IT best practices, moving away from "build biased" processes, and moving towards more COTS and Everything as a Service (XaaS). As directed by FITARA and NDAA Sec804, DoD CIO will need to engage industry, internal stake holders and standard bodies to take advantage of best practices and lessons learned. More information on agency best practices follows this section.

ACTION 4 – PORTFOLIO AND TECHNOLOGY BUSINESS MANAGEMENT

DoDs Digital Modernization Strategy recognizes the need to leverage commercial innovations and a deeper understanding of the many disconnect IT assets already in the DoD portfolio. Due to the unique nature of how DoD and Congress have stove-piped the program and budgeting process, there is a great need for a cross cutting Portfolio and Asset Management process, another element of FITARA.

We have seen this problem exacerbated with some of DoD's most progressive programs, including AF EITaaS, F35 Program, JEDI Cloud, Navy NGEN, Army NETMOD, and DEOS. DoD CIO lacks the tools, data and authority to gain insights into what compute assets existing, their lifecycle costs, the s/w licenses needed, and the business value being delivered.

These challenges can be met through a more aggressive embrace of modern Portfolio Management, Asset Management and Technology Business Management standards and tools. IT-AAC's deep partnership with leading standards bodies and commercial IT communities of practice representing Fortune500 organizations has allowed us to understand "what right looks like", and potentially guide DoD IT management into the Digital Age. Unfortunately, DoD lacks the expertise and market access to fully leverage commercial best practices and lessons learned, which explains why previous efforts to address these shortcomings have produced limited results. Hopefully we have learned what Einstein would share "you can't solve today's problems with the same thinking that got you there".

ACTION 5 – FITARA AND TBM AUTOMATION

White House and Congressional leaders have directed agencies to fundamental transform how federal agencies both acquire and manage critical IT capabilities due to reoccurring failure patterns (74%), rising costs of legacy systems, and the significant digital gap in Federal IT. DoD CMO initiated an effort several years ago to begin to close these gaps through several high transformational programs. The first was thru the Business Transformation Agency (part of DCMO) whom formalized an Agile Acquisition Method, departing from the traditional DoD 5000 Weapon Systems Approach, building on AF Solution Assessment Process (ASAP). This effort sought to streamline IT acquisition and embrace performance-based contracting. Pilots implementations by the AF, Navy, DISA, NRO, and BTA demonstrated a data driven approach to enable "Agile Acquisition".

More recently, the DCMO, thru a contract with Boston Consulting Group, established an initial implementation of TBM, called CODE. This provided a foundational approach for gaining access to authoritative sources of program information needed to meet the intent of FITARA and NDAA Sec 804. In DoD terms, this was a very advanced approach, yet pales in comparison to similar efforts in Civil Agencies and Large Commercial Concerns whom have embrace COTS TBM and Portfolio Management Tools that enable greater governance and transparency. IT-AAC's partner network has developed a COTS assessment framework that can be rapidly applied to identify new FITARA toolset that would also fill significant gaps in high risk IT incentive and modernization programs like EITaaS. DoD CIO should build on the significant body of lessons learned and process re-engineering investments conducted by previous administration to avoid repeating past mistakes or re-inventing a wheel that may already existing. Opportunities to build on success is covered in later sections of this report.

ACTION 6 – MEASURE WHAT MATTERS

Evaluating decision support information includes assessing the quality, timeliness, and sufficiency of information available to decision makers during the planning phase at each decision point. While decision makers must make decisions based on the best information available to them at the point in time a decision must be made, they will sometimes delay decisions to get additional information to reduce the perceived risks associated with their decision. This part of the assessment will be subjective, based on the observations of the facilitation team and comments from pilot participants. It will compare the information resources available to support a decision with the decision maker's willingness to make a decision and their overall confidence with their decision. The intent here is to identify the essential elements of information that decision makers in different roles need, and their preferences for the format of the information (data templates, documents, displays, etc.).

The need for and availability of market research information and about contract options (e.g., strategic sourcing vehicles, SLAs, and OLAs) will also be captured. This information will vary based on swim lane; each pilot needs access to enough market research and contract information to inform decisions about solution options to evaluate, their relative costs and benefits, and sourcing strategy.

To the extent that risk information can be developed during the pilots, the program evaluation framework will roll up individual risk elements into an overall score. For each pilot, risk metrics may be selected from the following list to reflect the areas of most concern to decision makers for the particular type of IT acquisition (i.e., to reflect different sources and levels of risk inherent in the different swim lanes).

- Cost risk is the uncertainty in the lifecycle cost estimate caused by things such as price differences across vendors, uncertainty in the vendor to be used, price fluctuations for the product and maintenance or service over time, and uncertainty about number of units to be purchased.
- Technology risk is the qualitative assessment of the maturity of the technology (use a maturity model classification?).
- Schedule risk is a quantitative assessment of the factors that may impact schedule and the number of days each factor may cause the schedule to slip. Add up days for each factor and express them as a percentage of the total schedule length.
- Integration risk is a qualitative assessment of the level of difficulty that will be associated with integrating the new IT acquisition within the existing EA (it should be low for anything developed using the AAF because the framework is designed to promote architecture alignment and use of standards—it needs to be included for comparison with other acquisitions).
- Funding risk is an estimate of the likelihood that funding will not be available when needed and as much as needed to execute the project on schedule.
- Resource risk expresses the uncertainty in availability of SMEs, other team members, and other non-budgetary resources to execute the project.

ACTION 7 – FITARA, IT MGT ACT, AND CCA BEST PRACTICES

As DoD CIO has committed to leveraging best practices and lessons learned, we have identified several significant investments that the DoD CIO could leverage to accelerate its embrace of FITARA and related IT Reform Directives.

This section exposes examples where agencies transformed their IT acquisition and management process as listed in Table 1. The purpose of the work, an outline of the contents of associated reports, and a reference snapshot of relevant report covers are included.

Table 1 maps the examples to the swim lanes they support. Green cells indicate the recommended example that best illustrates that application of a swim lane. These examples provide models that will enable DoD to build on other agencies' investments in agile acquisition and develop tailored swim lanes for the most common IT acquisition

types: COTS and other commodities, integrated COTS suites, cloud and shared services, and tech refresh and infrastructure modernization.

These examples provide a starting point for DoD CIO to identify pilot efforts to introduce agile acquisition approaches to accelerate the execution of IT projects in one or more swim lanes. We recommend that DoD consider adapting and piloting one or more of these swim lane tailoring examples for a component-sponsored project that would provide shared value across multiple components and/or within DoD headquarters. Piloting and incremental implementation of one or more swim lanes will produce benefits and illuminate the critical success factors at DoD. It is not necessary to implement all the swim lanes to assess improvement in IT acquisition outcomes and to identify next steps in improving DoD processes.

Table 1: Existing Investments in IT Acquisition and Risk Management

Agency or SDO	Manual Name	Tailored IT Acquisition Swim Lanes				
		COTS and other Commodities	Integrated COTS suites	Cloud and Shared Services	Tech Refresh and Infrastructure Modernization	Complex IT Development and Customized COTS
BTA	BTA CCA Guide	Very supportive	Very supportive	N/A	Supportive	N/A
BTA	BTA Capability Assessment Method (CAM)	Supportive	Very supportive	Supportive	Very Supportive	N/A
DISA	Capability Assurance and Alignment Process (CAAP)	N/A	N/A	Very Supportive	Very Supportive	N/A
NRO	Internet Service Provider Gap Analysis	N/A	N/A	Very Supportive	Supportive	N/A
CSCC	Practical Guide to Cloud Service Agreements	N/A	Very Supportive	Very Supportive	Supportive	Supportive
Air Force CIO	Air Force Solution Assessment Process (ASAP)	Very Supportive (technical assessments)	Very Supportive	N/A	Supportive	N/A

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DCMO Clinger-Cohen Act Agile Acquisition Guide

BTA was chartered to establish a standardized DoD-wide approach to business systems automation and establish processes for rapid acquisition of COTS IT, in compliance with the CCA. DoD likely owns a large collection of customized automated business systems that mirror functionality found in the commercial IT market. When there is a solid foundation of market data and performance metrics supporting an IT-intensive program, it is far less risky to acquire an outcome guided by rigorous requirements and commercial IT best practices.

This process guide includes:

- Background on the CCA and an overview of its requirements
- Acquisition roles, responsibilities, and workflow descriptions for:
    - CIO and CAE
    - Enterprise processes
    - Business case assessment
    - Reviews and milestone decisions

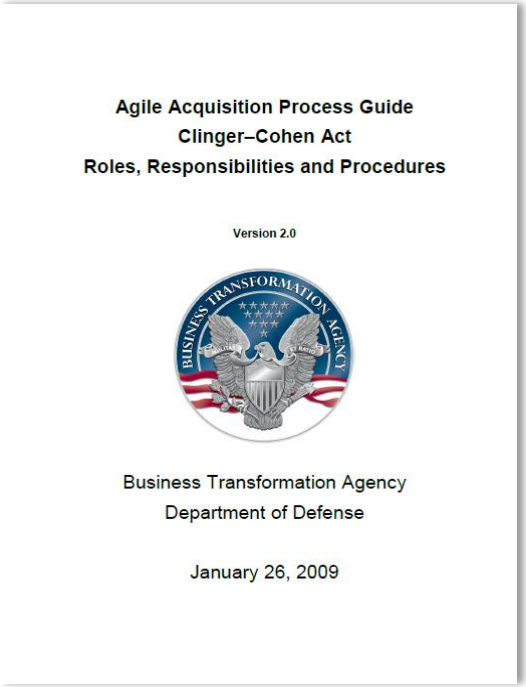

Figure 3: BTA CCA Guide for COTS and other commodities

With the DoD OCIO gaining increased oversight responsibility for both major IT investments and those not covered by ALF, it should consider establishing a standardized compliance framework that improves assessments of COTS value in terms of usability, interoperability, cybersecurity, and lifecycle costs. This approach will help lower development costs and risks by using COTS solutions to minimize the need for development and will help streamline executive review processes by providing a standardized decision framework.

As part of a pilot, DoD OCIO should consider partnering with S&T and mission-owning executives to establish a formal COTS and OSS risk assessment approach that can be consistently applied across DoD, in alignment with the DoD's bold new Digital Modernization Strategy.

DCMO Capability Assessment Method

Following years of trial and error, DoD's Defense Business Senior Acquisition Executive established CAM to guide investment decisions seeking to leverage the availability of mature technologies and integrated COTS solution suites. The BTA conducted a number of successful pilots of CAM. These pilots demonstrated the ability to acquire an outcome and to avoid taking ownership of development efforts that typically lead to cost overruns.

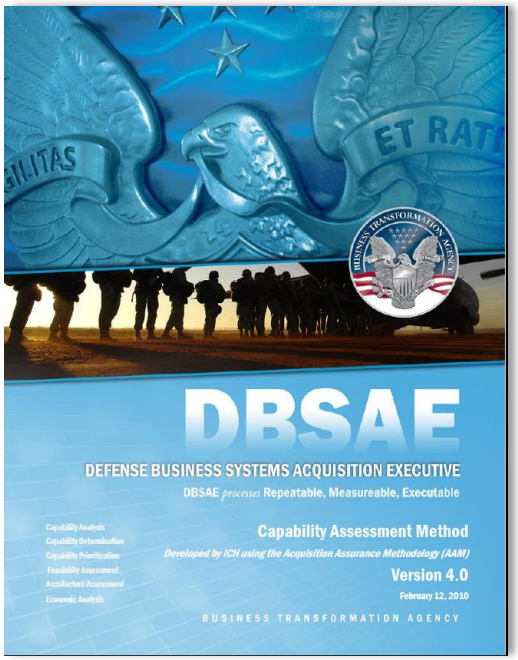

Figure 4: Capability Assessment Method for integrated COTS suites

CAM is an outcome-based approach. This process guide for solution architecture and EA processes addresses:

- Capability analysis
- Capability prioritization
- Feasibility assessment
- Economic analysis
- Defining solution alternatives

DoD OCIO should consider whether a similar capability assessment method, including a standardized solution assessment report template, would help streamline IT investment decision making.

DISA Cloud Computing Assessment Capability Assurance and Alignment Process

The Defense Information Systems Agency required a focused assessment of how to rapidly move DoD cloud computing efforts into a private cloud, and an examination of the value, challenges, and opportunities of cloud computing.

The feasibility assessment report shown includes:

- An overview of cloud computing and CAAP
- A CAAP market analysis
- Capability analysis, scoring, and prioritization
- A cloud reference architecture and maturity model
- An implementation road map

DoD OCIO should consider whether a similar examination of options for expanding and refining DoD use of cloud-based solutions would support organizational IT planning and strategic sourcing efforts and increase options for agile IT acquisition.

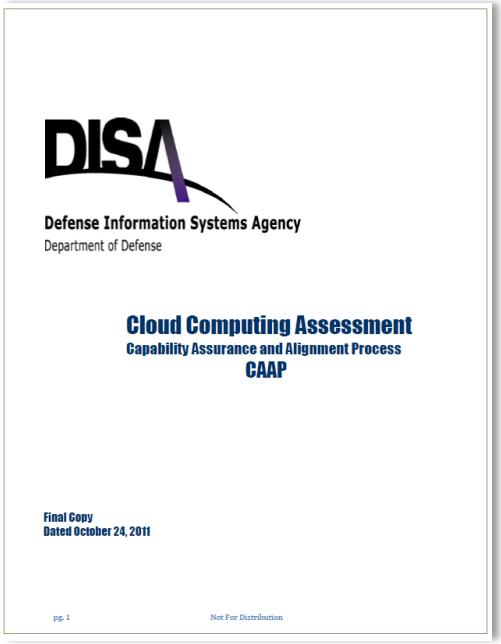

Figure 5: DISA agile cloud guide for as-a-service, shared services, and cloud

NRO Infrastructure Service Provider Gap Analysis Study

NRO found that its organizational governance structures were not optimally aligned to efficiently execute network modernization efforts.

The gap analysis illustrated here provided a road map for changing organizational and governance structures as needed to streamline the transition. This road map includes findings and recommendations on:

- Governance
- Architecture
- Service management
- Transitioning to an information technology infrastructure library (ITIL) and control objectives for information and related technology (COBIT) frameworks

DoD OCIO should consider a similar examination of organizational partnerships and potential process modifications to facilitate more agile and effective IT acquisition.

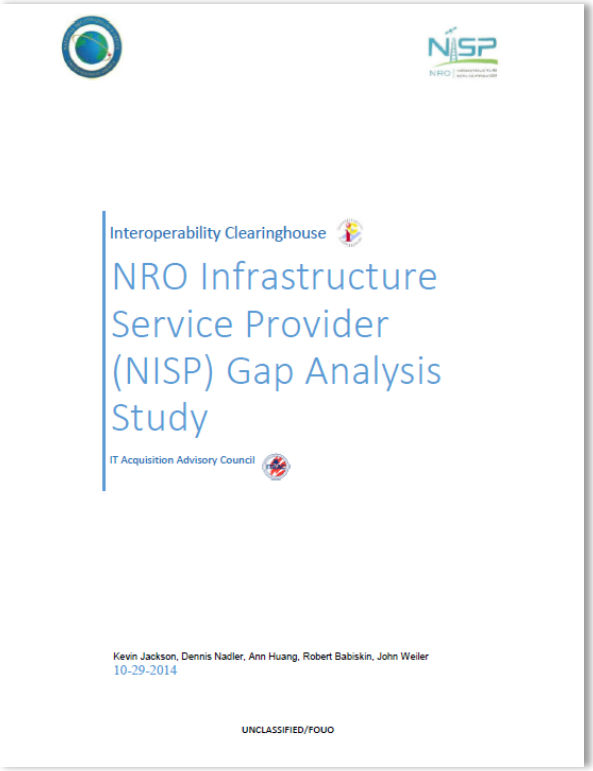

Figure 6: NRO Infrastructure Service Provider gap analysis for network (infrastructure) modernization

Cloud Standards Customer Council Practical Guide to Cloud Service Agreements

Cloud service agreements govern the relationships between cloud service providers and customers, and specify the customer agreement, SLA, and acceptable use policies. The guidebook referenced here recommends areas cloud customers should evaluate when comparing and negotiating terms with providers.

This guidebook outlines strategies for:

- Understanding roles and responsibilities, service and deployment models, disaster recovery plans, and the exit process
- Evaluating business-level policies and security and privacy requirements
- Identifying critical performance objectives and service management requirements
- Developing an effective governance process

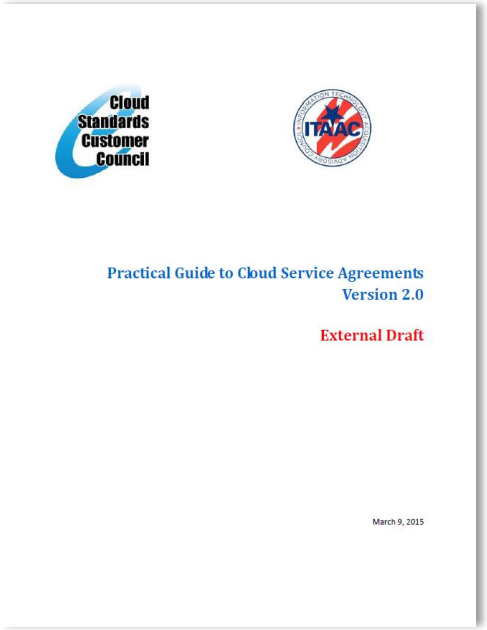

Figure 7: Draft CSCC Guide to Cloud Service Agreements

DoD has made great progress in data center consolidation, which required a basic application of shared services and cloud offerings. This capability is maturing, as recognized by high marks on the DoD FITARA report card. DoD OCIO should consider seizing this opportunity to build on success by leveraging an existing set of maturity models. These maturity models, co-developed by the international standards bodies guiding the National Institute of Standards and Technology (NIST), DoD, and DHS investments in cloud, can be applied to help DoD CIO expand its use of cloud and shared services, focusing attention on key elements such as:

- **Service-level management framework** to improve development and management of SLAs and OLAs.
- **Infrastructure services category management** to codify the discrete set of headquarters-managed IT infrastructure and application infrastructure services used across all DoD Components.[4]

[4] A review of emerging standards combined with recent benchmarked best practices of 11 Global 1000 companies revealed a suite of 14 common services that DoD should consider as foundational for all application development, much like what Apple and Google have provided for the iPhone and Android platforms.

- **Cloud broker framework** to establish a centralized acquisition authority and advisory for all DoD components as encouraged by NIST cloud standards guidance. Market research suggests the availability of at least 160 cloud offerings, each with its own unique and salient characteristics. This framework would help DoD CIO guide investment decisions based on risk assessments across cloud offerings.

Figure 8: ASAP institutionalizes an enterprise process to assess COTS solutions

- **Enhanced Federal Risk and Authorization Management Program (FedRAMP) framework** needed for high-assurance programs. DoD CIO can leverage the work of nationally recognized cloud standards bodies that are working through the IT Acquisition Advisory Council (IT-AAC) partnership. NIST and GSA have already acknowledged a desire to transform FedRAMP for high-assurance programs and have initiated discussions with IT-AAC's Cloud Standards partners.

- **Embrace of ITIM Framework like TBM, COBIT5 or ITILv3.** The COBIT 5 framework for the governance and management of enterprise IT is a leading-edge business optimization and growth road map that leverages proven practices, global thought leadership and ground-breaking tools to inspire IT innovation and fuel business success. ITIL is more proprietary (while not a standard, it has significant industry support). ITIL describes uniform processes, procedures, tasks, and checklists that can be integrated with an organization's strategy, delivering value and maintaining a minimum level of competency. It allows the organization to establish a baseline from which it can plan, implement, and measure. It is used to demonstrate compliance and to measure improvement. Those these are solid pieces of work, the White House, under EO13800 has determined the Technology Business Management (TBM), is the most mature, and widely used in Fortune500 companies, and directed all agencies to migrate to TBM over the next few years.

Air Force Solution Assessment Process

ASAP established a standardized tech assessment approach for acquiring COTS-based solutions. The Air Force conducted 11 successful pilot projects, reducing acquisition cycle time and decision errors by 70%.

CONCLUSION: MODERN IT GOVERNANCE CAN DRIVE BETTER OUTCOMES

The DoD CIO's embrace of FITARA and ability to leverage decades of expertise in Fortune500, provides the Department with a rare opportunity to fundamentally change IT Governance, and how DoD approaches it Digital Modernization Strategy. Having been an ardent supporter and change agent supporting Defense IT Reforms since the signing of Clinger Cohen Act, our Public Private Partnership is honored to be selected for this important task.

Having taken the first few steps in this transformational journey, we believe the foundation already established, will need additional resources and changes in roles and responsibility for this important work to survive any change in administration. We at the IT-AAC have similar bold moves in the past, only for the new administration to arrive and begin anew. Institutionalizing change requires partnerships with industry, standards groups and other stake holders to achieve sustainable IT acquisition reform, and establishing a measurable, repeatable and evidenced based FITARA framework.

Thank you for the opportunity and we hope to remain a part of this important journey.

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ABOUT IT-AAC

The Information Technology Acquisition Advisory Council (ITAAC) is a public/private partnership of concerned citizens, public interest groups, private sector sponsors and government partners working together **to serve as a catalyst for positive change and evolution in the Information Technology Acquisition System to meet the demands of the 21st century.**

Our mission is to provide Congress, White House, and Executive Branch IT Leadership with a trusted collaborative structure and Transformation Roadmaps for Streamlining the IT Acquisition Process, assuring critical mission elements that are highly dependent on IT (Info Sharing, Cyber-Security, E-Health, E-Gov, E-Biz, and Green IT). The IT-Acquisition Advisory Council is a 501(C)6 Standards Consortium with the participation of transformation minded senior leaders from government, academia, industry and public interests:

- **Government:** CONGRESS- Armed Service, Homeland Security, and Permanent Select Committee on Intelligence. FEDERAL AGENCY – VA, OSD Health Affairs, Navy and Airforce, GSA FAS, Army, White House, NSA, OSD ATL, DHS, and many other Public Sector stake holder.
- **Academia/Public Interest** Harvard KSG, University of Maryland, MIT SLOAN, NDA, CMU SEI, DAU, BENS.org, HIMSS.org, NCOIC.org, CCIA.org, TheCGP.org, ICHnet.org, Aerospace Corp.
- **Industry:** Trusted Computer Solutions, McKinsey, CGI, Accenture, Keane, Microsoft, Google, HP/EDS, nationally recognized IT experts and former government officials.

OTHER IT-AAC PUBLICATIONS:

- 2009 Roadmap for Sustainable IT Reform Vol1; http://www.it-aac.org/images/ITAACRoadmapCongSumv1.pdf
- 2011 Roadmap Vol 2: http://www.it-aac.org/images/Dec2010Roadmap_Summary.pdf
- 2014 HASC/SASC Response leading to FITARA adoption: http://www.it-aac.org/images/IT-AAC_Defense_IT-Reform_Roadmapv2.0_SignedFinal9-24.pdf
- 2015 FITARA Implementation Roadmap; http://www.it-aac.org/images/IT-AAC_FITARA_Cyber_Roadmap_OMB_SUM.pdf

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