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Framework for Organizational Needs of Innovation in the Department of Defense

Jennifer M. Taylor—is a Research Staff Member at the Institute for Defense Analyses (IDA). Jennifer has over 20 years' experience in government, think tanks, and as a consultant, transforming government institutions through strategy, planning, and implementation. She has a personal commitment to building better government institutions through making connections that were hidden from view.

Jennifer served as an action officer five years in the Office of the Undersecretary of Defense for Policy, providing policy advice. She has been working on security cooperation and defense institutional capacity building since 2006 and has seen firsthand the challenges and opportunities of assessing and evaluating the security cooperation programs since that time. She led the outreach and engagement for the 2020 Quadrennial Defense Review.

As a strategy and organizational change management consultant, Jennifer provided a number of institutional assessments for reform and transformation. She led the team that helped create the newest defense institution, the Defense POW/MIA Accounting Agency (DPAA). With senior DPAA leadership, she assessed and evaluated what changes were feasible in order to design an organization that would break down organizational stovepipes, improve processes, and engage employees.

Jennifer also has a background in acquisition reform and government contracting, recently serving as professional staff on the Section 809 Panel evaluating federal acquisition regulations. She is able help translate between contract staff and program staff to ensure the right solutions to policy challenges.

Jennifer has a B.A. from the University of North Carolina at Greensboro. She received an M.A. in international relations from Yale University, and a Master of Applied Security Strategy from the University of Exeter in the UK. [jtaylor@ida.org]

Abstract

The Department of Defense is a performance-based bureaucracy that focuses on time, schedule, and budget to evaluate the performance of its programs. The DoD is driven to perform its national security mission and to maximize results works to make every process and activity as predictable as possible. Bringing cohesion and simplifying communications internally and externally facilitate process, but come with risk for innovation. There is a need for better oversight, with the right kind of performance measures.

This is somewhat at odds with the requirements of innovation organizations (i.e., those organizations with innovation as a primary mission) that must have a high degree of freedom and flexibility in which to develop new approaches. At the same time, innovation efforts are reinforced and accelerated by maintaining consistent processes for contracting, personnel matters, budgeting, and other organizational concerns.

Executive Summary

The Institute for Defense Analyses has developed a framework for understanding the organizational needs to support innovation at the Department of Defense. The framework lays out Bureaucratic Environment Attributes and Innovation Environment Attributes that answer the central question of how to allow innovation to flourish while operating in a large-scale bureaucracy. These attributes describe the elements that need to be considered to support organizational decision-making, whether in realigning the innovation ecosystem, aligning efforts, or developing new strategies. This framework can assist in indicating what pieces should be centralized to allow more freedom for

innovation at the Department of Defense—such as hiring, budgeting, administration, acquisition management—that benefit from consistency. This framework may assist to build a case to measure innovation differently from the rest of the Department, but in a way that ensures oversight still occurs. It initiates the conversation to support efforts across the enterprise to consider new concepts of operations, new ideas for how old tools are used, and balance the requirements of the systems.

On the Scene

Innovation at the Department of Defense is a growth industry. There is widespread recognition of the benefits of "innovation" and a willingness to create new organizations to support the effort. In the last decade, the DoD has invested in the Strategic Capabilities Office (2012)[1], the Defense Innovation Unit (2015), and the Defense Innovation Board (2016), among others. The Services have been building on the success of Special Operations Command's SOFWERX (2015)—which connects technology prototypes more directly to potential users in order to determine utility—with the Air Force's AFWERX (2017), the Navy's NavalX (2019). New "shark tank" style competitions—the Army's first Dragon's Lair was hosted in December 2020—have followed the first "Spark Tank" hosted by the Air Force in 2018. These are added to the Department's longstanding innovation efforts like the Defense Advanced Research Projects Agency (DARPA; 1958). The marked uptick in the last decade of these problem solving organizations, create an entirely different challenge—how might the DoD best corral these groups, integrate their contributions, align their efforts, and maximize their effects?

Taken together, they comprise the "Defense Innovation Ecosytem," at its broadest sense made of those hundred plus DoD organizations that have some innovation mandate (Laurent, 2019). MITRE has developed a useful tool—Tap the Innovation Ecosystem— to pull the picture of these organizations together, categorizing innovation "offerings" into Accelerators, Challenge, Connector, Funding Opportunity, Government Contracting Authority, and Incubators (MITRE, n.d.). This is a useful starting point to gaining a site picture of the DoD's innovation organizations. However, the proliferation of innovation organizations with a variety of mandates, without an obvious entry point can be confusing for outside partners and industry who remain unsure of what door to knock on. Vendors do not know where the front door to the DoD is, and they have difficulty knowing who, when and how to engage with the DoD Innovation Ecosystem (Senior Defense Officials, personal communication, July 22, 2021).

Here we look to balance the needs of the system in an attempt to understand how better to support innovation organizationally. There is an interest on the part of current leadership in developing a broad "culture of innovation," (Senior Defense Official, personal communication, January 14, 2022) but those working on establishing this culture decry the frustrations of the system they are working in. From slow contracting to budget challenges, the system is set up for performance and predictability. As the Center for Security and Emerging Technology described in the July 2021, *Ending Innovation Tourism,* "If you were to design an organization to be the exact opposite of a tech startup, the end result would look a lot like the DoD. While young tech companies strive to be freewheeling, fast-moving, and disruptive, the military is rigid, regimented, and risk-averse. The department's technology acquisition process is no different" (Flagg & Corrigan, 2021).

[1] The year the organization was founded.

The Department of Defense is a performance-based bureaucracy that focuses on time, schedule, and budget to evaluate the performance of its programs. The DoD is driven to perform its national security mission, and to maximize results works to make every process and activity as predictable as possible. Bringing cohesion and simplifying communications internally and externally facilitate process, but come with risk for innovation.

This performance-oriented approach is at odds with the requirements of innovation organizations (i.e., those organizations with innovation as a primary mission) that desire a high degree of freedom and flexibility in which to develop new approaches. While there have been a number of successful innovation organizations at the Department of Defense, there have also been a number of reports that infer those organizations may play too fast and loose with contracts, hiring processes, or even technology in the name of pursuing innovation (Myers, 2021). These beg the question if there is a need for better oversight, with the right kind of performance measures suited to telling the right story of their contributions.

That said, consistent processes for contracting, personnel matters, budgeting, and other organizational concerns can reinforce and accelerate innovation efforts. Regularizing these processes, or developing a small set of tailored processes, rather than reinventing them for each new organization, assists adoption of technologies and innovative thinking, while creating process for process sake, has the opposite effect (Former Defense Official, personal communication, June 9, 2021). Too many rules slow progress and fail to meet the requirements, too few rules run the risk of getting nothing done and producing no outcomes (Bauer, 2016).

There are on-going discussions about reforming the budget process, the acquisition process, and training acquisition professionals to better support innovation. Rather than focus on those issues being addressed elsewhere, the central question is how to allow innovation to flourish while operating in a large-scale bureaucracy? How does the DoD optimize for the overlapping, but different, needs of supporting innovation that drives better outcomes and supporting a “performance based” bureaucracy, those measures that support scaling capabilities? What are the characteristics on both sides of the equation that need to be accounted for? IDA has developed a framework for understanding attributes that need to be balanced between the Department of Defense and its innovation organizations.

The framework was developed over the course of summer and fall 2021. It is informed by a number of key interviews with senior defense officials, attendance at a number of events such as DAU’s TEDxDAU “Platforms for the Future” conference, and a review of the innovation and business literature. This framework has a number of potential applications. It might be used, for example, by the Innovation Steering Group (2021) to account for required elements in potential shifts in direction to the innovation ecosystem. It might be useful to the innovation organizations themselves to determine potential adjustments in alignment. It may be appropriate to use in consideration of proposals such as consolidation or expansion of innovation organizations—the Defense Innovation Board’s (2016) recommendation to implement a Chief Innovation Officer for the DoD, or in the development of an innovation strategy. In the following pages, we consider the definition of innovation, the need for a framework, and an initial proposal for those attributes that might be considered to support innovation organizations within the DoD.

What is Innovation?

As we begin to consider a framework for innovation in the DoD, it is natural to first ask, what is innovation? Inigo Montoya had two particularly memorable lines in *The Princess Bride,* the second of which is most relevant here, "You keep using that word. I do not think it means what you think it means." Is innovation the existence of a new technology? The adoption of a new technology? A new concept for something that exists? A new process? Any improvement in the field that demonstrates ingenuity? What about "innovative thoughts?" (Senior Defense Official, personal communication, June 30, 2021). Is it creation? Or the application of creation? Or is it, as one senior defense official stated, something that "will change the way the customer does business and changes the way business is run?" (Senior Defense Official, personal communication, August 13, 2021).

This question is not a new question nor a new challenge, though we may be using new words. The description of transformation from the 2001 Quadrennial Defense Review, sounds quite similar to current discussions around innovations:

> Transformation results from the exploitation of new approaches to operational concepts and capabilities, the use of old and new technologies, and new forms of organization that more effectively anticipate new or still emerging strategic and operational challenges and opportunities and that render previous methods of conducting war obsolete or subordinate. Transformation can involve fundamental change in the form of military operations, as well as potential change in their scale. It can encompass the displacement of one form of war with another, such as fundamental change in the ways war is waged in the air, on land, and at sea. It can also involve the emergence of new kinds of war, such as armed conflict in new dimensions of the battlespace. (DoD, 2001)

The Strategic Capabilities Office takes a combined approach to innovation looking at what we have, marrying with something new, whatever it takes to get to an inventive solution to evolving warfighting challenges. Dr. Will Roper described the approach used by the Strategic Capabilities Office as, "the engineers at SCO do this using one of three approaches—by taking something designed for one mission and making it do a completely different mission, or by integrating systems into teams—'I can't solve the problem with system A or system B but by connecting them together I can,'—or changing the game by adding in commercial technology" (Roper, 2016).

One frequently (potentially the most) discussed definition of innovation focuses on technology and technology integration, or bridging the "Valley of Death"—that vast space between prototype and program. Bridging the Valley of Death is at its heart about marrying technology and users within the system—moving from research to application. The chasm is potentially a wide one. Often the DoD acquisition system is blamed for not being able to move quickly enough to create a "market" for potentially interesting technology. Yet, the risk aversion of the acquisition system has value—if immature technology is acquired too soon, others have to deal with that down the line (Senior Defense Official, personal communication, August 13, 2021). Equally culpable, however is the nature of research and development itself—to explore, to discover what is possible, to find a proof of principle—without concern for what might be scalable, marketable, or competitive. This demonstrates why the technology transition rate, a common metric for innovation, is problematic. The emphasis should be on demonstrated impact for the warfighter. An alternative metric to how many things leapt across the Valley of Death is how many programs of record were disrupted in a helpful way?

All of these definitions have merit though some are less appreciated than others. There is a recognition by DoD leadership that innovation is inclusive of, but goes beyond, technology. Further, the DoD recognizes that there are lots of things happening, but not everything is optimized (Senior Defense Official, personal communication, January 14, 2022).

When the DoD's Innovation Steering Group put out a call to map the Department's Innovation Ecosystem last year, they intentionally used as broad as possible a definition of innovation, described in one interview as "self-selection" (Senior Defense Official, personal communication, June 30, 2021). In their call to map the innovation organizations, they declined to define innovation, and instead took the approach of, if your group defines itself as innovative, the ISG wants to include you. The steering group wanted to get an understanding of the myriad ways that the DoD approaches innovation, and who is doing what. This approach benefits the culture of innovation by asking the question in a way that says, "Do you see yourself as part of this ecosystem, and if so, how do you support it?" though it leaves open the question of how the DoD sees innovation today.

A recent proposed definition by Institute for Defense Analyses attempts to reconcile these questions with the following definition:

> New capabilities and practices and changes to existing capabilities and practices that cause disruptive effects: those that, in order to avoid creating a persistent competitive advantage for the adopter(s), mandate either (a) adoption by other competitors, or (b) a corresponding counter-innovation by non-adopters. (Picucci et al., 2021)

Thinking of innovation solely in terms of technology is limiting. This definition provides the opens the discussion to include ways that changes to the bureaucracy itself can be innovative, and when effective, celebrated. By adopting such a definition, attention can be turned from the "what" of innovation being just about technology, to the "how" of innovation within the enterprise.

In the next section we describe the need for framework intended to facilitate the conversation around helping the DoD broadly support, scale, and integrate all aspects of this definition of innovation. This framework can assist in assessing structures for an innovation organization within the DoD. It serves to initiate the conversation to support efforts across the enterprise to consider new concepts of operations, new ideas for how old tools are used, and allows for "breakthrough capabilities for tomorrow's platforms and systems" (Flagg & Corrigan, 2021).

The Needs of the Organizations

Recognizing that innovation organizations must operate within the context of the government's largest bureaucracy. Some have said that the DoD should throw the entire system out and start over, bemoaning slow acquisition or too many regulations. However, it has been demonstrated that the acquisition system can move quickly when there is a need to do so, and the Federal Acquisition Regulations (FAR) have more flexibility than they are given credit (Lofgren, 2022). Tools like Other Transactions (i.e., the authority that allows for non-FAR based contracts) are important, but they are not necessarily how we need to buy everything in the vast purview of DoD procurement.

As a mission-driven organization, it is undesirable and unlikely the DoD will change to completely accommodate the attractive aspects that dominate in Silicon Valley. If we consider some common traits of innovation organizations they are to some extent diametrically opposed to the military culture—tolerance for failure, willingness to

experiment, psychological safety, highly collaborative, and nonhierarchical (Pisano, 2019). The DoD is driven to perform its national security mission and to maximize results works to make every process and activity as predictable as possible. To "fail fast" needs to be implemented in the context of the DoD's responsibility to spend taxpayer dollars wisely, which drives a level of early accountability that is not found in the private sector. This is not to say there is not accountability in the private sector, it comes in the form of the market. The early experiments can largely go away quietly. When the tech sector "fails fast" it is not on display on Capitol Hill, the front page of the *Washington Post*, or trending on Twitter—though it happens often, it happens quietly. To be clear, that is not to say the DoD does not need to evolve. While we want to incorporate those aspects from the private sector that serve the DoD's mission—data into decision making, the digital ecosystem, open systems that allow upgrades—we must acknowledge that bureaucratic barriers serve a purpose to manage the DoD's responsibilities while working to reduce barriers in a deliberate manner.

Innovation organizations are comfortable with a high degree of ambiguity and uncertainty, but they also require discipline (Pisano, 2019). Discipline, in this sense, is the management of a product, process, or concept from idea to prototype to adoption. While the DoD excels at some forms of discipline, on the whole the enterprise is challenged by its inability to cull programs once they are established. Those parts of the DoD, such as DARPA, with the reputation of being successful innovators, also know how to end projects that are less promising than others. For basic research and development (R&D), success can be realizing that the path you are going down is not the right one. The DoD is comfortable with this version of fail fast. However, that is planned for, and part of the organization's mission. If one does not "fail" fast enough, if one does not realize the problem at the R&D level, then failing "fast" is still slow enough that resources expended start to draw attention. "Discipline-oriented cultures select experiments carefully on the basis of their potential learning value, and they design them rigorously to yield as much information as possible relative to the costs" (Pisano, 2019). One interviewee stated, "There is no substitute for qualified and experienced leadership" (Senior Defense Official, personal communication, August 13, 2021). What is leadership's ability to develop an R&D plan and learn (in a timely manner) from executing that plan, and shifting when needed. Are they putting together an effective plan and are they making effective decisions to cut?

Innovation efforts are reinforced and accelerated by maintaining consistent processes for contracting, personnel matters, budgeting, and other organizational concerns. That means, if processes are in place that minimize the time and effort spent on issues related to these efforts, the more space is created to allow for innovative connections to take place. If there is a way to regularize these processes across the organizations, that may assist in bringing additional scale to support innovation.

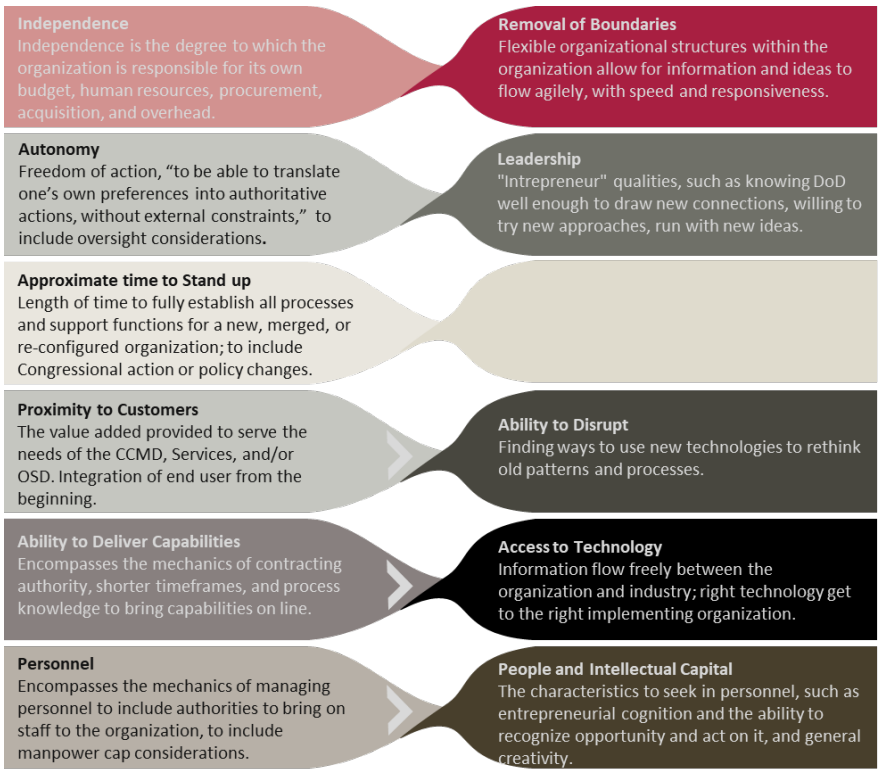
Successful innovation will be driven by organizational structures that encourage: interactions beyond boundaries and stovepipes, continuous learning, creativity, finding new connections, and facilitation of interactions with relevant users (Audretscha et al., 2021). At the same time, organizationally, the DoD is not optimized, except in specific urgent circumstances to: make fast, agile changes, with a sense of urgency, adopt innovative approaches, measure the success of innovation, or support processes that are different from the day-to-day operations. The next section lays out the framework itself.

A Framework for Optimizing Innovation Needs

This framework captures these dynamics—of organization support to innovation—in two categories: Bureaucratic Environment Attributes, that are necessary from the DoD

perspective, and Innovation Environment Attributes. DoD Bureaucratic Environment Attributes are those organizational attributes that are driven by, or largely affected by, placement of the organization within the enterprise (the world in which the organization exists). Innovation Environment Attributes are those that are critical for an innovation organization (what is needed based on purpose/mission). While these attributes may be desirable in all kinds of organizations, they are "must haves" in those focused on innovation and organizational creativity.

The attributes are described next with a proposed measurement tool description—observational, or a description of "what is," vice judgement, whether more or less of something is ascribed to be better or worse—and the attached scale. These are followed by other relevant considerations, details, or key questions. In an organization built for predictable reliable results, how can the DoD approach the paradox that "the systems that enable success with today's model reinforce behaviors that are inconsistent with discovering tomorrow's model" (Anthony et al., 2019).



This Chart Summarizes the Attributes. The Arrows Demonstrate the Close Ties Between These Particular Attributes.

Figure 1. The Bureaucratic Environment Attributes

Independence

Independence is the degree to which the organization is responsible for its budget, human resources, procurement, acquisition, and overhead.

- Measurement tool: Observational
- Scale: High to low

Independent organizations would have their own budget authority, contracting processes, human resources processes. A highly independent organization would be responsible for implementing these processes themselves rather than leverage a Shared

Service (e.g., Washington Headquarter Services provides these elements for all organizations within the Office of the Secretary of Defense and a number of other Washington-based organizations). A high degree of independence may accompany a lack of clear external champion and would require any organization to advocate for itself and prove its value in the budget process (Former Senior Defense Official, personal communication, April 30, 2021).

Autonomy

Autonomy, as distinct from independence, is the degree to which the organization has freedom of action, "to be able to translate one's own preferences into authoritative actions, without external constraints," (Nordlinger, 1982) to include oversight considerations.

- Measurement tool: Observational
- Scale: High to low

Autonomy allows organizations to prioritize their own actions and drive their own agenda. When autonomy is high, external organizations are collaborators, but not drivers of the actions. This is modeled by the Strategic Capabilities Office close collaboration with Combatant Commands. When autonomy is low, external organizations have more say over priorities and actions. This autonomy serves the requirements of innovation organizations, but it can never be wholly autonomous.

However, developing appropriate oversight to help manage the autonomy is a challenge for the DoD. There is a conflict between understanding stabile processes, activities, and programs, and understanding those in active reform. Those performance measures that work for the steady state of the organization are inadequate for understanding performance in innovation organizations. Time, schedule, and budget may not apply.

Proximity to Customers

Proximity to customers includes customers' reliance on the organization, ability to understand the customers' problems, the value added provided to serve the needs of the CCMD, Services, and/or OSD. Integration of end user from the beginning.

- Measurement tool: Judgement
- Scale: Preference for increased ability to engage customers

Some DoD innovation organizations like the SCO and SOFWERX have direct ties into the end users, by close liaison or co-location. Others, such as DARPA have less direct interaction, intentionally so as not to be driven by a requirement so much as to be driven by exploring the boundaries of science. Proximity to "customer" is a way to think through how relevant is the work of the organization to the people who will use it most directly? Do you have a direct value-add to the Services? A Combatant Command? Perhaps the Secretary of Defense? Do they find value in the service provided? Can the organization bring those "customer" challenges together with others to provide insight to solutions?

Time to Stand Up (e.g., Full Operational Capability)

Estimate on length of time to fully establish all processes and support functions for a new, merged, or re-configured organization; to include Congressional action or policy changes.

- Measurement tool: Observational
- Scale: Length of time

This attribute looks towards how quickly a new organization (if required) could be brought on line. For example, a full agency takes up to two years to get organized. A smaller office, might be able to be rapidly stood up and integrated into the system on a much quicker level. However, that smaller organization would likely need a champion or sponsor to give it the time to grow into its mission.

Deliver Capabilities

Encompasses the mechanics of contracting authority, shorter timeframes, and process knowledge to bring capabilities on line. The ability to advocate for new authorities and funding, as required.

- Measurement tool: Judgement
- Scale: Preference for increased ability to deliver capabilities

If independence is the need to have your own contracting capabilities, deliver capabilities reflects the mechanics of how that is implemented. If the organization is not highly independent and running its own, do they have access to adequate resources elsewhere? Does the organization have access to a dedicated contracting team that knows how to engage the different parts of the bureaucracy? Is there sufficient institutional knowledge that allows them to fulfill missions? Are Other Transactions a regular requirement, or an anomaly? When gaps are identified who knows what triggers to pull in order to close them? Are there adequate resources to manage the system?

Personnel

Encompasses the mechanics of managing personnel to include authorities to bring on staff to the organization, to include manpower cap considerations.

- Measurement tool: Judgement
- Scale: Preference for access to personnel authorities that ease hiring and maintain performance based compensation

If independence drives the need to have your own personnel system in place, this attribute gets into the adequacy of available hiring authorities, duration of recruitments, pay scale, and clearance concerns. Personnel might also appear as unique hiring policies. DARPA demonstrates this aspect by their term limitations.

Can we bring the people we need onboard in a timely manner? The DoD has been granted hiring authorities, such as Acquisition Demonstration Authority (AcqDemo), that can be helpful to the innovation organizations. How are these organizations supported in their use? AcqDemo allows for pay for performance through a different rating structure, outside of the general schedule (i.e., the traditional government system), as long as there are:

> a) At least one-third of their civilian workforce occupying positions coded as meeting the requirements of the Defense Acquisition Workforce Improvement Act (DAWIA); and
>
> b) At least two-thirds of the civilian workforce consisting of members of the AWF and supporting personnel assigned to work directly with the AWF. (DoD, 2019)

These authorities are available to organizations that qualify on their own or as part of a larger organization, such as the Office of the Secretary of Defense Acquisition and Sustainment.

The traditional hiring process is notoriously cumbersome and slow—double that of the private sector (Hamilton, 2020). In recognition of the DoD's competition with industry, direct hire authority has allowed the DoD to streamline the process (DoD, Defense Civilian Personnel Advisory Service, n.d.). A number of other potential authorities exist to assist in recruiting the types of characteristics, described below in People and Intellectual Capital.

The Innovation Environment Attribute

Removal of Boundaries

Flexible organizational structures within the organization allow for information and ideas to flow agilely, with speed and responsiveness. Potential for rotational opportunities between organizations.

- Measurement tool: Judgement (i.e., attaches a preference to the observation)
- Scale: Preference for increased ability to move information and ideas through the system, facilitate rotational opportunities

Innovation in part comes from connections made between new thoughts and ideas. Innovation organizations need to actively remove boundaries and stovepipes both within the organization and between others in order to facilitate these connections (Audretscha et al, 2021).

A recent MG Harold Greene Awards for Acquisition paper spoke of the lack of networks for innovators at the DoD, an investment that is worth making. "Today, the DoD lacks a department-wide network mechanism for DoD innovators to connect, engage, share learnings, and problem solve. While the DoD has many innovation champions, most operate in minor and often unrelated networks due to the lack of an innovation scaling framework at the Joint Force level" (Theodotou, 2021).

Are rotational opportunities integrated into the organization? Does it work to remove information barricades, or does information need to flow up to move out? What level is empowered to act? To get off the ground, it is possible an initiative will be insulated, but what then is the plan to follow that with integration to the larger whole—how will the initiative's outcome be integrated? What are the means by which the siloes are networked?

Leadership

Leadership of the organization should have adequate seniority (at or above SES-3); reflect "Intrepreneur" qualities, such as knowing the DoD well enough to draw new connections, willing to try new approaches, run with new ideas. Leader who know the larger organization well enough to use the authorities granted. Provides tools to accomplish the mission, vice rules to be followed. Needs the right team, but sets the cultural tone of creativity.

- Measurement tool: Judgement
- Scale: Preference for seniority in leadership, ability to recruit for "intreprenurial" qualities, and ability to align disparate innovation organizations

Any organization aimed at innovation is a product of the personality of the leader. Innovation is a human behavior, dependent on personality, and there is no change without change agents. Bureaucracy's repeatable processes are designed so that any properly trained individual can do them. Leadership for innovation organizations is a task that only a few may be capable of doing well. Instead of getting away from the personality-driven aspect, solve for it (Former Defense Official, personal communication, June 9, 2021).

Invest in early identification and support to those who show the traits and characteristics that will support innovation without removing them from the DoD processes and systems they will need to learn to be effective.

Ability to Disrupt

Finding ways to use new technologies to rethink old patterns and processes.

- Measurement tool: Judgement
- Scale: Preference for influence over directed

Is the organization able to leverage the aforementioned proximity to customer in order to implement an innovation, or is it just as likely to have the contributions ignored? Proximity also builds community and buy-in, as innovations are more readily adopted if they come from within the community (Van Maanen & Barley, 1982). It helps to prevent the tendency to question new approaches before they get off the ground. This helps align permeability of the organizations, and move ideas quickly, with the hopes of preventing:

> Innovations which are interpreted as potentially deskilling or which might disrupt the social structure and prestige of the community as it is currently organized will be resisted and, if possible, sabotaged. For example, artillerymen in the Israeli army pride themselves on their ability to quickly calculate and pinpoint targets using sharply honed trigonometric skills. In fact, such prestige attends the artilleryman's ability that mere privates often possess recognition and prestige that go well beyond their military rank. Consequently, when computerized range finders were installed in Israeli batteries many artillerymen gutted or otherwise disengaged the electronic equipment and continued to make the necessary calculations in their heads. Of course, the housings were discreetly left mounted and intact in case officers happened to inspect the operation (Kunda, personal communication). (Van Maanen & Barley, 1982)

Access to Technology

Information flow freely between the organization and industry; right technology get to the right implementing organization.

- Measurement tool: Judgement
- Scale: Preference for clear signaling to external stakeholders

Outside partners need an understanding of which innovation organizations within the DoD they should present technology or promising research that should be integrated into a design.

People and Intellectual Capital

Attract talent with entrepreneurial cognition and the ability to recognize opportunity and act on it; extensive networking and relationship building that facilitates connecting new potentially unrelated ideas; and general creativity.

- Metric: Judgement
- Scale: Preference for ability to identify and recruit those able to connect disparate thoughts and ideas and act on them

Innovation requires personnel with characteristics that can draw new connections between what is known and what is unknown, "dot connectors and pattern recognizers," and growth mindsets.

What's Omitted?

It is worth explicitly stating that there are two attributes that do not appear on their own in this framework, which may seem counter-intuitive. The first is the bureaucratic tendency for longevity. The second is speed. Longevity and speed for the sake of longevity and speed do not support the objectives of the Department—whether bureaucratically or in the innovation environment. The framework instead emphasizes nearness to end user, disruption, and rapidity of fielding. Former Deputy Secretary of Defense Robert Work asserts that speed matters in the context of its alignment to decisions that need to be made alongside priorities (Work, n.d.). We can extrapolate that to longevity as well. Match speed to the requirement. Match longevity to the mission.

Concluding Thoughts

This framework was developed to support effective innovation organizations recognizing many of the realities of the Department of Defense modus operandi. Such a framework may be useful in considering any potential innovation strategy for the Department which would align missions, personnel, and budgets to greater effect. The Innovation Steering Group has already honed their map of the core DoD innovation ecosystem down to 20 organizations. As they continue to map the future of innovation at the DoD, the attributes described here can serve their thinking about the alignment of the organizations within the enterprise. Should the DoD decide to approach innovation in such a manner, this kind of framework can help ensure consideration of attributes that make innovation organizations effective in a bureaucratic environment.

Mixing this cultures and ways of doing business is incredibly difficult. The framework is intended as a starting point for discussion about what matters on both sides to resolve any tensions that limit integration of innovation and innovation organizations within the DoD. In applying the framework, it may help to prioritize certain attributes for decision making around alignment in innovation—because considerations yield different results depending on the most important attributes. There are ways to accommodate the necessary changes within the bureaucracy.

This framework can assist in indicating what pieces should be centralized to allow more freedom for innovation at the Department of Defense—like hiring, budgeting, administration, acquisition management—that benefit from consistency. This framework may assist to build a case to measure innovation differently from the rest of the Department, but do so in a way that ensures oversight is still occurring. Define and agree on performance metrics appropriate to innovation—such as positive disruption to programs. Work to identify and build a cadre of professionals who speak both languages to minimize the frustrations of culture clash.

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Acquisition Research Program
Naval Postgraduate School
555 Dyer Road, Ingersoll Hall
Monterey, CA 93943

www.acquisitionresearch.net