HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Industry, Science and Technology

INDU • NUMBER 036 • 1st SESSION • 41st PARLIAMENT

EVIDENCE

Tuesday, June 12, 2012

Chair

Mr. David Sweet

Standing Committee on Industry, Science and Technology

Tuesday, June 12, 2012

● (0845)

[*English*]

The Chair (Mr. David Sweet (Ancaster—Dundas—Flamborough—Westdale, CPC)): Good morning, ladies and gentlemen. *Bonjour à tous*.

Welcome to the 36th meeting of the Standing Committee on Industry, Science and Technology.

We have a two-part meeting today. We have a video conference from the United Kingdom with Mr. Hargreaves. Ian Hargreaves is a professor of digital economy at Cardiff University. We'll do that from 8:45 till 9:15. Then after that I will introduce other witnesses, two of whom are seated with us already, and we'll go into their introductions and then questions on separate rounds.

First, Mr. Hargreaves, thank you very much for taking the time to join us. You have eight to nine minutes for your opening comments and then we'll go into questions.

Please begin.

Professor Ian Hargreaves (Professor, Digital Economy, Cardiff University, As an Individual): Thank you.

Thank you for giving me this opportunity to speak with you today.

I will speak, I think, for a little less than eight or nine minutes, simply to give you the background and key points in the review on IP issues that I conducted for the U.K. government. That review was commissioned in October 2010. It reported in May 2011, so just over one year ago. The government broadly accepted the ten policy recommendations of the review, and has subsequently been engaged in detailed pre-legislative consultation, which is not yet complete. The parliamentary aspect of the carrying forward of the review's recommendations remains before us, and therefore subject to the usual uncertainty of that process.

The review itself was commissioned by Prime Minister Cameron, who said that he wanted a review of IP issues that specifically addressed the interface between IP law and its effects on innovation and growth in the economy. So it was a relatively tightly focused review, which we were given six months to complete.

The main points arising from the review were at the cross-cutting level, as it were: the observation that a good deal of decision-making on IP matters in the U.K. has, in my judgment, not been based upon the best evidence available for those decisions and to urge government in the future to avoid that being the case.

There were recommendations in the review on the unitary European patent. That is making very laboured progress through the system in Europe. There were recommendations on the access of smaller firms to IP law advice and systems to support their effective podification in the IP-based economy, and there are some recommendations around the issue of design rights, which the review suggests, in the U.K. context at least, has been a relatively neglected area in IP. But the aspects of the review that have caused most public discussion, because these are the aspects of the review where the conclusions are strongest, are that, in my judgment, U.K. law on copyright no longer fits the purpose, it last having been redrafted prior to the Internet era and therefore, not suprisingly, now showing significant signs of unfitness for purpose in what remains a very boisterous digital age.

The specific sets of recommendations around copyright involve urging the U.K. government to take more advantage than it has in the past been inclined to in terms of activating exceptions to copyright coverage available in the framework of European law within which U.K. law sits. That's one set of recommendations, a set of recommendations designed to release the very substantial buried treasure of orphaned works in different media and various ideas at different levels of legislative difficulty in terms of seeking to find ways of both making copyright law in practice more readily adaptable to further technological change, but also seeking to ensure that copyright law itself is able to be actioned satisfactorily by rights holders whose rights are being infringed through breach of copyright.

● (0850)

The argument that I used on the latter score is that I don't think we are going to get to a position again where copyright infringement ceases to be a major problem, unless and until we also address the respective working of markets in digital content, and to that end, I suggested a major change in approach that actually doesn't require any legislative action, which I called the creation of a digital copyright exchange.

That idea is simply to build upon the very considerable amount of work that is already being done to ensure that in the world of digital content across different media there are interoperable databases that will make it easier, quicker, and lower cost to find out who owns rights, and on what terms they may be licensable, and then to move from that to a database-based trading system. That already exists in some parts of these markets, but it would be to seek to accomplish this on a thorough and cross-media market basis.

The argument of the review is that if these changes are carried forward there will be measurable benefits for the U.K. economy. The economic impact assessment that was done at the time of the review by a small group of economists who were invited to do that estimated that the effect on the U.K.'s gross domestic product will be to add between 0.3% and 0.6% per year of growth to the British economy. This is a set of figures that of course has been much debated. It's a range. It's based on economists' assumptions. But I don't think there has been any serious challenge to the idea that reform of this kind would be economically positive if successfully carried through.

That concludes the remarks I wanted to make before inviting questions from your committee, sir.

The Chair: Thank you very much, Professor Hargreaves.

For the committee, we'll go on to our regular seven-minute rounds, and that will be for this witness exclusively. You may want to share your time, and I'll let you do that as the time ticks off.

I'll begin with the Conservative Party, as usual. Mr. Braid.

● (0855)

Mr. Peter Braid (Kitchener—Waterloo, CPC): Thank you very much, Mr. Chair.

Thank you very much, Professor Hargreaves, for being with us today. I greatly appreciated your presentation.

I wanted to begin by asking for a little bit of background on the panel you were part of. I presume Prime Minister Cameron asked you to lead this review. Were you part of a panel of various individuals? What sectors of the U.K. economy and what stakeholders did the panellists represent?

Prof. Ian Hargreaves: I was advised by a panel rather than being a member of a panel. The review is under single authorship, under my name. I take responsibility for all of its conclusions.

I was advised by a panel of experts who ranged from an academic based in North America to the former head of patent activity at IBM. It included other academics, people with an industrial background, people with more of a policy background.

Mr. Peter Braid: So you were taking a very much global view of the IP framework around the world to make recommendations to the U.K. government. Is that a fair and accurate statement?

Prof. Ian Hargreaves: That's a fair and accurate statement.

Mr. Peter Braid: Great. You mentioned that the U.K. government is now in pre-legislative consultations. Could you elaborate on potential directions this legislation may go in?

Prof. Ian Hargreaves: I'm not in a position to speak authoritatively about that. That's clearly a matter for ministers, and at this stage the government has not declared the precise legislative approach it intends to take. So it would be inappropriate for me to seek to guess at that.

In terms of the possibilities of an informed observer on that process, various legislative methods or vehicles could be used to make the legal changes that are recommended in the review. Some changes proposed in the review don't require any legislative change at all; one of them I referred to is the creation of a digital copyright exchange. That is proposed in the review as an essentially voluntary or incentivized activity on behalf of rights owners themselves. And subsequent to the completion of the review, as recommended by me in my own report, Richard Hooper, a former deputy chairman of Ofcom, the U.K. communications regulator, was appointed to conduct a feasibility study of that concept. He's completed the first of two phases of that feasibility work and published a report essentially confirming the value of the exercise. He is now engaged in the second task, which is to make specific recommendations on how, in practice, it can be set up.

Mr. Peter Braid: Great.

In taking this global view that was the approach of the panel, are there any particular jurisdictions internationally that stand out that have particularly strong IP frameworks and do a better job than many other jurisdictions in terms of enhancing IP and making that important linkage between IP and fostering innovation?

Prof. Ian Hargreaves: I think even if one were tempted to see this as a global beauty parade of regimes and pick the winner and seek to copy it, it would not necessarily be the route you would try to go down. It is true that there are examples, and Israel would be one, where there has been a very substantial wholesale shift of regime.

In the U.K. review, the one I was responsible for, in kicking it off the Prime Minister himself made some comments about the copyright regime of the United States, which includes, as you will very well know, the fair use defence in the area of copyright. In announcing the review the Prime Minister said he had been told by Google that there were very substantial benefits to be had from a regime of that kind in terms of the pursuit of innovation and growth.

My own judgment in assessing that question was that even if one had been attracted to the American regime, proposing that it be installed in the United Kingdom, sitting within a framework of European law would have guaranteed inaction on copyright reform for another generation.

● (0900)

Mr. Peter Braid: I want to change gears a little. Could you speak a little about the challenges that patent thickets present and ways around some of those challenges?

Prof. Ian Hargreaves: Yes. There is certainly evidence that some use of patents is designed primarily not in the pursuit of invention and innovation but designed in defence of existing marketplace positions of one kind or another, some of them more distantly related to innovation and substance than others.

So there's no doubt that there are some real issues there. I would have to say, however, that the various tracks that our review went down in seeking potential ways of dealing with that problem did not lead to dramatic proposals so to do.

We had a very hard look at the patent pricing system. We had a hard look at the research and the evidence around the effects of different pricing strategies, either for registering patents or continuing to hold patents. We had a look at the rules that apply whether or not it might, for example, be sensible to charge a lower price for patent registration to smaller companies. That was something that was advocated to the review strongly from some quarters.

The Chair: Professor Hargreaves, I'm sorry, but we're always battling with time, and we're overtime in that round, so I'll have to cut you off at that point in your answer. Thank you.

Mr. Stewart, you have seven minutes.

Mr. Kennedy Stewart (Burnaby—Douglas, NDP): Thank you, Mr. Chair.

Thank you for your presentation, Professor Hargreaves.

I have a broader question about patenting in the U.K. or IP innovation. In terms of patents, in Canada it seems that a lot of inventors or innovators go to the U.S. and get their patent first, come back to Canada, and then establish themselves here in their home country.

I was just wondering if you could paint a picture of what happens in the U.K. in terms of patenting generally.

Prof. Ian Hargreaves: The debate in the U.K., or the practice in the U.K.... The U.K. is a very significant registration point for patents. It has, I think it would be fair to say, a well-regarded patent administration system run through the Intellectual Property Office of the United Kingdom.

What are the issues and the sources of debate and complaint? The issues and the sources of debate and complaint are around actionability of patent defence and the problems that arise for smaller companies where they run into the difficulty of facing very expensive legal support questions in defending their patent rights.

There's always a debate internationally about the relative quality of patent award systems in different countries. Against that there is a lively debate, which the review added to, I think, by urging greater international collaboration, because there's no doubt quite a lot of duplication of effort in the global patent system as well in terms of examining the criteria for the award of patents.

● (0905)

Mr. Kennedy Stewart: Thank you.

In terms of the market exchange mechanism that you've proposed for the U.K., would there be any limits on foreign purchase of patents, or is it really just open to global bidding?

Prof. Ian Hargreaves: The exchange that I proposed did not concern patents but copyright, a digital content right called the digital copyright exchange. Copyright, of course, unlike patent, is an unregistered right in Europe.

The idea here is to get a better quality of data into the marketplace, essentially so that markets in digital content work better, so that prices can be struck and deals can be made more readily. I would certainly see that as being an international phenomenon. There's work going on in a number of countries that I'm aware of on projects that bear some similarity to the idea that I've advanced in the review for the U.K.

Mr. Kennedy Stewart: Thank you.

I just want to turn to IP and universities. Did any part of your report concern how universities interact with the current IP laws and how things might be changed?

Prof. Ian Hargreaves: That wasn't a matter the review considered in detail. We did look at it. We published some thoughts, as it were, as a supplementary document. We published a number of supplementary documents to the review, one of which touched on those issues.

Those issues are certainly very lively in the U.K. The U.K. government is currently pursuing a pretty strong open public data policy. In terms of the relationship between universities and business or the market on IP, there have been a number of pieces of work done on that in recent years in the U.K., which there was no attraction to replicating in this most recent review.

Mr. Kennedy Stewart: Did you have any recommendations, even in the supplemental report? Did you just encapsulate what's already been studied, or did you find something that might be of interest to us?

Prof. Ian Hargreaves: It depends on what the question is. One set of questions around universities and IP involves the relationship between the rights attached to academic published work—the copyright coverage and the nature of the copyright coverage that is involved—and the extent to which you want to pursue an open rights system versus a more traditional closed rights system. That's one debate that exists.

In terms of how universities play their part in working through spinoff companies or transferring IP into the private sector, my review really didn't look at that. The most recent state of the art on the policy discussion in the U.K. about that made recommendations about contractual forms and so on, which are quite particular. I'm not sure they would be of very wide relevance internationally.

Mr. Kennedy Stewart: Thank you.

How much time do I have left?

The Chair: You have one minute.

Mr. Kennedy Stewart: One minute.

Perhaps we could go back to your market exchange, in terms of copyright, and how you see that moving forward within the U.K.

Prof. Ian Hargreaves: I mentioned that a feasibility study is under way to determine the feasibility of the idea. At the halfway stage of that exercise, the idea received strong support in a piece of work led by an independent outsider that included people from all the relevant sectors of the economy. I would hope that we are well on the way to establishing this arrangement in the U.K.

As for the earliest that it could be established, I would guess some time next year. Am I absolutely sure it's going to happen? I couldn't say that. Do I think it should happen and would be beneficial to the U.K. economy if it did? I certainly do, and I'm hopeful that will be the case.

● (0910)

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

Now we go to Mr. Lake for seven minutes.

Mr. Mike Lake (Edmonton—Mill Woods—Beaumont, CPC): Thank you, Mr. Chair.

Thank you, Mr. Hargreaves, for taking the time to be with us today.

I'm just going to start with a very broad question. You were tasked with, I think I heard you say, a review of IP law and its effect on innovation and growth. In your recollection of the time you spent on this, what would you say was your most important finding? I'm sure it's tough to pick one thing out of all the things, but where would you say the most substantial opportunity lies?

Prof. Ian Hargreaves: I would say that the most important finding was that for a variety of reasons, a number of decisions have been taken in recent years that fly in the face of the economic evidence to hand. One of those sets of issues—the most obvious set of issues of that kind—would be the frequent extension of the duration of copyright to a point where it is certainly not economically rational to take the actions that have been taken.

Of course, politicians have to take into account matters that are not economic. I would say that the general argument about if you want your IP system to do well for the economy and innovation you'd better make sure you gather the evidence and take the evidence fully into account in making political decisions is the single most important argument in the review, because it applies to all aspects of the review.

Mr. Mike Lake: Okay. Actually, that was where my next question was going to go, because I noticed that you'd said decisions were not based on best evidence. I was going to ask you for examples of the way it is and the way it should be in your world.

Prof. Ian Hargreaves: Well, I've given you the example in the previous answer, the best example or most telling example, which is the extension of copyright duration to a point where it now can exceed a hundred years. It takes us into the realm where it's very difficult to understand what economic incentive is being pursued over such distances of time. Any rational economic analysis of that would tell you that it can't be done for sound economic reasons.

Mr. Mike Lake: You also refer to economic evidence in your second recommendation when you state that the U.K. should resolutely pursue its international interests in IP, particularly with respect to emerging economies such as China and India, based on positions grounded in economic evidence. Could you elaborate on that a little bit?

Prof. Ian Hargreaves: Yes, that's an argument, you may think an overly optimistic one, that international negotiation might maximize its chance of succeeding in its objectives if the positions taken are based on evidence on which there might be some agreement around what the evidence points to. That's the simple point that's being made there.

There is certainly an argument that's made, including in the countries you've mentioned in quoting from the review, that in the past diplomacy around intellectual property has been based more upon a kind of power politics than a politics of economic reason. Given the global character of the Internet and the way that reshapes and rebalances forces in intellectual property issues, at the very least, those who are adopting international influencing strategies on these matters will be well to bear all of that in mind.

The terms of trade have changed, of course, not only in IP, but certainly including in IP.

● (0915)

Mr. Mike Lake: There are so many areas to go to in the report, but one of the things you mentioned in your opening statement was participation by smaller firms, which is something that's come up from witnesses here in our study and something we've talked about. Maybe you could elaborate on that aspect, on that recommendation of your report.

Prof. Ian Hargreaves: Yes, I think there are a number of dimensions to it. One very clear one is that if it is true—and I'm sure the evidence your committee is considering indicates that it is true—that most innovation in an economy like Canada's or the United Kingdom's comes from smaller firms, you're going to want to make sure that the IP system is working well for smaller firms as well as for big firms. What measures can help there? Access-to-justice issues, access-to-the-courts issues can help, as would taking measures to restrain the costs of legal proceedings, and there are various ways you can go about doing that. But I would say that the biggest single thing you can do for smaller firms is to take every step that is practical to take to try to ensure that markets are working in a way that permits, and indeed encourages, competition from smaller firms, rather than blanking them out either through the activities of patent trolls and patent thickateers or the control of markets and copyright content, which in some cases is structured in a way that is unduly skewed in favour of incumbents and old business models.

The Chair: Thank you very much, Professor and Mr. Lake.

Now the final questioner is Mr. Regan.

Hon. Geoff Regan (Halifax West, Lib.): Thank you very much, Mr. Chairman.

Professor Hargreaves, it's nice to have you with us, even if it's not in person.

One of the recommendations in your report talks about ineffective rights regimes being actually worse than no rights regimes at all. You suggest they seem to offer certainty and support for reliable business models, but in fact in practice they send misleading signals. Would you expand on that? If you can, tell us what you feel the major distinctions are between effective and ineffective regimes. What demarcates them?

Prof. Ian Hargreaves: An effective IP regime, including an effective copyright regime, would be one in which the level of abuse or infringement of that regime was relatively stable, relatively manageable, not generating a sense of being out of control. Although my review had quite a lot to say about the quality of evidence that's brought to descriptions of the markets suggests that piracy is on a massive scale and daily becoming more massive, one has to be careful how one interprets that evidence.

I don't think there is any doubt at all that there is a substantial online infringement problem. But my own view is that a substantial online infringement problem will not be satisfactorily addressed until the law makes reasonable sense to reasonable people. Therefore, in the U.K. case, for example, the continued unlawfulness of copying a song from a laptop to an MP3 player is something that has not been tenable for really quite some time. The law needs to be sensible; otherwise, the law is an ass. You need a sensible law around a sensible law or set of laws. You will have a reasonable level of civic consensus, and it will be possible to restabilize the copyright system.

Hon. Geoff Regan: When you speak of restraining the cost of legal proceedings for smaller firms, are you thinking of the small claims track for intellectual property court cases, of which you spoke? Do you see a series of provisions in that kind of a system that would lower costs? Can you give us some examples?

● (0920)

Prof. Ian Hargreaves: Yes. I think a small claims track is one of the tracks the U.K.'s going down, and I think that is a sensible thing to do. There are other mechanisms that can be put in place to cap costs. Anything that could be done that makes the system more accessible, quicker, and lower cost is a good thing, but it's in the nature of law that you can only do so much in that regard, which is why you wouldn't want to rely on that as the only mechanism of change. You don't want the system to be tested to the extent that it currently is in legal forums, although certainly here in the U.K. people would say you should see the United States.

Hon. Geoff Regan: I'm going to quote from your report for a moment. You say:

> ...we should be wary of expecting tougher enforcement alone to solve the problem of copyright infringement. Instead, government should respond in four ways: by modernising copyright law; through education; through enforcement; and by doing all it can to encourage open and competitive markets in licensed digital content, which will result in more legitimate digital content at prices which appeal to consumers.

Can you tell us why you came to the conclusion that tougher enforcement alone will not solve the problem of intellectual property infringement?

Prof. Ian Hargreaves: Because I think we now have an abundance of evidence that this approach, tried and tested in numerous locations around the world, has not had the effect frequently claimed at the point at which such measures are instigated.

Hon. Geoff Regan: That brings me to my next question, which has to do with the fact that you have some companies that use very restrictive models for protecting their products. I'm thinking of television networks with television shows they have very strict rules around. Or they'll control how that's put on the Internet, for example, as best they can.

Then you have other examples. I'm thinking of a company we had a story about in the media here not long ago, Getty Images, which has moved from having the regular watermark that you often see on photographs online—where it actually obstructs the photograph—to having a link to their website up in the corner of the photograph so that someone can voluntarily choose to go there and decide whether or not to pay. In fact they've been very successful in getting payment for their images as a result, whereas you see some other companies that have the opposite model and are struggling in terms of trying to get revenues or are losing great quantities of revenues.

Is that a model to pursue in terms of frameworks or legislation? Is it the way of the future?

Prof. Ian Hargreaves: Yes. Getty Images are themselves taking part in the exercise I referred to that's active here at the moment, the feasibility study of the digital copyright exchange. Getty Images' business model, which you've just described in its use of metadata as part of a pricing platform, is very much the kind of idea that is needed. But in my view, it's the sort of idea that will probably be more rapidly and successfully accomplished with a bit of guidance, nudging, shoving, or shaping by government than it will be simply by individual players in individual business sectors devising their own mechanism. It's not that one would replace the other; it's that we need this to happen right across the digital economy if we are to have effective safeguards against copyright infringement, and if we are to take full advantage of the economic opportunities of what are, after all, global digital markets, in many cases.

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

Thank you very much, Professor Hargreaves. We appreciate the time you've invested in the committee. I know that the committee members are appreciative of your testimony.

● (0925)

Prof. Ian Hargreaves: Thank you.

The Chair: Now we'll move on to our next witnesses, who are here now.

We have with us Erica Fraser, the manager of technology commercialization in engineering and sciences in industry liaison and innovation at Dalhousie University. We also have with us Bubble Technology Industries, represented by Lianne Ing, vice-president. And Marc-André Gagnon is representing himself and is an assistant professor at the School of Public Policy and Administration at Carleton University.

We'll hear from you in that order.

Ms. Fraser, if you would, please begin with your comments. You have five minutes.

Ms. Erica Fraser (Manager, Technology Commercialization, Engineering/Sciences, Industry Liaison and Innovation, Dalhousie University): Good morning, Mr. Chairman and honourable members of the committee.

Thank you for the opportunity to appear here on behalf of Dalhousie University. As you mentioned, my name is Erica Fraser, and I have the longest title in the world, manager of technology commercialization in engineering and sciences.

The industry liaison and innovation office is part of the research services office at Dalhousie University in Halifax, Nova Scotia. Our role at Dalhousie is twofold: we do both industry liaison and outreach as well as technology transfer. In technology transfer ILI works with researchers at Dalhousie and our affiliated teaching hospitals to protect, manage, and commercialize intellectual property developed at the university. In its industry liaison role, the office develops and manages research and development collaborations between industry partners and the university, including the negotiation, protection, management, and licensing of any resulting IP.

I believe that in your meeting of May 17 you received a good description of the role of technology transfer offices in Canadian universities. As such, I would like to address three challenges that we face in maximizing the innovative impacts of university research under the current IP regime.

The first challenge is that at Dalhousie, as with most universities, there's an inherent tension between the goals of academia and the culture of publication and the need to patent inventions to maximize the innovative and economic productivity results from our research. This disconnect results in the need to submit patent applications very early and often in a rushed manner. This can result in patents of a lower quality, either due to rushed drafting or the fact that the technology is not sufficiently developed with as much supporting data as would normally be desirable. While U.S. provisional applications offer a method of putting protection in place prior to a publication that is relatively cheaper, although not inexpensive in absolute terms, and sometimes, but not always, more expeditious, there is no such method available for filing in Canada. As a result, our first filings are done almost exclusively in the U.S., and Canadian applications may or may not follow 12 or 30 months later in the case of a PCT national base application. This depends on the potential for commercial partners and their potential markets.

A second challenge faced by our office, as well as the SMEs with whom we work closely, is the limited availability of registered patent agents outside major centres such as Ottawa, Toronto, Montreal, and Vancouver. Further, the legal fees associated with obtaining legal services through lawyers and patent agents from these centres are higher than legal fees in smaller centres. I would submit that if more patent agents are distributed across the country, accessibility would be improved. I believe that this happens in part because of a lack of awareness of both the possibility of becoming a patent agent as well as the process for becoming one, as well as the lack of local support and mentoring available to those attempting to become qualified patent agents. I also believe this can be ameliorated through outreach and education, perhaps by CIPO, the Canadian Intellectual Property Office, to people with a technical background regarding the option of becoming a patent agent as well as the provision of support for those attempting to become qualified across Canada.

I would like to draw this committee's attention to the final challenge, the ability of universities to protect their patent portfolio. As our budgets are very tight and patent litigation is very expensive, it is a challenge to enforce our patent rights. As such, we would welcome alternate enforcement options that would expedite and reduce costs, such as, for example only, a specialty division of the Federal Court, as was referred to in one of your previous proceedings.

I believe all these issues boil down to the larger issue of accessibility to high-quality patent protection and enforcement. With this improved accessibility to the level of protection, universities and our private sector partners can gain the maximum economic benefits from our innovations.

Thank you.

● (0930)

The Chair: Thank you very much, Ms. Fraser.

Now we move on to Ms. Ing for five minutes, please.

Ms. Lianne Ing (Vice-President, Bubble Technology Industries Inc.): Good morning, Mr. Chairman and members of the committee. Thank you very much for the opportunity to appear here and discuss the experiences of our company with regard to intellectual property protection and exploitation.

I'll begin with a few words about our company. Bubble Technology Industries was founded in 1988 and is located in Chalk River, Ontario, just a couple of hours west of Ottawa. We are an innovative, 50-person company, Canadian-owned, which provides products, services, and contract research primarily in the areas of radiation detection and explosives detection. We have over 400 customers in 25 different countries, and we've conducted over 100 research programs for customers around the world and here at home.

Our technology has been used to protect people and infrastructure at major events, including the U.S. Presidential Inauguration, the Super Bowl, the World Series, and the Olympics. Our technology has flown on over a dozen space missions to support research aimed at protecting astronauts from radiation hazards and is also used to protect nuclear submariners while they are deployed at sea.

We have a creative, highly skilled staff. Our cornerstone of success is the ability to generate innovative ideas and then carry those ideas through all stages of research, development, production, and deployment.

As a small company entrenched in R and D, our approach to protecting intellectual property is a balance between costs and benefits of protecting a good idea. We generate many ideas that could lead to a patentable invention, but we only file patents for a small fraction of them.

This decision to patent or not to patent is a business decision. There are many costs associated with the patent process. We start by preparing an invention disclosure, which includes researching other patents and published literature to ensure that the invention is novel. We then engage with a lawyer to prepare the patent application. There are fees associated with filing the application, and those fees increase as you increase the number of countries in which you seek protection. There are often iterations with the Patent Office to define the scope of the patent. And if the patent is granted, there are annual maintenance fees for the lifetime of the patent, typically 20 years. All of those steps simply get you a patent.

If someone infringes upon your patent, you are then facing significant legal fees to enforce your patent, and those costs are not well bounded. As a result, a small company like ours must be selective about which inventions are protected by a patent. We patent inventions that have a clear and significant potential market and where holding a patent will provide us with a meaningful competitive advantage.

Aside from patents, we employ other approaches to protect our IP. It's worth noting that in the patent process, your application, which includes a detailed description of your invention, is laid open for public review after 18 months. This means that if your application is rejected, the IP continues to reside in the public domain and anyone can then use that knowledge. As a result, in some cases we rely on trade secrets to protect our IP or we choose to proactively publish the information to prevent other entities from filing patents for similar inventions.

Presumably one of the key reasons this committee is studying the intellectual property regime is to determine how best to promote the development and exploitation of intellectual property in order to benefit Canada. It is relevant to recognize that there is a technology development continuum. The continuum must start, of course, with high-quality research at the front end to generate new ideas. These ideas then get transformed into inventions through applied research and development, after which patents and other IP protection can be implemented.

However, at this point in the continuum many organizations encounter what is referred to as the technology valley of death. This is the point where a technology has reached a prototype stage, so it is too mature to qualify for R and D support, but the technology is still too immature to be launched commercially. This is the stage where the technology may need a few engineering refinements, product testing and certifications need to be done, marketing and training materials need to be developed, and production lines need to be set up. All of this must be done before the technology can be successfully commercialized.

When a technology fails to cross the valley of death, the value of the invention dies, and no benefits—economic, societal, or otherwise—are realized.

The government currently promotes research in Canada through a number of important programs, such as the SR&ED tax credit program and through NRC-IRAP. It is important to continue funding these programs in order to generate new inventions. In addition, the government has recently started the Canadian innovation commercialization program, which promotes testing and adoption of near-commercial technologies. This will hopefully help to transition some technologies into the commercial market. However, further focus on supporting small and medium companies to bridge the valley of death will ensure that Canada reaps the benefits of IP developed in this country.

● (0935)

In addition, in our experience there is one other notable area where the government can support the exploitation of IP. The current Treasury Board policy on IP arising under crown procurement contracts stipulates that the title to IP created by the contractor while performing a government contract shall rest with the contractor, in order to promote commercial exploitation. This is a good policy to promote commercialization, but there are exceptions to the policy that are often invoked. For example, a national security exception is often used in defence contracts. While it is critically important to ensure that national security interests are prioritized, the exception, in some cases, has become almost the default policy. This can create a barrier to commercialization.

In Canada, the defence market can be relatively small for certain technologies. However, if the contractor owns the IP and can readily commercialize and sell the technology to other allied nations, it can increase the market size and therefore reduce both the unit cost of the technology and the time to market, which benefits everyone. Thus, a more limited application of these policy exceptions would be beneficial to Canada.

Thank you for the opportunity to speak today. I'm happy to answer any questions you may have.

The Chair: Thank you very much, Madam Ing.

Now we'll move on to Marc-André Gagnon *pour cinq minutes.*

Dr. Marc-André Gagnon (Assistant Professor, School of Public Policy and Administration, Carleton University, As an Individual): If it is okay with everyone, I'm going to present in English. I think it will be easier.

I'm going to be discussing policies to encourage innovative R and D in the Canadian pharmaceutical industry and basically show how these innovation policies right now are very costly and also very ineffective. I'll give just a brief overview of the political economy of the sector and then a better understanding of these innovation policies in terms of costs and benefits.

In terms of the overview of the political economy, we have to keep in mind that we have core companies, basically, what's called “big pharma”. They represent two-thirds of world market share. At the same time, two-thirds of the Canadian market is controlled by 15 companies. I think the focus must be more on these companies.

Over the last 30 years we have seen that in terms of increasing profitability, there has been an important increase in profits for these companies. If you compare them to dominant companies in other industrial sectors, you'll see a differential accumulation, so basically an increase in the gap in profits for the pharmaceutical sector. Now, this could be normal, but the problem is that when you look at what has been going on in the pharmaceutical sector in the last 20 years or so, everybody agrees that we have this huge innovation crisis. In terms of therapeutic innovation, right now the situation is a bit of a catastrophe. So how can we explain this paradox of having increasing profits while at the same time decreasing therapeutic innovation?

We need to understand that basically the dominant business model of the pharmaceutical sector right now, not only in Canada but globally in the pharmaceutical sector, is way more focused on promotion, for example, than on real innovation. The patent system right now allows these companies to focus more on promotion, because they have large protection for the very little innovation they bring to the market, for example, with metered drugs.

The dominant business model is based on heavily promoting new medications that are insignificant in terms of therapeutic innovation. The existing financial incentives encourage large-scale promotion, not innovation.

On the question of innovation policies specific to Canada, we must keep in mind that patent policy is one of them, but we do have other innovation policies that are important for the sector. First, there are tax credits and the SR&ED program, but we have other tax credits as well. More or less, companies benefit from a 48% tax credit on R and D expenditures.

We have a system in Canada with the Patented Medicine Prices Review Board that sets the price for patented medicines in such a way that we always aim to be the world's fourth or fifth most expensive country, which is very problematic. This is something that is very costly. There is just no reason, for example, that when we compare ourselves to France or to the U.K., we spend 10% to 15% more for patented prescription drugs. The overall cost of that basically is that if we had a price comparable to that in France or the U.K. we would save around 12%, or $1.5 billion.

We have other innovation policies, such as the 15-year rule in Quebec and also some direct subsidies in Quebec and Ontario. If we do the math on all of this, basically, if you look at pharmaceutical R and D in Canada, the total gross private R and D expenditures are $1.2 billion, but if you take into account the tax credits, it means the net private R and D expenditure to the pharmaceutical sector is $640 million that is being spent by the companies.

If you add up the amounts, a conservative estimate of the cost of direct and indirect subsidies is $1.7 billion. So right now we have a system where Canadians pay at least $1.7 billion in different direct or indirect public financial subsidies to the pharmaceutical sector in order to generate a total of $614 million, for a rate of return of negative 65%. If you were running a company with this type of result, you would be fired on the spot, but this has been going on for at least the last 20 years.

● (0940)

In terms of innovation policy, the problem is that it's not working. The common measure to look at R and D intensity in the pharmaceutical sector for a country is the ratio of R and D to sales. It has been declining since the mid-1990s. It was 6.9% in 2010, and in 2011 it was still declining.

When we compare ourselves to other countries, we're not part of the leading countries in terms of the ratio of R and D to sales. We're more on par with Cyprus and Romania right now.

How can you solve the problem? My take on the issue is that we must not plow more money into the system. I have three very simple recommendations.

First, we need to change the way we set prices, for example, to aim at countries like the U.K. or France in terms of prices, so it would save us at least $1.5 billion.

There's discussion with the CETA agreement right now, Canada and Europe. My take on this is that you need to scrap the patent linkage regulations. This is costly, it is ineffective, it is a waste in patent litigations, and it creates real insecurity for brand-name companies in terms of the length of market exclusivity.

Finally, if we want to go for a patent term restoration—for example, the delay for approval—to get it back in terms of extended patent protection, it's not a problem. It's just a patent. It's not a right. It's a privilege granted by the state, and the state can require specific conditions to grant this privilege. The idea would be to impose the condition that a significant portion of these additional revenues because of patent term restoration be reinvested in Canada. I think you would really create a knowledge-based economy.

The Chair: Thanks.

Now we'll move to our questions. They're all five minutes.

Mr. Carmichael, for five minutes.

Mr. John Carmichael (Don Valley West, CPC): Thank you.

Welcome to our witnesses.

I'd like to begin with Madam Fraser. We've heard from other educational institutions, and we've been told specifically that Canada is the second choice of IP registration—the U.S. being first—in our market, in our sphere. I wonder if you might elaborate a bit on that.

From the perspective of Dalhousie, is that a good thing? Should it be a reverse, should we be working to correct that in any way? Or does it serve the purpose in terms of meeting the needs for those who are innovative in creating IP?

Ms. Erica Fraser: Well, I think the first thing to note is that it's not so much that Canada is a second choice; it's that under the current patent system you file in one place, and then you have 12 months to file either internationally or pick your other countries. The U.S. just offers that added advantage with the provisional applications. It's quicker, it's less formal. It can be less expensive, but not necessarily. So when I say that Canada is our second filing, it's not so much that it's a second choice. We will file in Canada when it makes sense to file in Canada—for example, do we have commercial partners who have a market in Canada?

That being said, if Canada had a provisional system or another competitive system that made it advantageous to file in Canada first, we would be happy to do so. It's purely a matter of.... Oftentimes we have a publication coming up quickly, so it's where can we file that makes the most sense first.

● (0945)

Mr. John Carmichael: Right. Quite frankly, I think that was the intent of the other educational institutions. They alluded to this issue.

You talked about the three challenges that you face at your university, and I would think that's consistent across the country.

Ms. Erica Fraser: I would think so, yes.

Mr. John Carmichael: Many academic institutions face the same challenges.

As we study this as an issue, obviously innovation is something we're clearly focused on, our government is focused on. We want to find a way to better assist or enhance the opportunity for innovation to ultimately commercialize, so how do we pave that road a little more smoothly so that we can assist in that, or at least take the objections or the hurdles out of the way?

I had a question to you specifically. Do certain IP policies increase incentives for business to invest or partner in research projects with university researchers? I understand the issue, for example, of the undeveloped technologies, the rush to market, and maybe we'll talk later about the valley of death—I'd be curious to hear more on that. I wonder if you could just address that as a question.

Ms. Erica Fraser: Sure, but just to clarify, by IP policies, do you mean at the government level or internal to the university?

Mr. John Carmichael: No, I think I'd like to know from the government level, more importantly.

Ms. Erica Fraser: Sure.

I think within certain applied research grants these days there is provision for IP funds for filing. For example, the NSERC I2I is a great example of having funding available for patenting. I think that's great.

I think where there is a little bit of a disconnect is perhaps with a lot of funding available through NSERC—and we love this funding, don't get me wrong—such as the Engage grants, the Interaction grants, and the CRDs. All of these are ways of connecting industry with the university and promoting that collaborative research. But there is no IP funding at the end of it. One of the things we often hear from companies is that it's great that this has been developed, but they don't have the money to protect it either.

If there were IP funding available to help with the protection of those technologies and those innovations developed through collaborative research, I think that would go a long way to helping companies work with the university even further to bring those innovations to market.

Mr. John Carmichael: Clearly, then, your third challenge is defence of the portfolio when there is no IP money at the end. Neither the business partner nor the academic institution has the ability to step up and do what's necessary to protect that IP technology.

Ms. Erica Fraser: I would say that's correct. I would say that there is another aspect to it too. If we consider IP developed at the university, and our goal is to commercialize that intellectual property, enforcement is the way we will have power to license it to a commercial partner, as opposed to it just going out into the ether where anybody can get a kick at it.

The Chair: Thank you.

We'll have Madame LeBlanc for five minutes.

[*Translation*]

Ms. Hélène LeBlanc (LaSalle—Émard, NDP): Thank you very much.

I would like to thank all the witnesses for joining us.

My question is for Professor Gagnon.

Does extending the lifetime of patents, like it was done in 1987, drive innovation up in the pharmaceutical sector?

Dr. Marc-André Gagnon: First, we have to establish what "innovation" means. This word can have various meanings. If we talk about innovation in terms of economic performance, we can say that economic performance went up until the mid-1990s. But if we talk about therapeutic innovation in the pharmaceutical sector, meaning results in terms of health, the answer is no.

Patent policies do not necessarily improve therapeutic innovation. They may increase research and development funding, but, if the primary purpose of the funding is to have access to research that has already been done and that is protected by a patent, that does not contribute to increasing therapeutic innovation.

● (0950)

Ms. Hélène LeBlanc: The intellectual property model that has been and is probably still being used in the pharmaceutical sector is rather restrictive and rigid. There was a lot of distress, especially in the Montreal area, when pharmaceutical research centres were shut down.

How do you see the future? We are talking about a more restrictive intellectual property model and stricter protection rules. What type of intellectual property system do you see for the future, be it in the pharmaceutical sector or other sectors?

Dr. Marc-André Gagnon: In the pharmaceutical sector, and even in other sectors, players are constantly in conflict. That is why the idea of integrating a culture of collaboration is no easy feat. However, when we talk to researchers from companies, we see that they are on board to try to increase collaboration. They see the importance of having access to each other's research. Business-wise, that is not necessarily the most profitable option for companies. That is why steam sometimes builds up on the topic.

As I said, there is very little therapeutic innovation with the current model. It is less risky and less expensive for a company to use the molecules it has already created and to continue working on that. It actually has all the patents and the intellectual property on those molecules. The company can try to make slight improvements to what it has rather than undertake a completely new and different type of research.

Right now, a lot of me-too drugs are being manufactured. Therapeutic innovation is often quite insignificant. Instead of encouraging major research that could lead to great discoveries, the current restrictive system leads to this business model based on insignificant innovation.

Ms. Hélène LeBlanc: You have made some recommendations. How could the government or lawmakers encourage this type of collaborative intellectual property in order to promote innovation in our country?

Dr. Marc-André Gagnon: I have collaborated with Richard Gold, who came to make a presentation here, I believe. We work a great deal on patent pooling for various diseases, among other things. It is one of the nice ways to encourage researchers to collaborate and to make interesting discoveries.

We have to understand that the current model granting intellectual property rights for ongoing research is becoming more and more of an obstacle. So, based on the current model, extending those rights is a roadblock to discovery rather than an incentive.

Ms. Hélène LeBlanc: You talked about patent-linkage regulations. Could you expand on that and tell us why that is not necessarily a benefit for Canada?

Dr. Marc-André Gagnon: We compare ourselves a lot to Europe, given the agreement negotiations that are under way. Europe does not have patent-linkage regulations. This is basically a system that allows generic manufacturers to have access to patented research from companies. However, as soon as generic companies want to market their product, they have to send a request to the patent holder for authorization.

In Canada, our patent system is very lax; we issue patents very easily. We start with the premise that generic manufacturers will challenge patents before the courts. Our system is very lax in terms of issuing patents and it allows companies to challenge it before the courts. The patent-linkage regulation system grants up to two years of additional protection to make it possible to demonstrate in court that the company's patents are not valid and that they were issued all too leniently. It is too expensive and it is not useful.

● (0955)

[*English*]

The Chair: We're quite a ways over the time. I let you go for a while there to try to get the detail out of your answer.

Dr. Marc-André Gagnon: Thank you.

The Chair: Mr. Albrecht, for five minutes.

Mr. Harold Albrecht (Kitchener—Conestoga, CPC): Thank you, Mr. Chair.

Thanks to our witnesses for being here.

I would like to follow up with Ms. Fraser on the IP policies across the range of Canadian universities, the evolution of those policies, and the continuum of policies that I know exist across the different universities. For example, at the University of Waterloo there's a policy that gives a large degree of freedom to the professor and the graduate student to retain ownership of their intellectual property.

I'm wondering, is there any appetite across Canadian universities to somehow standardize that IP policy? I'm sure there's a large degree of desire to retain autonomy at that level, but I'd like your input on that.

Secondly, how do we compare to other international partners in terms of the university regime, as far as it relates to protection of intellectual property?

Ms. Erica Fraser: As far as standardization, there is obviously a wide range of policies across Canada. At Dalhousie University, the researchers own their own intellectual property. That can be altered by contract, if they choose to contract with a company that wishes to deal directly with the university versus the researchers themselves.

That being said, that's defined in a collective agreement. If you were looking to standardize the IP policies across Canada, it's possible—it has been done in the U.S.—but it would mean changing every collective agreement.

Mr. Harold Albrecht: Could you just clarify what the U.S. standard is, then?

Ms. Erica Fraser: Yes. It's under the Bayh-Dole Act. There is some legal uncertainty as to what that means right now after a case at the Supreme Court last year. Currently the understanding is that it means the researchers have to disclose their intellectual property to the university and the university has rights to commercialize that IP.

Mr. Harold Albrecht: The actual developer has no ownership at all, or would there be a joint ownership of the IP?

Ms. Erica Fraser: I don't know enough to comment on that. I do know that most universities have some sort of revenue sharing with their researchers in the U.S.

Mr. Harold Albrecht: Do you know how we compare with, for example, the U.K., Australia, France...?

Ms. Erica Fraser: I don't know about France for sure, but I understand that the U.K. system is much like ours, where you have sort of a smorgasbord of different policies.

Mr. Harold Albrecht: And universities have the autonomy to establish their own collective bargaining.

Ms. Erica Fraser: Absolutely.

Mr. Harold Albrecht: An issue I certainly wasn't aware of was the issue you raised in your opening comment about the need for more patent agents distributed across the country, particularly in smaller centres. Could you just elaborate? What is the process for establishing yourself as a patent agent...and for knowing in the first place that it's a possibility? I certainly didn't know that until today—not that I'm looking for a new job.

Ms. Erica Fraser: No, understood.

Mr. Harold Albrecht: Maybe in 12 years.

Ms. Erica Fraser: Many patent agents are also lawyers, but they don't need to be. Patent agents are often people with a technical background, often but not always with advanced degrees in particular sciences or engineering. Depending on the field, the higher the education necessary; in pharmaceuticals, for example, it's not uncommon to find PhD-level patent agents.

The process for becoming a patent agent is to write an exam. This exam is very challenging. The last numbers I saw for the pass rate across Canada were from 2010, when the pass rate was between 10% and 12%. Many people have to take the exam several times before they are successful. In terms of preparation for this exam, the most preparation that's really available through CIPO is through past exams posted online.

With regard to training courses available, IPIC—I believe you had someone here earlier this spring—offers a training course, but it's only offered in the Ottawa region. There might be one in Vancouver now. If you're coming from Atlantic Canada, you have to travel to that. It's not an inexpensive course.

Mr. Harold Albrecht: But once you've established the fact that you have passed the exam, there is nothing stopping you from setting up shop anywhere in Canada—there are no jurisdictional parameters in terms of not being able to set up in an area because there is one five miles down the road.

Ms. Erica Fraser: No, absolutely not. They tend to conglomerate in Ottawa, Toronto, Vancouver, because—

Mr. Harold Albrecht: Sure, based on market forces.

Ms. Erica Fraser: Exactly.

Mr. Harold Albrecht: But there are no legal restrictions.

● (1000)

Ms. Erica Fraser: There are no legal restrictions for doing so.

Mr. Harold Albrecht: All right.

Those are all my questions. Thank you, Mr. Chair.

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

The valley of death and pass rates as low as 12%—it's a brutal industry.

Mr. Regan, for five minutes.

Hon. Geoff Regan: "Yea, though I walk through...". It's kind of like being in the House of Commons, I guess.

An hon. member: It might be by Thursday.

Hon. Geoff Regan: Yes. We'll all feel like that in a couple of days.

Professor Fraser, first of all, let me ask you about how you would describe the state of innovation in our home region of Atlantic Canada and what needs to be done to inspire more companies like Ocean Nutrition, Acadian Seaplants, Radian6, Precision BioLogic, etc.

Ms. Erica Fraser: I think there's actually a good and growing climate of innovation. I think there are more and more small and medium-sized enterprises, especially, who are really doing some very interesting and innovative things, such as Ocean Nutrition, as you mentioned, who just had a very successful exit. A number of other companies, including Acadian Seaplants and LED Roadway, are doing very innovative things in Atlantic Canada.

I just mentioned a few Nova Scotia companies because that's what I'm most familiar with.

Hon. Geoff Regan: That's okay with me.

Ms. Erica Fraser: With regard to what can be done to spur more innovation, the Atlantic Innovation Fund is a great program for doing so. It is quite a large program, so you really have to undertake a big project for doing so.

Otherwise, some of the other national programs that I've mentioned, such as the NSERC Engage, the Interaction, the collaborative research and development grants, are great ways for universities to assist smaller companies that may not have sufficient R and D resources to do some of that PhD-level R and D at a university.

I think those are great things, and I would say they're really helpful.

Hon. Geoff Regan: Some of our other witnesses on this topic have talked about the need for greater incentives for collaboration in partnerships. Over the past 20 years we've seen that some government granting programs, R and D programs, have required collaboration and partnerships, not only between academics and business but also among academics.

Could you comment on the need for stronger interactions between industry, government, and academic leaders? What can government do to improve this, and how important is it? Should that be a focus?

Ms. Erica Fraser: I absolutely think that is a focus. I would say that there have been some great steps taken over the last couple of years introducing these collaborative granting projects. Anything along those lines is a benefit, anything that, first of all, can raise awareness that collaboration is possible and that there are these resources available to them—because to this day that is still something that many small and medium-sized enterprises are not aware of. And secondly, anything that eases the process for them in doing so is definitely a benefit.

Hon. Geoff Regan: Thank you very much.

Ms. Ing, aside from a rod and a staff, what do you think our businesses need to cross the valley of death?

Ms. Lianne Ing: As I mentioned, there are a number of programs and contracts available to small and medium-sized enterprises now that will help to fund or stimulate research and development, typically up to an early prototype stage.

The government has recently introduced the CIC program to try to encourage the commercialization of technologies, but the entry criteria for the technology require that it must be at a certain maturity level and essentially be near commercial technology, meaning that there are really no further engineering requirements for that technology. So what we end up with is a gap, this valley of death, where you can get as far as a prototype and you then have this leap that you need to make to get to something that is really ready for a commercial launch.

So an extension of existing funding programs to allow them to expand their mandate to cover some of the developmental activity further along in terms of technology would certainly assist. There are programs such as the NRC IRAP program or the CIC program at each end of that spectrum that could be extended so that we actually have coverage from one end of the development spectrum all the way through to commercial launch.

Hon. Geoff Regan: Thank you.

[*Translation*]

Professor Gagnon, I found your comments on drug patent subsidies very interesting. You estimate that the return is around $614 million but that we pay $1.7 billion.

We have heard comments and suggestions related to the negotiations between Canada and the European Union saying that the European Union insists that we extend the lifetime of their drug patents.

What are your comments on the potential impact of such a decision on the Canadian government's behalf?

● (1005)

[*English*]

The Chair: A very brief response, please.

[*Translation*]

Dr. Marc-André Gagnon: It is possible that, if we agree to the European Union's requests, we will simply end up increasing costs without actually generating more innovation in the sector.

If we compare ourselves to Europe, we need to understand that patents give you a protection period. What is being protected? We are also protecting the price of the product. If our prices are 15% higher and the life of the patent is 10% shorter, at the end of the day, Canada will get better protection than a number of other European countries. If we keep the same prices and we extend the protection period, it will be too expensive and we will not get the benefits that come with that.

[*English*]

The Chair: Thank you, Mr. Gagnon.

Surely goodness and mercy were abundant in that round.

Madam Gallant, for five minutes.

Mrs. Cheryl Gallant (Renfrew—Nipissing—Pembroke, CPC): Thank you, Mr. Chairman.

I'd like to zero in on the remarks of Bubble Technology about the current Treasury Board policy on IP arising from crown procurement contracts.

First of all, I want to clarify something. When the exception becomes the default, does that mean it's the department that owns the IP?

Ms. Lianne Ing: That's right. When the Treasury Board policy exception in invoked, it means that the crown owns the intellectual property that's developed under that contract.

Obviously there are certain cases where, for national security reasons, that might make sense. If it's strategic technology, the government needs to make sure that it has access. But there are many programs that were done under the umbrella of the Department of National Defence where the technology could perhaps be supplied more quickly and at a lower unit cost without sacrificing national security if the IP ownership rested with the contractor. In all cases, because the government has provided funding towards that technology, the government retains a right to utilize that technology. But when the contractor is able to own the IP, it allows them to explore other follow-on activities for that technology, which could include commercializing it or building upon that technology to come up with the next-generation technology.

Mrs. Cheryl Gallant: Generally speaking, is the witness aware of any situations whereby once the contract with the government runs out, the government takes that IP and gives it to another company to acquire the product at a lower price?

Ms. Lianne Ing: We have not had direct experience in that regard. We typically find that in the case where the crown owns the intellectual property, you then need to engage in order to develop a licensing agreement with the government department. It simply becomes an issue of time and resources. It becomes quite a bit of paperwork in many cases. Because the technology is so varied, in many cases when the departments are looking at tech transfer they're often starting with a template for a licensing agreement, and that template may not suit the specific technology that's been developed under that program. So you get into a scenario whereby in order to go through those licensing negotiations you keep adding cost and time to market and it becomes more of a barrier to pursuing that technology. If you have other technology that perhaps is also promising, you might choose to redirect your energy to those areas.

Mrs. Cheryl Gallant: How does this Treasury Board IP system differ from that of other allied or NATO countries?

Ms. Lianne Ing: We do a lot of work with other allied nations, particularly with the United States government. They have a very industry-centric focus when they are contracting. The Treasury Board policy itself, which indicates that the IP should rest with the contractor, is consistent with what we see from the U.S. government in terms of terms and conditions. It's simply that when the exceptions to the Treasury Board policy are invoked, they can create this barrier to commercialization.

Mrs. Cheryl Gallant: Then all things being equal, is it more lucrative to deal with the U.S. Department of Defense versus the Canadian Department of Defence with respect to commercialization?

Ms. Lianne Ing: In the U.S. we often see many of the development contracts are willing to fund the development of the technology further along in technological maturity. We often will have contracts whereby you can get very close to a commercially viable system through a government contract. So that does provide you an easier springboard in terms of the commercial launch of a product.

● (1010)

Mrs. Cheryl Gallant: When the government has an exclusive with you and you're not allowed to commercialize, does that protect the pricing for the government?

Ms. Lianne Ing: We often see in many of the government contracts that they can invoke clauses that say if you're going to take this technology and commercialize it, you have to ensure the government will receive the most favourable pricing. That already provides a price protection for the government in recognition of the contributions they have made to the technological development. By not restricting where the company can sell that technology, if we can increase the volume sale of something, we can drive down the unit cost. We do radiation and explosives detection. The market for specialty technologies within Canada can be relatively small. You're not selling thousands of units here. So if we're able to expand that market, sell to other allied nations, for instance, we can increase that volume of production and then it drops the price for everyone.

Mrs. Cheryl Gallant: In dealing with either the Canadian or the U.S. government, have you experienced that they will allow the technology to be shared, that they won't completely invoke this? For example, share it with the NORAD countries, Canada, U.S., the Five Eyes, or NATO—has that been explored?

Ms. Lianne Ing: In some of the contracts we work on when the Treasury Board exceptions are not invoked, we're able to retain ownership of the intellectual property through Government of Canada contracts. We have then taken that technology and successfully commercialized it and sold it abroad. Of course there are export regulations that already serve to protect what is exported. So if it's sensitive technology, you are assured already that this technology is not going into undesirable countries.

The Chair: Thank you, Ms. Ing.

Thank you, Madam Gallant.

Now we move on to Mr. Harris for five minutes.

Mr. Dan Harris (Scarborough Southwest, NDP): Thank you.

I'm going to start with Madam Ing, but on a different track from Mrs. Gallant. Of course you were talking about the valley of death and it's provided lots of humour, but it is a very serious issue. It's one of those gaps, especially for small and medium enterprises.

The Jenkins report has made recommendations about shifting some of the emphasis from direct tax cuts into more direct funding. Do you think that kind of an approach would help to bridge that valley of death?

Ms. Lianne Ing: The concern we have moving away from an SR&ED tax credit model and going toward something where the funding is more directed is that some group is going to decide the priority areas for investment. The research areas of small companies that are often not on the radar and don't spend huge dollars marketing and may not be the most prevalent name in Canada but are doing very innovative work can easily be overlooked when some other group is deciding what the strategic priorities for research should be. In our opinion, it tends to stifle innovation.

Mr. Dan Harris: Thank you. That's a very interesting comment. I think it touches on the fact that in all the things we do here our goal always has to be to find the right balance.

I think that's one of the main purposes of this study. It's to look into intellectual property to actually discover and find the right balance between patents and trademarks and everything else we're talking about, so that we are incentivizing innovation and not stifling it through the rules.

Now, on that, I'm going to go across to Monsieur Gagnon.

[*Translation*]

My comments will follow up on Mr. Regan's comments. You said that a total of $1.7 billion in subsidies goes to the pharmaceutical sector, which gives us approximately $640 million in return.

At the same time, compared to countries like France and Great Britain, at the end of the day, we spend an extra $1.5 billion on the pharmaceutical sector. I cannot believe that we have to spend more money although we have subsidies. We are spending an extra $3 billion to get a return of $640 million.

Do you have a suggestion? You said that we should perhaps consider lowering the prices to be in line with France and other comparable countries? Do you think we should decrease or increase subsidies for the pharmaceutical sector? Do you think that this would be useful? Or would it be possible to invest that money more specifically in innovation?

● (1015)

Dr. Marc-André Gagnon: I think it would be only too logical to check lowering prices against comparable countries, and that would have no impact on research and development funding.

For example, in terms of the money we could save, we have to understand how the whole current innovation system works in the pharmaceutical sector; the system is based on commercialization by the major dominant companies that we have talked about. For example, the main goal of any biotechnology company is to be bought by one of those dominant players.

The problem is that dominant companies have a research agenda that relies on me-too drugs. But there is a way to improve therapeutic innovation. I think the way to do that is to have public research. There should be an alternative business model, based more so on public research than commercialization by large corporations. That model would not replace what is being done, but it would complement the work nicely by potentially bringing something new and something different to the current pharmaceutical sector.

Mr. Dan Harris: Thank you.

[*English*]

Now, of course Mr. Hargreaves is no longer with us, but one of the suggestions he made was with regard to an idea of having smaller fees for patents for small businesses. If we looked at something like that, I would suggest that we look at academia as well, academia as fitting into a bit of a different model. Do any of the witnesses have any comments on that?

The Chair: It would have to be just a brief comment, as we're over our time.

Ms. Erica Fraser: There is a system in Canada already called the small entity system, whereby we pay lower fees for universities and small companies, although there again it's kind of risky sometimes for small companies to take advantage of that. The U.S. just introduced something called micro entity status, which is even smaller, and that's based on the number of patents you've filed. If you've filed a relatively low number of patents or you are a university, you can take advantage of even lower fees.

The Chair: Thank you very much.

Now we'll go on to Mr. McColeman for five minutes.

Mr. Phil McColeman (Brant, CPC): Thank you, Mr. Chair

Thank you to the witnesses.

Ms. Ing, you've discussed IRAP and SR&ED. As well, based on the opposition's questions, you've commented on SR&ED. With IRAP, what are some of the ways in which IRAP has helped you fund innovation?

Ms. Lianne Ing: The IRA program is one we've taken advantage of in a couple of different instances. First of all, they do a very good job in terms of outreach, even to rural communities. We are not located in a major centre, yet we have IRAP technology advisors who are mandated to go out and contact small companies to let them know what services are available through IRAP.

We've had a couple of programs that have been successful through IRAP. The company invests in the technology development, of course, but IRAP provides some additional funding to help accelerate some of that work. We've had some good success there in terms of technology development, which can then lead to a commercial product.

One of the focus areas for IRAP when they are evaluating a proposal is that they are always looking for what the benefit to Canada is going to be. They're looking for a very clear business plan and a commercialization plan. By forcing that thinking into the front end of a program, it really compels the organization to think through its business case. Since the company is also contributing and investing funds in that program, it makes them think carefully about what they apply for, and it makes them select the most commercially promising technologies.

Mr. Phil McColeman: Are there any add-ons or other ways we can reach the really promising technology companies? Are there any further things a program like this could provide more outreach with?

● (1020)

Ms. Lianne Ing: As I said, I think IRAP has done quite a good job in terms of holding a lot of information sessions and trying to expand their coverage.

In the U.S., there is SBIR, a small-business program, which is geared directly towards providing funding for small businesses in order to spur innovation. That program has been very successful, in the sense that they actually have separate calls for proposals. They have very prevalent awareness among the business community about the advantages available to small businesses.

The U.S. government also has incentive programs that try to encourage large companies to use small businesses when they're executing large contracts. The use of small business is actually added to the evaluation of a proposal in the U.S., so that certainly helps.

Mr. Phil McColeman: That would perhaps help IRAP to drill down to the smaller companies and give them more incentive to advance their technologies.

Ms. Lianne Ing: Yes.

Mr. Phil McColeman: Good.

I have a question on the SR&ED side of things—also involved with the industry committee—and your comment that stifling innovation perhaps is one of the redirections. SR&ED is obviously offered to a lot of companies. A lot of companies that take advantage of SR&ED find it's very useful for their business models. But a lot of other companies use it just as a business model and don't really produce some of the technologies, the innovations, some of the things that are meant through the SR&ED tax credits.

I wonder if you could comment on that. How could we perhaps do a hybrid SR&ED, or something like that, where we could combine the best results of SR&ED but also eliminate some of the lesser uses of SR&ED that are almost part of a subsidy?

Ms. Lianne Ing: If you look at the model for our company, I think the SR&ED program has been very beneficial, in the sense that it has allowed us to conduct company-funded R and D, which then qualifies for SR&ED tax credits. We conduct that R and D typically to set up for development of new technology through contracts—not subsidies, but contracts—and often those contracts are performed not only for the Government of Canada but for other governments. In those cases we're bringing revenue into the country in the performance of those R and D programs.

When I spoke previously about some of the suggestions on how to change the model for SR&ED—trying to emphasize more commercialization—the real concern is that if we get into a situation where there is a group somewhere that is trying to define the strategic priorities for research, there is no possible way for them to really know across the country what the most promising technologies are for a range of small and medium-sized enterprises.

The smartest people in the world could sit down in a room and they're not going to be able to accurately predict breakthrough technology that could be the next multi-million-dollar technology for the company. From our perspective, it makes sense to try to provide programs that will encourage promising commercial technologies, but not to try to define what those technologies are by sector.

The Chair: Thank you very much, Madam Ing and Mr. McColeman.

[*Translation*]

Ms. Leblanc, you have five minutes.

Ms. Hélène LeBlanc: Thank you, Mr. Chair.

Mr. Gagnon, I would like to quickly go back to what we were saying earlier. The free-trade agreement with the European Union is in the process of being negotiated. In Canada, data protection is valid for eight years. As part of the negotiations, the European Union would like the period to be extended to 10 years now.

Does that meet the WTO requirements or does it go beyond the requirements? What will the impact be on Canada if we agree to extend the data protection period, as the European Union wants?

Dr. Marc-André Gagnon: In terms of data protection, we fully comply with the TRIPS agreement. Extending data protection seeks to encourage companies to do research and clinical trials on already existing drugs to see whether or not they could be used for other purposes.

I personally think that it would make sense for us to somewhat extend the data protection period. The major difference between the European Union and Canada is that, in Canada, we often confuse data protection and data secrecy. Health Canada always requires data secrecy on all clinical data it obtains, which is unacceptable. That prevents other researchers from having access to clinical data that are available. And in many cases, those data have been obtained through massive public funding. I don't have a problem with protecting data for intellectual property so that another company does not market something else, but I think that making them secret to prevent researchers from having access to them is unacceptable.

● (1025)

Ms. Hélène LeBlanc: You said that public research could complement private research. Could you elaborate on that and provide us with some examples?

Dr. Marc-André Gagnon: Private research is highly based on coming up with selling points for pharmaceutical products rather than on clinical research that makes it possible to fully understand the safety of those products. When data secrecy is imposed, and the data are produced by companies and then published in medical journals, the data that are going to be published are carefully selected. The trend is to opt for those data that better support the sales pitch they want to make to doctors.

Right now, more than 85% of basic research is currently funded by the public. So it is essentially public, but it is geared towards commercialization by large corporations.

In terms of clinical research, the major public trials carried out in the United States by the National Institutes of Health have largely made it possible to have an objective and neutral idea of the benefits of a product as opposed to its risks. Sometimes, major clinical trials can set things straight in terms of whether a product is actually good or not.

Ms. Hélène LeBlanc: To continue along the lines of our study and the pharmaceutical sector in particular, how can we develop policies that will lead to the implementation of intellectual property standards, which in turn will generate more innovation in the pharmaceutical sector?

[*English*]

The Chair: Make it very brief.

[*Translation*]

Dr. Marc-André Gagnon: In my view, having patent policies does not mean more innovation. We currently have an institutionalized corporate welfare system. So what I am trying to show is that patent policies are not necessarily the best tool to improve therapeutic innovation.

In terms of policies, we can set up patents and other innovation policies. There is something simple right now that England or the United Kingdom is trying out. It is called value-based pricing, meaning that you agree to pay for a drug based on its therapeutic innovation. So you will pay for innovation, for the results on health, not for the commercialized product.

In my view, that would be a great way to encourage innovation. You bring us innovation, we will pay for it; you bring us something insignificant, we are not going to pay for that.

[*English*]

The Chair: Thank you, Mr. Gagnon.

Thank you, Madame LeBlanc.

Now we'll go to Mr. Lake, for five minutes.

Mr. Mike Lake: Thank you, Mr. Chair.

Thank you to all the witnesses today.

I'm going to zero in, Ms. Ing, if I could, on your reference to SR&ED and your reference to concerns you have about shipping costs to direct funding mechanisms of some sort. But one of the things that was interesting was that you seemed to have had a really good experience with IRAP.

I would note that in the most recent budget, the budget we're going to be voting on for hours and hours over this week, one of the measures we've taken is to modify SR&ED. We have maintained significant portions of it but have modified some of it. Part of that transition, in terms of the dollars, has been to double the IRAP program, for example. I think what you're saying is that you like that program, because it's available to everybody. It doesn't pick one sector over another. It's available to everybody. I don't know if you want to elaborate a little bit more on that.

● (1030)

Ms. Lianne Ing: Yes, that's right. I think there are a lot of good programs available in Canada. It's beneficial always to take a look at these programs to make sure they're not becoming cases where people are maybe taking advantage of a program and are not actually generating a lot of benefits for the country.

From our perspective as a small company in a fairly niche research field, we want to ensure that these sorts of programs don't start getting narrowed down to where they are focusing on only certain technology sectors. I think it's really difficult for anyone to know what the entire innovation field looks like in Canada. There can be a small company somewhere that no one has ever heard of that is about to come up with the greatest breakthrough we've seen in this decade. You wouldn't be able to predict it just by looking at strategic market sectors or strategic technology sectors.

Mr. Mike Lake: One of the things that's valuable about your testimony today is that experiential factor, from the company's standpoint. If you had that small-business person coming to you for some advice on what to do—the business is up and coming, but they don't know where to turn to take that next step—what would you tell them, based on what we have here in Canada right now?

Ms. Lianne Ing: Do you mean in terms of what programs to look at or pursue?

Mr. Mike Lake: Yes.

Ms. Lianne Ing: I think I'd certainly recommend that they contact their NRC IRAP advisor. The advisors available through IRAP are varied. They have technology advisors. They also have business advisors, and they are able to provide good feedback. They act as sounding boards when you go to them with a new concept or technology. They ask a lot of the questions you would expect investors to ask, for instance, to make sure that you're setting up a very comprehensive business case. They are certainly a good resource.

Mr. Mike Lake: Great.

You said in your statement something that sort of jumped out at me. You said:

> As a result, a small company like ours must be selective about which inventions are protected by a patent. We patent inventions that have a clear and significant potential market and where holding a patent will provide us with a meaningful competitive advantage.

The statement that you have to be selective implies that you have inventions that fit that description, but you also have inventions that don't fit that description, and you choose not to patent those.

Ms. Lianne Ing: It really becomes a question of prioritization. As a small company, you can only set aside a finite amount of money, really, to cover things such as patent application and patent maintenance fees. As a company that specializes in a lot of science and engineering, we have a lot of scientists and engineers who come up with great ideas that could become patentable inventions, with appropriate funding.

We really have to sit down and prioritize what we're going to spend company funding on, in terms of investment in R and D. We may have a dozen inventions that are patent quality, but we have to then select just a small fraction of those we will actually apply for a patent on. What that means is that there are technologies that end up not coming out and seeing the light of day or that have to go on the back burner, because the costs for patenting are quite high for a small company.

Mr. Mike Lake: You went on, and that's what I was going to get to, and said:

> As a result, in some cases we rely on trade secrets to protect our IP, or we choose to proactively publish the information to prevent other entities from filing patents for similar inventions.

Ms. Lianne Ing: Right.

● (1035)

Mr. Mike Lake: I don't quite understand that exactly. Maybe you could elaborate.

Ms. Lianne Ing: The two other strategies, aside from patenting, are, first, to rely on trade secrets. That simply means that you try to rely on other legal instruments, such as confidentiality agreements with your suppliers or your partners that prohibit them from releasing certain details about your technology in a public forum. You're simply trying to keep the know-how secret so that you can move forward with a product and launch that product. That really only works when you're dealing with a technology that cannot be easily reverse-engineered, for instance.

The second approach for intellectual property protection is defensive publication. If you're working in a field in which there's a lot of research activity, you know that there might be a lot of groups internationally working in your field. If you make a discovery and you feel that it is prohibitive or not the best business decision to try to patent that, your other option is to go forward and publish that information in the public domain. Once that information is published, if another group were to try to seek a patent on that same concept or a similar invention, that publication would show up when the patent office did a review of the state of the art in the field. One of the criteria for a patent is that it has to be novel and it cannot be obvious to one who is skilled in the art. If you can show that you have come up with a concept and you have published it, it means that another group will not be able to get a patent and block you from using that technology.

Mr. Mike Lake: Okay. Thank you.

The Chair: Of course they could work collaboratively with you on that as well.

Ms. Lianne Ing: Yes.

The Chair: Mr. Stewart, for five minutes.

Mr. Kennedy Stewart: I wanted to talk a little more about universities. Ms. Fraser, maybe you can help me here. This may be a topic that's quite different from what we've been talking about today, but it's related. It's the idea of scientific research funding at universities.

Currently this government seems to be shifting away a bit from pure discovery or basic science and moving more towards industry-directed research. For example, we've had a decline in the amount of money given to discovery grants, and the elimination of two key grant areas, the MRS grant and the RTI grant, or the tools grant. Also, then, we're shifting our more open scholarships to scholarships and post-doctorates that require more industry partnerships.

I'm just wondering if at Dalhousie there has been a broad discussion of this change of direction or if it's on your radar yet.

Ms. Erica Fraser: It's very definitely on the radar. Especially for new researchers, for people just starting out, a discovery grant is how you get started. So the fact that those numbers have been declining is definitely noticeable.

I will say that I work in the industry liaison office, so we very much appreciate those applied research industry grants. I think it is recognized that there has to be that balance between sort of blue sky basic research that oftentimes down the road will lead into applied research or commercialization.... But as Ms. Ing has been talking about, in picking winners or whatever else, oftentimes you don't know what's going to be coming out of that basic research until you do it. So we think there has to be a balance. We think there should be both.

Mr. Kennedy Stewart: Okay. I appreciate that.

I'm just wondering how.... There somehow seems to be this idea that there are these kinds of links in the chain: that you get your basic research, some of it goes to more development, and then eventually it gets commercialized. But those links may not be as connected as they often are portrayed. In Britain they often allude to this idea of calling that a sausage machine, in that you put in the meat on one side and you get your sausages out the other. But having worked in a university for a long time myself, I don't think that's necessarily how basic researchers tick.

So do you have any special ways you try to bring basic researchers more on board with liaising with industry? Are there any special kinds of programs, seminars, or things you do at Dalhousie to try to show basic researchers the value of this?

Ms. Erica Fraser: We definitely do outreach to our researchers—we being the industry liaison and innovation office. We do outreach to our researchers, making sure they're aware of what programs are available.

We do matchmaking with industry partners if there's somebody in the same field. Oftentimes it's push and pull. We often have researchers coming to us with their ideas, but we also have industry coming to us saying that they need help and asking us who we can suggest.

In both of those ways, we try to make those connections.

As for the other way, oftentimes when a discovery is made without an industry partner, then that discovery or invention is disclosed to our office, and we attempt to commercialize it by finding industry partners for it. So while it's not always linear, such that you have this sausage machine, I would say that there are various mechanisms by which, at any point, that interaction can be made.

Mr. Kennedy Stewart: Right, and how successful have your commercialization efforts been? I was talking to a gentleman who works out of UBC, for example, who developed natural gas engines for big trucks, and they went on to commercialize it. Westport is the company on the west coast that now does these trucks.

Anecdotally, do you have any similar examples from Dalhousie where you've had these kinds of big-scale and tip-to-tail success stories?

Ms. Erica Fraser: Sure. For various industries and in various departments at our university, we have successfully commercialized technology. A researcher named Mark Stradiotto has had much recent success in the chemistry field. His product is now being sold and is commercially available.

As well, we have a concrete material that has been developed and is currently being commercialized in Atlantic Canada. Also, we do have several drugs that are currently going through the different phases of clinical trials and that have been partnered with pharmaceutical companies.

So it really spans the breadth of the research that happens at Dalhousie.

● (1040)

Mr. Kennedy Stewart: Yes, and my fear, I guess, is that if you limit academic freedom—this is a bit like what Ms. Ing has been saying—and if you start steering people in a direction, with companies saying that this is what they're expecting from you and it's not happening....

But also, for academics, if you start limiting the freedom with which they can explore, they go elsewhere, and I've heard this. I've had a lot of letters and e-mails since the changing of the grants. People are saying that their basic research grants are disappearing so they're starting to look elsewhere now, because they signed up for a job for academic freedom, not necessarily to serve industry. They say they don't mind partnering, but they don't want that to be their primary goal.

Are you having forums or discussions at Dalhousie regarding the nature of research at the university? Is it something that you explore often?

The Chair: Go ahead very briefly, please.

Ms. Erica Fraser: I would say that's always a topic of conversation.

The Chair: Thank you.

Now we go to Madam Gallant for the last round.

Mrs. Cheryl Gallant: Thank you, Mr. Chairman.

Ms. Ing, Mr. Regan raised his eyebrows when you mentioned you're from Chalk River, because we did have a visit there recently. Bubble Technology in and of itself is a consequence of the science generated at AECL. We had the intellectual property there, which was commercialized.

You've spoken quite a bit about the intellectual property generated by Bubble Technology and commercializing. Have you experienced any situations, given that AECL generates about 12 patents a year, or with taking those they're currently working on and transferring them or commercializing AECL's patents recently?

Ms. Lianne Ing: We haven't had any recent collaborations with AECL in that regard. A lot of the focus of R and D at AECL in recent years has been more on nuclear reactor technologies and supporting technologies. Our field of research has moved more towards defence and security applications, so there hasn't been a strong overlap. However, in the last year or so, as people have looked at restructuring AECL, there's been a renewed focus at the Chalk River site in terms of reaching out to collaborate and establish greater linkages with partners such as us. In the past year we've actually started some renewed collaborations with AECL to try to take advantage of some of the facilities they have available at the Chalk River site.

Mrs. Cheryl Gallant: Very good.

You mentioned that for small and medium-sized businesses it's expensive enough to get the patent going, but if there's a challenge to your patent then you enter the realm of courts.

Madam Fraser expressed that there should perhaps be a separate smaller court system for the intellectual property. Would you suggest the same sort of thing, or do you envision another type of entity altogether to deal with patents especially as they apply to small and medium-sized businesses?

Ms. Lianne Ing: It's certainly a concern for a small company when it recognizes that once it has obtained a patent, if a large organization wishes to infringe or create a lot of obstacles for it and wants to throw enough money at doing that, it could tie the small company up in court for a long time and the small company would really be at a huge disadvantage. Certainly if there were some program under which either you would have a separate small claims model approach or you would have some mechanism whereby there would be resources for a small company if it could demonstrate that the technology had a net economic value to the country, there might be some resources they could rely upon to defend themselves against a very large corporation.

Mrs. Cheryl Gallant: Thank you.

The Chair: Members, before I thank the witnesses, I just want to let you know there will no meeting on Thursday. There was an agreement by all committee members.

I just need someone to move a motion regarding our budget here: that in relation to the study of the intellectual property regime in Canada, the proposed supplementary budget in the amount of $2,600 be adopted. Can I have somebody move that?

Mr. John Carmichael: So moved.

(Motion agreed to)

The Chair: Thank you very much, members.

Thank you very much to the witnesses for your very good answers and your time that you invested here as well.

The meeting is adjourned.

Published under the authority of the Speaker of the House of Commons

SPEAKER'S PERMISSION

Additional copies may be obtained from: Publishing and Depository Services
Public Works and Government Services Canada
Ottawa, Ontario K1A 0S5
Telephone: 613-941-5995 or 1-800-635-7943
Fax: 613-954-5779 or 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Also available on the Parliament of Canada Web Site at the following address: http://www.parl.gc.ca

Publié en conformité de l'autorité du Président de la Chambre des communes

PERMISSION DU PRÉSIDENT

On peut obtenir des copies supplémentaires en écrivant à : Les Éditions et Services de dépôt
Travaux publics et Services gouvernementaux Canada
Ottawa (Ontario) K1A 0S5
Téléphone : 613-941-5995 ou 1-800-635-7943
Télécopieur : 613-954-5779 ou 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Aussi disponible sur le site Web du Parlement du Canada à l'adresse suivante : http://www.parl.gc.ca