Budget 2014: Re-balancing Innovation Support Programs
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Dinner & Keynote Speaker

Is Canada Set to Win? Values, Skills and Strategies for National Competitiveness

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Starting from his title theme of how well Canada will be able to compete in the 21st century, Coates revealed his conclusion: “Of course we’re capable of it, but we’re not actually on track to do it, for a whole variety of reasons.” He premised this conclusion on his own opinion, making it clear that the observations to follow were his opinion, informed by some analysis.

In light of the tremendous explosion of scientific and technological activity that has taken place since the 1960s, he cited the emergence of principles of economic development premised on the concept of innovation that emerges from research enterprises. In this context, he expressed his distaste for the term “knowledge economy”, preferring to describe the current state of affairs as a “specialist economy”, which rewards people with jobs based on a narrow range of skills. “Whether it’s in nanotechnology or electrical engineering or digital design or whatever it happens to be, people in those fields who are in high demand will do very well. But the idea of a generic, four-year degree that will lead you into a great 21st century career has proven to be inaccurate.” He backed up this observation with the high unemployment figures for university graduates, which also testifies to the excessive number of people in university classes.

Returning to the broader question of innovation, he outlined the “innovation equation”, whereby high levels of education added to basic research and commercialization equals business development, jobs, and prosperity. “I find this rather interesting, because everybody’s doing almost exactly the same thing. I’m not sure if innovation is innovative if everybody’s doing the same thing. When everybody’s doing the same thing, not everyone is going to succeed equally.”

Having said that, he acknowledged that Canada does certain things very well, including sending a high proportion of our population to university and college, and those educational institutions are outstanding. Similarly, he praised our ability to do basic research, coupled with sufficient government funding for that research. More specifically, he suggested that business incubators in Canada are performing fairly well, and we have successful innovative firms, but nowhere near enough.

In spite of these virtues, Coates did not regard Canada as being anywhere near the front of the pack internationally. Part of this stems from a general lack of understanding of the word “innovation”. In fact, innovation has been oversold politically, to the point where it has become a liability. “Innovation is actually a really successful job-killer,” he said. “The only way many of our companies stay successful is by innovating through technology that results in fewer jobs.”

He offered the example of Kitimat, BC, where Alcan was faced with the prospect of revitalizing an outdated aluminum smelter or shutting it down. The company opted to save it, at a cost of $2 billion dollars, but improved equipment meant that only half as many people are now employed there. “They had to innovate in order to stay competitive, but in innovating they ended up losing

a large number of jobs," he said, noting that this pattern was being repeated in other sectors, such as forestry and mining. "Innovation isn't this magic bullet."

He then voiced his concern that Canadians have not yet had a public discussion about how to embrace these aspects of innovation, which are bringing an end to those middle-tier, well paying jobs that were the backbone of the economy, such as those of auto plants before automation eliminated huge numbers of positions. Such manufacturing jobs are increasingly scarce, and they are not being replaced with anything comparable.

Coates suggested that Canada has done well with its inputs to the innovation economy, and the moves to embrace automation were understood to be necessary and fairly well received by most people. As technology begins to reshape the employment picture for white collar work to an extent as profound as it has already altered blue collar work, that acceptance could shift. Even seemingly modest changes such as the installation of ATMs and on-line services by banks has eliminated key entry-level pathways for employment in that field. Similarly, tax software has reduced opportunities in tax processing services. This has already happened in areas such drafting, which was done in by the rise of computer graphics, and Coates predicted that medicine would soon begin to feel the impact of technology that will eliminate many activities currently carried out by people.

He related his own background, which included research into how well smaller and more isolated population centres will cope with these changes, and discovered that these places are being steadily abandoned in countries around the world. "I came out of that process realizing that success in the 21st century requires real commitment, it requires an openness to the future, it requires speed and global perspectives."

As for Canada's ability to take up this challenge, he insisted that few places are better endowed with natural resources that could enable us to thrive. Rather than treating such resources as a primitive bank account on which to draw, however, he argued that they should be used as leverage for more ambitious undertakings. "We're not using the resource wealth as we should, a golden opportunity to build an economy that is very forward-looking," he said. "We are as a country very slow moving. We're comfortable; there's no great crisis, we're not falling apart at the seams, we're doing okay, and that's made us complacent rather than excited about the future." As a by-product, he added, these circumstances have left us risk-averse, as evidenced by the dearth of investment capital in the country. Likewise, we fail to support our own enterprises, as evidenced by the rough ride Blackberry received at the hands of the country's own media.

"We should rally behind our brands, we should rally behind the things that we do well, and as a country we don't do that at all well. We are incredibly hostile to our own success stories. In New Zealand they call this the 'tall poppy syndrome', because they don't want anyone getting too wealthy."

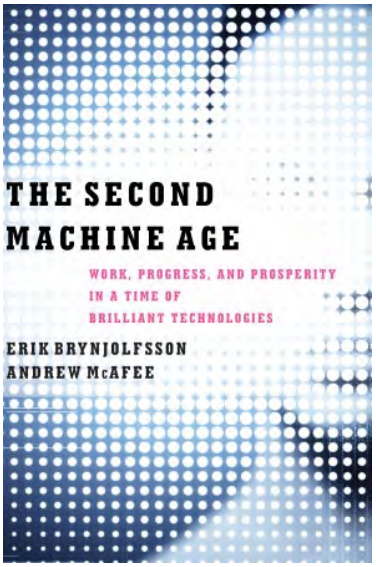
Compounding these difficulties, according to Coates, is an overcrowding of the post-secondary system with students who are not ready or motivated to be there. He blamed this in part on an inordinate belief in self-esteem on the part of educators. “There is something wrong with telling young people over and over again that they’re brilliant, they’re wonderful, they’re talented, and they all get to win,” he said. “We have created the most spoiled generation in history. And what’s interesting is that’s not a failure of the young people, it’s a failure of parenting, it’s our inability as a society to let teachers exercise proper control in the classroom.”

Consequently, he observed, the educational system cannot meet the demands of the 21st century world, nor are its graduates properly prepared to work in such a world. Companies seeking to find desirable employees have already identified this problem. “They can find people with the skill,” he said. “But they have trouble finding people with the work ethic.” He added that this trend is also reflected in the shortage of young, ambitious entrepreneurs, and the fact that the leading employer of choice for young Canadians is the federal government. “The deficit is in our imagination, our creativity, and our work ethic. To be an entrepreneur is not a skill you get by taking a couple of classes and getting some good credit. To be an entrepreneur is a challenge to your soul, your spirit, and your energy.”

Coates also expressed his admiration for entrepreneurial nationalists, business leaders who see it as part of their job to build a 21st century economy in this country, some of whom he met while working in Waterloo. “I never figured out what the cost would have been, but I bet you that Mike Lazaridis and Jim Balsillie would have made an awful lot more money if four or five years after they started the company they moved to Syracuse, New York.” Conversely, he likewise complained about our ignorance of the rest of the world, despite the significant number of new citizens Canada welcomes from throughout that world.

After apologizing to members of audience who are employed in some form of granting system, he portrayed Canada as a country of people seeking grants. “Do you realize that there’s a whole industry of people who will fill out grant applications for you? And universities will give you money to hire people to fill out grant applications so you can fool the people on the research committee who are evaluating these things. These things are enormously expensive, and we never put a cost on what it actually requires to fill out these applications.” Nor is the attendant process with these applications fast enough to keep pace with economic reality. Some grants call for a 12-month turnaround, in contrast to programs in forward-looking places such as Singapore, where applications receive a response within a week.

Moreover, he continued, those who do not take it upon themselves to become grant-writers are likely to be the accountants riding herd on those same grant writers. “There’s a huge cost to the over-accounting preoccupation in Canada,” he said, estimating that it might be as much as 40% of the overall cost of the granting system. “It represents a fundamental breakdown in trust — we don’t trust government, our governments don’t trust us. We’ve created a culture here around accountability that is suppressing innovation and destroying entrepreneurship.”



Coates referred to *The Second Machine Age*, a recent book by MIT researchers Erik Brynjolfsson and Andrew McAfee, which details the ways in which technology will be paring down the size of the potential job market. “The question is, what jobs are we going to have left?” he asked. “Technological innovation like this encourages inequality. The people who have high skills will get paid more and more. You’ll get more and more of a gap with society as a whole.”

He concluded by insisting that Canada has a massive “loyalty deficit”, meaning that the country asks less of its citizens that anyplace in the world, and so the country gets little back from those citizens. “What happens is that it’s unconscionably easy to sell out,” he said, recalling how some of the best students he met at the University of Waterloo aspired to leave the country. “We used to advertise at the University of Waterloo that we had more people working for Microsoft in Washington than any university on the planet. How many countries would brag about the fact that many of their smartest and best and brightest people, educated here at taxpayer expense, were going out of the country?”

He regarded this lack of loyalty as being all the more remarkable in the face of the country’s unrivalled political and social stability, its tolerance for people of different cultures and language. “But we also have a great deal of unrealized potential. The 21th century belongs to those countries — and those parts of countries — where people embrace change. We have to have people who live fast, who work quickly, who anticipate technological innovations, and who challenge the status quo. Canada’s not that country yet. I’m not sure Canadians are willing to fight for the future.”

He wrapped up with a sobering example from a recent meeting at his university, where the meetings were dealing with such serious issues as climate change, water management, and food security. The discussion ranged across the many demands that would be imposed on these issues, calling for new, interdisciplinary research initiatives. As he became more excited about mapping out directions for this work, he was disappointed to see the discussion quickly veer toward faculty contracts and merit pay, which was seen to be the only way to get people from different disciplines to collaborate. “I was mortified,” he recalled. “If, at a publicly funded university system, with the high pay, the intellectual freedom we have, if it comes down to having a conversation about how to pay highly paid professors even more in order to incentivize them to do what the world desperately needs us to do, to actually bribe people to collaborate to address the most fundamental challenges of the 21st century, I’m not convinced universities are the place to start. And

if that is the case, the issue that comes up is, where is the place to start? Not on campuses, not in government, not with business. You figure it out."

When asked about ways of improving the post-secondary education system, he reiterated one of his earlier points, namely that there are plenty of good institutions that are crying out for students, so students should go there rather than encouraging governments to launch new institutions. The unwillingness of students to leave Ontario, for example, reflects the lack of a national approach to higher education. He likewise bemoaned the lack of programs that combine academic skill sets with hands-on trade or trade-like training, something that would balance off the blanket desire to attend university, something that has become a sacred cow amongst politicians and society in general. "If we took in 25% fewer university students, we would probably produce more graduates, because we'd have more resources to work with the students who have talent and motivation. Right now we're spending those resources on kids who know they don't belong, and it's a waste of our money and their time."

Jeff Crelinsten referred to a research project he undertook with Doug Barber, examining the institutional culture of several universities around the world that were acknowledged to be hotbeds of innovation. "We found out that every single one of them had mission statements like this one, which is MIT's: 'our mission is to help young people change the country and change the world'," he said. "If you look at Canadian university mission statements, they say 'we are excellent in scholarship, period. The culture of Canadian universities is part of the problem."

Coates responded that pockets within various universities do many things well, and he is generally optimistic about their ability to generate significant positive change. However, expectations can run too high. He referred to *Betting on Biotech*, by University of Toronto political scientist Joseph Wong, who outlined the extensive efforts of Taiwan, Singapore, and South Korea to create a new industrial base on biotechnology. Those efforts were ultimately unsuccessful in creating large numbers of jobs, shaking public confidence in the ability of government to develop an innovation economy. "They bet billions on it and it didn't work," said Coates. "The question is, what does work? Don't put it all on the universities' shoulders and expect them to solve it."

At a more fundamental level of education, Coates commented on another questioner's observations about the deterioration of elementary and secondary school standards by noting that parents are voting with their feet — and their pocketbooks — by paying for all manner of private tutoring and schooling opportunities. "They're giving up on the public school system to do the basic things that we require," he said, adding that many of these alternative systems are full of the children of immigrants who value education more than most Canadians. More importantly, he asked how Canada can expect to compete with societies that routinely impose much more pressure on their student populations.

Finally, Rebecca Melville felt compelled, as a representative of the younger generation for which Coates fears, to speak on behalf of their ambitions. “Millennials, as they’re called, are not lazy, they’re not cynical, and they’re working very hard to benefit their country and move it forward,” she said. “There are two contradictory messages we’re told: one is to go to university and get a good job; then when we graduate and don’t get a job, we’re not working hard enough.” She said representatives of her generation are just beginning to figure out just how much opportunity there is in trades, but no one had taken the trouble to tell them that before. For that reason, she emphasized the importance of not citing a generational divide as the source of Canada’s shortcomings and instead to work together to help different generations move forward together.

Coates endorsed her statement, which he suggested applied to at least half of the students in the university system. Part of the difficulty being faced by successful students is that too many students overall have been pushed through the system. “The economy is different than what we thought it was going to be,” he said. “It is our collective responsibility to produce a future for those young people. If we’re not talking about that job environment and the unemployment circumstances, and how as governments and companies and institutions, we’re going to create futures for those young people, we’ve betrayed an entire generation.”