

Canada Foundation for Innovation
Fondation canadienne pour l'innovation

Brief to the

**Senate Standing Committee on
Social Affairs, Science and Technology**

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Role of the Canada Foundation for Innovation (CFI)

Created by the Government of Canada in 1997 as an independent corporation, the CFI's mission is to strengthen the capacity of Canadian universities, colleges, research hospitals and non-profit research institutions to carry out world-class research and technology development that benefit Canadians both socially and economically through the provision of research infrastructure.

The CFI funds up to 40 percent of a project's infrastructure costs. Institutions, often in partnership with public, private and non-profit sector organizations, must secure the remainder. Since its creation, the CFI has committed almost \$5.3 billion in support of almost 6,700 projects at 130 research institutions in 65 municipalities across Canada.

All CFI investments are guided by the strategic research priorities of individual institutions. This approach allows numerous research programs to achieve world-class status, while providing institutions with the resources to recruit and retain outstanding new faculty members and students, as well as foster regional innovation clusters that bring together academia and industry. This approach has also resulted in 85 percent of CFI funding being devoted to the strategic priority areas identified in the Government of Canada's S&T Strategy — environmental science and technologies, natural resources and energy, health and related life sciences and technologies, and information and communications technologies.

The strategic focus adopted by the CFI provides a strong platform upon which to support the goals of the S&T Strategy. In fulfilling its mandate, the CFI continues to implement the Strategy's four core principles: promoting world-class excellence; focusing on priorities areas important to Canadians; fostering partnerships; and enhancing accountability.

The 2009 and 2010 Federal Budgets reinforced the CFI's position as an essential element of the country's S&T capacity by providing \$750 million in funding for future CFI activities. Of this amount, \$150 million was allocated through competitions held in 2009. The remaining \$600 million will be allocated through competitions in 2010-11 and beyond.

Canada's future prosperity rests on its capacity to innovate — to generate knowledge and ideas that result in the development of new products and services, wealth, enhanced social foundations, environmental sustainability, and ultimately the improvement of quality of life for all Canadians. Increasing this capacity is the central role of the CFI.

CFI's Strategic Approach

The success of the CFI strategy ultimately rests on the integrity of the Foundation, the professional connections between institutions and CFI staff, and the effectiveness of CFI's transparent merit-review processes.

The CFI fulfills its mandate to fund world-class research infrastructure through a suite of competitive programs that award capital, replacement, and

initial operating and maintenance funds, based on a rigorous assessment. The CFI's funding mechanisms are continually adjusted and refined to align with the evolving research environment.

Together, the elements of this approach assure the CFI's relevance to all stakeholders and ensure the greatest impact of its investments on Canada's research enterprise. The underlying logic of the strategy from a policy perspective is included in Appendix I.

This approach has proven to be highly adaptable, allowing the CFI to effectively support Canada's S&T Strategy by promoting world-class excellence in research and technology development.

The Importance of Research Infrastructure in Today's Economy

Research infrastructure is a central component in building research capacity. It provides the 'nuclei' for skills and knowledge formation, either through the centralization of these activities within specific research institutions or through networked collaboration between researchers in multidisciplinary teams. Indeed, the training of scientists and engineers through experience with research infrastructure is an integral part of this research capacity building process.

The research facilities that the CFI supports are, essentially, centres of excellence for research and training. And since activities in these facilities lie at the frontiers of science, they stimulate the interest of young people who want to embrace scientific and engineering careers. Access to, and use of, advanced technology facilities enables young researchers and students to tackle complex problems as part of high level interdisciplinary teams, qualifying them, in an outstanding manner, for tasks in science or industry.

Research infrastructure contributes to the growth of a knowledge economy, not only by facilitating world-class research, but also through the combination of expertise from different backgrounds, from the development of communication capacities and from strengthening the interaction between research and industry. This occurs not just through the use of infrastructure by researchers in collaboration with industry, but also through the construction and maintenance of facilities, creating important supply and demand effects. Innovation capacity results from new technologies applied in constructing world level research installations as well as from spin-off products and/or start up companies. Research infrastructure also benefits from industrial design and construction expertise, project management expertise and the development of new technologies and new engineering processes. Industry benefits from having a customer base that continually pushes the boundaries of knowledge and the application of the most advanced technologies. It challenges companies to be innovative while providing them with opportunities to test, pilot and further develop their products.

The on-going symbiotic relationships that results from the purchase, installation and use of research infrastructure is, therefore, of direct benefit to industry, research institutions, and Canadian society as a whole. It boosts innovative capacity in industry, creates stable markets for the development of leading-edge technologies, and facilitates the creation of the knowledge we need to improve the health and well-being of all Canadian citizens.

Performance of the CFI

In accordance with our Funding Agreement with the Government of Canada, the CFI underwent an Overall Performance Evaluation and Value-for-Money Audit in 2010. These reports, conducted by KPMG, were extremely positive. The results of this comprehensive examination were then reviewed by an International Review Panel of seven highly accomplished experts. The KPMG evaluation focused on the achievements of the CFI in fulfilling its national objectives and addressed global questions regarding relevance, results and the design and delivery of CFI's programs. The audit looked at the CFI's management practices and processes, and whether they have been carried out with regard to economy, efficiency and effectiveness. The KPMG performance evaluation concluded that: *"in relation to results, design and delivery, and relevance, the CFI's record of achievement to date is outstanding."*

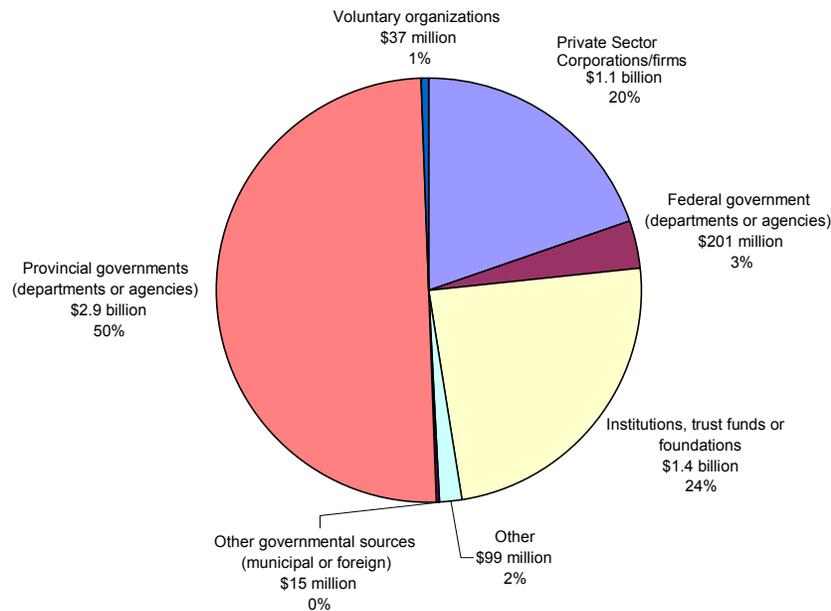
In its review of the results of the evaluation and audit, the International Review Panel highlighted the following aspects of the CFI's performance:

- Canada's cutting-edge labs, equipment and facilities are attracting researchers from around the globe and retaining Canadian talent. The CFI has been driven by a commitment to excellence, an emphasis on multidisciplinary collaborations and strategic thinking in funding this infrastructure. And in doing so, it has played a catalytic role in revitalizing and transforming the research enterprise in Canada and making it world-class.
- The CFI's foundation model gives it the autonomy and flexibility it needs to promote excellence through rigorous funding competitions. The Government of Canada's continued support for this model has allowed the CFI to adjust its programs to meet Canada's research infrastructure needs while safeguarding the public interest. The CFI's programs and processes involve world's best practices that are worthy of emulation.
- For more than a decade, the CFI has been a key player in rebuilding Canada's status as a destination of choice for research talent and collaboration. In today's global knowledge-based economy, where research is increasingly important to a country's economic prosperity, the CFI's achievements are relevant to Canada's needs and national interests.

The CFI's Unique Funding Model

Since its inception, the CFI has required all recipient institutions to match the 40% funding provided by the CFI with 60% funding from other sources. This leveraging formula has resulted in an investment of over \$11 billion in Canada's research intensive universities, colleges, research hospitals and not-for-profit research organizations. This shared investment model has dramatically increased the commitment of Canada's provincial governments and private sector organizations to building world-class research capacity (See Figure 1).

Figure 1 -- Partner contributions since the inception of the CFI



Focus on Accountability

As a foundation entrusted with public funds, the CFI operates in an efficient, effective and transparent manner, while communicating its results to a wide audience. The CFI recognizes its responsibility to deliver programs that address the needs of Canadians by enabling institutions and their researchers to compete in the global, knowledge-based.

The CFI assures responsible stewardship of public funds through ongoing performance management within a broad framework that integrates measurement, evaluation, risk assessment and audit activities. As part of the CFI's efforts in assessing impacts and disseminating results, activities in 2010-11 will include:

- *Overall Performance Evaluation and Value-for-Money Audit (OPEA)*

With the completion of the Overall Performance Evaluation and Value-for-Money Audit, the CFI undertook an extensive communications program to ensure that the results were widely distributed to Canadians. These communications focused on the CFI's achievements in meeting its national objectives, its relevance and demonstrated effectiveness in program design and delivery, and the benefits that result from the Government of Canada's support for science and technology.
- *Progress Reports*

In order to ensure transparency and accountability, as in previous years, the CFI analyzes the data from institutional progress reports and posts this information on its website.

- *Outcome Measurement Studies (OMS)*

The OMS is designed to assess the degree to which the CFI's investment in research infrastructure in a specific theme in an institution are critical to strategic research planning, research capacity building, recruiting and training highly qualified personnel, increasing research productivity and fostering innovation. These studies demonstrate the significant progress being made as a result of CFI investments, particularly in areas such as biomedical engineering, oil sands research, cardiology, energy technologies, geo-engineering, brain imaging and advanced materials science.

- *Evaluations and Special Studies*

While the CFI will concentrate on the OMS, it will also continue its ongoing examination into the need for new research infrastructure and renewal of existing research infrastructure, as well as into the impacts of research collaborations, and the specific social and economic benefits that result from research infrastructure.

Communicating with Canadians

Communicating the results of research investments is critical on a number of fronts. It draws national and international attention to the needs and benefits of research. It attracts the interest of potential partners, increases the potential for commercialization, encourages funding and research partnerships, attracts talent to Canada and provides the CFI with an opportunity to recognize the Government of Canada for entrusting it with its important mandate. The CFI will continue to work with its client institutions to report to the public through the media on the research enabled by CFI infrastructure investments. Every CFI news release announcing new investments includes a quote approved by the Government of Canada.

Conclusion

As the recent International Review Panel emphasized, the CFI is successfully meeting its mandate to strengthen the capacity of Canadian universities, colleges, research hospitals and other non-profit research institutions to carry out world-class research and technology development for the benefit of Canadians. Its infrastructure investments have clearly had a dramatic impact on the science and engineering landscape in Canada, paving the way for the country's transformation to a knowledge-based economy.

Through the actions of the Government of Canada, the provinces and private industry, we have established a global reputation as a destination for high-quality research and training. Proof that these research investments are paying off can be seen in the caliber of talent this country is able to attract and in the groundbreaking discoveries that are being made every day in Canada. These discoveries have the power to improve our quality of life.

For Canada to remain one of the most innovative countries in the world — a nation whose economic foundation increasingly depends on the knowledge-based economy — the Government of Canada needs to stay the course in supporting research. Canada's economic prosperity and quality of life depend on it.

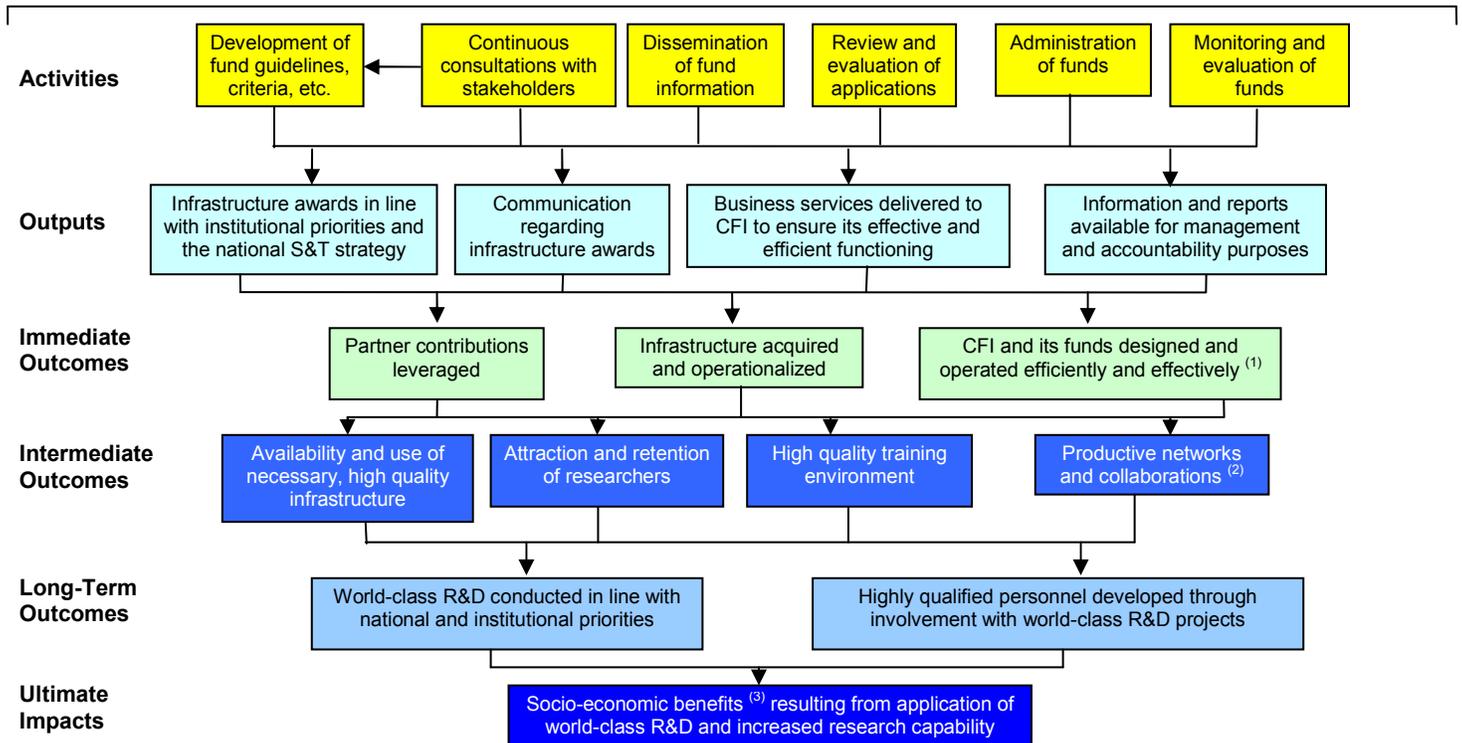
Appendix I – Logic Model of the CFI Programs

To support economic growth and job creation; as well as health and environmental quality through innovation.

To increase Canada's capacity to carry out important world-class scientific research and technology development.

National Objectives To expand research and job opportunities by providing support through research infrastructure for the development of highly qualified personnel.

To promote productive networks and collaboration among Canadian post-secondary educational institutions, research hospitals and the private sector.



Note: The word *fund* includes CFI Funds (programs) and funds (awards disbursed).

(1) Efficient and effective operation of the CFI's funds includes ensuring compliance with the Funding Agreement and fund guidelines and requirements.

(2) Networks and collaborative arrangements include links between researchers, links between institutions, and links with end-users of the outputs of the R&D process. This objective also includes the sharing of new infrastructure – i.e., the arrangements that are set up include those related to infrastructure sharing.

(3) Socio-economic benefits include economic growth, job creation (including jobs resulting from infrastructure construction), improved health and health care, and improved environmental quality.