WATERLOO REGION: BUILDING THE SOURCE-CODE FOR ENTREPRENEURS

A white paper from the LEADERSHIP INNOVATION CONFERENCE 2013
hosted by THE UNIVERSITY OF WATERLOO in Waterloo, Canada
Research, entrepreneurialism and venture capital all have a vital role to play in fuelling economic growth and prosperity for Ontario, Canada and the world. The first annual Leadership Innovation Conference, hosted by the University of Waterloo, brought together visionaries, industry leaders, investors, academics and policy-makers for two intensive days focused on a single vision:

**BUILDING A MORE PROSPEROUS TOMORROW.**

Written by: Karen Mazurkewich

July 2013
Executive summary

The University of Waterloo is undertaking an experiential approach to education and entrepreneurship that has the power to transform economies. The entrepreneur-graduates from the institution are reshaping the employment landscape in Ontario. They achieve global status, joining the top ranks at technology giants such as Google and Facebook, and building international companies such as Desire2Learn and Public History Inc. — with offices and employees around the world.

The region has built a unique innovation hub. It has done so without securing a major international airport or fast train service connecting it to major urban centres. It has buffered itself against economic disruption. Even as the region’s biggest technology company faces headwinds, employees have opportunities to be rehired by other firms in the community. Most importantly, the region is pumping out more start-ups per capita than anywhere else in Canada, despite the absence of venture capital firms.\footnote{If we build it, they (investors) will come.} As Canada continues to underperform in global innovation rankings, Waterloo Region is in a unique position to “pay it forward” — to share the lessons it has learned, and show other players how to build better commercialization engines.

At the inaugural Leadership Innovation Conference (LINC) held in April, Feridun Hamdullahpur, president and vice-chancellor of the University of Waterloo, said that Canada must be shaken out of its innovation complacency. The urgency was underscored by New York Times Magazine writer Jon Gertner: “The innovations of today are the pipelines of jobs tomorrow. A society and culture that innovates is a society that solves its problems.”

As Canada continues to underperform in global innovation rankings, Waterloo Region is in a unique position to “pay it forward” — to share the lessons it has learned, and show other players how to build better commercialization engines.
As a nation, we have many problems that require solutions, not least of which is job creation. Fusing academics, forward-looking research and experience, the University of Waterloo educates the next generation, drives prosperity and improves the human condition. It does this extremely well. Academic knowledge, job readiness and self-confidence keep Waterloo graduates in high demand with employers. It is the top-ranked engineering university in Canada and places 29th internationally, according to Business Insider.²

This white paper summarizes the lessons learned from LINC 2013 and offers a University of Waterloo blueprint for future prosperity built on a foundation of entrepreneurial education.

The region can become a “Canadian Silicon Valley,” according to the Wall Street Journal.³ Since 2010, more than 860 start-ups have been formed in Waterloo Region. Technology and digital media firms here boast over $30 billion in annual revenues, according to Communitech, the region’s commercialization hub.⁴ If Ontario is a “have not” province, can Waterloo’s, innovation and entrepreneurial formula transform it into the “can do” province once again and fill the gaps left by the current economy? Yes, with caveats.

Waterloo Region is wired to the world, but now it must be linked to the rest of the province. “Transportation is one of the biggest issues the community faces,” said Iain Klugman, president and CEO of Communitech on a panel at LINC. Infrastructure, not innovation, is the unmet challenge.

While the region is great at starting companies, it’s still unclear how well we can grow them into global powerhouses. Entrepreneurs need venture capital to fuel expansion, and Canada has a poor track record with this particular financial instrument. Most companies are starved for cash and connections.

Nevertheless, Waterloo has successfully built a source code for entrepreneurial success. Its intellectual property — a roadmap for innovation — belongs to us all, if we wish to benefit from it.
HOW THE SOURCE CODE FOR ENTREPRENEURS WAS BUILT

It’s not an exact science, but the University of Waterloo has developed a formula for entrepreneurship — one that is vastly different from other global start-up hubs such as Silicon Valley, or Israel’s Institute of Technology (Technion.) The university’s unorthodox approach is based on four pillars:

1) Co-operative education: Launched in 1957, the co-op program allows students to move seamlessly between industry and the academic worlds by mixing their learning semesters with six dedicated work terms. Students take learning from the classroom and apply it to the workplace and, in turn, take the problems of the workplace and solve them in the classroom. As New York Times reporter Ian Austen said, the “school has served as a reliable pipeline of stellar engineering talent.”

2) Emphasis on fundamental research combined with hands-on labs where students team up to work on projects. These companies hatched, in part, from student projects at the University of Waterloo. Increasing emphasis has been placed on supporting multi-disciplinary design projects through the Student Design Centre at the university’s engineering department. Under the right conditions, universities can be hotbeds of innovation.

3) Enlightened intellectual property (IP) policy: Unlike most universities, Waterloo does not claim the IP ownership of inventions created inside its walls. Class projects can be scaled up off campus, and students and faculty have incentives to build products that have a market beyond the classroom and experimental labs. OpenText, Maplesoft, Certicom and Dalsa, are examples of local companies spun from faculty research.

4) A constellation of startup incubator and accelerator centres to commercialize innovations. In 1997, a group of 11 entrepreneurs, including Tom Jenkins (currently executive chairman and chief strategy officer of OpenText) and Jim Balsillie (co-founder of BlackBerry) each wrote $10,000 cheques to found Communitech, an industry trade association. Communitech has since expanded its programs and networks — mentoring more than 500 startups — and seeded the Canadian Digital Media Network and Communitech Hub. The university has developed its own incubator ecosystem, starting with VeloCity — a living-learning university residence for aspiring entrepreneurs; and VeloCity Garage — set up to provide students and alumni with access to free space and expert mentoring. The results so far: 45 companies creating more than 200 jobs.
LESSONS LEARNED

Universities have to “permit oxygen in the room for commercialization programs to take hold,” said Tom Jenkins during a keynote speech at LINC. As Waterloo has proven, universities can be powerful economic engines if they adopt a commercialization approach that combines excellence in research with entrepreneurial support systems that can attract certain kinds of innovators and problem-solvers. Waterloo doesn’t specifically screen high-school students for their entrepreneurial drive, said Pearl Sullivan, dean of engineering at Waterloo, but that spirit and drive is nurtured at university. Waterloo has designed a unique formula for creating entrepreneurs based on the four pillars cited above. These ideas are backed by mentorship and seed financing.

“Waterloo has much to teach on experiential learning,” said Kevin Lynch, chair of the board of governors at the University of Waterloo, and vice-chair of BMO Financial Group. The university should figure out what Co-op 3.0 should look like — including embedded accelerator and mentor services — and share the “secret sauce.” The province would benefit if more Canadian universities adopted the co-op model of education and entrepreneurial training services.

THE UNIVERSITY OF WATERLOO HAS DEVELOPED A FORMULA FOR ENTREPRENEURSHIP BASED ON FOUR PILLARS:

1) Co-operative education
2) Emphasis on fundamental research combined with hands-on labs
3) Enlightened intellectual property (IP) policy
4) A constellation of startup incubator and accelerator centres to commercialize innovations
WHY WATERLOO SUCCEEDED WHERE OTHER REGIONS IN CANADA DIDN’T

Ottawa-Gatineau vs. Waterloo Region: Kanata, the Ottawa suburb which was Canada’s tech powerhouse region in the 1980s, virtually collapsed when Northern Telecom Ltd. (later renamed Nortel Networks) imploded, leaving behind an industrial crater and thousands unemployed. Why did the end of Nortel decimate the high-tech community in Kanata, while the recent downsizing at BlackBerry has had far less impact on the unemployment rate in Waterloo Region? 

Waterloo’s entrepreneurs instinctively grasp that while healthy rivalry and competition are good for business, so too is market diversity — and corporate camaraderie.

For decades, Nortel was the community anchor — terra firma for the regional telecom industry, and the core of a high-tech cluster in Kanata. Its collapse was a stark reminder that no company is an island.

Waterloo’s entrepreneurs instinctively grasp that while healthy rivalry and competition are good for business, so too is market diversity — and corporate camaraderie, said several panelists at LINC. Waterloo is home to a cluster of information and communication technology (ICT) companies, but most do not directly compete with one another. The first high-profile generation of entrepreneurs in the region — who attended the University of Waterloo in the early 1980s — branched out to smartphone technology (BlackBerry), business software (OpenText) and financial services software (Janna Systems.)

CEOs past and present attending LINC referred to the peer-to-peer support they received and offered. In the early days, Jim Balsillie of BlackBerry, Tom Jenkins and other entrepreneurs met regularly over beer to discuss corporate challenges. It could be argued that Waterloo’s innovation hub started at the pub.

The latest crop of entrepreneurs — Ted Livingston of Kik Interactive Inc. and Mike McCauley of BufferBox — have embraced their predecessors’ philosophy and are carrying on the “pay-it-forward” tradition by meeting regularly to share stories and experiences, said McCauley. Livingston has already donated $1 million to support VeloCity Garage, the University of Waterloo incubator that backed his start-up (which landed $19.5-million in Series B financing earlier this year.)

As Tom Jenkins of OpenText pointed out during the sessions: “Clusters happen because (entrepreneurs) feed off each other, and the sum of the parts is greater than the individual.”
LESSONS LEARNED

If it takes a village to raise a child, perhaps it also takes a community to sustain industries. Regions cannot put all their eggs into one innovation basket. They need to encourage diversity and foster corporate camaraderie.

Culture and a creative lifestyle are critical factors in the talent retention game. Industry leaders in Waterloo Region are seeking government support for regular train service linking the region to the Greater Toronto Area, as well as an expanded airport so that investors and innovators alike have greater mobility.

The municipality can anchor more talent if it restores heritage buildings and subsidizes “hip” venues to support a creative class. “Waterloo needs a vibrant city core,” said California investor Chris Albinson. It can’t be just about jobs today; it’s also lifestyle. During a session at LINC, Albinson said that Twitter and Zynga understood that the best way to compete for talent was to locate their offices in San Francisco proper — offering a perfect work/life balance. Young employees would rather bike to their job than take a bus to Palo Alto, which is currently the hub for megaplexes like Facebook and Google.

Waterloo has the opposite problem: loads of talent, but a less-dynamic lifestyle. While the old Lang Tannery in Kitchener was converted to a hip start-up hub, more heritage buildings must be redeveloped in the city — not only to nurture the tech community, which demands designer spaces, but also to support a wider range of artistic organizations and venues.
FUNDAMENTAL RESEARCH + COMMERCIALIZATION = COMPETITIVENESS

Cutting-edge research is difficult to explain. Predicting future benefits is an even more difficult task. Even if we think we understand the value of an innovation ... we probably don’t, said Jon Gertner, author of The Idea Factory: Bell Labs and the Great Age of American Innovation, during his LINC keynote address.

Feridun Hamdullahpur, president and vice-chancellor at the University of Waterloo, said that fundamental research remains part of the University’s core: “Only by deepening our understanding do we open new horizons.”

History shows that fundamental research can have a huge economic impact over time. Entire industries were created from disruptive technologies including the transistor, radio telescope, communications satellite, laser, UNIX operating system, and the silicon chip industry — all of which emerged from pure research and experimentation at Bell Labs in New Jersey in the first half of the last century.

Similarly, the founding of the Mike & Ophelia Lazaridis Quantum-Nano Centre at the University of Waterloo has placed the region on the front lines of quantum computing and nanotechnology.

Feridun Hamdullahpur, president and vice-chancellor at the University of Waterloo, said that fundamental research remains part of the university’s core: “Only by deepening our understanding do we open new horizons.”

The founding of the Mike & Ophelia Lazaridis Quantum-Nano Centre at the University of Waterloo has placed the region on the front lines of quantum computing and nanotechnology.

Mike Lazaridis said that by pursuing the most exciting quantum research, Waterloo can “intercept the future.” Lazaridis, co-founder of BlackBerry, has always been fascinated by quantum physics. That explains a series of donations totalling $290 million, which launched the Perimeter Institute for Theoretical Physics in 1999, the Institute for Quantum Computing (IQC) in 2002, and, most recently, construction...
of the state-of-the-art Mike & Ophelia Lazaridis Quantum-Nano Centre at the University of Waterloo which houses the IQC and the Waterloo Institute for Nanotechnology (WIN). 18

The media have dubbed his initiative a “Star Trek” vision. 18 During a keynote at LINC, Lazaridis called this vision a necessity, not mere fantasy. Canada needs a new technology base, and new breakthroughs to build the next value-creation cycle.

“Trillions of dollars in wealth has been created in this first quantum revolution based on solid state semiconductors,” Mike Lazaridis, founder of BlackBerry, told a LINC audience. “With the exception of a few very successful technology companies — who nonetheless played only a peripheral role in this silicon technology revolution — the fact is, Canada played almost no role in this massive opportunity. We cannot let this happen again.”

Quantum computing and nanotechnology will likely reshape the world from how we share and store information, to the ways we diagnose and treat disease. “Our vision now is to build upon the culture that already exists in this region to establish a commercialization infrastructure that is similar to what has been established in Silicon Valley, but that is focused on breakthroughs in Quantum Information Science,” Lazaridis told LINC attendees. “In short, our goal is build the Quantum Valley in Canada.”

Trillions of dollars in wealth has been created in this first quantum revolution based on solid state semiconductors,” Mike Lazaridis, founder of BlackBerry, told a LINC audience. “With the exception of a few very successful technology companies — who nonetheless played only a peripheral role in this silicon technology revolution — the fact is, Canada played almost no role in this massive opportunity. We cannot let this happen again.”

LESSONS LEARNED

Stay ahead of the curve, or at the very least, be on top of the next scientific revolution. Waterloo is looking into the future by identifying key new areas of discovery, innovation and application that will further elevate its reputation as a research powerhouse, while it remains a magnet for talent. The twin institutes, IQC and WIN, have put Waterloo in a global competitive race to create the next Silicon Valley. It will be 10 to 20 years before the fruits of this basic research are realized, Lazaridis said. But as Jon Gertner wrote in an article for Fast Company earlier this year, “(Lazaridis) has had nuttier ideas before. A while back, he believed that at some point in the future, everyone would be walking around with a smartphone.” 20
THE GEOGRAPHY OF INNOVATION

Innovation is everywhere. Afghan designers have built wind-powered minesweepers that resemble tumbleweeds to clear dangerous minefields. Research on seaweed as a nutritional source takes place throughout Southeast Asia.

At the heart of the thesis was the idea that innovation could be cultivated in key geographic regions through creative collaboration between universities and the private sector.

In his book, *The Competitive Advantage of Nations*, Michael Porter chronicled how the geographical concentration of firms working within a particular field raised productivity, innovation and competition. At the heart of his thesis was the idea that innovation could be cultivated in key geographic regions through creative collaboration between universities and the private sector.

Certainly, this is part of Waterloo’s story: a fledgling initiative to add science and applied science courses to an existing arts college morphed into a major science and engineering institution. It was done with the assistance of two local businessmen, Ira Needles, president of BF Goodrich Canada, and Carl Pollock, president of Dominion Electrohome Industries Ltd. With other colleagues, they championed a co-operative approach with Canadian industries, and personally leveraged their contacts in industrial circles to ensure students had work placements. The vision was great, the timing perfect. The co-op program was an elegant solution to help aspiring students finance higher education. Waterloo’s new strategy to train scientists and engineers struck a chord with both the Ontario and the federal governments, anxious about the Cold War and Russia’s growing technology prowess. By the 1960s, the University of Waterloo became a top feeder school to companies.  

In the 1950’s the University of Waterloo championed a co-operative approach to education partnering with Canadian industries to ensure students had work placements. The vision was great, the timing perfect. **By the 1960s, the University of Waterloo became a top feeder school to companies.**
Global competitiveness happens when communities leverage local assets and people. At LINC, private equity veteran Prashant Pathak said Ontario should exploit its agricultural resources. Pathak, whose private investment firm bought the Omstead food processing company in Wheatley, Ont., and repositioned it as a food and agriculture infrastructure firm, says the province’s agricultural diversity gives it a global competitive edge. Ontario has 200 separate agriculture commodities, one of the largest freshwater fishing ports in the world and advanced greenhouse technologies, says Pathak. But this industry has not commercialized aggressively.

Serial entrepreneur Bill Tatham believes Ontario has not taken full advantage of the opportunity to become a leader in health informatics. “Things that are routine in business, we haven’t solved in health.” Tatham, chief executive officer of NexJ Systems Inc, and founder, chairman and CEO of Janna Systems, said the system would benefit if the province embraced the software development strengths of Ontario’s high-tech sector.

**LESSONS LEARNED**

Play to geography and focus on local expertise. There are good reasons why global concentrations of research exist. Historically, Waterloo leveraged its local business partnerships to create an ICT nucleus. The university must continue to encourage research networks and planned partnerships with industry, government and other universities. Agriculture and digital healthcare are two opportunities.
WATERLOO EMBRACES ITS TECHNOLOGY ROCK STARS

At Waterloo, the entrepreneur who raises a significant Series A or B funding round, or makes a sizeable “exit” selling their company for millions — is a rock star within the community. And their numbers are growing: Pebble, a smartwatch company that displays data from iPhones and Android devices, shattered records by raising $10.3 million on Kickstarter. BufferBox, a parcel delivery system, was recently acquired by Google. Kik Interactive Inc., a start-up courted by dozens of venture capital players, raised $19.4 million in a major Series B investment round.

Waterloo embraces such high-fliers and promotes their success stories. It also quietly courts many of its other alumni, including Canadians in Silicon Valley who may have departed the region but are still seeking opportunities that embrace their “inner Canadian.”

With ties to almost every major company in the Valley, Canadians are coming out of stealth mode: Chris Albinson, an expatriate from Kingston, Ont. and co-founder and managing director of Founders Circle Capital in Menlo Park, California, says that not only are there thousands of Canadians in Silicon Valley, but 47 top venture capitalists are Canadian. Albinson is one of the well-connected Canadian expats who are opening doors to Valley executives for northern entrepreneurs through a Silicon Valley group called C100. The C100 members are “paying-it-forward” — taking the 100 most successful expats and connecting them with Canadian entrepreneurs. The C100 companies raised $515 million in three years, and the group has leveraged $3 billion worth of “exits” for those companies. Besides generating economic wealth for the individual companies, the C100 has focused a spotlight on Waterloo. U.S. venture capitalists are increasingly looking to the region to find promising new ventures, and a new flow of capital is making its way north.
Well-connected Canadian expats are opening doors to Valley executives for northern entrepreneurs through a Silicon Valley group called C100. The C100 members are “paying-it-forward” — taking the 100 most successful expats and connecting them with Canadian entrepreneurs.

**LESSONS LEARNED**

The best-case scenario for regional prosperity is this: Ontario educates and anchors its best engineering and scientific talent to build world-class companies. The reality, of course, is more complex. Retaining talent is difficult. Talent is fluid and elusive, but it’s important to remember that talent can also add value during different stages of the innovation cycle. An engineer can leave the region but later return to teach, mentor, network and invest. By promoting and engaging Canada’s tech rock stars at home through conferences, mentorships and media, and encouraging more high-flying alumni to return to their roots to share experiences, Waterloo is creating an extended family of entrepreneurs who are sharing the wealth.
CAN WATERLOO DELIVER ONTARIO FROM ECONOMIC STASIS?

In late 2012, the Jobs and Prosperity Council, chaired by Gordon Nixon, President and CEO of the Royal Bank of Canada, and vice-chaired by BMO’s Kevin Lynch, released its report addressing the province’s structural, financial and industrial challenges. One of the report’s major recommendations: Canadian businesses need more market diversification, product innovation and talent. If there was a mantra that resonated throughout the document it was, “go global.”

At LINC, Kevin Lynch, chair of the board of governors at the University of Waterloo, and vice-chair of BMO Financial Group, said Canadian firms should look to emerging markets instead of continuing to hitch their economic wagons to the sluggish American market.

At LINC, Lynch said Canadian firms should look to emerging markets instead of continuing to hitch their economic wagons to the sluggish American market. While 80 per cent of Canadian companies maintain a narrow trade focus, there is some hope of reversal in this region. Small and medium-sized businesses in Waterloo are more outward-looking.

One reason for the international perspective is that many of the student-entrepreneurs in Waterloo are multicultural and well-travelled. In the engineering department, 12.5 per cent of the undergraduate student body comes from overseas. That number rises to 30 per cent within the graduate ranks. Enrolment aside, the university encourages international cross-pollination. In 2012, Waterloo hosted 118 outbound and 217 inbound international exchange programs, and the university has 350 educational and research agreements with institutions in 60 countries. It offers co-op opportunities in 40 countries.

Multicultural student bodies, international research ties, and global co-op programs are the fundamentals necessary to graduate entrepreneurs ready to tackle the world.
“I graduated from (Waterloo) with a global mindset because I worked abroad,” said Kunal Gupta, CEO of Polar Mobile. In a speech at LINC, Gupta said his company has expanded its client base to 13 countries in five years.

But global expansion in the emerging markets is not easy even for the most ambitious Small and Medium-size Enterprises (SMEs). “We haven’t figured out how to make money in all of them,” said Gupta. Only three of the 13 countries are driving Polar Mobile’s profits — the United States, the United Kingdom and Canada.

Desire2Learn is entering the market in Singapore, the United Kingdom and Brazil, but the company’s global expansion has been driven by acquisition.

LESSONS LEARNED

Multicultural student bodies, international research ties, and global co-op programs are the fundamentals necessary to create entrepreneurs ready to tackle the world. Raising the university’s international profile will continue to heighten its prestige, but also produce more graduates who are globally literate and comfortable in a culturally diverse workplace.
THE CHALLENGE AHEAD FOR WATERLOO

We know we can create great companies. We do not know if we can build them to global scale. This requires enlightened public policy, with private sector partnerships and investments. The best innovation will benefit from public policy. Governments play a role in picking the winners and losers in the innovation game. As management educator and venture capitalist Jim de Wilde said: “Government ‘picked’ the internet through U.S. defense research and ‘picked’ GPS satellites.”

One of the greatest challenges faced by Waterloo and the rest of Canada is a chronic lack of venture capital.

In Canada, government spurs innovation through the popular scientific research and experimental development (SR&ED) tax credit system and other outlets such as the industrial research assistance program and Mitacs-Accelerate, Canada’s premiere research internship program. But one of the greatest challenges faced by Waterloo and the rest of Canada is a chronic lack of venture capital.

Available seed capital increased as the ranks of angel investors swelled from 250 to more than 800 in Ontario since 2009, thanks to federal development programs that match new investment dollars. Then there is the mushrooming of incubators with $60 million in new government support. While these initiatives help the bootstrapped entrepreneur, the money available to take companies to the next level, with series A and B rounds of financing, remains elusive. Waterloo’s tide of talent won’t translate into significant job creation and prosperity unless some of the companies grow significantly, and remain anchored in the province.

The federal government announced in 2012 that it would earmark $400 million to support large-scale venture capital funds in the country, but the money has still not been distributed.

The Wall Street Journal parsed the numbers in an October 2012 feature story. The article noted that 15 New York firms each secured more than $50 million in funding since 2007, compared with just one in Waterloo — an $80 million investment announced by Desire2Learn. In Silicon Valley, more than 1,200 companies raised some $12 billion in funding in 2011.

Venture capital is only one form of government support. Another issue raised at LINC was government procurement policy. Tom Jenkins, who chaired the recent report, Canada First: Leveraging Defence Procurement Through Key Industrial Capabilities, argued that leveraging government procurement is an obvious opportunity to invest in innovation. “We need to drive innovation by government taking the risk and being a demanding customer.”
LESSONS LEARNED

Waterloo has been successful at luring its alumni back to invest and network. It is a testament to the institution that high-flyers want to give back. But the region needs more high-profile, private-sector initiatives, such as the Quantum Valley Ventures Fund, to fully leverage its potential. Venture capital is a key component of competitiveness in an innovation-driven economy. It’s not just about funding; it’s about connecting entrepreneurs to the global economy, designing business models, and collaborating with like-minded investors.

There are a number of venture capital firms in Vancouver and Montreal, but Waterloo has been slow to evolve this particular financial instrument. Attracting better venture capital financing demands further national awareness and government engagement.

Howard Armitage, founding director of the University of Waterloo’s Conrad Business, Entrepreneurship and Technology centre told LINC attendees that the region has made a good start, but can’t afford to rest. “We can be a whole lot better.”
ENDNOTES


2 http://www.businessinsider.com/the-worlds-best-engineering-schools-2012-6?op=1


5 University of Waterloo: Draft Strategic Plan, April 17, 2013

6 http://www.nytimes.com/2013/02/04/technology/a-canadian-campus-focused-on-tech-and-enterprise.html?


8 John Baker at the conference and in other interviews said Desire2Learn came from a student project; Pebble was originally developed by Eric Migicovsky while he was part of Velocity, and Mike Lazaridis developed BlackBerry partly as a school project. BufferBox came from a student project.

9 Information about our student teams: http://uwaterloo.ca/student-design-centre/teams/student-teams-f#FSE

10 University of Waterloo’s Strategic Plan

11 Communitech website — on the 11 people who started Communitech

12 According to Stats Canada, Ottawa employed more than 70,000 people in 2007 — but by 2011, the number of high-tech jobs had slipped below 44,000 a drop of nearly 40%. By contrast, the troubles at BlackBerry have barely made a blip in the unemployment levels in the Waterloo Region. According to Stats Canada, the unemployment rate in the Kitchener-Cambridge-Waterloo area declined, from 7.4% to 6.8% between May 2011 and May 2012 during a period when BlackBerry laid off 2,000 of its global workforce employees.


15 http://investoronto.ca/InvestAssets/PDF/Sector_One_Pagers_Food_and_Beverage_English.pdf


17 http://business.financialpost.com/2012/11/30/google-snaps-up-waterloo-startup-bufferbox/?__lsa=d2f7-42f6

18 Waterloo historian Ken McLaughlin kmclaugh@uwaterloo.ca

21 Waterloo historian Ken McLaughlin


23 From Pearl Sullivan’s PowerPoint presentation at LINC

28 http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/0I549.html

29 http://pm.gc.ca/eng/media.asp?id=5234

30 http://online.wsj.com/article/SBI1000087239639044400470457803057351877776.html