THE HILL TIMES POLICY BRIEFING

INNOVATION

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Dr. Sheila Singh
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Canada Research Chair in Human Cancer Stem Cell Biology

Michael Noseworthy, Professor,
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McMaster University

Innovation procurement programs looking to lure home-grown products

Improving communication surrounding the procurement process and available supports to get businesses through it is key, say University of Ottawa professors.

BY EMILY HAWS

Yad Garcha, CEO of Bionic Power, understands why most small business owners are wary of doing business with the federal government, calling the process bureaucratic, but for him government procurement was always the end goal.

The Vancouver-based Bionic Power was recently awarded a contract for $1.1-million for its Knee Based Energy Harvester through the Build in Canada Innovation program (BCIP). The company makes battery chargers powered by human movement, in this case, the movement of human knees. It's being tested by the Canadian Armed Forces.

"It's kind of a silly thing for a company" to develop an invention for the purpose of selling it to the government, he said, "because by the time the government buys, generations of entrepreneurs die trying to get there."

"You need to have a business model so you can survive for 10 years before they write the first serious cheque," he said, adding that serious cheques come from the deployment of a technology, not just testing it. Investors don't want to put money into a project that could take a decade to get a return, he added, so most develop commercially and then go onto government sales. That wasn't an option for him, as the armed forces were the only market willing to put the money into the project to get it off the ground.

BCIP, established in 2010, is run by Public Services and Procurement Canada (PSPC). Inventions are tested by government departments, and it pays up to $500,000 for a standard invention and up to $1-million for military inventions. It helps companies test their invention, but allows them to keep the intellectual property.

Since its inception, it has awarded more than 285 contracts valued at over $126-million, said a press release. It noted 80 per cent of firms that benefited have successfully commercialized their products, and through its support, 50 made-in-Canada innovations have been exported to 44 countries. Over the past 14 months, the number of submissions to the program has doubled, which has the program pushing forward at a rate of over 600 innovation submissions per year, according to a statement from PSPC. As well, 80 per cent of participant companies, 97 per cent of which are small and medium enterprises, have successfully commercialized their BCIP innovations within a year of completing their BCIP contracts.

After having spent two decades in the venture capital world, Mr. Garcha said he was encouraged to apply for the government program after he met representatives at a trade show. Bionic Power was awarded a contract on its second go.

The program is a good idea because it supports domestic technology in its quest for deployment around the world, he said, but noted it would be nice to have government departments pick the inventions over the PSPC bureaucrats. The application process could be shortened, he added, because "what [bureaucracy] thinks takes 45 minutes, takes about a month."

Bionic Power has previously worked with the United States' Armed Forces and Simon Fraser University, and his device will be tested in February and March at Canadian Forces Base Gagetown, N.B., as well as Toronto's Defence Research and Development Canada facility.

Lack of awareness 'dominant factor' for lack of SME procurement, say profs

Businesses don't think of the government as a potential client, said Barbara Orser, a professor at the University of Ottawa's Telfer School of Management. In July, Prof. Orser, colleague Allan Riding, and their research team released a study in collaboration with Public Services and Procurement Canada looking at which businesses do and do not use the government procurement process, and why.

"There's opportunity to continue to alert, research out, communicate with small businesses that they are in the business of procuring goods and services," she said. "Really, the dominant factor is lack of awareness."

The House Government Operations and Estimates Committee has been studying the issue since late last year. As of Feb. 13, it has heard the oral testimony from 35 witnesses and received four written briefs.

Innovation, Science, and Economic Development Minister Navdeep Bains and Public Services and Procurement Minister Carla Qualtrough are responsible for the Build in Canada Innovation Program and the Innovative Solutions Canada program, which both help Canadian entrepreneurs do business with the federal government. *The Hill Times photograph by Andrew Meade*

Barbara Orser, a professor at the University of Ottawa's Telfer School of Management, concluded a study in July in partnership with Public Services and Procurement Canada that found small and medium sized enterprises do not see the federal government as a potential client. *Photograph courtesy of the University of Ottawa*

Allan Riding, a professor at the University of Ottawa's Telfer School of Management, said the fact PSPC reached out to them to study why enterprises aren't doing business with the government shows they are committed to solving the issue. *Photograph courtesy of the University of Ottawa*

Prof. Orser and Prof. Riding appeared before the committee in December where they spoke about their study. Other witnesses have included Women Business Enterprises Canada Council, and the Information Technology Association of Canada.

After looking at the 2014 Survey of Financing and Growth of Small and Medium Enterprises—conducted in partnership with a consortium of organizations led by Innovation, Science and Economic Development Canada, according to a press release—the professors found businesses struggled with finding available contracts, that they were too expensive to venture into, and that the contract bidding process itself was too complex.

Between 2012 and 2014, less than one in 20 Canadian small- and medium-sized enterprises were doing business with the federal government, and nearly 82 per cent didn't see it as a potential client, the study suggested. Federal, municipal and provincial governments direct about 33 per cent of their spending on goods and services.

The government is trying to change the perspective, Prof. Orser said, citing the PSPC-run Office of Small and Medium Enterprises. The office guides businesses through the procurement process, including maintaining a list of government sites offering procurement opportunities, and posting information on upcoming seminars.

"That office has really developed over the last couple of years," she said. "They're much more aggressive in reaching out to small business."

The professors said the department came to them looking to collaborate on ideas about engaging small businesses.

Prof. Orser noted she is supportive of the Build in Canada Innovation Program, but noted she hasn't studied it. The government needs to ensure businesses know it's an option and that it could improve education around the program's benefits and application process.

The procurement application process is also time-consuming, she said, but the government is attempting the clarify that process and the language in the application. Once a business has successfully gotten a contract they are more likely to continue to do business with the government, she said, but getting to that point is difficult.

The professors' research found businesses supplying the government were found to be typically older and have more employees, be more knowledge and technology-based industries and were also more likely to innovate, grow, and export.

Along with BCIP, in December Innovation, Science, and Economic Development Canada introduced the $100-million Innovative Solutions Canada program. The program has 20 government departments set aside money to support the creation of innovative solutions by Canadian small businesses. Essentially, the government posts a list of "open challenges" that Canadian businesses submit their solution proposals to.

If a company's idea is selected, it could receive up to $150,000 to develop a proof of concept. If this proof of concept is approved, companies could get up to $1-million to develop a prototype. The Government of Canada could then be the company's first buyer if the solution works.

Businesses more likely to sell to municipal governments than feds: CFIB

Corinne Pohlmann, senior vice-president, national affairs and partnerships at the Canadian Federation of Independent Business, said small businesses are more likely to work with municipal or provincial governments. The association represents 109,000 businesses nationally.

"[Procurement] is a pretty complicated process to go through, and particularly intimidating for a lot of small companies to try to sell to the federal government," she said. "They know the councillors in their communities."

"It's more difficult I think to understand what it is that you can sell to the federal government. And because it's often large, as well, some of the procurement opportunities are sometimes far too large for companies to be able to access."

She applauded the government for its pilot programming, allowing them to test out new ideas, but said there's still work to be done. About 20 per cent of their members had tried to sell to the federal government, according to the CFIB's latest research.

She indicated the process could be onerous for companies, with no guarantee of reward, but said once successful they are much more likely to continue to do business. The federal government's procurement process can be repetitive, she said, so certain parts of previous applications can be recycled.

"The more experience you get with the paperwork, the more likely you are" to be successful, she said.

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Government should prepare now for automation economy, even if layoffs aren't imminent, say experts

Transport Minister Marc Garneau boards an autonomous shuttle during a September 2017 self-driving vehicle demonstration on Parliament Hill. *The Hill Times photograph by Andrew Meade*

Job losses from automation is not a matter of if, but when, say advocates and experts.

BY JOLSON LIM

Despite mixed opinions from experts as to how soon automation will lead to significant layoffs, both proponents of new technologies in industry and those more apprehensive to their adoption say it's better for the federal government to ready Canada for potential job losses and a disrupted economy with policy sooner rather than later.

"We have this dystopian idea that everything is going to change and get worse for a lot of people and I would say that's the case if we're not proactive," said Kaylie Tiessen, a labour economist working for Unifor, which represents 315,000 members in sectors such as manufacturing, retail, and energy.

Ms. Tiessen told *The Hill Times* that she doesn't believe the workforce as a whole "should be worried about losing their jobs to artificial intelligence tomorrow," but cautioned that governments need to do more to create a stronger social safety net and provide skills training.

She said it's incumbent not only on governments, but also educational institutions, labour unions, and businesses to work together to find solutions and develop a system to deal with future tech-induced economic changes.

So far, the federal government has provided mixed signals on when automation will dramatically shake up the labour force. On one hand, the Liberals have invested hundreds of millions of dollars into skills development and training programs meant to prepare the workforce for an increasingly digitized economy, and cautioned in the last federal budget that automation creates "anxiety" for workers worried their jobs will disappear.

On the other, senior government officials believe they'll eventually have to deal with the impact of automation but likely not for decades, according to an industry source who spoke to the Canadian Press last March. Such a view would parallel the American government, with Secretary of Commerce Steve Mnuchin saying last year that he doesn't believe artificial intelligence would significantly impact jobs for at least 50 years.

Experts also haven't reached a consensus as to how soon automation will drastically impact labour markets, according to Sean Mullin, an economist at the Toronto-based Brookfield Institute. He told *The Hill Times* the projection models range from "complete decimation of the workforce" to less-daunting ones suggesting the economy will eventually correct itself.

"Fundamentally, it's a difficult and almost unknowable thing to accurately predict the future," said Mr. Mullin about automation's effect on the workforce. The Brookfield Institute recently published a report that found workers in low-skill jobs in sectors such as retail are most vulnerable to automation.

While he doesn't believe forecasts of an imminent collapse of the workforce, Mr. Mullin said automation's effect "will happen in uneven ways," with some sectors changed and technological advancements happening faster than others.

Mr. Mullin however noted that there have been dramatic advances in AI in the last half decade and governments are now talking about the effects of automation in ways unseen even three years ago.

"In the long run I think we'll be fine, but there is a duty for us to think of these distributional impacts in the short term to make sure we're not caught unaware," he said, adding that he wouldn't describe what policies the federal government has offered as of now as "concrete."

However, there's pronounced fears that automated machines will lead to massive job losses, with the latest jolt of anxiety coming from Suncor Energy's Jan. 31 announcement that it would shed 400 jobs in the Alberta oil sands for automated ore-hauling driverless trucks.

Self-serve checkouts are increasingly ubiquitous in grocery stores and fast food restaurants, while e-commerce giants such as Amazon and tech-centred "gig" companies such as Uber have already disrupted the retail and transportation sectors. After Ontario's new $14 minimum wage was introduced on Jan. 1, retailers such as Dollarama have also said they're speeding up study of automation, considering it an option for offsetting the cost of paying employees more.

In December, the influential Advisory Council on Economic Growth chaired by economist Dominic Barton, released an alarming report warning that two million Canadian workers could lose their jobs in the next decade due to tech-based market disruptions.

Finance Minister Bill Morneau (Toronto Centre, Ont.) said in December that the upcoming budget will respond to Mr. Barton's report, which calls for $15-billion more in public and private spending on equipping adults with more economically relevant skills. The 2018 budget will be tabled on Feb. 27.

Liberal Senator Dennis Dawson is deputy chair of the Senate's Transport Committee that studied autonomous vehicles. He says job losses due to automation are inevitable. *The Hill Times photograph by Andrew Meade*

In addition, the Senate Transport and Communications Committee released its report looking at automation in transportation on Jan. 29, cautioning that hundreds of thousands of jobs would be threatened in transportation-related industries by the rise of autonomous driverless vehicles. Currently, 1.1 million Canadians are employed in sectors such as trucking.

Liberal Senator Dennis Dawson (Quebec), deputy chair of the committee, told *The Hill Times* that automation in the sector is already happening, pointing to how more automated big rigs are being tested and produced by companies such as Tesla. He said disruptions will happen "sooner rather than later."

Although Sen. Dawson predicts job losses are inevitable, he said "governments have to be sure to encourage progress and not hinder it." He believes new technologies will produce jobs in the long run, citing the historical example of how jobs were initially lost when cars replaced the horse and buggy only to result in employment in the automotive sector.

"You can't resist change. We tried it with Uber. It was a waste of time. Embrace it, but be sure to minimize the downfall," said Sen. Dawson, adding that he hopes unions resistant to automation's application in industry can embrace change and work with policymakers.

The report also recommended that Employment and Social Development Canada continue to work with provincial and territorial governments in order to "strengthen retraining, skills upgrading and employment support" for Canadians at risk to job loss. Currently, the federal government transfers $3-billion annually to lower-level governments for such files, and announced in last year's budget that $2.7-billion over six years in transfers will go toward developing the labour force.

More spending on preparation for disrupted economy suggested

The Liberal government also allocated new spending towards skills development and training programs in last year's budget. Meant to foster a "culture of lifelong learning," the programs intend to equip young Canadians soon entering the workforce and older currently employed workers, with skills needed in an increasingly digitized economy.

It includes a $287-million pilot program over three years to test new approaches to making it easier for adult learners to qualify for student grants and loans, $132-million over four years and $37.9-million annually thereafter to fund EI benefits for unemployed Canadians to pursue self-funded training, and $225-million over four years and $75-million per year after to develop an organization to support "skills development and measurement in Canada."

The budget also emphasizes digital skills for young Canadians who will enter an increasingly high-tech economy, investing $50-million to go to teaching children coding, and $29-million for a digital literacy exchange program.

Such programs offering university credentials provide Canadians the "best disruption protection," Universities Canada president Paul Davidson told *The Hill Times*. Last week, his organization hosted Univation, a forum bringing together 80 thinkers to discuss how to ready students for a disrupted economy.

Mr. Davidson said "we're living in a period of accelerating change" so it's "incumbent on us all to think about what kind of public policy response can support people through these changes and help adjust our economy."

He said different levels of government have to start working together immediately, adding that "we don't have 20 years to decide" whether federal or provincial governments take the lead on readying the workforce. He suggested work-study programs, investment in basic research, and teaching learners "global skills" with ideas such as exchange programs are needed in the next budget.

Mr. Mullin said there will have to be a "mindset shift" for workers comfortable with the idea of going to school before permanently entering the workforce with one career in mind. Workers will have to accumulate creative and digital skills "hard for computers or technology to replicate."

"We need to prepare people not for particular jobs or careers but ensuring they accumulate bundles of skills that are going to make them resilient in an economy where a particular job may or may not exist 10 years from now," he said.

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Canada's Nuclear Technology Delivers Clean Energy and More

By Mel Hyatt
President
Power Workers' Union

The federal government recently released the results of a June 2017 public survey on energy and resource development. Results suggest that public support for nuclear energy still occupies the basement at 45% compared with solar and hydro, with numbers more than double that of nuclear. Wind is next at 86%, followed by oil at 63%. The same survey showed about one third of the people surveyed support making greenhouse gas reductions a guiding principle for natural resource development. Other principles include keeping energy affordable at 25%, ensuring safe production and transportation at 20%, and creating more energy jobs at 10%.

The facts suggest Canada's nuclear technology meets these principles.

On a lifecycle basis, nuclear generated electricity emissions are slightly more than hydro and wind but less than solar. Intermittent wind and solar generation require back up about seventy percent of the time. In Ontario, this backup generation is typically provided by carbon emitting natural gas plants. By comparison, nuclear plants produce "baseload", low-carbon electricity twenty-four seven.

Over the last 30 years, Canada's reactor technology and uranium exports have helped avoid about one billion tonnes of carbon dioxide (CO_2) globally. Ontario's nuclear fleet helps avoid about 45 million tonnes of CO_2 annually, the equivalent of taking ten million combustion engine vehicles off the road. With next year's $20/tonne federal carbon tax, this represents a value of $900,000,000 to Ontarians. The province's reactors also help Quebec maximize its low-carbon hydropower production and electricity exports. In the future, climate change impacts on electricity production will make this nuclear/hydropower relationship more important.

Ontario became a leader developing Canada's nuclear technology partly because the province doesn't have vast hydropower resources like Quebec and Manitoba. CANDU nuclear reactors are the electricity workhorses in Ontario, meeting about 60% of the province's electricity needs. In New Brunswick, for similar reasons, nuclear provides a third of its electricity.

Analyses show that nuclear power is today's best low-cost power source and will continue to be in the future. The current average per kw/h cost of nuclear in Ontario is 6.6 cents compared to solar at 48.1 cents and wind at 13.3 cents. Nonetheless, advocates of wind, solar and emerging distributed energy technologies (DER e.g., battery storage and microgrids) call for increased investments citing environmental benefits, customer choice and declining costs.

The costs of nuclear are well known but the same cannot be said for solar, wind and DER.

Ontario Power Generation's nuclear fleet is regulated by the Ontario Energy Board—the only generator subject to such oversight in the province. The regulatory framework, including the process to be followed for analyzing DER costs and benefits, is yet to be determined. To date, most of Ontario's DER investments have been demonstration projects paid for largely by electricity consumers.

DER technologies make consumers producers of electricity or "prosumers". The resulting two-way flows of electricity generate massive amounts of data that must be managed to ensure reliability. This requires significant expenditures on information technology. And unlike nuclear, the decommissioning and waste management costs for DER have not been addressed. Solar panels and batteries contain toxic chemicals that must be managed. While DER may facilitate Integrated Regional Resource Planning to the benefit of local consumers and economies, it will create a range of electricity rates across Ontario. The bottom line – Ontarians will not know DER's impacts on electricity rates for some time.

Canada's nuclear technology has been safely and reliably operating for decades. The economy benefits from a five billion dollar a year, 50,000 plus job industry. Making nuclear the baseload foundation for Canada's low-carbon energy future means even more environmental and economic benefits, including: low-carbon electricity exports; electrification of the economy; powering zero emission vehicles; hydrogen production; and, cancer-fighting, productivity improving, space exploring innovations. Canada's nuclear technology is our "ace" in the hole.

Fintech caught in grey zone, stakeholders say, as feds study Bank Act

The Canadian financial technology sector lags behind its peers, says an Ernst & Young report, and observers want banking regulations to come into the digital age.

BY EMILY HAWS

As Finance Canada is in the midst of its review of the Bank Act, observers are saying the rules need to better accommodate the emerging financial technology sector—known as "fintech"—and bring banking regulations into the digital age so that Canada can catch up to its international peers.

"Things in fintech are moving in weeks and months, not five-year increments," said Neil Parmenter, CEO of the Canadian Bankers Association (CBA). "We're really looking and hoping for modernization in some of the rules governing banks, particularly as it pertains to fintech."

Fintech includes any company combining technology and financial services. This includes Apple Pay or the crowd-funding website GoFundMe, as well as using robots to monitor investments or blockchain, a decentralized public register of all transactions.

Key wants among stakeholders include changing regulations so banks can invest in and partner with fintech startups more easily, clarifying those rules to accommodate the sector's needs, and the smoothing out of jurisdictional issues between provinces and territories.

Regulations make the Canadian financial system one of the soundest in the world, but the current framework may impede innovation, said Mr. Parmenter. For example, banking regulations have outdated definitions of technology and rules surrounding the transmission and communication of information, which means banks are limited to only investing in financial services companies and are barred from investing in commercial ones.

This was meant to prevent banks from becoming holding companies and having a stake in airlines, for example, said Mr. Parmenter, but it leaves a grey zone for fintech companies as most are both financial services and commercial. For example, Square, an app making mobile credit card payments easier, has a food delivery component, putting it in this grey zone, and possibly requiring regulatory review. Mr. Parmenter said 80 of the top 100 global fintech companies fall into this zone.

"Those companies could end up going to unregulated entities [for money]," he said. "What fintechs often want to do is partner with banks because they get access to a big brand, they get access to lots of capital, they get access to lots of customers to bring scale to their business, and these things can be challenging."

However, the government's review must balance regulation with innovation, and take into account risks such as cyber security. Stephen Redican, a Toronto-based financial services lawyer, said regulation of the fintech sector could also promote trust to consumers.

In August, Finance Canada released its second consultation paper on its review of the Bank Act, looking for feedback on potential policy measures crafted after the first round of consultations. The review allows "the government to calibrate its legislative and policy environment for financial institutions," Jocelyn Sweet, a spokesperson for Finance Canada, said in an emailed statement. The review must be completed by March 2019, and occurs every five years.

"The Government's financial sector policy objectives are to ensure the federal framework provides the right incentives to maintain a competitive and innovative sector, while balancing overarching considerations of financial stability and the protection of consumer and business interests," Ms. Sweet said.

There is no oversight body regulating the fintech sector but it must conform to the same regulations as other companies, such as licensing or compliance requirements. This can be problematic when fintech companies may not have the funds to fully comply, or do not fit neatly into the compliance framework.

Canadian consumers lag behind peers: report

The Competition Bureau released a December report to outlining why Canada is lagging behind its peers in fintech usage, outlining 11 broad recommendations for regulations to spur growth. About 18 per cent of digitally active consumers in Canada had used at least two fintech products in the prior six months, said the report, citing an Ernst & Young survey, compared to about 33 per cent of the other nations surveyed.

Key barriers to fintech sector growth cited in the survey included regulations, the mitigations of risk such as cyber-security, and trust in incumbent institutions. The study examined the three most popular parts of the sector—retail payments, lending and crowd-funding, and investment dealing and advice—because of its size, said Vicky Eatrides, the bureau's deputy commissioner, in the competition promotion branch.

"We really looked at this from a competition perspective … so you know, we saw that obviously more open access to systems and data would make it easier for consumers to shop around," she said, referencing open banking. "You can picture these sort of apps that we don't have right now where you'd be able to compare financial products from different financial institutions."

Finance Minister Bill Morneau holds a closing press conference after meeting with provincial and territorial finance ministers in December. Finance Canada is currently looking at overhauling the financial regulatory framework to include the financial technology sector, known as 'Fintech.' *The Hill Times photograph by Andrew Meade*

Open banking—where consumers grant third-parties like fintechs access to bank data to develop innovative apps—also allows for further cyber-security concerns. Finance Canada said it is "examining the merits" of the idea, as "a number of jurisdictions are considering or actively moving forward" with it.

Mr. Redican said open banking has been successful in the United Kingdom, but that regulation of the third party is key to safety. Consumers can already share financial information to third parties if they want, but open banking forces financial institutions to do it automatically. This could make it easier to get loans, he said for example. If someone is high risk, they can check a box so that if the bank can't provide them with a loan, it will share the information with another third-party lender.

The loan would likely come at a higher cost, he said, but "ultimately the consumer is better served because they get the loan that they need."

The Competition Bureau and the CBA also recommended the regulations be technology neutral so as not to date itself. Technology neutrality means regulations won't have to be updated when the next type of digital authentication comes along, allowing "innovation to happen that isn't going to require us to come back and say 'can you change the rules again,'" said Mr. Parmenter.

Cyber security always a concern

Despite the access issues, the industry is doing a good job overall of balancing innovation and consumer protection, said Blair Wiley, a Toronto-based securities lawyer, adding deregulation is not necessarily key to growth.

"It's not simply a question of loosening regulation to spur fintech innovation," he said. "I think you need to have more entrepreneurs, more engineering talent, [and] more investors."

He noted that cyber security affects every sector of the Canadian financial system, whether or not it is driven by new technology. The Canadian Securities Administrators (CSA) released the results of a survey in October on cyber security that found 51 per cent of the 649 firms examined experienced a cyber security incident in 2016. These included "phishing (43 per cent), malware incidents (18 per cent) and fraudulent email attempts to transfer funds or securities (15 per cent)," according to a press release.

Mr. Redican agreed, saying cyber security keeps bankers up at night, as "every [organization] has the risk of being penetrated."

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DEAR MINISTER MORNEAU.

WE REMAIN COMMITTED TO WORKING WITH YOU, BUT MUCH WORK REMAINS TO BE DONE.

The Coalition for Small Business Tax Fairness represents hundreds of thousands of independent businesses, professionals and taxpayers across all sectors of the economy and all regions of the country that employ millions of Canadians. Today we need to talk about recently announced changes to income splitting rules for families and upcoming changes to passive investment rules.

NEW INCOME SPLITTING RULES; MORE RED TAPE.

As of January 1, 2018, small business owners are subject to stricter rules that limit their ability to split business income with family members, creating significant confusion, audit risks and lack of recognition of the important role of spouses in the life of a business.

PASSIVE INVESTMENT RULES; LIMITING GROWTH.

While we are pleased the federal government now recognizes the importance of permitting some passive investment (and resulting income) within a private corporation we believe the investment income limit will prevent small businesses from saving for larger investments and innovations and therefore limit their growth potential and ability to scale up their operations.

LET'S GET THIS RIGHT.

Given the complexity of these proposals, more analysis and consultation is needed to fully understand the effect on the small business community. We therefore recommend the following action.

ON INCOME SPLITTING.

- Postpone any changes until at the very least January 1st, 2019
- Consider, at a minimum, a full exemption for spousal income and dividends from the new income splitting rules.

ON PASSIVE INVESTMENT.

- Do not proceed with the proposed passive investment rules.
- Undertake a comprehensive review of Canada's income tax system.

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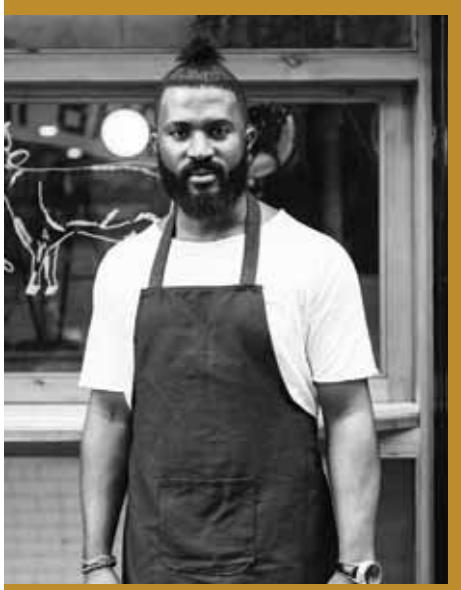

Coalition for small business tax fairness.

Canada jeopardizing U.S. relations, trade deals by favouring Chinese takeovers

Conservative MP Matt Jeneroux

Free trade

Encouraging free trade is a cornerstone of the Conservative Party's foreign affairs strategy. Gaining access to new markets in a mutually beneficial manner facilitates the dissemination of Canadian innovation, while creating jobs and a strong economy for Canadians. However, this enthusiasm to engage does not extend to state-owned enterprises, especially when it comes at the cost of Canadian security and economic prosperity. Specifically, the Liberals' distinct efforts to cozy up to China are jeopardizing the NAFTA renegotiation with our closest allies.

The most evident manifestation of this approach is in the approval of Canadian companies being taken over by Chinese state-owned enterprises, especially in the many cases where an additional national security review was not conducted. Norsat International is a satellite communications firm based out of Richmond, B.C., with a diverse clientele, including: defence and security agencies of Canada, the United States, Ireland, Taiwan and Scandinavian states, in addition to media giants like CBS and Reuters.

In June 2017, the Trudeau Liberals approved the sale of Norsat to Hytera Communications Corp., while forgoing an in-depth national security review. According to many media reports, Hytera's majority owner likely received Chinese state financing in order to buy out the Canadian company. Given the direct impact of this sale of American national security, the Liberals' approval was met with immediate disdain from the U.S.-China Economic and Security Review Commission. The Commission felt that Canada was too willing to sacrifice its relationship with some of its closest allies to curry favour with China. Norsat's American clients were urged to review their dealings with the Canadian satellite company, and evaluate whether they should continue given the new ownership structure. Similar warnings from governments of other jurisdictions will represent a loss for Canadian innovation as clients hesitate to engage.

This is not the first Liberal-approved sale of a Canadian enterprise to a Chinese state-owned entity that has posed a threat to Canadian innovation. Our previous Conservative government rejected the sale of Montreal-based ITF Technologies to a Chinese enterprise on the rationale that doing so would be sacrificing a key technological advantage Western militaries held over China. In March 2017, the Trudeau Liberals reversed that decision and let the sale proceed, once again, without a further national security review. Such a deal relinquishes proprietary Canadian innovations to a dominant competitor.

The impact of these takeovers is cause for concern in light of the ongoing and somewhat contentious NAFTA renegotiation. Across party lines, we have presented a united front of commitment to the renegotiation. We know how many Canadians rely on jobs stemming from NAFTA, and it must stand. However, the Liberals continued favouring of China is jeopardizing those renegotiations. The U.S.-China Economic and Security Review Commission have made clear their thoughts on increasing Chinese takeovers in Canada. In September 2017, the U.S. administration blocked the sale of Lattice Semiconductor from Portland, Oregon to an enterprise backed by China's state council on the grounds of national security. On this significant trade strategy, Canada and the United States are moving in very opposite directions.

While the protectionism of the Chinese regime runs counter to an ideal free trade arrangement, a bilateral free trade agreement with the United Kingdom (Andrew Scheer recently announced this policy position on behalf of the Conservative Party of Canada) would be mutually beneficial. Furthermore, the government should consider tax incentives to entice more public-private partnerships in research funding, as well as abandoning their $50,000 threshold on passive income in a private company. After all, start-ups are generally small businesses themselves, and I have heard firsthand in my consultations with that community how the new tax rules are diminishing their prospects.

Mergers and acquisitions are routine proceedings in the business world. If such an arrangement will give the company access to investment capital and create more jobs, then we welcome that. But the takeover of Canadian companies by enterprises backed by a foreign state is a different story. We should not be sacrificing our innovative edge and national security so willingly.

It remains to be seen whether the proposed sale of the construction company Aecon to Chinese state-owned firm CCCC International Holdings Ltd. (CCCI) will be approved. We welcome further scrutiny of the acquisition under a national security review; however the Liberals' track record in this respect indicates a favourable outcome for CCCI. As the Official Opposition, we will continue to highlight the impact that these takeovers backed by Chinese state-owned enterprises will have on the willingness of investors to do business in Canada, and on maintaining and expanding the areas in which Canada holds an innovative edge.

Conservative MP Matt Jeneroux, who represents Edmonton Riverbend, Alta., is his party's science critic.

The Hill Times

Health innovation requires taking risks

Embrace technology to solve problems, but when choosing this path, use the best one for the job and avoided being hemmed in by the limitations of a particular program or vendor.

Clare Liddy & Erin Keely

Health

It all started when the two of us sat down over a cup of coffee. As a family physician and endocrinologist, we stand on opposite sides of a large chasm called patient wait times, and we both started seeing more and more of our patients getting swallowed up by this abyss.

In her role as a family doctor, Clare noticed how long some of her patients had to wait for an appointment with a specialist. In Erin's case, patients were waiting months for their appointments with her as an endocrinologist, often for problems their family doctors could have addressed with just a little guidance.

Surely, we thought, there was a better way, a quicker path that could save patients the meandering months-long waits they were too often facing?

From this conversation, we came up with an innovative solution: what if, instead of a family doctor making a referral every time they faced a question about a patient's care, they could instead reach out to a knowledgeable specialist directly? Perhaps, in some cases, the specialist could guide the family doctor, saving the patient a long wait for an in-person appointment. And this could save the beleaguered public health system important resources in the process.

With public grant funding and the support of regional partner—including the Champlain Local Health Integration Network and the Winchester District Memorial Hospital—we created the Champlain BASE eConsult service: a secure online platform that allows primary care providers to ask specialists questions about a patient's care. Specialists respond within a week—two days on average—with advice on the patient's care, recommendations for referral or requests for more information.

Eight years since its founding, the eConsult service has completed more than 30,000 cases, enrolled more than 1,300 primary care providers and allowed thousands of patients to receive high quality care without needing a face-to-face specialist visit.

Other innovators in several provinces have partnered with us to bring the BASE eConsult model of care to their jurisdictions, and the Government of Ontario has recently committed to expanding the service across the province.

The eConsult service made the leap from pilot into practice—no easy feat in the often intractable and rigid Canadian health system. Over the years, we've learned a number of important lessons about creating and implementing healthcare innovations, which too often fail to sustain themselves beyond an initial pilot phase.

1. Straddle the divide between research and practice

Successful innovations are built on a foundation of sound evidence and that evidence comes from solid research. But research alone can't launch a service, and many promising innovations have remained cloistered in academic journals—valuable platforms, but ones that rarely resonate outside of their immediate circles. In order to get something implemented, you need to reach the people who do the actual implementing: clinicians, policymakers, and especially patients, whose voices must be heard.

2. Technology should be the vehicle, not the driver

We created eConsult first and foremost to solve a problem: poor access to specialist care. Our solution to this problem embraced technology, but when choosing this path, we remained set on our destination, which was always improving access for patients. By remaining agnostic to the particular technology we used, we ensured that the platform we ultimately chose was the best one for the job and avoided being hemmed in by the limitations of a particular program or vendor.

3. Stay flexible, but stay focused

Implementation is an ongoing process and adapting to new facts or changing needs is vital. For instance, in the early days of eConsult, we considered building the service around an email client. However, Ontario's privacy legislation doesn't allow transmission of patient data through email because it's too insecure, so we switched to a platform with more robust security measures.

While such adjustments are inevitable and must be taken in stride, the overall goal of the innovation should remain at the forefront of its implementation. Many programs suffer from a gradual broadening of their scope, which can dilute their impact on the objective they originally meant to achieve.

4. Take risks

In research, failure is often preferable to inaction, because failure brings with it lessons on how to improve, while inaction teaches us nothing. Mistakes are inevitable, and the best way to learn from them is to seek continuous feedback from the providers and patients who use or benefit from the service.

We've seen firsthand the positive impact eConsult can have on patient care, and hope that one day every Canadian can avoid the pitfalls of excessive wait times—which range from inconvenience to serious deterioration of health—and benefit from improved access to specialist care.

Dr. Clare Liddy is a clinical investigator at the C.T. Lamont Primary Health Care Research Centre of the Bruyère Research Institute, a Tier 2 Chair and associate professor at the University of Ottawa's Department of Family Medicine, and a practicing family physician and an expert advisor with EvidenceNetwork.ca. *Dr. Erin Keely is an endocrinologist with The Ottawa Hospital, a professor at the University of Ottawa's Department of Medicine, and a clinician researcher with the Ottawa Hospital Research Institute.*

The Hill Times

Feds must step up support for innovation in Canada's auto industry

In 2016, the biggest trade driver between Canada and the U.S. was the auto industry. We cannot, nor should we, stand by and let it fail, or drift without goals.

NDP MP Brian Masse

Auto manufacturing

Since the inception of the automotive industry in Canada, automakers and automotive part suppliers have become global leaders in innovation. Especially following the financial crisis of 2008 and with ongoing NAFTA negotiations, it is clear that our government needs to step up its support of the automotive industry in Canada. Other countries have strategies to grow their sector and innovate; we still do not.

The former government provided funding by way of the Automotive Innovation Fund, which involved repayable loans to companies that could afford to benefit from such loans. It was a step in the right direction, but ultimately, did not focus on the immense talent that automotive industry workers could provide. So while the automotive industry in Canada slowly worked itself back, innovation lagged, and opportunities were missed, leaving Canada behind. One can easily argue the workers and quality performance led to the recovery.

The current government's Strategic Innovation Fund combines several former investment initiatives into one large group, making each industry compete for the same funds. This new fund brings together the former Strategic Aerospace and Defence Initiative, Technology Demonstration Program, Automotive Innovation Fund, and Automotive Supplier Innovation Program into one program that the government claims will streamline the funding process. To date, we do not have enough information to see if this will, in fact, make a difference for applicants, nor have we set any target for these investments.

A report by Canadian auto czar Ray Tanguay, entitled Drive to Win, was submitted to the Canadian government last month. This vital report highlighted the need for this government to invest further in the automotive industry in Canada via the current Strategic Innovation Fund. Mr. Tanguay studied the important work that this industry provides and suggested tangible ways for the government to help make Canadian automotive research and production number one in the world. He was clear that we have to lead with innovation.

Now, it's up to the Government of Canada to heed this call.

We must remember that the automotive industry in Canada is the second-largest manufacturing sector; it provides $18-billion or more to Canada's GDP. Further, there are 126,900 direct jobs and 401,800 indirect jobs, and it is the largest export sector accounting for 17 per cent of total merchandise exports (95 per cent of which are destined for the United States).

In 2016 alone, Statistics Canada revealed that the biggest trade driver between Canada and the United States was the automotive industry. We cannot, nor should we, stand by and let this industry fail, or drift without goals or ambitions.

With constantly evolving technologies in the automotive field, in both the manufacturing processes and innovation of products, this presents a new opportunity for automotive manufacturers and our government to work closely together and reprioritize this industry. It is clear that we have the platform for doing this right; we have the people, skills, location, and technologies to innovate and adapt year after year. Now it's just ensuring that the automotive industry is not lost in this bigger funding plan.

For years Canada's automotive manufacturing industry has been virtually ignored by our government. The message by Prime Minister Justin Trudeau at the epicentre on manufacturing was also discouraging, as manufacturing is not a disappearing or passing industry. Robust artificial intelligence is just one example of new and exciting opportunities for automotive and cross-over industries.

It's time that this government ensures that we are not left behind other automotive nations investing in innovation. The government must make good on its Innovation and Skills Plan commitments, through the Strategic Innovation Fund, and ensure that investments in the automotive sector meet the calls in Drive to Win. Mr. Tanguay was clear that this industry can be a global leader capable of taking Canada to a whole new level if the right investments by this government are made. I agree.

The automotive evolution is reaching another pinnacle. Despite a history of accomplishments, we cannot pretend to ignore the reality that a new age is upon Canada, and a new results-based approach is desperately needed.

Brian Masse is the MP for Windsor West and NDP innovation, science, and economic development critic.

The Hill Times

Federal and Ontario auto adviser Ray Tanguay, centre, is pictured with then-Ontario minister of economic development, employment, and infrastructure Brad Duguid, left, and his deputy minister, Giles Gherson, at the Canadian International Autoshow in 2015. *Photograph courtesy of Ontario's Ministry of Economic Development and Growth*

Liberals making investments to help Canadians seize opportunities created by technology: Bains

'We recognize that technology is changing fast, and with that comes opportunity.'

BY MARCO VIGLIOTTI

The expansive portfolio handed to Innovation, Science, and Economic Development Minister Navdeep Bains has already earned him the moniker the "minister of everything."

After all, the Mississauga, Ont., MP is tasked with not only shepherding the government's all-important economic development agenda, but also helping domestic businesses become more innovative, an elusive task that seemingly boils down to helping Canadian firms remain on the cutting edge of a rapidly evolving technological landscape.

It's a mandate that seems simple only in its breadth and scope: help support economic development now and into the future. Or, as Mr. Bains (Mississauga-Malton, Ont.) succinctly describes it, creating "good, well-paying middle-class jobs now while preparing workers for the jobs of tomorrow."

For the innovation policy briefing, *The Hill Times* quizzed Mr. Bains on how his department was using government buying power to support small- and medium-sized firms in Canada, how it was handling the emerging Fintech sector, and preparing Canadians for increased automation and other innovation-fuelled disruptions in the job market, as well as other pressing queries related to his portfolio.

Innovation, Science, and Economic Development Minister Navdeep Bains says the Liberal government is focusing on creating 'good, well-paying middle-class jobs now while preparing workers for the jobs of tomorrow.' *The Hill Times photograph by Andrew Meade*

You can see where the minister of everything tag comes from.

This email Q&A has been edited for style and length.

What is the federal government doing to leverage its considerable buying power to help small- and medium-sized businesses in Canada, especially those in the innovation space? How does it offer support to domestic businesses without running afoul of WTO rules and various trade agreements prohibiting granting preference to local firms?

"Launched in December 2017, Innovative Solutions Canada is a new innovation procurement program designed to support Canadian small businesses. Twenty participating federal departments and agencies will issue challenges through Innovative Solutions Canada. The challenges are designed to seek novel solutions and not commercially available products or services. The challenges issued by federal departments and agencies will be designed around desired outcomes rather than known products or process specifications.

"Each participating department will allocate a minimum of one per cent of their 2015-16 procurement and intramural research and development expenditures to support early-stage, pre-commercial research and development and late-stage prototypes from Canadian small businesses in response to challenges. The funding supports partnerships between government departments and Canadian innovators in the development of early stage, pre-commercial innovation with the ultimate goal of promoting the growth of Canada's small businesses.

"The benefits of Innovative Solutions Canada for small businesses is that they do not give up equity in their company, they do not give up rights to the intellectual property, and they do not return the funding—this is not a loan or a repayable contribution. What is expected is truly novel research that will lead to a commercial product that benefits Canada. Getting into the program sends a powerful signal to potential investors and customers. It says that the company's innovation has the potential to address a pressing need expressed by the government of Canada."

What is Ottawa doing to spur more innovation in the financial services industry? In the same vein, what regulatory approach is Ottawa considering for the emergent Fintech sector? What department/agency is taking the lead?

"Canada has a rapidly developing Fintech sector, with a strong base of firms, talent and funding, and has a global reputation for its strength in financial sector stability and prudential oversight. Like other jurisdictions, Canada is considering the policy implications of rapidly evolving technological changes in the provision of financial services. The government's financial sector policy objectives are to ensure that the federal framework provides the right incentives to maintain a competitive and innovative sector, while balancing overarching considerations of financial stability. Under the Canadian framework, Canada's financial institution statutes are reviewed every five years. The Department of Finance Canada is currently in the midst of such a review, which will allow the government to calibrate its legislative and policy environment for financial institutions to accommodate a changing market environment with respect to Fintech.

"As part of this review, there have been two periods of consultation with stakeholders.

Continued on page 27

Bloomberg 2018 Innovation Index

2018 rank	2017 rank	Year over year	Economy	Total score
1	1	0	S.Korea	89.28
2	2	0	Sweden	84.70
3	6	+3	Singapore	83.05
4	3	-1	Germany	82.53
5	4	-1	Switzerland	82.34
6	7	+1	Japan	81.91
7	5	-2	Finland	81.46
8	8	0	Denmark	81.28
9	11	+2	France	80.75
10	10	0	Israel	80.64
11	9	-2	U.S.	80.42
12	12	0	Austria	79.12
13	16	+3	Ireland	77.87
14	3	-1	Belgium	77.12
15	14	-1	Norway	76.76
16	15	-1	Netherlands	75.09
17	17	0	U.K.	74.54
18	18	0	Australia	74.35
19	21	+2	China	73.36
20	24	+4	Italy	68.88
21	22	+1	Poland	68.74
22	20	-2	Canada	67.98
23	19	-4	New Zealand	67.40
24	25	+1	Iceland	67.11
25	26	+1	Russia	66.61

Source: Bloomberg.com

Continued from page 26

By the numbers

$2.379-billion
Total federal financial support for business innovation for fiscal year 2016-2017

37,297
Total patent applications filed in Canada for fiscal year 2016-2017. That's down from 38,968 in 2015-2016.

Sources: Treasury Board of Canada

Finance has heard from stakeholders that:

"Innovation is about convergence of financial, technological and other services. Traditional regulatory approaches based on these definitions may need to evolve to keep pace with the new business environment.

"Players from across the sector (whether incumbent institutions or start-ups) see the value in partnership. Financial institutions and Fintechs want to leverage their respective strengths (like a customer base and scale for banks, and a focus on the user experience for Fintechs) through collaboration.

"This input is informing the government's policy approach as it considers how to adapt Canada's institutional frameworks for Fintech. Similarly, the Department of Finance Canada is working to develop a new oversight framework for retail payments.

"Innovation is transforming all segments of the financial sector, and retail payments are at the forefront of this transformation. The evolving nature and complexity of retail payments requires a dialogue between the government and stakeholders to ensure the new oversight framework fosters innovation and competition, and protects users of those services. As an outcome of this consultation, Canada will bring forward new legislation to implement the new oversight framework.

"Canada is also closely monitoring policy developments in other jurisdictions, as technologies and markets are evolving rapidly."

What is the government doing to help prepare Canadians for increased automation and other innovation-fuelled disruptions in the job market? Specifically, is Ottawa doing anything to help Canadians prepare and thrive in the emerging gig economy, marked by fewer, stable 9-to-5 jobs?

"Our government is looking to create good, well-paying middle-class jobs now while preparing workers for the jobs of tomorrow. We recognize that technology is changing fast, and with that comes opportunity. That's why Budget 2017's Innovation and Skills Plan made investments that will ensure all Canadians are prepared for the jobs of the future, and that Canada's workers are equipped with the skills and training they need to succeed in a changing economy.

"As part of that plan we launched the Innovation Superclusters Initiative to invest up to $950-million to support business-led innovation superclusters that have potential to accelerate economic growth.

"We announced the launch of a $1.26-billion Strategic Innovation Fund, which has expanded business innovation programming to dynamic and emerging sectors, such as clean technology and agri-food.

"We launched our Global Skills Strategy, which recognizes that by facilitating the faster entry of top talent with specialized skill sets and global experience to Canada, we can help innovative companies grow, flourish and create jobs for Canadians.

"Automation represents a great opportunity for Canadian workers—leveraging the incredible expertise and knowledge that exists in Canada. For example, over the next two decades, artificial intelligence (AI) will help increase productivity of Canadian workers by automating routine tasks so they can bring more strategic value-added skills to their work. Increased innovation and productivity will attract foreign investment into Canada, creating additional highly skilled jobs. Canada can be a leader in this field, building on the extensive work already done at some of the top universities in Canada."

What update can you provide us on how the $1.26-billion Strategic Innovation Fund is supporting domestic businesses and, more broadly, helping the Canadian economy to become more innovative?

"Making sure that Canada is a top destination for businesses to invest, grow and create jobs and prosperity for Canadians is one of our government's top priority. Since its launch in 2017, Canada's innovative industries have responded positively to the Strategic Innovation Fund. Hundreds of applications have been received through the new single-window program delivery office, from sectors ranging from advanced manufacturing, to clean tech and biosciences.

"The government of Canada has announced the following Strategic Innovation Fund projects so far:

• $49-million for Linamar Corporation's advancements in artificial intelligence and advanced manufacturing, creating 1,500 new jobs and securing more than 8,000 others.

• $41-million for projects involving 11 automotive manufacturing companies located in Ontario, Quebec and British Columbia, creating more than 2,600 jobs."

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The Hill Times

Canadian gross domestic expenditures on research and development (GERD) as a percentage of gross domestic product (GDP)

Year	GERD ($ million)	GDP ($ million)	GERD/GDP (%)
2012	30,555	1,662,757	1.84
2013	31,834	1,770,014	1.80
2014	32,707	1,831,228	1.79
2015	31,972	1,893,759	1.69
2016	31,825*	1,974,825	1.61*

* Includes preliminary data
Note: GERD refers to all money spent on research and development performed within the country in a given year. The funding may come from government, business enterprise, private non-profit, higher education, or foreign sources.
Source: Statistics Canada

Innovation Minister Navdeep Bains, right, and parliamentary secretary David Lametti test out an electric car that runs on hydrogen power cells in June. According to Mr. Bains, automotive manufacturing companies will benefit from the government's Strategic Innovation Fund. *The Hill Times file photograph*