Integrating and Aligning Elements in the Innovation Ecosystem

Knowledge Economy Network Forum
Towards an Integrated Innovation Policy
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Canada

Innovation performance is shaped by public policies on . . .

- education
- science and technology
- industry: competition, IP, standards, digital economy
- health
- finance
- trade and investment
- immigration

How do we align these policies?

- to empower partners in the Innovation System

- to support jobs and growth

- to increase well being and quality of life

Canada's Approach to the Challenge:
--- 2007 Science and Technology (S&T) Strategy ---

Fosters three <u>ADVANTAGES:</u>

Entrepreneurial Advantage
Translate knowledge into applications to improve wealth

Knowledge Advantage
Build on research and engineering strengths

People Advantage
Develop, attract and retain highly-skilled people

Embodies 4 <u>PRINCIPLES:</u>

- **Excellence**
- **Priorities**
- **Partnerships**
- **Accountability**

Establishes <u>Science, Technology and Innovation Council</u> :

- Integrated external advisory body. Provides confidential advice and produces public State of the Nation reports on Canada's Science, Technology and Innovation System.
- All Ministers and Prime Minister can request advice from STIC on science, technology and innovation issues. STIC reports to the Minister of Industry.

Canada's 2007 S&T Strategy: Objectives

Entrepreneurial Advantage

- Foster a competitive and dynamic business environment
- Pursue public-private research and commercialization partnerships
- Increase the impact of federal business R&D assistance programs

Knowledge Advantage

- Focus strategically on research in the national interest
- Maintain our G8 leadership in public R&D performance
- Enhance value for money, accountability and responsiveness from Canada's three granting councils
- Explore new approaches to federally-performed S&T

People Advantage

- Enhance environment to attract and retain highly-skilled workers
- Increase supply of highly-qualified, globally-connected S&T graduates
- Foster an S&T culture

How has the vision been implemented?

Examples of key initiatives

- *Talent – Human Capital*
- *Knowledge Development – Research*
- *Collaboration and Commercialization*

Talent: Vanier Canada Graduate Scholarships Program

- Launched September 2008
- To support top Canadian and international doctoral students
  - Three year scholarships ($50,000/year tax free)
  - 340 Vanier Scholars announced to date (plus 2011)
- A tri-agency initiative: Canada's three research granting councils
- Three stage selection process: University, peer review committees and selection board
- Selection criteria: Academic excellence, research potential and leadership

Talent:
Banting Postdoctoral Fellowship Program

- Launched July 2010
- Administered by Canada's three research granting councils
- Two-year awards ($70,000/year taxable)
- 140 awards active at steady state
- Open to both Canadian and international researchers who have recently completed a PhD, PhD-equivalent or health professional degree
    - Up to 25 per cent of Canadian awardees eligible to go to a foreign research institution
- Two stage selection process: Peer review and selection board
- Selection criteria:
    - Research excellence and leadership
    - Quality of the research program
    - Institutional commitment and demonstrated synergy between applicant and institutional strategic priorities

Knowledge Development: Research

2009

- Federal labs infrastructure that supports regulatory mandates and private sector linkages ($250 million/2 years)
- Upgrades to key arctic research facilities ($87 million/2 years)
- Canada Foundation for Innovation ($750 million/6 years)

2010

- Increased funding to granting agencies ($32 million/year)
- Genome Canada new funding ($75 million)
- Clinical Research ($10 million)

Knowledge Development: Canada Excellence Research Chairs

- Launched September 2008
- To establish ambitious research programs at Canadian universities in Canada's S&T priority and sub-priority areas
- A tri-agency initiative: Canada's three research granting councils
- Up to $10 million over 7 years to each chairholder
- Up to 20 chairholders and their research teams
  - 19 inaugural recipients announced May 2010 – all came from research institutions outside Canada
- Two-stage competitive process:
  - Phase 1: Universities compete for the opportunity to establish chairs in priority research areas
  - Phase 2: A short-list of universities recruit world-class researchers and the individuals compete for the 20 chairs funded under the program

Knowledge Transfer and Collaboration

2008

- Centres of Excellence in Commercialization and Research program ($195 million/2 years)
- Minister of Industry endorses R&D Sub-priorities

2009

- National Research Council's Industrial Research Assistance Program (NRC-IRAP) to fund SMEs ($200 million/2 years)
- Development and demonstration of promising clean energy technologies ($1 billion/5 years)

2010

- ("SBIR-type") Innovation Commercialization Program ($20 million/year for 2 years)
- Clusters for economic development, led by NRC ($67 million/year for 2 years)
- Launch of Expert Panel to federal support for business R&D (to report autumn 2011)

Trends in Europe

- Supporting Research Excellence
  - European Research Council grants can go to researchers from private or public sectors

- Challenges and Choices
  - Europe FP7 10 Co-operation themes with benefits to citizens; researchers and industry and SMEs explicitly stated
  - France: 17 higher education and research clusters - PRES (pôles de recherche et d'enseignement supérieur)

Trends in Europe

- University-Industry Collaboration
  - EU:
    - Marie Curie Industry-Academia Partnerships
      - Partners are research organizations (e.g. universities/research centers) and companies, particularly SMEs, in two countries
    - Knowledge and Innovation Communities
      - ICT Society, Sustainable Energy, Climate – 7 year time frame
      - distributed networks, core and affiliate members
      - multi-partner funding at roughly 100 million euros per year
  - Germany: Excellence Initiative
    - funding for graduate schools' scientists, and clusters which link universities with leading research institutes and business; 2.7 billion euro for 2012-17.

Trends in Europe

- Specialization/Clusters
  - Finland SHOK Sectors
    - 6 strategic centres (energy and the environment; metal products and mechanical engineering; forest cluster; ICT industry and services; health and wellbeing; built environment)
  - UK Technology and Innovation Centres
    - fIrst TIC announced March 2011 « High Value Manufacturing »
    - Competition underway for second TIC in « Cell Therapies »

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