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Chair

Mr. James Rajotte

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● (1110)

[*English*]

The Chair (Mr. James Rajotte (Edmonton—Leduc, CPC)): We'll call this meeting to order, the 31st meeting of the Standing Committee on Industry, Science and Technology.

We are beginning today our study pursuant to Standing Order 108 (2), a study of Canadian science and technology. It's very exciting. All members of the committee are looking forward to it, and I know that many Canadians across this country have written to me and to the clerk and are looking forward to this study.

We have with us today two officials from Industry Canada.

We have, first of all, someone who's been here many times. We have the deputy minister, Mr. Richard Dicerni. Welcome, Mr. Dicerni.

And we have the director general of the Portfolio and Coordination Branch. We have Mr. Iain Stewart, who's an expert on science and technology within the department.

Mr. Dicerni, are you starting with the opening statement? I'll give two minutes between the two of you, if that's okay.

Mr. Richard Dicerni (Deputy Minister, Department of Industry): Okay. I'm glad to be here. I'm looking forward to answering your questions.

[*Translation*]

I am going to give the floor to Mr. Stewart, Director General in the Department of Industry. On the administrative front, his hand has guided the Science and Technology Strategy. He has prepared a document that has been distributed to you. I feel that he will be able to make a contribution to your deliberations today.

[*English*]

With that, I'll turn it over to Iain, who was, as I said, at the bureaucratic level, the guiding light in preparing the science and technology strategy.

Go ahead, Iain.

Mr. Iain Stewart (Director General, Portfolio and Coordination Branch, Department of Industry): Thank you, sir.

Good morning, and thank you for having us. I understand I have about five minutes. It's a 106-page document, but there are short versions and longer versions, if you're interested.

My remarks have been distributed, so you have them. What I'll do is go through them as quickly as I can and hit the high points.

The S and T strategy provides a multi-year framework to guide the government's approach to science and technology, with the objective of guiding science and technology to create a long-term sustainable economic advantage for Canadians. As a result, it's a guide for how the government invests in S and T as well.

So the remarks I've provided for you set out that multi-year S and T framework, its objectives, the advantages it seeks to create, and the guiding principles. Then my remarks identify a few of the initiatives undertaken, for instance, in Budget 2006 and Budget 2007, to populate these advantages or to achieve the objective of the strategy.

So just to go through this very quickly, as I mentioned, the overall objective of the S and T strategy is to build a national competitive advantage based on science and technology. The structure of the strategy and the objectives set out in the strategy flow from a diagnosis of what are the Canadian challenges, what is the situation at a very high level. In this page, I've captured them here. They're set out in much greater length, of course, in the S and T strategy.

First of all, the single most important theatre for research and innovation in Canada is the private sector. About 54% of all R and D in Canada happens in the private sector. Although that sounds like a lot, it's actually less than in competitor countries. The OECD average for research and development performed by the private sector is actually about 68%. So one of the key objectives of the S and T strategy is to create an environment in which Canadian companies compete on the basis of innovation and therefore invest in R and D in science and technology.

Secondly, one of the key things that we determined in our analysis leading up to the strategy was that Canada has a very strong university and public R and D base. Our universities and colleges across the country are very good. However, we don't always achieve the levels of excellence we should. Given how much the Government of Canada and governments across the country invest in R and D in the private sector, but also in the public sector and the university system, we would expect to be excellent in a number of areas to the advantage of Canada, and that is an important element of the strategy flowing from this diagnosis.

Lastly, in the same way, we have a very well-educated workforce. If you look at OECD, Canada has the most educated workforce of any country with respect to tertiary education. However, if you look at advanced degrees that are important to research and innovation, like Ph.D.s, our performance is much weaker.

So the three things this strategy sets out to do become the advantages, and you'll see those set out starting on page 3. All of the actions intended to build these three advantages that speak to those challenges are guided by four core priorities—and they're also set out on page 3.

The core priorities include promoting world-class excellence; everything the government is doing should be driving to encourage Canadian researchers to achieve excellence in their activities. Given that the Government of Canada needs to work with the universities and private sector to achieve these objectives, another major principle of the strategy is that things should be done in partnership, through collaborative approaches. Also, the government is focusing resources and energy and activity in the research community in priority areas, so that we achieve those levels of excellence in the areas that are important to Canada's long-term future. And the last priority is accountability, so that we're seeing results and the system we're supporting is responsive to the needs of Canadians—civil society, more generally—and not just academic research happening in an ivory tower.

The first of the three advantages is an entrepreneurial advantage. So if Canadian businesses tend to use innovation as a competitive strategy less than their competitors do in other countries, we need to create an environment in which they wish to compete on the basis of innovation.

For those companies that do want to compete on the basis of innovation, we need to ensure that the government is supporting collaborative R and D approaches, so that the firms that want to be innovators and to be excellent in their business area can access the very strong public resource we have through the universities and colleges and their faculties and students.

Also, where government is intervening to encourage an entrepreneurial advantage, where government is doing direct activities, we need to ensure that we're doing it effectively, that we're achieving results and our programs are working together.

One of the initiatives we highlight in the S and T strategy in that regard is a collaborative dialogue among the NRC, NSERC, and BDC—three entities that are all supporting different aspects of research and innovation—so that they're working together to support their clients.

So those initiatives are there to create an entrepreneurial advantage.

● (1115)

The second big advantage is this knowledge advantage, which is about focusing resources in areas that are important to Canada's long-term base, but doing so on a healthy discovery base of research. So the Government of Canada is supporting researchers across the country to pursue excellence in their field, and we are also at the same time identifying some areas where Canada could be truly excellent.

The S and T strategy sets out four priority areas in that regard. The environment is number one. Natural resources and energy is the second area. The third area is health and related sciences. The fourth area is ICTs, where we've had a strong research community for many years. So there is that idea of building a critical mass.

A third advantage is around this people advantage, and that's encouraging young Canadians to want to be interested in being part of the research community. Secondly, it's ensuring that they have adequate support in order to participate in graduate research through scholarships. Lastly, we're bridging those young people who are interested in joining the research community over into the private sector or into areas where they can apply their expertise.

The last general section of the S and T strategy is around some of the important things that are not necessarily directly linked to any one of these three advantages, but nonetheless are crucial to having a well-performing government support for the innovation system.

One of those areas that's talked about in particular is the importance of ensuring effective, high-level, comprehensive science advice. So the S and T strategy set out the objective of consolidating various bodies that were each handling individual slices of science advice into one body that would speak to basic research through to commercialization...across all discipline lines involving researchers and research experts from academia, the private sector, government, and just the research community—Canada research chairs, for instance, end up being on this body—and that, of course, is the Science, Technology and Innovation Council that was created as a result of the strategy by Minister Prentice.

In each of these areas there are examples of budget initiatives that were taken to make these things happen. My remarks include them. Under each of the three advantages there are examples, so I will just pick a couple. If you're going to create an environment that encourages people to invest and compete on the basis of innovation, you have to ensure we have a competitive market. The government created a competition panel to look at how competitive the Canadian market is. What could be done to improve competitive intensity, which we know from economics results in innovation?

The SR and ED tax credit is the single-biggest program the government runs. Last year it was about $4 billion in deferred income for the treasury. Is that program achieving the impacts it could? The Department of Finance did a review of that, and through the budget, Minister Flaherty announced changes to improve its impact, particularly for small companies, which are the innovators quite often that grow. So additional changes were focused on that client community.

If you want companies to invest in innovation, they can perform it themselves, such as being supported by the SR and ED tax credit, or they can also buy the latest technologies and equipment from abroad. The changes to the capital cost allowance that were made in particular were important in that regard.

Other things were done to improve venture capital. The last budget created a $75 million contribution towards the establishment of a larger fund by the Business Development Bank. Those are all done to improve the competitive environment that would encourage this entrepreneurial advantage.

With respect to the knowledge advantage, significant investments were made in Budget 2007 and Budget 2008 in support of the knowledge advantage. There was $510 million for the CFI, new money for the granting councils, etc. That's in support of those objectives.

Lastly, on the people advantage, it has encouraged young people to be involved in this area through the provision of new funding for scholarships. So the Canada graduate scholarships program has gotten larger. As well, new flagship programs, as announced in the last budget, like the Vanier scholarship program, will focus on the best and the brightest in the world. Also, there is a new Canada excellence research chairs program to concentrate resources for world-leading researchers in Canada to achieve international excellence in the results of their work.

I'll stop there, sir.

● (1120)

The Chair: Thank you very much, Mr. Stewart and Mr. Dicerni.

We'll start with questions from members. The first round will be six minutes, and we'll start with Mr. McTeague, please.

Hon. Dan McTeague (Pickering—Scarborough East, Lib.): Chair, thank you.

Mr. Dicerni, Mr. Stewart, thank you for that broad-brush overview. This committee is of course interested in tackling an issue that has not been treated, and we would like obviously to deal with the science and technology side of our mandate here as a committee.

I have a few questions dealing with the perception and perhaps the conflicts that often arise among provincial strategies on science and technology. Do you find your department is at odds with the provinces or that we work sometimes at cross-purposes with their strategies? Or is there a better form of coordination to ensure that at the end of the day, at the end of the line, new ideas are not just made and encouraged and developed in Canada, but they're also commercialized around the world?

Mr. Richard Dicerni: We are trying to work with the provinces in a number of ways. In this particular area of science and technology, shall we say, as compared to other areas of the department, one size definitely does not fit all. Different provinces have different infrastructure in place, if you look at Alberta, Quebec, Ontario, or B.C.

The second point I would make is that when you use the term “coordination”, coordination does not necessarily come easily in this particular sector, partly because both governments deal with third-party instruments. That would be the NRC and our granting councils. Provincial governments have similar institutions, which are at arm's length from actual decision-making.

The third point I would make is that a lot of the research is indeed discovery research. If you look at some of the foundation research that takes place in universities and so forth, it is bottom up; it is by researchers. So in some respects, it runs counter to the concept of explicit federal-provincial consultations.

I will ask my colleague if he has anything to add. We have ongoing discussions with a number of provinces on a bilateral basis. Iain was recently meeting with his Ontario colleagues in regard to certain areas, shall we say, in the auto sector, where there is an interest on the part of government—it was flagged in the budget—to pursue further R and D collaboration.

So within the parameters I've outlined, we do seek to work with provincial governments.

With respect to that one last thing, in the Atlantic provinces we try to work through ACOA, since they have an Atlantic Innovation Fund.

Hon. Dan McTeague: Thank you.

Mr. Stewart, I don't know if you want to add anything, but I have a couple of questions in that vain. Go ahead if you wish.

Mr. Iain Stewart: The only thing I would add to that is that if you read the provincial strategies on science, technology, and innovation and how they end up labelling them, there's actually a broad consensus among them about the kinds of challenges and the kinds of solutions. So the community is working within a very shared sense of the approach.

Hon. Dan McTeague: On the subject of coordination, not just with the provinces but interdepartmentally, if I'm talking about new technologies, and it happens to be an environmental technology, and I want this commercialized, is Industry Canada taking the lead? Is Environment taking the lead? Is Natural Resources taking the lead? It seems that there may be some confusion as to who actually leads, disregarding the fact that science and technology falls under us. Quite often, if I'm applying for a particular program, I may have some confusion in dealing with one department versus the other. Is there a magic formula? Is there one department that speaks for all?

Mr. Richard Dicerni: No, is the short answer, because of the number of institutions. For example, the NRC has a very good program, the IRAP program, which seeks to bridge research and the marketplace. The Business Development Bank also has some involvement through its venture capital operations. NSERC also has a partnership fund. As Iain was saying, we've asked those three entities to pool their resources, both on-site and at a strategic level, to pursue more outcomes related to commercialization.

● (1125)

Hon. Dan McTeague: Having spent a bit of time in Foreign Affairs, it struck me that many people who have made inroads very successfully will go to a country that may have some difficulty, as an example, with pollution. We find that EDC might be willing to help develop strategically or to finance. Are we in fact working with the Department of Foreign Affairs and International Trade to export our products so that products can be guaranteed to be sold around the world, thereby making point and purpose of our commercialization efforts here?

As well, I haven't heard any comment here with respect to the role of basic research, pure research, the kind of stuff that doesn't have outcomes but is nevertheless important. I think with the help of the chair we'll be able to see that in the next couple of weeks.

Mr. Richard Dicerni: I referred to fundamental research that does not lend itself to coordination. One puts out a certain amount of funding that on a peer-reviewed basis seeks to recognize and support those who are the best with regard to an excellence-based outcome. So a large chunk of the funding the granting councils provide is for what I would call discovery research or pure research.

Hon. Dan McTeague: Thank you.

The Chair: I think, Mr. Dicerni, you would want to clarify your answer and say that Industry, of course, is the architectonic department of all departments.

I'm just kidding.

Mr. Richard Dicerni: No, sir, I would like for the record to note that we at the Department of Industry drink regularly from the fountain of humility, and it would be beyond our pay grade to assume this mandate.

The Chair: Okay. Thank you.

Madame Brunelle, s'il vous plaît.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Good morning, gentlemen. It is a pleasure to meet you. I would like to talk a little about funding for research and development.

Mr. Stewart, you told us that, since 1997, this area has been well funded, even spectacularly, I gather. On the other hand, I was reading that the vibrancy of research and development is often calculated as a ratio of the GDP. In those terms, Canada's ratio of research and development to GDP is below the average among OECD countries. It has been 2% for the last five years.

Yet we see that, in a comparison of tax credit rates in 36 countries, Canada's is third highest for research and development. So that is a strong point.

Are the government's efforts enough? If so, are they beginning to bear fruit? The figures seem quite spectacular, but we know that research and development are really very important, the heart of the matter.

We know that the European Union spends a great deal on research and development, even with major international projects. The countries of Europe are at the same level as the United States. Is it your impression that the government's efforts are enough?

Mr. Richard Dicerni: The average you cited, as a percentage of the gross domestic product, is the sum of both governmental and private sector efforts. That is why we are in the middle of the pack.

But if you consider government investments in research and development, you see that Canada is performing at Olympic level, we are in the three or four top countries. The country's performance comes down because private sector investment is modest compared to what goes on elsewhere.

So we asked an independent group, the Council of Canadian Academies, to look into why this is the case, to study the matter in depth and, once and for all, to find out why the private sector in Canada invests comparatively much less than other countries.

You also asked if the investments provide us with anything: is investment worth the trouble? First, investments need time to pay off; we cannot expect immediate results from attracting great minds to university chairs, from awarding scholarships and so on. It takes time before it all starts to work.

Yet we no longer talk about a brain drain, about bright people leaving the country, because we now have interesting challenges for them. We are going to continue to see benefits in the years to come, but it is a constant challenge, a daily challenge.

● (1130)

Ms. Paule Brunelle: Do you have an idea of what has to be done? Mr. Stewart, you told us that only 50% of research is funded by the private sector and confirmed that the percentage is much higher elsewhere.

Do we have a way of getting the private sector interested? Is it just a fact of life in the marketplace that, if we really invest in high tech —because if we are to be competitive these days and really do business, it has to be in the knowledge industry—the returns do not come naturally?

As for the best researchers, I had a brief discussion with the people at Genome Canada, among others, and I was amazed to find out how much you have to pay these top researchers, up to a million dollars a year and more. If we do not have people like this, all our research suffers because it is they who put us in the spotlight and allow us to position ourselves better.

I wonder whether Canada has enough of what it takes or whether we should form some kind of bigger association with the United States. Is it conceivable to do a bit like the European Union is doing, where several countries get together to try to get international level researchers? I wonder whether we are in the race.

Mr. Richard Dicerni: I would say yes, and I would point out the projects in the last budget.

The Chairs for Research Excellence for a total of $10 million, announced in the budget, is real money. It is also very competitive.

As well, the Vanier Scholarships, valued at $50,000, will also allow us to attract first-rate post-doctoral students. In candidate quality, these scholarships will rival the Fulbright and Rhodes scholarships and so on. The objective is to attract both professors and students. When I say students, I mean people who have finished their PhDs.

You mentioned collaboration with the United States. This is already being done on a number of fronts. Specifically, there is an excellent project that brings together researchers from Canada and California.

As to private sector participation, you said earlier that, by population, our tax credit rate was ranked third in significance. In that respect, the government is doing all that it has to do with the tools it has.

I draw your attention to a speech by Red Wilson a few weeks ago. It dealt with the importance of making it easier for the university world and the business world to come together. A number of other experts have dealt with the same subject. Mr. Bachand also spoke about it in Quebec. Mr. Wilson heads the group studying the laws that govern competition. In his speech, he highlighted the importance, in a country like Canada, of encouraging as much as possible a better dialogue between the private sector and the universities. We are going to work on it.

The Chair: Right. Thank you.

Ms. Paule Brunelle: Do I have any time left?

The Chair: No.

Ms. Paule Brunelle: Pity. My best question was coming up.

[*English*]

The Chair: *Merci, madame Brunelle*.

We'll go now to Mr. Carrie, please.

● (1135)

Mr. Colin Carrie (Oshawa, CPC): Thank you very much, Mr. Chair.

I want to say, actually, how proud I am of you gentlemen for the work you're doing with Industry Canada and how proud I am to be associated with Industry Canada. I actually had the opportunity to go out to speak to the research community about how well received this science and technology strategy is.

Mr. Stewart, you talked about how we have this sustainable economic strategy, multi-year. Other governments in the past, and I think everybody's guilty, has been pouring a lot of money into it without a rudder, so this strategy has been received very, very well.

You touched on some of the issues we hear out in the field, like some of the problems with venture capital. You mentioned the EDC getting $75 million in the budget. You touched on commercialization. Now that the government has unveiled the overall science and technology strategy, I was wondering if you could comment on how the government is successfully implementing the science and technology strategy, kind of putting the meat on the bones of this strategy.

I will let you know, Mr. Chair, that I will be splitting my time with Mr. Stanton.

Mr. Iain Stewart: Thank you very much.

The way in which this strategy is being made real is through a series of initiatives that have been announced in Budgets 2007 and 2008, and presumably as a multi-year framework it will continue to steer against those three advantages.

In total, the past two budgets have announced about $2.3 billion of initiatives that support these advantages. It's being made real as the government's long-term plan through these specific actions in the advantages I was trying to touch on a little bit earlier.

It's also a whole of government activity. Within the government there is a mechanism for coordinating a science and technology activity; it's an ADM committee on science and technology that includes all departments and agencies that have an interest in this area. It was tasked through the science and technology strategy to coordinate this activity, to engage Environment Canada, Health Canada, International Trade, the granting councils, all the players. So that group is overseeing the policy commitments within the strategy and the progress against them.

Mr. Colin Carrie: Is that external?

Mr. Iain Stewart: That's an external advisory council that is providing advice from that whole of government perspective, as you identify. The committee I'm referring to is an internal government committee to coordinate the science and technology strategy delivery. It's the responsibility of an ADM committee on science and technology against those policy commitments, so it's related but a different entity.

Mr. Colin Carrie: Thank you.

The Chair: Mr. Stanton, you have about three and a half minutes.

Mr. Bruce Stanton (Simcoe North, CPC): Thank you, Mr. Chair.

Continuing in a similar vein, while we were undertaking our study of the service sector, we learned from a couple of witnesses—I can't remember their names—that on this question of Canada's performance, particularly in the area of engaging the business community in research, Canada has not been nearly as successful in seeing business' share of overall research, as compared, say, to the OECD. I think we rank at about 54%, and the norm in the OECD is around 68%.

I wonder if you could mention what components of our strategy are really aimed at mobilizing the business community more effectively.

Mr. Iain Stewart: The most important aspect of the strategy that speaks to that is right up front, and it's about getting the right business environment so that companies want to be innovators, so that you're encouraging companies to invest in R and D and bring innovations to market.

As we understand it, from the literature and from practice, it comes down to ensuring we have a competitive marketplace.

Mr. Dicerni was referring to the fact that we have a panel out there that's looking at the extent to which the Canadian marketplace is a competitive marketplace, that's encouraging the stimulation of innovation, and secondly, that we have a climate for those companies that want to be innovators that encourages them to invest in innovation. The SR and ED tax credit, as was mentioned, is one of the most generous tax credits available within the OECD. It's a very large program. It's the single largest program the government has to encourage R and D in Canada. That competitive environment and an environment that's conducive to investment in R and D are critical.

But then when you get the companies that need special expertise, that want to have the brightest young minds brought into their company to become part of their business line and part of their team, you need to have bridging mechanisms. It's hard for companies to know where to find the expert in a certain area who could really help them with their business strategy, and so on.

So there are some programs around that. On the private sector side we have IRAP, the industrial research assistance program. It has about 260 points of service across the country, and it's meant to work with companies to help them with their technology development plans so they're able to bring their new ideas to market.

If a company wants to connect with the university research community, Budget 2007 created a number of interesting programs in that regard. The centres of excellence for commercialization and research have so far created 18 centres across the country.

There is the business-led networks of centres of excellence. It's a bit of a mouthful. That brings together a consortia of companies that want to work with the universities around a shared technological problem. It could be something that companies have on their 10-year horizon, so it's a little too out there for their short-term commercial needs. But as a group, as a consortium, they can share their resources with the university network around what they need to solve for their collective competitiveness 10 years out.

So there are those kinds of bridging mechanisms.

Those internships for young students are very important. Budget 2007 put out 1,000 internships a year so that people in a graduate program doing research of some kind or another can be supported to go and work with a company for a term or two to learn from their perspective how R and D happens in the private sector, but also to bring the new ideas and technologies into those companies so that technology transfer happens on legs and these young people come in with the latest ideas from the fields they're studying.

Those are some of the mix of things in the strategy around encouraging commercialization.

● (1140)

Mr. Bruce Stanton: Thank you very much. It's great to have you here today.

The Chair: Thank you very much, Mr. Stanton.

We'll go to Ms. Nash, please.

Ms. Peggy Nash (Parkdale—High Park, NDP): Thank you, Mr. Chair.

Good morning to the witnesses from Industry Canada. It's a pleasure to see you again, and it's great to finally be starting our study on science and technology.

I have a couple of general questions, but I want to ask you a specific question, Mr. Stewart, about the tax credits that Canada is offering. You said that our current program of tax credits is the single largest tax credit in the OECD.

Do you think we need to expand that tax credit, or is it already doing its job as it is?

Mr. Richard Dicerni: The Department of Finance, in the previous budget, said they would look at it, so they had a series of consultations about the tax credit. They talked to a number of folks about it and I think made some small modifications to it.

Iain can add to that, but the holder of that public policy instrument is the Department of Finance, given that it's a tax measure. In the context of your committee's work, you might want to invite somebody from the Department of Finance to come and talk specifically about the tax credit.

Ms. Peggy Nash: I guess my question is, if it's the largest of the OECD—

Mr. Iain Stewart: One of.

Ms. Peggy Nash: Okay. You said it's the single largest tax credit —

Mr. Iain Stewart: It's the single largest Government of Canada program. That $4 billion a year is larger than other government programs to support innovation in Canada.

Ms. Peggy Nash: All right. Thank you for clarifying that. I thought what we were offering was more generous, dollar for dollar, than—

Mr. Richard Dicerni: If you take all of the granting council support, it doesn't add up to the tax credit as a government expenditure. You can have direct expenditures and tax expenditures.

Ms. Peggy Nash: Yes, of course.

So on a policy level, then, is this our most effective tool, or are there other kinds of tools around taxation that we should be looking at?

Mr. Richard Dicerni: The feedback we get from various people is that in a basket of public policy instruments ranging from the NRC's IRAP to the work of the granting councils, to the venture capital that the Business Development Bank has to bridge products to the marketplace, tax credit does play a significant role in that basket, but you need to have all the other elements to make it work.

Mr. Iain Stewart: Absolutely, it's a mix. Different businesses have different needs. Most businesses benefit from the SR and ED program. It's very popular. But there are these other initiatives as well that play important roles.

Ms. Peggy Nash: How do we measure how well we're doing? We see some of the fruits of our innovation, such as the successful launch of the Radarsat-2 satellite, Dextre, robotics. We see companies that are very successful, such as RIM, and we say, yes, this is good Canadian innovation. But how do we measure how well we are doing and how we stack up compared to other countries?

● (1145)

Mr. Richard Dicerni: I think that's a very good area or question to explore, and many other countries struggle with a similar question; that is, what are the indicators, what are the metrics you could use?

Where we've ended up is that if you want to get a sense of the effectiveness or usefulness of your investment, you have to look at a basket of indicators—for example, citations per capita. If you're looking at the pure research part, how many of our Canadian researchers get citations? At the other end, how many patents per capita get produced?

The U.K. is going down the same path of having a multiplicity of indicators.

I don't have one specific one, because as you were alluding to, there are a number of inputs.

If you recall, in the context of your study, people from Genome Canada, which the government has been funding quite significantly, have their own set of performance measurements.

So what we prefer to do is look at a basket of indicators and take stock, but there's no equivalent of GDP or inflation, that you measure inflation in the following way. There's no equivalent single metric. I think most OECD countries are working on this.

The last point on that is that I believe—Iain, you were closer to this—the OECD as a secretariat is indeed looking at this, was working on the project factoring in how different countries went about measuring effectiveness of investment. Where are they at?

Mr. Iain Stewart: It's an international endeavour to try to answer that question. The OECD is leading that exercise and we're participating.

The Chair: Thank you.

We'll go to Mr. Simard, please.

Hon. Raymond Simard (Saint Boniface, Lib.): Thank you very much, Mr. Chair.

Welcome, gentlemen. It's very nice to have you here.

I have three very different questions that I hope you can answer, and if you can't directly, I'd like to get your feedback on some of these issues.

The first one is on centres of excellence. I know it's referred to in here. I understand the synergies behind them and I understand the whole philosophy behind them, but we seem to be finding, in a lot of cases, that money draws money. So you end up with four or five big universities in Canada, such as UBC or the University of Toronto, getting most of the money for research and development, and the disparity between these universities and other universities seems to be increasing.

Do you have any feedback on that? Is there any way we can rectify that? Or does that really exist, in your mind?

Mr. Richard Dicerni: I have two comments.

One, we do try to emphasize the peer review part of it, whereby these are identified on the basis of competition and reviews by other people who identify the best.

Secondly, with a view to diversifying that, we did establish a private sector advisory board to complement, if you will, the academic peer review, to say where we could get the best bang for the R and D investment.

The last thing I would say is that in the government, if you look at the panoply of instruments, granting councils are definitely one and the NRC also supports research. They have a number of clusters that are spread across the country. So I think you have to look at the broad base of instruments the government uses.

But on your specific point on centres of excellence, we do tend to privilege peer review to draw out the best.

Hon. Raymond Simard: We have indicated here that we have established a strategic aerospace and defence initiative. A little higher than that we talk about a review we've launched of Canada's competition policy. I'd like us to be aware of a few things.

For instance, there's a company in Winnipeg that apparently builds world-class satellites. Their difficulty is that they're competing with a British company that is heavily subsidized by the government, which allows those people to apparently build five or six satellites at one time, therefore reducing the unit cost of the satellites. Then, down the road, Canada is buying satellites and the Winnipeg people are having to compete with the European satellites. Inevitably, Canada buys the European satellites. I've been hearing this a lot lately, and there's a huge concern.

Will the review of Canada's competition policy consider some of these issues?

● (1150)

Mr. Richard Dicerni: You raised two issues.

One is strategic aerospace and defence initiatives. This program is administered by the Department of Industry and is focused very much on the aerospace industry to identify partnership opportunities for Canadian companies to work with government to bring new products to market. It is focused on the aerospace sector.

In terms of the competition panel you referred to, which is led by Wilson, they have a fairly broad mandate. It is initially focused on two pieces of existing legislation, the Competition Act and the Investment Canada Act. Secondly, they look at other sectoral restrictions that preclude investments in key sectors; and thirdly, they look at all other government types of policies and programs that may negatively impact on Canada's competitiveness.

Hon. Raymond Simard: So this kind of situation would be looked at in that review.

Thank you.

My third question is with regard to federal funding on R and D. Again, this is something we hear about a lot. The federal government has funded R and D for a long time—the people and labs, for instance—but does not fund the operating costs, for instance, the electricity, the water and the day-to-day stuff. We're finding that a lot of very bright people are spending a lot of energy trying to find the money to operate on a daily basis. As a matter of fact, we're losing people because of that frustration.

Are there any thoughts on whether we should change our policy on that? What can be done with regard to that?

Mr. Richard Dicerni: I have two points.

One, provincial governments do have the primary responsibility for the electricity, water, rent, and that type of stuff. I'm somewhat familiar with this, having been a former deputy minister of education and post-secondary....

Secondly, the federal government does have a program, which is delivered through the Social Sciences and Humanities Research Council. It is an indirect cost program, which I think is about $325 million this year. That goes to universities to provide some support for what is referred to as the indirect costs of research.

Hon. Raymond Simard: What is that called?

Mr. Richard Dicerni: The indirect costs program.

When you have Chad Gaffield next week, or whenever, he's the president of SSHRC and that particular federal program is delivered through his granting council.

The Chair: Thank you, Mr. Simard.

We'll go to Mr. Van Kesteren, please.

Mr. Dave Van Kesteren (Chatham-Kent—Essex, CPC): Thank you, Mr. Chair.

Thank you for appearing again. It's good to see you again, sir.

I want to talk to you about STIC and the influence government has on it and what influence STIC has on government. I understand that STIC will be reporting annually. I'm wondering if you could talk to me about the advice to government and how it works. Talk to us a little bit about STIC.

I'm splitting my time with Mr. Arthur.

The Chair: It's the science advisory council.

Mr. Richard Dicerni: I've been around governments for a number of years. What has struck me is that governments at different points in time get advice in different ways. Sometimes they institutionalize advice by salvaging something within the bureaucracy and sometimes they go outside.

Recently I did a paper, and it got me to read the Glassco report. I noted that there was a fundamental chapter, the first chapter ever written on this, and you might, Mr. Chair, take a look at it. I think it was chapter 22 or 23 of Glassco. It was the first time anybody had looked at S and T. In particular, there was a recommendation to establish a science and technology advisory council, bringing people from the private sector, from universities, from government together in an integrated manner to give advice to government. So in some ways the genesis of STIC is 50 years old.

Secondly, we are quite proud, because it is a really good cross-section of people from the private sector and from academia—both academia from the research perspective, because there are some people who have research as their day-to-day job, or administrators, i.e. university presidents. You have people who actually use research in their day-to-day lives. I think it's a good cross-section.

In regard to who gives advice to whom, who listens, I think it's a two-way exchange. I've said to people in STIC that they give advice, but like any advice that flows within a university environment, it has to be peer reviewed. It has to be peer reviewed by other ministers, other departments. So you give advice, governments feed back and forth, you exchange, and on that basis, I think a good product comes out.

They are involved in a number of ways on an ongoing basis to give advice on things that are topical, but they also take a longer-term perspective, i.e. the state of R and D and S and T in the country—not just the Department of Industry, not just Government of Canada, but broadly speaking as a country. How do we stack up? How can we improve? What are things we should change?

I think the committee membership is very good; the interaction with the minister is quite good. The minister meets with them on an ongoing basis—he has had three or four meetings with them—and I think the value is the interactive part of it.

● (1155)

The Chair: You still have about a minute and a half, Mr. Arthur, or you could take the spot after Mr. Vincent. It's up to you.

Mr. Dave Van Kesteren: I have one more question. As I was reading through the CCA report I saw that there were four areas identified, and those are the four areas that were specifically chosen to be addressed.

The other area that we have found in our study that we're very strong on is banking. I'm curious why we didn't choose that. I understand that science and technology.... There may be those who would argue that there really isn't any room for that, but I would argue, in regard to what's happened in the States, that good science and research could have prevented some of those things.

I'm curious to know why we didn't move in those areas as well.

Mr. Richard Dicerni: What's happened in the States is a terrain where prudent bureaucrats dare not venture.

In regard to how we went about picking those four sectors, we had requested the Council of Canadian Academies to do a broad sweep across the country to truly identify where we have research excellence, what the strengths are. They had a grid, and they produced report—which we could share with your committee—that I thought was quite comprehensive in describing where Canada was known to have excellence, where Canada was known to have strengths.

We used that as a platform to start with. That was the reason. You have to start somewhere, and that's where we started.

The Chair: Thank you, Mr. Van Kesteren.

Members, just for a point of information, we are at twelve noon.

Mr. Dicerni, I know you have a flight at one, but you indicated that Mr. Stewart could stay. As long as you can stay, you're certainly welcome to, but if you do have to go—

Mr. Richard Dicerni: As I said to you, Mr. Chairman, I'm quite prepared to come back on any point the committee would like to pursue.

The Chair: We did start a few minutes late. We have Monsieur Vincent, Monsieur Arthur, Mr. Eyking, and me. Hopefully we'll finish within 20 minutes. Then we will go in camera, members, for our committee business.

We'll go now to Monsieur Vincent.

[*Translation*]

Mr. Robert Vincent (Shefford, BQ): Thank you, Mr. Chair.

Earlier, you talked about intellectual property. In recent weeks, the events surrounding the sale of MDA have arisen as an issue. Do you believe that, when the Canadian government invests in companies, it will keep or acquire the intellectual property associated with research and development?

We must not put ourselves into that kind of situation again, that is, selling the intellectual property of companies in which Canadians' money has been invested. Given that we were almost caught out, have you considered establishing priorities, or more specific measures that would keep our intellectual property in Canada?

● (1200)

Mr. Richard Dicerni: When we are dealing with intellectual property, we have to ask ourselves whose it is. In pure research, it varies greatly among universities and among researchers. It is often specifically included in collective agreements between researchers and universities. It varies a lot from country to country. I do not feel that there is one universal, specific answer on intellectual property.

Mr. Robert Vincent: I seem to remember reading somewhere that intellectual property in a university setting remains the property of the institution. Is that the case?

Mr. Richard Dicerni: That is what varies greatly among universities and depends on the negotiations that unions and researchers have had. There is one arrangement at Waterloo University, another at the Université de Sherbrooke, and yet another at the University of Calgary.

In the United Sates, at Stanford University, for example, intellectual property completely belongs to the researchers.The university does not get involved because it gets its investments back indirectly. But it is true that the private sector in the States is much more likely to invest in universities. It really varies a great deal and there is no one national system.

As to dealings with companies, these are partnership agreements. When the government invested in RIM as part of the IRAP-TPC program—I cannot remember when that was—the company had to pay royalties. That is how most partnership projects work in the program that replaced IRAP-TPC, in aeronautics certainly.

In these partnership agreements, the government puts in a certain amount and expects to receive royalties when the program is up and running. That does not happen in all cases.

In fact, if projects were guaranteed to be successful, companies could go to the banks for loans. People come to see us when their project has an element of risk. That is why they pay us when the investment is up on its feet.

To answer Ms. Brunelle's question, I said earlier that a product needs five or six years of investments before it can be put on the market and sold. In the case of MDA, we are talking about a decision made by the government at the end of the 1990s, I believe, and with very specific parameters. So it varies somewhat. Each situation is in some ways a case unto itself.

Mr. Robert Vincent: I understand, but we cannot get taken in again. The question is: how is Canada going to protect its investments in the future? The money is not lost because of an agreement on services, on loans, grants or investments by Canada in intellectual property.

[*English*]

The Chair: Please be very brief, Mr. Dicerni.

[*Translation*]

Mr. Richard Dicerni: We would appreciate the committee's views.

Mr. Robert Vincent: That is a good answer.

[*English*]

The Chair: Thank you.

Merci, Monsieur Vincent.

We'll go to Monsieur Arthur.

[*Translation*]

Mr. André Arthur (Portneuf—Jacques-Cartier, Ind.): Thank you, Mr. Chair.

Good morning, Mr. Dicerni. Let me ask you a somewhat naive question. I am going to try to complete my education using your skill.

You eloquently told us that Canada's international efforts to encourage research and development are "Olympic level". That was the expression you used.

At the same time, according to what you and Mr. Stewart told us, our private sector is not making the same effort, is not so dynamic. In the United States, if Boeing had waited for government handouts in order to get the Boeing 747 off the ground, you would be flying in a DC-3 in a few minutes.

How is it that the Government of Canada has made the necessary effort yet our industries, whose future depends on their viability and their long-term research and development, are incapable of making the same effort?

How do you explain that contradiction?

● (1205)

Mr. Richard Dicerni: I invite you to consult our strategy document. You will see that it is the reason why we committed to giving the council the mandate to determine once and for all whether economic or cultural factors are at work, or whether it is the absence of partnerships between the private sector and the universities and the resulting lack of communication.

These are the trails that we have asked the council to follow to find out once and for all why the private sector in Canada does less research and development than the other OECD countries.

I have suggested hypotheses, but I have no answers, We are waiting to see what the report brings.

[*English*]

Mr. André Arthur: Mr. Stewart, you explain where you want to go, you explain how you want to get there, but you're not very clear on where we're starting from.

Has all this strategy been started out of a clear inventory of our strengths and weaknesses in Canada at this time? In what is Canada absolutely the best in the world and in what should we invest to stay the best in the world? In what fields is Canada lagging behind and needing to work harder? Do we have a clear understanding of our strengths and weaknesses as far as science and technology development is concerned?

[*Translation*]

Mr. Richard Dicerni: The council's study began with an examination of our strengths and our weaknesses. That is our starting point. It was a major ground-level review. They held consultations all across the country.

If we have the opportunity to come back to the committee, we will send it to you beforehand and we can discuss it in more detail.

[*English*]

Is Peter Nicholson coming to your committee?

The Chair: Actually, Peter Nicholson and Howard Alper were supposed to be here today, but they were unavailable for today, so they will be appearing later on.

[*Translation*]

Mr. Richard Dicerni: The president of the council, Mr. Nicholson, coordinated the preparation of the study that provided us with a starting point.

I would suggest that you get a copy of the study before he appears before the committee. You could then explore the question with him in greater depth.

Mr. André Arthur: Thank you, sir.

The Chair: Thank you, Mr. Arthur.

[*English*]

We'll go to Mr. Eyking, and then I have some questions.

Mr. Dicerni, I just want to point out that it is 12:10. I don't want you to miss your flight.

Mr. Richard Dicerni: No, no. It's fine.

The Chair: Okay. We'll go to Mr. Eyking for five minutes.

Hon. Mark Eyking (Sydney—Victoria, Lib.): Thank you, Mr. Chair, and I thank the guests for coming here today.

I am from the Atlantic Canada region. Being from that region, I was interested when you mentioned that a lot of assistance or help from your department goes to ACOA.

● (1210)

Mr. Richard Dicerni: No, I am sorry. Let me correct that. We work with ACOA, which has, I believe, a dedicated innovation fund that they work with, with provincial governments.

Hon. Mark Eyking: That's fine, but at the end of the day we are talking about the overall country, and we know we have to help industries to be competitive on a global scale, whether it is delivered through our regional development or directly to industry.

Often we find in Atlantic Canada that because the assistance comes through ACOA, it is often viewed through the media and sometimes through this present government as a bit of corporate welfare. Do you have any rough figures from your department across Canada for the different regions, such as the Quebec region, the Ontario region, the western region, and the Atlantic region? There are different regions that have different assistance toward their industries. Is there a bit of a breakdown overall to show if each region is getting fair treatment?

I know it goes to ACOA, but often back home we would say... Ontario would get it through a different venue—maybe the auto sector, or whatever—and people wouldn't look at it as corporate welfare but as an investment in the global economy. Sometimes at home we're viewed differently.

Does your department ever look at how we are doing overall for the whole country and how we are helping industries in these regions to prepare for the economies of whatever? Is there a breakdown in each region on how it is being rolled out, from the government's perspective?

Mr. Richard Dicerni: There are two or three points. One is that much of this expenditure through the granting councils or CFI is done as a result of peer review by third parties. It is not Iain or I or the minister who at the end of the day picks this university or that university to receive an award of one sort or another.

Second, I mention ACOA because they're the only regional development agency that has a specific innovation fund. Quebec does not have it, WED does not have it, and FedNor does not have it, so we work with them and with the provincial governments to see the areas to which we could bring a greater focus of support.

Third, the NRC, which is a major wing of the government, does have a number of initiatives and investments of an S and T nature that they support—Memorial University and P.E.I. and so forth.

I think it's hard to determine what is “fair share” in this area, in part because it is driven through third-party review based on peer assessment. I am hesitant to say yes, they are getting a fair share, because at times in other jobs I've been in, the only way they get their fair share is if you work it out to 140%.

Hon. Mark Eyking: I think my question is revealing that it's not just how much share each region gets; sometimes it's how it's perceived it is delivered. Our vehicle in Atlantic Canada is ACOA, which sometimes is perceived as corporate welfare, whereas in other regions it's perceived as maybe a necessary investment in the economy.

Mr. Richard Dicerni: But it is not exclusively through ACOA.

When the granting councils come and appear before you, you may wish to ask the president of NSERC, the president of CIHR, or the president of SSHRC. They are also investing in a number of universities in eastern Canada. I would not want to leave the impression that the government's involvement in the Atlantic community is just through the ACOA innovation fund; the other instruments are also involved.

The Chair: You have 10 seconds.

Hon. Mark Eyking: Just on those things you're talking about, like the university chairs and so on, do you have a bit of an allotment for different regions? Or do you just have a competitive basis right across the country, and whoever has the best proposal or whatever... because we often hear that some universities in central Canada really load up compared to Atlantic Canada?

The Chair: Mr. Stewart.

● (1215)

Mr. Iain Stewart: If you think about the Canada research chairs program, which is funding 2,000 researchers across the country, there is a special allocation that is a leg-up for small universities, for small research-performing universities.

I think, for instance, NSCAD, in Halifax, ended up with a chair, I believe, through that process. So there is an element of that there.

The Chair: Thank you, Mr. Eyking.

I'm going to finish as the chair with a couple of questions. I want to thank you two gentlemen for coming in.

I have a series of questions, but I want to put two to you that have been put to me by a number of people.

First of all, with respect to the R and D tax credit, you mention the size of the program and the generous nature of the program, and I think it's an excellent program. One of the things that has been brought to me—and I want to bring it to you—is this. A company like CAE, a flagship Canadian company based in Montreal, says that one of their challenges is that they perform research that is eligible for the SR and ED tax credit, but perhaps because of the fiscal situation they find—one year or a particular number of years later—that they cannot actually monetize the tax credit. So they find it difficult. That's why they and others have called, before this committee, for making these credits refundable—100% refundable, 50%, 20%—to some extent to allow them to actually use these credits that they are in fact, in their view, eligible for. That's the first question.

The second one is with respect to the ongoing operational costs of big science projects. In the last month I was at the synchrotron in Saskatoon, which was very appreciative of the recent funding in the recent budget and the ongoing funding that's happened from governments over the years. The way they describe it is there's a lot of investment through CFI and others in the infrastructure; there's a lot of investment in human capital through the granting councils. In terms of the operational costs of the facility itself on an ongoing basis, one of the questions I ask is, “Do you need CFI expanded, or do you need perhaps another program to address this?” It's different from the indirect costs, so they'll probably be appearing, or we may in fact go out to that facility as a committee. But that's a second challenge.

I know it's a challenge, and perhaps it's two comments and two suggestions as to what we should be looking at. If either or both of you have any comments on either one of those issues, I'd certainly appreciate it.

Mr. Richard Dicerni: On the issue of the tax credit, I would be remiss if I did not mention how much I'm sure officials in the Department of Finance would love to come and talk about tax policy. It's a purview that they understandably claim a fair degree of monopolistic oversight on, and they do not welcome comments from line departments in how they structure tax policy, because it has to be looked at as a whole.

The Chair: They may not, but I would. Anyway, I'll accept that comment.

Mr. Richard Dicerni: That's a comment on the first one.

On the big science projects, I think that is a real issue. We do...“struggle” is perhaps too strong a term. How do you deal with those fundamental investments that have been made, which are quite beneficial, and how do you structure an appropriate government instrument to deal with those on a one-off basis, as we did with the synchrotron or their other approaches?

Large programs are hard to fit because all of these are one-offs. They're one of the types of initiatives. To try to develop a big science program, how much money do you put into it? What do you force-feed? To establish program parameters around such things would be quite complicated.

We at the officials level would welcome any advice your committee has in regard to this. To start with, what is big science? Is it more than $50 million, under $300,000? What is the national government's role? What is the provincial government's role? What is the role of the private sector? What are the governance elements? By governance, I mean who's on the boards and what outreach do they have towards the private sector?

So if your committee has advice in terms of how one, from a governmental perspective, should look at this, we would welcome any thoughts.

● (1220)

The Chair: I want to thank you both for being here, and I especially want to thank you for staying with the tight schedule. I do want to let you know that if there is any input you want to make to the committee while this study is ongoing, please feel free to submit it to myself or the clerk. We'd be happy to share it with all the members.

Mr. Richard Dicerni: Thank you for having us. Again, if at any point in your deliberations you would like Iain and me to come back for a further exchange, please let us know.

The Chair: Thank you.

Members, we will suspend for two minutes and go in camera for committee business shortly thereafter.

[*Proceedings continue in camera*]

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