

CIO – Innovation management best practices

Canada's failing capacity for innovation

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Is Canada acting like the proverbial frog in the water when it comes to creating and commercializing innovation?

Canada's (Canadians), i.e. it's not just the government, that has failed to stop the slide in global innovativeness rankings. In 2008 Canada was ranked 18th for its 'capacity for innovation' but in the latest report; 2014-2015 Canada ranked 26th out of 144 countries, by the WEC¹, arguably a totally apolitical organization.

Quick Summary

According to the latest WEF report on competitiveness, Canada's ranking in innovativeness has been on the decline since 2008. We now rank 14th overall in this latest report but rankings for innovation place us closer to 24th. Not good for an 'innovation-driven' economy seeking to maintain or enhance its standard of living.

The frogs are not in water, but in oil!

commercialize it for global distribution – export.

Despite several initiatives by federal and provincial governments to increase the creation and commercialization of value-added products, the trend line for Canada is downward. Should this concern us?

We look at the components that go to make up this assessment and comment on options.

Canada is ranked among what are referred to as 'innovation-driven' economies as opposed to countries which are at an earlier stage of development. We are at the top level and the competition is severe; and we are losing ground – rapidly.

'Innovation-driven' countries are those that are successful at the business of adding-value to their resource base, whether that resource base is in the ground or in its human capacity. Whether it's adding value to raw bitumen or developing the next high-tech product, the challenge is to take and



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¹ World Economic Forum Global Competitiveness Report for 2014/2015

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Background

Canada's rankings have been slipping since 2008

Each year the World Economic Forum publishes a vast – over 500-page report – on the subject of competitiveness in about 140 countries. A multi-factor analysis is the basis for ranking each country and the analysis is a complex mix of hard data and opinion.

In the 2008/2009 report, Canada joined the top 10 group. The extract from the report is provided in the Appendices. For some reason the report does not comment, but does provide the data, on Canada in the latest report; 2014/2015. In the 2013/2014 and current report Canada ranked 14th overall.

In terms of global competitiveness, Canada ranked in the top 15 for the period we are examining; 2008 to 2015. That is the good news.

Overall ratings are important but our examination deals primarily with the issue of innovativeness, one of the reports twelve 'pillars' used in their evaluation process. It is in this 'pillar' that Canada is viewed as slipping.

The 12th Pillar

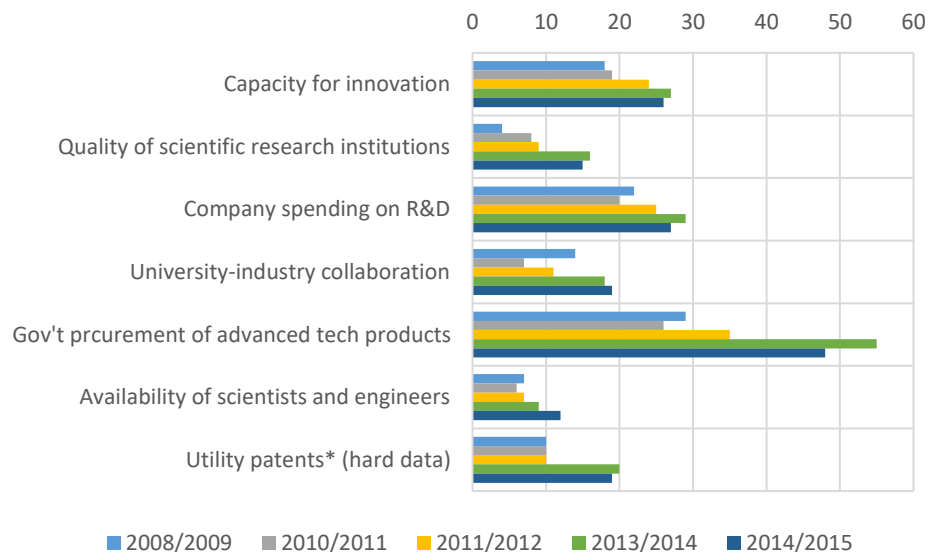
The data from the WEC report provides the insight into why the slide is taking place.

The trend is clear. There is a shift in Canada's ranking. For example, for the factor 'capacity for innovation', the shift is from a ranking 18th in the first report to 26th in the most recent report.

From a relatively high ranking in the period 2008/2009, all of the rankings have shifted negatively over the period. Even the 'utility patents' factor, which is based on 'hard data' show a decline.

The rankings compare Canada to a total population of from 134 to 148 countries depending on the year chosen. One might argue that Canada's performance is not bad considering the total number of countries involved but typically Canadians measure their economic performance against a set of countries which have similar life styles and economic wellbeing. Most often in the top ten are; Switzerland, Sweden, Finland, the U.S.A., Japan,

The Twelfth Pillar; Canada's ranking from 2008/2009 to 2014/2015



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Germany, the U.K., Denmark, Norway and the Netherlands. More recently and creeping higher in the rankings are Singapore, Hong Kong, and Taiwan.

One should be aware of the means of collecting the data as well as the ranking process. A glimpse of the process is set out in the Appendices for those who are curious. Suffice to say that the team makes maximum use of statistical data from a wide variety of sources but also employs an annual survey of the opinions of business leaders and this is the main source of information for the 11th Pillar.

This latter research device is particularly relevant to Canada, even though the comments on innovation are subjective. Opinions matter and in this case, the opinions relating to innovation, provides most of the results which are set out here. In this sense it is the 'global opinion' of executives which matters and this is important since such a perception can impact future investment decisions.

For example, the recent establishment of R&D centers around the world by companies such as GE, Deere, and 3M and to not advance research in Canada to the same degree is a contributing factor to Canada's decline in importance on the world stage. On a global basis it is somewhat easy for executives to forget a market of 36 million people when billion-people markets beckon. Canada's traditional linkage and empathy with the U.S. business community is changing!

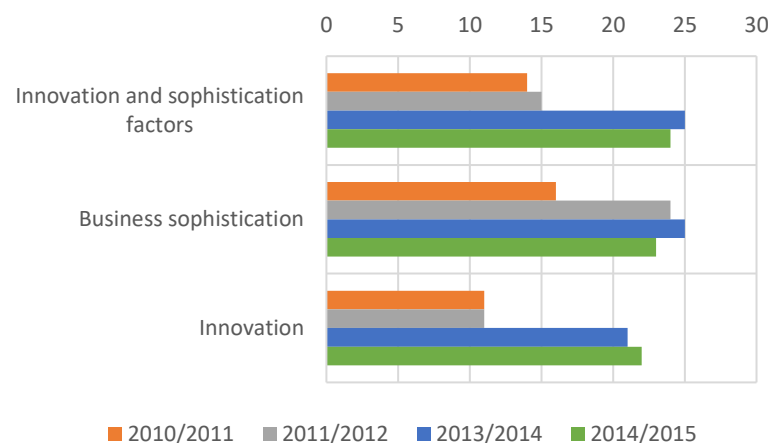
Business sophistication

Imagine a country becoming less sophisticated!

In addition to the above analysis, the WEC report looks at two other factors which are then summarized into one; innovation and sophistication factors.

This is part of the 11th pillar² examined in the report. These two factors, and the summary factor, are an attempt to look the quality of a country's overall business networks and the quality of individual firms' operations and strategies – and as the report notes – these factors are especially important to countries at an advanced stage of development – i.e. Canada. Efficiency, as the report states, is enhanced by the formation and operation of clusters.

Innovation and sophistication factors
2008/2009 to 2014/2015



² See Appendices for an explanation of this factor

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Here again, as in the 12th pillar, Canada has seen its ranking decline. Business sophistication took a leap the wrong way in 2011/2012 but has regained marginally since. Innovation per se is somewhat worse in the period 2013 to 2015. The summary factor shows a definite drop over the period.

What to do?

More importantly, what not to do!

Canada has had its share of Royal Commissions, task groups, committees at the national and regional levels, which have studied Canada's productivity and made recommendations for change. In reality however, important recommendations have not been adopted and eventually interest withers – until the next commission/study is set up. So this option, for Canadians, is not likely to be fruitful.

Just think about the most recent study; The Jenkins Expert Panel Report in 2011-2012, which called for major restructurings of Canada's approach to R&D spending and significant revisions to the structure of public spending on research. Little or no action has followed the recommendations set out in the report. One should ask why! The Panel recommended the formation of a body to give voice to innovation at the national level and to better program and allocate research and development spending nationally and regionally. Suggestions for transforming the National research institutes and improving access to risk capital for 'high-growth rate' firms were part of a sweeping set of recommendations. The notion was to grow SMEs into larger, competitive firms. Sensible recommendations but followed with little action.

The Conference Board of Canada monitors Canada's innovation condition closely by publishing its own rankings³. Canada has been rated by the Conference Board on a number of indicators showing that our performance is not up to scratch. This is not really news to those who have followed such ratings over the years. But how useful are the ratings in helping move Canada forward? The trend is still down.

Here's the rub. Canada is also rated as one of the best countries in the world to live in, the financial system is robust, unemployment numbers are not bad albeit Canada is highly dependent on the U.S. recovery, Canada now even imports labour to take on some of the more mundane jobs which Canadians don't have an interest in doing. Canada, under the heading of 'Economy', ranks 6th out of the 16 countries reported upon in this Conference Board report. 7th when it come to the subject of 'Society', 15th in terms of 'Environment', 10th when in come to 'Health' and, believe it or not, 2nd when the topic is Education and Skills. There are 193 member states in the United Nations! 13th position for 'Innovation' isn't too bad – or is it? So what is all the fuss

³ See our review of a recent ranking at <http://www.corporateinnovationonline.com/wordpress/wp-content/uploads/2014/05/Op-ed-on-Conference-Board-ratings-of-Canada.pdf>. The Conference Board has dropped two indicators and added 11 in this recent report – 'How Canada Performs'

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about? Canada is known as a great place to live and its cities, Toronto and Vancouver in particular, are often highly rated.

Our focus in this paper is however on the topic of innovation. Most would agree that innovation is the main driver of productivity and eventually impacts the standard of living. Canada does have minimal image internationally when it comes to innovation. A recent survey commissioned by GE stated that only 3% of 2,800 global executive surveyed listed Canada as one of the top three innovative countries. U.S. Germany, Japan, and China were selected as most innovative.

The conclusion has to be that, in spite of efforts over the last fifty plus years, innovation and labour productivity are just not high enough on the federal agenda. You have to wonder why one would take the time to have research done and then not move on with adopting at least some of the more important recommendations. That's probably why the Jenkins Expert Panel entitled their report 'A Call to Action'. Enough study! Get on with it! The answer has to be that innovation is not given the priority it deserves – and the frog is gradually succumbing.

While our research has focused on innovation in a corporate setting, one has learned from experience in business, is that nothing significant happens unless the CEO, backed by the Board, support initiatives with investment and, even more importantly, make it a topic in their speeches, presentations, and strategic plans. Country management operates in the same way. Leadership, commitment, and communication are essential ingredients for making change happen. This is not happening in Canada and we now are beginning to see the results.

The frogs, by the way, are not in water. They are in oil!

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Appendices

Overall Comments; WEF Global Competitive Reports

Comment from the 2008/2009 report

Canada moves up three places to join the top 10 (ranked 10th). Canada benefits from top-notch transport and telephony infrastructure, highly efficient markets, particularly labor and financial markets (ranked 7th and 10th respectively) and well-functioning and transparent institutions (ranked 15th). In addition, the educational system gets excellent market for quality, which has prepared the countries work force to adopt to the latest technologies to for productivity enhancements (ranked 9th). Canada's main weakness remains its macroeconomic stability, where it ranked 43rd, mainly linked to the significant government debt of nearly 70% of GDP, which places the country 107th out of 134 countries on this indicator. On a more positive note, however, the government has been running small surpluses over recent years, which is allowing the country to put the debt level on a downward trend.

Comment in 2010/2011 report

Canada has dropped one place this year to 10th, with a stable performance and rounding out the top 10. Canada benefits from highly efficient markets (with goods, labor, and financial markets ranked 11th, 6th, and 12th, respectively), well-functioning and transparent institutions (11th), and excellent infrastructure (9th). In addition, the country has been successful in nurturing its human resources: it is ranked 6th for health and primary education and 8th for higher education and training. Improving the sophistication and innovative potential of the private sector, with greater R&D spending and producing higher on the value chain, would enhance Canada's competitiveness and productive potential going into the future.

Comments in 2011/2012 report

Canada has dropped two positions this year to 12th place, with a slight improvement in score. Canada continues to benefit from highly efficient markets (with its goods, labor, and financial markets ranked 12th, 5th, and 13th, respectively), well-functioning and transparent institutions (11th), and excellent infrastructure (11th). In addition, the country has been successful in nurturing its human resources: it is ranked 6th for health and primary education and 12th for higher education and training. As we have noted in recent years, improving the sophistication and innovative potential of the private sector, with greater R&D spending and producing goods and services higher on the value chain, would enhance Canada's competitiveness and productive potential going into the future

Comments from the 2013/2014 report

Canada remains stable at 14th place. The country continues to benefit from highly efficient markets (with its goods, labor, and financial markets are ranked 17th, 7th, and 12th, respectively), well-functioning and transparent institutions (14th), and excellent infrastructure (12th). Canada is also successfully nurturing its human resources compared with other advanced economies (ranking 7th for health and primary education and 16th for higher education and training), providing the workforce with the skills needed to succeed in a competitive economy. Canada's competitiveness would be further enhanced by improvements in its innovation ecosystem such as increased company-level spending on R&D and government procurement of advanced research products

Comment from the 2014/2015 report

None

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The 12th Pillar - Extract from the Global Competitiveness Report⁴ (with highlights by White & Partners)

Innovation can emerge from new technological and non-technological knowledge. Non-technological innovations are closely related to the know-how, skills, and working conditions that are embedded in organizations and are therefore largely covered by the eleventh pillar of the GCI. The final pillar of competitiveness focuses on technological innovation.

Although substantial gains can be obtained by improving institutions, building infrastructure, reducing macroeconomic instability, or improving human capital, all these factors eventually run into diminishing returns. The same is true for the efficiency of the labor, financial, and goods markets. In the long run, standards of living can be largely enhanced by technological innovation.

Technological breakthroughs have been at the basis of many of the productivity gains that our economies have historically experienced. These range from the industrial revolution in the 18th century and the invention of the steam engine and the generation of electricity to the more recent digital revolution. The latter is not only transforming the way things are being done, but also opening a wider range of new possibilities in terms of products and services.

Innovation is particularly important for economies as they approach the frontiers of knowledge, and the possibility of generating more value by merely integrating and adapting exogenous technologies tends to disappear.

Although less-advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas, **for those that have reached the innovation stage of development this is no longer sufficient for increasing productivity.** Firms in these countries must design and develop cutting-edge products and processes to maintain a competitive edge and move toward even higher value-added activities. This progression requires an environment that is conducive to innovative activity and supported by both the public and the private sector.

In particular, it means **sufficient investment in research and development (R&D), especially by the private sector;** the presence of **high-quality scientific research institutions** that can generate the basic knowledge needed to build the new technologies; **extensive collaboration** in research and technological developments between universities and industry; and **the protection of intellectual property**, in addition to high levels of competition and access to venture capital and financing that are analyzed in other pillars of the Index. In light of the recent sluggish recovery and rising fiscal pressures faced by advanced economies, it is important that public and private sectors **resist pressures to cut back on the R&D spending** that will be so critical for sustainable growth into the future.

⁴ © 2014 World Economic Forum The Global Competitiveness Report 2014–2015.

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11th Pillar: Business sophistication

There is no doubt that sophisticated business practices are conducive to higher efficiency in the production of goods and services. Business sophistication concerns two elements that are intricately linked: the **quality of a country's overall business networks** and the **quality of individual firms' operations and strategies**. These factors are especially important for countries at an advanced stage of development when, to a large extent, the more basic sources of productivity improvements have been exhausted. The quality of a country's business networks and supporting industries, as measured by the quantity and quality of local suppliers and the extent of their interaction, is important for a variety of reasons. When companies and suppliers from a particular sector are interconnected in geographically proximate groups, called *clusters*, efficiency is heightened, greater opportunities for innovation in processes and products are created, and barriers to entry for new firms are reduced. Individual firms' advanced operations and strategies (branding, marketing, distribution, advanced production processes, and the production of unique and sophisticated products) spill over into the economy and lead to sophisticated and modern business processes across the country's business sectors

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Background on data sources – highlights by White & Partners

The Executive Opinion Survey: The Voice of the Business Community

Since 1979 and its first report on the competitiveness of European industry, the World Economic Forum's annual survey has been a key ingredient of its research and benchmarking activities.

The **Executive Opinion Survey (the Survey)** is the longest-running and most extensive survey of its kind. Box 1 retraces the history of this instrument, which is closely related to the history of the competitiveness report series. The **Survey captures the opinions of business leaders around the world** on a broad range of topics for which data sources are scarce or, frequently, nonexistent on a global scale. It helps to capture aspects of a particular domain—such as the **extent** of the skills gap, the **level** of corruption, or the **intensity** of market competition—that are **more qualitative** than hard data can provide. Thus it is an indispensable complement to the sources of data made available by international organizations and national statistical offices.

The indicators derived from the Survey are used in the calculation of the Global Competitiveness Index (GCI) and other Forum indexes, including the Networked Readiness Index, the Enabling Trade Index, the Travel & Tourism Competitiveness Index, and the Gender Gap Index, as well as in a number of regional studies.

A truly unique source of data, the Survey has also long been used by a number of international and nongovernmental organizations, think tanks, and academia for empirical and policy work. For example, Transparency International has been using the Survey data for the elaboration of their Corruption Perceptions Index and the Bribe Payers Index. Institutions such as the Organisation for Economic Co-operation and Development (OECD), the World Bank, and the International Monetary Fund (IMF) also refer to the Forum's Survey data in their publications, as do a number of academic publications. Finally, an increasing number of countries publish national competitiveness reports that draw on or refer to the Survey data.

Data sources

To measure these concepts, the GCI uses statistical data such as enrollment rates, government debt, budget deficit, and life expectancy. These data are obtained from internationally recognized agencies, notably the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Monetary Fund (IMF), and the World Health Organization (WHO). The descriptions and data sources of all these statistical variables are summarized in the Technical Notes and Sources at the end of this *Report*. Furthermore, the GCI uses data from the World Economic Forum's annual Executive Opinion Survey (the Survey) to capture **concepts that require a more qualitative assessment or for which internationally comparable statistical data are not available for the entire set of economies.**