



**“Are Canada’s Business R&D Incentives Working?”
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Conference Proceedings

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Featured Speaker, Iain Gillespie, International Trends in Industry Research Incentives
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Gillespie summarized his talk as having four main goals: an assessment of what is happening with private sector R&D in OECD countries; the key elements that foster these investments by the business community; the structure of the incentives provided for these investments, and how they develop as the business environment develops; and finally, some take-home messages for people looking at innovation policies.

Portraying the OECD as a “rich man’s club”, he pointed out that with the exception of Mexico, all OECD members are truly developed countries. Much of the organization’s new work, he added, is looking at emerging markets in places such as Brazil, Russia, India and China. With specific reference to science and innovation, one of the oldest committees in the OECD deals with this subject, carrying out various forms of analysis, trying to give advice to member governments that could help them with innovation strategies. “We try to provide a relatively safe and secure platform,” he said, “for exchange of views, analysis, data, and peer review.”

Looking at graphs of trends in R&D intensity in the OECD, it is clear that in most of these countries, intensity is growing. Nevertheless, most of this growth falls short of the targets countries are setting for themselves. It also turns out that most of this growth is coming from business, rather than public sector contributions, although these are important. And the volume of this business R&D is driven by the size of firms and the particular composition of industries within the country. This information should be carefully regarded, because countries like Finland that are highly specialized in their fields of strength score highly, but may likewise be vulnerable to disruptive changes in technology. An even more complex graph outlined the specific contribution of various industries within each country to that country’s overall R&D intensity. A final graph also considered how open each national economy is to foreign investment, and what contribution that made to business R&D. This description also raises the question of whether such openness is an important factor in driving technological competitiveness.

Gillespie then put forward the leading policy issue, how to foster greater private investment in R&D. Before addressing that question, though, he underscored the point that R&D intensity is not innovation, but merely a proxy for innovation.

“Innovation is a good idea which you develop, which you turn into a product, which you put on the market, which you sell, which you have money in the bank for, and which you’re not being sued for.”— Iain Gillespie, OECD

In this context, then, Gillespie offered familiar examples of how business investment in R&D could be encouraged, including framework conditions such as labour market flexibility, tax policy, availability of a skilled work force, and good infrastructure, both in the “hard” sense (e.g. bricks and mortar installations) and the “soft” sense (e.g. coherent intellectual property regulations). Each of these elements affects overall R&D intensity in different ways, as Gillespie showed in another graph, but the leading drive is still business investment in R&D. Public expenditures do not have anywhere near as substantial or consistent an effect, nor do regulatory measures, although they do have the ability to build investor confidence in any given market.

According to Gillespie, the framework conditions that are the most important determinants of business R&D include the reduction of anti-competitive product market regulations, lowering restrictions on foreign direct investment, maintaining stable macroeconomic conditions and stable interest rates, and availability of external financing. Innovation policies matter too, however, particularly an openness to foreign knowledge. This is a problem for Japan, which exports a great deal of knowledge but has a much harder time importing it. And because the pool of human resources available for research is invariably limited, expanding public research efforts to complement business research efforts will increase the competition for talent. This limitation is in fact becoming an increasingly critical issue for OECD countries, as heavily populated nations such as China, India, and Brazil become more prominent in the global economy. And finally, Gillespie noted that the argument for simply strengthening national IP policy does not hold up, since it can actually reduce product market competition. Instead, he argued, IP must become more flexible and adaptable to local conditions, which will then foster innovation.

Gillespie returned to the subject of support measures, noting that there is significant change afoot in this area. That change includes a reduction and focusing of effort, especially on the basis of merit or competition, in order to obtain maximum value for this investment. Likewise, there is more of an emphasis on R&D, which is not revenue generating, than on innovation, which has commercial implications. Not surprisingly, another perennial goal is to build dynamic networks and clusters. And tax credits, which are a laudable part of policy, turn out to be not as effective as providing tax relief for employees, especially in smaller companies, so that salaries can be boosted instead.

“We like to think that we see some smarter approaches to supporting innovation,” he said. “And we would like to think that these smarter approaches to supporting innovation were widespread

across the OECD countries. The short answer is that at the moment, they're not." Tax credits, for example, are still very popular. Direct support for business R&D is also popular.

For Gillespie, the larger question is how one adapts such incentives to meet the demands of a changing business environment. Those demands include shorter time-to-market, expanding technological opportunities, increased cost and risk, globalization of markets, increased labour mobility, and more demand from users. Within OECD, therefore, the outlook is shifting from a old model of "closed" innovation — driven by firms identifying necessary technological advances and conducting the relevant R&D to achieve those advances — to an emerging model of "open" innovation, characterized by new funding models, more diverse innovation drivers, acquisition of technology from elsewhere, licensing of research results.

"This is tracking what successful companies are doing anyway," he observed. "They're spinning out, they're externalizing R&D, they're globalizing R&D, they're looking at a diversity of markets, a diversity of technologies. They're trying to bring technologies together. They're not sitting still on a stagnant business model, but they're developing a business model to innovate, to continue to get good products into the marketplace that sell and don't get sued for."

This shift has a whole range of implications for innovation policies in various countries. Public sector research organizations, for instance, are hearing a call to do more of the basic research, and to make that research achieve new standards of excellence and relevance. >From the government side, there is a change from direct support to shaping the entire innovation environment. So too, is the role of IP being re-assessed and policies surrounding IP now seeking a better balance between protecting innovations and stimulating diffusion of those innovations.

As the OECD has looked for examples of the distinction between these close and open innovation strategies, they have found some countries that are on the cutting edge of this development, while others still have much to do. The lessons are clear: a growing need for connectivity, new models for handling IP and capital, networks of cooperation. In particular, he noted that although many countries are making a high priority of leveraging financing, few are looking at where that financing is supposed to be going. "If you can focus resources, if you can leverage the resources and spend them where it's going to make the difference, you can succeed in innovation terms."

That said, there are problems that go along with these changes. The definition of success becomes somewhat more elusive, as organizations tout measures ranging from amount of capital to the number of jobs created. "We still have a lack of clarity in trying to change the innovation system and the outcomes that we're trying to deliver. The specifics often are lacking." Another question is whether the policy environment is going to sustain investment. He refers back to the earlier description of a "virtuous cycle of innovation", which is exactly what the OECD is seeking. "It's a dynamic, evolving, living system, and it's not the way most policies address innovation. We're still stuck largely in this linear progression, and it just doesn't reflect the reality of the way the business world goes about doing their work."

For Gillespie, this leaves us with some open questions about policy frameworks, the creation of knowledge markets, and where the vision and leadership reside in the country. He praises Canada's ability to punch above its weight, which bodes well for the prospect of leveraging innovation in the marketplace. Nevertheless, such potential has to be harnessed, directed, concentrated, and focused. Meanwhile, at the OECD level, the organization can help countries think about these issues in larger terms, and use that thinking to promote change. The reality, though is that everyone believes that innovation is going to be a key driver of growth, and can help deal with other challenges, such as climate change or the delivery of health care. And yet, government actions anywhere based on such a progressive outlook are few and far between. Given the complexities of trying to determine such actions, then, the OECD is drafting a generic innovation policy for its members, which will provide a base for individual countries to assess how they should move forward.

“But it doesn't mean anything without the input and the foresight from governments and colleagues and countries. Don't sit there — innovate.”— Iain Gillespie, OECD

A questioner asked for some clarification about the role of the IP system, and in particular what disruptive effects the US IP system might be having in the marketplace. Gillespie says the US system does not have the relevance it once did, since it is largely devoted to protect a great deal of IP that has little utility. If the IP system is not aimed at getting IP into the marketplace, the policy question is how to overcome this dilemma, and whether patenting can work in other ways.

Another questioner characterized the OECD countries as representative of the “old economy”, whose proportion of the global GDP is going down, and asked what they should do to address that. Gillespie responded by noting that the way in which these new, non-OECD countries are going to behave in the way the OECD countries have done in the past. Without attempting to answer the very difficult question of how to re-shape the international economic order, he simply noted that OECD members had to remain fleet-footed, so they can cope with the new approaches that are bound to define the emerging global economy.