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A NEW BUSINESS INNOVATION AGENCY: OPPORTUNITIES TO IMPROVE THE IMPACT OF FEDERAL BUSINESS INNOVATION SUPPORT PROGRAMS

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INNOVATION POLICY LAB WORKING PAPER SERIES 2025-03

About the Author

Iain Stewart began his federal career in 1994, at Treasury Board Secretariat and worked in a range of federal departments and agencies, including on the design or delivery of federal business innovation programs, such as the Atlantic Innovation Fund (AIF), Technology Partnerships Canada (TPC), and the National Research Council's Industrial Research Assistance Program (IRAP). His experience also included policy initiatives such as *Mobilizing Science and Technology to Canada's Advantage* (2007), and serving as Secretary to advisory panels, such as the Science, Technology and Innovation Council (STIC) and the Expert Panel on Federal Support to Research and Development (the Jenkins Panel). In 2015, Iain was appointed Associate Secretary to the Treasury Board, and in 2016, President of the National Research Council, with a one-year tour of duty as President of the Public Health Agency of Canada and successful vaccination of Canadians (2020-21), before returning to the NRC. Iain retired in 2024, and now contributes to a number of Boards and is a Senior Fellow of the Munk School of Global Affairs and Public Policy at the University of Toronto.

Acknowledgments

This commentary is intended as a work in progress to encourage discussion and comments. However, it has already benefited from the comments, advice, and ideas of many people, in particular my long-time colleague Peter J. Nicholson, and my new colleagues Darius Ornston and David Wolfe at the Munk School of Global Affairs and Public Policy at the University of Toronto. My deep thanks to all.

Executive Summary

The Government of Canada should create a new business innovation agency to deliver its core programs, and to be a centre of expertise on working effectively with entrepreneurs and responding to their evolving needs and opportunities.

The Scale of the Challenge

Canada faces a productivity crisis that threatens our economic future. After decades of lagging behind international peers in business innovation and productivity growth, the need for improvement has intensified. The new U.S. administration's antagonistic stance toward trade with Canada challenges Canadian businesses to invest more in innovation as a competitive strategy. This commentary argues that the Government of Canada can make changes to better assist them in this regard.

Canadian firms remain chronically less likely than global peers to develop new technologies, commercialize innovations, or invest in the latest advanced production processes and business software. This under-performance diminishes the productivity gains foundational to long-term economic growth, increased wages, public revenues, and so maintaining a high quality of life for Canadians.

The roots run deep. Canada's resource-heavy economy, branch-plant predominance, small firm size distribution, limited domestic risk capital, and brain drain to the United States create systemic barriers to innovation-driven growth. Canadian integration with North American supply chains and consumer markets has traditionally enabled Canadian firms to be profitable, low-cost suppliers of inputs without the need to invest in competing through innovation. Canadian geographic dispersion and internal market fragmentation compound these challenges.

Government's Role and Limitations

Governments seek to influence economic activity such as innovation through marketplace framework policies that shape the overall environment for competition and business investment. They encourage business innovation inputs like new ideas and skilled talent through funding for universities and research organizations. But governments also intervene in the market to directly incentivize firm-level investment in innovation through subsidy programs.

This commentary is focused on improving the effectiveness and impact of these federal business innovation subsidy programs. While these tools are not sufficient to on their own to change economy-wide business innovation outcomes, the programs represent a substantial annual federal expenditure, and this commentary argues that improvements can be made to increase their beneficial impact.

The Program Delivery Issues

Federal business innovation support suffers from a number of challenges. Over 130 programs spread across multiple departments create confusion and administrative burden. Core programs like the Industrial Research Assistance Program (IRAP), Strategic Innovation Fund (SIF), and Innovation Solutions Canada (ISC) operate in silos with different rules, timelines, and processes. The $4.5 billion SR&ED tax credit, while massive in scale, focuses on subsidizing business R&D activity, not the steps leading to commercialization, and can be perceived by early-stage technology companies as a risky source of support.

External and internal constraints underlie federal program design and delivery. Economic theories favoring early-stage R&D (where spill-over benefits in the economy are greatest) over commercialization (where innovations become actual products and new production processes), combined with long-standing interpretations of trade rules, have the effect of steering federal programs toward subsidizing early-stage research inputs rather than enabling market outcomes. Current understandings of trade commitments also influence the use of procurement to stimulate Canadian innovation. Internal federal processes prioritize administrative control over client responsiveness. Treasury Board policies, central agency oversight, and mandatory use of common services create delivery models that are risk-averse, slow, and fragmented.

The result: programs that entrepreneurs describe as bureaucratic and unresponsive rather than strategic enablers; application processes that take many months for major funding awards; and negotiated contribution agreements that hold companies to terms that cannot be easily adjusted to respond to project developments. Decision-making authority for many programs rests with busy ministers rather than expert program staff. Firms spend weeks assembling complex program applications and submissions, only to face unpredictable timelines and what can seem like arbitrary rejections. And the Government of Canada appears to be indifferent to using innovative new products developed in Canada.

The Path Forward: Create a New Delivery Agency

Federal program impact would benefit from establishing a dedicated business innovation delivery agency such as the Canada Innovation Corporation announced in Budget 2022, but not yet implemented. This new agency would greatly improve the impact and outcomes of federal business innovation support programs by taking on delivery of the most important "core" federal national programs, improving their design over time, consolidating and coordinating program processes, and improving user engagement and support. The new agency would assume full delivery of IRAP and ISC, while taking responsibility for client interactions and application assessment for the innovation activity of SIF, and providing recommendations for those SR&ED claims denied as not being eligible R&D activity made by Canada Controlled Private Corporations (CCPCs).

Staffed by experts with technology commercialization experience and empowered to make autonomous funding decisions, the new agency would represent a fundamental shift from fragmented program delivery to creating a federal centre of program design and delivery expertise. Ideally it should be a Crown Corporation to have maximum flexibility to operate at the speed of business, or in the alternate, be an independent subsidiary of the National Research Council, provided it receives new authorities to enable autonomous operations.
Future Priorities for the new Agency

Once in place, a new federal business innovation delivery agency would provide an expert platform for ongoing private sector engagement, act as a central guiding intelligence for the core program suite, drawing on its client interactions and access to ongoing program delivery data on Canadian technology firms and their agendas, and so would be a source of intelligence for the evolution of federal programs to address innovation challenges. Foremost, this work should include supporting the Department of Finance, and Innovation Science and Economic Development (ISED), with ideas to improve growth capital. Without improved domestic growth funding for companies to achieve their ambitions in Canada, federal innovation efforts are subsidizing the American economy with Canadian intellectual property and talent.

Second, the new agency team could examine ways to expand federal program support beyond building innovations in Canada to include technology adoption and adaptation. Most productivity gains come from firms adopting the latest innovations rather than developing their own new ones. Current programs almost exclusively support the "build" strategy while ignoring the "buy" approach that could benefit many Canadian companies. In addition to international innovations, this initiative could include identifying world-leading Canadian technologies and supporting their diffusion into government and large-scale Canadian enterprises.

Third, the expert team at the new agency could work with ISED, Global Affairs Canada (GAC), and Treasury Board Secretariat (TBS) to better define the limits of the constraints on funding commercialization and technology demonstration. This could include examining whether and how other countries provide robust downstream innovation assistance within their trade obligations. Canada's cautious interpretation of subsidy rules risks leaving promising technologies stranded in the laboratory or half-launched start-ups. It is time for a refreshed understanding for federal program designers on what is in fact possible.

Lastly, the new agency would provide an expert platform for programs intended to challenge the Canadian private sector to bring forward "dual-use" innovations that build Canada's capacity to meet sovereign defence, security, and related mandates.

The Stakes

Trade tensions, technological disruption, and geopolitical realignment are reshaping global

competition. To increase productivity, competitiveness, and long-term growth, Canada needs a dynamic and innovative private sector. Canada has invested heavily in innovation inputs—universities, research infrastructure, early-stage R&D—but struggles to convert these investments into commercial success and economic growth.

The opportunity is to change this and build the institutional capacity needed to support companies to innovate and so better compete in a less comfortable world. The Canada Innovation Corporation represents a key first step toward creating a more coherent, client-focused innovation support system, allowing for expert staff to take on delivery of core federal programs with a relentless commitment to their ongoing improvement. This new agency then provides a platform for possible new initiatives supporting growth capital, technology adoption, and dual use technologies as required, and can be a centre of excellence on business innovation program delivery for other departments and central agencies.

Introduction

Canada's productivity challenge is increasingly understood as a business innovation challenge. Despite sustained federal investments, Canadian firms remain less likely than their global peers to develop and commercialize new technologies or to adopt and adapt advanced processes from abroad. The stakes of this underperformance are rising. Trade tensions, U.S. tariffs, and the international return of industrial policy have made innovation performance not only an economic issue but also a strategic one.

In response to these pressures, past governments have built a large and diverse portfolio of program interventions. This paper identifies the "core" business innovation programs within that portfolio—those aimed at assisting individual firm-level innovation outcomes—and examines how these their design and delivery could be improved. Drawing on work by Statistics Canada and Treasury Board, and recent evaluations and policy analysis, the paper illuminates institutional challenges and outlines options for strengthening delivery. In order to provide an expert delivery team focused on improving design and delivery over time, the paper also recommends that a new delivery organization should be created, such as the Canada Innovation Corporation announced in Budget 2022, to provide more coherent, agile, and evidence-based support to firms pursuing innovation in globally competitive sectors.

Concerns about Canada's weak labour productivity growth have become increasingly urgent. Productivity growth matters because it is the foundation for rising wages, public revenues, and long-term improvements in quality of life. A growing body of analysis has shown that business investment in innovation—especially in research and development, new products, processes, and technologies—is central to improving productivity over time. Canada has experienced persistent underperformance in business innovation. Private-sector R&D intensity remains low relative to international peers, and Canadian firms are slower to adopt new technologies or commercialize new ideas at scale.

A wide range of factors contribute to this dynamic, including the structural composition of the Canadian economy and its resource sectors, firm size distribution, access to risk capital, market structure, and the pervasive impact of deep integration into American markets and networks resulting in ongoing loss of talent, intellectual property, and promising technology-based start ups in the United States. With the sudden pivot of the new US administration after the 2024 election, Canada's deepest and long-time economic and security partner has adopted an antagonistic stance toward Canadian integration with the United States economy. Canada now faces an even greater imperative to improve business innovation, productivity, and international competitiveness to sustain Canadian quality of life and future prosperity in a less comfortable world.

Governments can play a positive role encouraging innovation and so productivity. Foremost, a broad range of federal policies and institutions fundamentally influence Canadian business innovation, starting with institutions concerned with a stable, low inflation, an open and competitive economy, and provide key marketplace policies like competition, bankruptcy, intellectual property, standards and measurement, consumer

protection, and labour law, all relevant to enabling a dynamic and innovative economy in which companies survive over time by out competing other firms through activities such as innovating. Second, the federal government also provides substantial funding for higher education research and research commercialization activity, student scholarships and internships, incubators and accelerators, specialized research and technology organizations and more. All of these factors are worthy of ongoing attention as companies draw on them to support their innovation efforts. Governments also intervene directly in the market through policy and program initiatives intended to encourage innovation. This paper is focused squarely a specific kind of intervention - business innovation support programs. It is important to note that the paper is not an argument in favour of government subsidy programs – it is concerned with a discussion of how to improve the design and delivery of these programs to better achieve government objectives to encourage Canadian firms to invest in innovation activities they might not otherwise undertake.

A steady progression of public reports and stakeholder submissions have called out shortcomings in these federal business innovation support efforts. They have diagnosed the need to improve the design, coordination, and delivery of Canada's federal business innovation programs and offered a range of prescriptions for improvements. For example, the Jenkins Panel (2011) notably recommended a major rebalancing from indirect tax-based support to direct support, simplification of the program landscape, and creation of a new consolidated Industrial Research and Innovation Council (IRIC). Robert Asselin and Sean Speer (2021) urged the establishment of an autonomous, mission driven advanced research agency focused on radical innovation and bridging breakthroughs to market ("CARPA, based on the US DARPA model), in order to complement existing supports and drive Canadian competitiveness. The creation of a new agency to focus and consolidate business innovation support also figured prominently in Budget 2022, which proposed launching a Canada Innovation Corporation (CIC) to better address the innovation and productivity challenge. Senator Colin Deacon (2024) has called for consolidation of federal efforts across its many programs and for more entrepreneur-responsive service design and governance modernization to increase impact. The Council of Canadian Innovators (2025) has advocated for a redesigned SR&ED tax credit, reform of federal procurement to support domestic tech scaleups, and the establishment of a more business savvy innovation agency to drive coherent delivery. The Canadian Centre for Innovation and Competitiveness (2025), emphasizing the need for clearer program objectives and performance-based outcomes, called for a dedicated new agency that would in effect combine Budget 2022's CIC and Asselin/Speer's CARPA.

Together, these commentaries and Canada's changing relation with the US clearly suggest that now is the opportune moment to reconsider how federal programs are designed, organized, and delivered to make greater progress stimulating business innovation and so productivity. The focus of this paper is on those programs that are most directly focused on firm-level business innovation support with a view to ensuring that they are designed and delivered in ways that maximize their effectiveness, and whether these programs could usefully be moved into some form of new delivery organization, and what form that

organization itself could take. The intent is to offer up some comments and ideas to feed into the deliberations of the federal government about how to improve these innovation programs, in order to respond to the challenge of the moment to increase productivity, competitiveness and so growth.

To do so, the paper discusses what do we mean to by "business innovation", and how do innovation programs seek to influence entrepreneurs, and in turn what these clients look for in the design and delivery of those programs. It discusses why there are so many federal innovation support programs, and which ones arguably are "business innovation" support programs, and so most likely to incent entrepreneurs and respond to their preferences. From this the paper selects a subset of "core" programs that seem most relevant for this discussion of possible ways to improve federal support for business innovation. Part of this includes considering what are some constraints that influence the design and delivery of federal business innovation programs and work against what entrepreneurs need and want, and what are some possible areas for consideration and action to make beneficial changes.

In short, business innovation is a powerful, measurable driver of productivity at the firm and national level. If Canada is to improve its long-term economic performance, individual Canadian companies need to decide to invest more in competing through innovation. If the federal government is going invest substantially in subsidizing business and its programs are going to be successful in influencing individual business decision-makers, the core programs must target their actual business needs, and be designed and delivered to achieve the objective: more private sector innovation. The next section explores what a good business innovation program looks like and what external and internal constraints influence their design and delivery.

Section 1: What Makes for Useful Business Innovation Support Programs and What Are the Constraints That Impact Their Design and Delivery?

Business innovation generally refers to the implementation of new or significantly improved products, processes, marketing methods, or organizational practices with the goal of enhancing competitiveness, productivity, and growth. Unlike other forms of innovation that aim to address social, cultural, or public service goals, business innovation is focused on economic value creation within firms. It involves commercializing ideas to create or increase sales, create efficiencies and reduce costs, or create or expand into new markets. While innovation in health care delivery, public administration, or the arts may deliver considerable societal benefits, they are outside the scope of this paper. Our focus is on business-led innovation that contributes directly to Canada's productivity and competitiveness through new offerings, enhanced performance, and successful participation in global markets.

The business innovation programs discussed in this paper are ultimately designed to influence private-sector decision-makers who determine whether, when, and how to invest

in innovation. These include startup founders seeking to commercialize new technologies, SME leaders navigating early-stage product development, R&D-intensive companies aiming to compete globally, and senior executives in medium and large firms who weigh innovation investment against other strategic priorities. To be effective, federal business innovation programs therefore have to influence these decision-makers.

Before examining this further, it is worthwhile to pause and observe that the programs discussed in this paper focus on one strategy of business leaders to acquire innovation – developing their own in-house innovations. Business decision-makers can improve their competitive position through innovation by "build" or "buy" strategies. The "build" strategy (the focus of this paper) is when a firm develops an innovation through its own efforts — developing new goods, services, or processes in-house. This is in contrast with a "buy" strategy in which the firm adopts or adapts the innovations of others, such as through licensing intellectual property, purchasing advanced software, or investing in cutting-edge machinery and equipment that embodies the latest production technology. In fact, almost all federal business innovation programs are explicitly geared toward supporting firms that seek to "build" their own innovations (why is discussed below), and so this is the focus of this paper. Yet given Canada's small share of global innovation output, and the global nature of leading-edge business technologies, support for adoption merits renewed attention (also discussed below). Efforts to stimulate an innovative economy need a blend of programs that support both and buying innovation.

To successfully influence business decision-makers to invest in building in innovations, a business innovation program has to meet their needs. Innovation is inherently risky. Firms may wish to contend with technical uncertainty (will it work?), financial risk (can we afford it?), regulatory risk (will it be approved?), market risk (will anyone buy it?), and organizational risk (can we deliver?). Entrepreneurs face competing opportunities to invest their limited capital and organizational attention among innovation, cost reductions, or short-term profit maximization. To shift their strategy toward innovation, they seek a favourable balance between expected reward and manageable risk. They need assured access to a range of affordable resources, many of which can in fact be difficult and complex to access or cost prohibitive against their available resources, such as:

- **ideas** and insights into what is the innovation opportunity and often complex information around the specific technology and what can be done that is novel and beneficial (and so access to, and protection of, the intellectual property required),
- relevant state of the art expert **advice** on how to develop, work out, and exploit the idea as a functioning solution, product or service for customers to use,
- innovation project and company scale up and growth **financing**,
- highly qualified **talent**, including accessing new graduates with the latest skills and talent or seasoned executives who understand leading complex research and commercialization projects successfully,

- **market intelligence** to judge whether there is a market fit meeting a gap or opportunity and so a viable commercial return from the product, and where the opportunity is international market entry planning and support
- Depending on the areas of technology, **technical facilities** and support with meeting standards (e.g., hardware) and undergoing certification (e.g., a new jet engine for the European market), passing extended safety trials (e.g., a vaccine or other life science products), and specialized equipment capabilities (e.g. biologics manufacturing suites, destructive testing facilities) to develop first runs and test out production of an innovation before the company commits and invests in its own capital capacities; and
- Product or service **demonstration opportunities** and access to demanding first users/customers that provide initial revenue but also user feedback and a deeper understanding of requirements.

As noted above, governments influence business innovation by playing an overall foundational role in shaping the environment for business operations, competition, and investment, including macroeconomic stability, competitive markets, sound infrastructure, and the rule of law. Beyond these enabling conditions, as noted, in Canada the federal and provincial governments hugely enable business innovation by funding higher-education research and education across the country's university and college system, advancing knowledge and so increasing the supply of novel ideas and intellectual property and educating and forming highly qualified personnel that becomes the talent supply for firms. Government funding programs for these higher-education activities and outputs therefore immensely benefit and enable an innovative economy. However, while an in-depth discussion of the design and effectiveness of federal programs supporting higher-education and other public sector suppliers of research and education, and tech transfer and commercialization, are worthy subjects, they are outside the scope of this paper.

Instead, our focus here is on how government can and does also play a more direct role in reducing the risks facing innovation projects of individual firms and reducing their costs when investing in innovation through subsidy programs. These subsidies received by entrepreneurs take the form of:

- direct funding to individual firms, such as grants or contributions, and
- indirect funding through tax credits.

These programs can be more or less effective assisting individual firms depending on their design and delivery. Based on the experiences of the author, entrepreneurs consistently identify important characteristics that make an innovation support program valuable.

- Entrepreneurs want programs that are easy to find, and easy to initially engage with, such as through the accessibility of the program's on-line presence and materials, or through the quality and skill of its program delivery team (see below).
- Programs need to be easy to understand, with a clear application process and decision-making steps and timelines, so that firms can plan for and resource their participation in the process, and estimate their likelihood of success.

- Programs then need to operate with transparent and predictable rules.
- If companies succeed and receive support, programs should seek to limit compliance burdens and costs, such as the reporting requirements or processes for submission of claims for reimbursement.
- Although not always possible depending on the design of programs, companies also want flexibility in funding, to be able to evolve their project as they learn from their project or encounter unplanned challenges. Multi-year funding, flexibility in eligible costs, and the opportunity to scale funding or apply for follow-on awards as the project successfully advances.
- The program application and decision-making process burden on the firm should be commensurate with the likely amount of funding the company will receive.

Companies prefer programs where staff are knowledgeable, accessible, and empowered to make decisions or resolve issues with them in real time. Ideally, program delivery staff should understand the basics of the technologies involved, know about the targeted market segment, have some prior experience in innovation-based entrepreneurial realities, and so be able to work with the business in their language and ideally at the speed of business.

Programs models that work with the company on their project or initiative as it advances seem more likely to help the firm bring an innovation to market than passive programs that hold an upfront, relative-merit, "beauty contest" to "win" the best-written proposal against the program's criteria. The best-written application is not always the most innovative proposal, with clearest path to market, with a team most able to bring their idea to reality – interactive staff engagement with the firm examining the proposed project along with on-site assessment of company capabilities provide vital information.

Overall, entrepreneurs seek relevance: programs that address their real risks and challenges in real timeframes. However, despite decades of experience providing subsidy programs, federal business innovation efforts often fall short of meeting what entrepreneurs say they need. Arguably, a large part of the explanation is the result of the operation of external and internal constraints on federal innovation program design and delivery.

External Constraints on Program Design and Delivery

Federal innovation programs have long prioritized early-stage R&D, often at the expense of downstream activities such as prototyping, product development, and market demonstration. This emphasis reflects longstanding economic and legal considerations. R&D generates broad spillover benefits that firms cannot fully capture, justifying subsidy under conventional economic theory. In contrast, commercialization and scale-up activities are perceived to yield benefits that return primarily to the firm itself, making the case for public support less clear-cut. This underpinning economic rationale has traditionally been pervasive throughout the federal policy and central agency community, creating a strong shared understanding and norms regarding what is an appropriate federal intervention, and how it should be designed. Manifestations include a clear preference for funding

innovation inputs to companies, such as university R&D collaborations or student internships instead of funding the companies themselves (in contrast to the author's experience that business leaders prefer to decide what research and which talent they want and from where). It includes a bias toward funding earlier stage exploratory research and avoiding funding translational activity like product development and demonstration projects. And, overall, it biases federal support programs toward encouraging businesses to invent and "build" their own innovations here in Canada over strategies to acquire leading international technology advances and adopt and adapt it ("buy") to improve their company's productivity and competitiveness. This federal program design preference well-reflects the economic literature, in which the spillovers are higher for early-stage research, while commercialization and technology adoption benefit the individual company, which captures most of the beneficial returns privately. However, Canada is a small economy in a large world full of exciting advances, and other countries have made substantial gains through being a fast adopter. Further program design work and guidance is required to balance the spill-over benefits of early-stage research into the wider economy (and internationally) against the reality that companies must successfully commercialize at least some of their research if they are to stay in the innovation business and contribute to the economy.

International trade rules reinforce the early-stage focus. Under the WTO's Agreement on Subsidies and Countervailing Measures, business R&D, environmental adaptation of existing facilities, and regional development subsidies were once explicitly protected. Although these provisions lapsed at the end of 1999, countries—including Canada—have continued to frame programs around those themes to avoid potential trade challenges. Program language often reflects this, even when underlying objectives are broader. The legacy focus on regional development also shapes federal innovation programming outcomes: an important project that builds innovation capacity in a disadvantaged region may not be subsidizing world-competitive business innovation outcomes.

International trade commitments-- such as the Comprehensive Economic and Trade Agreement between Canada and the European Union (CETA) – also impact use of procurement to stimulate innovation. Canada agreed to preclude federal, provincial and municipal government use of procurement to favour Canadian firms. While CETA exceptions include limited tendering for prototypes, or a first good or service, developed at government's request in the course of research, experiment, study or original development, it is not yet clear how much room these provisions will provide in practice for using procurement as a tool to stimulate innovation.

In short, the underlying economic rationale for the role of government in subsidizing business innovation and international trade law have created a body of acceptable norms within the federal public service. They have led to a persistent program policy imbalance: firms are supported in generating new ideas but receive less help in bringing those ideas to market or adopting and adapting the innovations of others. These norms are woven into the

fabric of what is allowable for subsidy, or "transfer payment", programs and the activities and costs government can help companies fund, as the following section discusses.

Internal Constraints on Program Design and Delivery

Federal innovation programs operate within a dense internal policy architecture designed to uphold transparency, stewardship, and accountability for use of public funds. Government expenditures are required to comply with policy and program guidance from central agencies - most notably Treasury Board Secretariat (TBS) and its Office of the Comptroller General (OCG) - and the scrutiny of Parliament and its committees and the agents of Parliament, such as the Parliamentary Budget Officer or the Auditor General of Canada. All program spending must comply with the Financial Administration Act (FAA), which requires authorization by Parliament and adherence to formal delegation and oversight requirements.

The Policy on Transfer Payments (PTP) is the central policy of the TBS policy suite governing the design and delivery of federal subsidy programs, and so applies to all of the business innovation programs discussed in this paper (with the one exception of tax credits discussed below). Transfer payments include:

- **Grants**, which are paid to the recipient up front when the applicant meets the pre-set program eligibility criteria and recipients are not required to account for how the money was spent and they are not normally audited;
- **Contributions**, in which recipients enter into a contribution agreement (CA) and submit claims for reimbursement for eligible activities and costs against progress reports and receipts, after review by program staff, often subject to audit; and
- **Repayable contributions**, where the contribution must be repaid at a later date, or conditionally repayable on conditions such as successful commercialization, in the form of milestone repayments, royalties, or company gross revenues[1].

The PTP is focused on ensuring accountability, transparency, and effectiveness, and the policy sets out a range of requirements: programs must demonstrate a clear public purpose, assess whether a transfer payment is the most appropriate approach, and justify the necessity of public funding without displacing private investment. Departments are required to apply a risk-based approach to oversight, ensure proportional administrative burden, monitor performance, and publicly report on results. Reflecting the economics and trade law biases noted above, the transfer policy also requires that program payments support a broad public purpose and avoid conferring disproportionate private benefit, negatively impacting programs intended to fund activity leading to commercialization (manifesting the federal structural bias in favour of early-stage R&D and against the later stages of the innovation cycle). In practice, this framework amounts to requirements that

[1] Other forms of transfer payments also exist, not relevant to this paper, such as transfer payments to provinces or classes of recipients set out in legislation (e.g., Equalization payments to the provinces and territories).

federal program designs prioritize formal oversight and accountability elements over agility and achievement of outcomes – a root problem underlying the suite of federal business innovation programs.

For instance, to achieve these requirements federal innovation programs often default to using contribution agreements—favoured for their control over expenses as recipients are paid for pre-approved expenses categories only after submission of receipts—even when up-front grants would provide the flexibility for the client. Contributions allow all pre-negotiation of activity, formally documented in the agreement (which is a legal contract between the firm and department). The agreements often lock down in detail the specific activities, costs, process, timeline and emphasize cost minimization and expenditure control. For large-scale projects, drafting the agreements often requires clause by clause negotiation between the delivery line department and the company. The draft agreements are then reviewed again clause by clause with central agency staff (sometimes resulting in changes necessitating further negotiations with the company) and then reviewed for approval by Treasury Board ministers.

Clearly very important accountability, oversight, and expenditure control values are being prioritized and upheld in such circumstances. However, these realities also impact program usability, agility, and perhaps even a focus on achievement of intended outcomes, as following the agreement can overwhelm a project as it evolves. Changes to the agreement -- such as seeking to revise the allowable activities, eligible costs, or adjust the intended project outcomes -- can take extensive internal review, re-negotiation, and depending on the extent of change, may require further scrutiny by central agencies and even subsequent ministerial engagement.

These constraints are reinforced by the oversight culture of central agencies, notably the Treasury Board Secretariat and the Department of Finance, whose focus on compliance with stewardship and uniformity objectives across government can outweigh considerations of an individual program's client usability or effectiveness. The influence of central agency "challenge function" commentary to departments, and their advice to Ministers during the approval process, provide central agency staff with extensive influence over program design and intended delivery plans, such as whether a program uses repayable contributions, grants, or procurement and what are acceptable costs and administrative burdens for the client. Yet despite this very real influence over what gets approved, the expertise of central agency staff is in their rules and processes, and not business or technology development and commercialization or therefore what makes for an effective business innovation program support. They are not held accountable for achieving innovation results—responsibility for outcomes rests solely with the accountable Minister and officials of the delivering department or agency. As a result, few incentives exist for risk-taking or user-centred experimentation. The net effect on the program design and approval process is a system in which administrative controls dominate, often at the expense of client experience or impact.

Federal line departments, agencies and departmental corporations are also required to use federal common service agencies for key functions, which can limit agility. Justice Canada is involved in funding agreements; Shared Services Canada is responsible for IT systems, what are allowable digital platforms, and the software departments use for delivery of their programming; Public Services and Procurement Canada (PSPC) and Shared Services (for IT) run all procurement processes for the delivery team to use; the Public Service Commission and the Office of the Chief Human Resource Officer (OHRO) of TBS are responsible how work is classified, promotions occur, and benefits and remuneration levels are set for delivery teams.

These entities are all subject to intense ongoing public scrutiny and Parliamentary oversight regarding achievement of their legislated mandates. To do so, they must create rules and then monitor and ensure compliance with their imperatives for all departments and agencies within their service mandates. These requirements may work against business innovation program delivery. Legal interpretations may prefer risk avoidance over flexibility. Procurement processes may emphasize open calls for proposals and selecting lowest cost proposals rather than most innovative solutions. Digital platforms may be designed around conformity with national standards and cyber-security controls, rather than speed, flexibility and adaptability, usability, or experimenting with new or more innovative approaches and solutions. The composition and skills of the teams that deliver the business innovation programs are directly influenced by HR central controls. All line departments must adhere to federal human resource management policies in the hiring, classification, compensation, and promotion of public servants. These frameworks ensure that staffing decisions are merit-based, non-partisan, and consistent with broader public service values. These requirements collectively shape not only how innovation programs are delivered, but also the capacity of departments to build and retain the specialized teams necessary to serve business clients effectively.

It is important to underline the value and importance of common services providers. As per the above examples, they uphold core public sector values like value for money for tax dollars, or cyber security for federal agencies. They also enable efficiencies of scale, avoid overlap and duplication, can focus on quality in delivery, and support many specific objectives. Yet these wider benefits come at costs. Staff in the business innovation program teams depend on these third-party public servants for key inputs to their work. For legal advice on contract disputes or buying new software, delivery teams depend on others, adding time, complexity, conformity requirements, and so administrative burden working against moving at the speed of business.

This makes the actual form of the federal organization itself important, as the organizational form influences how much the foregoing discussion impacts its program delivery. Delivery agencies can be:

- **"Line" departments**, like Innovation Science and Economic Development (ISED), and the Regional Development Agencies (RDAs), like the Atlantic Canada Opportunities Agency (ACOA), report directly to their responsible Minister (who reports to Parliament

for their activities), and are parts of the "core" public service and are most subject to Parliament, ministerial/Cabinet, and central agency oversight, and so influenced strongly by the rules, policies and processes discussed here, and are most often required to use whole-of-government service delivery agencies for key internal functions such as IT, procurement, and human resource activities. The enabling underpinning legislation of these acts and the Financial Administration Act place final program funding decision-making with the accountable minister. Ministerial involvement in funding decisions opens the door to political considerations, and directly impacts the timeliness of program delivery as Ministers and their advisors are extremely busy and time must be found to brief them and receive a formal decision, and as the central agencies may even delay communication of program decisions as they manage government communications and media.

- **Departmental Corporations** such as the Natural Sciences and Engineering Research Council (NSERC), and the National Research Council (NRC), report to Parliament through Ministers, but have greater freedom to operate than departments (e.g., they can be separate employers with greater flexibility in HR practices), and their chief executive officer may be empowered to make final program funding decisions. However, they remain subject to many of the main elements and bodies of the federal executive and Parliamentary oversight and accountability system, and they often also are required to use common service providers for their IT etc.
- **Crown Corporations** like the Business Development Corporation of Canada (BDC), and the Export Development Corporation (EDC), have even more independence. While Cabinet appoints their executive heads and boards, and often must review and approve their borrowing and spending plans for a year, direct involvement in their operations is limited. They provide their own HR, IT, procurement policy and delivery, manage their own communications, and their chief executives make final funding decisions.
- **Third-party delivery agencies**, usually not-for-profit organizations, which are controlled by the federal government through the terms of their funding Contribution Agreements.

Organizational form and freedom to operate directly impacts delivery quality. Line departments delivering business innovation programs predominately recruit career public servants from general Government of Canada labour pools and staffing processes. Given the role that their accountable ministers play in overseeing departmental activity, these generalist public servants and their skills and experience make sense – they are habituated to public sector values, the norms of central agencies, and supporting elected officials and their staff, Cabinet, and Parliament with oversight and decision-making. However, Crown Corporations, or Departmental Corporations like the NRC have greater flexibilities in their authorities and processes. For instance, they can delegate financial decision-making down to the expert staff level, and so speed up decision turn around for clients. They have more flexibility in recruitment, classification and remuneration, and so can recruit private sector expertise into their delivery teams, providing them with more expert understanding of technology and business innovation experience. These differences influence the quality of investment decision-making, and the ability of staff to understand and interact with their

business clients. For these reasons, Crown corporations or departmental corporations make good sense as funding program delivery agencies.

Summing up, administrative rules, organizational constraints, and legacy practices shape how federal innovation programs are designed and delivered. These include external constraints such as the economic justification for subsidies to business for research and innovation and international trade practices. Internal constraints include Treasury Board policies, central agency challenge functions, and the role of mandated central service departments and their influence on the speed and flexibility of program delivery agencies. Together, the constraints help explain why programs appear to be designed to be overly complex, process heavy, risk-averse, or fragmented and disconnected in delivery. We will come back to what can be done to make improvements in the recommendations.

But before the recommendations, and with these constraints in mind, we can turn to examining why there are so many federal "innovation" programs, and which ones may in fact be the "core" business innovation programs that are most important to improve.

Section 2: Government of Canada Business Innovation Programs

Identifying federal business innovation programs is difficult. By way of putting the bottom-line up front (BLUF), this paper suggests that attention should focus on improving a "core" set of federal business innovation support programs that:

1) directly support individual businesses to incent their investment in R&D and commercialization and related activity,

2) are national in focus, available across the whole economy, and

3) have sufficient scale and delivery resources to arguably have a noticeable impact on the Canadian economy over time.

While Table 1 of Section 6 in the Public Accounts of Canada for fiscal year 2023–24, indicates federal disbursements in "transfer payments to industry" was $11.13 billion, sorting through the expenditure programs to find those encouraging business innovation program is challenging. There is no federal registry of business innovation programs, nor central guidance or requirements as to what can be called a "business innovation program". The Jenkins Panel, in 2011, found over 60 individual federal programs with an innovation objective. Working with more comprehensive data, in 2018, the Treasury Board Secretariat and Statistics Canada, using their Business Innovation and Growth Support (BIGS) program tool (discussed below), identified 134 business innovation programs, spending $4.5B in the latest year (and not including the SR&ED tax expenditures of $4.2B that year).

However, many of these programs are not focused on influencing individual business decision-makers to invest more in using innovation as a competitive strategy. Instead, they fund non-business ecosystem actors for objectives such as building the capacity of the

Canadian research and innovation eco-system, or to support production of innovation inputs noted above (e.g., ideas, talent). These programs play vital roles and warrant in-depth examination elsewhere to consider how they can be improved. However, the focus here of this commentary is on improving business innovation programs, and so programs directly subsidizing individual firms themselves.

That still leaves a range of programs. Departments and agencies provide programs for a array of objectives such as investment attraction, regional development, equity and inclusion for excluded groups, environmental objectives, and more. These are important public policy objectives. But if they are not focused squarely on empowering firms to increase their individual business innovation, it is harder to optimize their design, delivery, and performance.

Lastly, if the objective is a more innovative and productive Canadian national economy, it is important that program in question have sufficient scale to actually influence Canadian outcomes. There are many beneficial small scale, targeted, and nimble programs that have value. However, this paper seeks to focus on the programs that will have larger scale impact.

In short, while there may be 134 programs that self-describe as supporting business innovation, arguably there is a much smaller number of "core" programs. Using the three ideas at the beginning of this section, an illustrative set of "core" federal business innovation support programs include: the Scientific Research & Experimental Development (SR&ED) Tax Incentive, the Industrial Research Assistance Program (IRAP), the Strategic Innovation Fund (SIF), and the Innovations Solutions Canada (ISC) research and procurement program. Here is a short overview of each of the four programs:

Scientific Research & Experimental Development (SR&ED)

- The policy and design of the SR&ED tax incentive is the responsibility of the Department of Finance while the delivery and client interaction is undertaken by the Canada Revenue Agency (CRA). SR&ED is Canada's single largest business R&D support program, open to Canadian and international companies of all sizes. The program provides companies with 1) an income tax deduction in which they can deduct eligible SR&ED expenditures from net income for tax purposes, and 2) an investment tax credit of 15% on qualified SR&ED expenditures, and up to 35% for Canadian Controlled Private Corporations (CCPCs) that meet income and taxable capital thresholds on up to $3M of eligible expenditures annually (rising to $4.5M for taxation years starting after December 2024). This tax credit for CCPCs is a refundable tax credit, meaning eligible firms receive the benefit amount as a payment from the CRA even if they do not in fact have tax owing. Companies apply for support by submitting R&D expense claims as part of their overall tax filings, with decisions made by CRA tax administrators, backed up by technology and R&D advisors and, if required, specialized auditors. In the 2024-25 fiscal year, SR&ED provided $4.5 B investment tax credits to over 22, 000 claimants (although

2024-25 data is not yet available, in the previous tax year, 57% of these payments were refundable).

- Strengths: SR&ED provides a program of general application in all regions and sectors of the Canadian economy through the federal income tax system – it is Canada's most truly national business innovation program operating at scale and with the potential to "move the needle" regarding economy-wide outcomes. By being open to all firms undertaking eligible R&D in all regions and sectors, it does not pick winners, allowing the creativity and initiative of individual business leaders to receive support for their innovation initiatives.

- Weaknesses: There is an extensive body of commentary about aspects of the SR&ED program and how it should change. Commentators have and continue to suggest specific program eligibility changes, and the creation of new tax expenditure programs (e.g., patent boxes). For the purpose of this commentary, the focus is on program delivery. SR&ED is a program of general application, open to any company meeting the program eligible activities. It rewards both domestic and international companies for their business expenditures based on demonstrating compliance with rules around research and development activity, without consideration of their intended outcomes, commercialization pathway to markets, or resulting economic activity benefiting Canadians. Nor does the R&D expenditure have to be incremental in any way, allowing year over year subsidy for continuing eligible activity. Furthermore, program compliance is complex (resulting in a national ecosystem of tax consultants funded through SR&ED claims), and claimants are not assured of the benefit until their tax filing is complete and accepted. In the case of CCPCs that are technology-based SMEs, rejection of their claim for R&D costs they have already incurred can have profound impacts on the company's financial health and so continuation. Also, CRA does not provide advisory support for users regarding the program, nor in support of succeeding with achievement of their objectives for their R&D activity (as IRAP does, discussed below). Often described as time-consuming and high-risk, technology start-up founders anecdotally report spending weeks assembling claims only to face re-assessment and audits months later, and if CRA ultimately rejects a claim the unexpected tax liability can be "catastrophic" for cash-strapped technology SMEs.

- Overall, for business, the SR&ED tax expenditure of over $4B annually supporting over 20,000 firms is, by sheer size, the primary Canadian nosiness innovation subsidy program and has long been the backbone of federal support for business innovation. It dwarfs all other business innovation support programs. However, SR&ED notably over-focuses on subsidizing the costs of allowable R&D activity. It excludes costs related to commercialization, and it is paid regardless of project outcomes. Overall, it is likely that the program's impact on business innovation outcomes would benefit from a shift toward a focus or greater support for R&D project achievement and commercialization costs. For CCPC firms relying on use of the SR&ED refundable tax credit, the current risk

of an unfavorable review and rejection of a claim is a key challenge for the program, as it discourages use, creates uncertainty for clients, and when rejections occur, can be catastrophic for small or resource constrained firms.

Industrial Research Assistance Program (IRAP)

- IRAP is a program delivered by the National Research Council (NRC) that provides non-repayable contributions and expert advisory services for pre-approved SME R&D projects (~C$400 M per year). IRAP is delivered by a team of 260+ Industrial Technology Advisors (ITA), recruited based on their business and technology research and commercialization expertise, who are embedded in locations across the country.

- Strengths: Like SR&ED, IRAP is national and sector agnostic, supporting over 3,000 SMEs a year. IRAP does not use the norms of academic funding programs to award financial support – such as open calls for proposals against published criteria and then relative-merit assessments to select the projects with applications that best addressed the criteria. Instead, companies work with an ITA to develop an acceptable project, which then is approved by more senior experts in the IRAP management team. The ITA provides technology and business advice through to the project's completion, and the program allows flexibility for changes over the life of the project. Lastly, IRAP supports access to new markets. It delivers the Canadian International Innovation Program (CIIP) on behalf of Global Affairs Canada and is Canada's member of the European-centered, international EUREKA network of technology funding organizations. These arrangements allow IRAP to support SMEs clients to enter international markets, through providing advisory services, funding, and linkages partner SMEs and customers in a wide range of countries. The combination of program flexibility run by expert staff with delegated decision-making are major structural advantages for the program's ability to work effectively with businesses.

- Weaknesses: Although IRAP can provide up to $10M in support, in practice to manage demand most IRAP projects are limited in size and so under $200k in funding. Like SR&ED, IRAP also by design does not fund commercialization costs nor support company scale-up or growth funding needs. That said, IRAP is one of the Government of Canada's most popular programs. It is praised for its expert "hands-on" ITAs and flexible milestones and for usually playing a "small but catalytic" role for early-stage start-ups as the advisors help companies refine their plans and connect to other programs and investors. How IRAP's expert staff and distributed national presence can be leveraged by other programs is worth further consideration (see below). Programs that embed trusted advisors (with private sector technology research commercialization experience) like IRAP align closely with what firms say they need from program delivery staff. As also discussed below, hiring subject matter experience is a best practice, and the organization of federal business innovation should enable and encourage hiring staff with private sector expertise.

Innovative Solutions Canada (ISC)

- ISC is centrally coordinated by ISED on behalf of a range of participating federal departments. It consists of two "streams". ISC has a "Challenge Stream" in which ISC posts a challenge on behalf of a federal sponsoring department or agency, in which during Phase 1 a short-list of selected company proposals receive funding to undertake a short R&D project to de-risk their proposed solution to the challenge. The strongest projects then are selected for Phase 2, in which the companies build and validate a working prototype of their proposed solutions. In contrast, the ISC 'Testing Stream" allows departments to buy and test pre-commercial prototypes in real-life settings. Designed to act as a first-customer pathway, ISC is meant to attract and develop Canadian innovations that departments and agencies may subsequently purchase. ISED departmental staff run the ICS program, supported by business/technology experts from IRAP (see above) and subject matter experts in the client departments. Successful innovations that departments want are acquired through Public Services and Procurement Canada (PSPC) staff and processes, the federal common service procurement department.

- Strengths: Analysts have long called for the Government of Canada to combine the federal spending power with the needs of federal departments in order pull on the Canadian innovation system for novel solutions and for the government to be a demanding first customer. The ISC is intended to play this role and match the long-standing American federal government's Small Business Innovation Research (SPIR) Program.

- Weaknesses: The ISC program has suffered from uneven support from departments, given that its creation was funded by requiring them to reallocate prescribed amounts of their existing funding to ISC, which added new costs they now had to cover for the program's R&D stages prior to the procurement. In short, it was not voluntary, and it increased the total costs for departments seeking a solution to a problem. Furthermore, the extended timeline and the program's inherent uncertainty (not all innovative solutions work and meet the customer's needs) require client departments to have patience and flexibility. Lastly, firms that successfully navigate the various program stages have no certainty their solutions will actually be purchased. Company enthusiasm at Phase 1/2 often turns to frustration as departments do not buy the prototype. Budget volatility and cancelled challenges are now adding to program uncertainty. Budget 2023 announced reductions to departmental contributions to the ISC program, and consultations on whether such a program needed a legislated foundation to support it – the results of which have yet to be made public. Lastly, as consideration is given as to how to renew ISC, care is required to ensure compliance with international trade requirements such as CETA.

- This program needs to be revitalized in order to provide a procurement pathway for Canada to pull on its innovation ecosystem to develop innovative solutions for Canadians. Consideration could be given to combining its delivery with the expert IRAP team, which would also allow IRAP's parent organization the National Research Council – which has authority to undertake its own procurement outside of PSPC – to focus attention on achieving successful commercialization.

Strategic Innovation Fund (SIF)

- Delivered by Innovation Science and Economic Development (ISED), this direct funding program - like IRAP - does not use open calls for applications and relative-merit competition to select successful projects, but instead provides very large, negotiated contributions for major R&D, net-zero, and industrial-transformation projects (at present a total of $9B has been committed to 127 individual projects). Project proponents approach ISED with project proposals and enter into a pipeline of projects.

- Strengths: Based on the longstanding history of federal programs that have played the role performed by SIF, it can be argued that the program exists to meet a revealed preference of parts of the Canadian economy. For certain technology sectors, most notably aerospace, defence, and automotive, and at times also IT and pharma, the program assists companies active in Canada to compete to win research and innovation-related mandates from their international head offices, or assist them with over-size investments required to re-tool, modernize, or to co-fund the launch a major innovation-related campaign.

- Weaknesses: Given SIF's role as the source of high-dollar value support in the federal program suite, SIF projects undergo a very lengthy and resource-intensive application process, delivered by a project team of public servants located inside a major federal department, in which SIF is only one of a range of departmental program, regulatory, and policy mandates. As ultimate decisions must be made by the Minister of ISED or, in the case of even larger funding awards, by Cabinet, SIF decisions compete for ministerial attention, in turn requiring additional time for project decisions or subsequent project changes. In short, SIF is a slow, large-bore instrument, that works best for select projects that can sustain their participation in the deliberative process.

- Overall, SIF is seen as a route to very large non-dilutive support to firms, but entrepreneurs see it as a marathon as application dossiers can run hundreds of pages and approval can take 12-20 months—too slow for most scale-ups. It seems likely that there will continue to be a federal program instrument such as SIF for the foreseeable future. However, there are opportunities to improve its design, delivery and impact (see below).

This overview of selected programs allows for some initial commentary about four programs that are national, operate at-scale, and are business-focused. The overviews provide some sense of their design differences, strengths, and weaknesses. Given the focus of this commentary on improving business innovation, the following section discusses what information federal program evaluations provide on impact.

Evaluation of the Effectiveness of Federal Business Innovation Programs

The Government of Canada lacks the program evaluation tools and insights needed to determine which federal business innovation programs are most effective. The Financial Administration Act requires every department to review, at least every five years, the relevance and effectiveness of each program a department or agency delivers. The Treasury Board's Policy on Results and Directive on Results (2016) requires that departments and agencies have an in-house, neutral evaluation function, and a rolling five-year Departmental Evaluation Plan, covering all of their grant and contribution programs expending more than $5M a year, with the public release of the resulting evaluation reports.

Despite these requirements, and the range of supporting guidance on evaluation from Treasury Board Secretariat, in practice there is much variance in the evaluations. They can use metrics that are not standardized and frequently lack the rigour needed to assess causality or comparative performance. As a result, there is no consistent baseline to evaluate the effectiveness or efficiency of business innovation programs, either individually or in relation to one another.

This longstanding limitation is now beginning to be addressed through the Business Innovation and Growth Support (BIGS) initiative—a joint effort of the Treasury Board of Canada Secretariat and Statistics Canada. It is through the BIGS project that the comprehensive inventory of 134 programs was identified. More importantly, BIGS has begun to build a harmonized framework for tracking program performance by linking administrative data from these programs and their clients with Statistics Canada's Business Register and firm-level outcomes using the Linkable File Environment. This allows, for the first time, a quantitative analysis of how participation in specific programs correlates with firm level outcomes such as employment, revenues, exports, profitability, and R&D spending.

That said, insights are limited and relatively high level at this stage. BIGS analysis shows that participation in federal business innovation programs between 2015 and 2020 was associated with statistically significant increases in both revenue and employment (the latter of course being a metric of debatable appropriateness, given the intent for innovation-based productivity improvements over time). Outcomes for profitability were more mixed—generally positive for firms that increased R&D investment, but muted or negative for the broader cohort of funded firms during the COVID-19 period. BIGS so far has not yet provided definitive insights into which federal programs are strongest by way of positive impact, nor which design and delivery features are key to impact, although this work has provided some initial insights that suggest more insights may be forthcoming in the future.

Also of interest, clean technology programs like SDTC stand out for delivering the strongest outcomes in revenue growth, employment, R&D spending, and exports. Regarding the four "core" national programs outlined above, BIGS found that the Strategic Innovation Fund (SIF) was meeting its objectives of promoting large-scale industrial R&D and commercialization. IRAP is recognized as an effective model by combining financial and expert business technology advisory support. Although SR&ED has not yet been fully assessed through BIGS, complementary studies suggest that the greatest impact occurs when paired with grant-based programs, given their focus on specific projects intended to achieve results. For the remaining core programs, BIGS has not yet published program-specific conclusions, underscoring the need for continuation of this work and broader and more consistent outcome tracking across programs.

The Absence of a Centralized Guiding Hand

Budget 2022 proposed the Canada Innovation Corporation (CIC)—a new Crown Corporation focused on improving business-facing innovation support. The CIC as announced was to build on IRAP and include a broader mandate to experiment, adapt, and scale programs that were demonstrably effective.

CIC represents an exciting opportunity to introduce an intelligent guiding hand to the federal program portfolio. At present, the 134 innovation-related federal programs and even the select 4 "core" programs discussed above, are delivered by different departments and agencies, with no active central coordination of delivery (although as noted above, TBS and Finance have central positions in program approval and funding decisions). While ISED holds the overall business innovation mandate among federal line departments, it lacks authority over many of the range of other federal departments and agencies delivering their own programs, and ISED has many mandates of which innovation program delivery is only one.

Previous efforts have been made to improve voluntary coordination among delivery organizations to provide more integrated interaction with clients, such as the Accelerated Growth Service (AGS). Initiatives such as this have aimed to streamline support for high-potential firms by bringing together program delivery teams from multiple departments and agencies—such as IRAP, BDC, Global Affairs Canada, and others—under a shared banner. While voluntary coordination platforms like this can be successful in identifying promising firms and facilitating introductions, they struggle to reduce the underlying administrative complexity that businesses face. Each participating program continues to have its own legal mandate and accountabilities, with their own individual Ministers authorizing funding decisions, and must conform with their existing eligibility rules, timelines, program processes, and reporting requirements. Firms therefore still have to invest significant time and effort navigating a fragmented support landscape. From the client's perspective, it is a more coordinated front end, but not a coherent, streamlined, integrated experience. AGS is layered atop a structurally fragmented system.

The rationale for CIC was clear: to consolidate expertise, improve delivery, and create a centre of excellence for business innovation support. As a Crown Corporation, CIC would not be subject to all internal controls that bind line departments, it would not have to use federal common service providers, and it would be free to go to market for expert staff with private sector technology commercialization and business experience, allowing it to operate more flexibly and at a pace aligned with private sector realities.

However, Minister Freeland, the then Minister of Finance, announced in late 2023, and reiterated in Budget 2024, that the implementation of the Canada Innovation Corporation would be delayed, at that time stated as until no later than 2026-27. This delay was positioned as providing additional supporting time for a seamless transfer of IRAP from the NRC to CIC and to allow for related consultations about the new Agency, Speculation suggests it may also contribute to expenditure reduction objectives by delaying the need to find the core funding the agency would require for functions in addition to IRAP delivery.

If CIC proceeds, there is a strong case for transferring the delivery of all or parts of the core programs identified in this section into its mandate to integrate program requirements and facilitate client movement from one program to another as their needs evolve, professionalize their delivery team with expert staff, and compile program data to become a centre of expertise for both core programs and any initiatives the government wishes to advance at a national scale. As the core programs are onboarded a key task will be improving delivery quality: reviewing each program one by one and ensuring the programs have clear objectives, are well designed, and show results. As the agency build its expertise it could also serve as an internal advocate within the federal system for program experimentation, new initiatives, and for better integration between innovation supports and marketplace frameworks.

Summing Up Section 2

Strengthening business innovation support in Canada requires sustained attention to delivery design, staff capabilities, policy integration, and governance. A more coherent system, informed by user needs and grounded in real-world constraints, will be essential to realizing the full potential of public investment in innovation. There is opportunity for ongoing simplification of program processes, faster turnaround between application and receipt of a first cheque, and for more listening to the voice of the client community in program design and delivery. Establishing an agency to act as a federal centre of expertise and as the guiding hand for all or parts of the “core” business innovation programs, staffed by people with private sector experience, seems like the essential heart of an agenda to improve program outcomes.

The next section builds on these preliminary observations to examine how the Government of Canada could potentially improve the overall design, delivery, and organization of the federal business innovation program suite.

Section 3: Areas for Further Consideration

In order to improve the impact of federal programs, the following ideas are suggested for discussion:

Create a Dedicated Business Innovation Delivery Agency

The current fragmentation of federal business innovation supports weakens both their effectiveness and their visibility to firms. Program mandates are distributed across multiple departments, and loose coordination mechanisms such as the Accelerated Growth Service have had limited ability to integrate support across program lines. A more strategic approach would consolidate responsibility for delivering the core suite of business-facing programs (or core elements thereof) within a single agency. This would improve consistency, reduce duplication, and create a central point of accountability for business-facing innovation delivery.

To achieve this needed reform, the federal government should establish a dedicated agency for business innovation program delivery. Established as a Crown corporation it would have the flexibility to hire private sector expertise at market rates, it would do its own procurement, legal, IT, and contracting services, and so would work to ensure it operates at the speed of business with the responsiveness and accountability expected by business clients. (The next best approach would be a subsidiary of the National Research Council, a departmental corporation, with autonomy in decision-making, human resources, and procurement, which could also be granted special autonomy to provide its own IT).

The new Agency would act as a whole of government program policy hub—developing new approaches for ever more effective programs, testing new delivery and support models through pilot initiatives, and advising other departments and central agencies on needed reforms. As discussed below, this would include work to address gaps in federal program supports and work with central agencies on refreshment of federal policy guidelines.

The Agency Should Deliver All or Part of the 4 "Core" Business Innovation Programs

As the central federal platform for business innovation programs, the new agency should take on:

- **IRAP**: Delivery of the Industrial Research Assistance Program, including all related staff and funding.
- **ISC**: Delivery of the Innovation Solutions Canada program, including all staff and funding, and be provided with authority and staff required for the delivery of the procurements arising from the program, improving the transition between client companies being funded to research and develop solutions for federal challenges, and their solutions successfully being bought and used to address those challenges. Care will be required in the renewal of the program to address CETA requirements.
- **SIF:** For the innovation-related SIF program activity, responsibility to manage client interactions, program delivery with clients, application assessment, and funding

recommendations should be transferred to the new agency under delegated authority from ISED. ISED in turn should retain overall responsibility for the program and support for all Ministerial and Cabinet decision-making, and post-decision delivery of funding disbursements to clients.

- **SR&ED:** Recommendations to CRA regarding SR&ED claims for refundable tax credits from Canadian Privately Controlled Corporations (CCPCs), that have been denied as being not consisting of eligible R&D activity (otherwise all aspects of the program would remain with the Canadian Revenue Agency).

For this core program suite, the new delivery agenda should work on unifying or simplifying intake application processes, such as harmonizing eligibility criteria where feasible, offering dedicated concierge-style navigation for an individual firm to access the agency's group of programs, ensuring the seamless transfer of the client and their data among programs, and ensuring program funding timelines and review procedures are better integrated across programs and aligned with business realities and requirements. It should also include in-depth examination of the design and delivery of each of its programs on its own merits and address the individual shortcomings of these core programs (see the illustrative examples discussed above, such as ISC not achieving procurements as frequently as expected).

The agency will have a unique opportunity to provide informed intelligence to guide the evolution of its programs and to support other federal departments and decision-makers with unique intelligence and advice. The new agency will have continuous staff engagement with clients. It could also run ongoing survey work with clients. And most powerfully, it can create pooled client data across its program suite and mine and query this data. This agency intel, coupled with the TBS-Statistics Canada's BIGS initiative (which could be transferred to the new agency, as it provides unique insights into firms' use of federal programs with their subsequent growth), will provide confidential insights into new firms and technologies prior to their market entry. By knowing what leading-edge innovation firms are currently working on (through their project files), the agency will be able to see ahead and "predict" and so prepare its programming to respond and support the success of innovators. IRAP has been exploring use of its confidential files in this way, and given immense gains in data analytics capacity, more can be done by the new agency.

<u>Launch New Initiatives</u>

The new Agency puts in place an ongoing federal centre of excellence for the design and delivery of new programming. The agency team should engage deeply with business decision-makers in an ongoing way and use this engagement to listen deeply to innovators' views on opportunities and needs. As a trusted internal source of knowledge, experience and intelligence, the agency would be well positioned to develop and propose new initiatives in support of ISED and the central agencies.

Tackle the Growth Capital Shortfall

Canada's chronic shortage of domestic growth capital remains a fundamental barrier to firm scaling. In addition to ongoing efforts by BDC, the Export Development Corporation, and others, the Government of Canada has undertaken special initiatives, such as the Venture Capital Action Plan (VCAP) of 2013, and the Venture Capital Catalyst Initiative (VCCI) in 2017, renewed in 2021.

The ongoing absence of large-scale, follow-on, domestic scale-up funding continues to nudge Canadian firms into the arms of American sources of capital. There are many possible reasons for any given firm, or entrepreneur, to consider moving to the United States. But anecdotally investment by US firms in growing Canadian companies is a constant source of inducement and pressure for the company to migrate south of the border, along with their intellectual property, talent, and subsequent value creation. Reliance on US capital, in the absence of domestic alternatives, is therefore a continuing constraint on Canada realizing the full, beneficial impact of federal innovation spending, whether directly on Canadian firms and more generally on the research and business innovation eco-system.

Possible solutions could include: expanding the role of federal entities such as BDC and EDC; requiring Canadian pension funds to increase their share of investment in Canadian companies, specifically including providing risk capital for investment in innovation-based SMEs; introducing new tax expenditure vehicles, such as a flow-through shares program for innovation companies; launching a new round of "VCAP-like" initiatives for increasing later stage Canadian funds; or even other possible as of yet undeveloped ideas.

That said, developing one of these solutions into a workable initiative at sufficient scale will require careful policy work. For instance, reintroducing regulatory requirements that Canadian pension funds increase domestic investment faces substantial financial community opposition. In 2024, when the then Minister of Finance floated the idea that pensions should invest more in Canadian growth the idea was met with resistance from pension managers, deeply concerned about their ability to sustain sufficient returns to ensure they meet their future pension obligations for Canadians. Introducing a new tax-based program of flow-through shares for innovation companies, modelled on the existing, long-standing program for mineral exploration, could also face design and delivery challenges. The realities and dynamics of innovation start-ups and scale-ups are not the same as junior mining exploration companies, nor are the dynamics of technology firms growing to scale comparable to pooling large-scale investment to develop mineral projects in Canada. It is unclear whether and how such a model would work, and substantial trial and testing will be required to know whether the costs would be warranted by the results.

In contrast, a federal subsidy initiative could be used to encourage more late-stage growth funding for Canadian technology start-ups. This could leverage private sector players by building on the example of the successful VCAP/VCCI models. The expert staff in the new business innovation agency, working closely with Finance Canada, could take on design and delivery of a call for proposals and support Finance with the selection process to pick the best private sector proposals for Finance Canada to then fund. In the alternate, the government could provide loan guarantees for scale-up borrowing with some of the loan

forgivable eventually, but requiring immediate full repayment if controlling ownership leaves Canada. This is attractive to founders since there is no dilution of equity. And if the guarantees were only available for advanced-stage companies--i.e., those most likely threatened with foreign takeover--then the risk would be much reduced.

Careful work, informed by Canadian industry leaders with deep expertise in risk capital, is required to examine these possible ideas and others. However, the ongoing hemorrhage of Canadian talent, IP, and promising start-up companies is a fundamental constraint on the success of federal business innovation support programs. A coherent strategy supporting innovation from conception to commercialization at-scale therefore must address this issue, or Canada will continue to leak talent, IP, and promising firms into the US. The new agency, working closely with clients and Canadian experts should develop a new growth capital agenda for ISED and Finance as an essential component for the success of the overall federal business innovation agenda.

Support Adoption, Not Just Invention

In thinking about the future directions for federal innovation programming, one area meriting closer attention is support for companies for the adoption and adaptation of the innovations of other companies—what might be thought of as the "buy" side of innovation. Most existing federal programs emphasize in-house development through R&D and commercialization supports. While this focus is valuable, especially for firms pushing the technological frontier, it may be worth considering how complementary programming could support firms aiming to adopt and adapt the proven innovations of others to improve their productivity. The technology diffusion process is of overwhelming importance for productivity growth. Canada needs creativity in program development to speed up the diffusion process throughout the economy and regions of the country so Canadian firms better keep pace with the best business technology (e.g., production machinery, business software) wherever it may be found.

The former Canada Digital Adoption Program (CDAP), while short-lived, provided a useful test case. By funding digital advisors and offsetting the costs of adopting business software and e-commerce tools, it addressed some of the practical barriers firms face in modernizing their operations. Although its scale was modest relative to SR&ED and other core programs, the logic of the program—enhancing firm performance through technology diffusion—is sound. In light of this, there would be value in exploring whether a next-generation adoption support program could be integrated into the broader business innovation portfolio, potentially with stronger connections to sectoral needs, technology benchmarking, and vendor-neutral advisory services.

As the Canada Innovation Corporation develops its mandate and delivery strategy, it should develop an adoption-oriented initiative to fit within the federal innovation ecosystem supports. This new initiative should complement core R&D supports, target technology and productivity-lagging sectors and regions, and be measured using productivity and technology-utilization indicators. It should also explore how this initiative could also

encourage Canadian leading-edge technology providers to diffuse their latest world-leading products and services into use by Canadian governments and large-scale Canadian enterprises. In a globally competitive environment, a balanced innovation policy would benefit from sustained attention not only to the creation of new technologies, but also to their timely uptake.

Support the Development of "Dual-use" Business Innovations

Lastly, the new agency should provide the best expert location and most sophisticated delivery capacity for the design and delivery of a new round of federal business innovation programs in defence of Canada. These programs should be intended to challenge the Canadian private sector to bring forward "dual-use" innovations, intended to build Canada's capacity to meet sovereign defence, security, and related mandates. As the guiding hand of federal business innovation programs, the new agency will have the skills and capacity to marshal the Canadian technology innovation community into programs that results in viable commercial products and processes that are sustainable from a business perspective with likely customers and addressable markets, as well as federal clients with sovereign uses supporting Canadian defence, security, and related mandates.

Support ISED and Central Agencies with Policy Work to Improve Commercialization Outcomes

Lastly, as discussed earlier, the allowable activities and allowable costs supported by Federal programs have long over-emphasized early-stage R&D. As noted, this reflects established economic principles about spillovers and legacy interpretations of international trade rules. Yet commercialization support is essential for innovation outcomes, and other OECD countries have found ways to support these activities without running afoul of trade obligations. The new agency should lead a policy dialogue, in collaboration with ISED, Global Affairs Canada, and TBS, to build a policy case—grounded in contemporary economic thinking and comparative international practice—for expanding support into these downstream areas, and propose a renewed Policy on Transfers to Treasury Board ministers for approval. The new Agency staff – given their deep private sector technology commercialization and business experience – could then work with the central agencies to issue new policy and program guidance for the design and delivery of business innovation programs. This would help teams charged with developing programming, and also central agency staff charged with assessing and briefing Ministers on program proposals. The resulting guidance could also be translated into teaching materials by the Canada School of the Public Service to ensure next generation programs better support translational and commercialization outcomes for Canadians.

Program outcomes are also influenced by Marketplace Frameworks. However, federal innovation policy often operates in a silo from broader marketplace policy frameworks. Yet these frameworks—governing taxation, intellectual property, competition, standards, health and safety, and more—shape the economic environment in which firms operate. All businesses are expected to comply with these "whole-of-economy" national rules, and so

many touch directly on innovation outcomes (the reach of the largest federal program—SR&ED—arises from being embedded within the mandatory tax system, leveraging infrastructure to reach tens of thousands of firms).

It is unclear to what extent other federal business innovation programs leverage or are coordinated with their most adjacent federal policies. For example, while the government funds company IP strategies through grants and advisory services, these subsidy programs may not be designed and coordinated with ISED IP policy or bodies such as the Canadian Intellectual Property Office. Similarly, environmental agencies create market opportunities for clean tech firms when they impose performance standards and requirements, and with coordination the core business innovation support programs could nudge firms into providing technology solutions.

Alignment between innovation programming and marketplace frameworks does occur within federal portfolios in that line departments charged with regulatory mandates – such as Natural Resources Canada or Environment and Climate Change Canada - often also have subsidy programs supporting technology development. However, as discussed, it is very difficult to deliver effective business innovation programs inside large federal line departments. Better linking policy and regulation with core business innovation programs holds out the potential to better achieve results for both.

Conclusion

Canada's federal business innovation programs represent a significant national investment in the country's future prosperity. But despite decades of effort and public expenditures, Canada continues to lag its peers in firm-level innovation, productivity growth, and the successful scaling of homegrown companies.

As was noted at the outset, the root problems underlying weak Canadian business innovation outcomes seem heavily influenced by structural aspects of the Canadian economy, and the most powerful federal tools are those that determine the attractiveness, competitiveness, and stability of the overall Canadian economy. However, based on past experience, we can also expect continued federal programing initiatives to encourage private sector investment in business innovation and so improving productivity.

This paper has therefore focused on how federal programs are designed, delivered, and organized as these considerations greatly influence success in this regard. The current system is shaped by incentives that are at times misaligned with the fundamental objective of promoting a more innovative and productive business sector. The misalignment reflects administrative constraints, fragmented responsibilities, outdated delivery models, and a persistent emphasis on early-stage R&D over technology adoption, commercialization, and scaling-up successful technology companies. Together, these systemic features limit program impact, reduce responsiveness to business needs, contribute to an ongoing pattern

of underperformance, and so collectively indicate that the Government of Canada is not committed to achieving significant business innovation improvements.

To begin to turn the page, the Government of Canada should establish a dedicated agency to take responsibility for the core suite of federal business innovation programs. This agency should be established outside core government—likely as a Crown Corporation or as a subsidiary of the National Research Council (a departmental corporation)—with operational independence, expert staff with private sector technology commercialization experience, and the flexibility to experiment, learn, and evolve. It would provide a home for key delivery functions, and act as a centre of excellence for program design, evaluation, and policy development. The core set of program discussed here, should be transferred to the new agency in whole (IRAP, ISC) or in part (SR&ED, SIF) as should subsequent program initiatives intended to directly support business innovation (e.g., technology adoption, scale-up funding, and dual-use business innovation to meet Canadian defence and security mandate needs).

Such an agency should focus on improving the design and delivery of existing initiatives, and dynamically redesign and rebalance funding among its program suite to respond to client needs and feedback. It should lay the foundation for a more responsive, coherent, and effective business innovation strategy over the long term. This would represent a shift from fragmented program delivery to focused institutional learning—a strategic investment in Canada's capacity to innovate, grow, and compete in the global economy.

Annex: The Business Development Bank of Canada

The Business Development Bank of Canada (BDC) could also be included in this paper, given its innovation-focused financing and advisory services. However, BDC falls outside of the direct and indirect subsidy program focus of this paper, as it is a financial institution providing financial and advisory services as an integrated part of a larger mandate to ultimately provide a financial return to its shareholder (government). As such, arguably BDC is not undertaking business innovation expenditure program such as the other initiatives discussed in this paper.

It is mentioned here however, given how proximate it is to the focus of the paper. BDC provides loans and strategic investment capital to support R&D and early commercialization, company growth and scale-up, and technology adoption for high-potential firms, delivered through BDC's financing network and its BDC Capital venture arm. In 2024, BDC provided over 3,000 advisory mandates, $234M in direct equity in companies, and $172M in indirect equity into other VC funds (2024 Annual Report). BDC therefore offers national programming for technology-focused SMEs, with flexible terms and interest-only loans, non-dilutive capital, and venture capital with supporting advisory services. All decisions are made by in-house BDC staff expert with experience in business, finance, or technology. Criticisms of BDC can be found in its 2022 Legislative Review, including that BDC support outside of Quebec and Ontario was weaker, that it had cumbersome processes, and a more conservative risk appetite with capital ratios well below BDCs statutory ceiling. More anecdotally, technology start-ups and SMEs complain BDC is difficult to deal with, overly cautious, and not playing a sufficient role in improving the domestic risk and growth capital scene.

Overall, BDC is recognized for its risk-tolerant capital and flexible structuring, especially for firms that are pre-revenue, scaling, or leveraging IP assets. Entrepreneurs highlight that BDC fills critical funding gaps when commercial banks hesitate, and value its advisory support on productivity, digital transformation, and technology planning. But early-stage founders comment it is difficult to access/succeed with BDC programming, and even more pressingly Canada overall continues to suffer from a critical inability for start-up companies to secure sufficient domestic growth capital to scale, resulting in an ongoing loss of Canadian talent, intellectual property and promising firms to the United States (as discussed in the body of the paper).

Sources

1. Jenkins Panel (2011). Innovation Canada: A Call to Action. https://publications.gc.ca/collections/collection_2011/ic/Iu4-149-1-2011-eng.pdf

2. Asselin, R. & Speer, S. (2021). The Case for a Canada Advanced Research Projects Agency. Public Policy Forum. https://ppforum.ca/wp-content/uploads/2021/12/NNS3-CanadaAdvancedResearchProjectsAgency-PPF-Dec2021-EN.pdf

3. Government of Canada (2022). Budget 2022: Canada Innovation Corporation. https://budget.gc.ca/2022/report-rapport/chap4-en.html

4. Higher Education Strategy Associates (2024). Time for CARPA? https://higheredstrategy.com/time-for-carpa/

5. Asselin, R. & Speer, S. (2024). Five Years Later, We're Drifting Away from Our New North Star. The Hub. https://thehub.ca/2024/04/04/robert-asselin-and-sean-speer-north-star/

6. Business Council of Canada (2024). Engines of Growth. https://www.thebusinesscouncil.ca/wp-content/uploads/2024/08/Engines-of-Growth.pdf

7. ITIF (2025). Canada Doesn't Have an Innovation System: It Has 134 Programs. https://itif.org/publications/2025/07/07/canada-doesnt-have-innovation-system-it-has-134-programs

8. OECD (2015). Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development. OECD Publishing. https://doi.org/10.1787/9789264239012-en

9. OECD/Eurostat (2018). Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation. 4th Edition, OECD Publishing. https://doi.org/10.1787/9789264304604-en

10. WTO (1994). Agreement on Subsidies and Countervailing Measures. World Trade Organization. https://www.wto.org/english/docs_e/legal_e/24-scm.pdf

11. Treasury Board of Canada Secretariat & Statistics Canada (2023). Business Innovation and Growth Support Inventory: Program Count and Expenditures. https://www.csps-efpc.gc.ca/documents/bigs/bigs-dashboard-eng.aspx

12. Public Accounts of Canada (2024). Transfer Payments to Industry, Table 1, Section 6. Receiver General of Canada. https://www.tpsgc-pwgsc.gc.ca/recgen/cpc-pac/index-eng.html

13. BDC (2023). Annual Report 2022–2023: Supporting Business Innovation. Business Development Bank of Canada. https://www.bdc.ca/en/about/annual-reports

14. Innovation, Science and Economic Development Canada (2023). Strategic Innovation Fund: Results and Investments. https://ised-isde.canada.ca/site/strategic-innovation-fund/en/results-and-investments

15. National Research Council Canada (2023). Industrial Research Assistance Program. https://nrc.canada.ca/en/support-technology-innovation/industrial-research-assistance-program

16. Canada Revenue Agency (2023). Scientific Research and Experimental Development (SR&ED) Tax Incentive Program.

17: Statistics Canada & Treasury Board Secretariat. Business Innovation and Growth Support (BIGS) Inventory. https://www.csps-efpc.gc.ca/documents/bigs/bigs-dashboard-eng.aspx

18: Statistics Canada. The Business Innovation and Growth Support (BIGS) Program: A Summary of the First Evaluation Results, April 2024. https://www150.statcan.gc.ca/n1/pub/18-001-x/18-001-x2024002-eng.htm

19: Statistics Canada. Linking Program Participation to Firm Outcomes, April 2024. https://www150.statcan.gc.ca/n1/pub/18-001-x/18-001-x2024003-eng.htm

20: Environment Journal. Clean Tech Stands Out in Federal Innovation Support Results, May 2024. https://environmentjournal.ca/first-ever-statscan-snapshot-of-federal-support-for-growing-cleantech-activities

21. Nicholson, Peter, Facing the Facts: Reconsidering Business Innovation Policy in Canada, Institute for Research on Public Policy, 2018.