

TECHNOLOGY POLICY BRIEFING: SOCIAL SCIENCES

Social scientists, humanists helping Canada harness the power of technology

In this context, scholars and their research partners across campus and in the private, public and non-profit sectors are helping Canada develop talent, gain insight, and build connections in the new technologically-enabled and people-centered culture of innovation.



BY CHAD GAFFIELD

The great Canadian thinker, Marshall McLuhan, would have enjoyed the recent cover of *The Economist* that portrayed Steve Jobs as Moses coming down from Mount Sinai to deliver his new iPad to the world. McLuhan's famous insight that 'the medium is the message' resonates more than ever as new digital technologies extend our ideas and behaviour far beyond the reaches of the analog world.

The increasingly complex relationships among technologies, ideas and behaviour are now the centre of attention across the pri-

ivate, public and non-profit sectors. The new ambitions are to be customer-focused in the marketplace, user-oriented in service industries, employee-empowered in workplaces, citizen-engaged in politics, student-centered in schools, and patient-focused in health. In all these ambitions, one key question is how best to combine digital technologies with digital content and digital literacy to drive the new culture of innovation.

The online discussion that followed the launch of the iPad focused on its usability especially how it might handle books and movies, emails and newspapers. This discussion showed that the promise of tablet computing is its potential to connect us with content that we can view, listen to, and interact with. Today, the medium is more than ever the message.

The new model of innovation integrates technological invention into social context, and thus increases the need for, and value of, research about individuals, groups and societies. Such research is now fuelling innovation in firms, institutions and organizations beyond the campus. Findings of a 2009 study by Science-Metrix indicate that two-thirds of social sciences and humanities research projects are used in non-academic organizations. Use is highest for research related to three key actions: (a) private sector innovation through research in fields such as economics, industrial relations, and law; (b) government response to public policy issues through political science and public administration, criminology, health studies, education, communications, and similar research fields; and (c) delivery of public services through social work, sociology, urban studies, and career counselling among other research areas.

For those integrating technology, content and literacy to drive innovation, research on language is proving to be highly relevant, sometimes in unexpected ways, and often with Canadian scholars in the lead. Ian Lancashire, an

English professor at the University of Toronto and his colleague Graeme Hirst, a computational linguist, topped *The New York Times'* ranking of the best ideas of 2009. Their award-winning idea was to undertake a systematic analysis of Agatha Christie's novels based on the knowledge that written vocabulary changes subtly but perceptively with the onset of dementia. Their technology-enabled textual analysis demonstrated for the first time that the prolific Christie did, in fact, write her last novels while suffering from Alzheimer's. Moreover, their work suggests new diagnostic tools for identifying the initial onset of dementia which, in turn, will make possible new preventive treatments such as helping individuals re-learn a word soon after it is lost. The significance of the economic, health, and social benefits of such work will continue increasing rapidly with the aging of our population.

The unexpected ways in which language expertise combines with new technologies to underpin digitally-enabled innovation became apparent in Canada as early as the 1980s. Open Text Corporation emerged from a project at the University of Waterloo to digitize the 60 million words and 21,000 pages of the *Oxford English Dictionary* (OED). By 1989, the world applauded how computer scientists, linguists, philosophers and sociologists had created new search systems that allowed readers to find and display information from the OED at speeds and with an ease that was unimaginable just a few years earlier. Such collaboration became the foundation for continued innovation in managing all forms of digital content as well as

business processes and employee teamwork. Last summer, 20 years later, *Fortune magazine* ranked Open Text 15th among the fastest growing companies in the world.

To understand technology is to understand human thought and behaviour—why we do the things we do and why we strive to change or stay the same. The challenge is to develop integrated understandings that reflected the dynamic and contingent connections between humans and technology.

Research shows that technology is not just a tool—contrary to what Bill Gates claimed a decade ago. Rather, such research reveals how technologies and cultures intertwine and interact to determine economic growth and competitiveness, social cohesion and engagement, and quality of life.

In this context, scholars and their research partners across campus and in the private, public and non-profit sectors are helping Canada develop talent, gain insight, and build connections in the new technologically-enabled and people-centered culture of innovation. Working in the tradition of those like McLuhan, in collaborative projects like the digital OED, and with new ideas like those praised recently by *The New York Times*, social scientists and humanists are helping Canada and the world harness the power of technology, knowledge and understanding to create prosperous and resilient economies and safe, just and civil societies.

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Chad Gaffield is president of the Social Sciences and Humanities Research Council of Canada. news@hilltimes.com
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