



## + PROGRESS

### Canadians are innovators

*“Innovators share ... traits we are all born with—curiosity, courage, creativity, and a collaborative spirit—combined with an intense focus on discovering the truth. But discovery is only part of the equation. Equally important is using innovations wisely, for the betterment of everyone.”*

—Neil Turok, Director,  
Perimeter Institute for  
Theoretical Physics

We have always understood that better is possible, and time after time we have used curiosity, courage, creativity, and collaboration to create positive change for ourselves—and the world.

This spirit of innovation that Canadians share helped to create the industries and jobs that created and grew Canada's middle class. Today, that same drive to innovate creates new jobs and export opportunities in growing industries as it transforms jobs in existing ones.

The innovations we make today will create new and exciting job prospects for existing workers, and better opportunities for our children and grandchildren. We ask them “what they want to be when they grow up,” but many of them are likely to work in jobs and industries that haven't been invented yet. After all, the largest companies in the world today didn't exist just a generation or two ago.

At the same time, by making smart investments today—the kind that give more people a real and fair chance at success—we can build a forward-looking economy for Canada, one that our children and

grandchildren will want to be a part of, in jobs they are qualified for, and excited to have.

Everyone—from junior researchers to veteran scientists to the CEOs of the companies whose businesses are leading the way in innovation—has a role to play in building Canada's future economy. So too does government. Investing in the people and projects that will change our world for the better is not just the right thing to do, it's the smart thing to do for Canada's economy.

The Government proposes to make significant new investments to ensure that Canada's current and future scientists and researchers have the funding and support they need to do their work. Budget 2018 proposes an investment of nearly \$4 billion in Canada's research system to support the work of researchers and to provide them access to the state-of-the-art tools and facilities they need.

These investments are not simply to enhance the status quo. In recognition of the historic opportunity for real change, investments made through Budget 2018 will be tied to clear objectives and conditions so that Canada's next generation of researchers—including students, trainees and early-career researchers—is larger, more diverse and better supported.

### **It starts with a question ...**

As innovators, Canadians seek answers to difficult questions, and look for new ways to apply what we've learned. The desire to understand how the human heart works led to pioneering efforts in open heart surgery, and the invention of the artificial pacemaker. Curiosity about how we learn and think led to breakthroughs in machine learning and artificial intelligence—discoveries that help us to navigate traffic with the help of our smartphones today, and in the future will help us get to work and school in self-driving cars.

## **Canada's Granting Councils**

Canada supports its researchers and scientists through three agencies: the Social Sciences and Humanities Research Council, the Natural Sciences and Engineering Research Council and the Canadian Institutes of Health Research. Together, they support and promote high-quality research in a wide variety of disciplines and areas, from how to make workplaces safer to how to build longer-lasting batteries to finding new ways to help ovarian cancer patients live longer lives.

Federal scientists' research touches everything from clean air and water to food security to developing drugs and vaccines that play a crucial role in protecting and improving the lives of Canadians. Budget 2018 proposes measures to "re-imagine" the National Research Council—at the centre of research excellence and collaboration, bringing together the best innovative minds from across the country to deliver solutions and breakthroughs that matter to Canadians. Budget 2018 also proposes to invest in Canada's world-class federal science laboratories and facilities to enable scientists to continue to conduct research that promotes evidence-based decision-making.

To better support Canada's innovators, Budget 2018 proposes to provide \$2.6 billion in incremental support over five years. In addition to new funding, Budget 2018 announces measures that will transform Canada's innovation programs—making them easier to access and to use, and expanding support for Canadian companies that want to scale up and sell their innovations in the global marketplace. Budget 2018 also proposes new initiatives to make business regulations more efficient and less costly, and seeks to promote greater awareness and use by Canadian entrepreneurs of intellectual property, important assets that can fuel the growth of innovative businesses in the modern economy. Businesses and entrepreneurs in rural areas are important contributors to Canada's prosperity. Budget 2018 proposes new measures to improve the business environment in rural areas.

## Chapter 2: Advancing Canada's Gender Equality Goals



Key Chapter 2 initiatives that advance objectives of Canada's new Gender Results Framework:

- Improving diversity in the research community through investments in the granting councils, data collection initiatives, early-career researchers and new gender equality planning.
- Helping women entrepreneurs grow their businesses through the new Women Entrepreneurship Strategy.
- Supporting the advancement of women in senior positions by publicly recognizing corporations committed to promoting women leaders.

# Canada's Innovation and Skills Plan

Budget 2017 launched the Government's Innovation and Skills Plan—an ambitious effort to make Canada a world-leading centre for innovation; to help create more good, well-paying jobs; and to help strengthen and grow the middle class. A number of signature initiatives are now underway:

**Five innovation superclusters** have been announced, selected from competing proposals from across Canada. When small, medium-sized and large companies, academic institutions and not-for-profit organizations come together to generate bold ideas, the results are more good, well-paying jobs for Canadians, and groundbreaking research that benefits everyone.

## Canada's New Superclusters

Building artificial intelligence-powered supply chains (SCALE.AI) in Montreal and the Quebec City-Waterloo corridor.

Promoting next-generation manufacturing (Advanced Manufacturing) in Southern Ontario.

Developing data-driven enterprises (BC Digital) in British Columbia.

Unleashing the potential of Canadian crops (Protein Industries Canada) in the Prairie Provinces.

**Six Economic Strategy Tables** have been established for areas where there is great potential for Canadian businesses to grow and create high-quality jobs: advanced manufacturing, agri-food, clean technology, digital industries, health/bio-sciences and clean resources. The Economic Strategy Tables have identified four key areas where additional support could drive economic growth and create jobs. These include smart regulations, digitization/data, intellectual property and export services. Budget 2018 includes measures to address these opportunities.

**Reforms to existing programs and transformational new investments in skills** are making a difference for young Canadians and adults wanting to return to school (through enhanced Canada Student Grants), for adult workers who wish to retrain (through better access to Employment Insurance benefits), for young Canadians entering the workforce (through new job and work-integrated learning opportunities) and for unemployed and underemployed Canadians seeking training to find a new job (through skills and training initiatives funded through the Labour Market Transfer Agreements).

The federal, provincial and territorial governments have also undertaken important negotiations on the **Labour Market Transfer Agreements**. These new agreements, expected to come into force on April 1, 2018, will provide an additional \$2.7 billion over six years, starting in 2017–18, to provinces and territories to address skills and training needs, which will allow people to advance their careers.

**Innovation Canada** was launched in January 2018 to provide a single point of contact for Canadian innovators and entrepreneurs looking to grow their businesses. This innovative interface is an entrepreneur's gateway to government programs and services (including at the provincial and territorial level). The tool generates targeted results, connecting businesses with exactly the resources they need.

This past year, the Government also launched a range of funds and initiatives aimed at supporting Canadian businesses that want to grow and create more good, well-paying jobs:

- The **Strategic Innovation Fund**, to consolidate and simplify legacy industrial support business programs and attract and support new high-quality business investments.
- The **Venture Capital Catalyst Initiative** to increase the availability of late-stage venture capital to support the growth of innovative Canadian firms.
- The **Impact Canada Initiative**, focused on accelerating outcomes-based funding approaches across government.
- The **Innovative Solutions Canada** procurement program, fulfilling a longstanding request from Canadian companies to help connect with government as a collaborator and first customer.

## Investing in Canadian Scientists and Researchers

The world is in the midst of a shift to a knowledge-based global economy, driven by the creation of ideas and their translation into commercial value. This transformation brings with it the prospect of new jobs, and new solutions to some of the world's greatest problems. But this shift will also bring change—change to the nature of work, the nature of middle class jobs and the skills needed to succeed in them.

Canada is well-positioned to lead in the coming years. Home to a highly skilled workforce and some of the world's top researchers, Canada's prospects are bright—thanks in part to earlier investments in science, research and innovation. These investments built world-leading Canadian universities and colleges and created a strong research environment—one that has resulted in global recognition and has succeeded in attracting top talent in important emerging fields like artificial intelligence. The next step is to build on this success, and make Canada a beacon that attracts the very best researchers from across the globe.

**Figure 2.1: Research is the Engine that Drives an Innovative Economy**



## Supporting the Next Generation of Research and Researchers

Research expands our basic understanding of the world, generates new ideas, leads to new jobs for our children and grandchildren when they grow up, and helps to build a workforce that is better able to respond to challenges with creativity and confidence. This doesn't just have economic benefits—it also makes Canada and the world a safer, healthier, better place to live.

In the past year, the Government of Canada received the report from the expert panel on Canada's Fundamental Science Review, led by Dr. David Naylor. While Canada spends more on higher-education research and development (as a share of gross domestic product) than any other Group of Seven (G7) country, the Review identified a number of challenges that require urgent attention. These include declining funding per researcher and the need to fundamentally shift how, when and where Canada invests—encouraging more global collaboration, fostering more interdisciplinary research, and better supporting research that has the potential to be groundbreaking. The Review also identified a need to focus on the next generation of researchers, including students, early-career researchers, and a science community that looks more like Canada—more diverse, and with a greater number of women.

Since the recommendations of the Fundamental Science Review were released in 2017, the Government has heard the strong and united message from Canada's research community on the importance of investing in the future of Canadian research—one that supports young researchers and embraces the increasingly international, interdisciplinary, high-risk and fast-breaking nature of leading-edge research.

In response, the Government is proposing measures to make Canada's research environment more responsive, agile and modern in order to attract the world's best researchers to Canada and take Canadian research to new heights. Budget 2018 proposes a historic investment in support for researchers, in big data and in the equipment Canadian researchers need to succeed—and lead. This includes more than \$1.7 billion over five years to support the next generation of Canadian researchers through Canada's granting councils and research institutes, and would provide the single largest investment in fundamental research in Canadian history. It also includes over \$1.3 billion over five years for investments in the laboratories, equipment and infrastructure researchers rely on every day.

Some of the most innovative and impactful research outcomes arise when researchers step beyond their traditional fields of study and beyond country borders to bring together different expertise and perspectives. Solutions from interdisciplinary and international research can have a profound impact on the daily lives of Canadians and are also the source of innovations that simply do not emerge out of any one field of study or geographic region. For example, Indigenous-led social scientists focused on Indigenous histories and landscapes are working with experts in geochemistry to bring together multiple research disciplines to improve our understanding of the history of Indigenous Peoples in Canada.

Fundamental research often pushes the knowledge frontier to ultimately lay the foundation for new innovations that drive the development of new products and services for global consumers. These investments in the work of researchers also support the Government's efforts to help Canadians strengthen their skills and ensure that Canada has the talented people needed to compete in a global economy.

## Women Leaders in Science, Technology, Engineering and Mathematics (STEM)

**Professor Raquel Urtasun** is a pioneer in the area of machine perception. A University of Toronto researcher, **Canada Research Chair**, and Head of Uber Advanced Technologies Group Toronto, Professor Urtasun has developed algorithms that allow vehicles to perceive and understand the environment in three dimensions and in real time. Her work is enabling autonomous vehicles to navigate the streets safely and swiftly, while detecting other vehicles and obstacles on the road and accounting for factors such as motion, speed and traffic flow. A key goal of Professor Urtasun's work is doing more with less—using fewer cameras and sensors to capture greater amounts of information and detail about a dynamic environment. As a result, her research is advancing the state of the art for industry and helping to make personal robotics more accessible and affordable for everyone.

## Granting Councils

Canada's three granting councils are arm's-length organizations that provide federal funding for the work of researchers at post-secondary institutions and research hospitals. In Budget 2018, the Government is proposing a historic investment to support this work—the most new funding for fundamental research through the granting councils in Canadian history.

The Government proposes to invest \$925 million over five years, starting in 2018–19, and \$235 million per year ongoing:

- \$354.7 million over five years (\$90.1 million per year ongoing) to the Natural Sciences and Engineering Research Council (NSERC).
- \$354.7 million over five years (\$90.1 million per year ongoing) to the Canadian Institutes of Health Research (CIHR).
- \$215.5 million over five years (\$54.8 million per year ongoing) to the Social Sciences and Humanities Research Council (SSHRC).

To accelerate Canada's transition to a more modern approach to research, Budget 2018 also proposes to create a new tri-council fund to support research that is international, interdisciplinary, fast-breaking and higher-risk. The Government proposes to provide \$275 million over five years, starting in 2018–19, and \$65 million per year ongoing, for this innovative approach, which will be administered by SSHRC on behalf of the granting councils.

These two proposed investments would increase the granting councils' annual budgets for fundamental research by over 25 per cent when they reach their peak in three years time. The proposed funding would provide increased support and training opportunities for about 21,000 researchers, students and high-quality personnel across Canada every year by 2021–22, including: 6,000 top-tier researchers and principal investigators; 3,500 early-career researchers; 8,000 undergraduate, master's and doctoral students; 1,300 postdoctoral students; and 2,000 research assistants and technicians.

With this investment, the granting councils will be tasked with developing new plans, strategies and targets to ensure greater collaboration between NSERC, CIHR and SSHRC and support for interdisciplinary research, as well as plans to achieve greater diversity among research funding recipients, including improved support for women, underrepresented groups and early-career researchers. To support these goals, the Government proposes to provide \$6 million over five years (\$0.5 million ongoing) for surveys to collect improved data on researchers, and \$15 million over five years to implement programs that support improved equality and diversity in academia at post-secondary institutions.

## Canada Research Chairs

To attract and retain leading early-career researchers at post-secondary institutions across the country, Budget 2018 proposes a new investment of \$210 million over five years, starting in 2018–19, with \$50 million per year ongoing, for the Canada Research Chairs Program. The purpose of this investment will be to better support early-career researchers, while increasing diversity among nominated researchers, including increasing the number of women who are nominated for Canada Research Chairs. This funding will provide the flexibility to improve the program to meet researcher priorities, and could result in, for example, 250 additional Chairs for early-career researchers by 2020–21, and a sizeable increase in funding provided to early-career researchers. The Government expects the granting councils to target new funding to early-career researchers whose diversity better represents Canada's population.

Over the next year, the Government will be doing further work to determine how to better support students, the next generation of researchers, through scholarships and fellowships.

### Canada Research Chairs

**Dr. Katherine Lippel** is a professor in civil law at the University of Ottawa, where she has held the Canada Research Chair in Occupational Health and Safety Law since 2006. She was named Fellow of the Royal Society of Canada in 2010 and in 2017 won SSHRC's highest award: the Gold Medal.

Her research has expanded our understanding about the effectiveness of occupational health and safety regulations. Her seminal work is a SSHRC-funded study showing the impact of applying different compensation systems to people with disabilities. Her findings have been cited by scholars and policymakers around the world.

## Women Leaders in STEM

**Professor Deborah McGregor**, a cross-appointed **Canada Research Chair** at York University in Toronto, is advancing our understanding of environmental justice by melding the law, environmental studies and traditional Indigenous knowledge systems to investigate sustainability, water governance and security, and First Nations land management. Professor McGregor, who is Anishinaabe from Whitefish River First Nation, is currently the primary investigator on two SSHRC-funded projects.

## Women Leaders in STEM

One out of three Canadians rely on medications to manage a chronic condition. Many struggle to stick to the treatment plan prescribed by their doctor. **Mary A. De Vera**, **Canada Research Chair** in medication adherence, utilization, and outcomes, examines different strategies to ensure people take their medications as required. By increasing the number of Canadians who use their medications as prescribed, Mary A. De Vera's research will help improve the health and quality of life of millions of Canadians who rely on medications to manage their chronic conditions, while helping to reduce costs across the health care system.

## Research Support

To ensure that researchers are provided with the necessary space and support at universities to undertake high-quality multidisciplinary research, the Government will increase the Research Support Fund. This Fund provides universities with resources to cover the indirect costs of research, including overhead costs such as those related to the maintenance of laboratories and other research space that are shared widely and therefore not covered through the granting council's direct research funding. Budget

2018 proposes to provide \$231.3 million over five years, starting in 2018–19, with \$58.8 million per year ongoing, to SSHRC, which administers this program on behalf of the granting councils.

## Investing in the Equipment Researchers Need—Canada Foundation for Innovation

The Canada Foundation for Innovation provides access to the state-of-the-art tools and facilities that researchers need to carry out the promising and innovative research that makes Canada a leader on the global stage. This includes the equipment and labs that are right now allowing Canadian researchers to make discoveries in areas like new composite materials for jets and cars, new diagnostic techniques for childhood diseases, and new methods for cracking the quantum computing challenge.

In order to do this important research, however, researchers need state-of-the-art equipment and good places to do their work. Providing ongoing, stable funding to the Canada Foundation for Innovation will allow the Foundation to provide access to cutting-edge research tools for about 17,500 researchers and 27,000 students and post-doctoral fellows every year.

Budget 2018 proposes to provide the Canada Foundation for Innovation with \$763 million over five years, starting in 2018–19, to provide the tools researchers need. This includes \$160 million for increased support to Canada's nationally important research facilities through the Foundation's Major Science Initiatives Fund. The Government also proposes to establish permanent funding at an ongoing level of \$462 million per year by 2023–24 for research tools and infrastructure supported through the Canada Foundation for Innovation.

### **Major Science Initiatives Fund**

The Canada Foundation for Innovation's Major Science Initiatives Fund supports national science facilities that make international-calibre research possible in Canada. Supported facilities include:

- Canadian Light Source, in Saskatoon, Saskatchewan, enabling synchrotron-based research in sectors such as mining, energy, life sciences and advanced manufacturing. Recent discoveries hold potential gains in the fight against climate change, including higher-quality fuels from biowaste, and a technique to reuse carbon dioxide and methane.
- SNOLAB's physics research centre near Sudbury, Ontario is helping scientists understand the basic building blocks of our universe. Its facility works to illuminate the mysteries of dark matter and allows scientists to study the impact that deep mines have on workers. SNOLAB has supported a variety of world leading research, including that of Nobel Prize winning physicist Dr. Art McDonald of Queen's University.
- The Canadian Research Icebreaker Amundsen provides a platform for scientists to explore the vast reaches of the Arctic. Discoveries in dozens of fields, from marine ecosystems to human health, have been made possible by the vessel.

# Harnessing Big Data

Digital research infrastructure is the collection of connectivity, computing power and storage services needed to support data-intensive and computationally-intensive research. Big data has become an essential tool for progress in science, underpinning world-class research across all disciplines. Improved technologies, such as cloud computing and faster networking, allow for new opportunities to address scientific challenges. For example, medical researchers in genomics can use advanced research computing to analyze genetic sequences to look for DNA-related changes that might cause cancer or dementia. Eventually, researchers may be able to develop personal medical treatment plans for patients based on genetics, age and behavioural data, improving health outcomes. Improved access to essential digital research tools and services will strengthen Canada's reputation as a global leader in science, research and innovation.

The Government proposes to provide \$572.5 million over five years, with \$52 million per year ongoing, to implement a Digital Research Infrastructure Strategy that will deliver more open and equitable access to advanced computing and big data resources to researchers across Canada. The Minister of Science will work with interested stakeholders, including provinces, territories and universities, to develop the strategy, including how to incorporate the roles currently played by the Canada Foundation for Innovation, Compute Canada and CANARIE, to provide for more streamlined access for Canadian researchers.

## What Will Success Look Like for Canadian Science and Research?

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- ✓ *A coordinated and harmonized system that is simple, effective and geared to meet the needs of Canadian researchers and modern research priorities.*
- ✓ *A research system that attracts global talent, promotes diversity and supports talent development across career stages.*
- ✓ *More researchers and students with access to cutting-edge research infrastructure, equipment and laboratories.*

# Leveraging the Full Potential of Business-Academia Collaboration

Fundamental and basic research support through the three federal granting councils and the Canada Foundation for Innovation provides the fuel for Canada's research system. Over the years these institutions have enabled discoveries in artificial intelligence and regenerative medicine, discoveries that will shape the economy of tomorrow and deliver tangible benefits to Canadians.

Canada continues to face challenges when it comes to translating the ideas generated from its world-class research into goods and services that people can use. An established role governments can play is to help bring together researchers and specialized equipment that resides at post-secondary institutions with businesses that have research needs but lack the skills and equipment to undertake their research in-house.

To modernize, simplify and improve the programs that bring together post-secondary researchers and businesses, Budget 2018 proposes to consolidate programming within each granting council in the following way:

- The Natural Sciences and Engineering Research Council will consolidate the Engage Grants, Industrial Research Chairs, Connect Grants, Strategic Partnership Grants for Networks and Projects, and Experience Awards Grants into a single Collaborative Research and Development Grant program.
- The Canadian Institutes of Health Research will consolidate the eHealth Innovations Partnership Program and Proof of Principle Program into a single Industry Partnered Collaborative Research program. The Government will also introduce legislation to separate the functions of the President from those of the Chair of Governing Council at this granting council in order to implement best practices in organizational governance.

Colleges and polytechnics are innovation intermediaries that actively collaborate with small and medium-sized businesses in their communities to solve business challenges. The Government proposes to provide \$140 million over five years, starting in 2018–19, to increase support for collaborative innovation projects involving businesses, colleges and polytechnics through the College and Community Innovation Program.

## **Colleges and Polytechnics Within Canada's Innovation Ecosystem**

Colleges and polytechnics partner directly with local employers to provide access to skilled students and faculty and specialized equipment to solve pressing business challenges through the College and Community Innovation Program. This program allows small and medium-sized enterprises the ability to undertake applied research to develop novel products for the market or to improve production processes that give businesses the edge to compete—all without having to develop in-house research and development capacity. In maintaining close linkages with their local communities, colleges build awareness among businesses of new and best practices and technologies to support local and economic development.

Colleges are also home to 30 Technology Access Centres (TACs) located across the country—innovation intermediaries that provide access to research facilities and connect the expertise of students and faculty with clients and partners looking to solve innovation challenges. In 2015–16, almost 2,000 companies were served by TACs, over 75 per cent of which were small and medium sized enterprises, and close to 1,000 students were involved in TAC-delivered services—representing almost 89,000 hours of innovation-related skills acquisition.

## Research Institutes and Organizations

At present, the Government allocates funding to a number of third-party research organizations that study a broad range of topics, from quantum science to regenerative medicine. The government will consider a new approach to determine how to allocate federal funding to third-party research organizations, as advocated by Canada's Fundamental Science Review. The three federal granting councils and the Canada Foundation for Innovation, for example, use a competitive model to determine funding allocations.

To improve the adaptability and effectiveness of federal research funding, the Government will communicate in the coming year new competitive processes for research institutes and organizations. In the meantime, Budget 2018 proposes to provide support for the organizations below.

<b>Institute for Quantum Computing</b>	This world-leading Canadian research facility focuses on the development of new quantum technologies. The Government proposes to provide the Institute with renewed funding of \$15 million over three years, starting in 2019–20, to continue to undertake high-calibre quantum research.
<b>Centre for Drug Research and Development</b>	This not-for-profit organization works in partnership with academia, industry, governments and foundations to identify and evaluate promising discoveries in drug technology. The Government proposes to provide \$48 million over three years, starting in 2019–20, in renewed support for the Centre's efforts to translate promising drug discoveries into commercialized health innovations and therapeutic products.
<b>Rick Hansen Institute</b>	Founded by the "Man in Motion", this not-for-profit research organization focuses on creating more accessible and inclusive communities and supporting research aimed at better treatment and a higher quality of life for people living with spinal cord injuries. The Government proposes to provide renewed funding of \$23.6 million over four years, starting in 2018–19, through Western Economic Diversification, to support the Institute's efforts to achieve breakthroughs in spinal cord injury research and care.
<b>Centre of Excellence on the Canadian Federation</b>	The Government proposes to contribute \$10 million in 2018–19 to the Institute for Research on Public Policy to endow a Centre of Excellence on the Canadian Federation, a permanent research body to promote shared understanding of the Canadian federal community. The Centre will undertake research on issues such as the impact of emerging economic and social trends on Canada's federal arrangements.

**Figure 2.2: Canada Is a Beacon to Researchers Around the World**



## Stronger and More Collaborative Federal Science

Federal government scientists enrich Canada's research environment, contributing to research focused on the public interest as well as the kind of discovery science that breeds innovation. Federal scientists seek to advance environmental remediation, energy and materials science, advanced manufacturing, and health and food safety. Thousands of scientists and the network of federal laboratories—including at the National Research Council—reinforce Canada's research capabilities and strengths, including through collaboration with post-secondary institutions and businesses.

### Gender-based Analysis Plus: Diversity in Research

As the National Research Council re-imagines itself to deliver on the Innovation and Skills Plan, it will be taking targeted action to include more women, youth, Indigenous Peoples, persons with disabilities and visible minorities among its researchers. Targeted actions include ensuring there are no unintended barriers to the participation of women researchers and entrepreneurs in the National Research Council's programs, as well as increased outreach to diverse groups of Canadians so they are fully aware of its programs and the opportunity to participate.

Governments around the world leverage their own research assets and talent to help businesses undertake commercially relevant but high-risk research, which can in turn lead to successful global companies. The National Research Council has the facilities, expertise and networks to convene strategic, large-scale national teams committed to cutting-edge innovation. Budget 2018 announces a “re-imagined” **National Research Council** and proposes to provide \$540 million over five years, starting in 2018–19, and \$108 million annually for measures that will reinforce its research strengths and role as a trusted collaboration partner of industry.

- To catalyze transformative, high-risk, high-reward research with the potential for game-changing scientific discoveries and technological breakthroughs, the Government proposes to provide \$150 million over five years with \$30 million per year ongoing, to the National Research Council to fund its scientists to work with innovators from post-secondary institutions and businesses on multi-party research and development programs. This research will be modelled on the highly successful Defense Advanced Research Projects Agency in the United States.
- To encourage, test and validate transformative research ideas generated by the National Research Council's world-class scientists, the Government proposes to provide \$30 million over five years with \$6 million per year ongoing, to the National Research Council to establish an ideation fund to target breakthrough research ideas through a competitive peer-reviewed process.
- To enhance collaboration with businesses and improve access to the National Research Council's specialized facilities and equipment, scientists and technical services, the Government proposes to provide \$62 million over five years with \$12.4 million per year ongoing, to lower access fees charged to small and medium-sized enterprises and universities and colleges.
- To allow for better long-term research planning and delivery, the Government will convert the National Research Council's longstanding temporary funding into ongoing permanent funding by providing \$298 million over five years and \$59.6 million per year ongoing. Total funding proposed under Budget 2018 will raise the National Research Council's total annual budget to \$1.1 billion.

The National Research Council is only one of the Government's science-based organizations. The Government has recently announced significant new funds in support of activities in other science-based federal departments and agencies.

### Major Science Investments

Canada's world-class federal science supports evidence-based decision-making, which improves our quality of life, our economy and our future prosperity. This Government has made significant federal science investments since it took office to ensure that Canada remains a global leader in research and innovation, especially in critical areas like the environment. This includes:

- \$100 million to support agricultural science research and innovation, with a focus on addressing emerging priorities, such as climate change and soil and water conservation.
- \$139 million over five years to federal laboratories and other federal assets to advance science, research and innovation.
- Approximately \$500 million over six years for oceans and freshwater science.

The Government will also build on this renewal of federal science by launching the first phase of an ambitious plan to **renew federal laboratories**.

- Public Services and Procurement Canada will begin the process for the construction of multi-purpose, collaborative, federal science and technology facilities. Rather than work in silos, this new approach to federal science and discovery will look to bring together federal scientists and science facilities across government including Agriculture and Agri-Food Canada, Natural Resources Canada, Fisheries and Oceans Canada, Environment and Climate Change Canada, the National Research Council and others in order to advance interdisciplinary research on, among other things, climate change, ocean protection, and human health. The Government proposes to provide \$2.8 billion on a cash basis (\$58 million on an accrual basis) over five years, starting in 2018–19, with \$4.5 million per year ongoing. The new facilities will be built to achieve a net zero carbon footprint, and funding will support a new science infrastructure program management office to support the renewal of federal laboratories.

- Canada's **National Microbiology Laboratory**, located in Winnipeg, is a world-leading facility that has helped advance critical work on infectious diseases, including helping to develop one of the world's first vaccines to combat Ebola. To build on this expertise and deepen the cluster of expertise in infectious disease in Winnipeg, the Government proposes to provide \$9.4 million over five years, starting in 2018–19, to establish a Centre for Innovation in Infectious Disease Diagnostics, funded from the Public Health Agency of Canada's existing resource levels.
- To advance our knowledge of the Canadian Arctic, the Government proposes to provide \$20.6 million over four years, starting in 2019–20 with \$5.1 million per year ongoing, to **POLAR Knowledge Canada**. This funding will support the Canadian High Arctic Research Station (CHARS) campus and enable world-class cutting-edge research strengthening Canadian leadership in polar science and technology. In addition, the Government proposes to amend the *Canadian High Arctic Research Station Act* to support the transfer of the CHARS campus to POLAR Knowledge Canada.

These investments will be carried out in a way that is more coordinated and agile, creating greater opportunity for collaboration across government and within the wider research system.

In addition, to ensure the Government continues to have access to world-class, independent scientific assessments to inform policy development in priority areas, the Government proposes to provide the Council of Canadian Academies, a not-for-profit research organization, with renewed funding of \$9 million over three years, starting in 2020–21.

## What Will Success Look Like?

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- ✓ *Reinforced role for federal government scientists, with a greater focus on disruptive technologies.*
- ✓ *Better linking scientific research to improving the lives of Canadians.*
- ✓ *Increased collaboration between federal government scientists and private sector and academic researchers.*
- ✓ *More opportunities for early-career researchers.*

# Innovation and Skills Plan—A More Client-Focused Federal Partner for Business

At its core, the Innovation and Skills Plan is about building an economy that works for everyone—an economy where Canadians have access to high-quality jobs and where Canadian businesses are well-placed to compete in a rapidly evolving and competitive global marketplace.

The Government currently supports businesses of all types and sizes through a vast and complicated array of programming. As recommended by the Advisory Council on Economic Growth, Budget 2017's Innovation and Skills Plan announced a review of all innovation programs that serve the business community, in an effort to make the services provided more responsive to client needs, more efficient and better able to promote business growth.

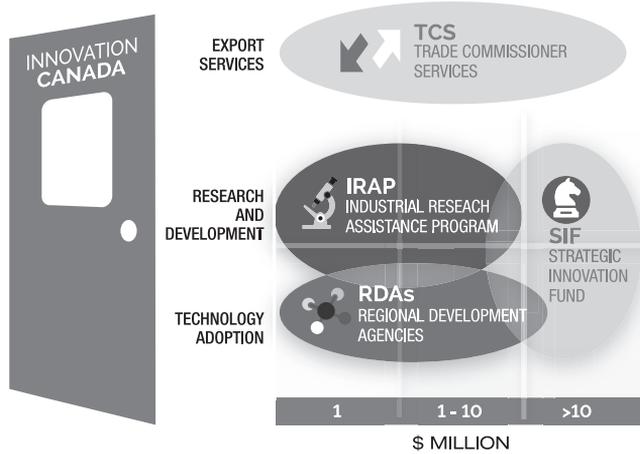
The review took place across 20 federal departments and agencies, making the review the first effort to date to review the entire business innovation program suite.

## What Will Success Look Like for Canadian Entrepreneurs?

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- ✓ *Programs that are simple, effective and geared to meet the needs of Canadian workers and entrepreneurs.*
- ✓ *A single window where Canadian businesses and entrepreneurs can access federal support rather than having to search for help across the entire government.*
- ✓ *Services and programs that help Canadian entrepreneurs and high-growth Canadian businesses expand and create jobs.*
- ✓ *Seamless help for growing businesses so that they are referred between programs without inconvenience or interruption as their needs change.*

**Figure 2.3: Simplifying Access to Innovation Programs**



As a result of the review, the Government is proposing a series of fundamental changes based on the following three principles:

- **A business-centric lens**—Shifting to a focus on business needs allows for the design of a program suite with the main client—Canadian businesses—at the centre. This principle encompasses consolidating programs, streamlining the program suite, and strengthening the single window through which businesses can easily navigate all program offerings—

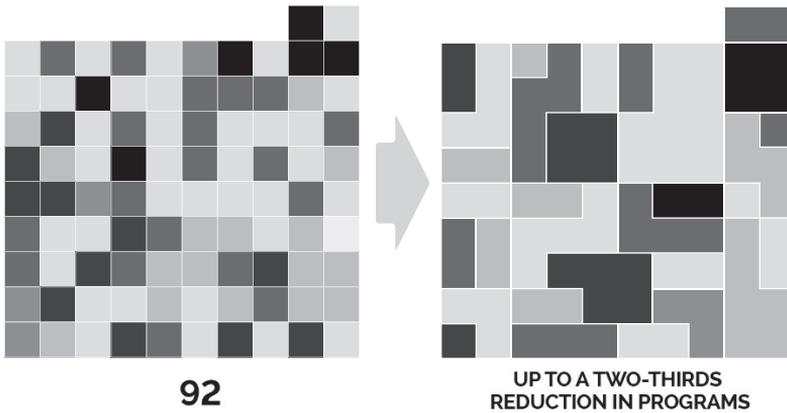
High-potential firms typically invest more, innovate constantly and expand into the global marketplace. Supported by an executive team with a strong desire to achieve and a high-risk tolerance, high-potential firms play a disproportionately larger role in the Canadian economy in terms of both job creation and gross domestic product growth.

**Innovation Canada.**

- **Focus on growing high-potential firms**—Solidifying support for high-potential firms as a core commitment of all federal business innovation programs, to deliver on the Budget 2017 commitment to “double the number of high-growth companies in Canada...from 14,000 to 28,000 by 2025.”
- **Accountability**—Putting in place mechanisms to generate program performance data that focuses on firm-level results against indicators such as revenue growth, productivity performance and export intensity to ensure the program suite is delivering value for Canadians.

Following these principles, **the Government is proposing an historic reform of business innovation programs** to create a suite of programs that is easy to navigate and will respond to the challenges and opportunities facing Canadian businesses today and into the future. **Total overall funding for innovation programming will increase, but the reform will see a reduction in the total number of business innovation programs by up to two-thirds.**

**Figure 2.4: Simplified Program Suite**



These reforms are designed to benefit Canadian workers, entrepreneurs, small business owners as well as Canadians employed by large companies over the long term, saving people time and paperwork. Over the next one to two years, changes will be managed to minimize disruption. Implementation details will follow, with some elements coming online quickly and others requiring more fundamental structural changes to be implemented at a more measured pace. All applications, including those from Canadian business owners that have been submitted to an existing program, will be honoured, with all current programs remaining in place until further details are announced.

## Innovation Canada – Accelerated Growth Service

Efforts to support high-potential firms will be further promoted through the consolidation of the Accelerated Growth Service and the Industrial Research Assistance Program's Concierge Service, with the consolidated program and associated funding to reside within Innovation Canada at Innovation, Science and Economic Development Canada.

The Government proposes to provide the new consolidated program with \$13.5 million over five years, starting in 2018–19, and \$3 million per year ongoing, for 15 new Innovation Advisors to support Canadian high-potential firms.

## The Creation of Four Flagship Platforms

The Government will streamline the program suite in part by designating four flagship "platforms":

1. Industrial Research Assistance Program
2. Strategic Innovation Fund
3. Canadian Trade Commissioner Service
4. Regional development agencies

Each will consolidate multiple programs and focus on providing the customized support that Canadian businesses need to succeed and grow. Together, these platforms will provide a streamlined user experience for businesses of all sizes, with a particular focus on serving the needs of all sizes of high-potential Canadian firms.

### **Industrial Research Assistance Program**

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To help Canadian entrepreneurs and small business owners develop innovative technologies and successfully commercialize them in a global marketplace, the Industrial Research Assistance Program (IRAP) offers flexible funding along with consulting services. IRAP has proven to be an effective resource for growing Canadian companies and innovative entrepreneurs. This program is well positioned to support funding for larger projects above the current contribution threshold of \$1 million.

To enable IRAP to support business research and development for projects up to a new threshold of \$10 million, the Government proposes to invest \$700 million over five years, starting in 2018–19, and \$150 million per year ongoing. This funding will support hard-working Canadian entrepreneurs to create jobs as they grow and expand their companies.

Hassan lives in Regina, where his company is working on inventing a new product to analyse soil composition for agricultural and ecological purposes. The Government will raise the threshold for eligible projects under the Industry Research Assistance Program from \$1 million to \$10 million, widening the range of financial support available to Hassan, and making it easier for him to access that support as his firm grows, alongside advice to help develop and get his product to market.

### **Strategic Innovation Fund**

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To allow for more focused support for business research and development projects over \$10 million, the Strategic Innovation Fund will move away from supporting smaller projects to support larger projects that can lead to significant job creation and shared prosperity for Canadians. The Fund's role in facilitating the growth and expansion of firms and attracting large-scale job-creating investments will remain unchanged. At the same time, the Fund's role in advancing research and development through collaboration between academia, not-for-profits and the private sector will be expanded.

The granting councils currently host two programs targeted at promoting large-scale business-academia collaborations that have proven to be effective in helping firms grow to create jobs and prosperity for Canadians. In order to modernize these programs and make them more accessible for businesses, the Government will consolidate the Centres of Excellence for Commercialization and Research and the Business-led Networks of Centres of Excellence programs and transfer responsibility for these programs and associated funding to the Strategic Innovation Fund.

## Canadian Trade Commissioner Service (TCS)

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To help Canadian firms unlock growth opportunities through exports, the TCS will undergo transformative enhancements to simplify the client experience, modernize tools and offer innovative services.

Exports are vital to the growth of our companies and economy. They help to turn small companies into big ones and support one in every six Canadian jobs, with these jobs typically paying higher wages than others. As stated in Budget 2017, the Government has set a goal to push Canada ahead by growing our country's exports 30 per cent by 2025.

One ingredient for success is Canada's suite of new free trade agreements—important tools for opening up new markets for our businesses. But there is a lot involved for companies trying to capitalize on these opportunities—learning how to do business in these markets, gathering market intelligence, navigating local laws and regulations, and making the right connections.

Vancouver entrepreneur Samantha transformed her home-based one-woman clothing company into a flourishing business. With growing sales and brand recognition throughout Canada, Samantha is ready to take her business to the next level and has identified the United States and Australia as key targets. The Canadian Trade Commissioner Service will be modernizing its service offerings and salesforce abroad so it is easier for high-performing entrepreneurs like Samantha to get the support they need to expand into new markets.

The Government has a number of programs to help, including Global Affairs Canada's Canadian Trade Commissioner Service. With over 1,300 trade commissioners in 161 offices around the world and across Canada, the TCS provides companies with advice, connections and funding to help them explore new markets. Other federal partners like Export Development Canada and the Canadian Commercial Corporation offer complementary services, including financing, advisory services, and assistance accessing global supply chains.

To augment and modernize this platform of export support programs, the Government will be making transformative enhancements in the coming year, with a focus on simplifying the client experience, providing targeted support to high-potential firms and offering innovative services.

To this end, TCS transformative enhancements will support:

- Amalgamation of multiple trade promotion programs across the Government including CanExport, Canadian Technology Accelerators, Going Global Innovation and Canadian International Innovation Program, under TCS for simpler client navigation.
- The creation of a high-impact, agile TCS workforce with strong expertise.
- Modernization of digital tools to better serve Canadian businesses, including seamless client navigation across federal partners;
- Orientation towards the new economy, with targeted support towards growing Canada's exports in technology, digital services and intellectual property.
- Enhancement of local TCS presence across Canada to connect aspiring exporters with the TCS' platform.
- Efforts to connect women entrepreneurs with export opportunities.

In addition, Budget 2018 proposes to provide \$10 million over five years, starting in 2018–19, with \$2 million per year thereafter, to renew the successful Canadian Technology Accelerators program, which helps high-growth Canadian technology businesses take their leading products and services to key markets in the United States.

Over the next year, the Government will continue to refine its export support platform, including by simplifying and improving the client experience across the TCS, Export Development Canada and other federal partners.

### **Regional development agencies**

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To foster economic growth in communities across Canada, the Government proposes to provide an additional \$400 million over five years on an accrual basis, \$511 million over five years on a cash basis, starting in 2018–19, to the regional development agencies to support the Innovation and Skills Plan across all regions of Canada. Of this amount, \$105 million will support nationally coordinated, regionally tailored support for women entrepreneurs as part of the new Women Entrepreneurship Strategy. In addition, \$35 million of the funding will be dedicated to supporting skills development and economic diversification activities to help workers and communities in the West and in the Atlantic region adapt to Canada's transition to a low-carbon economy. This will complement the work of the recently established federal task force that will report later this year.

The Government also proposes to extend core funding of the regional development agencies that is currently time-limited:

- \$20 million per year on a cash basis, starting in 2018–19 and ongoing, to the Canadian Northern Economic Development Agency to continue its economic development programming.
- \$920 million over six years, on a cash basis, starting in 2018–19, to renew the funding for the Federal Economic Development Agency for Southern Ontario to support economic growth in southern Ontario through the delivery of federal programs and services.

The Government will also introduce legislation to enable Western Economic Diversification Canada to collaborate more effectively with provinces in its region of activity.

As part of the broader review of innovation programs, over the next year, the Government will explore ways to simplify the existing suite of 22 programs offered by the regional development agencies. It is proposed that the agencies will place greater emphasis in helping firms scale up, develop new markets and expand, as well as assist with the adoption of new technologies and processes. The agencies could also become the main platform to support regional innovation ecosystems. Under any proposed change, the regional development agencies will also maintain their current functions that support communities in advancing and diversifying their economies.

**Raising the bar in food innovation in Ontario:** Noblegen Inc. (Peterborough, Ontario) started as an award-winning high school science fair project for one of its co-founders and now creates bioproducts for use in food and beverage development. Four years since it was established, Noblegen is in discussions with five of the largest food and beverage companies in the world. Receiving support from the Federal Economic Development Agency for Southern Ontario via its Investing in Business Innovation Initiative, this clean-technology company is contributing to a sustainable supply chain for what we eat and drink every day, while expanding its local workforce and doing business within the community.

**YuKonstruct building the innovation ecosystem in the Territories:** Since its inception, and with sustained support from the Canadian Northern Economic Development Agency, the YuKonstruct Makerspace Society (Whitehorse, Yukon) has filled a gap in the innovation ecosystem in the territory. Following its initial success in creating the community makerspace in Canada's North—a collaborative, community-operated, multiuser workspace to provide access to tools and equipment to bring innovative ideas to life—YuKonstruct is now exploring options for expanding its support systems for entrepreneurs. In October 2017, YuKonstruct received the national Startup Canada Entrepreneur Support Award for demonstrating excellence in advancing Canadian entrepreneurship through leadership, innovation and impact.

## Placing Evidence at the Centre of Program Evaluation and Design

With these ambitious reforms, to ensure business innovation programming is investing in the right place, supporting high-performing businesses and meeting economic objectives, the Government proposes to provide:

- \$1 million per year ongoing, starting in 2018–19, to Statistics Canada to improve performance evaluations for innovation-related programs.
- \$2 million per year ongoing, starting in 2018–19 to the Treasury Board Secretariat to establish a central performance evaluation team to undertake innovation performance evaluations on an ongoing basis, including using the data developed by Statistics Canada.

To ensure that business innovation programming is also contributing to improved diversity outcomes, a national strategy will be developed outlining ways to boost the participation of underrepresented groups in an innovation-driven economy.

## Streamlining the Innovation Program Suite

Department	Count	Programs Streams Reviewed under Horizontal Innovation Review <sup>1</sup>	Consolidated Program Suite under Budget 2018	Count
Global Affairs Canada	5	Canadian Trade Commissioner Service	Canadian Trade Commissioner Service	1
		CanExport		
		Canadian Technology Accelerators		
		Going Global Innovation		
		Canadian International Innovation Program		
Natural Resources Canada	9	GeoConnections Program	Cleantech for Natural Resources	1
		Impact Canada Clean Technology Program Stream		
		Green Jobs: Science and Technology Internship Program	Innovation for Forestry	1
		Forest Innovation Program		
		Forest Research Institutes Initiative		
		Investments in Forest Industry Transformation Program	Innovation for Energy and Mineral Development	1
		Energy Innovation Program (ecoENERGY Innovation Initiative)		
		Oil Spill Response Science		
Mining Innovation Program				
Atlantic Canada Opportunities Agency	2	Business Development Program Atlantic Innovation Fund	Upcoming proposals on program consolidation. See section entitled "Regional Development Agencies"	
Canadian Northern Economic Development Agency	1	Strategic Investments in Northern Economic Development		
Canada Economic Development for Quebec Regions	5	Productivity and Expansion		
		Innovation and Technology Transfer		
		Commercialization and Exports		
		Network Structuring		
Western Economic Diversification Canada	2	New Business Development and Start-ups		
		Western Diversification Program		
Federal Economic Development Agency for Southern Ontario	9	Western Innovation Initiative		
		Advanced Manufacturing Fund		
		Investing in Business Growth and Productivity		
		Achieving Innovation and Manufacturing Excellence Global Initiative		
		SMART Advanced Technologies for Global Growth		
		Investing in Business Innovation		
		AC Jumpstart		
		SmartStart Seed Fund		
		Investing in Commercialization Partnerships		
Eastern Ontario Development Program				
Innovation, Science and Economic Development—Northern Ontario	3	Northern Ontario Development Program: Targeted Manufacturing Initiative for Northern Ontario		
		Northern Ontario Development Program: Youth Internships		
		Northern Ontario Development Program: Business Growth and Competitiveness Priority		
Natural Sciences and Engineering Research Council of Canada	6	Collaborative Research and Development	Natural Sciences and Engineering Research Council of Canada Collaborative Research and Development Program	1
		Engage Grant		
		Industrial Research Chairs		
		Connect Grants		
		Strategic partnership grants for networks and projects		
		Experience awards (previously Industrial Undergraduate Student Research Awards)		
Canadian Institutes of Health Research	3	Industry Partnered Collaborative Research	Canadian Institutes of Health Research—Collaborative Research and Development Program	1
		Proof of Principle Programs		
		eHealth Innovations Partnership Program		

Department	Count	Programs Streams Reviewed under Horizontal Innovation Review <sup>1</sup>	Consolidated Program Suite under Budget 2018	Count
Tri-Council	3	College and Community Innovation Program		1
		Centres of Excellence for Commercialization and Research	Consolidate programs and transfer responsibility to Innovation, Science and Economic Development under the Strategic Innovation Fund	-
		Business-led Centres of Excellence		
Public Services and Procurement Canada	1	Build in Canada Innovation Program	Consolidated within Innovative Solutions Canada	-
Innovation, Science and Economic Development Canada	8	Innovative Solutions Canada	Innovative Solutions Canada	1
		Strategic Innovation Fund		1
		Venture Capital Catalyst Initiative		1
		Canada Small Business Financing Program		1
		Innovation Superclusters Initiative		1
		Sustainable Development Technology Canada		1
		Innovation Canada	Innovation Canada	1
		Canada Business Network		
National Research Council Canada	17	Concierge	Consolidated within Innovation Canada	-
		Aerospace		
		Aquatic and Crop Resource Development	National Research Council—Technology Development and Advancement Program	1
		Automotive and Surface Transportation		
		Construction		
		Energy, Mining and Environment		
		Human Health Therapeutics		
		Canadian HIV Technology Development Program		
		Information and Communication Technologies		
		Medical Devices		
		Ocean, Coastal, and River Engineering		
		Industrial Research Assistance Program: Contributions to Firms		
		Industrial Research Assistance Program: Contributions to Organizations		
		Industrial Research Assistance Program: Youth Employment Program		
		Industrial Research Assistance Program: Youth Employment Program Green		
		Industrial Research Assistance Program: EUREKA		
		Canadian Accelerator and Incubator Program	Regional development agencies could increasingly take on responsibilities for accelerator and incubator support	1
Third Party Organizations receiving funding from Innovation, Science and Economic Development Canada	6	CANARIE		6
		Mitacs Canada		
		Stem Cell Network		
		Genome Canada		
		Centre for Drug Research and Development		
		Futurpreneur Canada		
Agriculture and Agri-Food Canada	3	Canadian Agricultural Adaptation Program		3
		Enabling Commercialization and Adoption		
		Industry-led Research and Development		
Canadian Space Agency	3	Earth Observation Applications & Utilizations		3
		Space Technology Development Program		
		David Florida Laboratory		
National Defence	1	Defence Innovation Research Program		1
Environment and Climate Change Canada	1	Science Horizons Youth Internship Program		1
Crown-Indigenous Relations and Northern Affairs Canada	1	Aboriginal Entrepreneurship Program: Business Capital and Support		1
Canadian Heritage	2	Canada Media Fund		2
		Canada Periodical Fund		
POLAR Knowledge Canada	1	Northern Science and Technology Program		1
<b>Total of program streams</b>	<b>92</b>			<b>35 +</b>

Note: 1. Program streams largely reflect the inventory of federal business innovation and clean technology programs reviewed by the Treasury Board Secretariat in undertaking the Horizontal Innovation and Clean Technology Review. Programs listed may not align with the Treasury Board Secretariat's inventory as the scope of the relevant programs included in the Review was refined. More recent measures, such as the Innovation Superclusters Initiative, that were not within the scope of the Review have also been included to better represent the current suite of innovation and clean technology programming available to businesses. Program streams not listed above were not examined in the Review and are unchanged.

# Expanding Access to Entrepreneurship in Canada

Entrepreneurs with different backgrounds, experience and global relationships enrich Canada's innovation system and help to create well-paying jobs for Canadians.

## A New Women Entrepreneurship Strategy

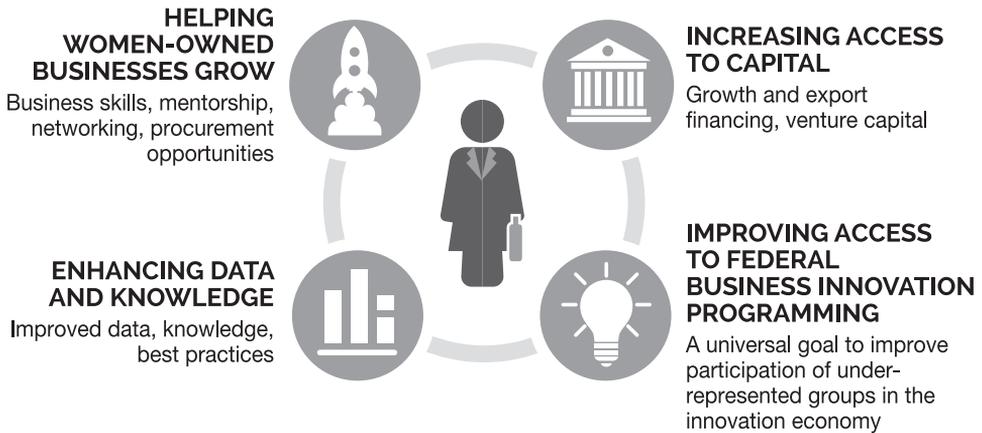
In Canada, fewer than one in six businesses (16 per cent) are majority-owned by women, and businesses owned by women tend to be smaller than businesses owned by men, although the difference varies by industry, according to the Business Development Bank of Canada (BDC) based on 2014 data from Statistics Canada.

Women entrepreneurs face unique barriers in accessing capital, supply chains and export programs compared to their male counterparts. Women entrepreneurs may also have a harder time receiving training and finding mentorship.

The Government believes that with greater support, women-led businesses could enter, compete and win on the world stage, boosting economic growth and creating more good, well-paying jobs here at home.

This is why helping women entrepreneurs scale up their businesses is a key part of the Government's Innovation and Skills Plan. Drawing on recommendations made by the Canada-United States Council for Advancement of Women Entrepreneurs and Business Leaders, the new **Women Entrepreneurship Strategy** will take a comprehensive approach, addressing critical growth stages and other challenges to better support women entrepreneurs, to help them grow their businesses and to remove barriers to their success.

**Figure 2.5: Women Entrepreneurship Strategy**



## Helping Women-Led Businesses Grow

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In order to grow, businesses require skills, access to mentorship and networking opportunities.

- Budget 2018 proposes to provide \$105 million over five years to the regional development agencies to support investments in women-led businesses, helping them scale and grow, as well as to support regional innovation ecosystems, including incubators and accelerators, and other third-party programs supporting mentorship, networking and skills development. These areas are consistent with the recommendations of the Canada-United States Council for Advancement of Women Entrepreneurs and Business Leaders, and the Expert Panel on Championing and Mentorship for Women Entrepreneurs, chaired by Arlene Dickinson. Further details on these initiatives will be announced in the coming months.
- The federal government is the single largest procurer of goods and services in Canada. In its recent report, the Canada-United States Council for Advancement of Women Entrepreneurs and Business Leaders recommended that Canada and the U.S. increase the proportion of procurement from women-led businesses. In the U.S., the federal government has set a target that 5 per cent of all federal contracts be awarded to women-led SMEs. The Government of Canada does not currently have sufficient data to be able to assess this figure for all federal procurement, but we are committed to filling this gap in knowledge and reviewing potential options.
- Moreover, we also recognize the importance of ensuring that women-owned businesses have equal opportunity to participate in federal procurements. Of those SMEs who participate in federal procurement, 10 per cent are women-owned. The Government intends to introduce measures to increase this participation rate by 50 per cent (to at least 15 per cent), in order to reflect the current proportion of SMEs majority led by women entrepreneurs in the broader population.
- The Business Development Bank of Canada (BDC) will coordinate a series of boot camps across Canada for promising women entrepreneurs looking to start their business. These bootcamps will focus on enhancing business skills and financial literacy. As well, the BDC will expand its suite of online learning content to better equip women entrepreneurs with the knowledge and tools they need to succeed.
- Growing, women-owned firms will also need to find export opportunities. Budget 2018 proposes that the Government will invest \$10 million over five years, starting in 2018–19, to connect women with expanded export services and opportunities through the Business Women in International Trade Program, with a specific focus of taking advantage of new opportunities arising from the Canada-European Union Comprehensive Economic and Trade Agreement and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

## Increasing Access to Capital

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As women-led companies grow, their need for capital increases. Additional capital can help women-led companies scale into globally competitive companies, and support sales into international markets.

- To better support the growth of women-led businesses into competitive, sustainable world-class companies, the Government will make available \$1.4 billion over three years, starting in 2018–19, in new financing for women entrepreneurs through the BDC. This commitment is in addition to an increase to \$200 million (from \$70 million) for investments in women-led technology firms over five years through the BDC's Women in Technology Fund.
- Women entrepreneurs also need access to financing that enables them to take advantage of opportunities in the global marketplace. To provide financing and insurance solutions for women-owned and women-led businesses that are exporting or looking to begin exporting, the Government will make available \$250 million over three years, starting in 2018–19, through Export Development Canada (EDC). As well, EDC will support the international success of women entrepreneurs by providing expert advice, including through training sessions. EDC will also partner with women business associations, the Canadian Trade Commissioner Service and the BDC in order to ensure more women-led companies looking to export have quick access to available federal resources.
- To support women entrepreneurs in agriculture, the Government will create and launch a new lending product in 2018–19 designed specifically for women entrepreneurs through Farm Credit Canada. In addition, Farm Credit Canada will continue to offer advisory services, learning events and knowledge initiatives aimed at women entrepreneurs in the agriculture and agri-food sectors.
- Essential capital and guidance to women-led companies is also provided by Canada's venture capital market. The Government is committed both to improving the representation of women among venture capital firm managers, and to ensuring venture capital funds are investing in Canada's promising women-owned firms. A recent report by MaRS and PricewaterhouseCoopers estimated only 30 per cent of Canadian venture capital firms have a female partner, and only 12 per cent of *all* venture capital partners are female.
- The Government's Venture Capital Catalyst Initiative, launched in December 2017 with the goal of injecting up to \$1.5 billion into Canada's venture capital market, includes a strong focus on gender balance and diversity. All proposals submitted under the Initiative are expected to demonstrate how they will improve gender representation among venture capital fund managers and portfolio companies, and will be assessed on this basis. This gender focus is expected to reduce bias in the investment community, and ensure high-performing women-owned firms can access the capital they need.

## **Improving Access to Federal Business Innovation Programming**

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Women entrepreneurs also depend on fair and efficient access to the entire suite of federal business innovation programming, from research and development support all the way through export programs.

- To address potential biases, and maximize the opportunities available to women entrepreneurs, Budget 2018 announces that the Government's coming reform to federal innovation programs will include a universal goal to improve the participation of underrepresented groups, including women entrepreneurs, in the innovation economy.

## **Enhancing Data and Knowledge**

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Finally, improved data, knowledge and best practices will support the advancement of women-owned companies throughout the innovation ecosystem, and will allow policymakers to make well-informed, evidence-based decisions. Collecting gender-disaggregated data—data that shows differences between women and men—is important, as is collecting data that explains differences among women. This information helps to guide decisions that will generate better results for more people.

- To accelerate the accumulation and dissemination of knowledge, data and best practices for women entrepreneurs, the Government will make available \$9.5 million over three years to support third-party proposals through a competitive process, to be administered by Innovation, Science and Economic Development.

## **Advancing Women Business Leaders**

Encouraging corporate diversity is not just about creating equal opportunities for women. It is about creating a competitive advantage for Canadian businesses by making sure that our businesses have access to the talent, ambition, skills and new perspectives that women bring to the job. While there is no shortage of women with senior leadership experience in Canada, change is slow and women remain a minority on corporate boards, holding less than one fifth (19 per cent) of board seats and only 15 per cent of executive officer positions at S&P/TSX Composite Index companies, according to Catalyst Canada.

More women in the workforce inevitably leads to a greater talent pool—and when women hold leadership positions, companies see stronger financial performance, more innovation, and more effective decision-making at the board level. A McKinsey Global Institute study of more than 1,000 companies in 12 countries found that the companies that had the most gender diversity on their executive teams were 21 per cent more likely to have above-average profitability, compared to the “least diverse” companies. Further, a 1 per cent increase in gender diversity in Canadian workplaces is associated with an average increase of 3.5 per cent in revenue and 0.7 per cent in workplace productivity, according to the Centre for International Governance Innovation.

The Government is committed to making gender equality a priority and harnessing this competitive advantage for Canada. This includes the way that the Government itself makes decisions. In 2015, the Government unveiled Canada's first gender-balanced Cabinet. Since that time, the percentage of women appointed by the federal Cabinet to senior positions has grown, and women now account for more than 40 per cent of these high-level appointments. As a further example of its commitment to gender equality and its willingness to lead by example, the Government has named the advancement of gender equality and women's economic empowerment one of the key themes during Canada's G7 Presidency this year.

In addition, legislation recently introduced in Parliament by the Minister of Innovation, Science and Economic Development proposes amendments to the *Canada Business Corporations Act* that would require federally incorporated corporations to make annual disclosures to shareholders regarding the diversity of their senior management teams and boards of directors.

Building on this legislative requirement, the Government will further support corporate inclusion by publicly recognizing corporations that are committed to promoting women, including minority women, to senior management positions and boards of directors. In partnership with the private sector, the Government will create an annual award for Canadian corporations showing leadership in this area.

## Expanding the Diversity of Entrepreneurs

Canada's Start-up Visa Program provides permanent resident immigration status to innovative global entrepreneurs with the potential to grow their companies in Canada. In July 2017, the Government announced that the Start-up Visa Program, initially launched as a pilot project, will be made a permanent pathway to immigrate to Canada, as of March 31, 2018.

When first introduced, the Start-up Visa was a small, low-volume program. But in recent years, it has seen increased interest from global entrepreneurs eager to come to Canada and grow their businesses. To match that growing demand, Budget 2018 proposes to provide \$4.6 million over five years, beginning in 2018–19, and \$0.8 million per year ongoing, to enhance the Start-up Visa client-service experience by ensuring applicants, private sector partners and immigration officials are able to process applications electronically and more efficiently.

## Canada's Start-Up Visa Program

During the first three years of the pilot project, Start-Up Visa entrepreneurs received over \$3.7 million in investment capital from private-sector partners, including venture capital funds, angel investor groups and business incubators.

Some of the start-ups created with the help of the Start-Up Visa Program have already been acquired by larger companies—an indicator of success for a new venture. For example, Huzza Media—an online platform for musicians was acquired by Kickstarter in 2017.

Other examples of successful companies established through the Start-Up Visa Program include:

- Zeetl—a social media telephony company acquired by Hootsuite in 2014; and,
- Lendful—an online lending marketplace that has raised \$17 million in debt and equity financing.

### Quotes

*"Every company launched in Canada with the help of the Start-Up Visa Program has the potential to be a big win for Canadians. Our Government's Innovation and Skills Plan has identified the nurturing entrepreneurship and growth of start-ups as vitally important to Canada's present and future economy. Making the Start-Up Visa Program permanent supports that agenda."*

— The Honourable Ahmed Hussen,  
Minister of Immigration, Refugees and Citizenship

*"Canadians benefit through the jobs that are created when entrepreneurs come from all corners of the globe to start businesses in this country. By making the Start-Up Visa Program permanent, Canada will attract more innovative entrepreneurs who generate new business opportunities, create jobs and equip Canadians with the skills they need for the jobs of the future."*

— The Honourable Navdeep Bains,  
Minister of Innovation, Science and Economic Development

## Making it Easier for Entrepreneurs and Companies to Do Business

For Canadian companies to grow and thrive in the global marketplace, they also need a competitive and predictable business environment that supports investment. This includes marketplace regulations and standards that support innovation and that allow businesses to better access markets at home and abroad. Budget 2018 proposes a new, modern approach to intellectual property, an ambitious regulatory agenda, and a simpler federal procurement system to make it easier for companies to do business and grow.

### What Is a Patent Collective?

A Patent Collective is a way for firms to share, generate, and license or purchase intellectual property. The collective approach is intended to help Canadian firms ensure a global “freedom to operate”, mitigate the risk of infringing a patent, and aid in the defence of a patent infringement suit.

## A New Intellectual Property Strategy

For Canadian businesses to grow and create good, well-paying jobs, they need the ability to turn their new ideas into new goods and services that can compete in the marketplace. To give businesses the confidence they need to grow and take risks, a well-defined strategy that manages and protects intellectual property is needed.

Budget 2018 proposes measures in support of a new **Intellectual Property Strategy** to help Canadian

entrepreneurs better understand and protect intellectual property, and get better access to shared intellectual property.

Budget 2018 proposes to invest \$85.3 million over five years, starting in 2018–19, with \$10 million per year ongoing, in support of the strategy. The Minister of Innovation, Science and Economic Development will bring forward the full details of the strategy in the coming months, including the following initiatives to increase the intellectual property literacy of Canadian entrepreneurs, and to reduce costs and create incentives for Canadian businesses to leverage their intellectual property:

- To better enable firms to access and share intellectual property, the Government proposes to provide \$30 million in 2019–20 to pilot a **Patent Collective**. This collective will work with Canada’s entrepreneurs to pool patents, so that small and medium-sized firms have better access to the critical intellectual property they need to grow their businesses.
- To support the development of **intellectual property expertise and legal advice** for Canada’s innovation community, the Government proposes to provide \$21.5 million over five years, starting in 2018–19, to Innovation, Science and Economic Development Canada. This funding will improve access for Canadian entrepreneurs to intellectual property legal clinics at universities. It will also enable the creation of a team in the federal government to work with Canadian entrepreneurs to help them develop tailored strategies for using their intellectual property and expanding into international markets.

- To support strategic intellectual property tools that enable economic growth, Budget 2018 also proposes to provide \$33.8 million over five years, starting in 2018–19, to Innovation, Science and Economic Development Canada, including \$4.5 million for the creation of an **intellectual property marketplace**. This marketplace will be a one-stop, online listing of public sector-owned intellectual property available for licensing or sale to reduce transaction costs for businesses and researchers, and to improve Canadian entrepreneurs' access to public sector-owned intellectual property.

The Government will also consider further measures, including through legislation, in support of the new intellectual property strategy.

### **Helping All Canadians Harness Intellectual Property**

Intellectual property is one of our most valuable resources, and every Canadian business owner should understand how to protect and use it.

To better understand what groups of Canadians are benefiting the most from intellectual property, Budget 2018 proposes to provide Statistics Canada with \$2 million over three years to conduct an intellectual property awareness and use survey. This survey will help identify how Canadians understand and use intellectual property, including groups that have traditionally been less likely to use intellectual property, such as women and Indigenous entrepreneurs. The results of the survey should help the Government better meet the needs of these groups through education and awareness initiatives.

The Canadian Intellectual Property Office will also increase the number of education and awareness initiatives that are delivered in partnership with business, intermediaries and academia to ensure Canadians better understand, integrate and take advantage of intellectual property when building their business strategies. This will include targeted initiatives to support underrepresented groups.

Finally, Budget 2018 also proposes to invest \$1 million over five years to enable representatives of Canada's Indigenous Peoples to participate in discussions at the World Intellectual Property Organization related to traditional knowledge and traditional cultural expressions, an important form of intellectual property.

## Modernizing Canada's Regulatory Frameworks

In its December 2017 report, the Advisory Council on Economic Growth identified three priority areas for establishing an agile regulatory system designed for the new economy:

- Catalyze innovation across the economy through regulations that accommodate emerging technologies and business models, especially in high-potential sectors.
- Drive coordination between agencies and jurisdictions, both within Canada and internationally.
- Promote efficient and predictable regulation.

These priority areas were further supported by the early reports of the six Economic Strategy Tables.

In response to these recommendations, Budget 2018 proposes to provide \$11.5 million over three years, starting in 2018–19, for the Government to pursue a regulatory reform agenda focused on supporting innovation and business investment. The goal is to make the Canadian regulatory system more agile, transparent and responsive, so that businesses across the country can explore and act on new opportunities, resulting in benefits for all Canadians. The approach includes:

- Targeted reviews, over the next three years, of regulatory requirements and practices that are bottlenecks to innovation and growth in Canada, with an initial focus on agri-food and aquaculture, health/bio-sciences, and transportation and infrastructure, including emerging technologies such as autonomous vehicles.
- Canada's leadership on internal trade at the Canadian Free Trade Agreement Regulatory Reconciliation and Cooperation Table.
- Developing an e-regulation system—an online platform modelled on the successful U.S. Office of Information and Regulatory Affairs website [Regulations.gov](http://Regulations.gov)—to engage Canadians on regulation in order to improve the transparency and efficiency of the overall rule-making process.

The Government also proposes to introduce legislation to reduce the regulatory burden faced by businesses. This includes streamlining Canada's *Customs Tariff* legislation in order to simplify its structure and administration. This measure will reduce the overall complexity of the legislation, which will ease administrative burden and reduce compliance costs for Canadian businesses and government.

## Simpler and Better Procurement

Budget 2017 announced the creation of Innovative Solutions Canada, a new initiative modelled on the very successful U.S. Small Business Innovation Research program. As the single largest purchaser of Canadian goods and services, the Government of Canada has a unique opportunity to support the growth of Canadian businesses. The introduction of Innovative Solutions Canada fulfilled a longstanding request from Canadian companies that need a “first customer” to test and validate their innovations. With this assistance, Canadian businesses that operate in areas of strategic importance to our economy are better able to scale up, create new jobs and find new customers around the world.

To simplify the suite of innovation programs across the federal government, Budget 2018 proposes to consolidate the existing Build in Canada Innovation Program, focused on the procurement of later stage innovative goods and services, into Innovative Solutions Canada.

In addition, Canadian companies have long asked the federal government to improve its relationship with suppliers—to make opportunities easier to find, simpler to navigate and faster to award, with less administrative burden. Government procurement is heavily paper-based and offers limited self-serve options for suppliers.

Moving procurement online is a key element of a more efficient procurement system. It will allow more suppliers to connect with the Government, and make government procurement opportunities more accessible to potential suppliers, regardless of size or geographic location.

To this end, the Government will establish a new electronic procurement platform. This will help Canadian small and medium-sized businesses better access opportunities to work with the Government. Budget 2018 proposes to provide \$196.8 million over five years, beginning in 2018–19, to Public Services and Procurement Canada to establish this platform.

The Government also recognizes the importance of ensuring that women-owned businesses have equal opportunity to participate in federal procurement opportunities. In this regard, e-procurement will support the Government's commitment as part of the new Women Entrepreneurship Strategy to increase the participation rate for women-owned small and medium-sized businesses in the federal procurement supply chain to 15 per cent, and efforts to ensure that diverse suppliers are provided with more opportunities to compete in federal procurement processes.

## Supporting the Rural Economy

The Government's Innovation and Skills Plan is about ensuring an innovative, growing and sustainable economy that works for everyone. From coast to coast to coast, Canadians are contributing to this shared vision in communities large and small. In addition to the new funding and simpler programming proposed for the regional development agencies earlier in this chapter in "The Creation of Four Flagship Platforms—Regional Development Agencies," Budget 2018 proposes the following measures in support of Canada's rural economy.

### Developing the Next Generation of Rural Broadband

The Government recognizes that access to the internet is more than just a convenience—it is an essential means by which citizens and businesses access information, offer services and create opportunities. To reach the most remote areas of Canada, new technological solutions will be required. One promising example is the use of low Earth orbit (LEO) satellites.

Networks of LEO satellites have the potential to provide Canadians living in rural and remote areas with significantly improved access to Internet and wireless services at more affordable prices. LEO satellites, situated closer to the surface of the Earth than traditional high orbit satellites, can receive and transmit data with significantly improved response times, speeding up data services, while maintaining the benefits of satellite technology, including the ability to provide Internet across challenging landscapes at much lower costs than fibre-optic technology. Canada is also uniquely placed with space satellite industry leaders to build and operate LEO satellite technologies, creating jobs and market opportunities around the world. Budget 2018 proposes funding of \$100 million over five years for the Strategic Innovation Fund, with a particular focus on supporting projects that relate to LEO satellites and next generation rural broadband.

### Supporting Early-Stage Mineral Exploration by Junior Companies

The 15-per-cent Mineral Exploration Tax Credit helps junior exploration companies raise capital to finance "grassroots" mineral exploration away from an existing mine site. This tax credit is scheduled to expire on March 31, 2018. Given the continuing challenges for junior mining companies, the Government proposes to support their mineral exploration efforts by extending the credit for an additional year, until March 31, 2019. This measure will help junior exploration companies to raise more equity and is expected to result in a net reduction of federal revenues of approximately \$45 million over the 2018–19 to 2019–20 period.

## Protecting Jobs in Eastern Canada's Forestry Sector

The sustainable management of our natural resources leads to long-term economic opportunity. Research on the spruce budworm, one of the most damaging pests to spruce trees in Canada, has identified ways to protect forests against its cyclical outbreaks. This is critical to support the forest industry and, in turn, jobs in parts of the country—such as Atlantic Canada—where the forestry sector is an important part of the economy.

Through Budget 2018, the Government proposes to take action alongside Atlantic provinces and the forest industry, by making available up to \$74.75 million over five years, starting in 2018–19, based on a 60:40 federal to provincial and industry cost-sharing basis, to prevent the spread of spruce budworm. Federal contributions will come from Natural Resources Canada. This will allow government, academia, industry and other stakeholders to continue to work together to protect our forests and support the economy.

## Renewing Canada's Network of Small Craft Harbours

Safe and accessible small craft harbours are essential to Canada's fisheries industry as well as its coastal communities. Expanding fisheries operations and the increasing size of fishing vessels require deeper and wider harbours. Budget 2018 proposes to provide \$250 million on a cash basis over two years, starting in 2018–19, to Fisheries and Oceans Canada to renew its network of small craft harbours and work with municipalities where investments and divestitures can enhance local communities. Budget 2018 investments allow the Government to support, for example:

- Building additional berthing space to help address overcrowding in Charlottetown in Southern Labrador.
- Extending the seawall to protect the fisheries industry from the full force of waves at the entrance of the harbour in Sainte-Thérèse-de Gaspé, Quebec.
- Rehabilitating the east and west piers of Port Dalhousie in St. Catharines, Ontario.
- Making improvements to enhance the safety of moorage facilities for the fisheries industry and other harbour users in Port Hardy and Powell River in British Columbia.

## Chapter 2—Progress

millions of dollars

	2017– 2018	2018– 2019	2019– 2020	2020– 2021	2021– 2022	2022– 2023	Total
<b>2.1 Investing in Canadian Scientists and Researchers</b>							
Granting Councils	0	115	155	185	235	235	925
Granting Councils: New Tri-Council Fund	0	35	45	65	65	65	275
Granting Councils: Increasing Diversity in Science	0	5	6	4	4	4	21
Granting Councils: Canada Research Chairs	0	25	35	50	50	50	210
Research Support Fund	0	29	39	46	59	59	231
Investing in the Equipment Researchers Need—Canada Foundation for Innovation	0	32	62	120	183	366	763
Harnessing Big Data	0	64	64	166	145	133	572
College and Community Innovation Program	0	20	30	30	30	30	140
Institute for Quantum Computing	0	0	5	5	5	0	15
Centre for Drug Research and Development	0	0	16	16	16	0	48
Rick Hansen Institute	0	6	6	6	6	0	24
Centre of Excellence on the Canadian Federation	0	10	0	0	0	0	10
<b>2.1 Investing in Canadian Scientists and Researchers Total</b>	<b>0</b>	<b>340</b>	<b>463</b>	<b>692</b>	<b>798</b>	<b>942</b>	<b>3,234</b>
<b>2.2 Stronger and More Collaborative Federal Science</b>							
National Research Council	0	108	108	108	108	108	540
Renewing Federal Laboratories	0	18	17	17	18	18	87
<i>Less: Funds Sourced from Existing Departmental Resources</i>	0	-2	-2	-2	-2	-2	-9
Council of Canadian Academies	0	0	0	3	3	3	9
<b>2.2 Stronger and More Collaborative Federal Science Total</b>	<b>0</b>	<b>124</b>	<b>124</b>	<b>126</b>	<b>127</b>	<b>127</b>	<b>627</b>
<b>2.3 Innovation and Skills Plan—A More Client-Focused Federal Partner for Business</b>							
Innovation Canada – Accelerated Growth Service	0	2	3	3	3	3	14
Industrial Research Assistance Program	0	100	150	150	150	150	700
Canadian Technology Accelerators Program	0	2	2	2	2	2	10
Regional Development Agencies	0	80	80	80	80	80	400
Renewal of Base Funding for the Canadian Northern Economic Development Agency	0	20	20	20	20	20	100
Renewal of Base Funding for the Federal Economic Development Agency for Southern Ontario	0	25	159	184	184	184	736
Placing Evidence at the Centre of Program Evaluation and Design	0	3	3	3	3	3	15

## Chapter 2—Progress

millions of dollars

	2017– 2018	2018– 2019	2019– 2020	2020– 2021	2021– 2022	2022– 2023	Total
A New Women							
Entrepreneurship Strategy	0	23	23	23	23	23	115
<i>Less: Funds existing in the Fiscal Framework</i>	0	-21	-21	-21	-21	-21	-105
Advancing Women							
Business Leaders	0	0.3	0.2	0.2	0.2	0.2	1
Expanding the Diversity of Entrepreneurs	0	1	1	1	1	1	5
A New Intellectual Property Strategy	0	13	41	11	11	10	85
Modernizing Canada's Regulatory Framework	0	4	4	3	0	0	12
<i>Less: Funds Sourced from Existing Departmental Resources</i>	0	-0.2	-0.3	-0.2	0	0	-0.7
Simpler and Better Procurement	0	52	64	36	23	22	197
Supporting the Next Generation of Rural Broadband	0	10	20	20	25	25	100
Supporting Early-Stage Mineral Exploration by Junior Companies	0	65	-20	0	0	0	45
Protecting Jobs in Eastern Canada's Forestry Sector	0	11	17	22	25	1	75
<i>Less: Funds Sourced from Existing Departmental Resources</i>	0	-2	-4	-7	-7	0	-20
Renewing Canada's Network of Small Craft Harbours	0	47	33	3	3	3	90
<b>2.3 Innovation and Skills Plan—A More Client-Focused Federal Partner for Business Total</b>	<b>0</b>	<b>434</b>	<b>575</b>	<b>533</b>	<b>525</b>	<b>506</b>	<b>2,574</b>
<b>Chapter 2—Net Fiscal Impact</b>	<b>0</b>	<b>898</b>	<b>1,162</b>	<b>1,351</b>	<b>1,450</b>	<b>1,575</b>	<b>6,435</b>