

Verbatim / Unlocking the Potential of Innovation

Sam Sebastian

The third annual Canada 2020 conference in Ottawa in November 2016 focused on innovation. Google Canada General Manager Sam Sebastian delivered a thought-provoking closing keynote.

For a company that's not old enough to legally drink in Ontario, Google has some deep Canadian roots. Fourteen years ago, Google chose Canada as the location of its first international office. We have steadily grown in Canada to nearly a thousand Googlers, with around 600 software engineers in Montreal and Waterloo.

While I've been at Google for over 10 years, I am what you would call a New Canadian. I've been in Toronto for two and a half years. And in this time, I have enjoyed a front row seat to a Canadian renaissance.

It seems not a day goes by when Canada is not topping some world ranking of cool: From the best cities for hip hop ... to the best home for hipsters (Mile End, Montreal). The New York Times even declared that the country that gave the world ice hockey, the snow blower and Labatt beer—is suddenly... hip.

The memes are true, people. This is Canada's moment. But here's the thing: This moment is about more than Canada being declared cool.

What's happening in Canada is much more profound.

When I try to explain this to my colleagues south of the border, I start with a 15-second geography lesson: Canada has the population of Cali-

fornia—spread out over a land mass nearly the size of Russia. Our economy, for years, was defined by what we could pull out of the ground. The biggest exporter of oil to America? That's Canada.

Vast geography. Loads of resources. These are facts that might shape a nation's destiny, if not its identity. But not Canada, not now.

To paraphrase our new Prime Minister, the world will know Canada for its resourcefulness, not its resources. Canada is no longer a place defined by the limits of our physical geography. Our future potential does not lie beneath Canadian bedrock—it is within our universities, incubators and our start-up communities.

And when it comes to innovation, unlocking that potential at global scale must be Canada's top priority.

But the question is, how?

As someone who is both new to this country and a veteran of the technology sector, I have three observations on innovation I want to share with you today. My hope, of course, is that they are particularly relevant as we define this moment together.

My first observation is that now is not the time for incremental thinking. Think big. Think exponential.

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This is not a small challenge. It demands our teams think big. To think globally. And Google now has seven products with over a billion users.

Now what does a software company's toothbrush test have to do with Canada?

Well, in the next 10 to 20 years, every Canadian company will be a technology company. From filmmaking to farming, there will be no exceptions. And every Canadian business will rely on software, hardware and connectivity to drive its business.

The implications are enormous and the possibilities even bigger.

Canada is home to 35 million people. But globally, there are just over 3 billion people who have Internet access. That number will nearly double in the next five years.



Google Canada General Manager Sam Sebastian on Canada's opportunities to become a leading innovation nation. Canada 2020 photo, Matthew Usherwood

The opportunity to scale Canada beyond our borders has never been greater.

How many people here have heard of Manitobah Mukluks? They make traditional mukluks out of Winnipeg with techniques used by Canada's First Peoples. In 2012, after 15 years selling within Canada, the owners sought to expand to an international audience. They began experimenting with online marketing using Google AdWords. Today Manitobah Mukluks sells to over 45 countries through their online store, and over one third of their website visits come from outside Canada. Just last week, Trade Minister Chrystia Freeland gifted the EU trade commissioner with a pair of her very own at the CETA signing.

And, on the other end of the spectrum is the company they turned to for their e-commerce solution: Shopify. Based right here in Ottawa. We all know the story: 1,500 employees, 300,000 merchants in 150 countries.

These Shopify folks passed the toothbrush test.

Thinking at a global scale is not just for software companies and retailers.

If you haven't heard of Lilly Singh, your kids certainly have. Known as Superwoman, she's one of the world's biggest YouTube personalities, with 10 million subscribers to her channel. Lilly is from Scarborough—and it doesn't seem to matter if she's walking the streets of Toronto, Singapore or Mumbai. She's mobbed by fans everywhere she goes.

Lilly's story is one of this country's greatest export stories. A full 90 per cent of the audience for Canadian content on YouTube is from outside this country.

And technology is giving Canadian businesses, artists and creators the tools to think big and reach that global marketplace. But thinking big—thinking exponentially—faces a significant challenge in Canada.

While we're asking Canadian businesses to prepare for a moment where every company is conceivably a technology company, do we have the pipeline of talent in place to meet the demand?

The new fast-track work permit is a critical step forward in addressing the immediate need we're seeing across the technology sector in Canada. It will attract more talent, transfer more knowledge and ultimately create more jobs.

But in the long run, we need to think about nurturing Canada's next generation of technology builders.

We certainly have talent in Canada. Sixty per cent of Google's engineers in Kitchener are University of Waterloo grads. Another 20 per cent are from UofT. We have top notch talent from UBC, University of Alberta and McGill. We need to keep this talent in Canada—or we need to bring them back. But regardless, we are not turning out enough computer science graduates to keep up with demand. Fifty per cent of Canadians graduate with a senior STEM course yet 75 per cent of jobs require one.

Thankfully, our greatest resource to meet this challenge is walking through the classroom doors of our nation every morning wearing oversized Pokémon and Hello Kitty backpacks.

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I had an interesting conversation with one of our engineers not that long ago. I asked him when he knew he was going to pursue a career in computer science. He talked about the time he turned a Radio Shack circuit snap-kit into a rudimentary metal detector. He

also mentioned a Grade 7 physics class on electromagnetic fields. But looking back, there wasn't one moment that led him to pursue engineering and computer science as a career. Instead, it was dozens of small moments that gradually illuminated the vast potential of sciences and math.

Ninety-eight per cent of Google engineers had some level of exposure to computer science and technology before entering university. Many say it wasn't a single "aha" moment that inspired them to pursue their career path, but rather dozens of small moments that gradually illuminated the vast potential of sciences and math. Canadian children need more of these opportunities—particularly girls, indigenous students and other communities that are underrepresented in STEM (science, technology, engineering and math) fields.

That's why Google Canada partnered with Actua, a national STEM outreach organization, to develop the Code-makers program that is delivering over a million hours of coding workshops and camps in hopes of creating those critical moments of inspiration for 125 thousand Canadian children.

But these kinds of moments are only as good as our capacity to carry that momentum of inspiration into the classroom. I know Prime Minister Justin Trudeau has talked about the need for kids to understand the importance of coding. In England, computer science and computational thinking is already on the curriculum for primary and secondary school pupils. And it's encouraging to see that British Columbia and Nova Scotia are working to integrate computational thinking and coding into curricula starting in kindergarten right through to grade 12.

If we're serious about innovation in Canada, we may want to think about applying the metaphorical toothbrush test to what we're teaching Canada's next generation of workers. We need to recognize that computer science is not simply the language of ones and zeroes. It's the language of creativity,

entrepreneurship and Canada's future potential.

From our businesses, to our culture to our education: Canada needs to think exponential. That's my first observation as a New Canadian.

My second observation is that Canada needs to feed the winners.

Canada is home to technology leaders and companies that are scaling up and staying put. We are racking up the wins. It's time to own our success.

And part of owning success is feeding the winners.

By that, I mean investing in the places where innovation is happening. Vancouver, Calgary, Montreal, the Waterloo-Toronto Corridor. These are the clusters where—if you go looking—you're likely to find Canada's next billion dollar company.

And if we want to find even more of those billion dollar Canadian companies, we need to resource the infrastructure, accelerators and academic institutions that play such critical roles in fostering growth and creating these remarkable start-up communities.

Which brings me to my last observation.

Thinking big, thinking exponentially, owning success, feeding the winners—these are tactics employed in Silicon Valley and economies around the globe as they strive to innovate. While Canada has vast potential to exploit these approaches—they are not uniquely Canadian.

But we do have something up here in Canada that I have yet to see replicated elsewhere. It has a little something with who we are together.

Now, being Canadian means different things to different people. Maybe for a technology start-up, it means another hurdle for financing, or a pain in securing talent.

But, from the perspective of someone like myself who calls himself a new

Canadian, what we have here is exceptional. Outside Silicon Valley, the Toronto-Waterloo corridor represents the highest concentration of start-ups on the planet. But it's the sense of community and shared ambition that truly sets us apart.

With all the talk of building walls and Brexits over the past 12 months, Canada was making headlines for welcoming refugees with open arms. This spirit of openness and inclusion shapes not only our national identity, but also how we do business. Since I moved up here two years ago, I've seen it firsthand.

Last week in Toronto, Google Canada hosted an event called Go North. The aim was to convene Canada's start-up community, address the challenges they face and to celebrate their successes. Nearly 700 people from start-ups and technology companies from across Canada showed up.

And what made every start-up attending Go North different from their competitors in Tel Aviv, London, Berlin or Silicon Valley is where they've decided to build their company: the place we call home.

Canada needs to think big. We need to look at what's working and feed it accordingly. But when it comes to innovation, our shared sense of community may be Canada's greatest market differentiator.

Steven Woods, who returned more than eight years ago from founding several successful start-ups in Silicon Valley to oversee Google Canada's engineering operations in Waterloo, describes what we have in this community as the equivalent of capturing lightning in a bottle.

Getting back to this idea of Canada's moment. This is what we're really talking about. Together, we've captured lightning in a bottle. And together, in this moment, we're going to use it to shape Canada's future. **P**

Sam Sebastian is General Manager of Google Canada. Excerpted from an address to Canada 2020, Ottawa, November 4, 2016.