Assessing the Third Offset Strategy

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Introduction

On October 28, 2016, the Center for Strategic and International Studies (CSIS) hosted a daylong conference including senior defense and intelligence policymakers, military leaders, strategists, regional experts, international and industry partners, and other experts to discuss DoD’s Third Offset Strategy. The idea of a Third Offset Strategy gained formal status as a Department of Defense effort in November 2014, when Secretary of Defense Chuck Hagel announced a Defense Innovation Initiative, adding that this was “an initiative that we expect to develop into a game-changing third ‘offset’ strategy.”¹ In several subsequent events and addresses, Deputy Secretary of Defense Robert Work and other officials have developed and extended the concept of the Third Offset Strategy. The purpose of the October 2016 conference at CSIS was to examine the operational challenges and trends giving impetus to the Third Offset Strategy, to define the nature of the strategy and its objectives, to examine the role of industry, allies, and partners in developing and implementing the strategy, and finally, to consider where the strategy may lead.

To understand what the Third Offset Strategy is, it is first necessary to understand what challenges and trends it is addressing. Here, the link initially made by Secretary Hagel to his innovation initiative is central. Technological superiority has been a foundation of U.S. military dominance for decades. However, the assumption of U.S. technological superiority as the status quo has been challenged in recent years as near-peer competitors have sought a variety of asymmetric capabilities to counter the overwhelming conventional military advantages possessed by the United States. As Deputy Secretary Work stated in the opening plenary session, while previous technological advantages gained by the United States have endured for significant periods, the pace of technological innovation, and the pace at which new technology diffuses across the world, means that most new technological advances will provide DoD with only a temporary advantage, assumed to be no more than five years. In recent years, advances in anti-access/area denial (A2AD) capabilities have begun to threaten the previously unfettered ability of the United States to project military power overseas, which has been a central element of U.S. military planning. Similarly, potential adversaries and competitors have made great strides in the space and cyber realms, which could jeopardize the massive Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) advantage that the United States has enjoyed over the past decades.

The effect of these changes has been the gradual erosion of significant military advantages that the United States has long enjoyed. Like the First and Second Offset Strategies, which successfully merged innovative technologies and new operational concepts, the Third Offset Strategy is intended to overcome a key operational challenge facing the United States. Namely, its focus is on ensuring the ability of the United States to project military power in the face of an emergent suite of advanced military capabilities developed, deployed, and potentially sold by China, Russia, and others. Viewed through this operational lens, an important measure of success for the Third Offset Strategy is its ability to drive military

capabilities and approaches that deter and/or defeat the use of these emergent capabilities to threaten the United States, its allies, and other interests.

This report summarizes the discussions and analysis of Third Offset that took place at CSIS on October 28, 2016. It is organized around six questions:

- What is the Third Offset Strategy?
- What is the political-military context that the Third Offset Strategy must address?
- How can DoD identify and access innovation in the commercial sector?
- How will the military services take advantage of Third Offset capabilities?
- How can DoD effectively share innovative technologies and operational concepts with allies?
- What implementation challenges does DoD face in pursuing innovation?

What Is the Third Offset Strategy?

According to the Defense Department’s current leaders, the Third Offset Strategy is an effort to focus DoD’s innovation efforts on preserving and revitalizing its conventional deterrence capability by adapting to the countermeasures to key U.S. capabilities that near-peer competitors have built up in recent years and are continuing to develop. A key issue in defining the Third Offset Strategy is the question of what adversary capability it offsets. In the first two offset strategies, the United States was offsetting the conventional numerical superiority of the Warsaw Pact. As Secretary of Defense Ashton Carter outlined in his keynote remarks, the current erosion of the U.S. technological advantage derives not from adversaries' numerical superiority or superior volumes of investment, but from the increasing global and commercial nature of the innovation environment and the increasing applicability of commercial technologies to military operations. Adversaries have been able to utilize these widely available technologies to enable their own innovative operational concepts that challenge U.S. and allied operational capabilities. Further, as General Paul Selva, Vice Chairman of the Joint Chiefs of Staff, stated in the opening plenary session, the Third Offset Strategy is designed not as final point solution to these issues, but more as a framing device. In short, as Vice Chairman Selva noted, the Third Offset Strategy is not so much an answer as a question: What is the suite of analytical and ultimately operational tools that should be used to address current and future operational problems? Answering this question can enable a range of solutions, many of which will only be envisioned in the future.

Secretary of Defense Ashton Carter’s keynote speech at the CSIS conference likewise framed the Third Offset Strategy as a question to be answered: How does DoD coordinate and advance the pillars of technological, operational, and organizational innovation, along with innovative military and civilian talent management, in order to counter rising threats to U.S. conventional deterrence capabilities and maintain U.S. technological superiority? Both Under Secretary Work and Secretary Carter framed the Third Offset Strategy in the context of those
four pillars. Secretary Carter’s remarks emphasized that this question will remain unanswerable unless DoD invests in developing civilian and military personnel who can encourage and access technological innovation, develop innovative operational concepts, and manage innovative organizations. Without this kind of workforce, DoD will not be able to successfully identify and acquire new technologies unless it adapts its organizations to allow it to build bridges to the commercial sector, both domestically and internationally. Nor will DoD be able to field new technologies effectively unless it develops new operational concepts that can take advantage of those new technologies and mitigate potential vulnerabilities.

Technologically, Deputy Secretary Work has focused Third Offset on five key areas: autonomous learning systems, human-machine collaborative decision-making, assisted human operations, advanced manned-unmanned systems operations, and network-enabled autonomous weapons and high-speed projectiles. Advancements in these specific technology areas will boost current conventional capabilities past the ability of near-peer competitors to counter them, as well as allow for development of new conventional capabilities that are beyond the current and projected ability of competitors to counter. While each of these five areas of focus are seen as valuable avenues of innovation, Secretary Carter stated in his remarks that the intention of the Third Offset Strategy is to seed many different investments and to “see what germinates,” rather than simply determining ahead of time what is expected to work and pouring money into it.

Such an approach requires that the organization of DoD do two things it has not traditionally been known for: accepting the risk of failure that is inherent to innovation, and demonstrating the ability to “fail fast.” The former is difficult for any organization, and made particularly difficult for DoD, given its responsibility as a steward of taxpayer dollars and the lack of tolerance within government and among the public for perceived “wasting” of money on failed programs. The latter requires leaders within DoD to quickly and accurately judge when a path of innovation is not producing results, and to be able to make the decision to accept the sunk costs and end the failing program before more time and money are spent. These are not easy judgment calls to make; as Deputy Secretary Work noted, the Global Positioning System (GPS) was nearly cancelled in development because it was costly and developing slowly. Then-Secretary of Defense William Perry preserved the GPS program because he happened to witness its use first-hand and was able to grasp the potential benefits of the capability.

To drive organizational innovation, Secretary Carter announced at the conference his plan to act on recommendations coming out of the Defense Science Board and the newly created Defense Innovation Board, which includes leading private-sector and academic innovation leaders, and has focused on advising DoD on learning from and implementing private-sector practices on fostering innovative organizations. While noting that not every private-sector practice is appropriate for DoD, Secretary Carter identified three recommendations from the Defense Innovation Board that he is planning to implement. First, making computer science a “core competency” of DoD. Second, creating a DoD Chief Innovation Officer who will sponsor, promote, and identify innovation. Third, utilizing prize challenges, competitions, and tournaments to create investment incentives, including a prize challenge piloted by the
Defense Innovation Unit-Experimental (DIUx) on computer vision and machine learning, and a machine learning virtual center of excellence. As of this writing, the status of these recent announcements is unclear, given the pending change in presidential administration. Secretary Carter also drew attention to longer-standing efforts at warfighting innovation. He stated that DoD has been revising all of its war plans to reflect current conditions, capabilities, and threats. DoD has also focused on trans-regional, trans-functional planning, to account for the changing nature of the potential threats that DoD must anticipate. Finally, he noted that DoD has adapted its planning to assume the need to execute operations across multiple contingencies at once. This change has driven more realistic assessments of the resources available for each plan, in turn spurring important debates about how to tackle operational challenges in new, and potentially less resource-intensive ways.

Secretary Carter’s announcements complemented comments made earlier in the conference by Vice Chairman Selva. General Selva had discussed the importance of efforts to reach down into the military services to promote changes in institutional culture, so as to enable innovation at that organizational level. He promoted the use of incentive funding to energize the creativity of institutions such as the doctrine development centers and wargame laboratories. Vice Chairman Selva also focused on the need for the military to adapt more quickly to new technologies. He cited the example of artificial intelligence (AI), remarking that most people interact with AI far more routinely in their daily lives than does the military, such as through mobile device applications. Secretary Carter, Deputy Secretary Work, and Vice Chairman Selva all emphasized that developing technology is only the first step in innovating; what you fight with is only as useful as how effectively you fight with it.

In terms of more innovative military and civilian talent management, Secretary Carter focused on DoD’s ongoing Force of the Future initiative. Specifically related to the Third Offset Strategy, Secretary Carter focused on initiatives that would allow DoD to better attract and retain the sort of civilian and military personnel that would enable DoD to function as an innovative organization. DoD is implementing or exploring such measures as developing on- and off-ramps for technical talent, bringing in talented individuals for specific projects, giving the services authority for lateral entry, enhancing talent exchange programs with the private sector, and doing more direct hiring from college campuses. These measures are designed to provide DoD the experience in its civilian and military workforce needed to implement the Third Offset Strategy. Secretary Carter also noted that DoD must develop a more dynamic career progression path; younger workers, he noted, want a career path that more closely resembles a jungle gym than an escalator. Secretary Carter also discussed the general difficulties that DoD (and the rest of the federal government) has in hiring due to Office of Personnel Management (OPM) rules. He stated that, while OPM rules allow more flexibility than is commonly recognized or utilized, there is still a need to make it easier for talented people interested in public service to work for DoD.

Both Deputy Secretary Work and Vice Chairman Selva offered thoughts on the key issue of how to measure return on investment from the Third Offset Strategy. For Deputy Secretary Work, return on investment will be measured based on feedback from the operators, and operational testing and collaboration across the joint force is crucial for determining what actually works. Deputy Secretary Work specifically cited the experience of developing the
air/land battle concept of the 1980s. To enable necessary operator feedback, DoD has established incentive funds to encourage its laboratories to test technology-enabled operational concepts and encourage doctrine development, and operators will evaluate the results of that work. This, in Deputy Secretary Work’s conception of the process, will lead to a virtuous cycle wherein feedback from operators will inform whether and how to proceed with innovative concepts and the technologies that enable them. How one interprets and uses such feedback is critical, noted Vice Chairman Selva. He warned against trying to graft artificial objective metrics onto an inherently subjective feedback process. DoD, he noted, has a bad history of implementing changes based on the subjective outcomes from wargames before operators have taken ownership of doctrine and validated success. Moving forward, according to Vice Chairman Selva, there will be a premium on proving-out the results of wargames through operational testing, exercises, and validation by theater commanders.

What Is the Political-Military Context That the Third Offset Strategy Must Address?

A key element to successfully implementing the Third Offset Strategy will be a clear understanding of the nature of the current and future world that the strategy is supposed to prepare DoD for, and what the role of the United States should be in that world. Dr. Barry Posen, a Professor and Director of the Security Studies Program at the Massachusetts Institute of Technology, identified a limited set of three issues that DoD should be focused on: countering the rise of Russia, nuclear weapons in the hands of states (not groups), and countering emerging non-state threat groups. He offered this limited list of focus areas because of his view that the United States is violating the first rule of strategy: make choices and set priorities. As Dr. Posen argued, the United States currently acts as if everything is a priority, and if everything is a priority, nothing is actually a priority. Other speakers pushed back on Posen’s framework: Sir Lawrence Freedman, Emeritus Professor of War Studies at King’s College London, specifically countered that, as a power primarily interested in maintaining the status quo, the United States could jeopardize that status quo if it does not engage on the range of issues facing the world, given that the United States is one of the few nations that can meaningfully do so. Dr. Kori Schake, a Research Fellow at the Hoover Institution at Stanford University, agreed with Sir Lawrence, noting that investing in a positive status quo, despite the costs, is less costly than having to reverse a negative change in the status quo.

Dr. David Kilcullen, Founder and Chairman at Caerus Global Solutions, raised a related issue, citing a quote from James Woolsey during his confirmation hearing for CIA director in the wake of the collapse of the Soviet Union: “We have slain a large dragon, but we live now in a jungle filled with a bewildering variety of poisonous snakes.” In dealing with those snakes, such as the conflicts in Iraq and Afghanistan, Dr. Kilcullen argued, the United States clearly displayed how it fights modern wars, and as such, gave potential near-peer competitors a blueprint for how to counter the core capabilities that underpin U.S. military superiority. This, then, is the world to which the Third Offset Strategy is responding: one where the United States may not have a choice to pull back from dealing with potential threats to the status quo.
quo, but where potential competitors have been increasingly successful in developing means to counter key U.S. military areas of advantage.

There was a similar dynamic at play in discussion of the U.S. relationship with partners and allies. Dr. Posen highlighted the current problems with allies, noting that they are underinvesting in defense even as the costs of maintaining an effective military force increase, and that the knowledge that the United States will be "there to catch them" causes allies and partners to act without fully acknowledging the consequences. Sir Lawrence acknowledged these dynamics, but noted that the U.S. role in regional stability was unique and nonreplaceable. While NATO could still function without the United States, Sir Lawrence noted, the United States played an important role because NATO members listen to the United States when they would not necessarily listen to each other. By contrast, in Asia, there is not one large alliance, but a series of bilateral relationships between the United States and other nations. This arrangement allows for broader cooperation, overcoming historical antagonism, because of the trust placed in the United States. Dr. Schake referred to this as a "big sloppy" set of alliance relationships, but that actively maintaining these relationships was the only way to preserve the status quo world order under which the United States has thrived in recent decades.

By contrast, there was broad agreement among speakers regarding the need for the United States to be more judicious in its use of force. Dr. Kilcullen emphasized that the United States needed to learn how to work with a lighter footprint and widen the definition of warfare beyond the exchange of firepower on the battlefield. Dr. Schake discussed the difference between the power of intimidation and the power of inspiration, noting that overuse of the former deteriorates the ability of the United States to persuade nations to follow the path it charts. Sir Lawrence noted that grand strategy usually suggests avoiding the use of military force, and more often utilizing forms of influence short of war. Dr. Posen, the dissenter on the other issues, offered a data point that highlights his argument that the United States has been too casual in its use of kinetic solutions: the United States has engaged in kinetic conflict twice as much since the end of the Cold War as during it. War, he noted, is a battle-axe, in a world that often requires a scalpel.

**How Can DoD Identify and Access Innovation in the Commercial Sector?**

A common theme running through the conference discussions was that there was a wealth of potential innovation in the commercial sector that DoD, at present, has difficulty identifying and bringing into the defense system. Organizations like DIUx are designed to increase engagement with the commercial technology sector and enhance visibility into the innovative advances those firms are making, but the myriad rules under which defense acquisitions operate make many commercial firms that do not already do business with DoD hesitant to do so. In order for DoD to find and acquire new and innovative capabilities from the commercial sector, either domestically or internationally, four things need to happen. First, DoD must develop problem statements that will allow it to understand clearly what capabilities it needs. Second, DoD must be able to send a clear demand signal to industry. Third, DoD must engage with industry in order to understand what is available and possible.
Fourth, DoD must present incentives sufficient to convince firms that working with DoD is good for, or at a minimum not harmful to, their business.

A key goal of the Third Offset Strategy is pressing DoD and the military services to more clearly identify the threats they face and the capabilities they need to maintain military and technological superiority over potential near-peer competitors. As Under Secretary of Defense for Acquisition, Technology, and Logistics Frank Kendall stated, the U.S. military is dependent on a small number of high-value assets (satellites, aircraft carriers, forward air bases, logistics/kinetic control nodes), against which adversaries have developed systems designed to neutralize U.S. advantages. The Third Offset Strategy emphasizes leveraging artificial intelligence and automation to allow U.S. forces to operate from greater range and to have a more distributed capability that is harder to target, so that the loss of one major capital asset is not a crippling blow. Planning and implementing these approaches has been carried out through initiatives such as Better Buying Power 3.0 and the Long Range Research and Development Plan. Pierre Chao, a founding partner at Renaissance Strategic Advisors, argued that focusing on technologies is looking at the problem from the wrong end. As with previous offset strategies, DoD needs to focus on the challenges and threats it faces; rather than predetermining a technological answer to those questions, Chao believes, DoD’s role should be to define the problem, and then to properly incentivize industry to create solutions.

In order for that interplay to function, however, DoD must be able to send a clear demand signal to industry of what problems it needs solutions to, and what capability gaps it seeks to fill. Under Secretary Kendall highlighted one of the key issues, noting that, because industry makes its money in production and sustainment, as opposed to R&D, DoD needs to present a viable business case for industry. Further, Under Secretary Kendall highlighted that, due to sequestration and budget caps, current levels of development and production funding are inadequate to present compelling business cases for military-unique systems to industry in all but a handful of cases. He argued that until the budget caps are lifted, DoD’s ability to make progress on the Third Offset Strategy would be significantly impaired. Leanne Caret, President and CEO of Boeing Defense, Space & Security, identified three DoD organizations/initiatives that serve to facilitate communication between DoD and industry, and between traditional suppliers like Boeing and potential new defense suppliers. These organizations are DIUx, which provides a channel to nontraditional sectors for both technology and innovative business models; the Strategic Capabilities Office (SCO), which enables industry to look at traditional capability in nontraditional and potentially transformative ways; and the Space Enterprise Consortium, which allows for partnerships between primes and nontraditional suppliers and small businesses on space technology. She emphasized that combining new technologies and innovative business models with the strengths and technologies of traditional defense companies was essential to rapidly integrate innovation into fielded and fielding systems. Pierre Chao referred to this as combinatorial innovation and stated that most real breakthroughs occur when this approach succeeds. Shahar Abuhasira, CEO of Roboteam, Inc., emphasized that his company has been able to successfully receive demand signals from DoD via direct communication with operators and end-users to understand need before it becomes a formal requirement; they then invest in recommended areas with internal R&D without expectation for government-
funded R&D. This business model has allowed him to move rapidly to fill orders and to deliver improved capabilities to fielded systems engaged in operations in days.

Once DoD is able to send a clear demand signal, DoD still must be able to identify promising solutions. Pierre Chao discussed the need to access potential innovation across the full industry ecosystem, which includes traditional defense and nondefense commercial firms, firms at varying stages of maturity, and both domestic and international. Incentives offered to firms operating in different parts of the ecosystem must be different. For traditional defense firms, Chao suggested, the standard business model, wherein firms either break even or lose money on R&D and make it up on production and sustainment, are threatened as DoD seeks greater intellectual property rights as part of a push for open systems architecture. Likewise, the goal for startup firms is to become the defining standard in a new technology, making protection of their intellectual property rights equally critical to their incentives. The solution, Chao suggests, is to ensure industry can retain critical intellectual property and to allow higher margins on R&D work, to make it more economically viable. Under Secretary Kendall noted, however, that a major cause of firms losing money on the R&D stage of a project is deliberate underbidding in order to secure increasingly scarce new-start contracts, with the anticipation of making the money back on procurement and sustainment.

For commercial firms that are nontraditional defense contractors, the issues involved in incentivizing them to do business with DoD are more complex. Between intellectual property issues, cost accounting standards and other cost-data-sharing requirements, and the general compliance burden inherent in working under the Federal Acquisition Regulations (FAR), many innovative commercial firms do not see a viable business case for jumping through the hoops necessary to work with DoD. In his keynote remarks, Secretary Carter acknowledged these challenges, but noted that the FAR contained more flexibility than either industry recognized or DoD used, and that properly utilizing that flexibility could help DoD ameliorate some of the barriers to entry into the DoD marketplace. Dr. Arati Prabhakar, Director of the Defense Advanced Research Projects Agency (DARPA), emphasized that the advantage required for the Third Offset Strategy will not derive from commercial off-the-shelf technology alone, as these technologies will be equally available to adversaries. Instead, the advantage lies in combining commercial innovation with military technologies that can provide unique advantages, such as the combination of commercial processing capabilities with DARPA-developed gallium nitride transistors that have provided a unique U.S. advantage in radar technology. She also identified a business model that may address some issues of concern: DoD support of commercial capability development, such as space launch, which the government would then purchase as a service, rather than acquiring as an organic capability. Pierre Chao noted that, for many commercial start-up firms, establishing themselves as the market standard was a more valuable incentive than return on investment, which was why competitors in the DARPA robotics challenge were willing to spend a collective $85 million to win a $1 million prize. The various challenges and tournaments that Secretary Carter hopes to have sponsored by a DoD Chief Innovation Officer are one path to attracting firms that are looking primarily to establish themselves as the standard-bearer in a particular market area.
How Will the Military Services Take Advantage of Third Offset Capabilities?

Identifying and acquiring innovative technologies presents significant challenges for DoD, but the challenge does not end once those two steps are achieved. Rather, DoD must then figure out how to integrate new capabilities, and the new operational concepts those new capabilities demand and allow for, into existing military service cultures that are not always particularly receptive to change. Lieutenant General (Ret.) Robert Schmidle, USMC, the former Principal Deputy Director of the Office of Cost Assessment and Program Evaluation (CAPE), emphasized that point. He illustrated the point by talking about Marine Corps efforts to develop an operating concept that uses unmanned platforms to allow smaller groups of Marines to control larger areas. There was significant pushback against this initiative due to conflicts with established operational concepts. In general, however, Lt. Gen. Schmidle felt that change happens when demands from warfighters overcomes bureaucracy and institutional inertia.

Rear Admiral Michael Manazir, USN, Deputy Chief of Naval Operations for Warfare Systems, sounded a similarly hopeful note on the issue of culture, noting that the current generation of enlisted personnel and officers grew up with and were very comfortable with modern technology. This generational difference has the potential both to ease resistance to new operational concepts based on such technology and to facilitate operational innovation within the force as units in the field come up with new and unexpected uses of existing technologies. Brigadier General Brian Killough, USAF, Director of Strategy, Concepts, and Assessments in the Office of Strategic Plans and Requirements, emphasized that civilian culture was as important as military culture. Civilian leaders, he stated, need to understand that the military can often move faster than civilian leaders’ decision-making process allows for, and that delays considered routine can put military forces at risk when operational needs move faster than the normal speed of deliberation.

Speed was discussed by multiple panelists, in the sense of both the speed of decision-making/evaluation, and the speed of capability development. Major General Walter Piatt, USA, Deputy Director for Operations, U.S. Army Rapid Capabilities Office, observed that some other countries had the capability to militarize commercial technologies faster. Maj. Gen. Piatt emphasized testing new technologies and operational concepts in realistic test environments, and doing so early in the process. Military services must not wait 10 to 20 years before determining if technology provides needed capabilities and if new operational concepts are sound. Maj. Gen. Piatt pointed to the example of the new 30mm gun for the Stryker. It addressed only a limited subset of challenges, and was fielded to only part of the force, but it happened in 18 months. RDML Manazir similarly emphasized that risk tolerance was essential. If the military services are always aiming to design the perfect solution and are designing for zero risk, operational risk will increase dramatically while they futilely waited to achieve perfection. Lt. Gen. Schmidle, meanwhile, stated his view that defense acquisition needed to be a mix of buying capabilities that could be rapidly fielded and longer-term, transformational capabilities; neither one was necessarily “better,” but both could be necessary, depending on the challenge at hand.
Lt. Gen. Schmidle also emphasized the importance of trust in integration of new technologies and operational concepts, specifically citing the example of cyber: if DoD wants to make advances in cyber capability, he argued, it needs to be willing to trust algorithms, because people cannot react fast enough. However, if you want decision-makers to trust the algorithms, Lt. Gen. Schmidle stated, you need those decision-makers to be involved in, and capable of understanding, the development of those algorithms, because they are not going to necessarily be involved in the real-time decisions that the algorithms would make. In short, Lt. Gen. Schmidle observed, if you do not understand something, you are unlikely to trust it.

Just as important as building trust and understanding of new technologies and operational concepts is understanding their limitations. There was broad agreement among the panelists that many of the Third Offset capabilities had the same cyber vulnerabilities that DoD was already concerned about in regards to existing capabilities. In the opening plenary session, both Deputy Secretary Work and Vice Chairmen Selva noted that DoD, in addition to cyber-hardening existing systems and building cyber-hardening into new systems from the start, does extensive training in cyber-limited environments so that forces are prepared to operate effectively in the event that various capabilities are unavailable. Both Deputy Secretary Work and Vice Chairmen Selva also noted that the very nature of the U.S. military structure rendered it less vulnerable to cyber disruptions than authoritarian regimes. While those regimes depended on battle networks to issue orders from a central command, and forces act only on orders from that central command, U.S. forces operate with a degree of independence that renders them less vulnerable to disruptions of the line of communications.

How Can DoD Effectively Share Innovative Technologies and Operational Concepts with Allies?

One of the key advantages that the United States has over its potential near-peer competitors is its robust network of allies and alliances, made up of capable partner nations who broadly share core values and are willing participants in joint efforts. As Dr. Michael Green, Senior Vice President for Asia and Japan Chair at CSIS, noted, the first and second offsets—in conjunction with developments in nuclear weapons and precision-guided munitions, respectively—both depended upon allies to offset the advantages of the Soviet Union in Asia and Europe. Likewise, he stated, the Third Offset Strategy will not succeed without the participation of allies. Janine Davidson, Under Secretary of the Navy, and General Sir Gordon Messenger, Vice Chief of the Defence Staff, UK Ministry of Defence, agreed with Dr. Green, while acknowledging the challenges inherent in such cooperation. Under Secretary Davidson discussed the potential difficulties of sharing the output of the Third Offset Strategy with allies and partners who did not necessarily operate at the U.S. level of operational or technological sophistication. While Vice Chief Messenger, in turn, acknowledged that alliances like NATO have their own bureaucracies that could magnify the delays in DoD’s own internal bureaucratic processes.

Under Secretary Davidson cited the F-35 as an example of promising technological advances that will achieve a greater impact because of the nine partner nations that are procuring the
platform, assuming it leads to new allied operational concepts and information sharing. She also noted the potential for allies and partners to have a dramatic effect on the U.S. Navy’s emerging concept of distributed lethality, as long as impediments such as interoperability, data transfer, information sharing, and technology sharing can be overcome. Dr. Davidson concluded by reminding participants of the “great promise of integration and the great challenge of integration,” which requires new policies to make sharing and working together easier. Andrew Shearer, Senior Advisor on Asia Pacific Security at CSIS, continued on this theme of the need to remove roadblocks to sharing innovative technologies with allies, including resolving the remaining impediments to technology transfer. He stated, “it still mystifies me a little that we have to go around the same circle again and again to argue why the best possible technologies should be released to America’s closest allies.” He suggested an “inverted paradigm” in which technology transfer to allies and close partners begins from an assumption of approval, rather than denial. Vice Chief Messenger concluded by calling attention to the UK’s version of the Third Offset Strategy, which will seek complementary efforts toward innovation with the goals of better deterring adversaries, affording and sustaining the force, and delivering a workforce fit for purpose.

All of the panelists noted that allies and partners possess valuable technological expertise that can make joint improvements come faster and better. Under Secretary Davidson highlighted the UK’s key contributions to the U.S. Navy’s recent advancements in energy technology (e.g., hybrid electric drives), which will allow naval ships to remain on patrol longer and shorten the refueling process. Øystein Bø, Secretary of State for the Norwegian Ministry of Defense, explained that the comparative advantage of certain allies and partners enables precious U.S. assets and expertise to focus elsewhere. Norway, for example, has both the skill and interest in acting as the “allied gatekeeper of the North,” which ensures situational awareness for the United States and NATO, as well as for itself. He added that the development of new strategic and operational concepts benefits from the shared expertise and insights of others who may have spent more time assessing the challenge based on geography and proximity to the threat. Norway, he mentioned, “never dropped its focus from Russia after the Cold War.” Citing the Norwegian defense industry as an example, he stated that it “may be small in relative terms, but it is also highly specialized in niche areas, delivering cutting-edge technologies.” The United States needs to have the best technology and capabilities, and all of the panelists emphasized the need to recognize that some of those may be foreign technology and capabilities.

Another valuable asset that allies and partners bring to the table is skilled personnel, an aspect that Secretary Bø and Vice Chief Messenger emphasized. While Norway may not have as many advanced systems as the United States, Secretary Bø explained, it does have a cadre of highly trained, educated, and professional soldiers that share Western values. In terms of innovation, he said, “the human factor is as important as technical gadgets.” He concluded his remarks by noting, “while no nation can match the U.S. in terms of sheer size and the defense technology sector, we should nevertheless seek partnerships among allies that leverage each nation’s comparative advantages.” Vice Chief Messenger continued on this thread, acknowledging the meaningful perspectives of allies in building an accurate and common threat picture. “If you really want to understand Russia,” he explained, “go to
Norway, Finland, Estonia, Romania, Turkey, Vietnam and you will get very different perspectives,” which, taken together, paint a more fulsome and accurate threat picture.

**What Implementation Challenges Does DoD Face in Pursuing Innovation?**

One of the key challenges to successful implementation of the Third Offset Strategy, which was discussed by multiple speakers throughout the course of the event, was the disconnect between the level of risk tolerance needed to effectively innovate and the risk-averse nature of DoD. Pete Newell, a visiting Senior Research Fellow at National Defense University’s Center for Technology and National Security Policy, noted that a key reason DoD is so risk averse is that it has far more responsibilities than resources, and thus feels the risk of wasting resources more keenly. Su Jin Chang, a Principal at the Center for Acquisition Management Sciences in The MITRE Corporation, cited a related issue: government contracting officers are incentivized to be risk-averse because they are measured by a standard of “perfect is better than protest.” Lowering cost and avoiding protest are more important than speed of delivery. Even in cases when contracting officers are willing to risk using innovative acquisition techniques, Ms. Chang continued, they often avoid spreading knowledge of the technique, because they feel like they have “dodged a hammer” in not getting in trouble for sticking their necks out. Dr. Will Roper, Director of DoD’s Strategic Capabilities Office, emphasized that DoD needs to be able to define and perform “good enough,” not by setting a rigid, arbitrary line of what constitutes “good enough,” but through rigorous and robust operational testing.

Dr. Roper offered another key challenge: the lack of understanding within DoD of what incentivizes start-up firms. DoD, he offered, needs to get away from the mindset that, when it puts money on the table, everyone is going to come running to try to get a piece of the action. For companies with visions of selling to the entire world, an exclusive relationship with DoD is not especially enticing. Mr. Newell expanded on this point, noting that the goal for many Silicon Valley firms is getting to a place where they can sell to Google for $1 billion, and working with DoD does not necessarily move them toward that goal. Dr. Roper also noted that DoD has to avoid the trap of developing a $1 million missile to shoot down a $1,000 drone; DoD has to get into the mindset of utilizing commercial capabilities to counter the commercial capabilities of our potential competitors, because developing exquisite, defense-unique capabilities is both cost- and time-inefficient.

The panelists did express measured optimism that these challenges can be overcome. Ms. Chang, echoing comments by both Secretary Carter and Deputy Secretary Work, explained that the FAR contains sufficient flexibility if contractors and contracting officers are able to work together, and contracting officers are empowered to use their best judgment. Mr. Newell suggested the creation of a “box” within the acquisition system where the FAR rules are suspended or scaled back for rapidly fielding technologies, similar to the established Rapid Acquisition Authority. Dr. Roper suggested that one path to bridging the incentive gap between DoD and start-up firms would be to trade lack of DoD ownership for early/beta access to promising innovative technologies. Secretary Carter made a similar point in his
keynote speech, noting that open systems architecture would allow firms to keep the rights to their specific technologies, while allowing others to work within the overall system.

Finally, Dr. Peter W. Singer, Strategist and Senior Fellow at New America, discussed the implications of increased use of algorithms and AI: how, he asked, do you test and wargame as the speed of decision continues to accelerate? Limiting algorithms to learning in a test environment may not produce sufficiently “real-world” conditions to prepare it for real operations, but testing in real operations may not be legal. There are serious questions that need to be addressed about whether an algorithm can be said to be “under control” if its controllers cannot predict its actions. Dr. Roper discussed similar concerns, noting that while the U.S. chain of command would have a difficult time with not being in the decision loop, other countries would likely not be as hesitant. Dr. Roper also spoke to the issue of algorithms and AIs, noted that a potential solution was to have human overseers give high-level commands, and task algorithms with determining the optical way to implement those objectives on the ground. This discussion of the unclear and potentially unpredictable nature of emergent technologies when incorporated into military operating concepts brought the conference back toward an opening observation from Gen. Selva that the Third Offset Strategy will create many new questions even as it provides answers to existing problems.

Final Thoughts

Overall, while most of the speakers expressed varying degrees of concern about the challenges to successfully implementing the Third Offset Strategy, the consensus seemed to be that, at the very least, the threats that the Third Offset Strategy addresses were properly framed, and that the challenges to successful implementation were not insurmountable. There was similarly broad agreement that the success of Third Offset Strategy will depend on the ability of DoD leadership to incentivize buy-in from all of the key stakeholders. The military services will have to develop and integrate new operational concepts to take advantage of innovative technologies. The acquisition community will have to overcome cultural barriers to bring innovation into DoD. The commercial sector must be convinced that working with DoD is good business. Congress must provide consistent funding even if some of the innovation paths do not immediately bear fruit. Last, warfighters must trust that the innovative technologies and operational concepts will make them better able to carry out their missions.

The new incoming administration presents an additional complication, as it is unclear whether the new DoD leadership team will want to continue on the path set by the Third Offset Strategy. It is important to note, however, that there has been support for the goals of Third Offset Strategy within the congressional Committees on Armed Services, which could provide for continuity of support even if the new administration is lukewarm. But it will be difficult to make any concrete judgments regarding the future of Third Offset Strategy until the new DoD leadership team is in place, or at least nominated and on the record about their views. The coming months will be telling about whether Third Offset Strategy—by this or another name—is the future of defense innovation, or whether new frameworks or priorities for innovation will take its place.
About the Project Directors and Authors

Kathleen H. Hicks is senior vice president, Henry A. Kissinger Chair, and director of the International Security Program at CSIS. She is a frequent writer and lecturer on U.S. foreign policy; national security strategy, forces, and budget; and strategic futures. Dr. Hicks previously served in the Department of Defense as principal deputy under secretary for policy, a Senate-confirmed position with responsibility for assisting in the development and oversight of global and regional defense policy, strategy, and operations. She also served as deputy under secretary of defense for strategy, plans, and forces, leading the development of the 2012 Defense Strategic Guidance and the 2010 Quadrennial Defense Review and crafting guidance for future force capabilities, overseas military posture, and contingency and theater campaign plans.

Dr. Hicks was a senior fellow at CSIS from 2006 to 2009, leading a variety of national security research projects. From 1993 to 2006, she was a career civil servant in the Office of the Secretary of Defense, rising from Presidential Management Intern to the Senior Executive Service. Dr. Hicks received numerous recognitions for her service in the Department of Defense (DOD), including distinguished awards from three secretaries of defense and the chairman of the Joint Chiefs of Staff. She also received the 2011 DOD Senior Professional Women’s Association Excellence in Leadership Award. She holds a Ph.D. in political science from the Massachusetts Institute of Technology, an M.P.A. from the University of Maryland, and an A.B. magna cum laude and Phi Beta Kappa from Mount Holyoke College. Dr. Hicks was a presidially appointed commissioner for the National Commission on the Future of the Army. She is a member of the Council on Foreign Relations and serves on the Boards of Advisors for the Truman National Security Project and SoldierStrong.

Andrew Hunter is a senior fellow in the International Security Program and director of the Defense-Industrial Initiatives Group at CSIS. He focuses on issues affecting the industrial base, including emerging technologies, sequestration, acquisition policy, and industrial policy. From 2011 to November 2014, Mr. Hunter served as a senior executive in the Department of Defense (DOD). Appointed as director of the Joint Rapid Acquisition Cell in 2013, his duties included fielding solutions to urgent operational needs and leading the work of the Warfighter Senior Integration Group to ensure timely action on critical issues of warfighter support. From 2011 to 2012, he served as chief of staff to Ashton B. Carter and Frank Kendall, while each was serving as under secretary of defense for acquisition, technology, and logistics. Additional duties while at DOD include providing support to the Deputy’s Management Action Group and leading a team examining ways to reshape acquisition statutes.

From 2005 to 2011, Mr. Hunter served as a professional staff member of the House Armed Services Committee, leading the committee’s policy staff and managing a portfolio focused on acquisition policy, the defense industrial base, technology transfers, and export controls. From 1994 to 2005, he served in a variety of staff positions in the House of Representatives, including as appropriations associate for Representative Norman D. Dicks, as military legislative assistant and legislative director for Representative John M. Spratt Jr., and as a staff member for the Select Committee on U.S. National Security and Military/Commercial
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