Innovation is the key to growing the economy, says CIBC President Victor Dodig. Canadian Club of Ottawa photo

Building Canada's Modern Economy

Victor G. Dodig

Canada's prosperity has rested for decades on the boom-bust cycle of commodities and a discounted Canadian dollar that's provided a competitive advantage in the global marketplace. Canada is at a defining moment in its history, where with the right policies and committed leadership, its economy can realize its true potential. CIBC's President and CEO Victor G. Dodig shares his ideas on how Canada can drive innovation and foster growth in the modern economy.

With a new federal government having just been sworn in, it is time for Canada to assess its economic strengths and challenges, and the choices we face in building a modern economy equipped for growth and competitiveness both at home and around the world.

Over the last decade, Canada lost 10,500 manufacturing plants or 17 per cent of our manufacturing capacity. Even with the current weakness in the Canadian dollar, it is unrealistic to think that this traditional capacity will be rebuilt. The reality is that going forward economic

growth will come from innovation across all key sectors of our economy—natural resources, financial services, real estate and broadly defined diversified sectors.

While Canada is roundly—and rightly—envied for our solid economy and how we withstood the financial crisis, we have three gaps to fill if we are going to continue to prosper and be leaders among the advanced economies:

- First, I believe we need to do a better job of building the *intellectual capital and the skills* necessary to fuel innovation and execute in a modern economy;
- Second, we need to ensure our innovative entrepreneurs are able to attract both the *formation and sustainability capital* necessary to commercialize new ideas into valuable products and services; and,
- Third, we need to ensure that we build an *innovative ecosystem* that effectively encourages and nurtures that development.

The fundamental strength of every modern economy starts with its people. As the World Economic Forum told us in a 2013 report, "The most important determinant of a country's competitiveness is its human talent—the skills and productivity of its workforce."

In Canada, we are not coming to this challenge from a standing start. Participation in post-secondary education has grown from 41 per cent to 53 per cent over the past decade, the highest among OECD countries. So while we are investing in our intellectual capital, how productive is this investment for the new economy?

Actually, some troubling issues lie behind those positive numbers:

- Canada has a much lower proportion of graduates in the all-important STEM sectors—science, technology, engineering and mathematics—than 22 other OECD countries;

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- Only about 20 per cent of our graduates are from those disciplines; and,
- Post-secondary graduates rank 19th of 21 in numeracy, 18th of 21 in literacy and 14th of 18 in problem-solving skills.

By way of comparison, in India and China, close to 40 per cent of graduates have STEM degrees. In Germany, it's around 25 per cent.

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We're talking about the very people and very skills we need to need to lead Canada in innovation and create the high-value jobs for the future.

As the Canadian Council of Chief Executives CEO and CIBC's board chair, John Manley recently said, "This isn't a problem of under-investment. [But] at least at the university level, there seems to be a significant disconnect between suppliers and consumers of education."

Far too many graduates don't bring enough skills and practical experience to be ready for the modern labour force. The result is that Canadian students, by and large, are choosing an education path that is geared toward acquiring credentials, rather than on skills acquisition and on what the labour market needs.

So, what do we need to do?

First, we need to promote education choices that match the needs of the job market. We also need policies and models to support emerging industries that focus on creating solutions in the global supply chain as opposed to just building products. While traditional manufacturing in Canada has shrunk dramatically in recent years, there are other businesses that are creating solutions that we should look to.

Recent research by Benjamin Tal of CIBC Economics found firms that focus more and more on creating solutions as opposed to just building products, are emerging to fill some of the gap. As much as 70 per cent of the economy and 80 per cent of all jobs are in tradeable goods and services, with trade in industries like engineering, architecture, computer and financial services already almost as large as the merchandise sector. These types of companies are creating products and services many of us never imagined—and certainly never thought there was a market for.

These emerging firms share a common outlook—they are innovators. And, to put it simply, innovators are all about finding new and better ways

of creating value. In today's context, innovation is the generation, commercialization, and adoption of new ideas, processes, products, and services in the marketplace.

To support them, they require three fundamentals: skilled labour, access to expertise, and capital.

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First, policymakers need to look again at our post-secondary education system, which is heavily subsidized by taxpayers. We need accurate information about student enrollment in programs and employers' job-vacancy forecasts to help guide young Canadians toward programs with solid employment prospects. Canadian educators must embrace the need to develop the next generation of economic builders and business owners with the necessary practical and applied skills to turn great ideas into commercial successes.

Second, we in established businesses all need to encourage intelligent, risk-taking young people, and provide them with the resources and support they need to succeed on the business side. We can do that by harnessing their innovations to provide better services to our clients.

We have started to do this at CIBC by creating our own technology hub—casually known as #digital—that employs about 300 people in an environment more akin to a Silicon Valley start-up than a staid Big Five bank.

Our work here is necessary to respond and adapt to the changes in our industry. Clients today expect a lot more from their bank. They have extensive and varied online experience and they are tech-savvy. They've seen technology simplify transactions that used to be complex and time-consuming in other parts of their lives.

But they will only embrace innovative technologies if they integrate seamlessly into their lives, fulfill real needs and deliver additional value.

At MaRS in Toronto, CIBC established an innovation lab, where a small team of bright young co-op students and developers created the CIBC Apple Watch Banking App. Because technical specs were not yet available from Apple, they designed the proof of concept on the basis of what clients would want from a CIBC Banking App on the Apple Watch.

The speed of development was unprecedented and caught the attention of the Apple team and resulted in another first for our bank.

By acting like a bank and like a tech start-up, we were able to achieve a better outcome for our clients.

We also believe in the importance of partnering with Fintechs, those startups that leverage innovation and technology to provide financial services in new and innovative ways. We believe that by working with some of these firms we can deliver a better outcome for our clients and for our economy. For example, we recently worked with a UK-based Fintech, Earthport, to turn Canada's $30 billion foreign remittance market on its head by eliminating the fees associated with sending money overseas.

In the world of innovation, partnerships are key to success, where private enterprise and post-secondary institutions are creating ecosystems or hubs where innovation can flourish.

At Ryerson in Toronto, the Digital Media Zone, known as DMZ, is one of Canada's largest business incubators for emerging tech startups. In just five years, it has raised $120 million in seed funding, incubated over 200 startups and so far helped create nearly 2,000 jobs.

There are also fine examples of innovation partnerships in more traditional spaces, like the energy sector. The Institute for Oil Sands Innovation at the University of Alberta is developing innovative technologies to address emission and water consumption challenges in the energy sector. There, a University of Alberta engineering professor developed a cutting edge technique using solar energy to clean up oil sand waste water.

We see this in manufacturing as well. Siemens Canada for example, has established an innovative manufacturing hub in Burlington. As Robert Hardt, president and CEO, said recently, "Companies that innovate and commercialize the fastest in today's environment are going to be the leaders". Part of its strategy is to partner with area colleges where it provides guest lectures, technical workshops and curriculum development recommendations. Siemens also provided a $458 million product lifecycle management software grant to McMaster University in Hamilton that gives students the ability to work with the same design and manufacturing research technologies used by many of the world's most sophisticated manufacturers.

All of these hubs demonstrate that the right ecosystem can produce great innovation and commercial success. They are creative and necessary partnerships between schools, government and business. But we need to do more to compete and grow—including cross partnerships and greater collaboration between governments and institutions on a national basis.

The second element required to build and grow Canada's new economy is ensuring innovative young companies can access the needed capital and expertise both to get started and to sustain their growth. In recent

years, policy makers have been more focused on protecting small business than creating an environment in which it can grow and thrive.

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Successful innovation strategies require investment. Thomson Reuters' recent Canadian Venture Capital Review reported that deal activity and investments in the first half of 2015 were up by 21 per cent and 23 per cent, respectively, over the previous year. Private equity investments in the manufacturing sector are up 38 per cent year-to-date over last year.

But, there are some indications of a funding gap among early stage innovation-based companies, especially among asset-light firms and those looking to expand into international markets.

This funding gap needs to be addressed. One model worth considering is the Business Growth Fund created by five of the UK's largest banks. This fund provides the start-ups with capital and, importantly, access to a network of 3,000 experienced expert advisors.

Capital on its own is not enough to drive growth and ensure success for our startup companies. We need to create an environment that supports their continued success and helps them turn into global players.

We could learn from a global innovation leader like Germany, which has succeeded in implementing a national collaborative innovation policy. Germany has implemented three key strategies:

- Firstly, the German Science, Tech and Innovation system (known as BVIZ) operates 150 business incubation centres that help startups to commercialize and achieve scale, resulting in the creation of more than 5,800 companies and 46,000 jobs. The Centres help entrepreneurs and ensure that innovation gains in productivity are spread across all economic sectors rather than just being concentrated in a specific area.
- Germany created a network called the Fraunhofer Society, an organization of 80 institutes in Germany, and now around the world. Through a mix of public and private funding, these institutes help move radical ideas into the marketplace. As independent researchers they act as 'intermediate policy makers' to help businesses commercialize and achieve scale.
- Finally, Germany is ensuring skills training is a lifelong endeavor, teaching existing workers, not just young people, how to use new technologies to increase productivity.

There's another area that needs some urgent attention by the federal government to create the right innovation infrastructure in Canada—we need a public and private policy framework to support the capture of wealth from ideas. This starts with stronger intellectual property protection for innovators.

High tech innovators create two kinds of value: the profits they generate from selling their products, services and processes, and from the ownership of ideas—the intellectual property rights that lie behind their innovation.

Jim Balsillie and John Ruffolo, two highly successful leaders and innovators, recently joined forces with a number of elite high-tech companies to create the Canadian Council of Innovators, a lobby group that will work with government to establish a stronger infrastructure for supporting emerging Canadian innovators as they grow their companies beyond Canada.

The Canadian economy today faces some difficult challenges, but we are in a period of transition with even more opportunity. It is not a transition from an "old" economy to a "new" economy, it is a transition from "today's economy" to a "future economy."

That will first take a tight focus on fixing the way we value and build our intellectual capital, as well as how we inform our choices on where and how to invest in our intellectual resources.

Second, we need to need to become much more innovative about innovation in the public and private sectors. We need to tap into the innovative genius of Canadians to build the framework for increased and sustained future growth across all economic sectors.

We need to marry up the necessary business skills with the genius of our discoverers and inventors to push great ideas through to marketable and valuable products and services.

A focus on value-added, R&D intensive manufacturing will be one way to restore and bolster our capacity and return jobs we have lost in this sector.

The providers of capital—banks, pension plans, venture funds and others—need to be in a position to provide the necessary capital to help the early-stage innovators and those seeking to scale and grow their businesses to be world class.

Together, the public and private sector, employer groups and post-secondary institutions can build a Canadian economy that is competitive, prosperous and meets the national objectives that all of us share. P

Adapted from a speech to the Canadian Club of Ottawa, November 24, 2015.