

Defense Innovation: How Can Europe and the United States Learn from Each Other?

By Martin Quencez

Transatlantic defense policymakers have regularly emphasized the need to improve their innovation policy to address contemporary competition. Experiencing common challenges, transatlantic partners can benefit from sharing best-practices, but they face structural hurdles that hinder the prospect of a constructive exchange of lessons-learned. The United States and major European military powers can enhance transatlantic dialogue on innovation via three connected steps: sharing a common rationale at the policy level, showing good will in regard to transatlantic interoperability, and focusing on two systemic and topical issues.

Recent years have brought new buzz around defense innovation on both sides of the Atlantic. The United States and European allies have launched new initiatives and agencies to foster innovation and integrate new technologies and research into the military sector. However, while both share the drive to innovate, the transatlantic partners do not share the same objectives or methods: standing between them is the sizable gap between U.S. and European defense budgets. Even the largest European defense spenders — the United Kingdom, France, and Germany — do not aim to match the efforts and ambitions of the U.S. Department of Defense.

However, money is not the only factor in defining policy initiatives for innovation. The British, French, and German cases illustrate how each country, based on its own defense priorities, its industrial and technological environment, and its cultural understanding of innovation, has had a distinct approach to the issue.¹ Exchanges of best-practices among transatlantic allies can therefore add genuine value; even the United States “recognizes that not all good ideas come from the country with the most aircraft carriers.”² Existing formats of discussions at the bilateral and multilateral levels already allow transatlantic armed forces to share lessons-learned and better cooperate in this field. The French–British–U.S. exchanges, at the level of the vice chairmen of their respective Joint Staff, constitute an outstanding example of such dialogues. For the most

1 Sylvie Matelly, Christian Mölling, Trevor Taylor, "The Future of Transatlantic Strategic Superiority: British, German, and French Perspectives", GMF Policy Paper, April 2018.

2 Secretary of Defense Jim Mattis, House Armed Services Committee Witten Statement for the Record, April 12, 2018, <https://docs.house.gov/meetings/AS/AS00/20180412/108075/HHRG-115-AS00-Wstate-MattisJ-20180412.pdf>.



part, military staff and policymakers are willing to share insights around their innovation policy, as they see its short and long-term benefits. Publicly available research can also help the partners understand one another's efforts better.³ Yet, cultural and political hurdles stand in the way of better exchange. We all need to innovate, and, if we want to prevent innovation from hindering military cooperation among transatlantic partners, we will need to work, if not in parallel at least cooperatively, which means informing and learning from one another. A few basic steps will facilitate this.

First, transatlantic partners need to be talking about the same thing, that is, to share a narrative and goals for their defense innovation policy. Indeed, while the term of innovation is politically appealing, policymakers tend to forget the reasons why it should be a priority in defense policy and budget. Second, we need to resolve uncertainties about transatlantic interoperability. Clarifications on U.S. and European visions of the transatlantic defense partnership is a necessary step toward creating the future tools of this partnership. Third, despite many differences, transatlantic powers face some common systemic challenges in regard to defense innovation. At least when it comes to the challenges of working on the nontechnological aspects of innovation and integrating commercial innovation into the defense realm, the United States and Europe can learn from one another's best practices.

Innovation — But Why?

Just like all other buzzwords, innovation has largely lost its meaning. Its overused and generalized, well beyond the defense arena, leading to brilliant circular reasoning: "To be innovative, we have to encourage innovation."⁴ The defense realm has not been spared from innovation fever, and innovation is too often perceived as a goal in and of itself, rather than a means to achieve victory.

Transatlantic military leaders share a common understanding of defense innovation priorities. At the political level, however, the transatlantic partners lack a common rationale that would support a common sustained effort to coordinate defense innovation. This is all the more crucial as "predominant defense technologies have reached a cost plateau."⁵ This means that within already existing technologies, research and development innovation is getting more and more expensive while producing smaller and smaller operational benefits. In a context of intense international industrial competition, the amount of money allocated to technological innovation is therefore not the only factor of success. Success depends on accurately defining the goals that innovation is meant to reach.

European and U.S. goals are not identical, but we do agree on the challenges. Different threat perceptions

and strategic priorities shape different goals, for example, the prospect of high-intensity conflict in the Pacific influences U.S. capability objectives for the future, while Europeans are first concerned with territorial defense or smaller-scale power projections in their neighborhoods.⁶ However, the assessment that the United States and its allies are seeing their conventional military superiority erode is now shared across the Atlantic. The U.S. Third Offset Strategy aimed at providing answers to this worrying evolution, and the current Department of Defense approach to innovation is still designed to address the loss of strategic and tactical advantages on the battlefield. Technologies that used to be the exclusive domain of major powers, such as precision-guided munition, have become accessible and spread globally. In addition other major powers' military

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3 See for instance Lisa Aronsson's piece for the Congressional Research Service on the allies' approach to defense innovation <https://fas.org/sgp/crs/row/R45177.pdf>.

4 Michael O'Bryan, "Innovation: The Most important and Overused Word in America," *Wired*, November 2013, <https://www.wired.com/insights/2013/11/innovation-the-most-important-and-overused-word-in-america/>.

5 Bellais, Renaud and Fiott, Daniel, "The European defense market: Disruptive Innovation and Market Destabilization," *The Economics of Peace and Security Journal*, 12(1), 2017, p.39.

6 Martin Quencez, "The Impossible Transatlantic Dialogue on the Third Offset Strategy," GMF Policy Brief, October 6, 2016.

forces have undergone rapid modernization, in particular China and Russia. According to U.S. Under Secretary of Defense for Research and Engineering Mike Griffin, the U.S.' adversaries "are systematically and strategically developing and fielding advanced systems more rapidly than us."⁷ Middle powers have also learned to counter transatlantic technological advantages. Since the First Gulf War and the outstanding demonstration of its superiority, the U.S. military has become predictable. Twenty-five years later, the benefits of the Second Offset, which brought guided missile technology and new intelligence, surveillance, and reconnaissance capabilities, have diminished, and a new leap is necessary.

This military assessment needs to be translated to the political level, especially among European mid-powers, and become a shared transatlantic rationale for defense innovation. Even if political consensus on specific security goals remains a step too far for the transatlantic partners, they can and do share the goal of retaining the Alliance's conventional military advantages. Politicians and publics must understand the link between the evolution of the strategic environment and the purpose of defense innovation to support the necessary investments and accept the long-term costs of innovating. While official U.S., British, French, and German documents underscore the concrete articulation of state competition and defense innovation,⁸ this needs to be much more present at the political level and to the public discourse.

Be Serious About Interoperability

The benefits of dialogue and cooperation on defense innovation may be obvious, yet mistrust and bureaucratic inertia continue to impede transatlantic sharing. The U.S. and European allies need to address

⁷ Statement by Dr. Mike Griffin, Under Secretary of Defense for Research and Engineering, before the House Armed Services Committee on Promoting the Department of Defense's culture of innovation, Second Session, 116th Congress, April 17, 2018, <https://docs.house.gov/meetings/AS/AS00/20180417/108132/HHRG-115-AS00-Wstate-GriffinM-20180417.pdf>.

⁸ Most recently, the 2018 U.S. National Defense Strategy focused on 'strategic competitions with big powers' and the 2017 French Strategic Review warned that Europe risks "lagging behind" in the innovation competition with major powers. The 2015 British National Security Strategy and Strategic Defence and Security Review also addressed the issue of resurgence of competition between states, while the 2016 White Paper on German Security and the Future of the Bundeswehr highlighted that security pressure increased as "other states outside the EU invested heavily in their armed forces."

two political contentious issues around competition and interoperability. Both sides would need to commit to their responsibilities around interoperability and clear up ambiguities that hinder (compatible) development.

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On the one hand, the United States needs to show its European allies that it is serious about transatlantic interoperability when it designs its defense innovation strategy. Indeed, the difference in budgets dedicated to defense innovation and the widening technological gap among allies have increasingly affected the prospect of transatlantic military cooperation. Europeans cannot ask the United States to limit its investments, but Washington needs to mitigate the consequences of innovation for the Alliance.

There are only two ways to ensure that U.S. and European forces remain interoperable in the future: they can either all purchase and use the same capabilities or agree on common standards notably through NATO standardization bodies. If the United States wants European allies to increase their defense budget and assume more security responsibilities, then working on standards is the only sustainable solution- While the aftermath of the Ukraine crisis and the multitude of security crises in the European neighborhoods led to an increase of Europeans' defense budgets, this level of spending will only be politically sustainable in the long run only if it also helps European industry and economy.

The question of transatlantic interoperability is therefore intrinsically connected to the way the U.S. administration will approach transatlantic industrial competition, and the promotion of a more mercantilist approach to the transatlantic defense partnership by the current U.S. administration has added tension to the issue. Pushing politically for more industrial cooperation and giving priority

to reforming NATO defense planning process — which underperforms according to all actors — and improving standardization process would instead send the right signal to concerned partners.

For their part, Europeans need to reaffirm that they can bring concrete and significant military resources to the United States that makes transatlantic interoperability worth it for all. This issue goes beyond the topical question of NATO's 2 percent pledge and touches upon the sensitive question of European military specialization. The U.S. military's current push for global integration⁹ has concerned Europeans, as it presents the vision of completely specialized allies that would “plug into” U.S. forces on the battlefield entails a series of problems. A “plug in” system would decrease the sense of responsibility of European powers and weaken the morale of their armed forces, which would carry out secondary tasks. Increased specialization would also require faith that the United States is (always) willing to act, as Europeans would be de facto unable to respond to any complex security challenge without the U.S. military backbone.

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Yet Europeans need to admit reality. The transatlantic alliance is already one of specialization, as all European powers have already made choices to specialize in some areas and the United States is the only ally that truly enjoys full-spectrum capabilities. From an American perspective, the perceived reluctance of European partners to come to terms with this situation sends the wrong message about transatlantic interoperability. Thus, to enable a more pragmatic approach to sensitive interoperability questions, Europeans need to clarify their capability objectives and debunk some transatlantic myths about the concept of strategic autonomy. It would

also require better explaining of the role of the EU in defense, and why a more nuanced U.S. understanding of military specialization may benefit the U.S. armed forces.

Focus the Discussion on Two Systemic Issues

The United States is in a league of its own both in terms of objectives and budgets allocated to defense innovation. However, despite these differences, the U.S. and European militaries face some common innovation challenges. The U.S. Department of Defense may have an advantage in having started some initiatives before its European counterparts, but both sides' experiences will be useful to collectively improve innovation policy. Two systemic issues stand out, as they are shared by the U.S. and European major powers alike for a long time and can directly benefit from transatlantic cooperation. The first is the need to think about innovation beyond technological developments and the second deals with the integration of civilian innovation into the defense realm.

Better Practice Process Lessons

Innovation competition with other military powers is not a mere technological race. You defeat your enemy not only by innovating, but by being faster at integrating innovation in your organizations and on the battlefield. Success lies, therefore, not only in the impressive new devices and robotics. Designing new operational concepts, improving bureaucracy, and adapting military culture to innovation are as essential as financing the development of new projects. As U.S. Department of Defense official Michael Griffin put it, “Our competitors are closing the gap because of our processes, not our talent,”¹⁰ and while transatlantic partners may lead the global pace of innovation in some domains, their superiority is largely challenged in terms of speed of integration to the field. Although

9 Jim Garamone, “Global Integration seeks to Buy Leaders Decision Time, Increase ‘Speed of Relevance,’” U.S. Department of Defense, July 2, 2018, Available at: <https://dod.defense.gov/News/Article/Article/1565240/global-integration-seeks-to-buy-leaders-decision-time-increase-speed-of-relevan/>.

10 Statement by Dr. Mike Griffin, Under Secretary of Defense for Research and Engineering, before the House Armed Services Committee on Promoting Department of Defense's culture of innovation, Second Session, 116th Congress, April 17, 2018, <https://docs.house.gov/meetings/AS/AS00/20180417/108132/HHRG-115-AS00-Wstate-GriffinM-20180417.pdf>.

the defense sectors in the United States and Western European countries differ, they generally face the same bureaucratic hurdles and constraints.

On both sides of the Atlantic, defense officials and advisors promote similar recommendations to make defense agencies more agile and effective in translating innovation through internal processes. They stress the need for a more bottom-up approach to innovation, with industry representatives and final users — i.e. soldiers — being more directly involved in developments.¹¹ Lessons-learned from one country in that regard can be easily utilized by others. The Joint European Disruptive Initiative (JEDI), launched in 2017, has thus used as a model the methodology of the U.S. Defense Advanced Research Projects Agency. The question of the level of centralization, for instance, is relevant to all allies. The French example, with the creation in 2018 of a specific “Defense Innovation Agency,” may provide a useful model.¹² The agency will aim to coordinate all aspects of the innovation strategy of the defense ministry but should also avoid leading to a counter-productive concentration of processes and methods. The transformation of the bureaucratic process must strike the right balance between too much autonomy — which would produce too costly and incoherent results — and too much top-down planning — which could lead to oxymoronic approach such as an innovation doctrine.

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Civilian-Military Cooperation

The second issue concerns the relations between the military and non-military worlds, and notably the integration of commercial technology and innovation in the defense sector. The question is, again, nothing new,¹³ but it has become increasingly important as most technological revolutions happen outside the state. Commercial companies in the Silicon Valley outspend the Department of Defense’s research and technology budget by ten to one, and defense innovation is already deeply dependent on technologies with dual-use applications.

Yet, both in Europe and the United States, the integration of commercial actors can be an issue. Non-military companies can indeed be reluctant to work for or with the defense sector, for ethical or business-related reasons. This unwillingness to work on defense projects often stems from national industrial culture, as in Germany where the perception of “good” versus “bad” innovation affects the prospect for synergies. Most recently, the cancellation of Project Maven¹⁴ by Google illustrated the difficulties that can be faced by the U.S. Department of Defense and the room for improvement in that regard. These obstacles are notably topical as competitors such as Russia and China have also increased their effort to promote closer collaboration between commercial and military realms, but they do not face the same constraints from their civil societies.¹⁵ The U.S. and European allies need to find their own model, which encourages critical and ethical thinking while fostering cooperation and integration.

Finally, these two systemic issues partially overlap, as defense ministries both in the United States and in Europe attempt to copy commercial companies to improve their own bureaucratic processes. The U.S. Defense Innovation Unit Experimental (DIUx), launched in 2015, not only serves as a bridge with

11 See for example recommendations on culture and people by the DIB <https://innovation.defense.gov/Recommendations.aspx>

12 Interestingly, the head of France’s newly created “Defense Innovation Agency” recently published an article on DIUx as a possible model for the French MoD. Emmanuel Chiva, “Capturer l’innovation de défense: à la découverte de DIUx”, *Defense&Industries*, June 11, 2018, <https://www.frstrategie.org/publications/defense-et-industries/capturer-l-innovation-de-defense-a-la-decouverte-de-diux-11-3>.

13 It has been largely discussed by academic literature. See for instance Alic, John A., Lewis M. Branscomb, Harvey Brooks, Ashton B. Carter, and Gerald Epstein. *Beyond Spinoff: Military and Commercial Technologies in a Changing World*. Boston, MA: Harvard Business Publishing, April 1992.

14 Google announced in June 2018 that Project Maven (formally known as the Algorithmic Warfare Cross-Functional Team), an artificial intelligence project for drone footage launched in 2017, would not be renewed after 2019. This decision stemmed from backlash within Google against the weaponization of A.I. and the involvement of the company in military projects.

15 Samuel Bendett and Elsa B. Kania, “Chinese and Russian Defense Innovation, with American Characteristics?” *The Strategy Bridge*, August 2, 2018

startups to scout new technologies, but also to learn from commercial companies and educate the Department of Defense about innovation.¹⁶ Such exchanges are promising, but should come with a pinch of caution. The long and bureaucratic processes of public defense institutions also serve a purpose: innovation in the defense realm deals with national security with taxpayers' money and requires heavier administrative constraints.

Conclusion

Transatlantic partners have the will and the institutional tools to further cooperate on defense innovation, but in the long term the United States and its European allies often approach common challenges differently due to their respective defense spending and strategic priorities. Sharing a narrative around the need for innovation, addressing policy taboos and hurdles, and narrowing cooperation to a couple of shared systemic issues are the right steps to improve transatlantic dialogue in this field.

Policymakers should also be wary not to raise expectations too much, as cultural constraints will take time to change. The current effort, on both sides of the Atlantic, to integrate innovation at a faster pace will not provide clear and rapid deliverables. Besides, what can be applied for the biggest European military powers may not be relevant for smaller partners, which risk seeing the technological gap with the United States but also within Europe widen. In that domain, the success of recent EU defense initiatives will have important spillover effects, and could help prevent the Alliance from facing unmanageable interoperability issues in the future.

¹⁶ Robert Hummel and Kathryn Schiller Wurster, "Department of Defense's Innovation Experiment," STEPS Article, June 30 2016, <http://www.potomac institute.org/steps/featured-articles/83-department-of-defense-s-innovation-experiment>.

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