

## Governing Conservatives unveil new science and technology blueprint

It is entirely axiomatic that upon taking office in Canada, new federal governments decry the absence of a coherent national science and technology strategy and promptly launch an exercise to address the deficiency.

Months or years later, federal mandarins produce a blueprint that just as invariably vows to redress Canada's historic deficiency in industrial research and development by establishing the proverbial "positive investment climate," while, in the interval, overhauling government management of science and technology, and creating a new scientific advisory body.

The current minority Conservative government proved no exception, launching a science and technology policy setting exercise as part of the 2006 federal budget with a promise to craft a plan based on obtaining "value for money."

Prime Minister Stephen Harper unveiled the fruits of that labour on May 17 in the form of a freshly minted strategy entitled *Mobilizing Science and Technology to Canada's Advantage* and primarily aimed at promoting private sector research and development as well as more commercialization of academic research. It also vows to focus future government investment in 4 broad areas: environmental science and technologies, natural resources and energy, health and related life sciences and technologies, and information and communication technologies.

The new strategy also proposes to shuffle the bureaucratic governance deck, with vows to scuttle 3 existing advisory bodies in favour of a "Science, Technology and Innovation Council"; to sell off at least 5 "non-regulatory" government labs; and to overhaul senior management at the 3 research granting councils, including the Canadian Institutes of Health Research, to

separate the presidency into 2 administrative positions, while appointing more corporate representatives to their governing boards.

Beyond that, the new strategy lacked much in the way of detail, although the absence was welcomed by the nation's scientific community.

Calling it "entirely positive," Canadian Institutes of Health Research President Dr. Alan Bernstein noted that science and technology strategies around the world have had varying degrees of detail. "And at the end of the day, if the document is clear, it does form the basis for action and that's how I'm interpreting this one."

"What they're saying is that Canada must transfer knowledge into practical applications to improve our wealth, wellness and well-being. I think what they're saying is knowledge is not an end in itself. It's got to be used to support an entrepreneurial advantage. It's not something that a university president would say. But I don't think it's unreasonable for a government to say."

University of Toronto Sunnybrook Health Sciences Centre Vice-President (Research) Dr. Michael Julius, who'll chair a task force struck by the advocacy group Research Canada to study the strategy, called it "an enormous step forward."

In committing the government to supporting the entire science and technology continuum, from basic research to commercialization, the strategy creates a "balanced, equilibrated innovation system," Julius argues. "The reason that I say that is because more often than not, it is the flavour of the day that invokes transfer of resources to that area of the continuum which will garner the most retail politics."

The policy framework itself is the achievement, Julius added. "They've now put stakes in the ground highlighting people, highlighting knowledge and its creation, and highlighting the need for the entrepreneurial backbone as a focus of this continuum."

Association of Canadian Academic Healthcare Organizations Executive-



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The federal government wants more commercialization of academic research.

Director Glenn Brimacombe says the policy framework "deals with the important pieces that form, from our standpoint, what is a health research ecosystem."

That policy framework is structured around a tripartite commitment to respectively create an "entrepreneurial," a "knowledge" and a "people" advantage in Canada (Box 1).

Many of the principles therein are altogether familiar to pundits who have followed the tortured meanderings of Canadian science and technology policy in recent decades: the need to spur more private sector research and development; erstwhile promotion of more collaboration and partnerships between the business, academic and public sectors; strengthened endeavours to promote more commercialization of the fruits of university research; measures to adequately train the Canadian workforce; governance reforms and stricter accountability measures for public research organizations.

Yet, while the science and technology strategy avows a tripartite ap-

proach, there is little doubt that the Conservatives are primarily seeking to shift the focus more towards the commercialization side of the equation by promising to target more monies at activities viewed as more directly related to wealth creation.

To create such an “entrepreneurial advantage,” the government says its primary approach will be to establish the proverbial positive investment climate that would prompt the private sector to redress its historically low research and development outlay. Currently, only 54% of Canadian research

and development is performed by business, compared with 68% in other Organization for Economic Co-operation and Development nations. Statistics Canada projected that the private sector performed \$14.7 billion in research and development in 2005, an outlay that places Canada 14th among Organization for Economic Co-operation and Development nations in business expenditures on research and development as a percentage of gross domestic product.

It’s an approach, and a lament, that has been oft-repeated in Canada in re-

cent decades, in large measure because of the endemic structural problems with the economy, namely its resource-based nature, the relatively small size of the majority of firms, the so-called “branch plant” mentality (research and development typically being a head office function), the lack of a so-called “receptor-capacity” to take up new discoveries and transform them into marketable products, and a timid venture capital market.

Few specifics are proposed in response to those structural impediments, although the government says it will ask the Council of Canadian Academies to consult the private sector and academic experts on “the S&T [science and technology] investment constraints and opportunities facing Canadian firms.”

A separate review will be launched under the “knowledge advantage” element of the strategy to “uncover factors that might be inhibiting S&T [science and technology] collaboration” between industry and academia.

Again, few specifics are offered other than the revamping of management and advisory models, but the intent is certainly clear. The government wants “more value for money” from the nation’s publicly funded researchers.

Arguing that there’s a need to generate an economic return from the billions that have been invested in academic research in recent years through programs like the Canada Foundation for Innovation, the Canada Research Chairs and increases in the base budgets of the granting councils, the government says Canada must now “take it to a new level by making strategic choices and focusing our resources where we can achieve the most benefit.”

Bernstein notes that the underlying message to the research community at large, and to the granting councils in particular, is that the government now expects them to actively develop the mechanisms to transfer knowledge to the private sector. “I have no problem with that. The only concern I have is sort of an underlying tone that they’re not getting value for money. I believe the opposite is true.” — Wayne Kondro, *CMAJ*

#### Box 1: Mobilizing science and technology to Canada’s advantage

The federal government’s new policy framework for science and technology is structured around a tripartite commitment to respectively create an “entrepreneurial,” a “knowledge” and a “people” advantage in Canada. Other than measures announced in last February’s budget or previously floated in the government’s November 2006 long-term national economic plan, entitled *Advantage Canada: Building a Strong Economy for Canadians*, few specifics are proposed. The promises include:

##### Measures aimed at creating an “entrepreneurial” advantage:

- establish the lowest tax rate on new business investment among Group of 7 nations
- realign existing business assistance programs, in conjunction with the provinces and territories, “to increase commercialization outcomes”
- establish more public-private sector research and development partnerships
- establish more regional and bilateral free trade and investment agreements
- revamp “administration” of the existing scientific research and experimental development tax credit system
- streamline regulatory regimes to make Canada “a best-in-class regulator”

##### Measures aimed at creating a “knowledge” advantage:

- “improving governance” by separating the functions of the Chair and President of the nation’s 3 granting councils
- appoint more business and community representatives to the governing boards of the councils “to ensure that investment decisions reflect a broader view of Canada’s economic and national needs and opportunities”
- reassess council application procedures and peer review processes “to identify best practices” and make appropriate changes
- jettison The Advisory Council on Science and Technology, the Council of Science and Technology Advisors and the Canadian Biotechnology Advisory Committee in favour of a new advisory body called the Science, Technology and Innovation Council, which will “produce regular State-of-the-Nation reports that benchmark Canada’s science and technology performance against international standards of excellence”
- overhaul intellectual property law and management regimes in both university and federal labs to provide the private sector with more ready access to publicly funded research

##### Measures aimed at creating a “people” advantage:

- reduce personal income tax rates to attract highly skilled workers
- align immigration programs “with the needs of the labour market”
- provide continued support for existing postgraduate scholarship program
- modernize “labour market programming”
- reduce barriers to labour mobility and credentials recognition

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