Innovative, Data-Enabled Acquisition Strategy (IDEAS)

Concepts for Driving the Digital Transformation of Defense Acquisition

EXECUTIVE SUMMARY
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EXECUTIVE SUMMARY

INNOVATIVE, DATA-ENABLED ACQUISITION STRATEGY (IDEAS): CONCEPTS FOR DRIVING THE DIGITAL TRANSFORMATION OF DEFENSE ACQUISITION

The Department of Defense (DoD) is pursuing defense acquisition system innovations to improve acquisition speed and outcomes given rapidly changing threats, technologies, and business models. A key enabler of such innovation is the digital transformation of acquisition and sustainment processes.

This report lays out a strategy, guiding principles, and a series of recommendations for a DoD *Innovative, Data-Enabled Acquisition Strategy* (IDEAS). As a first step in a living strategy, this document identifies insights, ideas, and concepts from academia, the DoD, and the commercial sector on how the DoD might evolve and improve acquisition execution and outcomes. IDEAS uses four interrelated strategic facets to identify and manage initiatives to improve acquisition outcomes through better use of acquisition data, as illustrated in Figure 1.

- **Information.** Improve secure data, knowledge and insight flows across DoD, industry and academia to inform, improve and accelerate acquisition functions, decisions and outcomes.

- **Acquisition Tools and Functions.** Support and improve acquisition tradecraft to improve processes and decisions for program managers (PMs), functional analysts, and leadership by leveraging information, models and commercial innovation.

- **Decision and Policy Tools.** Assess ideas and inform evidence-based decisions to improve policies and processes through models, test ranges and analytics.

- **People and Culture.** Incentivize and train agile, innovative and outcome-focused acquisition communities.

Of these four facets, information and people provide the basis for developing and applying tools to support acquisition and policy decisions, and should receive priority for implementation. It often takes a while to realize the benefits of workforce initiatives, but they will have an enduring, strategic impact.
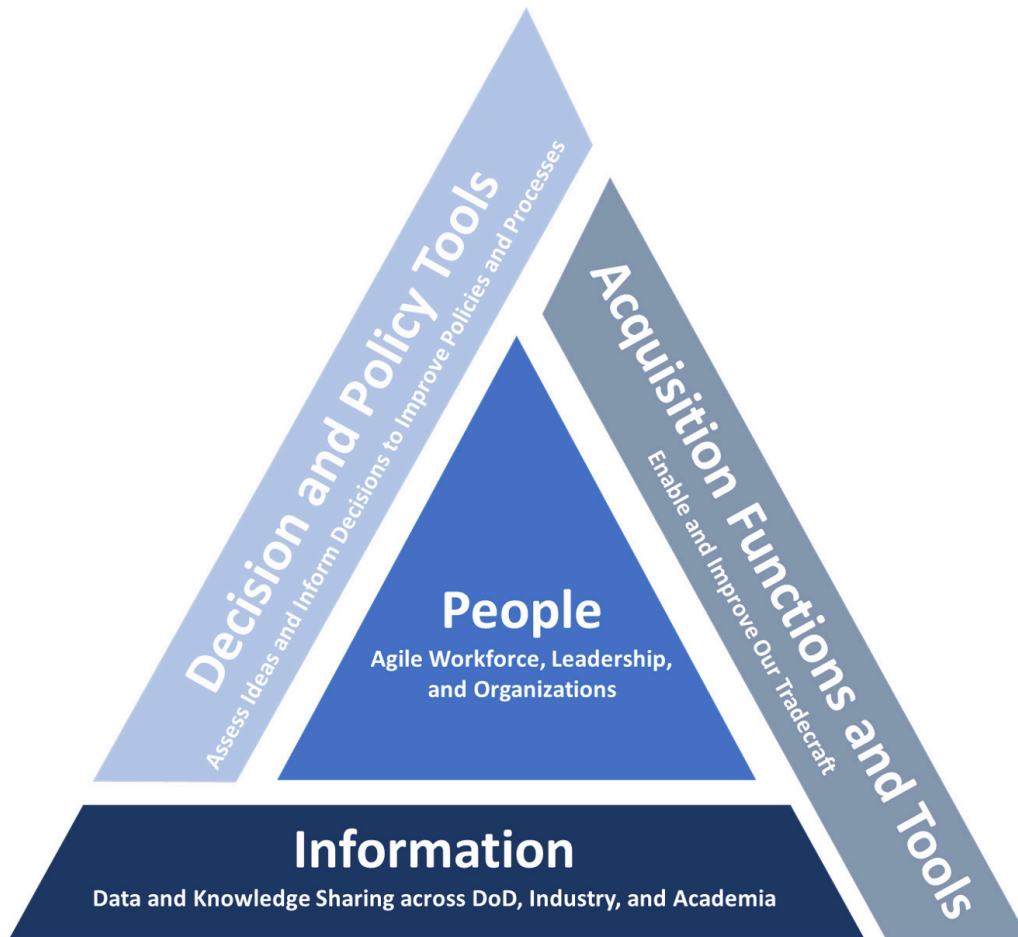
Figure 1: IDEAS Strategic Facets

The AIRC research team recommends that DoD pursue the following initiatives to implement the IDEAS strategy.

Information. DoD acquisition is largely an information-driven process. Acquisition functions consume and process information to generate knowledge to support acquisition decisions. Improving the availability and flow of acquisition data, with appropriate protections, will allow DoD to improve acquisition processes and make better acquisition decisions.

Recommendations to improve collection, governance and sharing of acquisition data, information and knowledge, listed in order of potential impact:

- Policy – IN1. Develop and implement policies to establish plans and track progress in making acquisition data readily available across _all_ functional areas.

- Data Availability and Secure Use Pilots – IN2.

  » Continue efforts to develop DARCIE[1] and improve methods for analysis of protected data.

  » Continue efforts to improve acquisition data flows into the Advana[2] and DAVE[3] data analysis environments.

- Data Sharing Pilots – IN3.

  » Continue efforts to improve data access by developing open application programming interfaces and bulk data downloads, publishing data dictionaries, and increasing use of trust platforms.

  » Identify and pursue opportunities to improve data access, e.g., Controlled Unclassified Information (CUI) access for labs, University-Affiliated Research Centers (UARCs), Federally Funded Research and Development Centers (FFRDCs) and support contractors.

  » Open account access with single sign-on.

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[1] DARCIE – Defense Acquisition Research Collaboration and Innovation Environment.

[2] Advana – Advanced Analytics

[3] DAVE – Defense Acquisition Visibility Environment

Acquisition Functions and Tools. Many acquisition functions are needed to achieve successful outcomes. Improvements in the efficiency, quality and timeliness of individual functions and their interactions will yield improvements to the overall defense acquisition system.

Recommendations to improve acquisition tradecraft through more effective use of acquisition data include the following, listed in order of their potential impact:

- Improved Acquisition Outcomes – AFT1. Identify, prioritize and pursue efforts to improve acquisition outcomes through more effective use of acquisition data.

  » Such efforts could include analysis of bid protests, debarment and the Fair Labor Standards Act, and pilot applications of BA-8 software appropriations.

- Digital Acquisition – AFT2. Leverage advances in digital engineering to set the foundation for digital acquisition

  » e.g., digital twins of acquisition processes and systems

- Data and Analysis Tools – AFT3. Determine whether funding is needed for data and analysis tools to enable the workforce to realize the benefits of their "digital mindset" training.

- Agile Development and Delivery – AFT4. Continue to pursue efforts to adapt agile and DevSecOps commercial practices to DoD acquisition.

Decision and Policy Tools. As a knowledge-driven process, decisions are made throughout the defense acquisition system – at all levels and functions, by acquisition managers, oversight, leaders, and policymakers. Tools and approaches to improve decisions will improve the efficiency, quality, affordability, and timeliness of acquisition functions and processes, ultimately improving warfighter outcomes.

Recommendations to assess ideas and improve evidence-based decision-making, listed in order of potential impact:

- Digital Engineering Tools – DPT1. Develop and apply model-based analytic tools for mission engineering, portfolio management and requirements decisions.

- Streamline Requirements Process – DPT2. Continue efforts to model the requirements process, and assess commercial and foreign best practices for setting requirements.

- Intellectual Property (IP) – DPT3. Continue to develop better ways to store, track and manage IP to evaluate, price and negotiate IP in acquisitions.

- Policy Test Laboratories – DPT4. Continue developing simulation environments to perform policy analysis, uncover non-obvious relationships and provide actionable insight to decision-makers.

- Selected Acquisition Report (SAR) – DPT5. Continue efforts to update SAR content and structure to improve DoD and Congressional analyses, while minimizing the administrative burden.

People and Culture. People are key to an effective acquisition system. Improving workforce culture, incentives, education and training, and leadership will have a direct impact on acquisition outcomes. Workforce impediments, such as incentives that discourage agility and speed, must also be addressed.

Recommendations to improve workforce culture, incentives and training for managing acquisition data, listed in order of potential impact:

- Culture – PC1. Identify and pursue a set of potential short-term, process improvement wins to help establish culture of data-driven innovation in acquisition.

- Training – PC2. Provide classroom and online training to establish a "digital mindset." Provide rotational assignments for people to address acquisition challenges using advanced analytic techniques.

- Incentives – PC3. Continue pilot efforts to align workforce incentives to focus on acquisition outcomes vs. narrow functional performance objectives.

- Community – PC4. Continue using the DoD Acquisition Analytics Forum to help establish a culture of data-driven innovation in acquisition.

- Research – PC5. Continue efforts to develop intelligent tutoring and cognitive assistants, and game simulations for improved training.

Implementation Approach. To make progress against the four strategic facets, DoD should implement the recommendations detailed in the main body of the report. These recommendations address the most fundamental challenges first:

I.   Incentives and Empowerment

II.   Leveraging Communities Inside and Outside Acquisition

III. Improved Access

IV.   Trust and Security

V.   Innovation and Agility

VI.   Metrics

VII. Incremental Progress and Iteration

Next Steps. The best course of action involves engaging stakeholders to increase awareness of the IDEAS recommendations, identifying organizations and representatives to form a cross-functional team and working group, and initiating plans to implement recommendations for I. Incentives and Empowerment, and II. Leveraging Communities Inside and Outside Acquisition.

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