



Canada Foundation for Innovation  
Fondation canadienne pour l'innovation

## Discussion Paper: CFI Program Consultation

March, 2009

### Context

Canada's Federal Government has demonstrated its commitment to the knowledge and innovation economy in its S&T Strategy, in Budgets 2006-2009, and in the appointment of a Minister of State for Science and Technology. Germane to our consultations with the research community, Budget 2009 provides \$750 million in new funding for CFI.

\$600 million is intended "for future activities of the Foundation, including the launch of one or more new competitions by December 2010 in support of areas of priority identified by the Minister of Industry in consultation with the Canada Foundation for Innovation, and guided by the Foundation's strategic plan."<sup>1</sup>

The onus is therefore on CFI to present an appropriate strategic plan for use of the \$600 million to the Minister of Industry that highlights areas of priority, developed after consultation with the research community.

As in the past, the CFI will engage Canada's academic, government, and industry sectors to explore current and emerging issues facing the research community, gauge the value of the present program architecture, and identify adjustments necessary to future programming to assure an effective response that best aligns with the S&T Strategy and addresses evolving opportunities.

A proposed program architecture and design will emerge from these discussions that will be validated and developed further into a final program.

The consultation is ultimately intended to identify opportunities for better alignment with community needs and with the federal S&T Strategy, and thus provide an important means for the CFI to generate value by assuring high quality proposals that will contribute to enhancing the capacity of Canada's research infrastructure.

We expect to complete our initial consultations by the end of May, 2009, and to present a summary of the findings and a draft strategic plan to the Board at its meeting in June, 2009.

### Rationale

In the past, the completion of a major CFI competition was followed by a two stage review starting with a comprehensive assessment of results to assure both alignment

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<sup>1</sup> A portion of this funding (\$150 million) is intended to supplement the current *Leading Edge and New Initiatives Funds* competition, the results of which will be presented to the CFI Board for approval in June, 2009. Decisions will be made within the parameters of the current competition and thus is not germane to this national consultation.

with community opportunities and with future improvement in the process. Building upon these findings, understanding the future requirements of the research community was then gauged through extensive consultations, followed by adjustments to the design of existing funds or creation of new funds. Thus, all new competitions have been guided by both emergent community opportunities and administrative efficiency and effectiveness.

Integration of priority areas will follow the same pathway, except that changes to funds and supporting materials will be preceded by a formal plan that addresses research community opportunities that surfaced during consultations while meeting requirements outlined in Budget 2009.

## **CFI Purpose and Roles**

The CFI mandate is to provide the infrastructure required to support world-class research and training. As an independent, non-profit corporation that funds research infrastructure, the CFI encourages a strategic, long-term approach to building research capacity. The philosophy that underlies the work of the CFI will be reflected in the consultation and preserved in the final results.

The objectives of the CFI are to:

- build Canada's capacity for innovation
- attract and retain top quality researchers
- enable institutions and their researchers to conduct world-class leading-edge research
- assist in making the country internationally competitive in research and development (R&D)
- strengthen research training
- promote networking, collaboration at all levels (between disciplines, institutions and sectors)
- foster research planning at the institutional level
- ensure optimal use of research infrastructure
- bring socio-economic benefits to the country

In achieving these objectives, the CFI is guided by three over-arching principles in the development and implementation of its funding mechanisms (see Attachment A for list of current funds). These are:

- Competition - the vast majority of CFI's funding has been allocated as a consequence of open pan-Canadian competitions (even in the LEF / NIF competitions, the distribution of funds between these funding mechanisms is not pre-set);

- Rigorous, but fair and equitable review<sup>2</sup>; and
- No consideration is permitted to trump excellence.

Ultimately, the CFI strives to be an organization that is responsive to institution needs, recognized, and valued by its stakeholders

### CFI's Evolving Program Architecture

The CFI's approach has been guided by two over-arching features:

1. *Development of a limited number of broad and flexible funding mechanisms (programs) that are:*

- open to all fields of inquiry; and
- accessible by a diverse range of eligible institutions including colleges, universities (ranging from smaller, mainly undergraduate universities to larger, research intensive universities) and research hospitals and not for profit research institutions.

These mechanisms must also be sufficiently flexible to respond to the needs of universities for infrastructure projects of varying scale (from an individual researcher's lab to large, unique and complex facilities) and scope (from a group of researchers within a single institution to a network of researchers in a region or dispersed across the country).

2. *An on-going ability to adapt to a changing environment:*

The infusion of over \$10 billion in research infrastructure over the last decade has changed the Canadian academic landscape considerably. The CFI has strived to ensure that its programs are adapted to this changing environment. For example, the current program architecture introduced in 2005 was designed to address the need to accommodate a shift:

- from a predominant focus on attracting leading researchers to both attracting and retaining high quality research personnel (LOF);
- from a focus on building capacity by investing in new state-of-the-art research infrastructure to both investing in new initiatives and building on and enhancing the more productive and successful initiatives in which the CFI had already invested (LEF / NIF);
- from a focus on institutional planning to also strengthening regional and national planning (National Platforms Fund), while still requiring institutions to make choices and to focus on their areas of strength;

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<sup>2</sup> The review process developed for CFI Funds seeks to ensure a rigorous and independent assessment of each project on its own merits in light of assessment criteria by experts from relevant fields. The structured assessment of each project is key to ensuring an assessment that is rigorous, while being fair and equitable.

- from a purely responsive or bottom-up approach to meeting infrastructure needs to make strategic investments in shared, multi-purpose and enabling research infrastructure (NPF).

## The Challenge of National Priorities

The concept of focusing on strategic priorities has been in place at the level of institutions for several years. The S&T Strategy builds on this approach by moving the concept of strategic priorities to the national level. The challenge to CFI outlined in Budget 2009 is to direct resources strategically to areas in which Canada is (or can be) an international leader, with the specific research initiatives and projects within each area that are to be supported being determined by the traditional merit-based approach.

## Addressing the Challenges

**1. The objective:** *enhance Canada's competitiveness, prosperity, and global impact by focusing resources in areas of priority and strength (See also Attachment B)*

### The context:

- the increasing emphasis on focus and strategic priorities in the S&T Strategy and in Budget 2009<sup>3</sup>
- increasing intensity of global competitiveness in R&D
- increasing magnitude and costs of research projects and infrastructure

### Issues for consideration:

- How should the CFI continue to ensure that it attracts proposals that are transformative in nature and bring benefits to Canada? Can this objective still be accomplished with the current suite of programs or are specific changes necessary?
- How should the CFI extend the concept of strategic priorities from the institutional to the national level?
- How should the priority areas that are to be supported by future CFI competitions be identified? Should they include emerging areas of science in which Canada is not yet an international leader, but can/should be?

**2. The objective:** *sustain and enhance previous investments in infrastructure*

### The context:

- the relatively short "scientific life" of equipment and infrastructure because of the continuous emergence of new technologies

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<sup>3</sup> Priority sectors identified in the federal S&T Strategy are environmental science and technologies, natural resources and energy, health and related life sciences and technologies, information and communications technologies.

- the high cost of operating and maintaining equipment and infrastructure
- recognition that O&M includes the highly specialized technical personnel required to operate and maintain the infrastructure
- the understanding that retention of outstanding researchers is critically linked to the availability of state-of-the-art equipment and infrastructure

**Issues for consideration:**

- What is the appropriate balance between funding to renew and sustain existing infrastructure and funding of infrastructure for new research opportunities?
- Should funding to renew and sustain infrastructure be limited to projects that align with the priority areas that are to be the focus of future competitions?
- What is the appropriate role for CFI in funding the operating and maintenance costs of its investments in infrastructure, including human resources?

**3. The objective:** *enhance the role of Canadian institutions in knowledge translation and commercialization that benefits Canada*

**The context:**

- increasing expectation that investments in research will bring benefits to Canadians, including wealth creation
- increasing recognition of the importance of clusters and of cities in driving innovation, and of technology as one of the three critical elements for growth in a knowledge-based economy
- the advantages of aligning investments with the priorities of provinces and the private sector

**Issues for consideration:**

- How should the CFI specifically enhance collaborations between institutions and industry?
- How should the CFI enhance the capacity of local/regional clusters?

**4. The objective:** *assess the research community's long-term strategic needs for research infrastructure in Canada.*

**Issue for consideration:**

- What are the long-term opportunities and challenges that the CFI should consider in its next competition and beyond?

***CFI Suite of Programs***

The current program architecture is composed of:

- **The Leading Edge Fund (LEF)** enables institutions to build on already successful and productive activities supported by past CFI investments by securing and enhancing further world-class research or technology development efforts, particularly in select areas of strategic priority where institutions have a competitive advantage.
- **The New Initiatives Fund (NIF)** supports new infrastructure initiatives in which the CFI has not previously invested and that enable institutions and their partners to develop and enhance their capacity in promising new areas of research and development, as well as to improve their research competitiveness and international leadership.
- **The National Platforms Fund** provides generic research infrastructure, resources, services, and facilities that serve the needs of many research subjects and disciplines.
- **The Leaders Opportunity Fund (LOF)** is designed to assist universities to attract excellent faculty to Canadian universities as well as retain the very best of today and tomorrow's leading researchers for Canada.
- **The Infrastructure Operating Fund (IOF)** contributes to the incremental operating and maintenance costs associated with projects funded by the CFI to maximize the efficient utilization of research infrastructure.

### Federal S&T Strategy Priority and Sub Priority Sectors

Priority Sector	Sub-Priority Sector*
Environment	<ul style="list-style-type: none"> <li>• Water (health, energy, security)</li> <li>• Cleaner methods of extracting, processing and utilizing hydrocarbon fuels, including reduced consumption of these fuels.</li> </ul>
Natural Resources and Energy	<ul style="list-style-type: none"> <li>• Energy production in the oilsands</li> <li>• Arctic (resource production, climate change adaptation, monitoring)</li> <li>• Biofuels, fuel cells and nuclear energy</li> </ul>
Health and Life Sciences	<ul style="list-style-type: none"> <li>• Regenerative medicine</li> <li>• Neuroscience</li> <li>• Health in an aging population</li> <li>• Biomedical engineering and medical technologies</li> </ul>
Information and Communications Technologies	<ul style="list-style-type: none"> <li>• New Media, animation and games</li> <li>• Wireless networks and services</li> <li>• Broadband networks</li> <li>• Telecom equipment</li> </ul>

*\*Sub-priorities are presented in random order*