Written Submission for the Pre-Budget Consultations in Advance of the 2019 Budget

Canada's Technology Access Centres: Amplifying impact through inclusive innovation

Submitted on behalf of Canada's Technology Access Centres by:

Ken Doyle
Executive Director
Tech-Access Canada

Recommendations:

Recommendation 1:

That the government provide funding in the amount of $ 9 million over three years for the Inclusive Innovation Initiative (i3) proposed by Tech-Access Canada.

Recommendation 2:

That the government provide funding in the amount of $ 135 million over five years to implement Réseau Trans-Tech's Budget 2019 recommendation for the Fonds d'accélération pour l'innovation de proximité (FAIP) – Regional Innovation Acceleration Fund (RIAF).

On behalf of our members, thank you for Budget 2018's explicit acknowledgement of the unique - but often unsung - role that Canada's Technology Access Centres (TACs) play as objective innovation intermediaries solving business innovation challenges for entrepreneurs, innovators, and small Canadian firms. Equally important is your recognition of how TACs provide students and recent graduates with extremely valuable experiential learning opportunities, equipping them with hands-on applied research and innovation skills that regional innovation talent pools need.

Budget 2018's unprecedented investments in the NSERC-administered College and Community Innovation Program, as well as the Canada Foundation for Innovation and IRAP, will ensure that the Canadian college and cégep community have the resources to respond to business innovation challenges from firms across the country. These investments are critical and timely if we want to move the needle on Business Expenditures on Research and Development (BERD), a metric in which we have long lagged our peers, falling well below the OECD average.

According to the Council of Canadian Academies' Expert Panel on Business Innovation, BERD spending "signals a firm's commitment to the systematic generation and commercial application of new ideas." Canada currently ranks 15th out of 16 peer nations on BERD. A multi-country study by the OECD found that a "sustained increase of 0.1 percentage point in a nation's BERD to GDP ratio would eventually translate to a 1.2 per cent higher GDP per capita, other things being equal."

According to the federal government's most recent report, Canada has 1 million businesses with under 100 employees, and fewer than 3,000 large enterprises with over 500 employees. Large businesses make up only 0.3% of all businesses, yet they account for over 50% of all R&D spending. Comparatively, despite representing 98% of all firms, small businesses account for only 27% of total R&D spending. Canada has always been a country of small businesses, yet small business spending on R&D has declined consistently over the years despite the efforts of so many special committees, expert reviews, panels, and reports on Canada's lackluster innovation record.

Albert Einstein is often credited with saying "If you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."

Trying to transplant successful innovation policies from other countries ignores Canada's history and industrial makeup. An economy of 98% small firms scattered across the second largest country in the world, with few scaling into medium-sized firms, and virtually no homegrown multinational anchor firms, shows that we are drastically different from our competitors. Even the sharpest, most high-tech climbing shoes are not going to help our fishes climb trees.

Still, Canada has a highly-educated population and incredibly talented innovators and entrepreneurs from all backgrounds spread across all regions and all industries. They are doing everything they can to get their innovations to market. Perhaps the time has come to judge our fish on their ability to swim, and provide the required supports.

Small firms are constrained by their size, and often do not know that an entire network of objective innovation intermediaries exists to help them solve their innovation challenge: Canada's Technology Access Centres.

A uniquely Canadian innovation, TACs are specialized applied R&D centres affiliated with Canadian colleges or cégeps. Demand-driven TACs help Canadian businesses – especially small businesses – advance their products, processes and services by:

- conducting applied research and development projects focused on company problems;
- offering specialized technical services and objective advice; and
- providing training related to new types of equipment and processes.

Every year, the TACs provide clients and partners from across Canada with access to:

- expertise and experience of over 1,000 business innovation and applied R&D experts;
- over 2.4 million square feet of innovation and applied research space; and
- over $250 million worth of highly-specialized equipment and facilities.

Canada's TACs provide an accessible model that helps entrepreneurs and innovators exploit new opportunities for profit, bring new innovations to market, and realize their dreams in a one-stop-shop. TACs do the heavy lifting required to help businesses catapult new ideas scribbled on the back of napkins, to lucrative markets in Canada and around the world. Their industry-friendly Intellectual Property policies put the IP in the hands of industry to commercially exploit, a tremendous benefit for small firms hoping to stay nimble and expand. TACs also socialize the concept of applied R&D and innovation as strategic investments rather than additional expenses, thus incrementally moving the needle on BERD.

In the same way that Canada's 30 TACs are designed to be safe spaces for de-risking innovation, the TACs' network - Tech-Access Canada - is a safe space for policy innovation and experimentation. Established in 2015, Tech-Access Canada is the formal, national network of NSERC-designated TACs. As kindred spirits to our members, we too act as an innovation intermediary aiming to build as many connections as possible with entrepreneurs and innovators to enable them – through the TACs - to pursue their passions and turn their business ideas and dreams into reality, instead of toiling away in a position where they help to build somebody else's dream, always wondering "what if?"

In that spirit, on behalf of Canada's TACs, we recommend that Budget 2019 provide $9 million over three years to support the launch of the Inclusive Innovation Initiative (i3) administered by Tech-Access Canada. i3 is comprised of three complementary elements that will fill unintentional gaps in the Canadian innovation ecosystem and act as a catalyst to maximize the effectiveness of the TACs.

TACs are affiliated closely with colleges and cégeps, which are institutions of inclusion by design, educating and upskilling diverse communities of students. Like colleges, TACs are client agnostic

and personify inclusive innovation, eager to work with any innovator or entrepreneur who knocks on their door with an innovation challenge.

Recently, many R&D support programs have tightened eligibility criteria to screen out smaller, or newer, firms. Our members have noticed that this undeservedly impacts firms led by members of traditionally under-represented groups, keeping them on the sidelines of innovation.

Our commitment is to provide access to innovation support services for all Canadians, and that is why i3 is comprised of three foundational elements that are Inclusive by design, in addition to being Interactive, Incremental, and Immersive.

A brief overview of each of the elements follows, with supporting documentation available from Tech-Access Canada:

1. Interactive Visits for SMEs:

Based on a very successful regional pilot, the scaled-up Interactive Visits for SMEs program will provide each SME with up to 20 hours of access to specialized innovation assistance from a TAC to solve a specific challenge. Interactive Visits work perfectly as an entry-level, initial introduction to collaborative innovation. Over the course of the pilot, the clients referred to the TACs for Interactive Visits reported increasing sales; hiring new employees; launching a new or extended product line; obtaining further funding for expansion, and; initiating a larger scale R&D project with the TAC. Our inclusive model works, and Tech-Access Canada looks forward to delivering a comprehensive Interactive Visits program across the country.

2. Incremental TRL Elevation Projects:

Inevitably, innovators will hit a roadblock on their way to market and need assistance getting their innovation to the next Technology Readiness Level (TRL). TRLs are a measure to evaluate the maturity of an evolving innovation from Level 1: an idea on a napkin, to Level 9: a commercialized product on store shelves. For innovators who are not too proud to ask for help, Incremental TRL Elevation Projects will allow them to collaborate with a TAC to get around the roadblock. These small-scale applied R&D projects will have rapid approval and roll-out timelines to move at the speed of innovation. Being inclusive and open to everyone, the TAC validation and advancement facilitates follow-on R&D projects with the TAC or other innovation ecosystem partners better suited to get the innovation to TRL 9.

3. Immersive TAC Expertise Exchange:

The Expertise Exchange make smart use of our Made-in-Canada TAC innovation talent and creates a formal mechanism to rapidly deploy the TACs' experts to a peer TAC in need of short-term assistance, reducing overlap and duplication of efforts, and getting innovations to market quicker. Support would enable TAC researchers to travel to another TAC to share their specific expertise as part of a team solving an industry partner's challenge. The host TAC will also onboard a local "innovation apprentice" to the project team, tasked with understudying the visiting specialist. This is knowledge transfer in the most literal sense, benefitting regional economic development at a level that would take the TACs years to replicate organically.

While the overarching objective of i3 is to remove barriers for accessing innovation support services for Canadian entrepreneurs and innovators, the underlying motivation is to increase the production of mid-TRL innovation talent for regional talent pools. Increasing the number of interactions between innovators and TACs increases the number of potential projects, which increases the demand for innovation talent to deliver the projects at the TACs, as well as shepherd the results to market through the commercialization efforts of the firms.

The Tech-Access Canada network can act as the administrator for i3 using our secure, proprietary, T.A.C.P.I.T.S project-tracking platform, making project administration efficient and cost-effective, and standardizing the collection of performance metrics. We are also confident i3 will act as a catalyst to amplify the positive impacts of other government supported R&D and innovation assistance programs.

While still an emerging and inconsistent enterprise, college applied research has tremendous untapped potential across the country. There is a pressing need to develop and support consistent pan-Canadian college applied research capacity.

Tech-Access Canada and Canada's 30 TACs fully endorse **Réseau Trans-Tech's Budget 2019 recommendation for an investment of $135 million over five years to create Fonds d'accélération pour l'innovation de proximité (FAIP) – Regional Innovation Acceleration Fund (RIAF).** FAIP-RIAF would be a first in the history of Canadian college applied research and would establish a consistent and capable brand of cross-country college applied research support in over 3,000 communities. As Réseau Trans-Tech clearly explains, the FAIP-RIAF will help future proof the colleges for the benefit of regional economic development.

In closing, Tech-Access Canada and the TACs are standing on guard, ready to work shoulder to shoulder with Canada's entrepreneurs and innovators to move the needle on BERD and maximize the impact of Budget 2018's investments in college applied research.

TACs are a uniquely Canadian innovation. Our hope is that these interventions help shift our discourse to judging how well our fish can swim, before other countries give their animals snorkels.

But now we need you.

Your support for Réseau Trans-Tech's Budget 2019 recommendation to create the FAIP-RIAF will provide the enabling conditions for all colleges in Canada to build and augment their applied research and innovation capacity to a consistent and reliable level to respond to the demand driven innovation challenges of industry in all regions of the country.

Just as significant is your support for Tech-Access Canada's Inclusive Innovation Initiative. i3 will introduce the interactive, incremental, and immersive interventions the innovation ecosystem needs, in an impactful manner.

i3 will:

- positively impact other actors in the innovation ecosystem.
- certainly impact students and recent graduates with increased access to experiential learning opportunities.
- significantly impact every single innovator and entrepreneur in Canada with a game-changing idea scribbled on a napkin, wanting to someday see it hanging on a store shelf, but who realizes they cannot do it all on their own.

Thank you.