



Canadian  
Manufacturers &  
Exporters

Manufacturiers et  
Exportateurs du  
Canada

# Driving Business Innovation

CME Response to the Independent Panel on  
Federal Support to Research and Development

NOVEMBER 2011

## Introduction

On October 10, 2011, the Independent Panel on Federal Support to Research and Development (R&D) — also known as the *Jenkins Panel* — published its report to the Government of Canada. This report included a number of recommendations on how to strengthen business investment in R&D and overall innovation in Canada. Canadian Manufacturers & Exporters (CME) has actively participated in the consultation process. In summary, CME made the following observations and recommendations during the process:

1. Governments have an important role to play in helping businesses reduce risks associated with bringing new products to market and improving production and business processes.
2. Canada relies heavily on an R&D *push* model, which was the one adopted by many countries in the 1980s. The federal government invests heavily in basic and applied research, particularly in academic and government research institutions, in support of invention. We do not, however, give the same priority to the commercialization phase of successful innovation — the part that is essential to business and vital for Canada to realize economic benefits from the knowledge generated from public and private research. Other jurisdictions have meanwhile shifted their focus to support innovation outcomes (United States), encourage investments required for commercialization (EU, Japan, India), or make significant direct investments in R&D (China, Brazil).
3. There is an inadequate supply of capital in Canada for all stages of the innovation process. One key issue is the lack of adequate institutional investment funds to support venture capital (VC).
4. Product and process improvements are both crucial components of business innovation. Governments should support business investment in productive assets (R&D, technology and equipment, and skills) primarily through tax measures that are the most efficient means of delivering support by leaving more money in the hands of companies making these investments.
5. *First customer* is an important part of a broader strategic procurement role that government should play. Procurement is already the most important driver of innovation in sectors like defence, aerospace and information and communications technologies (ICT). A more strategic approach should also be taken by governments with respect to the purchase of health-related, environmental, energy, security, and transportation technologies. “Smart customer”, however, is an even more important requirement. Governments should assess procurement opportunities on a full product delivery/cost opportunity basis that includes not just the selling price, but the government funds already invested in R&D.
6. Our education system should provide students with a strong theoretical base, but just as important: with empirical, practical and applied experience. Basic research makes important long-term contributions to the Canadian economy. However, applied research is also important. And, whether basic or applied, more publicly supported research should be aimed at solving empirical rather than theoretical problems.
7. Federal direct funding programs that work well are the Industrial Research Assistance Program (IRAP), some Centres of Excellence (like Auto21), and other programs that provide direct funding to businesses to undertake productivity enhancement or innovation projects (such as CME’s SMART program administered on behalf of FedDev). These programs work well because they respond to the real needs of business. Business interests are well represented on their boards. Funding decisions take into account the commercial and scientific merit of projects. And, technology advisors are usually employed to match the research capabilities of universities, colleges, and research institutes with problems for

which businesses are looking for innovative solutions. Programs that do not work well are those that focus on funding academic research without a clear understanding of business needs and little collaboration with business. A voucher system or indirect funding approach through business would help to strengthen collaborative research and focus research activities to a greater extent on the empirical problems being experienced by business.

8. a) The Scientific Research and Experimental Development (SR&ED) tax credit program is of crucial importance to start-up and existing companies alike. For start-ups, the tax credit often makes the difference between a deficit and a net profit in their first years of business, and provides these companies with a critical source of cash flow. For all businesses, the additional cash generates a higher rate of return on R&D investments. Tax refunds are a very important element of SR&ED, acting as an incentive to Canadian controlled private corporations (CCPCs) to invest more in R&D. CME strongly believes that the government should also make tax refunds available to larger corporations. If the tax credits were to be made refundable, SR&ED would become more of a factor in multinationals' global R&D allocations if the credit were available as a cash refund rather than a tax reduction, as the latter are fully offset by US tax law. Second, it would have a more direct impact on companies' cash flow, and therefore boost business expenditures in R&D, while the current tax credit has to be accumulated when a company does not have the profits for the tax credit to be applied. Refundability is even more important at a time of economic weakness when profits deteriorate but when it is more important than ever for businesses to invest in new and improved products and processes. Third, by making SR&ED refundable the government would achieve its objective of

supporting R&D across a broad range of businesses in the most efficient way possible, without having to 'pick winners'.

- b) Problems with the administration of the SR&ED tax credit system continue to frustrate business. The Canada Revenue Agency (CRA) has made the interpretation of eligibility criteria more stringent over time, increasing complexity, uncertainty, and compliance costs.
- c) Canada's SR&ED tax credit system would be improved significantly if technical assessments were to be undertaken by experts outside CRA (like IRAP's technology advisors) who could determine the technical eligibility of projects before tax claims are made.
- d) IRAP technical assessments should be integrated into the administration of both the SR&ED tax credit and direct funding decisions made by granting councils.

The expert panel report touches on many of CME's recommendations. It raises a number of important issues that need to be addressed with respect to the administration of government funding programs, especially the lack of performance metrics and adequate assessment procedures that mean it is impossible to judge the relative merits, efficiency or effectiveness of any of the government's programs in support of business investment. However, while we welcome the efforts of the expert panel in trying to provide better direction to the government, we have serious concerns with several of its recommendations. Specifically, and of greatest concern to our members across the country, are the panel's recommendations to restrict eligibility and reduce funding for the SR&ED tax credit. We also believe that the panel failed to address many key issues in government policy and programs that affect support for business innovation in Canada.

## BACKGROUND

In a recent study conducted jointly by CME, Industry Canada, and McMaster University on the state of advanced manufacturing, results indicated that innovation in the manufacturing sector goes well beyond business expenditures in R&D or product development. In fact, the manufacturing sector outperformed all other industry sectors in Canada between 2007 and 2009 in terms of the four components of innovation: product development, organizational innovation, product innovation and marketing innovation. It is important to note that process innovation is the key factor that determines a company's capacity to go up the world value chain, while product and marketing innovations are the main determinants of a company's capacity to bring new and improved products to market. These are important elements to keep in mind in implementing policies in support of business innovation, since most government programs currently focus heavily on product innovation and on fundamental and applied research. Policy-makers need to take all elements of innovation into account, especially if we want to improve commercialization and productivity performance.

## Key Observations

- About 82 per cent of all R&D investments by Canadian business are carried out by companies that also manufacture products — embodying the innovation in a product that can be sold to customers.
- For every dollar that Canadian manufacturers spend on research and development, they invest \$32 in design, engineering, scale-up, production, and marketing of the new and improved goods and services they bring to market.
- After-tax cash flow drives business investment activity. Investments in new machinery and equipment follow closely behind changes in after-tax cash flow performance while businesses tend to base R&D spending decisions on their previous year's cash flow performance.
- Canadian businesses have invested roughly the same proportions of after-tax cash flow in R&D, as well as in machinery and equipment, over the past thirty years.
- Tax measures adopted by federal and provincial governments since 2006 have encouraged Canadian manufacturers to allocate more cash to technology investments.

It is in this context that CME responds to the recommendations of the expert panel.

## The Expert Panel Report

### Recommendations

1. Create an Industrial Research and Innovation Council (IRIC) with a clear business mandate (including delivery of business-facing innovation programs, development of a business innovation talent strategy, and other duties over time) and enhance the impact of programs through consolidation and improved whole-of-government innovation.

**CME response:** CME agrees with the overall goals of simplifying access to R&D support programs, applying the best combination of program support for innovation projects identified by business, developing an innovation talent strategy, and leveraging the strengths of all innovation support programs. We strongly support the opportunity that such a consolidation of innovation programs would provide in combining the strengths of IRAP for instance in decision-making with respect to SR&ED tax credit eligibility or the administration of the innovation vouchers program also recommended by the panel.

However, CME is deeply concerned that the creation of a new government agency will divert necessary attention and resources away from the primary objective of ensuring effective support for business innovation and instead toward having to deal with the administrative complexities of bureaucratic reorganization. This is not the time to dilute the limited resources available in the government's innovation envelope. CME would support the creation of IRIC only on the condition that the total amount of direct funding for business innovation through the new agency is not reduced from current levels and that the amount of funding provided for overall administration of support programs is reduced.

CME is also concerned that the new structures proposed by the panel would lead to an unnecessary centralization of decisions related to the direct funds currently being spent in business R&D. For example, regional economic development agencies account for 14 per cent of current direct government expenditures in business innovation. These agencies have the knowledge, networks and expertise at the local level that could be lost by a transfer of responsibilities to a central agency in charge of administering these programs. We strongly recommend that the administration of direct R&D funds continue to be managed at the local and regional levels.

The panel raises a very important concern with respect to the duplicative nature and stacking of support funding, and more so with respect to the inadequacy, or in many cases the lack of processes in place that would enable the government to evaluate the efficiency or effectiveness of its programs in support of business innovation. The same observation can be made with respect to many programs in support of public research activities. We believe this issue needs to be addressed on an urgent basis. The lack of credible evaluation processes in fact undermines subsequent recommendations of the panel's report — in particular, its recommendation to reduce the relative importance of SR&ED tax credit support in favour of more direct government funding programs.

2. Simplify the SR&ED program by basing the tax credit for smaller companies on labour-related costs, while increasing its rate, and applying the same criteria over time to larger firms.

**CME response:** CME strongly disagrees with this recommendation. While we do understand the necessity to simplify the claims process, restricting the types of activities eligible for the tax credit is not the most effective way to achieve this objective, if the goal of the tax credit is to incent business innovation. Such a restriction would exclude other very important costs currently eligible for the tax credit, like the acquisition of capital equipment used in testing and product development, the cost of materials acquired for product innovation, and expenses related to services contracted to third parties. Material and capital expenses are two very important cost components in product development, testing and commercialization, as well as in process innovation. And, by excluding services contracts, the proposed formula would actually run counter to the general objective of strengthening collaboration between academic institutions, government research institutes and businesses. It would also undermine the ability of businesses to contract out to best-in-class R&D services.

The panel recommended that the government should “over time, extend this new labour-based approach to all firms, provided it is able to concurrently provide compensatory assistance to offset the negative impact of this approach on large firms with high non-labour R&D

costs.” In the absence of greater detail regarding what this compensatory assistance would include, CME strongly disagrees with such a radical change to the SR&ED tax credit system.

The rationale used by the panel for adopting a labour-based approach to SR&ED eligibility is the complexity of the current formula related to the allocation of overheads, equipment, materials, and third-party contracts. This complexity has no doubt given rise to a thriving business for tax advisors, raising concerns that funding support is leaking too much into the hands of consultants. CME believes that better solutions to this problem can be found. We recommend that:

- i. Businesses be given the option of adopting the simpler labour-based formula with an increased credit rate recommended by the panel or using the current formula that would include other non-labour costs; and,
- ii. IRAP be given the mandate to pre-approve R&D projects eligible for the SR&ED tax credit and verify usage rates for equipment and materials. This approach would allow the government to lower administrative costs within CRA, reduce uncertainty with respect to the technical eligibility of projects, and verify cost allocations. It could also increase the level of certainty for government about how much funding is available or being provided through the R&D tax credit system.

Over the past year, many companies have noticed significant changes in the way the CRA has audited their claims, and have complained that some activities, which were eligible in previous years, are no longer eligible for claim. This not only creates uncertainty among businesses, it also raises the need for a clear policy mandate as it pertains to assessing SR&ED claims. This is why CME strongly recommends that technical assessments be based on reviews by experts outside the CRA, as with IRAP's technology advisors, in order to provide more clarity and certainty.

Clearly the panel was concerned about the growing number of abusive claims made under the SR&ED system — an important concern for government and business

alike. Consultants, for the most part, have a legitimate role to play in supporting businesses making SR&ED claims, as is the case with any other service that businesses find more efficient to contract to a third party. SMEs, generally speaking, are managed by a small group of people who handle many responsibilities within the business, from R&D to sales, through to production and marketing. Tax services, which includes SR&ED, are among the first services that a firm will contract outside to a third party since consultants provide technical advice and some guarantee of quality. CME and other business associations could help the government ensure that businesses work with consultants that have a good track-record with SR&ED claims. Business associations could also work with SR&ED consultants in implementing a code of ethics, and businesses would be referred to the consultants that have adopted this code.

The expert panel also recommended that the refundable amount of SR&ED tax credit available for small companies should be reduced, while other incentives are introduced to encourage the growth and profitability of SMEs. CME totally disagrees with this recommendation. The SR&ED tax credit itself is one of the most important instruments the government has to encourage businesses to innovate, improve competitiveness and productivity, become more profitable, and grow. Finance Canada's own analysis underlines the value of the tax credit as an incentive to business growth. It makes no sense to reduce the amount of the tax credit and then rely on less effective means of encouraging business profitability. On the contrary, we strongly believe that it is preferable to provide tax credit refunds as a mechanism to boost cash flow and thereby stimulate R&D investment activity. Refundability leaves more money in the hands of businesses that invest in R&D just when they need it the most – when profits and cash flow are under pressure. In fact, our small members see the panel's proposal to limit eligibility of the tax credit to labour costs and eliminating refundability as strong disincentives to investment, innovation, and growth.

It is unfortunate that the panel did not address changes that would improve and strengthen the SR&ED tax credit system, rather than searching for ways to limit the effectiveness of the system while making only vague promises of finding other mechanisms to support business innovation. CME believes that improvements in the administration of the SR&ED system would result in substantial savings that could then be reallocated to enhancing the effectiveness of the tax credits by making them refundable. This would constitute substantial savings for business

and government alike if clear eligibility criteria were to be determined by technology advisors working with business. By making the tax credit refundable (in part if not in whole), it would be far more effective in generating cash flow for companies investing in innovative products and processes regardless of their level of profitability. It would also extend the benefits of the tax credit to subsidiaries of US companies that do not benefit from the current system because of the consolidated nature of the US corporate tax system, thus making Canada's SR&ED system a real incentive in attracting R&D investments to the country.

Instead, the panel recommended that greater reliance be placed on direct funding for business innovation rather than indirect support through the SR&ED tax credit system. CME recognizes and supports the need for well-targeted funding programs for specific innovation initiatives, whether they are undertaken on a sector wide basis to compete with other jurisdictions or provided in support of eligible productivity and innovation enhancement projects. There are many direct support programs that work well and should be enhanced. However, CME strongly disagrees with the panel's recommendation of diluting the SR&ED tax credit system. Tax credits, if administered well, are the most widely available source of support for smaller companies that frequently do not have the time or resources to apply for direct funding programs. The tax credit system is also the most efficient support mechanism to manage. CME recognizes that there are a number of problems inherent in the current administration of the SR&ED tax credit system. Our recommendation is not to dilute the tax credit in favour of direct funding programs, but to work to improve the tax credit itself. We feel that significant improvements can be made by requiring applications for the tax credit to be vetted by IRAP technology advisors to determine eligibility for tax support.

Moreover, without an adequate assessment of the efficiency and effectiveness of direct funding programs, it is difficult to agree with the panel's rationale favouring direct funding over indirect SR&ED tax credit support. We do believe that efficient and effective direct funding programs should be enhanced following an evaluation of all direct funding programs – an assessment that should include customer and bureaucratic evaluations of compliance costs and benefits.

We recognize that there is a limited funding envelope with respect to programs that directly support business innovation and that the panel was given a mandate to ensure that its recommendations were revenue neutral. However, programs in support of business innovation

are only one element of the government's overall funding envelope for innovation — more than \$14 billion annually is also provided to academic and government research institutions. We believe that these programs should also be evaluated for efficiency and effectiveness and that funding allocation decisions should be made across the entire innovation envelope.

3. Make business innovation one of the core objectives of procurement, with the supporting initiatives to achieve this objective.

**CME response:** CME fully agrees with this recommendation. The panel touches on two interesting elements of procurement, but too little to make significant changes in the way it can be used to improve innovation in Canada. The recommendation to expand the current pilot phase of the Canadian Innovation Commercialization Program, for instance, is important; but, it is not clear how the panel envisions this program playing a more significant role in making departments become the first customers of an innovative product or service, since the program — as currently designed — has no obligations or incentives to buy products. Furthermore, this program should be expanded to larger firms, which are the main performers of R&D in Canada, and which serve as customers for many smaller suppliers across the country.

CME believes that the federal government can and should play a meaningful role in using procurement as a driver of innovation. This role could be enhanced in a number of ways:

*Public procurement of R&D (or pre-commercial procurement):* This process is potentially a multi-faceted approach involving exploration, feasibility, prototyping, and commercialization. These procurements are excluded from WTO GPA. They are used when there is no off-the-shelf solution to fulfill a need, and where the government sees an opportunity to develop a new product that can be commercialized and exported successfully. Canada must take greater advantage of these processes. Other governments around the world successfully do on a regular and substantial basis, to the benefit of their industry and overall innovation performance. For example, in the aerospace and defence sectors, the procurement of fixed-wing search and rescue (FWSAR) are areas where this type of process could be implemented. In order to do it, however, government needs to favour a culture of risk-taking within its purchasing departments. It also needs to rely on a consolidated network of businesses, academic institutions,

and government research organizations that can identify upfront the areas where this process could be applied. Centres of Excellence, and the networks developed over the years in specific programs like IRAP, could play this role.

*Innovative procurement:* The process should include innovation at the core of the assessment grid used to evaluate various bids submitted. As CME has suggested in its submission, *Smart customer* is probably a more important requirement. Government should assess procurement opportunities on a full product delivery/cost opportunity basis that includes not just the selling price, but the government funds already invested in R&D. We fully support the panel's recommendation that innovation should be a stated objective of government procurement policies. The challenge will be to ensure that it is also institutionalized in government procurement practices.

*Targeted initiatives:* CME strongly believes that to be successful, targeted procurement initiatives need to be aimed at solving strategic problems for Canada, such as healthcare, the environment, energy, security, and transportation, and be structured to provide spin-off benefits through both research and product commercialization.

4. Transform the institutes of the National Research Council (NRC) into a constellation of large-scale, sectoral collaborative R&D centres involving business, the university sector, and the provinces, while transferring NRC public policy-related research activity to the appropriate federal agencies.

**CME response:** CME agrees that NRC institutes need to work collaboratively as large-scale research centres involving business, university, college, and other provincial research centres. However, the NRC brand is important and we are not convinced that an expanded national role for the institutes cannot be achieved by revising their mandates and the operations of NRC. Public policy-related research is an important role for NRC institutes and we are concerned that it will be undervalued and underfunded as part of other federal agencies and departments. Similar attempts to subsume policy-related research under relevant departments, at both federal and provincial levels, have not been successful in improving either the efficiency or the effectiveness of research programs. Separating the policy-related research role from the mandate of the institutes would furthermore eliminate a very important mechanism for technology transfer from the public to

private sector — without which much of Canada's ICT and aerospace sectors would not exist today. We recommend that the institutes should continue to perform policy-related research and that funding for this research should be provided as part of the government's contribution to the institutes, and as much as possible in support of collaborative R&D.

5. Help high-growth innovative firms access the risk capital they need through the establishment of new funds where gaps exist. Direct the Business Development Bank of Canada (BDC) to allocate a larger portion of its portfolio to start-up stage financing, preferably in the form of a sidecar fund with angel investment groups. Provide the BDC with new capital to support the development of larger-scale, later-stage venture capital funds and growth equity funds, which would specialize in deal sizes of \$10 million and above and are managed by the private sector, subject to appropriate governance practices.

**CME response:** CME agrees that successful business innovation requires access to capital throughout the product development and commercialization process. Early and late stage venture capital is both important and additional funds are required — especially for early-stage ventures. However, it is also important to understand the risks associated with increasing VC financing. The BDC is a bank, with a risk managing culture and methods that are closer to the ones of traditional banks than to angel or VC investors. Since the current budgets at BDC allocated to VC are already in deficit, the government and BDC will need to manage expectations and ensure adequate risk management processes are acceptable. As any VC investor will confirm, nine out of every ten investments will fail, and we must make sure that we agree failure is a necessary stepping-stone on the path to success. Therefore, it will be critically important to define precisely what the appropriate governance and expectations model is before BDC is tasked with an expanded VC role.

From CME's perspective, a more sophisticated approach to encouraging VC investment is required. It should, as the panel suggests, focus on all aspects of the innovation process. However, it should also deal with all factors affecting returns on investment and how VC financing is supplied. Three issues should be tackled in particular:

- i. The lack of large-scale institutional investments in VC funds;

- ii. The relatively weak intellectual property protection offered to Canadian companies; and,
- iii. The importance of technology and business clusters.

The first issue could be addressed through a government guarantee program for institutional VC portfolios investing in Canadian companies that receive public R&D support. The second could be addressed by streamlining and strengthening Canada's patenting system to provide start-up companies intellectual property protection earlier in the R&D process. The third could be addressed through a more sophisticated strategy to match the innovation requirements of large companies with the R&D and technological capabilities of smaller firms and publicly-funded research centres.

6. Establish a clear federal voice for innovation, and engage in a dialogue with the provinces to improve coordination and impact.

**CME response:** CME strongly agrees that the federal government has a leading role to play, and that coordination with provinces is essential to success. In government procurement, for example, provinces and municipalities spend more together than the federal government alone. It is especially true in sectors identified by CME in its submission. There is a unique opportunity fast approaching in 2014 with the renewal of the federal-provincial agreement on the transfer of payments or healthcare. This will be a good opportunity to elaborate core objectives and establish mechanisms as to how we can better use innovation practices to improve innovation in the healthcare sector.

The report touches on the importance of looking at business innovation from a regional perspective. It briefly mentions that regional economic development agencies could play a more important role in advising the government on how to strengthen support for regional industry clusters. For example, CME suggests the government should go a step further. The current activities of federal regional economic development agencies should be evaluated with respect to the efficiency and effectiveness of their programs and their role should be re-focused on support for business innovation.

## Missed Opportunities

It is unfortunate that the expert panel did not address all federal programs in support of innovation. By focusing on a narrow remit of funding for business innovation, the panel missed the opportunity to evaluate and improve funding models for academic and government research. None of their recommendations deal with the fundamental issue of how to generate greater economic benefits from the \$14 billion that are currently being invested in academic and public research. CME believes that funding programs for academic research should be directed to provide greater support for collaborative R&D activities with business, increasing technology transfer to Canadian businesses, and the placement of talented and skilled personnel in business. Other countries have found effective means of transferring academic research findings to businesses where they can be successfully commercialized. In Canada, best practice can be found in the Auto21 Centre of Excellence and the former Ontario Centre of Excellence, Materials and Manufacturing Ontario.

Another issue not addressed by the expert panel is the need for Canada to better reward the products of innovation. As recommended by Mark Parson, the author of the CD Howe Institute paper on SR&ED reform, a good solution to explore would be to adopt a smarter tax system for products that are a result of a patent developed in Canada. The U.K. is an interesting model. It imposes a five per cent tax on income generated by products and patents that are related to a firm's R&D completed in the U.K. In Canada, products of innovation are taxed at the same rate as any other income. CME strongly believes that this could be a very good complement to Canada's model, centered on basic and experimental research.

There is also no mention of the important role that international technology and knowledge transfer plays in business innovation within Canada. How should programs be structured to support global product research and development mandates? How can Canada's trade commissioners better support access to R&D in other countries and identify international commercialization opportunities for Canadian businesses? How should Canada's patenting process be improved? And, what support should be given to assist businesses in patenting, testing, standards certification, technology enhancement, process improvement, and market development? They are all very important aspects of the commercialization process.

## Conclusion

Canada currently has one of the most generous tax credits for R&D in the world. Some observers argue that because we are still lagging behind compared to other nations, we should restrict the accessibility of the tax credits. However, CME does not believe that reducing the benefits of a tax credit, which is widely available among all sizes of businesses, will actually improve business innovation performance, especially in the absence of a credible evaluation process that would provide the government with a means of evaluating the efficiency and effectiveness of direct funding programs.

CME recommends that the government should carry out a thorough review of all funding programs in support of innovation with a view to assessing:

- The efficiency of program administration as well as compliance requirements for applicants;
- The effectiveness of the program in supporting commercialization;
- The capacity of the program to leverage collaboration and technology transfer with business; and,
- The economic and supply chain spin-offs resulting from program delivery.

Only when that review is completed will the government have the information it requires to make an informed decision about possible gaps and appropriate program funding allocations.