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Chair

Mr. Dan Ruimy

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● (0845)

[*English*]

The Chair (Mr. Dan Ruimy (Pitt Meadows—Maple Ridge, Lib.)): Welcome, everybody, to meeting number 66 of the Standing Committee on Industry, Science and Technology. We are continuing our study on intellectual property and technology transfer.

Today we have with us Richard Gold, associate dean and the James McGill professor at the Faculty of Law, McGill University, by video conference; from the Intellectual Property Institute of Canada, Stephen Beney, president; from the Centre of Excellence in Next Generation Networks, Ritch Dusome, president and chief executive officer; from the Canadian Chamber of Commerce, Scott Smith, director, intellectual property and innovation policy; and all the way from Manitoba, from the Manitoba Technology Accelerator Inc., Marshall Ring, chief executive officer.

Welcome to all.

We will start with you, Mr. Gold. You have seven minutes, please.

Prof. Richard Gold (James McGill Professor, Faculty of Law, Faculty of Medecine, McGill University, As an Individual): Thank you very much for inviting me.

[*Translation*]

Good morning, ladies and gentlemen.

[*English*]

Because I only had two days to prepare, I didn't get to translate my brief into French. I apologize.

I'm here in my personal capacity, not as associate dean, but as a James McGill professor in both law and medicine at McGill. Not to be too immodest, I am Canada's leading independent expert on patent law, and I have a particular focus on technology transfer partnerships between the university and industry. I have advised the alphabet soup of international organizations, such as WIPO, WHO, OECD, UNITAID, as well as Canadian and provincial governments. I have given advice internationally. I've talked to basically every single political party, although I don't think I've had conversations with the Greens yet.

Most pertinent to this discussion is that I was the lead expert on the OECD counsel's recommendation on the "Guidelines for the Licensing of Genetic Inventions". Also, I was the author of the OECD's report, "Collaborative Mechanisms for Intellectual Property Management in the Life Sciences". I have done extensive work with the tech transfer community in Canada, the United States, and internationally.

I sent in some slides. I'm not going to talk about them because we can't see them, but I'll leave that for the staff. We all know the background. We're very good in Canada in generating ideas; what we're not so good at is transforming them into innovation. If we look at the pharmaceutical, aerospace, and electronic sectors, all sectors that we think are strong, we're actually pretty poor in terms of our exports.

If you look at the top technology firms—this is from a Pricewaterhouse study in 2015—they gain about 60% of their revenues within Canada. Given how small Canada is in the world, that is a worrisome trend. We should be exporting much more than that.

The problem is essentially one of lack of investment and infrastructure—more intellectual than physical—which comes down to a failure of innovation policy. In terms of the universities, we've been pursuing the same policies of tech transfer for 30 years. They have failed. Every time they fail, we say, let's just try harder. We try harder and it fails again. It's time for something new.

The end result is that by ignoring innovation policy and just following things that don't work, we've lacked in an ecosystem in which firms invest, develop, and export technology. The end result is that our universities create knowledge, transfer it mostly to the U.S., but also other foreign firms, and they sell it back to us. We're paying twice for the same thing and not mobilizing that knowledge.

In terms of intellectual property, Canada is in compliance with all international laws. However, we do not exercise all the flexibility that international law offers us to ensure that we're helping our local innovators. There is no credible evidence that increasing intellectual property rights will lead to domestic innovation. I have to cite the MacArthur genius award winner Heidi Williams, who concluded, "we still have essentially no credible empirical evidence on the seemingly simple question of whether stronger patent rights... encourage research investments into developing new technologies".

My own research with Jean-Frédéric Morin at Laval suggests that IP does not cause growth; growth causes higher IP. What we need to do is think outside the box and have a made-in-Canada solution within the international scheme. In particular, our universities have to break away from what they've been doing for the last 30 years and focus less on patenting. We're bad patentors at university.

The people who get their stuff patented are inventors who complain—the squeaky wheel. There's no business planning around it. When the patents are issued or sought, they're not necessarily sought for the right things, and so most of them go nowhere except to trolls. The only people who pick them up are patent trolls who will use them against our firms. There's just no capacity within the university to think about how to do this. Instead, it's the industry that needs to patent.

● (0850)

Instead of having this idea that we come up with ideas, patent them, and transfer them, we need to create new forms of partnerships and leave it to the private sector to get the patents.

One of the impediments is that we have little knowledge about how to use intellectual property. As I said, we tend to look to the U. S. for mechanisms, but even there the universities do not make money, except for the top 15, and most of them don't actually lead to much innovation.

What I want to suggest in my remaining time are some models to think about.

In Montreal, we have the Montreal Neurological Institute and Hospital, recently funded in part by the federal government, the provincial government, and a $20-million gift from Larry Tanenbaum of Toronto. The idea is that all the data will be made public, and there will be no intellectual property. The advantage of that is that it brings down the cost for companies to interact with universities. The thing that I hear constantly is that it takes too much time to negotiate one-off agreements with universities.

Everybody is thinking that their little piece of IP is a lottery ticket, and they don't want to give it up. What that does is impede all but the largest companies from entering into agreements. By getting rid of intellectual property within the mandate of our research, we can allow in a whole bunch of companies. In the biotech—as is the Montreal Neurological Institute and Hospital—and life sciences, we can bring in IT companies that normally wouldn't come in because of these costs. Then we allow the firms to patent around it. If they get good ideas, products, and services, that's great. They patent it, but the university stays out.

That model, we think—and I have done some work on this that the committee will get later—should generate an ecosystem because we will get more firms involved with university research and allow the people who have the strategy to develop it.

That is one approach. There have been others. The BC Cancer Agency also has a form of openness. The Structural Genomics Consortium, based out of Toronto, has its own form. All of these have been exceedingly successful in attracting industry financing and in engaging industry. I would suggest we think more about that.

In Quebec, we have a different model with the aerospace industry through CRIAQ, whereby, within the partnership, everybody gets to use everybody else's intellectual property outside. They can license it.

All of these show that there are different ways of thinking about technology transfer that don't involve the universities necessarily getting any, instead leaving it to the private sector.

To make it effective, however, we need to build up strategic knowledge about intellectual property. We don't do a very good job. We don't educate our researchers about intellectual property. It's not Canadian intellectual property that's driving innovation; it's American and European. It's thinking about non-traditional IP, like standard-setting internationally. All of these drive innovation. We need our researchers and our firms to have a better understanding. We need more courses in this and more points of training, to the extent that we can use large collaborations like the superclusters to provide that training. That would be great.

We also need to recognize the fact that we're small in a big pool. We have to somehow bring together the intellectual property that's stretched across our country, whether through a patent pool or through a rule that when the federal government funds research that results in a patent, that patent cannot be used against Canadian firms. We have to unleash the power of charities. Our tax laws are pretty restrictive. We have to allow our charities to better invest in the sector.

Those are the types of things we need. It's not about intellectual property. We know that making universities all abide by the same rule of university-owned or inventor-owned doesn't make a difference. It's the soft stuff we need, not hard rules.

● (0855)

The Chair: Thank you, Mr. Gold. I'm sorry to have to cut you off, but we do have a lot of people here.

I was looking at your PowerPoint presentation. It's really good stuff. We're going to make sure that it gets translated and sent out to everybody. There are some really interesting graphs in there.

We're going to move to Stephen Beney from the Intellectual Property Institute of Canada.

You have seven minutes.

Mr. Stephen Beney (President, Intellectual Property Institute of Canada): Thank you, Mr. Chair.

I would like to thank all members of the industry, science, and technology committee for allowing me to speak to you about facilitating technology transfer in Canada. My name is Stephen Beney, and I'm the council president of the Intellectual Property Institute of Canada, also known as IPIC.

IPIC is the professional association of patent agents, trademark agents, and lawyers practising in all areas of IP law. Our membership totals more than 1,800 individuals consisting of practitioners in law firms and patent agency firms of all sizes, in-house corporate and university IP professionals, government personnel, and academics. Our members' clients include virtually all Canadian businesses, universities, and also foreign companies that hold IP rights in Canada.

Today, I'm going to give you some of the highlights of our submission for the study, where we brought together IPIC members who work in private practice, university technology transfer offices, or TTOs, government research agencies, and large manufacturing corporations. Our purpose is to bring the perspective of these professionals involved in various aspects of technology transfer in Canada.

To begin, we define technology transfer as the process by which money invested in applied research in a university or college is transformed to produce societal benefits that may generate commercial revenue. We found four main routes by which technology transfer takes place. There's the industry-sponsored, university–college partnerships; there's the licensing of the technology to the private sector by the university or college; there's a spinoff company, where academic researchers create new companies to exploit their invention; and there's open innovation, where companies consider an external path to market, such as transferring IP rights or collaborating with partners who are better positioned to actually bring something to the market.

In support of your committee's studies on technology transfer, IPIC has six recommendations for you to consider.

First, a university's internal IP policy plays a role in the ease of commercialization of transferrable technology. Currently, universities are free to institute their own internal IP policies, a situation that has resulted in several different models. Some universities have a creator-owned IP model, others have a university-owned IP model, and some allow both or either. The lack of a systematic policy creates unnecessary barriers for commercialization. The different policies present different challenges to entities interested in technology transfer for purposes of commercialization, as they must customize their approach on an institution-by-institution basis. A clear national university internal IP policy could set out the road map for technology transfer within such institutions, facilitating negotiations of commercial IP arrangements between a university and a commercializing entity, including licensing and royalty-sharing agreements and private equity participation in academic start-ups.

IPIC recommends that, in the absence of a common internal policy of IP ownership between universities and creators, the federal and provincial governments should work together to study and propose policy options with the objective of encouraging uniformity within these common models, such that we can do that.

Second, universities have traditionally created technology transfer offices to promote and facilitate commercialization. These offices are funded by the universities themselves, and over the years they have benefited from government funding. While incentives provide the motivation to commercialize, the practices of TTOs and the commercialization models that they adopt determine the path of commercialization. In a nutshell, these practices and models determine whether a deal gets done and whether and how it will create value for the Canadian economy.

Therefore, we recommend that, to transform the range of expertise found in TTOs across Canada into a national advantage, the government should establish programs to facilitate knowledge-sharing across TTOs, including best practices in working with IP professionals.

Third, a key hurdle in university relationships with the private sector is the funding gap, the lack of funding from either government or industry to take innovations from early stage to a marketable stage. To bridge this gap, proof-of-concept centres have gained popularity with universities. These centres offer various services, including seed funding and incubator space, thus allowing inventors to test the commercial potential of their research. This is a trend worth investigating, with the caveat that providing researchers with insufficient funding is probably worse than providing no funding at all.

We recommend that the government should develop programs that help to bridge the funding gaps between academic research and market entry.

Fourth, researchers, students, institutional leaders, funding agencies, and other key players in applied research should have basic knowledge of IP concepts for the commercialization process. For example, researchers need to know that publication of their research might eliminate a possibility of patenting an invention that resulted from the research. Some may believe that freely sharing their discoveries is the best approach to solving a problem in society, and that can be fine; however, sometimes that may not be so, and the development of a commercial product would require a company to do it, and a patent for that.

● (0900)

So that researchers know the right information to be successful, we recommend that universities engage IP professionals in discussions and education about technology transfer best practices and IP basics. IPIC would be pleased to be involved in discussions about IP education.

Fifth, much has been written to say that the current metrics may not be sufficient to measure the performance and impact of technology transfer. For example, the Auditor General of Ontario recommended that universities develop socio-economic performance measures. To this end, we would recommend that the government work or support work on the development of relevant metrics. IP professionals would likely be involved in these discussions as well.

Finally, patent and trademark agents are at the forefront of supporting innovation in Canada. This is why we must ensure that the Patent Act and Trade-marks Act remain updated and competitive.

A current legislative gap that is relevant to technology transfer concerns is the regulatory framework for patent and trademark agents. The Canadian Intellectual Property Office, with assistance from the profession, administers a rigorous exam qualification process, but most of the hallmarks of a professional regulatory system are missing. There is no mandatory code of conduct for agents, no continuing education requirements, and no discipline process. A self-regulated body would provide all stakeholders in technology transfer with the confidence that the patent and trademark agents meet continuing education and insurance requirements, abide by a code of conduct, and are subject to a clear complaints and discipline process. We recommend that Parliament adopt legislation that would allow for the creation of a college of patent and trademark agents.

In conclusion, we have found that there are several aspects of the current technology transfer system in Canada that need to be addressed by the federal government to ensure that it's more effective and efficient. Canadian IP professionals continue to be at the front line of helping with this process, which allows for innovation and supports economic growth. We are confident that by implementing some of these recommendations from IPIC, Canada will be positioned to become one of the more innovative countries in the world.

I would like to thank you on behalf of IPIC for your continued support of our profession, and for considering the six recommendations I have presented to you today.

The Chair: Excellent—right on seven minutes. Thank you very much.

We're going to move to the Centre of Excellence, and Mr. Dusome.

You have seven minutes, sir.

Mr. Ritch Dusome (President and Chief Executive Officer, Centre of Excellence in Next Generation Networks): Hi, this is my first time here, so I brought my five copies.

I'm coming at this from a different angle. I'm coming from industry. Our consortium exists probably because companies like Nortel don't exist any more, which is quite unfortunate. I'm here on behalf of large industry members. Unfortunately, most of them are multinationals based outside of Canada, although we do have a lot of service providers, the large Canadian service providers as well.

We're a centre of excellence. We're funded by the NCE and we focus on ICT/telecom, which I would argue is the foundation of the next digital economy. You can't name any industry that is not going to have a technology component to it.

Our model is very simple from an intellectual property view. We deal a lot with small and medium enterprise. That is where the innovation comes from. I used to work for very large companies like Cisco Systems. I ran their R and D here in Ottawa for many years. I also worked for Bell Canada, and so on. When you're at these large companies, you think that you're innovating, and you are, but the bright ideas are coming from the smaller companies. In my opinion those are the ones that need their intellectual properties protected.

When they come to the table, in our model we have large multinationals that put out problem statements: we would like investment in these areas. Small companies submit a proposal that may or may not match what these companies are looking for. We bring in students and professors from universities to do a proof of concept and a commercialization exercise, and in that way we believe that this is the proper engine or, in the ICT space, this is the proper vehicle for commercialization. At least we've had some very good success.

We are going to be launching our program across Ontario, linking all of the innovation centres together. You'll see that in my slides whenever you can see them. Then we also plan to link the innovation centres across the country, as well as the superclusters and the centre of excellence. That's our long-term view and, effectively, any of the major vertical spaces—be they oil and gas, mining, energy, health care, you name it—will have an ICT component and will ride over this infrastructure.

Now, it does need to be open and to be standard spaced. That's the only solution that would make sense. From an intellectual property perspective, our model is very simple. The IP actually stays with the SME. This is agreed to. The large multinationals have very big law firms and we need to make sure that the small companies who can't afford it are protected. That is right in our mandate. It's in our proposals, so unless the SME agrees to partner, licence, or share, it stays with them. If we create something together while we're doing this proof of concept or commercialization, then we would have a discussion about where that intellectual property would lie. Right now, it's assumed that it would be joint, with equal representation from the various members.

In terms of technology transfer, we have a very interesting competition in the sense that we have industry members who compete with each another, but when they come to CENGN for the benefit of Canada, they co-operate. There are times when material cannot flow company to company, so we need to make sure that is absolutely secure. Technology transfer will happen once all the appropriate agreements had been signed, and so on.

That is our model. I know it's a very simplistic view. I'm certainly not a lawyer, but from my industry perspective, I believe innovation comes from industry. It comes from the small companies and that is where the IP needs to stay.

Thank you.

● (0905)

The Chair: Thank you very much.

We'll move to the Canadian Chamber of Commerce.

Scott Smith, you have the floor for seven minutes, please.

Mr. Scott Smith (Director, Intellectual Property and Innovation Policy, Canadian Chamber of Commerce): Thank you, Mr. Chair, and members of the committee, for your kind invitation. As a matter of fact I received an invitation from several of you, which is very encouraging.

I'm pleased to be here today to represent the Canadian Chamber of Commerce. Most of you know who we are. As the largest business organization in Canada, we have a network of over 450 local chambers of commerce in our membership. That includes boards of trade, representing over 200,000 businesses across the country. So it's businesses of all sizes and in all sectors.

A lot of those businesses aren't necessarily involved in tech transfer from the perspective that you've been listening to this morning, but there are a number of things that we might want to look at, such as what innovation actually is.

My comments to you this morning are informed by regular dialogue with these members. You've heard this before, I think, but Canada is currently ranked 15th on the World Economic Forum's global innovation index, and we've been falling behind for roughly the past decade. That was last year's number. This year's rankings come out next week, so it's too bad I couldn't have talked to you next week. I might have had a better answer for you, because the focus will be on agriculture and natural resources, which I think we're pretty good at in this country. Perhaps we'll see an improvement in the ranking.

The OECD defines innovation as the implementation of a new or significantly improved product, good, or service, or process; a new marketing method; or a new organizational method in business practices, workplace organization, or external relations. That's pretty broad. In Canada we tend to be a little narrower in our definition. We count the number of patents and we ask, what do we commercialize? Perhaps we should think a little more broadly in terms of what we mean by ”innovation” as our metrics. It might help to improve our scores if we looked a little bit beyond the traditional notion of intellectual property and find incentives for businesses to improve on their processes, as an example, to meet the needs of the 200,000 businesses out there.

That said, intellectual property is the cornerstone of the value proposition for any new venture. It's both a wealth creator and a wealth protector. As competition from other jurisdictions rises, a robust IP regime is crucial to our economy. The U.S. Chamber of Commerce—I think some of you went down to Washington recently and heard a little bit more about this—produces an intellectual property index. In that index, Canada was ranked 17th this year, just ahead of Taiwan, Malaysia, and Mexico, and just behind Israel and Poland.

The report analyzes a number of factors, including things like patent terms, and court systems and judgments, to derive a score. Then they take that score and measure it against the innovation indexes, and they found a direct correlation. Canada is an anomaly on that score—namely in terms of the relationship between innovation and IP—according to our GDP. Why is that? It's because we do pretty well in agriculture and natural resources, which are not necessarily innovation-related. There are innovation aspects to them but most of our exports are raw materials.

Weak patent protection can lead to suboptimal innovation, since the potential payoff for a private actor may be deemed insufficient for the amount of time and resources put into developing an invention. Because weak rights make it more expensive to protect inventions, firms tend to look inward to solve problems that may otherwise have been more efficiently solved by an inter-firm partnership. Patents allow employers to see the exact results of the creativity and skill of prospective employees. As well, when rights are weak, workers have trouble qualifying their value.

We're not experiencing a dearth of ideas in this country and research is well-funded by the crown, so why are we seeing other jurisdictions rise in global innovation indexes relative to Canada's position?

One of the reasons is access to capital. Start-ups tend to do quite well in seeing a first round of financing for a great new idea, but, as I think you've heard from a number of sources this morning, one of the key challenges is the sales and marketing, and the strategy for intellectual property going forward within those start-ups. Start-ups aren't always looking for an exit. Often they are looking to scale up. They just can't find the financing for that, and it's because the strategy is wrong. What ends up happening is that the start-up gets bought by a U.S. company and the U.S. company takes it on and, as you heard this morning, sells it back to us in other ways.

So we need to find a way around that.

● (0910)

With respect to knowledge transfer, one of the key challenges for publicly funded research is the IP ownership framework of Canadian universities. Unlike the United States, Canadian universities don't have a uniform patent policy, with both university ownership and inventor ownership models existing at different universities. For inventions, 22% of Canadian universities have university ownership policies, while inventor ownership policies are more common, making up 42%. Rarer are the joint ownership models, where technology transfer and innovation policy are for both the inventor and the university. The mandatory implementation of uniform patent ownership policies interferes with contractual freedom. IP ownership or preferred licensing terms are a prerequisite for business to participate in research projects.

Second would be the incentive structure for academics. Innovation is more likely driven by the obligation to publish in reputable journals as a means of advancement than is commercialization of products derived from research. As you heard this morning, academics aren't necessarily geared towards entrepreneurship. There are some who are very good at it, but they are the exception rather than the rule.

The questions being asked by university researchers are more often than not framed by academic curiosity rather than commercial demand. In speaking to our members, who are regularly asked to participate in these research projects, our researchers are not asking the questions business needs answered, those immediate problem-solving questions that help bring new products to market.

Third, I'll talk a bit about spin-offs and licensing. These are another method of transfer we rely on. Waterloo University is probably the only example of researcher-owned IP framework. It is the most successful research institution, but maybe we should look more to that example not just for the IP framework but as a source of human capital. Knowledge transfer comes not just from the ideas and relationships that they build, but from the interaction between business and academia. It's critical to mutual understanding. Also, I think the co-op programs, which you're seeing more universities do now, help build those relationships and trust.

Incentives for research should take into consideration the objectives for reducing the research in the first place. If the end goal is to satisfy academic curiosity, then we should forego the expectation of a commercial return. There is merit in doing research for research's sake, and funding universities is an important thing to do, but don't expect something to come out of that. If the incentives are geared towards business enterprise and commercialization of ideas, then sales and marketing should be an integral component of the research proposal, which I think is a fundamental component of the supercluster idea that's come out. That should be an integral component of the proposal, with a clear strategy to commercialization as part of a grant application.

I'll make one final note on data flows. Raw data is not treated as intellectual property in any formal sense. However, the data derived from research could produce unintended and spectacular results when analyzed outside the parameters of the original research project, and we should probably give some thought as to how data is treated as intellectual property.

With that, I will conclude, and thank you so much for your attention.

● (0915)

The Chair: Thank you very much.

Finally, we will move to Manitoba Technology Accelerator, and Marshall Ring, chief executive officer.

You have seven minutes, sir.

Mr. Marshall Ring (Chief Executive Officer, Manitoba Technology Accelerator Inc.): Good morning.

I did not submit any slides or opening comments in advance, but I am captivated by the conversation around the room, and thank you very much for the opportunity to speak to you folks.

By way of introduction we build start-up companies. We take great ideas that are often patent-protected, and we turn those into companies. Our KPIs measure investments that we secure with client companies, the revenues we generate, and how many jobs we put into this space. As everybody probably knows, Manitoba is not the biggest province in the nation, but we did manage to raise over $125 million in capital from the clients of our little operation last year. We created about 250 new technology jobs, and we generated over $35 million in revenue from concepts that were ideas three years ago. So we are starting to see the acceleration of these ideas. What I find interesting is that less than 10% of our client base is rooted in the intellectual property that comes from universities or academics. Most of the ideas we work to commercialize come from the private sector, or from individuals working on their own.

If the purpose of the committee is to understand how we can use innovation to grow Canada's commercialization and economic standing, one of the questions I would ask is for a review of the sources from which our intellectual property come from. In a regional and a national setting, if we look at the patents filed, I'd be curious to know the owners of those patents. I would argue that you could divide it into three categories: universities and academics, business, and individuals. If you were to look at the data that shows where our greatest flow of patent ideas come from, it would be very useful then to use that data to build policies to enhance their acceleration and commercialization.

I would also encourage the idea that there is more room for the private sector to work in the early stages of filing ideas and getting patents. There has been some conversation that universities should take a longer position as the ideas get formed and patented with the view of building businesses, but again I would come back to some of the comments that were objectives-based. Understand why patents or research is undertaken and the objectives of the patent, and one of the phrases that we often use is to put people to their “highest and best use”. I think that from ideation to company formation a multitude of skill sets are required to come into that process, and I would encourage the use of people and their highest and best use. It's not going to be one person or even one team that would likely be involved to make that transformation from ideation into technology that can build a company.

If I had opening suggestions to make, it would be to focus on data to make sure that we make informed decisions that are objectives-based.

I thank you for your time.

● (0920)

The Chair: Okay.

Thank you very much. We're going to go right into questions, starting with Mr. Longfield for seven minutes.

Mr. Lloyd Longfield (Guelph, Lib.): Thanks, Mr. Chair.

Thanks to everybody for coming here to talk about IP and innovation and commercialization.

Professor Gold from McGill, I was really interested in your comments about having to look at this differently, almost in the opposite way to what we have been doing in the past. You mentioned your background in biotech.

This morning I was on Facebook answering some questions around IP as it relates to seeds, particularly the question of why seed companies don't just provide all of their seed IP for free so that everybody can use it. It takes 10 years to develop a product and get it through approvals, including all the money that goes into research and approvals. We need to protect IP but we also need to make ideas open. Could you maybe speak to that a little more, please?

Prof. Richard Gold: Certainly, and I think you're quite right. This is an area where industry itself is moving. I work more closely with the pharmaceutical industry. Probably the best example is the work that the Structural Genomics Consortium is doing. It's based in Toronto. About a quarter of it is funded by industry. Some of the large pharmas are involved, plus the federal government, provincial government, and the Wellcome Trust.

They started a project in which they're trying to find probes, basically molecules, that will allow them to investigate genes and other things. They've asked the industry to go back into their archives. They've got these libraries of molecules that they've tested and decided not to pursue for various reasons, but they would work really well as probes. They spent hundreds of millions of dollars developing these. The firms are saying that they'll go through their archives and find those tools because they think it will accelerate research. That's one example. What we're seeing at the Montreal Neurological Institute is similar, in that firms are coming to the MNI because there's the open sharing of data.

In these cases, everybody is recognizing that keeping data local actually impedes research and that we need to encourage the sharing of data. Obviously, at one some point, there has to be a patent.

Mr. Lloyd Longfield: The argument that's also been made by Mr. Beney is around the patent pool and the concept of businesses being able to draw ideas, not patents, from universities and then commercialize them.

I'll move over to you on this question as well. I'll start on the first one with McGill, and then go over to you .

You could form a supercluster to commercialize these ideas. The members of that cluster could go across Canada through the network of university research, draw ideas, and then work through the supercluster concept to commercialize those ideas.

Is that—

Prof. Richard Gold: Are you starting this question with me?

Mr. Lloyd Longfield: Yes. I'm trying to connect our study with the supercluster concept.

● (0925)

Prof. Richard Gold: The superclusters are based on industry, which I think is the right focus for them.

Most of the patents for the type of stuff we come up with at universities are useless. They're way too early stage. They have no commercial viability. That's one of the reasons why it's not worth spending the money on them. Industry knows much better what is valuable. The patents we have are dispersed among many firms, and sometimes the only option is to sell out to a U.S. firm in order to get something for them.

If we can pool those resources—and I think Jim Hinton talked to you a couple of days ago about this—that would certainly enhance our ability if we could collectively use a base of knowledge, with each firm then developing its own patents for its products and services.

Mr. Lloyd Longfield: Terrific. Thank you.

Mr. Beney, how are you on that?

Mr. Stephen Beney: That's actually the first area of technology transfer they've identified in which industries go to universities and fund research to help further their development. I do work with a lot of universities, and that is one model I see. I think the main issue there is the knowledge level. A lot of the universities don't have much experience, particularly in that type of environment.

Professors in particular don't have much experience with ownership, what they can and can't say in this area, and who is going to own what at the end of the process, and things like this. There's a lot of education that's required, I think, in that kind of environment to make sure everybody is on the same page and understands what they're working towards, and who owns the IP, and things like this.

Mr. Lloyd Longfield: Great. Thank you.

Mr. Dusome, you mentioned that the SMEs are where the innovation starts. I'm working with a business from New Brunswick in the area of AI. It's a spinoff from the University of New Brunswick. I'm working with an agriculture company in Guelph, as well as a manufacturer in Guelph, that is interested in protecting the AI in the small New Brunswick company from being taken into a large multinational agricultural company.

How do you see that going through? What role could our policy play in protecting Canadian IP?

Mr. Ritch Dusome: Our policy—and I don't know if it's the right one in the ICT space—is that the intellectual property always remains with the SME. That's the default, unless something unusual happens in which someone wants to pay for it, someone wants to partner, or the SME agrees that there were other people that have added value, which would change that position.

I think that is the only way. We're dealing with a lot of these companies, and they can't afford a lawyer, quite frankly. If they do, it's a big deal. Our agreements that are in place have been vetted by lawyers to protect them right from the start. I think that would be—

Mr. Lloyd Longfield: We really are going around this from a whole different view, then, coming from the SME forward instead of large businesses investing in universities and then selling their IP to the States, and then our buying the IP back.

Mr. Ritch Dusome: Correct. Large businesses know where their gaps are. They might not be able to move fast enough. Small companies could fill that gap. They're much more nimble. They can move more quickly, but they should be protected unless they plan to acquire those companies. Unfortunately, as was mentioned, that is the strategy for a lot of Canadian companies, to get bought.

Mr. Lloyd Longfield: In my two seconds left, I love the metrics from Manitoba. I'd love to get those metrics in front of us to see the best practices that we could share. Thank you.

Mr. Marshall Ring: I'd be pleased to distribute them.

Mr. Lloyd Longfield: Terrific. Thank you.

The Chair: Thank you very much.

Mr. Nuttall, you have seven minutes.

Mr. Alexander Nuttall (Barrie—Springwater—Oro-Medonte, CPC): Thank you, Mr. Chair. I have a number of questions for the group based on the presentations.

I certainly want to thank you all for being here with us today.

I'd like to start with Richard, if that's okay.

Richard, something caught my ear in your presentation I believe you talked about a Montreal organization that was partially funded by the government. Was it the Montreal Economic Institute, or what was the name of the institute?

Prof. Richard Gold: The Montreal Neurological Institute, in fact.

Mr. Alexander Nuttall: The Neurological Institute, okay. Can you describe how the government funding made a significant difference in that field and region?

Prof. Richard Gold: This is all relatively new. One of the government funds set up by the former government, continued by the present government, is the Canada first research excellence fund. Some of the funding came from it. The chief aim, obviously, is research on neurodegenerative diseases.

In this field there's really been almost no advance made in 30 years. We've been doing the same thing over and over again, so it was felt we needed a kick to the research community. That money was matched by provincial money and, as I said, it's attracted interest from all kinds of firms. I'm not sure I'm allowed to tell you which ones yet, as I don't know if they're public, but large pharma firms, biotech firms, and IT firms are interested. They're all coming.

The research is just starting. Interestingly enough, we're developing very detailed metrics of innovation and the success of this. The theory is that we're going to get a lot more firms involved. We're already seeing that, but this is all ad hoc. As an empiricist, I'm not confident yet, but we're seeing good signs that these firms are coming together and calling up the MNI to do research. We'll know in about five years whether we've succeeded. It's way too early.

We're seeing a lot of enthusiasm. We've had coverage in *The Guardian*. The European Commission and the OECD are interested. I'm being funded by the Gates Foundation and Wellcome Trust. There's a ton of interest, but I can't come to you with solid figures on how many jobs this has generated. We don't know that yet.

● (0930)

Mr. Alexander Nuttall: As a follow-up question, there was a fund created by the previous government related to research on degenerative brain disease, which I think was around $400 million over five years. Were they able to reach into that fund as well? It was matching private citizen donations to research. Is it just strictly out of innovation funds?

Prof. Richard Gold: Probably some of the researchers and projects are funded through that fund. It was more project oriented. The difference with the CFREF—which also crossed both governments—is that it's institution-wide. A lot of the money's going into making open science data available—there's really expensive but good-quality data out there—and to have it used. It's the infrastructure that allows this to happen, which is financed through the CFREF. Those other funds you're talking about would be more project specific. I don't have details on those.

Mr. Alexander Nuttall: Okay. Perfect.

I'll move over to Mr. Dusome. One thing you spoke about is the philosophy of dealing with the small and medium-sized businesses, and you said that that the larger businesses take care of themselves. They know where they're at. They are constantly doing 360° reviews to determine where their gaps are, and they have in-house legal counsel, etc., to manage these processes.

My riding's in Barrie, Ontario. We're an interesting place because we're an hour outside of Toronto, but we do have our own economy. It's not a bedroom community. We have more people commuting in than out.

You spoke about the superclusters. Just off the bat, is your organization in favour of the $950 million being spent in this year's budget on the supercluster strategy?

Mr. Ritch Dusome: Well, it's a little bit of a loaded question.

Mr. Alexander Nuttall: Yes, it is.

Mr. Ritch Dusome: We will be submitting—

Mr. Alexander Nuttall: That was the point.

Mr. Ritch Dusome: —a proposal to the supercluster, because, in fact, I want to connect all the superclusters together. Only then will you actually see collaboration across the country. I'm from north of Barrie, so we're in the same area.

Mr. Alexander Nuttall: Where are you from?

Mr. Ritch Dusome: I'm from Penetanguishene, a small community up there.

As to the innovation centres, the centres of excellence, the superclusters, I don't see any difference between them. They're all working towards the same purpose, which is to better our economy. We need to interconnect them so that people can collaborate. I agree with the point that the market in Canada is way too small. We need to think globally. Everything we do, we should look at in terms of the Canadian market as well as how we can take this outside.

Mr. Alexander Nuttall: Because your organization is what it is, I'm going to pick on you a little bit.

The issue that I've seen right away, and something that we identified very early in this funding, is that it seems that it's going to be overwhelmingly used in major urban centres. Barrie's not one of those, and Penetanguishene's not one of those. In fact, there are probably only five or six meaningful bases.

How would you propose that we move forward on places with mid-sized economies and institute the strategy that's been talked about pretty much by everybody today? Right now, my area's left in the dark, quite frankly.

● (0935)

Mr. Ritch Dusome: Yes, I agree. We have recently been awarded funding by the Ontario government to link all the innovation centres in Ontario. For whatever reason, there's not one in Barrie and I don't understand why that is, because it's certainly a growing economy. It's very close to Toronto.

The way that we plan to connect to all-inclusive is over the Internet, over the mobility infrastructure. In theory, most people should be able to get into a mobile range, and if they need access to our cloud at very high speeds, they would need to come to Toronto or the bigger centres. I agree with the point that ideas are not just in the big cities.

The Chair: We need a better bang for the rural areas.

Mr. Alexander Nuttall: Absolutely.

Mr. Ritch Dusome: Yes.

The Chair: Thank you.

We're going to move on to Mr. Masse.

Mr. Brian Masse (Windsor West, NDP): Thank you, Mr. Chair, and my thanks to our witnesses for being here virtually and at the table.

I'm going to ask a general question. The testimony was excellent today, and I'm looking forward to further submissions and further follow-up. In talking about the issue of superclusters and the whole strategy behind it, I recall that it was originally $800 million. The minister says it will be divided between three to five centres. They added an additional $150 million, so apparently now there are super-duper clusters.

Now we have people and companies that are going to be in and out of these clusters. I wonder about those situations. It's a little bit of a concern to me, in the sense that if you look at that money, it's not a whole lot when you look at the issues we have and start dividing it among five centres. You're looking at $200 million. That can get swallowed up by universities, research, and so forth.

I'm wondering whether or not the strategy with the best bang for our buck should look at medium-sized cities or smaller centres where we'd actually get a higher degree of value, almost like a greenfield project. I represent an area of the auto sector where greenfield sites are their own clusters. We don't need another acronym to describe them. You build a manufacturing plant and you have a competitive advantage to build around it and grow your business, because later on you can add components.

I'll turn it over to Mr. Gold and Mr. Ring. I'd like some general thoughts about how we protect those who don't get enclosed in the superclusters from getting washed out.

Prof. Richard Gold: Do you want me to begin?

Mr. Brian Masse: Sure, please. Thank you.

Prof. Richard Gold: Clusters have two dimensions. One is very geographic, because we know that where we have a certain number of players, we build out from there, and it's really important for that ecosystem, but they are also nationally focused.

We are exceedingly small in Canada. I think Jim Hinton provided evidence a couple of days ago about AI. Our patents are spread out across Canada. There is no one place. If we just focused on the Vector Institute in Toronto, we would lose. It has to be pan-Canadian.

Somehow, we have to bring the patents that exist across Canada and make them available to Canadian firms. From that perspective, we can't have firms outside. I think that's the idea behind superclusters. It's not to do original research; it's to build the infrastructure that allows that sharing and common base.

We want competition within Canada, kind of like intramural sports, but when we go on the outside we want Canada's A-team, so we have to bring it together. In my mind, that's what the supercluster is about.

That doesn't negate the importance of local clusters, such as the ones you're talking about or the MNI, where we build communities that involve universities and civil society. The cheapest way to deliver benefit in mental health may not be through pharmaceutical products; it may be through social services. We have to bring together all of these actors locally to develop new solutions. To me, that's not the supercluster; that's more traditional clusters.

● (0940)

Mr. Brian Masse: Our friend from Manitoba....

Mr. Marshall Ring: Thank you for the question.

If I were to repeat what I think you're asking, it's how to ensure that there are smaller centres or smaller municipalities included in this—the same as Mr. Nuttall's question.

Frankly, I share a bit of the concern that the money for superclusters will go to super-cities and it will be a drop in the bucket against current activities that are already ongoing. I view the supercluster initiative more as what a bank would do to a company, which is that it would have the money available when you don't really need it. You're looking for a 6% to 8% return, but I don't think it's going to have as powerful an impact without the stated purpose of going into smaller communities.

It's been said before that it's not the big firms that are doing a lot of research, innovation, and commercialization. The big firms, with shareholders, are looking for growth of 8% a year, and they do that through acquisition of new IP and new ideas. It's the innovation that comes from the smaller and medium-sized companies that feeds the machine. When you start looking at putting money into the superclusters around the largest centres, I think the regional places where great innovation exists will be excluded from that, for the simple function that people do business with those they know. For example, I recognize that a couple of you folks know each other by name, and I'm brand new to this because of my geographic distance.

I think there needs to be a concerted effort to look at where you can empower some of the smaller communities.

Mr. Brian Masse: Thank you.

Mr. Smith, go ahead.

Mr. Scott Smith: I'm going to take a bit of an issue with how innovation spending happens.

Roughly 12 companies account for 50% of the R and D spending in this country. The superclusters are going to be focused on those larger urban areas because they already have the infrastructure in place. I think the intent is to attract the best and the brightest in the world and to keep them here, and amenities matter in those cases. The smaller communities don't necessarily have those amenities.

How do you empower those smaller communities to take part in the innovation culture? I think somebody brought it up—it's connectivity. Make sure they have access to broadband, facilities, and data. The data is going to matter.

Mr. Brian Masse: Mr. Dusome and Mr. Beney....

The Chair: Answer very briefly, please.

Mr. Ritch Dusome: I'm a gigantic fan of broadband Internet's being the underpinning, and in that case it doesn't matter where you are.

Mr. Stephen Beney: A couple of months ago, I was at an Ontario government health care initiative, and the issue of how to introduce new medical devices to hospitals came up. Of course, when you go to the big cities, you end up with huge bureaucracies. It's almost impossible to get innovations into hospitals because it just takes forever to get there. The angel investors give up. They don't want to invest in these kinds of companies.

The interesting aspect is that when you move to the rural areas, the hospitals are much more flexible and willing to try things. You can have success there, and then move it back to the big cities.

Where I'm going with this is that, if you think about it, if you're going to have $200 million, or whatever it is that's going to go to the cities, it has to be in the place of least resistance to have the most impact. Whether that's in the city or outside the city, I don't really know, but it should be put in the appropriate spot.

There is another thing. I met someone from China yesterday, when I was at a centre that promotes innovation and start-up companies in southern Ontario. Just to put it into perspective, they mentioned that they're looking at investing in start-up communities in Canada. They have $32 billion at their disposal. We can't compete with that. We have to think of alternative ways to invest in our future.

The Chair: Thank you very much.

We're going to Mr. Jowhari.

You have seven minutes.

Mr. Majid Jowhari (Richmond Hill, Lib.): Thank you, Mr. Chair.

Thank you to all of you. We've had great testimony today.

Certain themes are developing, such as pooling, IP generation sources, various working models, and integration or collaboration among different superclusters. One of the things I am noticing but that, at least for me, is not coming across in a very clear manner that I can use to form my model for making recommendations, is really around what Mr. Gold talked about.

You mentioned it briefly at the tail end of your conversation, and you called it "soft stuff". You talked about some tax credits or incentives, which goes back to funding, and some policies.

With about five and a half minutes left, can each of you give me one funding model or policy that we could use? At the end of the day, the government develops policies; the policies are focused on the direction the government wants to take, and then it uses funding to be able to advance that agenda.

If you could start with one policy that you think would make a difference in tech transfer to commercialization and the creation of jobs, as well as one funding model that would support that, what would that be?

Let's start with Mr. Gold.

● (0945)

Prof. Richard Gold: It would be sharing of data, I think, from a research point of view in tech transfer. It would be making data of high quality available easily in a format people can use, and measuring the results.

In terms of helping our businesses, I would say invest in providing SMEs with strategic international IP advice. That might be getting standards or thinking about getting the right patents internationally. There's a dearth of knowledge about that. Many of our IP professionals represent international firms. Coming here, we need to think much more about how we can engage the international community. Canada is too small a community to worry about. We have to worry about the United States and Europe.

Mr. Majid Jowhari: So, specifically, what policy for the government do you suggest?

Prof. Richard Gold: I would fund a voucher that small firms can use to get international IP advice. It's not about funding to get a patent, because a patent may not be the right answer, but I would fund getting that strategic advice.

Mr. Majid Jowhari: Okay.

Mr. Beney.

Mr. Stephen Beney: This is an interesting question, because I don't think there's actually one program that meets all these things. You have start-up companies; you have companies that are going from start-up to SME; and then of course you have the issue of going to scale. I have a quote here from a venture capitalist who says, "University and government seed funds create lands of the walking dead. They have no way to ensure follow-up funding which a company needs to grow. [It's] like going to a gunfight with a knife—you will die."

So, that's another area of funding that's required as well.

If you want to talk about one area of funding, there is the area of my practice, which is mostly involved in start-up companies. I would like to see something along the lines of a first patent program in Quebec, or a start-up voucher program, something like what Mr. Gold mentioned, which I think Ontario is looking at.

Mr. Majid Jowhari: Great.

Mr. Dusome, it would be good to hear from you on the business side.

Mr. Ritch Dusome: I would say open broadband with gigabit speeds. We should think about something very different from 50 megabit—that's embarrassing.

In terms of a single policy, I like to think about ones that have a long-term effect, not a short-term one. I think, from an industry perspective, programs like the SR and ED program are the programs that are utilized extensively, so don't change something that's working.

Mr. Majid Jowhari: Okay.

Mr. Smith.

Mr. Scott Smith: With respect to funding, or access to capital, one of the key challenges in getting investors involved is the fact that they can't actually take advantage of any tax incentives, whereas if the start-up companies are using SR and ED incentives, they may have accumulated a number of tax credits they can't actually use because they don't have the revenue to support those. We do this for the mining industry: why not consider flow-through shares, whereby the investor can take on the tax advantage of what that company might accumulate?

With respect to what Mr. Gold was saying on IP strategy and awareness, CIPO has something it has just kicked off, and we're working with it to deliver that across the country, but it is probably very underfunded. That's something else you could look at. We're doing a workshop in Fredericton next week on IP strategy for small business.

Mr. Majid Jowhari: Mr. Ring, you're on.

● (0950)

Mr. Marshall Ring: Implement a policy with the objective of getting more IP out of the gate that has commercial potential and have it ready for participation with existing SMEs. The policy I would use, if you're talking about a federal funding resource, is a sidecar fund. For example, in the earliest, most risky days of starting a business around IP, if you have private angels that are ready to put up $250,000, if the federal government had a sidecar fund that would match that, you're relying on the due diligence of the private sector and you are having those people manage what's right for the business.

Mr. Majid Jowhari: Great.

I have about a minute. I want to go back and quickly touch on the partnership model. A lot of feedback is coming in that we should drive this innovation and IP from the business side rather than from the universities, yet all our funding is going to the universities. If you have any submissions or any further thoughts on that, I would really appreciate hearing them.

I'm going to give the last 30 seconds to Mr. Gold. Can you expand on that one?

Prof. Richard Gold: Certainly. Innovation is done by industry; research is done by universities. If you don't have research, you don't get innovation, but if you don't have companies doing things, you don't get things going. You need them to work together. There are lots of forms of partnerships. You want to reduce transaction costs and make it easier for the two to come together. Unrestricted data sharing and other things will assist with that. I suggest to you the MNI model in Montreal.

Mr. Majid Jowhari: Thank you.

The Chair: Thank you very much.

We're going to move to Mr. Dreeshen.

You have five minutes.

Mr. Earl Dreeshen (Red Deer—Mountain View, CPC): Thank you very much, Mr. Chair.

Welcome to all of our guests here this morning.

We have had so much information here today, and it will be very interesting trying to work our way through it.

Mr. Gold, you mentioned that you're looking at the university model as somewhat broken. We've had 30 years of doing the same thing and wondering why we're not getting better results and, of course, that's what our major study is about. It's about how do we manage and take a look at where all the funding is? How are we getting the bang for our buck and so on? In a lot of ways it's as though we are trying to find ways to enhance what we have done already, but without looking at what the results are. That is really part of it. And then there is the discussion on having a national university policy. We understand the structure that we have in this country and how it's difficult even if you have different universities in the same province, let alone having something that's going to work at a national level.

Those are my observations. Of course, there are other things we've heard. Making sure there is better broadband for rural areas is critical, and a gigabyte for business is what is needed. But there are so many businesses out there. In our visit to the U.S, and of course in all the discussions we've had with Canadian businesses, we can't forget the smaller areas. That's where the resources are. That's where the wealth is. The people, for their wealth, are in the big cities, but if you look at what makes Canada go, it's the rest of the country. When you think about that—and the discussion is working its way to that right now—we have to think about perhaps having different tax structures or things that can help to bring in angel investors and ensure they are there to help people over the original hump that we have.

Perhaps I'll go to Mr. Gold first, then to Mr. Smith, because I know that you've talked about tax structures. Could you talk a bit about what you might see us doing from a government perspective as far as some of the different tax incentives taxes are concerned?

Prof. Richard Gold: Let me just focus on one in particular, and that is the use of charities. Our rules around charitable investments are pretty strict. What we're looking at is creating models where charities will fund research to provide open data, but if something comes out of that, a commercial product, there has to be a route to commercialization. The problem is that if the charity knows in advance and partners with private firms so that the private firms will get the benefit, there is a significant risk that those charities will be offside the tax rules.

In the United Kingdom—and we are about to propose this actually—the government has a vehicle called the CIC. I can send more information on that later. It's a single-purpose, social-purpose-built corporation that has funding from charities but also from the private sector. We need to use these types of mechanisms to enable the charitable sector, which has lots of money and is eager to invest in innovation, to put their money in without risking their tax status. We can understand why you don't want charities going into business for themselves, but can we harness that power? It's just one small place where our tax act is more restrictive than our neighbours' and doesn't allow us to unleash that value.

● (0955)

Mr. Earl Dreeshen: Thank you.

The Chair: You have a minute and 15 seconds.

Mr. Earl Dreeshen: I'm on a five-minute time frame here, and I have a minute and 15 seconds left.

Scott, perhaps you could take a look at what your members are talking about and the types of things they see as advantageous, or some of the things that are disadvantageous.

Mr. Scott Smith: Absolutely. I'll start with the SR and ED program. A few years ago that was a very well used, very appreciated tax incentive for businesses, both small and large. The changes that happened in 2012 made it a lot more complicated and less useful for the larger companies, so you're seeing a resulting drop in R and D spending by those large companies in this country. They move to other jurisdictions where the tax arrangements are more favourable.

Mr. Earl Dreeshen: Just on that, does it mean, then, that the small and medium companies filled in or just that they had given up and decided they wanted other models?

Mr. Scott Smith: They'd given up and decided they wanted other models.

Mr. Earl Dreeshen: Why didn't the small and medium businesses fill in that vacuum?

Mr. Scott Smith: It's a complicated question. I think it's largely a result of the way SR and ED is applied. It's not uniformly applied, and the criteria are complicated for a lot of small businesses to be able to meet those criteria.

Mr. Earl Dreeshen: Okay, I'll let you get back to me with it.

Mr. Scott Smith: There are a couple of other options that we've been looking at over the course of the last couple of years and that we've made submissions on. For instance, one is to use a patent box as an incentive to commercialize in this country. We're actually calling it an "innovation box". It goes beyond just the patent. Where the end result of a research and development project and the IP resides in Canada, there would be a tax incentive for that product down the road.

The other option that I just spoke about was the flow-through capital shares, where the investor retains the tax incentive for that small business and it encourages the flow of capital into this country so that it stays here.

And then the third one—and Mr. Gold talk about this a little bit—is the idea of a sovereign patent pool arrangement in which the crown actually retains ownership of the IP that is created based on public funding, and then is able to licence that at a preferred rate for Canadian companies.

Mr. Earl Dreeshen: Thank you very much.

The Chair: Thank you very much.

We're going to move to Mr. Arya.

You have five minutes.

Mr. Chandra Arya (Nepean, Lib.): Thank you, Mr. Chair.

Hello, Ritch. It's nice seeing you again. Of course, as a former board member of Invest Ottawa, I know that Invest Ottawa has has been working very closely with you since the inception of CENGN.

My colleague, Mr. Longfield, may not know that CENGN is also exploring precision agriculture both in Guelph and in my riding of Barrhaven, and hopefully something will come out of it.

Congratulations on getting $63 million from the Government of Ontario. I know you guys are doing good work.

We are already investing quite a bit of funds into research and development, especially in the universities. Over a period of time, the Government of Canada has invested billions of dollars in the universities. But I feel that the benefits have not flowed to the private sector, especially the SMEs. What can we do? How can we leverage the investments we are making in the universities to make sure that the benefits are available to Canadian SMEs?

Mr. Ritch Dusome: Maybe it's a simplistic view from my side, but I would like to see the universities working on real-world problems. If you're not satisfying a business need, a government need, and changing Canadian citizens' lives, I'm not sure why we're doing that kind of work.

Mr. Chandra Arya: It's not the research I'm looking at. Yes, there is fundamental research that we support, and we also support applied research. But what is it that we can do? I don't want to use the word "force", but is there something we can do to the universities to make sure that the knowledge transfer takes place with industry?

● (1000)

Mr. Ritch Dusome: The model that we're using seems to work. I don't know if it's the answer for all. There has to be collaboration between the various organizations. The universities have a role to play. Right now we're utilizing them for a talent base because we're working on next-generation networks. It's an area that they're really not teaching in universities because it's so advanced. So we're in fact teaching the students and so on.

I'm hoping they will bring back to the universities the real-world problems that industry is looking to solve.

Mr. Chandra Arya: Thanks. I have limited time.

Mr. Gold, we have been investing billions of dollars in universities. How can we ensure that the knowledge transfer takes place to Canadian SMEs?

Prof. Richard Gold: We have to separate out these two things: research activity is vastly different from innovation activity. You do research because it generates knowledge, it generates people, it generates excitement and places that are attractive. There is not an innovative place in the world that doesn't have a university. Universities play don't play an innovation role, but a research role.

But we can do a whole bunch of things. One idea would be to open our labs to firms. Have a firm come in and use our equipment. The quid pro quo would be sharing data so we could do Ph.D. theses. Get them to work together. Make the boundary between the university lab and the industry lab more permeable. Have grad students and post-docs move back and forth. That's where real knowledge transfer happens. It's not actually the patents; it's the thing in their brains.

Mr. Chandra Arya: You're talking about the tacit knowledge transfer, which of course I've been asking about, in addition to the codified knowledge transfer.

One of the witnesses mentioned last week that in the U.S. researchers are paid for only eight months during the year. For the remaining four months they go to industry on consulting assignments. Would that help in tacit knowledge transfer?

Prof. Richard Gold: I don't think so, because most of them actually go to grants during the summer. The university pays a full year's salary in nine months. You have to remember that U.S. researchers are paid vastly more than we are, so they basically get in nine months what we would get in a year, and then they supplement it with grants.

I think my generation is lost. You need to focus on grad students and post-docs. Get them to see that there are opportunities.

Mr. Chandra Arya: Thanks, Mr. Gold.

I've just got a few seconds.

Mr. Beney, you seemed to indicate that more funding is required for technology transfer offices. You are asking for more funding for one more sector, but we already fund research through the SR and ED and other things. We also fund SMEs through a lot of investments and venture capital. We do a lot of funding. How can we use the existing funding to help the SMEs?

Mr. Stephen Beney: I think my comment was along the lines that there is a funding gap between getting a company to a certain point, the beginning of it, and then getting it to the next stage, the SME for example. I think there's a bit of a funding gap at that particular point.

Universities often start the company, and then they kind of let it go. They get the licence and venues in place, maybe, but then the companies often collapse and die, so there's that aspect there.

There are different levels of funding required, and I'm not exactly certain there's a right answer for all of these things, but there are different points, and you have to look at inflection points, if you will. I don't know if the funding that the universities get actually translates all the way through to the last goal of getting a company up and going and self-sustaining.

The Chair: Thank you very much.

Mr. Lobb, you have five minutes.

Mr. Ben Lobb (Huron—Bruce, CPC): Thanks very much.

I want to go back. Somebody mentioned the global innovation index, and when you look at the countries that are ahead of Canada on that index, most of them, but not all, are smaller than Canada and have smaller economies than Canada.

What are those countries doing—Switzerland, Sweden, Finland, Ireland, Denmark—to get themselves higher up on this list? Is this list credible? Is it worthwhile? Is it something to worry about? What is a group of politicians to think of Canada being on this list and far behind these much smaller countries?

Would anybody like to take a run at that one?

Mr. Scott Smith: I'll start, if you like.

I was the one who mentioned it. It's an index like any other index, so it has criteria that they evaluate in order to determine where you fall on that list. As an example of some of the criteria, this country has taken a position that it wants more balance in the system in order to balance IP rights against freedom to operate. Okay, that puts it somewhere on that list, and it has to accept what that is.

I think you can take some stock in the fact that the countries that are doing better on that list—Switzerland, Germany, the U.S.—really do focus on specific industries; they do pick winners. They have also focused on their education systems and streamlining those systems so that there is a marriage between industry and education, and that what comes out of those marriages are commercializable products.

● (1005)

Mr. Ben Lobb: Mr. Gold, you put your hand up.

Prof. Richard Gold: I actually do empirical work and I use a whole bunch of different indices to do this. The one Scott refers to is an industry-based one, which is quite opaque in its methodology. It doesn't meet academic standards, but it doesn't mean it's useless. It's based on what industry, especially multinationals, want. It's useful from that point of view, but I wouldn't take it as being the ultimate ranking. On the other indices, Canada does considerably better.

The more important point is that while Scott mentioned there's a correlation and these two numbers go together, except that in the case of Canada there's no causation. It's like saying how much snow we get in winter goes to your IQ. These two things may or may not be correlated, but it doesn't mean they're causally linked, so take this with a grain of sand. It's a useful piece of information, but don't rely on it too much. Look at the underlying economic analysis, which says that Canadian IP is not driving Canadian innovation; it's U.S. and European IP that's driving Canadian innovation.

How to get Canadians to access that is the more interesting figure, and none of these rankings take that into account.

Mr. Ben Lobb: Okay.

Mr. Beney, in your presentation or brief, I thought somewhere in there was a recommendation that we need to help universities understand the transfer of technology. I'm probably saying it the wrong way.

I guess when I see the billions of dollars that industry and governments in Ottawa and across the country are spending, I would be a little disappointed if university researchers still don't have a clue about the importance of patents. Is this problem out there, or am I reading this the wrong way?

Mr. Stephen Beney: I think it would vary from university to university, but I will tell you that in my work with universities, a lot of it is education. They do not understand the basics of business and how to promote IP innovation.

Mr. Ben Lobb: If that's the case, to me that's the root problem of what we're studying here. If people are investing billions of dollars each and every year and don't have a basic, fundamental understanding of business or law, that's a huge problem, before we get into spending more or super clusters or any of it.

Mr. Stephen Beney: A long-term goal, I would say, is more of a cultural change and shift to an innovation culture. I know that China right now is starting to look into that as well. They don't have an innovation culture, but they will have one, and we need to develop one as well. It's a long-term goal getting it into the universities, and possibly high schools.

The Chair: Thank you very much.

We'll go to Mr. Sheehan. You have five minutes.

Mr. Terry Sheehan (Sault Ste. Marie, Lib.): Thank you very much for your presentations. I'm sure they'll be helpful to our study.

The first question I have is for Richard Gold. You mentioned one of the issues that I think this committee recognizes, that the universities are selling their tech to American firms and American firms are selling it back to us. It's sort of a double whammy.

Why is that? Why aren't Canadian companies doing it? Is it money? What's the issue? Can you expand on that for us?

Prof. Richard Gold: That's the million dollar question. If I had the answer, I'd win the Nobel prize. It's the environment. We know it's the entire ecosystem. It's not the IP system itself. I think we've touched on a number of these things. Some of it is capital. We don't have enough people with experience in scaling up.

One of the things we're trying to do is to bring in our alumni from the universities who have gone to the United States and Europe and started businesses. Can we bring them back? They won't move back, but bring back their knowledge to work with firms in our space, so that the technical, tactical, strategic knowledge we're missing....

There are some funding concerns, but the problem is that Canadian firms grow to a certain extent, mostly on the basis of getting public funding, but when they've got proof of concept, they sell. It's okay to sell at a certain point, but we want the value to be here, so we need our firms to be able to go further and there's something missing in the environment. I think those are two of the ingredients.

If I knew the rest, I would certainly tell you. Nobody has the magic bullet.

● (1010)

Mr. Terry Sheehan: Fair enough.

Maybe you could take a deep dive for us into the patent pool and explain in a little more detail what your thoughts and ideas are on this patent pool.

Prof. Richard Gold: The most realistic patent pool is not one owned by the government. That has been done in South Korea and France. It should be industry-led, with government funding and co-funding.

I work with Power Corporation here. They're interested in doing some things in this area, whereby firms would get together, define a space, perhaps in association with a cluster, and buy patents. They would then license those patents out to any Canadian firm—it would have to be completely open—and you could do so in one of two ways. One is just to provide freedom to operate, so that eventually, if some U.S. firm were to sue them, they'd be able to countersue and tell them not to go ahead, rather than use it as an armament—that is, we transfer it to a Canadian firm and allow them to attack other firms.

The first line of defence is simply to provide Canadian firms with some defence, especially in the IT industry, where it's most important, so they can negotiate agreements.

You can also achieve a similar route through funding. When you fund large projects, you can attach a rule to the funding agencies that says they can patent, but if they patent, whenever they license the patent there must be a agreement by the licensee or the transferee that they not sue Canadian entities. You would have to define them.

What you're basically trying to say is that knowledge that the government is funding or that industry as a group is funding cannot be asserted against Canadians. That gives us room to breathe. It doesn't bring new products, but at least it gives us the opportunity to enter into the U.S. market.

The alternative of having the Canadian or provincial governments set up a pool.... I just don't think that governments are willing to put that much money into it by themselves. The safer way is to have it industry-led.

Mr. Terry Sheehan: Thank you.

Scott Smith, going back to the global innovation index—I remember reading about it when it came out—you mentioned that Canada has declined steadily on it in the last 10 years; we're no longer in the top 10. You also mentioned the superclusters.

How might a supercluster help Canada get back into the top 10, at least?

Mr. Scott Smith: With respect to the IP index, we were never in the top 10. We've actually improved our IP regime over the last couple of years by acceding to the Internet treaties, for example. With the CETA agreement, we're going to be improving some of our patent terms on the pharmaceutical side. There are some positives there.

With respect to our innovation index, I think the superclusters are going to do a lot more in terms of visibility and identity of certain industries. That just attracts attention. In terms of government spending, probably the best bang for your buck is building that attention globally, and it attracts investment from other countries. There's a positive there for sure.

Mr. Terry Sheehan: Thank you very much.

The Chair: Mr. Masse, you have two minutes.

Mr. Brian Masse: Thank you, Mr. Chair.

With only two minutes in this round, I want to ask Mr. Smith this question.

You represent it as diverse, but what common low-hanging fruit is there for Canadian businesses? We hear about access to capital at times and we hear the BDC saying that they're now into small business. I still have some concerns about the access they still have. Is there a galvanizing change that can take place before we go down the road of low-hanging fruit while waiting for superclusters to emerge to sort out the situation?

● (1015)

Mr. Scott Smith: As to whether there's low-hanging fruit that will appeal to every business out there, I don't think you can put one program in place that will suit everybody. The only way you can do it is through various tax incentives.

If you want to incent research and development, that's great, but it isn't necessarily going to result in any kind of innovation. It should, but it isn't always going to. As for expectation that you're going to have a product coming out of something around IRAP, you may not.

It was brought up several times around this table that the gap is not so much at that first round of getting an idea off the table, but how you market and commercialize that idea. How do you get the expertise? It's the collaboration and bringing in of that marketing expertise and making use of perhaps more than just the university system. We have a number of very competent colleges and polytechnics out there that can help bring things to market. They have the people in place.

Mr. Brian Masse: It's funny you should say that, because I guess I'm biased. I'm a sociologist. We heard from many different people from the United States about the problem of not having the proper skills and multidisciplinary understanding on how to bring all those disciplines together. We're going to have some more testimony coming up, so I'll leave it at that for now.

The Chair: We have enough time, and we've agreed that we'll all do one question of seven minutes each.

We're going to go to Ms. Lambropoulos. Welcome to our committee, by the way.

[*Translation*]

Ms. Emmanuella Lambropoulos (Saint-Laurent, Lib.): Mr. Gold, I'm going to ask my question in French, if you don't mind. You said American companies tend to be the ones who buy the ideas and research that come out of our universities. How do they find out about your ideas, unlike Canadian companies? How do you promote your ideas?

[*English*]

I'm sorry, that's for Mr. Gold.

[*Translation*]

Prof. Richard Gold: I listened to the interpretation, and I think I understand your question.

It's quite easy, actually. There are patent registers, and companies search those databases. They are in contact with researchers, so they can see what exists in Canada. We are talking about big companies like Google. In the field of artificial intelligence, the players are Google, Apple, Uber and so forth. They are highly sophisticated. They make small investments in research and have numerous contacts in the academic community. Since these are major companies and they have access to the databases, they can find us.

Small Canadian companies have a harder time. Yes, all the information is out there, but they don't have the same resources to find out about the various patents or as much money to buy them.

[*English*]

Ms. Emmanuella Lambropoulos: What would you suggest to Canadian businesses or government to push Canadian innovation and businesses to find out more about these ideas?

Prof. Richard Gold: One of the underlying things of a patent pool is as people like Jim Hinton have said. He spoke at the committee two days ago and has done extensive research on what patents exist in Canada and who holds them. Part of the supercluster idea could be that you fund the development of strategic IP advice, which includes doing these searches, connecting to these big companies, and then the idea would be that this conglomerate or consortium of firms would purchase these patents with government support.

It's perfectly doable; it's just a question of resources that were too spread out, but the supercluster could be one mechanism to do it. I know Jim and his group are hoping eventually to get some funding so they can keep this up and provide this information up to date.

● (1020)

Ms. Emmanuella Lambropoulos: Let's say these superclusters would use one building, have a cyber-hub, and have companies visit. Is that how it would work?

Prof. Richard Gold: I'll leave it to ISED to determine that. It doesn't have to be a physical structure. I'm imagining the supercluster as infrastructure, including broadband. It includes the services to collect the information; it connects with a patent pool of some sort, but I don't think it's physically located. It will still take place in the firms, but it's the glue that joins them together. That's how I envision it, but I'm not privy to what ISED is thinking and what they'll approve when the applications come in.

Ms. Emmanuella Lambropoulos: Okay, thank you.

The Chair: You have two minutes.

Mr. Lloyd Longfield: Thank you.

I just have a follow-up question for Mr. Gold.

You were using the word “charity” a lot in your presentation, and it got my interest. All charities are not-for-profits, but not all not-for-profits are charities. When we were setting up Innovation Guelph, we talked about the social benefit that we could provide if, as a not-for-profit, we were able to create a pool of funds from, let's say, innovations in Guelph. We could do that for education. We could use some things around whatever social benefits we thought the community needed for social innovation.

Were you specifically thinking charity, or were you thinking not-for-profit as a charity?

Prof. Richard Gold: In my specific remarks, I was actually talking about charities. I was thinking about things like the Michael J. Fox Foundation, or Wellcome Trust, or the equivalent—patient foundations here that have pots of money. They invest in research, but they don't get involved with the innovation part because of these tax rules.

What I'd like them to do is more impact investing, using the charitable money to further that. They might do so in the form of a non-profit—that might be the vehicle—but I'm trying to liberate charitable funds to invest in innovation.

Mr. Lloyd Longfield: That's tremendous. I was hoping that would be the answer.

With regard to community foundation funds, there are a number of vehicles that we could provide social benefit to. They could provide money into innovation.

It's a very interesting wrinkle. Thanks for providing it.

The Chair: Are you good?

Mr. Lloyd Longfield: Yes.

The Chair: Okay.

Mr. Dreeshen, you have seven minutes.

Mr. Earl Dreeshen: Thank you very much.

There are a number of things I have in listening to the discussions.

The first one is that when we talk about different charitable groups —I believe Mr. Longfield mentioned it as well with his observations about charities—you can have dollars that go into research that are against the national interests. We've seen that with charities and different groups that have gone after our oil and gas industries. We've seen that same type of thing happening in agriculture.

There are great ideas for setting this up. However, you have to make sure that the focus is in Canada's national interest. I think that's something we may want to keep in mind, as politicians who have to come up with policies.

Mr. Beney, you spoke about getting education out there so people understand how they can look at intellectual property and innovation —getting that literacy there. The suggestion was that we should have university people talking about this. I submit that it should be done a lot earlier than that.

I was a high school math and physics teacher. When I was teaching my calculus classes, I had professors come from universities. They'd say, “Well, your kids are going to know all they need as far as first-year calculus is concerned. What they aren't going to know is how to work together. Your classes should be set up in a collaborative way so that they're working on projects.” I think it has to start a lot earlier.

As you are talking to universities or trying to push this as far as universities are concerned, I'm wondering if you have some strategies that might enhance that.

● (1025)

Mr. Stephen Beney: It's interesting. IPIC has been looking at education programs that we could use to try to instill the idea of innovation at the high school level as well. You get into different aspects of who looks after these different levels of education. You have different systems. It's not quite as holistic as you might think in trying to get something through there. However, we have been looking at it. We have been talking to Ontario and trying to get some ideas on programs going into those high-school levels.

It's also the universities as well. Some tech transfer offices are quite knowledgeable in these aspects, and others less so. There is that aspect. I think there needs to be more co-operation across the universities to try to get everybody up to the same level.

Mr. Earl Dreeshen: Thank you.

Mr. Dusome, you had spoken about proof of concept centres. The Intellectual Property Institute of Canada presented some material to us. They spoke about it, and you recommended that we investigate that for potential business incubators.

It looks as though that's what you do, so I'm wondering if you can expand on some of the best practices that you've seen. Are there issues, maybe pitfalls that we should be aware of, and perhaps ways in which you're trying to work around any difficulties that you see?

Could you give us some ideas about how we should be looking at the proof of concept centres?

Mr. Ritch Dusome: The first thing is that this needs to be done in a cooperative manner, meaning that anything that is described will actually have an academic focus, an industry focus, and an SME focus and that you will be solving a real-world problem that someone at some point wants to spend money on. If it doesn't have those fundamentals, then it's not a good proof of concept.

SMEs topically come to CENGN because they can't afford the infrastructure, but which we've been able to provide through our large-member industry base. In that way, I think it is providing a pretty significant advantage to these companies.

There's the injection of university and college talent. I'm a huge fan of colleges as well, because of the practicality of what their students are trying to do. They're able to contribute much sooner to the economy because typically they're looking for a job much sooner.

The whole proof of concept, in my view, is the way to demonstrate whether you have something real or not. There's nothing wrong with this "fail fast" mechanism, whereby if an idea is not a good one—and believe me, not every one is—you fail fast. It's actually an advantage to these small companies: "I thought I had something and—do you know what?—I don't." Please, then, go on to the next one, because your next one might be a good idea.

Mr. Scott Smith: It's fail fast and cheap.

Mr. Ritch Dusome: Exactly. Fail as fast as you can.

Mr. Earl Dreeshen: Thank you.

Mr. Gold, you spoke about the university model and some of the issues you have with it. You mentioned that the patents often end up going to trolls, and we've had some discussion on that. I think the more we talk to various organizations that have had some experience in this, the more we will learn about it so we know what it is all about.

Can you give us some examples, then, of things that small businesses or any group should be concerned about when it comes to patent trolls?

Prof. Richard Gold: So far, because of the way our litigation system works, there's not as large an incentive, as there is in the United States, to come here. The fact that the U.S. has jury trials is really the most anti-foreign IP rule the U.S. has, because juries will naturally side with their own. It makes it very difficult.

RIM faced this. There's no way RIM should have lost. They did, partially because of the jury system. The U.S. patent system is unfair to foreigners in a way that ours isn't, because we have a much more regularized system.

Having said that, when universities come out with poor-quality, vaguely worded patents, they probably won't stand up. The only people wanting them will be trolls, who will use them to assert against a small Canadian firm—or any other firm— in a demand for money. They never want to go to court, but the SMEs don't have the resources, the hospitals don't have the resources. We saw this around gene patents, for which we had U.S. firms asserting patents in Canada that probably are invalid. They were invalidated in the United States, but nobody here.... A hospital is not going to spend $3 million from the health care system to defend.

That's really where the problem is. We need to stop these poor-quality patents getting through. Partially that's the patent office's responsibility, but they're under-resourced; they don't have enough time. Getting the universities not to apply for them is a good first step.

● (1030)

Mr. Earl Dreeshen: Are there any other solutions that governments can take a look at? Sometimes you have to be a little more heavy-handed, or maybe you have to be talking about international agreements or trade discussions. Is there anything you see in these that a person might do to put a bit of pressure on all of the actors in this regard?

Prof. Richard Gold: We want to maintain a high-quality patent system and not decrease the requirements we have in Canada. There is a lot of international pressure for Canada to make it easier to get patents. We need to resist it. The higher the quality of patents and the higher the standards required, the more the integrity of the system is there. If we had lost in the whole Eli Lilly dispute, for example, it would have resulted in Canada's giving away patents quite easily. The Supreme Court of Canada is about to decide. Hopefully, they won't change the rules to lower the threshold, but those are the things you need to resist. In international trade agreements, we mustn't diminish our flexibility to make sure that we can impose international standards, but impose them rigorously. That's the best way to stop poor-quality patents, which are what feed trolls.

Mr. Earl Dreeshen: Okay, thank you.

The Chair: Thank you very much.

We'll move to Mr. Masse for the final seven minutes.

Mr. Brian Masse: Thank you, Mr. Chair, and thank you again to our witnesses here.

One of the issues we heard about in the United States concerned a difference with the Bayh-Dole Act. I'll start again with our visitors, Mr. Ring and Mr. Gold.

Does Canada need legislation that is a little bit more prescriptive? It may not be exactly like the Bayh-Dole Act, but is it enough just to build the superclusters themselves and then support them with financing? Or, do we also have to look at a legislative approach, either for information sharing or, I guess, a very clear set of rules that are modernized and identifiable for more of the internal but also the external innovation, namely foreign capital and so forth, that we might start?

I'll ask Mr. Ring to start and then Mr. Gold, and the go across the table.

Mr. Marshall Ring: I must profess to not being as educated as my counterparts on the Bayh-Dole Act, so maybe I can take the second seat on this and leverage what I hear.

Mr. Brian Masse: That's a very fine answer. I already made a mistake because I pronounced it the "Buy"-Dole Act. I always say if I were perfect, I wouldn't be working here.

We'll turn it over to Mr. Gold and then we'll go around, and if Mr. Ring, at the end of the day, you have something to add, we would be happy to have you do that.

Prof. Richard Gold: I think if we were perfect we wouldn't be working anywhere.

Actually, there's a lot of misinformation about the Bayh-Dole Act. It only applies to a percentage of U.S. rules. It's only federally funded research that is subject to it. As to anything that comes from the state or from industry.... In fact, universities in the United States vary considerably. It's a myth that there's a uniform system in the United States. That is actually not true because most projects are funded from multiple sources.

This has been studied to death in Canada and the unanimous conclusion is that there's no point in coming up with uniform rules. It's actually not the barrier. Just as different firms have different approaches to how they think about their IP, we manage that. What you want is clarity and strategic knowledge so that when you approach a university, you know what they want to do.

As I argued before, I would get universities, to the extent possible —and you don't want to do it 100%—out of the business of patenting, leaving it to the private sector firms to do it. We want to open up the universities, but I don't think we want a Bayh-Dole Act. Frankly, I'm not sure it would pass constitutional muster. This is about the make-up of universities and would likely have to be done through the provinces, in my view, but I'm not an expert. You could attach it to federal grants. On federal grants you can specify who the owner is, but then when you have mixed funds, it's going to lead to more chaos, not less, in my view.

● (1035)

Mr. Brian Masse: Thank you.

Mr. Beney, maybe we'll start with you across the panel here.

Mr. Stephen Beney: The U.S. put the Bayh-Dole Act into place in 1980, I think. As mentioned, I believe that it was really to direct the federal funding aspect so it wasn't owned by the government. A lot of universities do have some ownership of that particular aspect of the technology developed from that.

I think we already have that in some respects. There may be other aspects of the act that I'm not sufficiently familiar with to know if they would be favourable or not. I heard that there were aspects about reporting that might be favourable. Maybe that might be helpful from the perspective of knowing what kind of patents are coming out, just for the supercluster idea, for example.

Mr. Brian Masse: Thank you.

Mr. Ritch Dusome: I can't really comment because I'm not familiar with it, but I want to caution that the supercluster is not going to solve all of Canada's problem. I think everyone is kind of aware of that. It's one of the tools in the tool belt, but I think it requires a multi-pronged approach.

Mr. Brian Masse: Mr. Smith.

Mr. Scott Smith: I would agree with the idea that putting a uniform law across the country that every university has to conform with.... That is not the barrier; the barrier is the ability to negotiate contracts to leverage business interests to participate in a research project. I think you have to go back again distinguish between a research project or an innovation project that is designed for commercialization. You still have to distinguish research as opposed to something that is designed specifically for a commercializable product.

If you're looking to engage business, there has to be a way for business to be able to participate and have some ownership of the product when it comes out. That's up to those universities. If they want to participate in those kinds of projects, then they'll need to amend their policies.

Mr. Brian Masse: How much time do I have?

The Chair: You have a minute and a half.

Mr. Brian Masse: Really quickly to Mr. Smith, you mentioned the uptake of the SR and ED tax credit decreasing. I know that the automotive industry was able to tap into that successfully, but it had quite a comprehensive layer of support to do so. Would a SR and ED tax credit at least be something positive if it were made more available to small and medium-sized applications versus the complications that have changed it since 2012? What do should we do to recover that, or should we not bother to recover the use of it?

Mr. Scott Smith: SR and ED is still available to small and medium-sized enterprises, and many are taking advantage of it. The challenge, I think, is how the criteria are applied to those small and medium-sized enterprises and their ability to navigate those criteria and conform to what the Canada Revenue Agency is asking for, which can be different from one agent to another. I think there needs to be more consistency in the system.

My earlier comments were that if you want to make SR and ED a more accessible program and bring back some of the research and development spending, you would have to move back to what the original arrangements were, which a larger business could take advantage of. The automotive companies in Windsor, for example, would be able to take advantage of it if we were to revert back to the old rules.

Mr. Brian Masse: Thank you.

The Chair: Thank you.

I want to thank our guests for spending some quality time with us today. There's lots of information we need to ponder.

Finally, for the rest of us, as you know, I'm tabling the Washington trip in the House on Friday. Then, so far next Tuesday we do have five more witnesses on the docket.

On that note, you all have a great day.

The meeting is adjourned.