Don’t swallow these innovation nostrums

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Canada has basked in the global spotlight this year, with a golden Olympics, two international summits and continued evidence that our economy is outperforming other G8 countries. Yet, for more than a decade, one report after another has identified innovation gaps in Canada and offered warnings about our lagging productivity and future prosperity. This mixed picture reinforces our scepticism about some of the quick fixes on offer to close the innovation gap and transform our economy. We review seven such nostrums:

Canada must urgently reduce its dependence on the resource sector. Yes, economic diversification makes sense, but so does promoting innovation in mining, forestry and energy production. Canada has massive advantages – research and development in resource-based industries and agriculture will increase our long-term prosperity and the sustainability of those sectors and our natural environment.

The high-tech sector is the cornerstone of our future prosperity. Yet, while information and communications technology (ICT) dominates the high-tech sector, it accounted for only 3.3 per cent of Canadian jobs in 2008, unchanged since 2002. The definition of high-tech is also ambiguous. For example, the ICT tally includes unskilled manufacturing jobs, advanced research labs and family operated computer service shops. Of course, there are golden opportunities for growth in ICT, medical devices, aerospace and biopharmaceuticals, among other high-tech fields. But Canada has to innovate in all sectors – including manufacturing and services – to compete and win in the decades ahead.

Better commercialization of publicly financed research is the key to accelerating innovation. Universities, colleges and hospitals could all do better at turning discoveries into marketable services and products. But Canada’s total R&D spending as a percentage of GDP is middle of the pack in the OECD, primarily due to Canada’s low and falling level of spending in business R&D. Thus, while researchers in public institutions will continue to push out ideas and inventions, it’s the receptor capacity in the private sector that needs urgent attention.

Government must limit wasteful spending on “curiosity driven” research. This zombie idea just won’t die. Most universities and colleges are keen to build mutually beneficial partnerships with industry, and much publicly funded research is already oriented toward applications. But basic research in science and technology can define whole new segments of industrial development, while novel insights from the social sciences and humanities help animate successful societies. Above all, students who do independent research learn problem-solving skills that will make them invaluable innovators in a range of industrial and non-profit environments.

Government should prescribe the commercialization model for institutions receiving public funds. In the commercialization of publicly financed research, pluralism reigns at home and abroad. Israel, Singapore and the United States have

done well by assigning ownership of intellectual property to institutions, not individual researchers. In those countries, however, successful institutions give a big share of the revenue back to the inventors, focusing first on getting ideas to market, not on their own proceeds. That said, primary inventor ownership is clearly workable, especially for rapid-cycle fields such as software. All things considered, we think it makes little sense for governments to waste political capital trying to micromanage the supply chain of ideas and inventions from independent institutional research.

Canada must set priorities for R&D spending aligned with an innovation-based economy. We estimate that taxpayers contribute more than $5-billion a year for regional development agencies, for R&D tax credits to private companies, and for labs managed by the National Research Council or directly by federal and provincial governments. Effective spending of this money under direct government control is arguably the starting point for any critical review. That said, governments everywhere have a mixed record when it comes to targeting external research spending or picking commercial winners. The R&D priority lists of governments across Canada also commonly include clean-tech, ICT and life sciences – essentially mirroring those of many other countries. At risk of heresy, we suggest that governments focus instead on creating the most generous environment possible in support of rigorously competitive excellence in R&D, entrepreneurship and early stage enterprises.

Universities and colleges should focus on educating more students in science and technology. Canada lags leading OECD countries in degrees granted per capita for many disciplines at both undergraduate and graduate levels. Many of our most successful business leaders and social innovators are arts or social science graduates. No one knows what the optimum mix of students should be. But as we read the evidence, independent-minded university and college graduates from diverse backgrounds are critical to building creative societies with innovative foundations.

So it seems logical that a culture of innovation and entrepreneurship should be promoted in all sectors of the economy, not least social agencies, non-profit enterprises, public administration, and postsecondary and health-care institutions. Such a shift depends on long-term planning and sustained effort. There are no short cuts, and quick fixes may do more harm than good.

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