

LESSONS FROM ISRAEL:
Building an economy based on innovation

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Week after week, headlines in this newspaper raise unsettling questions about Canada's international competitiveness. Canada has some of the best value-added natural resource companies in the world. But, in the global race to build an innovation-based economy, we are lagging behind countries such as South Korea, Taiwan, Singapore and Israel. Recently, I visited Israel along with the presidents of the University of British Columbia and the Canada Foundation for Innovation. Our mission: to understand how Israel has flipped its economy upside down in less than a generation. In the 1950s, 70 per cent of Israel's exports were agricultural; today only 2 per cent are. Much of what Israel sells to the world now comes from high-tech companies based on discoveries at places like the Weizmann Institute of Science, the Israel Institute of Technology (the Technion) and the Hebrew University of Jerusalem. What is Canada's position? Our national output of discoveries is impressive. University of Toronto professors, as just one example, are third in publication totals world-wide, exceeded only by Harvard and Tokyo. But the commercialization record of Canadian universities is modest. Our best performers generate far less revenue than their U.S. or Israeli counterparts. And, when it comes to turning discoveries into popular products and services, our outputs are underexploited. What's the Israeli solution? First, Israel's research institutions, government, industries, and venture capital sector collaborate to nurture innovation. Like a good hockey team, they are playing a "shots on goal" game. They're not trying to pick the next Google (a bonanza for Stanford) or Gatorade (credit the University of Florida). They're building a pipeline to churn out hundreds of new ideas for businesses every year, knowing that only a few will ever fly in global markets.

Second, although Israeli institutions own the intellectual property generated by their research, they routinely share 50 per cent of revenues with researchers and students. This keeps the pipeline flowing.

Third, Israelis take the view that researchers should be heavily rewarded for innovation, but seldom asked to change hats and help run companies. While Canada has a shortage of executives with experience in high-tech companies, we can't fill that gap with part-time professors. Fourth, Israelis recognize that the private sector does commercialization, not universities or governments. The government helped build the domestic venture capital industry with public funding, but left investment decisions to experts and left the field altogether once the industry got going. The government only comes in near the lab bench where the business potential of discoveries is uncertain. To that end, Israel runs a system of 24 business incubators that bring new technologies to investors once they have shown real commercial promise. Most incubators are privately owned, but the government covers up to 85 per cent of early-stage project costs. And the cash comes with almost no strings attached. Government takes no ownership stake and leaves private investors to manage the process of bringing an innovation to market. What's in it for the public? The creation of innovation-based companies with global reach. And the lesson is simple. Commercialization works if its main players - government, university and private sector - are linked in a system where each plays its own role. Canadians

sometimes confuse commercialization with commercially sponsored research. The next generation of creative minds and novel products will come from basic research environments, not by pressing universities to focus on industry's current needs. Canada and Israel are very different. Israel has been internationalized and lifted by waves of risk-taking immigrants, including an influx of science and engineering talent from the old Soviet Union. But Canada's big cities have also been lifted by countless talented immigrants who took risks to bring their families here. It's true that Israel's political circumstances and limited resources made it essential for the country to shift economic gears, while Canada can still cruise on its resource revenues. But just as melon-growers outside Tel Aviv 40 years ago asked: "What are we supposed to do next?" so too must manufacturing workers in Ontario pose the same question. The time to start building a more effective innovation system is now, not after our non-renewable resources run out.