

INSPIRING INNOVATION AND ENTREPRENEURSHIP WITHIN PEO'S OTTAWA CHAPTER

By Tapan Das, PhD, P.Eng.

Innovation and entrepreneurship are tightly linked to each other. Entrepreneurship is characterized by innovation and risk-taking, and is an essential part of a nation's ability to succeed in an ever-changing and increasingly competitive global marketplace. Invention can be defined as the creation of a product or introduction of a process for the first time, whereas innovation occurs if someone improves on or makes a significant contribution to an existing product, process or service.

Ted Hoff at Intel Corp. is credited with the invention of the micro-processor. By itself, the microprocessor was nothing more than another piece on the circuit board. It's what was done with that piece—the hundreds of thousands of products, processes and services that evolved from the invention of the microprocessor—that required innovation. Steve Jobs of Apple is a poster child of innovation. Innovation and entrepreneurship are so closely linked that I have taken the liberty of combining them into one word: “innopreneurship.”

ENTREPRENEURSHIP CULTURE

Innopreneurship is key to Canada's competitiveness. Our productivity and innovation are closely linked to it, and we continue to lag behind our international competitors. According to a 2013 Conference Board of Canada report (www.conferenceboard.ca/hcp/details/innovation.aspx), Canada remains near the bottom of its peer group on innovation, ranking 13th among the 16 peer countries. The report says countries with the highest overall scores have successfully developed national strategies around innovation, giving them a substantial lead over their peers in one or more areas. Ireland has seen enormous success as a host for leading innovative companies; the US fosters a combination of top science and engineering faculties, broad and deep capital markets, and an entrepreneurial culture; and Switzerland, the top-ranked country, is a leader in the pharmaceuticals industry.

Countries stay developed because of innovation and entrepreneurship in science, engineering and technology-creating businesses. Canada needs more entrepreneurs and it needs to help current entrepreneurs not only to survive, but thrive. There are entrepreneurs in multinational corporations, small local businesses, among immigrants and Canadian families, and in rural and urban communities. The Conference Board of Canada report concludes that “Canada is well supplied with good universities, engineering schools, teaching hospitals and technical institutes. It produces science that is well respected around the world. But, with some exceptions, Canada does not take the steps that other countries take to ensure research can be successfully commercialized and used as a source for innovative companies seeking global

market share. Canadian companies are thus rarely at the leading edge of new technology and too often find themselves a generation or more behind in productivity growth achieved by global industry leaders.”

I worked in Silicon Valley for a few years and found that “innopreneurship” is a part of its culture. Brilliant graduates from the US and all over the world work there with only one mantra: be innovative and risk failure. There, failure is not shameful but an achievement that proves courage and entrepreneurship. Entrepreneurs gather and discuss their failures. There are investors and companies who also take risks to help the innovators—the number of seed investment deals in Silicon Valley is increasing. Even if they fail, they keep moving forward because if and when one attempt turns out successful, it could well outweigh the losses.

We need to develop this kind of culture in Canada to stay competitive in the world market. Natural resources like oil, woods and minerals will run out and cannot sustain our development. “Innopreneurship” has no limit and is the best way to stay developed and competitive.

TYPES OF ENTREPRENEURS

I believe there are four types of entrepreneurs: those who want to be entrepreneurs but have no specific idea in mind or expertise; those who have particular ideas but need help to prove them; those who have proven their ideas with prototypes or research but need help to start a business; and those who have started a business to sell their products but need help to grow.

Our entrepreneurs need resources to support and prove their ideas with minimal or no cost initially. These resources include:

- Universities and colleges with their entrepreneurial courses and laboratory facilities;
- Business services like Invest Ottawa, MaRS and Research Innovation Commercialisation Centre;

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- Various industries and companies;
- Funding resources like Futurpreneur Canada, Industrial Research Assistance Program, Invest in Ontario, Ottawa Community Loan Fund and Canada Business Network; and
- Mentors who are successful entrepreneurs.

ENTREPRENEURSHIP PILOT PROGRAM

In April 2015 I was invited by the Ottawa Chapter's then Chair Guy Boone, P.Eng., to attend a chapter board meeting to propose a plan to start a chapter-run entrepreneurship program. The plan was unanimously approved. The program is meant to support individuals, including women engineers and entrepreneurs, university graduates and immigrant engineers, in all sectors for development of products and services. The entrepreneurship program has four key elements:

- Determine the needs of individuals interested in becoming entrepreneurs;
- Find the right resources for their needs;
- Facilitate the partnership between the resources and entrepreneurs; and
- Monitor the progress and provide other resources if and when required.

After receiving support from local schools, resource programs and experts, a pilot program was launched on June 29, 2015 with presentations from the Ottawa Chapter entrepreneurship program team: Professor Tony Ballelli, PhD, of Carleton University's technology innovation management program; Professor Hanan Anis of the University of Ottawa's School of Information Technology; Luc Lalande, executive director of the University of Ottawa's Entrepreneurship Hub; Peter Stewart of Invest Ottawa (now Christine Evans), and Marco Janeczek, director of L-Spark, an Ottawa-based incubator and accelerator of the enterprise software market.

Seven PEO members enrolled in the program as entrepreneurs, and Avo Bedrossian, P.Eng., founder of OpsInSynch—a company that helps businesses with operations improvement methodologies to achieve growth and profitability—volunteered as a mentor. Through the program, the entrepreneurs have been partnered with the appropriate resources and received helpful advice. One entrepreneur, Edward Atraghji, P.Eng., for example, had an idea for a multistage axial flow radial compressor for jet engines. University of Ottawa Professor Anis engaged a graduate student to help him use a 3-D

printer at the university's start-up garage to prove and create a mock-up model at no cost. Another entrepreneur, Emil Joannou, P.Eng., who created a start-up business called Naroch Networks for designing electronics for entrepreneurs and small businesses, met with Invest Ottawa for business advice. The entrepreneurship team also helped him hire an employee for his business.

Following a successful three-month pilot, the program was officially launched as PEO's Ottawa Chapter Entrepreneurship Program in a meeting on September 30, 2015. The chapter welcomed PEO's then President Thomas Chong, P.Eng., FEC, PEO Registrar Gerard McDonald, P.Eng., Ontario Society of Professional Engineers (OSPE) CEO Sandra Perruzza, OSPE then Vice Chair Michael Monette, P.Eng., and Ottawa Councillor Marianne Wilkinson at the meeting. Then President Chong hailed the program as one that will help shift our economy into high gear again by restoring growth, boosting employment, bringing back Ontario's leadership in high technology, and moving the country away from resource dependency. Councillor Wilkinson praised it as a "lead to win" entrepreneurship program.

The entrepreneurship program team and Ottawa Chapter board were excited with the results of the pilot program and the encouragement and support from the PEO president and Ottawa councillor. Although we enrolled 12 more entrepreneurs in the program, bringing the total number to 19, I received a letter from PEO Eastern Region Councillor David Brown, P.Eng., BDS, C.E.T., on October 27, 2015 stating that PEO's Regional Councillors Committee unanimously voted not to support the program since it did not fit within the regulatory mandate of PEO. The entire team was devastated with this outcome. Currently, the entrepreneurship program team is working with OSPE to create a joint entrepreneurship program.

As volunteers, we are spending our personal time, effort and sometimes money to make this program grow not only in Ottawa, but across Ontario to bring economic prosperity to Canada. The Ottawa Chapter is the largest PEO chapter with over 8500 licensed engineers, many of whom work in technical fields. We believe Ottawa is a technology hub teeming with talented professionals. Although we are receiving interest from Ottawa engineers to join the program, we may not be in a position to enroll many more entrepreneurs until we receive required funding and office support for the program. OSPE and the Ottawa Chapter are working together to address these issues. In the meantime, we will carry on with whatever funding and support we do receive for the program, although it may not be as large as we thought initially.

This is a long overdue program that greatly benefits our engineering community. Engineers can become entrepreneurs to innovate and create new products, launch new engineering businesses, create jobs and bring economic prosperity to the community, Ontario and Canada. We will do whatever we can to make this program a national success.

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