



ACQUISITION INNOVATION
RESEARCH CENTER

Implementing the DoD's Digital Data Strategy for Acquisition and Sustainment

Strategic Implementation Approaches and Options

EXECUTIVE SUMMARY
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PROJECT MANAGER

Natalie Wells, *VT-ARC*

PRINCIPAL INVESTIGATOR

Maegen Nix, *VT-ARC*

CONTRIBUTING AUTHORS

Grant Beanblossom, *VT-ARC*

Daniel Wolodkin, *VT-ARC*

Kobie Marsh, *VT-ARC*

SPONSOR

**Mr. Mark E. Krzysko, Deputy Director, Acquisition Policy and Innovation
Office of the Under Secretary of Defense for Acquisition and Sustainment**

STEVENS
INSTITUTE OF TECHNOLOGY

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EXECUTIVE SUMMARY

The Department of Defense (DoD) is pursuing increased use of data management and analytics to improve decision-making and acquisition and sustainment (A&S) outcomes. To support this transformation in digital acquisition, the Acquisition Innovation Research Center (AIRC) assessed data needed across DoD functions and organizations to inform next steps for DoD's continued transformation. This effort aligns with Office of the Under Secretary of Defense for Acquisition and Sustainment [OUSD(A&S)] efforts to implement the DoD Data Strategy and digitally transform acquisition and sustainment functions to improve acquisition outcomes.

This effort developed foundational frameworks, approaches, models, and practical next steps for transforming the DoD A&S community into a next-generation data-driven organization. The team conducted a cross-cutting analysis and leveraged Kotter's Leading Change framework,¹ the OUSD(A&S) *Digital Acquisition Strategy*,² and approaches in AIRC's prior Innovative, Data-Enabled Acquisition Strategy (IDEAS) research³ for addressing strategic challenges and barriers, evaluating the current and future-state digital data strategy and acquisition processes, and making recommendations for next steps. This report identifies models, approaches, and tools that can help accelerate advancement in digital acquisition and data-driven decision making. It provides an overarching Digital Acquisition Vision, an Acquisition Decision Landscape Model (current and future state), and recommendations to accelerate progress toward the proposed vision.

Proposed Digital Acquisition Vision:

Transform the A&S community through a cohesive, ubiquitous, and cross-functional approach to data and information management and digital acquisition. Enable cross-functional digital integration across the acquisition lifecycle to advance data-driven decision-making, improve acquisition outcomes, and deliver more timely capabilities to the warfighter.

This report also summarizes initial analytic results in a SWOT (strengths, weaknesses, opportunities, & threats) format. Six key findings are highlighted below.

Key Findings:

- **Multi-faceted Challenge** – Digital transformation of acquisition processes is a multi-faceted challenge with many dimensions surrounding data, organizational structures, and factors associated with the acquisition decision landscape.
- **Existing Strengths** – DoD and the Military Services have many strengths surrounding strategies, frameworks, initiatives, implementations and platforms, which are leading to change in functional areas within the Services and Defense Agencies. These strengths present opportunities that OUSD(A&S) could leverage, amplify, align, and expand to consolidate and expand gains.
- **Independent, Distributed, Short-Term Wins** – This project is part of a larger AIRC portfolio of efforts identifying innovative ways to transform and improve A&S functions across the DoD. Collectively, these projects are identifying practical options that can be combined with ongoing DoD and Service-level change efforts to further advance Digital Acquisition.
- **Needed Vision and Integration** – Despite individualized progress, change within functional areas in the Services and Agencies remain uncoordinated, impeding DoD's ability to move forward in functions described by two areas of Kotter's framework: consolidating gains and anchoring lasting change enterprise-wide. The A&S community across the DoD needs an overarching vision and implementing *coalition* focused on a concerted effort to translate and amplify individual progress into scaled, broad-based, integrated capabilities across the DoD to drive lasting change.
- **Current State Acquisition Decision Landscape Model** – The research team created an Acquisition Decision Landscape Model to help understand the current state of acquisition transformation to identify high-impact areas for OUSD(A&S) and the greater DoD to drive progress toward a common vision. This model portrays core elements and relational aspects constitute the DoD A&S decision landscape. The model illustrates how various higher-level decisions rely on access to lower-level data generators. Given most A&S efforts are isolated and not interoperable, this model can serve to inform the coalition on selecting next steps to focus on.
- **Future State Acquisition Decision Landscape Model** – Finally, the team created a future state version of the model to describe the state of the possible and portray critical areas that require further alignment and progress to consolidate gains.

Based on these findings, the research team formulated recommendations surrounding six critical areas, building on key themes and approaches across our targeted analysis of the data state, the Acquisition Decision Landscape Model, and our FY 2023 IDEAS recommendations.

Recommendations

Table ES-1 lists the recommended concepts and approaches along with a mapping to who in the DoD could lead and contribute to these efforts and what specific steps they can take in the short term to advance the transformation to Digital Acquisition.

Table ES-1. Strategic Recommendations and Potential Lead Organizations

Strategic Recommendation Area and Approach	Short-Term Options and Potential Lead(s)
<p>1. Continue Piloting Efforts – Explore and refine concepts surrounding the Acquisition Decision Landscape; core decisions and metrics used to pursue, formalize, and improve the use of acquisition data to inform decision-making processes; and additional technical solution, process, and policy development aligning and in coordination with the execution of the rest of the recommendations.</p>	<p>1.1. Pilot 1: Apply the Acquisition Decision Landscape Model in practice, develop a process for persistent monitoring of acquisition data to track program/capability progress and maturity over time to inform:</p> <ul style="list-style-type: none"> • Portfolio level roll-ups (Potential Leads: Deputy Assistant Secretary of Defense for Acquisition Integration and Interoperability [DASD(AI2)],⁴ DASD for Platform and Weapon Portfolio Management [DASD(PWPM)], DASD for Strategic, Space, and Intelligence Portfolio Management [DASD(SSIPM)], and the Data Analytics division of the Acquisition Policy and Innovation Office (API)[API/DA]). • Status/maturity of mission thread/kill chains for readiness tracking (Potential Leads: DASD(AI2), DASD(PWPM), DASD(SSIPM), and API/DA). • Status/maturity of critical technology areas for S&T/R&D investments tracking across the lifecycle (Potential Leads: DASD(AI2), DASD(PWPM), DASD(SSIPM), the Transition Tracking Action Group⁵ (TTAG)/DTIC, and API/DA). <p>1.2. Pilot 2: Analyze program(s) that reached milestones early or below costs. Develop a process for tracking early indicators of positive trends. Potential to design a concept for persistent capability for monitoring early positive trend indicators to inform incentives & best practice sharing/identification across AAF (Potential Lead: API/DA).</p> <p>1.3. Pilot 3: Conduct Defense Data Grand Prix competitions⁶ leveraging Acquisition Decision Landscape Model to explore data analytics & visualizations methods leveraging unstructured acquisition data, to tap into an underutilized resources to inform acquisition decisions across the landscape (Potential Lead: API).</p> <p>1.4. Pilot 4: Create a natural language processing (NLP) capability/workflow to process annual open-source documents (e.g., budget reports, Justification books, etc.) to persistently monitor for new data and analytics capability initiatives across the DoD. This would be used to inform expansion of AV Governance and a newly formed Digital Transformation-focused forum (see Recommendation 2.1 and 2.3) to coordinate efforts (Potential Lead: API).</p>

Strategic Recommendation Area and Approach	Short-Term Options and Potential Lead(s)
<p>2. Guiding Coalition & Consortium – Coordinate cross-organizational progress, lessons learned sharing, resource sharing and reuse, and co-development of standards and frameworks for shared implementations toward the vision. All service and program-level initiatives the research team engaged expressed interest in forming or participating in this cross-organizational entity.</p>	<p>2.1. Expand Acquisition Visibility Governance body (AV Governance) membership and scope with broader representation across localized data and digital transformation initiatives identified in our analysis (listed in Appendix A) to integrate and federate these initiatives, improve data sharing, and scale digital transformation efforts (Potential Leads: API, AV Governance).</p> <p>2.2. Utilize AV Governance to identify activities that OUSD(A&S) could pursue across the other recommendation areas to bring the Acquisition Decision Landscape Model into practice (Potential Leads: API, AV Governance).</p> <p>2.3. Utilize AV Governance to establish a new forum for digital transformation collaboration, connecting working-level representatives from initiatives identified in our analysis (Appendix A). Establish regular meetings and activities – in addition to AV Governance activities – to collectively share and coordinate implementations surrounding digital transformation of A&S processes and functions. Include the API-chaired Acquisition Analytic Forum as members of this newly established forum.⁷ (Potential Lead: API/DA).</p>
<p>3. Decision Framework Documentation – Capture and standardize the key decisions, core metrics, detailed touchpoints, data lifecycle, and map the existing AVDF to the foundational Acquisition Decision Landscape model.</p>	<p>3.1. Utilize AV Governance to determine required standards, documentation, and data requirements relevant to bringing the Acquisition Decision Landscape Model into practice (Potential Leads: API, AV Governance).</p> <p>3.2. Conduct data science pilots (under Recommendation Area 1) to develop and experiment with analytic workflows and visualizations surrounding identified Acquisition Decision Landscape Model standards, documentation, and requirements (Potential Leads: API).</p>
<p>4. Digital Acquisition Reference Architecture – Build upon and formalize alignment across existing efforts, standards and frameworks, guidance, and lower-level reference architectures aiming to align all to the Acquisition Decision Landscape Model.</p>	<p>4.1. Utilize AV Governance, ensuring representation from OSD CIO, Chief Digital and Artificial Intelligence Officer (CDAO), and Military Service CIOs, to discuss current/ in-progress reference architectures to date and determine next steps for aligning the Acquisition Decision Landscape Model to them for building the connective tissue between lower-level efforts and enterprise-wide architectures (Potential Leads: API, AV Governance).</p> <p>4.2. Coordinate use of the Acquisition Decision Landscape Model with current/ in-progress digital transformation reference and implementation architectures, (i.e., CDAO's and Army's Data Mesh Reference Architectures, and others discovered through AV Governance activities) (Potential Leads: API, CIO, CDAO).</p> <p>4.3. Determine relevant architecture guidance, taxonomies, and ontology components required to document and drive alignment across lower-level initiatives and architectures to use the Acquisition Decision Landscape Model (Potential Leads: API, AV Governance).</p>

Strategic Recommendation Area and Approach	Short-Term Options and Potential Lead(s)
<p>5. Digital Literacy Training/ Education Requirements & Curricula – Develop tailored curricula for the technical skills required to implement digital acquisition; to ensure understanding of decision framework among all stakeholders; and to educate all functional stakeholders on the Decision Landscape.</p>	<p>5.1. Leverage past OUSD(A&S) digital literacy work and current DAU offerings to create tailored curricula framework for six learning pathsⁱ specific to the Acquisition Decision Landscape and digital acquisition (Potential Leads: AV Governance, API/DA, DAU, Naval Postgraduate School (NPS), Air Force Institute of Technology (AFIT), Army War College).</p> <p>5.2. Identify current course offerings to leverage across curriculum, identify where tailored acquisition-specific workforce course gaps exist to drive new course development (Potential Leads: DAU, API).</p> <p>5.3. Develop workforce training requirements and incentives surrounding frequency, role-based, & implementation considerations for the curricula across functional areas (Potential Leads: API, A&S Functional Leads,⁸ Directors of Acquisition Career Management (DACMs)).</p>
<p>6. Cohesive Digital Acquisition Implementation Enablers – Beyond the reference architecture, pursue the policies, standards, incentives, contracting, technical ecosystem development that will enable and accelerate implementation.</p>	<p>6.1. Utilize AV Governance, ensuring representation from CDAO and initiatives identified through this analysis (Appendix A in the full report), to discuss actions needed surrounding policies, standards, incentives, guidance, and technical ecosystem alignment to: 1) scale lower-level standards/practicesⁱⁱ into enterprise-wide practice; 2) bring Acquisition Decision Landscape Model into practice; 3) and establish the connective tissue between lower-level efforts and enterprise-wide anchored change (Potential Leads: API, AV Governance).</p> <p>6.2. Utilize AV Governance to discuss the existing array of data and analytics platforms and related actions the A&S community can take to drive further connectivity amongst platforms through the Acquisition Decision Landscape Model, especially in light of forthcoming infrastructure and vendor changes to Advana^{9, 10} (Potential Leads: API, AV Governance).</p>

ⁱ Six learning paths: 1) Data architecting for acquisition data lifecycle management; 2) Data management & analytics; 3) Digital acquisition; 4) Acquisition Decision Landscape; 5) Digital acquisition governance and incentives; 6) Contracting for digital acquisition.

ⁱⁱ Including but not limited to core digital engineering/acquisition elements, digital maturity model and assessment process, contract language, and incentives critical to Acquisition Decision Landscape Model.

Conclusion:

In assessing the A&S community's current state and future envisioned state of digital transformation along Kotter's Leading Change framework, the research team found several key strengths, weaknesses, opportunities, and threats (SWOT) regarding digital acquisition and data-driven decision-making processes in the DoD. The team found strengths in individual functional change efforts that have resulted in short-term wins and capabilities; these wins provide the DoD further opportunities to scale, amplify, and integrate existing success models. While there is some evidence of urgency and a vision surrounding the need for digital transformation generally, the A&S community needs further progress guided by a common vision and dedication to broad data sharing to consolidate gains and anchor change specific to digital acquisition and acquisition decision-making (See Figure ES-1).

To lay a foundation toward addressing these gaps, the research team developed an overarching Digital Acquisition vision, an Acquisition Decision Landscape Model (current and future state), and recommendations to accelerate progress toward a common vision. Building on this enthusiasm, we identified recommendations to build on and consolidate existing progress that will anchor lasting enterprise-wide change for the A&S community (See Figure ES-2). In doing so, the A&S community will improve acquisition decision-making and outcomes for our warfighters and operators.

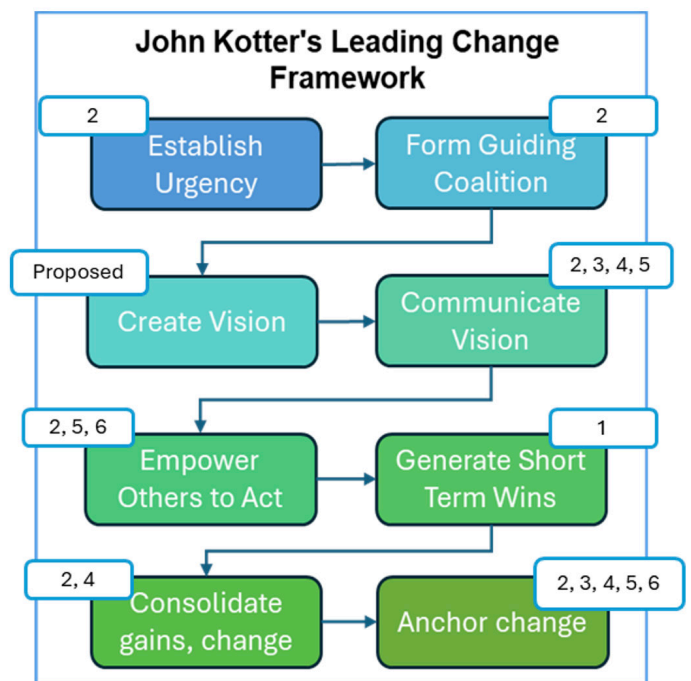
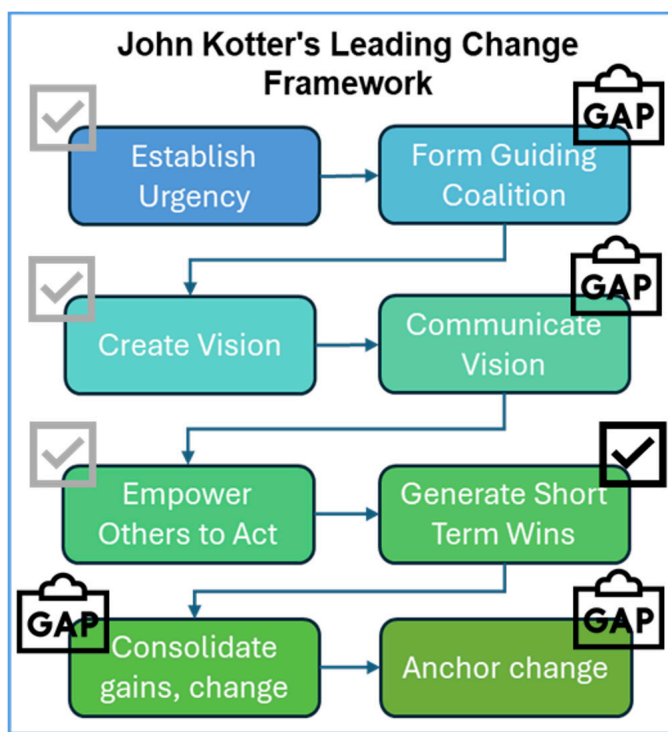


Figure ES-1: Strengths and Gaps Assessed Along Kotter's Leading Change Framework

Figure ES-2: The Six Recommendation Areas Mapped to Kotter's Leading Change

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