The Next Generation of Entrepreneurs and Innovators

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Looking ahead to Canada's future as an innovative nation means thinking about the next generation of entrepreneurs and innovators as well as the next generation of innovations. First let's consider the people involved in entrepreneurship and innovation from a few different perspectives: that of emerging and retiring professors and that of university students.

The abolition of mandatory retirement of university professors combined with an unsteady economy may well have created a precarious science future for our country. The two together mean that there are many less young professors in our universities. This, in turn, over time will lead to a gap in experienced researchers, those at the associate and full professor level. At present, we have a number of senior professors who are not active in innovation and have not been a part of the culture that sees universities as places for innovation. This means that they are often unable to mentor their students or junior colleagues in this regard. The importance of keeping new researchers coming into Canadian universities is critical, and once they are in place, they will need adequate support to build their research and innovation capacity. They will also need a university culture that recognizes, builds and rewards the innovation and entrepreneurship side of their careers.

The students who may become the scientific and social innovators and entrepreneurs of tomorrow need similar support, opportunities and motivators. Exposure to research experience, mentoring in innovation and entrepreneurship, co-located practice spaces, rewards, cross-disciplinary training, co-ops and experiential learning are all becoming increasingly important in today's university education.

Eric Grimson, a Canadian, is the Chancellor for Academic Advancement at MIT. He has been gracious enough to share with university, government and industry people in Nova Scotia many of the ideas that his university has put in place to meet the needs and encourage innovation and entrepreneurship for both students and professors. His talks have inspired ideas and optimism. He has described how MIT has worked to "interweave innovation and entrepreneurship with education to advance the capabilities of its students, postdocs, staff, faculty, and alumni to change the world through research, invention, innovation, leadership and intrapreneurship, entrepreneurship, service learning opportunities and research". In doing so, he said that its goal is to demonstrate global leadership in innovation and entrepreneurship within an educational enterprise. Here are some of the elements for making that happen at MIT: educational programs (curricular and co-curricular activities at all levels), research projects at all levels, organizational collocation of activities, spaces to encourage innovation and team-building, linkages to the neighboring innovation ecosystem. This has led to 20 significant activities, spread across the institute, approximately 54 classes across multiple units, spaces for innovation spread across multiple locations, cross-disciplinary approaches, links across departments with no one unit "owning" entrepreneurship, direct connections with the research engine, incentives for inventors and policies to encourage student start-up activities, and student-run competitions all year long. The result is very impressive. Dr. Grimson reported that these initiatives have led to more than 130 companies with aggregate exit-values of $2.5 billion captured and a market cap of over $15 billion. Furthermore, these companies have generated more than 2,500 jobs and have received $770 million in venture capital funding.

At the professorial level, according to Dr. Grimson, MIT has put in place a variety of incentives and supports such as a royalty policy with one third of royalty stream to inventors, a leave policy for the creation of a start-up of up to 2 years of unpaid leave. Professors are encouraged to spend up to one day a week in outside professional and consulting activities without the fees being counted against salary. MIT also provides ignition grants to provide seed funds for start-ups led by faculty and help in obtaining venture capital.

As Canada continues to build its innovation and entrepreneurship capacity into the future, there is much to learn from the MIT experience. In fact, many of our universities are already moving forward in similar directions.

Finally, but importantly, the next generation of innovation needs to be developed with the sustainability of our planet clearly in sight. Science and technology take place in the context of society and must serve societies and their needs for many generations to come. As an example, many of the innovative products of today have life spans that far out live the product. Many such products are then discarded and end up in developing countries which do not have the capacity to recycle them. The manufacturers of products made from advanced energy-saving materials need to consider the energy resources needed to produce such materials. The latter may outweigh the former. Robotics and advanced information technologies have changed and will continue to change the labor market. Education of our youth must take these changes in employment possibilities into account. In a variety of ways, as we move forward to a next generation of innovation, the development of science, technology and society need to progress hand-in-hand toward a sustainable future.