

# Critical thinking on innovation and commercialization in canada

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## **Innovation and Commercialization in Canada**

It is one thing to come up with an invention and another to manufacture the item and sell it to potential consumers. This is the essence of the Canadian commercialization gap. The country has world class innovators but a less than impressive commercialization record. Entrepreneurs and scientists develop new products every day but these ideas rarely materialize and whenever they do, they rarely make it to the mass market.

Despite decades of innovation Canada when compared to other developed countries. Compared to other 15 peer countries that are leading in innovation, Canada was ranked 13th. These findings were reported by The Conference Board of Canada (CBC, 2013) which conducted a 16 country study on innovation. The study measured 21 indicators that measured innovation in terms of creation, diffusion and transformation.

The countries that had the highest scores have developed clear national strategies for innovation and commercialization. Switzerland, the top ranking country is a global leader in pharmaceuticals. Other countries that topped the ranking were Sweden, The United States of America, Denmark, Netherlands and the United Kingdom respectively (CBC, 2013). The common characteristic among the leading countries is that they had found effective ways of using innovation to improve both their social and economic performance. These countries were actively producing improved products and services and through innovative capabilities, processes and strategies (Meadowcroft, Toner & Carleton University, 2009).

As a country Canada has an impressive innovative record. The country has world class universities with excellent engineering departments, technical

laboratories and teaching hospitals (Canadian Advanced Technology Alliance 2012). Canadian engineers have produced ingenious innovations both in Canada and in collaboration with international scientists. Therefore Canada is not short on innovation; the problem is in the commercialization of the ideas According to Stephen and Stewart (2011), commercialization is the process of producing a product for mass consumption. Canadian innovators and entrepreneurs lack the initiative of reproducing their ideas for the global markets. Canadians tend to avoid risky ventures therefore bypassing any opportunities to commercialize new ideas because of the high risk factor (Steven & Stewart, 2011). Consequently Canadian companies are often trailing by a decade or more in the growth of productivity and technology compared to peer-countries leading in innovation and commercialization. Innovation and the subsequent commercialization of the resultant products and services are key drivers of economic growth. Countries that have fully embraced innovation and developed commercialization procedures have better performance indices on productivity, income per capita and the quality of social systems (Meadowcroft et al, 2009). Such countries also record better performance in environmental preservation, healthcare and social welfare programs. Canada's performance on these indicators is lower compared to its peers (CBC, 2013).

### **Reasons for poor commercialization**

One of the reasons why Canada has a poor record in commercialization is lack of adequate funding (Doern & Carleton University, 2006). The country has a comparatively lower allocation for scientific research and experimental

development (SR& ED) when measured against its more innovative counterparts. Research requires substantial capital investments in order to convert the money into exploitable knowledge. Commercialization can only occur after the knowledge had been converted into products through experiments and development (Jim, 2011). Furthermore, the SR & ED claims that are made are either retrogressive or speculative. The SR & ED tax credits that are in place in Canada have done little to improve the overall quality of commercial innovations (Doern & Carleton, 2009).

Apart from direct funding, the Canadian tax system on research and development (R& D) has hindered innovation. Traditionally, R& D has enjoyed tax credits from the government. However these credits have only been for science and technology innovation (Robert & Scott, 2011). The government could change its policies to include all manner of innovation and research work. Alternatively, tax credits could be tied to performance and the generation of new ideas. As it is Canadian firms have failed to take advantage of the available tax breaks available to encourage companies to invest in R& D (Robert & Scott, 2011).

There are unique market characteristics that are peculiar to Canada. By nature, Canadians are averse to risk. The people who are supposed to participate in innovation or encourage its commercialization are unwilling to take the risks associated with the two processes (CATA, 2011). Engineers, entrepreneurs, scientists and business men and industry decision makers are unwilling to develop new into globally competitive products. The process of developing formidable global brands is capital intensive, highly competitive and takes time with no guarantee of success. Studies have shown that

Canadian firms are under- investing in research and innovation and especially in communication technology (CATA, 2012).

According to Steven & Stewart (2011), Canada has a weak support system for entrepreneurial success. In the United States, Individuals are highly motivated to pursue the commercialization of their innovations because of the people adopt change quickly creating a ready market. In Canada, innovators working as individuals or within firms are unable to aggressively pursue their ideas because the market is slow to adopt new technology.

There is no centralized framework to encourage innovation and commercialization among small and medium scale enterprises (Organization for Economic Corporation, 2006).

### **Strategic Methods to Improve Commercialization**

The Canadian government should ensure that the SR & ED program is streamlined to eliminate retrogressive and speculative claims that add no value to innovation and commercialization. Companies should be required to file their submissions from the point of conception to execution. This will ensure that any non feasible projects are stopped or adjusted in time and the successful ones are fully supported (CATA, 2011). The government could save between 20% and 30% of the SR & ED fund which can be channeled into the commercialization of promising innovations (CATA, 2012). Secondly, the SR & ED administration should be simplified for both government and users. The government could benefit from lower overheads in administration. The users will understand better what SR & ED is and what the system expects from the in terms of quality of work.

Secondly, the government should review both direct and indirect funding allocated for commercialization. As it is the SR & ED is faced by numerous inefficiencies and shortcomings. Direct funding has not produced much result either. The available monies should be distributed equitably among fully vetted projects that will be supervised to successful commercialization. The 20% to 30% savings that will be made from the proposed efficiencies of the SR & ED will be ploughed back to the system to increase available funding (CATA, 2012). Additionally, funding should be directed to technological innovations across board. These developments should be commenced with a commercialization goal if Canada is to catch up with the global innovation leaders.

Another way of improving commercialization of innovations is to generate adequate risk capital. From the onset, many companies lack adequate funding to engage in any viable development of their products or services. The cost of developing any ideas through the R & D stages is expensive for many small and medium scale firms considering that there is no revenue generated from the investment. The risk capital will allow innovators to follow through with their ideas and develop them to the commercialization stage (CATA, 2012). Many firms depend on the SR & ED tax credits to recover the monies invested in research and development. However, more resources should be allocated to ensuring that the businesses are cushioned from the risks associated with commercial production of innovations (CBC, 2013).

Private and foreign investors should be involved in the entire process of SR & ED. Heavy investment and interest in innovation and development will

provide motivation for both local and international investors and entrepreneurs to develop and commercialize their ideas (Doern & Carleton University, 2006). The state could stimulate venture funding creating opportunities for private investment and also by partnering with existing professional venture funds.

The weak Canadian collaboration environment can be resolved by creating synergies between business enterprises and technical experts (Council of Canadian Academies, 2009). The commercialization gap is largely due to the breakdown in the relationship between the technical developers and the entrepreneurs who are experts in commerce. Small and medium scale firms cannot afford the cost of hiring and maintaining an innovation facility. On the other hand, scientists and other technical innovators lack the ability to translate their innovations into commercial terms. The government can encourage technical collaboration and marketing integration between the innovators and entrepreneurs. Such collaboration will increase the percentage of innovations that are fully commercialized and delivered to the global market (CATA, 2012).

Alternatively, large globally experienced firms could be encouraged to function as anchor companies for SMEs. As it is SMEs make up 99% of all Canadian firms (CBC, 2013). To compete successfully in the global market, these small firms need the guidance or large experienced companies. Asian countries have traditionally used anchor companies to support small companies with tremendous success. The same can be encouraged in Canada through government incentives and guided collaborations. Presently the industry is only encouraged to collaborate with government labs.

Institutions or higher learning are also required to license their inventions to established firms. These limited collaborations can be expanded to include SME and major Canadian firms to improve productive exchanges and global market penetration strategies. A government and industry experts' panel should be put in place to oversee the company anchoring process to ensure that only meaningful collaborations are created (Council of Canadian Academies, 2009). The panel will consult and propose the best incentive for enhancing collaborations. Furthermore the panel will regulate the speed of industrial innovations and guarantee the best commercialization results.

The reasons why Canada has lagged behind in innovation are often based on the informed opinion of various stakeholders rather than concrete research. These reasons are often accompanied by an overload of recommendations for change and improvement. There is general consensus that Canada's poor commercialization record can be improved through adequate funding for research but especially for development. Other than funding, commercialization can be improved through meaningful collaboration among stakeholders. This can be done through company anchoring by established firm or through strategic partnerships between industry and private firms. In all this, the government has a major role to play in providing an enabling environment for the commercialization of innovations. Additionally, SME which make up 99% of all firms have the responsibility of following through on their R & D programs to commercialization. Success cannot be achieved individually as firms but through strategic collaboration with experienced industry players and the policy support of the government.



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