TRIPLE HELIX

Industry Insights on Fostering Canadian Defence Innovation

Perspectives from Ottawa-based companies

by Kelly Grounds

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BRIEFING NOTE

INDUSTRY INSIGHTS ON FOSTERING CANADIAN DEFENCE INNOVATION

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On November 13, Triple Helix partnered with Invest Ottawa in Ottawa, Ontario, to host a roundtable discussion with Ottawa's defence industry regarding their relationship with the Department of National Defence (DND) and federal innovation programs. Invest Ottawa is a business accelerator that that leverages programs, people, and places, making Ottawa a global tech hub and collaborative business community. The roundtable participants represented a diverse set of backgrounds, ranging from artificial intelligence to automation solutions, and vehicle design.

Over the course of the roundtable discussion, several themes and challenges emerged. Participants observed that the structure of government programs often creates high barriers to entry, which may exclude smaller companies due to the complex application processes and limited pathways to procurement. Further, the lack of clear contracting pathways discourages some companies from applying to these government programs, which may push them to seek opportunities with international clients instead.

Participants emphasized the importance of developing dual-use technological solutions and strategic partnerships between government and industry, which can attract private capital, validate business models, and reduce risks for both industry and government. Venture financing was identified as being essential to bridge the gap to commercialization; however, increased early-stage investment and support is needed to help companies survive and scale. Recommendations from participants emphasized streamlining application and procurement processes, engaging industry experts in decision-making, improving communication to build trust, and prioritize procurement to ensure that innovative solutions can make it to market. This report summarizes the key themes that emerged from the questions and concludes with a set of recommendations based on discussions.

Who sold outside of Canada first and why?

The majority of participants found their first clients outside of Canada, primarily in Europe and the United States. A common theme among them was the speed of innovation and the ease of procurement practices abroad. Several participants found their initial clients within the U.S. government and leveraged that experience to enter the Canadian market. In several cases, participants were able to enter the Canadian market after being referred by allies like the U.S. and the United Kingdom.

How do you keep pace with the speed of innovation and demands of the federal government?

One of the key factors noted by participants was that complex technologies, such as lithium batteries, which were previously cost-prohibitive, have since decreased in cost while simultaneously improving performance. This development has helped companies develop products that otherwise would have stagnated during planning stages a decade ago. Additionally, there has been a shift from building software from scratch to utilizing global platforms like Microsoft, which facilitates plug-and-play solutions that are more flexible and accessible to a wider range of clients. These are two of the developments that have helped the participants keep pace with the speed of innovation.

There is an increasing demand within the Canadian government for commercial technologies that have dual-purposes and can be adapted for military applications. This has transformed the procurement relationship, allowing buyers to refine their requirements and create shortlists of vendors, rather than relying on vendors to find buyers. As several participants noted, having a strong digital presence has become crucial for smaller companies to be able to get on to these shortlists and compete with larger firms.

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 (ISC), Innovation for Defence Excellence and Security (IDEaS))? If you have not engaged in any of these programs, why?

Multiple participants had previously engaged with Innovative Solutions, experiencing varying degrees of success. Those who had been able to secure funding managed to do so after three attempts, highlighting the importance of having a strong advocate within the system and establishing end-user connections. Others who completed the application process were not funded, despite investing time and effort into their applications, which left them reluctant to reapply for future funding. Participants also noted that even when a company succeeds with Innovative Solutions, there is no guarantee that the Canadian government will purchase the final product.

Those who had previously applied to participate in both IDEaS and the Strategic Innovation Fund (SIF) encountered challenges at each stage. Smaller companies reported facing resource barriers at the application stage, primarily due to the heavy paperwork required and a reliance on consultants for guidance, which smaller firms cannot afford. Once the applications were submitted, there are concerns that the funding would not materialize.

Participants also noted that without a clear mechanism taking their products from the development stage to a government procurement, interest in taking the time to apply decreases. This concern linked back to the difficulty of the application process, with participants observing that evaluators may lack sufficient expertise to assess proposals effectively. Several participants described the difficulties they had experienced due to suspected perceived biases in the selection process, where the criteria for selection appeared to be pre-determined, discouraging some from applying.

Focusing on IDEaS, several participants once again highlighted the lack of procurement pathways, noting that successful technologies often fail to reach their end-users in the government. Participants reiterated that without clear ways to transition their products to government adoption, interest in participation among industry stakeholders decreases.

To streamline the application process, participants recommended shifting from extensive paperwork applications to a simpler pitch-deck style application. They also suggested aligning funding decisions with procurement priorities to ensure that the programs effectively address the government's current needs and expand Canadian industrial capacity. Without updating the procurement process, several participants warned that Canada risks losing domestic companies to international markets, where processes are more efficient and supportive.

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 industry?

Participants provided several recommendations to improve federal government's relationships with industry, highlighting the need for streamlined processes, strategic partnerships, and clearer pathways to procurement.

Many participants stressed the need to simplify security clearances, as delays often hindered progress. Several suggested implementing a standardized and streamlined security clearance system for contracts, pointing out the inconsistencies across departments and the delays for international employees, which can cause project setbacks. A related suggestion was to prioritize clearances for government employees for key roles and address the backlog of clearances in order to increase the speed of the procurement process.

Several participants advocated for more transparent and strategic relationships with DND. This would help build trust and foster non-transactional engagements, ensuring better alignment among industry efforts with DND priorities. A potential first step in this direction would be to improve industry-facing platforms like CanadaBuys and to include evaluators with engineering and business expertise to provide meaningful feedback during the procurement processes.

On funding and procurement, participants emphasized the need for end-to-end support and highlighted successful US models, such as the Small Business Innovation Research program, which funds projects through multiple phases with guaranteed procurement at the end. Participants urged the Canadian government to adopt similar mechanisms, including sole-source procurement grants, to encourage effective delivery. Several also recommended involving commercial sponsors or academia with relevant expertise to validate technology applications early and accelerate adoption.

Participants also discussed the lack of continuity in government innovation programs, noting that projects often stall after the initial phases as there may be no clear path forward a final contract. To address this issue, several participants recommended enhancing the alignment between government procurement strategies and industry trends, paired with clear communication of long-term goals.

Finally, participants reiterated that without improvements, Canadian industry may increasingly turn to international markets, such as the U.S., where the speed of innovation is faster and there are faster pathways to successful procurement. Without a strong federal-industry relationship, Canada's defence industry and economic growth could stagnate.

What is the role of capital and venture financing and how can it compliment funding from the federal government?

Participants outlined the roles of capital and venture financing as complementary to federal funding, emphasizing its potential to address gaps in the application process and increase the impact of government funding for projects. The Western Diversification Fund and FedDev were cited as effective examples of capital investment in government programs due to their co-investment structure, which mitigated risks and attracted additional funding.

One potential suggestion to improve the effectiveness of federal funding is to incorporate arms-length capital, managed by commercial entities that can distribute funding to the industry in a more streamlined manner, thereby bypassing bureaucratic delays. This approach would be especially effective at the early stages of technological development, where funding is critical for

startups to survive long enough to attract venture capital or secure contracts. Smaller sources of funding are essential as stepping stones to larger investments.

Another element highlighted by the participants is the importance of strategic investors who not only provide funding but also offer market expertise, connections, and validation for the technology. These investors are especially valuable when entering new markets or addressing dual-purpose needs. Participants agreed that dual-purpose technologies are more appealing to both private investors and government buyers.

Building on the concept of strategic investors, some participants advocated for both equity and non-equity funding streams. Equity investors may prioritize financial returns, while government grants or loans could focus on advancing readiness levels to the point where procurement becomes feasible. However, this approach may present challenges, as founders could fear losing control, and this apprehension can deter them from seeking venture capital or seeking external advice, potentially limiting their growth.

Participants also advocated for including private capital and other experts in contract and funding decisions. This approach would shift the evaluation process from government officials to industry experts who possess a better understanding of market dynamics. As a result, this would increase the likelihood of funding successful projects while minimizing bureaucratic delays.

However, defence-focused companies often face challenges securing initial rounds of private funding due to their high-risk profiles and niche markets. For smaller companies, the initial funding may need to come from personal resources, angel investors, or smaller-scale grants. This approach allows the companies to grow until they reach a more advanced stage that is attractive to venture capitalists. In these cases, participants highlighted the necessity for government programs to support industry, enabling them to continue growing and developing their products.

Recommendations:

- Provide opportunities for smaller firms to engage with DND and CAF clients
- Align funding opportunities with current procurement priorities to ensure that the programs address current issues
- Simplify and standardize the security clearance for industry personnel
- Improve industry-facing platforms and include evaluators with engineering and business expertise in funding decisions
- Provide clearer paths for companies to take their products from the development stage to government procurement
- Incorporate private capital, managed by commercial entities, into federal funding program.