



**Submission to the House of Commons Standing
Committee on Industry, Science and Technology**

Regarding Mobilizing Science and Technology to Canada's Advantage

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April 2008**

I. Introduction

"To be world players, we need to understand the world." – Jim Balsillie
"Science without conscience is the death of the soul." – François Rabelais

The Canadian Federation for the Humanities and Social Sciences welcomes the release of the federal government's science and technology strategy, *Mobilizing Science and Technology to Canada's Advantage*. Investment in and support for research and innovation is necessary to ensure that Canada can succeed in an increasingly competitive and transforming international arena.

The social sciences and humanities have long contributed in direct and meaningful ways to the achievement of the priorities of the government. The Federation believes that our research contributions are invaluable not only to the economy and the science and technology strategy but also to the cultural and political prosperity of Canada. Federal investment in research such as constitutional studies, linguistic and cultural diversity, equity, poverty, homelessness, urban design and renewal have a direct impact and add to the quality of life of our citizenry.

No doubt research has a material dimension, but equally it has human, environmental and social dimensions, all of which contribute to the prosperity and well-being of Canadians. Investment in the social sciences and humanities, and not only in the health sciences and new technologies, must be supported as one of the most fundamental and essential public goods a country can provide to its citizens.

The end game is as much about a better Canada as it is about a more economically competitive Canada.

1. The Social Sciences and Humanities as Partners

The science and technology strategy quite rightly states that science must be broadly defined to encompass "the traditional disciplines in the natural sciences – the study of nature; the social sciences, humanities and health sciences – the study of human beings; and engineering – the creation and study of artifacts and systems."

This acknowledges that the humanities and social sciences contribute to the knowledge economy, and the stated goals of the science and technology strategy, by helping business find ways to understand the uses and users of their products, by helping the private and public sectors to understand long-term impacts of innovation to the environment and to society, and by providing information and research that can lead to important paradigm shifts in innovation and product development.

For example, anthropologists at Xerox have not only examined customer use of the company's products for the purposes of improving customer service and machine functioning, but also issues such as the creation of office paper waste. Social science researchers at Nokia assess cell-phone customers and the ways in which they use their phones, in order to guide the development of new generation technologies and features.

The social sciences and humanities play a vital role in a wide spectrum of social activities: from economic innovation to new health technologies; from international marketing to ethical and environmental impacts.

The Federation believes, along with the Association of Universities and Colleges of Canada and the Council of Canadian Academies, that considerations of science and its impact for Canada should include the social sciences and humanities; and that the social sciences and humanities should be active partners in the priority-setting process from the earliest stages of the strategy (Committee, 1 and AUCC, i).

In view of the important role the social sciences and humanities should play in helping government achieve its goals, the Federation believes that policy and decision-makers should have access to the most balanced recommendations possible. This can be achieved through greater representation from the social sciences and humanities disciplines on the Science, Technology and Innovation Council, as well as on other advisory boards, councils, and in submissions to Senate and House of Commons committees.

II. The Science and Technology Strategy

Creativity and communication are at the heart of our disciplines in humanities and social sciences. These skills are widely sought and a net advantage when engaging with business and research partners around the world. Indeed, the work of the humanities and social sciences sector informs that entrepreneurial advantage, especially by encouraging creative thinking and intellectual risk—the hallmarks of an innovation system. The business sector should be encouraged to embrace these approaches, especially as they contribute to the economy and the public good.

1. The Entrepreneurial Advantage

The first advantage outlined in the strategy – **the entrepreneurial advantage** – emphasizes the conversion of knowledge gained through first-class research into commercial applications, and an increase in private sector support to research in science and technology.

The humanities and social sciences have a place in the innovation system and the business sector must be encouraged to more fully embrace partnerships that benefit both the economy and the public.

Little data exists on private sector support of research in the humanities and social sciences, but a reading of press materials provided by universities across Canada regarding financial support to academe strongly suggests that partnerships between business and the social sciences and humanities have traditionally taken the form of bursaries, scholarships and prizes, rather than investment in specific research projects with the expectation of a commercial application.

New partnerships, similar to the ones envisioned in the strategy, are developing as more members of the business community recognize the practical benefits of humanities and social sciences research to society. For example:

- In February 2007, York University announced the creation of The Consortium on New Media, Creative and Entertainment Research and Development in the Toronto Region (CONCERT), a partnership of multinational, mid-sized and small companies in the entertainment, screen-based and other creative industries with academia, government and industry. CONCERT will grow the region's entertainment, screen-based and other innovation-driven creative industries into a globally competitive cluster, to allow the Greater Toronto Area to capture a larger share of the lucrative worldwide entertainment market (<http://www.yorku.ca/ylife/2007/03-March/03-12/concert-031207.htm>).

Businesses are beginning to realize that partnering with researchers in the humanities and social sciences also provides important opportunities to assess future markets, and to understand user behaviours and needs. For example:

- The TAPoR initiative, a partnership between IBM Canada, the University of Toronto and McMaster University, allows researchers to conduct lexical research such as text analysis that would have been impossible to do manually. In return, IBM has gained useful insights into how a major part of its future market – colleges and universities – uses computers and how text-analysis applications now dominate the web itself (<http://www.news.utoronto.ca/bin6/071010-3438.asp>).

The government is more likely to achieve the objectives of the science and technology strategy if it recognizes the mutually beneficial partnership of humanities and social sciences and business and if it does more to promote this kind of partnership, which finds “new solutions and new processes to business models and operational challenges rather than waiting for the serendipitous benefits of laboratory science to trickle down, or out, to the real world” (Cunningham, 4).

2. The Knowledge Advantage

The second advantage – **the knowledge advantage** – proposes positioning Canada at the leading edge of important developments that generate health, environmental, societal and economic benefits. The strategy identifies four main areas of research:

- environmental science and technology;
- natural resources and energy;
- health and related life sciences and technologies; and
- information and communication technologies.

Research of national interest from the point of view of social, economic, health and environmental benefits requires a close consideration of the human and social component to ensure the greatest benefit to Canadian society.

Current research projects provide excellent examples of the contribution the social sciences and humanities are already making to these fields. For example:

- David Castle, who has a PhD in philosophy and is the Canadian Research Chair in Science and Society at the University of Ottawa, is producing analytical frameworks for use in the assessment of science and technology innovation, and recommendations for its governance. Issues under study include the evaluation of science quality and procedures for conducting

technology assessments, the study of innovation in policy and regulation, and the role and importance of public consultation.

(http://www.chairs.gc.ca/web/chairholders/viewprofile_e.asp?id=2154).

- In December 2007, James Ford, a post-doctoral fellow in the Department of Geography at McGill University, received one of three Networks of Centres of Excellence (NCE) Young Innovator Awards for his work on climate change and his efforts to share the results of that work with a wider audience. Ford's research focuses on the vulnerability of Inuit populations to climate change. Through his work with the NCE's ArcticNet project, he has helped communities and industry reduce the economic impact of climate change (<http://www.mcgill.ca/newsroom/news/?ItemID=28135>).

Research in the humanities and social sciences is integral to the success of any science and technology strategy, and Canadian research is well-placed to lead the way. Indeed, the Council of Canadian Academies, from which the government drew its recommendations, identified areas in the social sciences and humanities in which Canada is strong and growing: media, multimedia, animation and gaming, visual and creative arts, as well as emerging interdisciplinary fields such as Aboriginal health, aging and gender and health (Committee, 5-10). Interdisciplinarity is key to forging new research pathways and we are seeing new and emerging areas of humanistic and scientific inquiry.

Research into language acquisition and cultural identity at the University of Ottawa, research at the Université du Québec en Outaouais into how early childhood education may shape the talent of Nobel laureates, and research into the cognitive science of language and music at McMaster are combining such fields as psychology, neuroscience, linguistic theory and language acquisition, and contribute to the knowledge economy by creating a knowledge advantage.

3. The People Advantage

The third and final advantage outlined in the science and technology strategy – **the people advantage** – centres on enhancing opportunities for science and technology graduates, increasing the supply of highly qualified and globally connected science and technology graduates to businesses and organizations, and increasing the enthusiasm for science and technology among Canadians.

We need problem-solvers as much as we need inventions. As Jim Balsillie, co-chief executive officer of Research in Motion, said, "To be world players, we need to understand the world" (B2). An educated, innovative mind, fostered in a culture of creativity, is a potent stimulant. Innovative, creative solutions come from the development of human competence and imagination. Moreover, competitive advantage and leadership on the world stage come from a broad and deep understanding of the world and the people that inhabit it.

The Federation believes that, in addition to technical skills and knowledge, future Canadian workers will also need skills that can be gained effectively through the humanities and social sciences. For example, workers will need to be able to:

- communicate effectively, and in more than one language;
- understand human behaviour and apply that understanding to their research;
- understand differences among cultures and be able to negotiate those differences;
- understand market forces and fluctuations; and

- understand the impact of new and innovative products and services on the environment, the economy and society in general.

Jim Balsillie of Research in Motion recently created the Canadian International Council, which has initiated a fellowship program designed to attract both eminent, established researchers as well as Canada's most promising young minds and provide them the opportunity to help guide Canada on pressing foreign policy problems. CIC Fellows will devote 6 to 12 months of their time to work on a research project focused on a particular foreign policy issue. The goal of each project is to produce a viable set of policy recommendations (<http://www.canadianinternationalcouncil.org/fellowships.php>). He has also endowed both the Centre of International Governance Innovation (CIGI) and the Balsillie School of International Affairs – both at the University of Waterloo – which will bring the best minds from around the world to collaborate, find solutions and educate the next generation of international policy makers.

At McMaster University, Chancellor Lynton Wilson recently gave \$10 million to the university's liberal arts programs, saying. "These disciplines are important in the development of the next generation of entrepreneurs, policy makers, innovators and politicians, who, in turn, will make us competitive and compassionate on a global scale" (<http://www.mcmaster.ca/opr/html/opr/media/main/NewsReleases/2007/Wilsongiftannouncement.html>).

4. Conclusion

Research in science and technology informed by and in partnership with humanistic and social science research will bridge and forge new partnerships and opportunities for the next generation of business and civic leaders. Scholars in the humanities and social sciences encourage this approach, and the Federation will continue to advise Parliamentarians on the budgetary decisions that support research. Canada's economic and social future relies as much on its human sciences as it does on its natural, engineering and health sciences. Success involves human potential and human excellence.

The Federation believes that the social sciences and humanities can and do contribute in meaningful ways to our ability to compete internationally and contribute to the global society and the public good.

Appendix attached

Appendix

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The Canadian Federation for the Humanities and the Social Sciences

The Canadian Federation for the Humanities and Social Sciences promotes research, scholarship, teaching and sharing of knowledge in the humanities and social sciences. It is a membership-based organization made up of 69 scholarly associations and 73 universities and colleges, and comprising more than 50,000 scholars, students and practitioners across Canada.

The Federation:

- acts as representative and convener of the largest research community in Canada;
- annually organizes The Congress of the Humanities and Social Sciences, the largest multidisciplinary gathering of scholars in North America;
- administers a program that supports the publication of 185 scholarly books per year;
- awards scholarly book prizes each year;
- runs the Breakfast on the Hill lecture series on Parliament Hill to bring humanities and social science research to policy-makers;

- addresses professional matters, including research ethics; and
- undertakes research projects to help advance Canada's humanities and social science fields.

The Federation is a non-profit, charitable organization, governed by an Executive Committee and Board of Directors made up of scholars from its member groups with a permanent secretariat based in Ottawa.

The Federation's Role

The Canadian Federation for the Humanities and Social Sciences assists in highlighting the federal government's investments in post-secondary education and research through two of its main programs:

- The Congress of the Humanities and Social Sciences (formerly known as the Learned) is the largest annual academic gathering in Canada; its multidisciplinary character marks it as unique in the world. Congress is an important meeting place where new and established academics and researchers can share their groundbreaking ideas and debate the most important questions of the day. Congress highlights in a very national forum the research in the social sciences and humanities made possible through federal grants and Canada Research Chairs. Through community outreach efforts, the Federation engages local community members – cultural, business, aboriginal, alumni and others -- and brings them to Congress. Media coverage of Congress reflects the enormous local, regional and national interest in the social sciences and humanities. At Congress 2007, an estimated 212 newspaper articles, television, radio and online pieces appeared.
- The Federation hosts the Breakfast on the Hill seminar series 6 times a year, which brings ground-breaking researchers in the humanities and social sciences to the Hill to engage MPs, Senators and their staffs, government officials and policy-makers, NGOs and the media on the critical issues of the day. This non-partisan forum features a variety of disciplines and viewpoints on subjects such as Canada's combat role in Afghanistan, racial profiling, immigration, the exchange rate, and the changing Canadian family. In the 2007-08 Parliamentary year, 549 people came to gain insight on various policy matters through outstanding, topical and federally-funded Canadian research.