

# Innovation Nation: Supercharging Canada's Innovation Ecosystem

Dominic Barton

*When the Trudeau government created its Advisory Council on Economic Growth, it turned to Dominic Barton, global managing partner of McKinsey, to chair the group. After decades spent advising major corporations and governments on how to address obstacles to success, Barton brought that experience to bear on Canada's economic strategy, particularly on innovation.*

A decade ago, CBC Television aired its mini-series *The Greatest Canadian Invention*, counting down 50 inventions that were developed in Canada, including insulin, the telephone, the artificial pacemaker, and the zipper. Clearly, inventions are a core part of our heritage as a nation.

Today, creating the conditions to supercharge Canadian innovation—or taking our ideas and inventions to scale commercially—will be critical for our future prosperity. We face a demographic challenge (rapidly aging population) which, if left unchecked, could cut GDP per capita growth from the 1.9 per cent we experienced over the past 50 years to 0.8 per cent over the next 50 years. And, as the pace of technological change accelerates and competition from other countries intensifies, supporting innovation will be key to creating high-value, resilient middle class jobs.

Upping our game on innovation will not be easy, and several previous attempts to accelerate Canadian inno-

vation have failed to deliver. Three specific issues have proved difficult to address. First, as a nation, we do not consistently translate our good ideas into revenue-generating commercial products and services. Second, we struggle to turn successful start-ups into mid-size companies, and to scale up mid-sized firms into globally competitive players. And third, many sectors lack a 'burning platform' for corporate adoption of innovation, as they are comfortably profitable and do not face the intense competition that has spurred innovation in other markets.

We believe that there are eight broad actions that could help address these challenges and transform Canada's innovation economy. The Canadian government's *Innovation and Skills Plan*, detailed in *Budget 2017*, and other recent initiatives lay a strong foundation for Canada to reach its innovation potential. That said, more opportunity still exists across the board—to increase productivity and drive inclusive growth. What is

needed now is bold ambition, and a willingness to challenge our current thinking.

**1. Invest heavily in skills training for workers.** The automation of work—driven by technology—is the single most disruptive force facing labour markets today. Nearly half of Canadian jobs are at a high risk of being affected by automation over the next two decades, according to a study by the Brookfield Institute. Furthermore, the paradigm of work continues to evolve—the number of people engaged in temporary or contract work has increased substantially in recent years, and those employed full-time are switching jobs more frequently. In this changing environment, lifelong learning and re-skilling are essential to maintaining a workforce that has the skills needed to thrive in an innovation-led, increasingly knowledge-based economy. *Budget 2017* provides considerable new investment in skills development and training. Continuing to build on a strong foundation here will become more and more important in the coming decade.

**2. Attract the world's top talent.** Three-quarters of high-growth firms in Canada say that the greatest barrier to growth is a lack of managerial talent. An important first step in remedying this will be to pursue the federal government's *2016 Global Skills Strategy*, and to double down on other recent initiatives such as the fast-track visa program. In the long run, attracting international

students to our globally recognized universities and increasing immigration of skilled workers will be essential. Half of all billion-dollar start-ups in the US were founded by immigrants. Canada's reputation for openness and diversity give it a comparative advantage in the global competition for talent, and one we should capitalize on.

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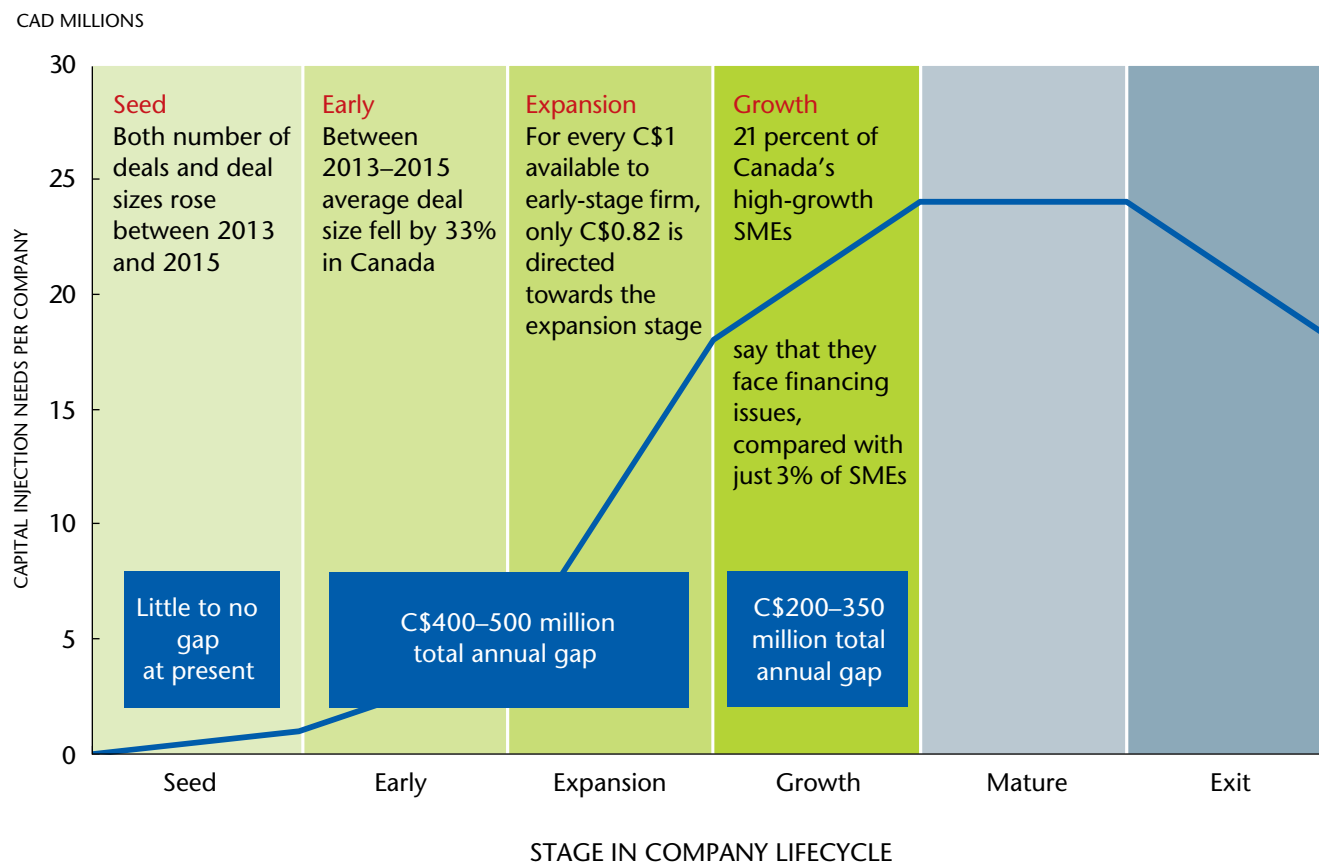
### 3. Create innovation marketplaces in key sectors and technologies.

Canada's innovation ecosystem is strong on many dimensions—from its remarkable base of talent, to its mix of large firms and high-growth SMEs, to its leading researchers and universities (e.g., in technologies as diverse as artificial intelligence, clean tech and quantum computing). What can be improved however, is the coordination and collaboration among these various stakeholders. To address this need, Canada should create and

scale innovation 'marketplaces' or 'clusters' to match the demand for innovation from companies and governments, with the supply from researchers and entrepreneurs. These marketplaces can be flywheels of innovation and economic growth, especially when focused on sectors where Canada has already developed a competitive edge, such as ag-food, energy and renewables, mining and metals, health and life sciences, and advanced manufacturing—as well as around our leading technologies.

**4. Pivot focus to high-growth markets in Asia.** Canada's domestic market represents two per cent of global GDP and less than 0.5 per cent of the global population. To scale and become global champions, Canadian companies will increasingly need to look beyond our borders for growth opportunities, and adopt the global mindset common in Switzerland and Scandinavia. The US will continue to be our most essential international market, but as global growth dynamics shift, other countries—es-

Figure 1: Capital injection needs by stage in a company lifecycle



pecially in Asia—will become more and more important as markets for our innovations. Companies that have an explicit strategy for broadening their international footprint will not only have greater opportunities for growth, but will also tap into the vibrant innovation ecosystems that exist in these high-growth markets.

#### 5. Create new pools of growth capital to scale businesses.

Starting a business in Canada is relatively easy: according to the World Economic Forum, Canada ranks second worldwide in ease of establishing a new firm. The problem is that disproportionately few small companies in Canada ever become mid-market or larger firms. A survey of start-up ‘exits’ in Canada and the US since 2000 found that only one per cent of Canadian companies exited with a valuation of more than \$500 million, compared with 10 per cent of exits in the US. This is why the government’s recent announcement of a private sector-led Canadian Business Growth Fund is so important. It will help close Canada’s \$200-350 million annual funding gap faced by firms with more than \$10 million in revenue, and provide the growth capital, venture capital, and access to investor advice and support needed for those companies to expand. (see figure 1)

**6. Digitize government.** Nearly a quarter of Canada’s employees work for government or quasi-government entities such as schools, hospitals, and crown corporations. At this scale, any meaningful national innovation and productivity effort must include the public sector. Opportunities abound here, particularly in digitizing government processes and services. The US Digital Service, a new federal agency, has a mandate to make government services “awesome” (i.e., better, faster, more mobile, more social) and cheaper. Another example is in the U.K., where the Govern-

ment Digital Service is collaborating with individual departments; using design principles to lead a fundamental “digital transformation of government,” and on a very aggressive time frame. Canada can and should make a similar large-scale, bold effort to digitize federal, provincial and municipal governments as well.

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#### 7. Target government procurement to boost innovation.

The Canadian government should use strategic government procurement to help small, innovative Canadian companies scale-up and gain credibility in global markets. The principle here must be a shift from *requirements-focused* to *value-based* procurement, enabling the public sector to be an important first customer for Canadian innovations. The opportunity here is significant: Canadian governments at all levels spend approximately \$100 billion each year to purchase equipment, supplies, and services. Innovative Solutions Canada, modeled after similar, successful programs in the US and U.K., will provide \$50 million annually starting with *Budget 2017* towards earlier-stage products and services, and if successful, should be expanded even further.

**8. Prioritize existing business innovation programs.** Canada spends more than \$5 billion annually on a multitude of programs to accelerate innovation, enable commercialization, and strengthen exports. We can still do a much better job of scaling up programs with proven impact, and cutting those without. To do this successfully will require regular assessment and systematic data collection on effectiveness, as well as a major mindset shift towards resource re-allocation and optimization. Also needed is a regular review of regulatory barriers—removing or re-tooling those that create unnecessary barriers to innovation.

Canada has the potential—and the need—to be an innovation powerhouse in the coming decade. From our world-class education system, to our diversity and reputation for openness, to our strong existing sectors, we have all the right ingredients to attract and equip the next generation of great Canadian inventors and business builders. Capturing this opportunity will be one of the most important drivers of Canada’s future prosperity for all. **P**

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