

INNOVATION ADOPTION FOR ALL: SCALING ACROSS THE DEPARTMENT OF DEFENSE

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COMMENTARY

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Across the Department of Defense, today's watchword is innovation. In 2018, Eric Schmidt, the former CEO of Google and the first chairman of the Pentagon's Defense Innovation Board, [aptly declared](#) that "the [Department of Defense] does not have an innovation problem; it has an innovation adoption problem." Unlike the fundamental technologies behind nuclear-powered submarines, intercontinental ballistic missiles, and stealth aircraft, an increasing percentage of the technological breakthroughs that provide a real combat edge for U.S.

warfighters are coming from commercial firms outside the traditional defense industrial base. Through the endeavors of organizations like the Defense Innovation Unit, AFWERX, and Army Futures Command, myriad opportunities exist to build prototypes to solve military problems.

Leaders from the secretary of defense on down argue that the department must move faster when it comes to delivering capabilities to warfighters that can offset increasingly urgent and sophisticated threats. The challenge is not incubating innovation, it is moving it from laboratories and testing grounds to the field. We believe that six factors — built on a foundation of talent and not requiring any new authorities — can scale innovation adoption across the Department of Defense. These factors include a clear problem definition, an empowered program team, an identified transition partner, a contracting vehicle, steady funding, and senior-leader support. These cannot be achieved in a piecemeal fashion. To work, they should become business-as-usual for the department rather than six consecutive miracles of defense innovation and acquisition.

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Existing Elements

In its Fiscal Year 2025 budget, the Department of Defense acknowledges the importance of fielding innovative products at scale by committing \$1 billion over two fiscal years to field thousands of autonomous, attritable drones through its flagship Replicator program. In February, Doug Beck, director of the Defense Innovation Unit, released a strategy for what he terms the Defense Innovation Unit 3.0. This is the next iteration of an organization originally chartered to serve as a bridge between Silicon Valley and the Department of Defense that aims to

“rapidly deliver commercially derived capabilities to the warfighter” in order to “build and sustain enduring advantage.” The FY2024 Defense Appropriations Act gives the Defense Innovation Unit almost \$1 billion to pursue its new strategy. These examples showcase how delivering new combat capabilities at speed and scale is a top priority at the highest levels within the department.

Inside the Department of Defense, innovation is about far more than increasing the pace of technology development at military service laboratories, the Defense Advanced Research Projects Agency, federally funded research centers, university-affiliated research centers, and major prime contractors. Innovation encompasses the concepts and processes that provide combat advantage. Of course, new technologies are synonymous with innovation, but any innovation’s ultimate relevance is how it can improve warfighting capabilities to address challenges posed by strategic competitors like China and Russia. Innovation now also includes embracing the digital world of software-created digital twins; aggregating disparate data for use by AI and machine-learning algorithms; and employing modeling, simulation, and wargaming. The department has recognized the gains made by our strategic competitors to embrace new technology applications that have narrowed our nation’s military edge. While American ingenuity and creativity continue to allow the Department of Defense to produce innovative warfighting capabilities, most efforts are led by special organizations, outside the “regular” structure of the department.

The Defense Innovation Unit, the Air Force’s Rapid Capabilities Office, and the Army’s Rapid Capabilities and Critical Technologies Office are focused on delivering high-performance hardware, software, and services quickly and at scale. These teams enjoy regular access to senior Department of Defense leaders and are staffed with high-potential military and career personnel. Unfortunately, they lack the scale to drive innovation across the entire department. We must learn from their success, understand why they are successful, and use these insights to help transform the department’s “normal” capability development and acquisition processes.

Recently, several commissions and study groups — many of which the authors have participated in — have attempted to catalyze change with a particular emphasis on budgeting and acquisition reforms. For example, the Planning, Programming, Budgeting, and Execution Commission [released its final report](#) in early March with numerous recommendations to fundamentally streamline the resourcing process while improving transparency with Congress. In January, the Atlantic Council released its report on [defense innovation adoption](#). The Department of Defense and Congress would do well to act on the recommendations found in these two reports.

Fortunately, the department largely has the authorities and processes for these reforms. While new authorities and approaches are urgently needed for greater budget flexibility, the department can speed up its modernization today through more widespread training of the workforce along with the corresponding championing of policy implementation by leadership. For example, Other Transactions Authorities, Middle Tier Acquisitions, and the Software Acquisition Pathway are existing authorities and approaches that are generally faster and more flexible than traditional acquisition paths. They enable new suppliers to join the defense ecosystem and ultimately bring new capabilities to the field faster than the legacy acquisition system. Unfortunately, they are not as widely adopted throughout the department as they could be.

The Defense Innovation Unit has made extensive use of Other Transactions Authorities in its effort to rapidly [develop 80 prototypes and transition no less than 52](#) of them to fielded capabilities. This demonstrates what is possible when flexible authorities are combined with an empowered organization. Furthermore, the relatively new [Adaptive Acquisition Framework](#) provides an overarching approach for program managers and other acquisition officials to align programmatic needs using what we term “creative compliance.” While this term is likely to strike many as dangerous, it’s about changing the underlying culture to mitigate, rather than eliminate, risk in policy implementation while remaining in compliance with legal requirements. Ultimately, the issue of how we address risk

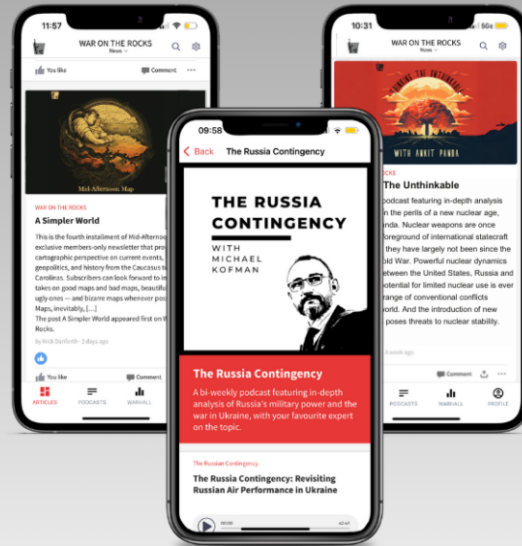
is a foundational issue for any department-wide reform and is worth its own article.

The Department of Defense does act quickly when properly motivated and catalyzed by effective leadership. The Joint Force's improvements to “golden hour” medical care in Afghanistan and the rapid acquisition of the Reaper drone fleet are successful efforts in meeting combat needs on an operationally relevant timeline. More recently, the department has had some notable successes in quickly fielding counter-drone systems, albeit in relatively small numbers. As another example, the Space Development Agency put in orbit innovative satellites for targeting and missile tracking in roughly two and a half years. These examples of transformative change span different capabilities and unique problems across multiple administrations.

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Six Factors for Innovation at Scale

We believe that there are six factors that, when combined, unlock the ability to quickly deliver needed capabilities at relevant scales. Additionally, talent is the

“secret sauce” that binds them all together. Without the right talent, achieving each factor is impossible. These factors will not come as a surprise to anyone with knowledge of what it takes to get things done within the department. Taken together, they represent not just an outline for a successful effort but also a roadmap for broader cultural reform.

The first factor is a clear definition of the problem. Different from a formal requirement, this is a concise statement of what problem is going to be solved in the context of a larger mission and overarching strategic guidance like the [National Defense Strategy](#). To address many of today’s urgent challenges, we should turn first to existing, often commercially derived systems that can be quickly scaled. Defining the problem should not result in a narrow requirement that includes a prescribed technology approach that limits creativity. More effective is an iterative approach with warfighter feedback that leads to the best solution. This opens the aperture, avoids eliminating a host of viable, commercially derived options, and creates a broad, competitive solutions ecosystem.

The second factor is an empowered program team that serves as the “quarterback” of the whole effort. More than “dual-fluency” talent that understands the language of both commercial technology and national security, an empowered program team should also be cross-functional — combining operators, technologists, engineers, acquisition professionals, security experts, and budgeteers. Each of these roles should be filled by the right talent from across the enterprise with the vision and drive to execute the program. Senior leaders should take personal interest in getting the right talent to the empowered team. Crucially, senior leaders should create a culture of risk tolerance where risks are either thoughtfully mitigated or judged to be worth accepting.

While the Department of Defense [currently stresses](#) the need for multi-functional acquisition teams, the objective of today’s approach is program execution and meeting a defined requirement. We believe the objective should be expanded to

achieve better mission-solution fits, iteration, and project scaling. The program team is also critical in building close, trusted, and mutually beneficial partnerships with industry that can bring the capabilities of both the government and the private sector to bear on the problem. This reimagines the role of the program team by expanding their responsibilities and defining success based on mission rather than execution performance or strict process compliance. Ultimately, the program team is the fulcrum around which all the other elements revolve.

The third factor is a transition partner who will “own” the new capability once it transitions to a full-scale program. This partner is the end-user who owns the mission, can provide feedback to vendors during testing, advocates for funding, and develops the training and sustainment strategies vital to ultimate program success. For traditional defense products — such as ships, aircraft, and missiles — this transition partner is often a program executive office identified and integrated from the beginning. However, for more emergent and non-traditional capabilities, the transition partner is often not immediately identified nor involved in the acquisition process.

This identified transition partner is key to fielding a capability rapidly as it ultimately owns the risks associated with using a given capability and its integration into a larger architecture. Fielding a capability rapidly is clearly demonstrated in operational testing where end users can accept “good enough” and phased certifications to meet urgent needs. This short-circuits a lengthy process designed to completely eliminate risk rather than evaluate it. Without establishing a path from the laboratory through testing to the field at the outset of a program, the valley of death will prove nigh impossible to cross.

The fourth factor is a contracting vehicle. While one of the more obvious elements in programmatic success, we want to draw specific attention to new contracting methods such as Other Transition Authorities and Commercial Solutions Openings that can rapidly support the development and fielding of emerging

capabilities. These new contracting methods provide the empowered program team with flexibility, scale, and speed to move from prototype to production. Matching contract type to program is also imperative as it allows the program team to proactively manage issues such as data rights, supply chains, and manufacturability. Knowledge of these new contracting methods and creativity in using them represent areas where the Department of Defense can leverage a best practice more widely.

The fifth factor is steady funding. This is closely related to the contracting vehicle but should be considered an independent element since an in-place contract is no guarantee of obligated funds. Consistent funding is needed so that the capability provider, regardless of type or size, can make smart planning choices in development and production. Furthermore, steady funding is one of the most important aspects of attracting matching capital from outside sources. The need for steady funding also represents buy-in both from broader departmental budget offices and Congress. This is the ultimate form of stakeholder consensus.

The sixth and final factor is senior leader support that ensures success and breaks bureaucratic logjams by providing rapid direction, streamlining processes, and creating an overarching, supporting culture of risk-taking. Senior support is key in ensuring that the program team and the transition partner have the right talent in place. Leadership also helps to create and maintain the important linkage between the program team and the transition partner. Senior leadership is the top cover to ensure continued support for iterative processes through the early failures that will inevitably happen. As an example, the Strategic Capabilities Office was championed and aggressively supported by Secretary of Defense Ash Carter, notably leading to the creation of an anti-ship capability for the SM-6 surface-to-air missile. Innovation can thrive and grow when it is supported.

Conclusion

None of these six factors by themselves will be enough to field necessary capabilities at speed and scale. However, when they are combined, and senior leaders assemble the right talent, the likelihood of programs succeeding increases immeasurably. In other words, this challenge is about people, culture, and implementation more than policies and regulations. The deputy secretary, along with the Joint Staff, should codify these six factors into an innovation adoption doctrine that can be scaled across the department. Fielding emerging capabilities at speed and scale is vital to maintain America's edge against China, ensure deterrence, and prevail should deterrence fail. These six factors should not be six consecutive miracles, but the way business is done at the Department of Defense.

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Robert Work spent 27 years on active duty in the Marine Corps as an artillery officer. He was the undersecretary of the Navy in the first Obama administration and the deputy secretary of defense from 2014 to 2018, serving alongside three different secretaries across two administrations. He is the distinguished senior fellow for defense and national security at the Center for a New American Security and serves as one of the chairs of its Defense Technology Task Force.

Ellen Lord serves on public and private company boards in addition to advising a variety of businesses. She is on the Board of Advisors at the Center for a New American Security and serves as one of the chairs of its Defense Technology Task Force. She served as the first under secretary of defense for acquisition and sustainment, and spent more than 30 years in the automotive and defense industries, including as president and CEO of Textron Systems Corporation, a subsidiary of Textron Inc., from 2012 to 2017.

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Image: [U.S. Air Force Photo by Tech. Sgt. Michael Mason](#)

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