

CANADIAN GLOBAL AFFAIRS INSTITUTE
INSTITUT CANADIEN DES AFFAIRES MONDIALES

Quebec Aerospace Industry & Defence Innovation

By Dr. Alexander Salt

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REPORT

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INTRODUCTION

On 19 April 2024 Triple Helix and Aéro Montréal hosted a roundtable discussion with various aerospace industry and government stakeholders to discuss the current state of innovation in the commercial aerospace industry as well as industry-government relations. Aéro Montréal is a thinktank representing all the major decision makers in Quebec's aerospace sector, which includes companies, educational and research institutions, professional associations and unions. Triple Helix is an Academic-Policy-Industry Partnership for Defence innovation and Analysis; it is a network composed of the Canadian Global Affairs Institute (CGAI), the Norman Paterson School of International Affairs (NPSIA) at Carleton University, and an industry that explores how a range of emerging technologies intersect with defence. This round table event was organized to provide the attendees with an opportunity to discuss and react to a series of semi-structured questions. This report provides a synthesis of the core discussion themes surrounding each of the questions, followed by conclusionary recommendations based on the previous discussions.

QUESTION 1: *What type of innovation is your company pursuing that is of relevance and use to defence/the military?*

Firms in Canada are working on various digital systems intended to support sustainment efforts for the Canadian Armed Forces (CAF). These include digitized systems that map internal aircraft systems and track their durability.

Industry can potentially offer new sustainment processes and training of personnel, but current regulations, such as military certification, delay their operationalization. The CAF's shortage of personnel is acting as a significant constraining factor on efficiency in defence. Potentially embedding civilian contractors to support maintenance and sustainment support for both for CAF garrisons and more complicated external operations may offer a solution to current personnel issues.

Some feel that the culture surrounding procurement in Canada is antithetical to innovation. There is a sense that industry is not being asked to meaningfully innovate by the government, and in fact aspects of the current arrangements, such as the structure of contracts and requirements to secure air certification, disincentivizes innovation. The current system consumes money and resources, but this does not translate to tangible outputs for the CAF. There is a major resource inefficiency in the Canadian defence-industry relationship. In particular, there is too much governmental regulation involved during contracts, research and development. Industry is compelled to allocate a considerable amount of personnel and time to understanding and responding to government contracts, which often do not generate sufficient profit compared to commercial market

opportunities to warrant particularly small company's time. The current government-industry relationship asks too much from industry and does not offer enough financial rewards for the resources required to participate in the process, for example there is a lack of intellectual property protection embedded within contracts. Maintenance and support contracts in particular, given their focus on addressing obsolesce issues, rather than improvements, are managed in a manner that is not conducive to innovation by suppliers. Industry would appreciate more support for exporting products internationally as generating sales within Canada is often overly difficult and opportunities are too few.

Industry is often placed in a hostile position, where if DND and CAF are not prepared to test and certify an innovative product, industry feels they must take it internationally to sell it. Without consistent revenues companies risk going out of business. There is a pressing need to get better feedback from Canadian defence back to industry for potential products. Having industry more directly involved at the earlier stages of the procurement cycle would be beneficial to both sides. If Canada wants innovation, the government needs to be more upfront about it to industry from the start of the process.

Other countries such as the U.K. have more efficient industry-defence relationships. In the U.K. industry is more of an active participant in defence policy, and the government does a better job at supporting industry. For example, U.K. military personnel and defence bureaucrats will much more actively help firms export products to foreign markets. Further, in the U.K. system, procurement is viewed as a career path, not just a short-term positing for personnel and so there is formal career development and training in this sector.

In general, a discrepancy persists between government rhetoric, which implies a desire for innovation to flourish, and Canada's ongoing deficiency in the foundational defence ecosystem needed to foster such innovation.

QUESTION 2: *What has been your experience engaging with the Department of National Defence's or the government of Canada's innovation programs (e.g., Innovation Solutions Canada, Innovation for Defence Excellence and Security)? If you have not engaged in any of these programs, why?*

Some firms had no direct participation in these programs due to a variety of reasons, including being newly introduced to the defence sector or lacking the personnel to be involved. Some firms felt certain programs, such as the Strategic Investment Funding program were far too complex, that they would need to dedicate too much time, personnel, and resources to oversee it. Other programs such as IDEaS and the ISC are more accessible for some firms, but they still involve considerable resources for effective participation. Some firms have voiced criticism that programs such as IDEaS do not have sufficient rewards by the end, such as new government contracts. IDEaS is viewed as being more focused on university research centres and lacking relevancy to larger firms. Also, those in smaller firms felt they did not have enough support and needed to be guided through the process. Industry would like more direct input from the

government as to what they are looking for, and more support throughout the application process, including ongoing direct conversations between the two sides.

Firms have also been unsuccessful in their participation attempts, for example some IDEaS applications were not granted. The motivation for these failed attempts by some firms was not monetary or innovation based, but rather viewed as a relationship building exercise with the government. These programs are seen as not profitable by many in industry. For some specific programs, such as the Strategic Innovation Fund, it was suggested there were too many forms involved, and there was a steep learning curve for new participants. The application process for the programs are viewed as being very different from how industry behaves within the commercial sector; firms would like to see more flexibility in how they can apply for these programs. It was felt that application process emphasizes and prioritizes competition among the applicants rather than successful outcomes. While other firms did find some successes in programs, including those partnering with engineering programs at universities.

Overall, industry would like more flexibility in the application process, and more direct feedback and guidance from government throughout the process to avoid wasting time and resources.

QUESTION 3: *Canada's new defence policy, Our North, Strong and Free, aims to improve the Defence Team's relationships with industry – what could this look like, in your eyes? Are there any steps the Department can take to better engage commercial industries?*

There needs to be a closer, more collegial, relationship between DND and industry. In particular, the DND needs to be descriptive with industry about its needs, prior to the point of releasing solicitation documents. In general, the current system suffers from a lack of transparency throughout the procurement process. There should be more direct discussions between industry and the DND to outline the specifics of current problems and operational employment concepts in order for industry to help offer solutions. This should occur with people in government empowered to make decisions, whereas currently much of the engagement happens at the working level where people are not in a position to take decisions. Lack of security clearances for those outside of DND and CAF is identified as a significant constraint on this goal. Industry feels it cannot consistently access relevant information under the current system. There is an acknowledgment that the older procurement cycle could take over a decade to unfold and as such is no longer feasible given the evolving character of technology. The consensus was there needs to be a shorter turnaround for procurement projects. DND needs to offer more specific guidance much earlier during this cycle, as offering feedback after the fact is not efficient. Industry needs more direct access to updated data to develop innovation based on government needs.

Further, there is a need for facilities and IT systems to be secure in order to comply with security protocols of secure networks, and this is getting more complex as time goes on. Some point to the U.S as an example of the successful use of accelerators for industry to move forward at a more rapid pace in order to be able to offer more innovative solutions to current problems. There is a sense that cultural change is needed on both sides of the industry-government relationship in

order to make for a more effective procurement process. NORAD modernization and the potential for Canada to be involved in AUKUS Pillar II may offer opportunities to help reform the system and generate new innovations.

Findings and Recommendations:

The status quo of defence-industry relations in Canada needs to be changed. Presently, Canada is not systemically and holistically incentivizing innovation. The government approach to contracts is too complicated and requires reform and streamlining particularly to engage more SMEs which cannot commit resources to the pursuit of projects on current lengthy timelines. Canada must build a procurement ecosystem that is more supportive of industry if it wants innovation to occur in future.

The procurement system in Canada would likely be improved by taking a more 'bottom-up' approach, where industry helps drive innovation from the very start of the cycle. For this to unfold, the government must provide clear guidance on what exactly it needs, which allows industry to organically develop and test solutions in response to those problems. Increased transparency and communication between government and industry stakeholders is essential for this type of reform to be successful.

Recommendations:

- Simplify and streamline the contracting process for government programs related to procurement and innovation.
- Offer industry better incentives to participate in innovation programs.
- Create more formal and informal forums for industry to talk with DND and CAF.
- Industry should be involved more directly in the early stages of procurement projects.
- Streamline the security clearance process for industry personnel.
- Give industry more direct access to DND and CAF data to help inspire and shape innovation.
- Industry contractors may help the CAF and DND offset lack of personnel for sustainment tasks.
- Canada should look to the U.S., U.K. and Australia for lessons learned to improve procurement system.
- The procurement cycle needs to be shortened considerably.
- The DND needs to decide if it wants to prioritize innovation or proven technological solutions and be consistent about this choice throughout its procurement activity.

About the Author

Dr. Alexander Salt has a PhD from the University of Calgary's Centre for Military, Security and Strategic Studies and an MA in Political Studies from the University of Manitoba. His dissertation explores to what extent has the battlefield experience of the U.S. military influenced post-war organizational innovation. His research has been awarded the Social Sciences and Humanities Research Council of Canada's Joseph-Armand Bombardier Doctoral Award, as well as a General Lemuel C. Shepherd, Jr. Memorial Dissertation Fellowship. He has published research relating to international security and defence policy with *Strategic Studies Quarterly, Journal of Military and Strategic Studies*, *Canadian Foreign Policy Journal*, and *The Canadian Network for Research on Terrorism, Security, and Society*. Previously, he was a Visiting Political Science Instructor with Macalester College and has also held positions with the Centre for Defence and Security Studies, as well as the Consulate General of Canada in Dallas, Texas, and the Consulate General of Canada in Minneapolis, Minnesota.

Canadian Global Affairs Institute

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