

Volume 19 Number

December 6, 2012

## **Opinion Leader: Kay James, former software/IT specialist with the SR&ED program, Canada Revenue Agency**

**A different perspective on the innovation gap**

**By Kay James**

Critiques of Canada's performance in the global marketplace start from the assumption that responsibility for the innovation gap lies solely with Canadian industry, citing its low level of R&D investment and poor record of bringing inventions to market. But another factor has been affecting Canada's global ranking for private-sector R&D and stacking the deck against commercialization efforts — a definition of R&D more narrower than in most other countries. The impact is twofold. Some important areas of innovation and crucial activities that qualify as R&D in other countries are not classed as such in Canada, and are not eligible for R&D support programs. Even when R&D is carried out in these areas despite the lack of support, the spending has not been reported as R&D, making Canada's international ranking artificially low. Canada, like the rest of the OECD and most other industrialized countries, looks to the OECD's Frascati Manual as the standard for identification and classification of R&D.

The problem is that Canada's R&D model is based on the original version of the Manual, dating from 1963, while most OECD countries use the broader and more up-to-date model in the current (Sixth) edition, published in 2002. The limitations of the original model are explained in the current edition: "*The model on which the Manual was originally based was that of institutionally structured R&D in the natural sciences and engineering leading to tangible technological innovations in primary and secondary industries*".

This was the basis for Canada's first definition of "Scientific Research and Experimental Development (SR&ED) in the 1963 Income Tax Act. There have since been some changes, but the original exclusions and the academic tone have been retained. A similar definition has been used by Statistics Canada for collection of data on private sector R&D.

In contrast, the Frascati model evolved significantly over the years. It was broadened to cover previously excluded areas because, in the words of the current Manual: "*an increasing share of relevant activities draws on the social sciences and humanities, and, together with advances in computing, leads to intangible innovations in service activities and products, with a growing contribution from service industries in the business enterprise sector*".

Under this model, R&D in the knowledge-based economy and the services sector is counted as part of a country's total R&D effort; business and financial processes and management, as well as such fields as psychology, education, economics, linguistics, social media, geography, demography, and information science. Advances in those areas are recognized as R&D in many OECD countries, but not in Canada.

Another important difference is the relationship between R&D and product development. In the current OECD model, experimental development is: "*systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.*"

In Canada, work described as "drawing on existing knowledge" or "directed to producing new products" would not be accepted as SR&ED. The Canadian definition of experimental development requires the first objective to be technological advancement; experimental development is: "*systematic investigation or search that is carried out in a field of science or technology by means of experiment or analysis and that is ... work undertaken for the purpose of achieving technological advancement for the purpose of creating new, or improving existing, materials, devices, products or processes*".

While the technological advancement may ultimately lead to new or improved products, the R&D part of the development project is considered to be ended once the principle of the technological advancement has been demonstrated. Any form of product preparation is excluded. In consequence, the final phase of development is not eligible for tax credit. Although the overall level of support in Canada's SR&ED program is generous, this cut-off at a critical stage can only have a negative effect on the ability of the private sector to bring new technologies to market. As well as being broader in scope, the current OECD criteria for R&D are less formal and more business-oriented than Canada's: "*The basic criterion for distinguishing R&D from related activities is the presence in R&D of an appreciable element of novelty and the resolution of scientific and/or technological uncertainty*".

In recent years, as administration of the SR&ED program has become more structured, expectations have arisen for private-sector R&D work to include formal experimental procedures and complete evidence records. In view of this, it is scarcely surprising that less and less development work passes the test for recognition as R&D.

The effect of these differences has been to narrow the scope of support offered to private-sector R&D performers in Canada, and to exclude substantial investment in advanced development from the data used to compare Canada's performance.

Statistics Canada has taken a step towards addressing this latter issue. For the new round of data collection, which began in October, the website definition of R&D has been replaced by a version closer to the current OECD model.

While for smaller R&D performers the data are still taken from the SR&ED database, companies reporting their own R&D now have the opportunity to include more of their R&D investment, using international criteria. Until Canada's private-sector effort is being measured on the same basis as its competitors', international comparisons of R&D performance, and assessment of the relative effectiveness of support programs, cannot be considered reliable.

*Kay James is the former national software/IT sector specialist for the SR&ED Program at the Canada Revenue Agency, and former senior director SR&ED with Deloitte & Touche LLP. She can be reached at [kay.james@gmail.com](mailto:kay.james@gmail.com).*