
The Rugged Landscape of Canada's Innovation Policy

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With Canadian innovation's persistent stagnation, new policy changes will have to embrace a uniquely Canadian approach to stimulate innovation, whilst also considering which metrics are being used to measure innovation.

Confusion over how best to measure the growth and development of innovation has been a problem which has persisted in the policy making decisions of the Canadian government for as long as the nation has been concerning itself with innovation strategy in the first place. Canada has stagnated despite its attempts to improve its innovation strategy, and it looks as if it may be on the path to repeating its decades-old mistake unless it recognizes its past failings and focuses on a redistribution of policy.¹ But the question remains, what would such a redistribution look like, and consequently what implications does it carry? Such a question is inherently difficult to answer as it is a fragmented question and depends on other external factors at play, both locally and abroad. Since innovation is heavily tied into multiple sectors of society, from the technology in our homes to the infrastructure of our social programs, how we choose to measure and develop our classifications will inevitably impact the results which follow. So what should we as a nation focus on for our innovation strategy? Last year, the Council of Canadian Academies published its findings in a report entitled, *Paradox Lost: Explaining Canada's Research and Innovation Weakness*, in which it presented

¹Hawkins, Looking at Innovation (2012), 4

its response to the lack of innovative growth in Canada. The report, true to its name, outlines many of the weaknesses of our nation's present innovation strategy, and it then goes on to suggest we undergo a paradigm shift from a *supply-push* to a *demand-pull* strategy surrounding R&D as a way to adjust for the future. Whilst the report does a good job of illustrating why such a shift is beneficial, it ignores the effect of our unique political environment, and remains dependent on the previous inaccurate methods of measuring innovative growth. The decisions to change not just how policy tries to stimulate innovation, but also the criteria by which we measure innovation will both need to be dealt with.² These decisions will be faced with difficulties ahead, but such changes will be necessary should Canada wish to remain a competitive country in more than just its innovation strategies, but as a global leader in all fields.

A need for radical change may not be readily apparent given Canada's recent resilience to market fluctuations and our relatively stable economy, but such sentiments become understandable once one considers the importance of *vaccinations*. Vaccinations are a *preventative* measure in modern medicine. Whilst they are ineffective against a virus which has established itself *a priori* in the body, given proactively, they act extraordinarily well in preparing your immune system for potential future threats. It therefore becomes imperative that Canada looks at policy as a proactive measure to prepare ourselves for future changes rather than looking at policy as a reactive measure used to adapt to our current climate. It sounds so simple, but in practice this tends to be the most difficult thing policy makers face when considering new policy changes. This difficulty becomes compounded when one considers that in order to have an effective policy for our innovation strategy, the policy itself must be innovative as previous attempts to spur innovation have been ineffective. A Catch-22 arises, for how can we know if something will be an effective innovation, given that we still

²Course Notes - Session 6

cannot accurately decide how innovation is influenced in the first place? This very difficulty has been prevalent since the first policies were drafted in response to our need to innovate. Unfortunately, little has changed to alleviate the uncertainty.³ This apparent inconsistency between our efforts to improve innovation and the pervading stagnation appears when one looks at the variation of policy changes which have been adopted over the years and their resulting ineffectiveness on innovation.⁴ Does such ineffectiveness stem just from an uncoordinated set of measurement criteria, or is there an additional factor at play? Whilst measurement criteria most certainly has an effect on how the government views the current state of innovation, it does not account for the declining body of informed councils presently working alongside the government.⁵ Could Canada's unique political landscape be affecting the efficacy of our policy making attempts to kickstart the growth of our innovation, or is it a strength we can use in developing a uniquely Canadian process of stimulating innovation?

Innovation is generally assumed to be a positive thing, and therefore good for society as a whole, but in the case of political perspectives, *where* that innovation occurs is heavily debatable. According to *Paradox Lost*, the answer is simple: switch from our current *supply-push* focus on R&D to a *demand-pull* focus. While the answer seems simple, could it just be another ineffective change in a long line of changes, or will it promote growth? It cannot be ignored that implementing the policy change does not discount the need for Canadians to have a more accurate and personalized model to measure innovative growth that takes our country's unique features into account. The need for such a model should be paramount to that of implementing any particular policy changes, for without proper measure, policy is blind.⁶ But how to go about

³Paradox Lost (2013), 6

⁴Cozzarin, *Data and measurement of R&D program impacts (2008)*, 294

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forming an accurate model? If such a model was easy, it would have been developed already and this problem would have been long since solved. Unfortunately, a clear-cut solution has not presented itself, and no model developed has henceforth proven to be very accurate.⁷ But this does not mean that all possible steps have been taken to develop one. If one was to look at the trend in the disappearance of federally appointed institutions and councils, one sees that fewer and fewer collectives are left to advise on the state of affairs relating innovation in various sectors of industry to the government.⁸ Due to this knowledge-gap within government and the imperative need for a more accurate model of innovation, it becomes valid to suggest that a new body be setup to work alongside the government in analyzing and preparing innovation policy.

By establishing this collective body, the government ideally would be able to develop a more informed direction in its attempts at promoting Canada's innovation. This council would be setup in order to ensure that future policy changes are based on accurate findings from experts on innovation from various industries, and that it adapts proactively rather than responding reactively. The initial job of the council would be to design a better model whereby we can better measure the effects of innovative growth in response to federal stimulus programs. The model should be concisely Canadian and focus on both our unique strengths and weaknesses.⁹ In *Paradox Lost*, some of these strengths and weaknesses have been outlined such as the aging population, increased effects from industries like ICT on the workplace, and future potential Canada has in emerging markets like genomics and nanotechnology.¹⁰ Whilst it does a good job of painting a bright future by showing what potential Canada has, the report still hinges on poor measures of innovation and a fundamental

⁷Course Notes - Session 8

⁸Course Notes - Session 6

⁹Hawkins, *Looking at Innovation from a Uniquely Canadian Perspective* (2012), 17-19

¹⁰*Paradox Lost* (2013), 31

misunderstanding of the mechanisms at play. Without an innovative Canadian way to measure our growth, we have no way of directing our policies as they pertain to us. But how then should Canada think about restructuring its measurement criteria? Teece suggested a model which characterizes innovation into 7 distinct foci: uncertainty, path-dependency, cumulativeness, irreversibility, technological inter-relatedness, tacitness, and inappropriability.¹¹ His breakdown does a good job of *qualitatively* describing innovation, but it doesn't give much further insight into how best to *quantitatively* measure innovation which is the crux of the issue. He also appears to take a very technology-focused stance which fails to account for various other forms of innovation which may impact the globe.¹² *Paradox Lost* on the other hand, doesn't appear to acknowledge such characteristics thoroughly, but rather chooses to focus on various indices to gauge Canada's innovation.¹³ Do such metrics such as *Specialization Index*, and *Average Relative Citations*, actually provide us with representative data about the underlying processes at work? If there was proven to be a correlation between the amount of R&D and innovative growth then perhaps such data would be compelling, but given that such a correlation hasn't consistently been shown, it suggests that accurate inferences may be difficult to develop. Until a report is filed which recognizes not just the ineffectiveness of our current linear model of innovation, but also chooses to propose a new model to replace it, all policy changes are hardly more than gambles lacking foresight. As a supposed world leader, the Canadian government should recognize its inherent weaknesses in the system and actually attempt to fix them before it chooses to implement additional policy changes, not just because it is logically sound, but because it is an opportunity for Canada to really gain some ground and move into a more powerful position on the world stage.

¹¹Cozzarin, *Data and measurement of R&D program impacts* (2008), 286-287

¹²Course Notes - Session 9

¹³*Paradox Lost* (2013), 18

Given that such problems persist and that the future of innovation stands to undergo some serious changes in the upcoming decades, what will Canada's position be? Will it stand up and adapt to the challenges presented, recognizing that our past mistakes are in part due to both policy directed at innovation as well as the criteria with which we measure innovation? Or, will we choose to ignore the deeply rooted problem in our discussions about innovations, and hope that policy change alone may bring us to victory? It is a difficult question and as such it deserves to be fairly critiqued and explored. Political differences shouldn't impact the growth of our nation, and as such a full-time federally-appointed external body should be setup to overlook and maintain the nation's policies concerning innovation in all capacities. Such a council would first redevelop a new, accurate model on measuring innovation, and then would proceed to draft an educated policy change with more clearly defined metrics and expected impacts. Whilst reports such as *Paradox Lost* do a good job of presenting our weaknesses as well as some well-thought-out policy suggestions, they inherently are dependent on a broken model and innaccurate metrics. Such reports may be of some help providing short-term gains, but until the deeper-seated issues are dealt with, policy will always be one step behind innovation. The future of Canada remains bright, but the path ahead is rugged. There are very real challenges facing Canada, and unless the government recognizes that outdated models and institutional knowledge-gaps will no longer provide us the means to adapt, we will persist at the the wayside. However, if the government takes steps to properly prepare for such challenges, Canada will be one step closer to becoming a world leader in all fields.