



## Industry Canada

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# Science and Technology Consultation

## Seizing Canada's Moment Moving Forward in Science, Technology and Innovation

### Consultation Paper

#### Feedback

Responses can be sent by email to [✉ science-tech-innovation-consultation@ic.gc.ca](mailto:science-tech-innovation-consultation@ic.gc.ca) on or before February 7, 2014.

### Introduction

In 2007, Prime Minister Stephen Harper announced the Government of Canada's science and technology strategy, *Mobilizing Science and Technology to Canada's Advantage*, which identified people, knowledge and entrepreneurial advantages.

Under this strategy, the government has invested more to support science, technology and innovative companies than ever before.

The government remains focused on creating jobs, growth and long-term prosperity for Canadians. It is doing so by encouraging partnerships with industry, attracting highly skilled researchers, continuing investments in discovery-driven research, strengthening Canada's knowledge base, supporting research infrastructure and providing incentives to private sector innovation.

The government has transformed the National Research Council, doubled its investment in the Industrial Research Assistance Program, supported research collaborations through the federal granting councils and recently created the new Venture Capital Action Plan. With these and other achievements, the Government of Canada is helping to promote greater commercialization of research and development (R&D) and is supporting world-class discovery-driven research at all levels.

While the government builds on these actions to enhance business innovation, it will continue to develop areas of strength, deliver solutions and protect support for research.

In a highly competitive global environment where innovation and collaboration matter, the world continues to take notice of Canada. Our country continues to lead the G7 in spending on R&D in higher education and is the only G7 country to increase its number of scientific papers above the world average in recent years. Canada has a world-class post-secondary education system that embraces and successfully leverages collaboration with the private sector, particularly through research networks. There has also been a net migration of researchers over the past decade as Canada increasingly continues to be a sought-after destination for some of the world's brightest minds.

These are achievements of which Canadians can be proud. The government and all stakeholders must continue to build on these accomplishments by seeking and seizing innovative solutions to ensure Canada remains well-positioned in the global race for excellence, talent and prosperity. Canada must seize this moment.

Canada must become more innovative—where "innovative" means "creating new or significantly improved products or process and doing business differently."

To be successful in innovation, every partner in the federal science, technology and innovation (ST&I) enterprise has a role to play: businesses that embrace innovation-based strategies; post-secondary and research institutions that attract and nurture highly qualified and skilled talent; researchers who push the frontiers of knowledge; and governments that provide the support and environment in which discovery and innovation will thrive.

The time is right to build on Canada's core strengths as leaders in research and to continue to sharpen the focus and impact of the ST&I investments by providing a new framework to guide federal ST&I investments and priorities. That is why the Government of Canada stated its intention to release an updated ST&I Strategy in the October 2013 Speech from the Throne.

Through this consultation process, the government is seeking the views of stakeholders from all sectors of the ST&I system—including universities, colleges and polytechnics, the business community, and Canadians—to help identify solutions that reflect the realities of today's ever-changing global innovation landscape. A renewed ST&I Strategy will reflect the need to maintain and build on Canada's strengths while identifying opportunities.

The government welcomes written submissions from all Canadians on the policy issues and questions presented in this paper.

## **Moving Forward Through Leadership in Science, Technology and Innovation**

### **A. Business Innovation**

The government continues to ensure that Canada has the optimal conditions in place to foster innovation, support investment and trade, and grow the economy. This is being achieved through low taxes, strong support for new businesses, a soundly regulated banking system, and ready availability of financial services. The government is also reducing red tape, expanding training partnerships and improving access to venture capital.

Collaboration is key to mobilizing innovation, and that is why the government continues to invest in partnerships between businesses and colleges and universities. Through initiatives like the Business-led Networks of Centres of Excellence and the Centres of Excellence for Commercialization and Research, Canada's research capacity is being focused on commercializing research breakthroughs and increasing private sector R&D.

Still, Canadian businesses continue to underperform when it comes to innovation—a primary driver of productivity growth—when compared to other competing nations. The performance of business R&D is one oft-cited measure used to gauge the level of innovative activity in a country's business sector.

This prompted the Government of Canada to launch a comprehensive review of federal support for business R&D in 2010 culminating in a final report, *Innovation Canada: A Call to Action*, which was released in October 2011.

Informed by this review, the government took action and announced a new approach to supporting business innovation that it outlined in Economic Action Plans (EAP) 2012 and 2013. Under this innovation agenda, focus has shifted to demand-driven policies, the use of procurement to provide incentive for innovative activity in firms, improved access to venture capital, augmented and more coordinated direct support to firms, and deeper partnerships and connections between the public and private sectors.

On October 17, 2011, the Expert Panel on Federal Support to Research and Development released its report. The key recommendations of the report advised the government to:

- improve access to venture capital;
- shift resources from indirect to a smaller number of direct business innovation programs;
- simplify and streamline the SR&ED program;
- support innovation through procurement; and
- refocus the National Research Council.

## Questions for Discussion

- Building on the advice provided by the Expert Panel on Federal Support for Research and Development, what more can be done to improve business investment in R&D and innovation?
- What actions could be taken, by the government or others, to enhance the mobilization of knowledge and technology from government laboratories and universities, colleges and polytechnics to the private sector?

## B. Developing Innovative and Entrepreneurial People

Canada boasts a workforce filled with talented, skilled and creative people. It is a critical element of a successful national economy. Canadians have reached top tier global performance in reading, mathematics, problem solving and science, and Canada has rising numbers of graduates with doctoral degrees in science and engineering.

This valuable resource of highly qualified and skilled individuals needs to be better leveraged. Federal investments in programs such as those delivered by Mitacs, which give students opportunities to gain valuable industry experience by doing hands-on work solving private sector challenges, are part of the solution.

Mitacs, a not-for-profit research organization with a proven track record of helping businesses solve problems by connecting them with graduate students, is supporting industrial R&D activities at 1,200 companies through an additional 4,800 Accelerate internships delivered over a five-year period, beginning in 2012–13. (Economic Action Plan 2012)

## Question for Discussion

- How can Canada continue to develop, attract and retain the world's top research talent at our businesses, research institutions, colleges and polytechnics, and universities?

## C. Excellence in Public and Post-Secondary Research and Development

Canada's capacity for knowledge creation is among the most impressive in the world. Backed by a strong commitment from government, Canada continues to rank first in the G7 for R&D performed by the higher-education sector and has documented strong capacity in research excellence and in developing, attracting and retaining highly qualified personnel.

Canada has a world-renowned post-secondary system that includes almost 100 universities and some 130 colleges and polytechnics. Colleges and polytechnics play an important role in helping small and medium-sized enterprises bring new technologies, products and processes to the marketplace.

Canada's foundation of knowledge remains impressive. The ease and ability of the academic community to collaborate, including through research networks, is also well-recognized. All stakeholders must continue to build on that advantage and leverage it to deliver solutions to continually improve Canada's economic and social well-being. The government remains committed to supporting discovery-driven research, supporting R&D by the higher-education sector and helping sustain Canada's strong capacity for knowledge generation and attracting talent. Most recently, this was reflected in EAP 2012 and 2013, which made investments in the granting agencies, Genome Canada, the Canadian Institute for Advanced Research and the Canada Foundation for Innovation.

Since the release of the 2007 S&T Strategy, the combined annual S&T expenditures of SSHRC, CIHR and NSERC are expected to reach \$2.8 billion in 2012–13, representing an increase of 17 percent since 2006–07, when they stood at \$2.4 billion.

Through the Knowledge Infrastructure Program, the Government of Canada supported over 520 advanced research infrastructure projects at over 240 colleges and universities in 190 communities across Canada.

In addition to direct research funding, the Indirect Costs Program, delivered through the granting agencies, covers a portion of research-related institutional costs that cannot be attributed to a specific federally funded research project. This helps foster a research environment that enables universities and colleges to make optimal use of federal research funding. In 2012–13, the program budget reached \$332 million, an increase of 28 percent since 2005–06.

## Questions for Discussion

- How might Canada build upon its success as a world leader in discovery-driven research?
- Is the Government of Canada's suite of programs appropriately designed to best support research excellence?

## Conclusion—Moving Forward

Canada has an impressive record when it comes to research and the quality of its knowledge base. Its strong history and reputation for research excellence and scientific success are well-documented. Canada's workforce is among the most skilled and well-educated in the world. In recent years, Canada has also built a strong reputation for its economic management and solid fiscal fundamentals. Still, the innovative performance of Canada's firms and the productivity growth continue to lag behind competing nations. The ability to leverage Canada's strengths and address the challenges the country faces will be critical to continually seek new and better solutions for enhancing the standard of living and prosperity of all Canadians.

The government is committed to enhancing Canada's competitive advantage based on science, technology and innovation through ongoing investments that enrich Canada's knowledge base and talent pool. The government is also committed to moving forward with a new approach to promoting business innovation—one that emphasizes active business-led initiatives and focuses resources on better fostering the growth of innovative firms. This will provide a solid foundation upon which Canadian businesses can innovate, create high-paying jobs, access new markets and find solutions to boost the prosperity of all Canadians.

Achieving this requires the concerted effort of all players in the innovation system—to ensure each does what one does best and to leverage one another's strengths. For colleges and universities, this means continuing to push the frontiers of knowledge and to develop our talent pool. For the business sector, it means harnessing the strengths of our knowledge base and workforce to find more innovative ways of doing business and to develop technologies, products and services that add value and create high-paying jobs. For provincial and territorial governments, it is to foster economic and social strengths that are grounded and reflective of their respective regional realities.

As Canada's 150th anniversary approaches, this is the moment to leverage and grow the many opportunities and advantages that stem from a strong, stable and vibrant science, technology and innovation enterprise. Together, we will seize this moment and build a brighter future for all Canadians.