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Chair

Mr. David Sweet

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● (0855)

[*English*]

The Chair (Mr. David Sweet (Ancaster—Dundas—Flamborough—Westdale, CPC)): Ladies and gentlemen, *bonjour à tous*. Welcome to the 37th meeting of the Standing Committee on Industry, Science and Technology.

Of course it won't be on this record, but I think it's appropriate to say to the members here.... I wanted to say it, but I thought the standing ovation was probably more apt, and then your personal words, Mr. Dicerni.... But certainly, his capability, his competence, his wide range of knowledge and wisdom, and his diplomatic ability at the committee—which he referred to a bit—and his limited vocabulary—

Voices: Oh, oh!

The Chair: —will be sorely missed. I know as well that, with his capabilities, he will be sorely missed by the minister.

That said, we'll turn to our witnesses.

Thank you very much for your flexibility in how we worked this morning. I'll just follow the orders of the day, and we'll follow this order for the witnesses as well.

We have before us, from Communitech, Avvey Peters, vice-president of external relations; from the Consortium for Research and Innovation in Aerospace in Quebec, we have Clément Fortin, president and chief executive officer; from Sustainable Development Technology Canada, an organization that I know very well, it's good to see David Harris Kolada here with us, who is the vice-president of corporate and market development; and from Mitacs, we have Rob Annan, director of policy, research, and evaluation.

I'll give all of you—I believe the clerk has warned you—about five to six minutes for your opening remarks. I'll start with Ms. Peters

Would you like to go ahead right now?

Ms. Avvey Peters (Vice-President, External Relations, Communitech): Thank you, Mr. Chair.

Good morning, everyone. Thank you very much for the invitation to join you today.

I'm Avvey Peters, and I'm with Communitech. We're the technology organization in Waterloo region, Ontario. I also have the pleasure of working with Communitech's national initiative, the Canadian Digital Media Network—our effort to connect Canada's digital media industry clusters together.

At Communitech we work at the front lines of Canada's tech industry, serving a network of close to a thousand tech companies. It generates more than $25 billion in revenue. Our work connects us to companies at all stages of growth, from more than 400 active start-ups that employ fewer than five people, through to Canada's largest software company, OpenText, and Canada's largest tech company, Research in Motion. The Waterloo region tech sector employs more than 33,000 Canadians.

I'm sharing this background because it's the vantage point that gives us insight into how jobs are created and also into what tech companies need to be successful.

I want to begin by telling you how pleased we are that you're choosing to explore the relationship between intellectual property and innovation in Canada. To us, IP is more than patents and copyrights and protections against counterfeiting; IP is a Canadian asset that drives productivity. Our goal should be to help companies do a better job of strategically managing their intellectual property as a business asset.

The OECD's recent report on Canada's economic performance highlights several barriers to Canadian productivity. Specifically, it references some original research that was conducted by the Canadian International Council for its report entitled *Rights and Rents: Why Canada must harness its intellectual property resources*.

There's one item from that report that I'd like to highlight for you. The CIC found that of 137 venture-capital-backed Canadian firms whose ownership changed hands between 2006 and 2010, nearly 60% of those companies were sold to foreign buyers, mainly for their valuable intellectual property, which meant they were taking Canadian-educated talent out of the country.

In other words, what we're seeing is that Canadian start-ups generate a great deal of intellectual property that's attractive to investors, but rather than exploit that IP to the fullest extent in Canada, a lot of these start-ups are acquired before they have the opportunity to grow. That makes Canada a great source of cheap IP that can be exploited by the acquiring entity, and any resulting job creation from the commercialization of that IP happens in countries other than Canada. This is the lost opportunity of our current intellectual property regime.

Today I want to focus on just two things that I think are ways in which Canada could reap the benefits of intellectual property for the purposes of fostering Canadian productivity. The first is to help small and medium-sized enterprises do a more effective job of leveraging IP as a key business asset. The second is to help companies and universities collaborate more effectively to commercialize intellectual property.

Small and medium-sized enterprises are widely acknowledged as engines of job creation in Canada. In Waterloo region we're blessed with a strong start-up ecosystem, more than 400 early-stage companies. But as innovative as these companies are, they generally do a really poor job of strategically managing their intellectual property assets.

The reason is twofold: Canadian SMEs typically don't understand the full range of the strategic advantage of their IP, and they don't understand the enormous risk of IP management done badly. In the latter case, that often means they become targets of patent litigation and aren't aware of how it can damage or destroy their company and its prospects.

Better education can play a big part in overcoming this barrier. Organizations like mine can help companies understand the importance of IP strategy and how to maximize the value it brings, as well as highlight the potential for the possibility of crippling litigation if IP is not effectively managed. Universities in Canada can offer more in the way of education about IP management. Companies need education to understand their risk management tools and strategies.

From an industry-academic collaboration perspective, Canada continues to view university research as a leading producer of intellectual property and the commercialization of university research as a leading source of innovation. In our experience, this is not really the case. While our universities and colleges are an important producer of IP in Canada, they're by far the minority source of commercial opportunity.

At Communitech, we work with more than one new start-up a day. They come through the door and they ask us for help. In our experience, fewer than 12% of them are university spinoffs. It's more likely that a start-up is being led by a current industry professional with a deep understanding of the market they're trying to serve.

Now, industry-academic collaboration is a good thing. It leads to new ventures and new partnerships and more research and more commercialization. But a lot of our companies are struggling to find the best way to work with academic partners. There are complex ownership agreements to negotiate, often with a multitude of partners.

● (0900)

I think there are better ways that Canada could be doing this. Consider the approach of Israel, where research institutes take a simplified approach to IP licensing. Any joint project with industry that receives government financing has to sign a standard agreement. There is no negotiation. This speeds up the time to execution on collaborative projects and provides clarity to the partners involved.

While there's a divide in the understanding between universities and industry around IP, I think it's one of communications and culture; it's not one of productivity. Both parties need to learn how to work more effectively with one another.

In conclusion, I think Canada can produce IP-rich tech companies with the potential for driving tremendous productivity gains, but we need to support companies and their efforts to better leverage their IP and maximize it as a business asset, and we need to focus on industry as the key producers of intellectual property for Canada's benefit and help them to be more effective.

Thank you for your time this morning. I look forward to your questions.

The Chair: Thank you, Ms. Peters.

Monsieur Fortin.

[*Translation*]

Mr. Clément Fortin (President and Chief Executive Officer, Consortium for Research and Innovation in Aerospace in Québec): Good morning. I am pleased to be here today.

CRIAQ has been around for 10 years and carries out collaborative research projects with businesses, universities, research centres and so on. We have done over 100 of them. I have prepared a document in French and English to help you understand the generic intellectual property agreement.

I fully agree with Ms. Peters. As is the case in Israel, we have a single agreement that covers large and small businesses, as well as universities and research centres. For us, this agreement is a strategic tool for developing the aerospace industry.

[*English*]

If you look at the document, you'll see the fundamental principles of the intellectual property agreement, which is a generic document signed by everybody. It's been in place for 10 years. Our mission at CRIAQ is to increase the competitiveness of the aerospace industry and enhance a collective knowledge base through a better training of students. We have a double mission of competitiveness and training, and the two are closely related, of course.

We do this through a number of collaborative projects. We have more than 100 in our portfolio, and the value is estimated at about $110 million. We have full IP coverage for all projects, and we have training of students—graduate students and research. We do the promotion, and we have national and international collaboration. We have about 15 international projects, a number of them with India, as an example, and some with Europe.

The principles are easy to understand. The principle is that the background IP belongs to the original owner. It will always be that way, should it be an SME or a large company.

The background IP has to be declared up front. What we recommend...and we have more than 50 industrial members, of which 32 are SMEs, and we have 30 university institutions participating in our projects.

On the background IP, if it's required for the project it's put forward, but it still belongs to the owner at the end. These are the principles.

The foreground IP is owned by the project partners. The key item now is that the universities have agreed to give the industrial partners —you see it there—an exclusive worldwide royalty-free licence for aerospace applications, or, more accurately, applications in the field of interest of the industrial members, which are mainly aerospace.

This is a key item. We don't negotiate a new IP agreement. SMEs and everybody else is agreeable to this; NRC is part of it. The universities keep the intellectual property for teaching, for internal research. There are rights for publications, but they have to be agreed by industry. Publications have to circulate before they are published.

● (0905)

[*Translation*]

The principles are fairly simple. This 29-page agreement is relatively complex and is the result of a significant compromise between industry and universities, but that is productive. We have projects that are patentable and others that are leading to applications on products that are currently on the market.

I think this is entirely possible. We are realizing this more and more, at CRIAQ. We are working closely with NSERC and MITACS, which is currently one of our main partners in most, if not all, of our projects. One of the important aspects of our approach is that it is possible for the same project to have both excellent science and results that are applied widely in the industry. So it involves both stressing marketing and finding this combination of both factors to make Canadian industry more competitive and at the forefront of everything being done globally, especially since the global market is stronger and stronger.

Thank you very much.

[*English*]

The Chair: Now on to Mr. Kolada for six minutes, please.

Mr. David Harris Kolada (Vice-President, Corporate and Market Development, Sustainable Development Technology Canada): Good morning, Chair, members of the committee, and thank you for the opportunity to represent Sustainable Development Technology Canada, or SDTC, an independent, arm's-length foundation founded and funded by the Government of Canada to help commercialize innovative clean technologies through financial and non-financial support. Our mission is to act as the primary catalyst in building a sustainable development technology or clean tech infrastructure in Canada, with a funding allocation from the government to date of just over a billion dollars, which we operate through two funds. They are complementary, operate close to the market, and address gaps in the innovation chain, most notably the pre-commercial funding gap otherwise known as the valley of death, which I understand the committee discussed at some length last week.

When we talk about clean technology, we mean innovative products or services that simultaneously reduce financial and environmental costs while driving better performance. They have a beneficial impact on the economy, on the environment, and society as a whole. They translate into economic opportunities, both rural and urban. They drive exports, job creation, health, and quality of life for all Canadians.

The clean tech industry is global. It's an export-driven industry. In fact, if you looked at clean tech SMEs, you would find that they are nine times more likely to export than SMEs, generally speaking. It is a large market that's growing quickly, from $100 billion in 2006 to $1 trillion in 2010, and it's expected to triple to $3 trillion by 2020. The Canadian share of that market, currently at about $9 billion, is expected to increase more than sixfold to $60 billion by 2020, at which point our market share would have increased from just under 1% to 2% and direct Canadian employment would go from 44,000 jobs to 126,000 by 2020. In 2020, the clean technology sector would be the third largest global industrial sector. It's a large market, growing fast, and a very lucrative opportunity for Canada.

As the market has grown over this period of time, the amount of intellectual property that's been developed has similarly been increasing, which is reflected in the chart on slide 5. You can see the number of patents that have been filed in key clean technology sectors, which from 2001 to 2009 have tripled. That's a 14% compound average growth rate during that period, which is double the growth rate of patents, generally speaking, throughout the world during the same period of time.

Intellectual property and clean tech are very important issues, and as a result we're very encouraged to see the Canadian Intellectual Property Office introducing a program to foster investment and expedite commercialization in clean tech, joining countries such as Australia, the U.K., the U.S., and other countries with similar programs. As export-based companies, Canadian clean tech companies generally patent their technologies abroad first, usually in the U.S., sometimes Europe, and then in Canada. The patent prosecution highway, which was introduced in Canada, has been very helpful in terms of expediting applications that have begun elsewhere, in other countries. Similarly, the Patent Cooperation Treaty, or PCT, of which Canada is a signatory, has also been very helpful for clean tech companies in terms of filing international patents.

Lastly on this topic, all SDTC companies must have their IP secured before we fund them. It's a very important issue for us in our due diligence, and it's also something we help them with through our funding of their projects.

In preparation for the committee, we went to a number of our portfolio companies, which now number over 220. I asked their views on this topic, which we wanted to reflect to the committee. I wanted to highlight six points. The first is that clean tech companies are indeed taking advantage of the patent prosecution highway. Second, the new CIPO clean tech program has limited awareness, but it is growing in the clean tech community. Third, the strong IP protection that is in place here in Canada has helped companies compete abroad. Fourth, most companies register their patents in the U.S. first and Canada second. Fifth, universities have inconsistent IP licensing rules, which are quite difficult to navigate, and that has inhibited the commercialization of clean technologies out of those environments. Lastly, the cost to patent and defend the IP, regardless of its origin, is high and the timelines are lengthy.

That brings us to our recommendations, sourced from the SMEs we have funded—over 90% of the companies we funded are SMEs. The first recommendation is to make it easier and cheaper for these SMEs to enforce their patents and to efficiently deal with infringement issues.

A couple of mechanisms that could be helpful are non-judicial administrative procedures, rather than having to go to litigation. Secondly, if litigation is necessary, have litigation caps to reduce the cost. This could include expanded financial support and advice for SMEs as they obtain their patents in a provincial program. One model to consider is the Alberta vouchers program. Thirdly, increase awareness of the CIPO clean tech program. Four, work to simplify university and government lab IP rules. And lastly, reduce delays in the prosecution and granting the patents, and if there are delays, implement a version of the USPTO's patent term adjustment calculation.

● (0910)

Thank you very much for the opportunity. I look forward to your questions.

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

Now we go to Mr. Annan, for six minutes, please.

Mr. Rob Annan (Director, Policy, Research and Evaluation, MITACS): Thank you, Mr. Chair.

Good morning, honourable members. Thank you for giving me the opportunity to present to the committee today.

My name is Rob Annan, and I am the director of policy, reporting and evaluation at Mitacs.

Mitacs is a national research organization that supports Canadian innovation through collaborative research projects linking Canadian businesses with leading experts at Canadian universities.

Our flagship program, Mitacs-Accelerate, supports two-way knowledge transfer through industrial research internships that place graduate students and post-doctoral fellows in industrial research settings where they apply the skills and expertise they have gained through their studies to industry-focused research needs.

This program supports increased R and D at Canadian companies and represents an effective research model that leverages the strengths of the industrial and academic sectors to the mutual benefit of each, with the effect of building long-term innovation into the Canadian economy.

Accelerate has grown from 18 internships in 2007 to roughly 2,000 internships this year, delivered from coast to coast in every sector and academic discipline. The program is supported in part through Industry Canada's industrial research and development internship program, but also through the support of nine of our ten provinces. P.E.I. is just about to join, I think. Nearly 2,000 Canadian companies have collaborated with our universities through the program, and roughly 60% of those are SMEs.

Mitacs has several other innovation programs, but they're all built on the same general model of bringing together industry and academia in research projects to the mutual benefit of each.

The challenge, of course, and the reason there's so much discussion around this area, is that Canada suffers from a lack of productivity related to poor innovation. We have below average BERD spending, we're in the bottom third of PhD graduates per capita, and we're 14th out of 17 OECD countries in terms of patents produced per population.

But we do have exceptional output from our research universities. We're 10th in the world in per capita academic publications. We're even higher in some areas; we're world leaders in things like life sciences. Our universities are among the highest ranked in the world.

Canada's education landscape is shifting increasingly towards sponsored research, from around 13% of university research budgets in the early 1990s to over 25% by the mid 2000s. This process is continuing, including the reallocation of some tri-council funds towards sponsored research in the most recent budget, yet we have not witnessed a commensurate increase in the output of innovation or commercial products.

Nevertheless, last week's OECD economic report about Canada recommends greater integration of our universities and colleges with industry and says this is a key opportunity for boosting Canadian innovation. The challenge, of course, is how to do it effectively.

Currently the model for collaboration largely focuses on the commercialization of university discoveries through licensing or other IP transfer agreements. This generally occurs through tech transfer offices marketing university-produced IP to businesses. This research push approach creates challenges, especially where inventors and businesses may disagree over the value of early-stage research discoveries.

Mitacs' programs employ a demand-driven industry pull approach to research, where companies with a specific research need can seek to access academic expertise, which may involve some university IP. But the application of IP in this case is more clear and its value to both parties is easier to determine, posing less potential for disagreement.

Commercialization of university IP from the research push side can be supported through skills training for graduate students, post-docs, providing them business and entrepreneurship skills so that inventors are better positioned to commercialize their own discoveries.

From Mitacs' perspective, Mitacs takes no stake in IP. We leave it to the parties to navigate, often through agreements like CRIAQ's, but we also have some boilerplate agreements where we're able to facilitate where there are challenges. Generally, commercial rights that are directly related to the project are retained by the company, and academic rights and commercial rights not directly related are retained by universities.

Of over 4,000 projects Mitacs has supported to date, only a handful have had IP issues. We find in many cases it's not even worthwhile to have an IP allocation. For instance, in IT the shelf life of some of these inventions is so short the technology is outdated before the patent is actually granted. In these cases we suggest that companies will put in a small delay of publication and incorporate the invention into the products within that timeframe.

The Mitacs model also involves the highest industry contribution among collaborative research programs. For this reason the company is actually paying for something, and it often makes IP negotiations easier to handle.

Finally, the demand-driven industry pull model Mitacs employs means definitions are generally clear. Our projects often involve either one of two cases: either companies are applying pre-existing university-generated IP to a specific company problem or a company is applying university expertise to pre-existing industry IP. It is relatively rare for our projects to involve the creation of novel IP. This is because we tend to initiate collaboration a little further down the innovation pipeline, after that invention and discovery phase but before the strict commercialization phase.

● (0915)

In conclusion, we believe that collaborative research between industry and universities and colleges represents a valuable opportunity to boost innovation. Intellectual property is clearly an important component of this collaboration. But focusing on a demand-driven approach to research collaboration will help mitigate the challenges and will provide ample opportunity for all to benefit.

Thank you.

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

Now we'll move to the government side. We'll go to Mr. Braid, for seven minutes.

Mr. Peter Braid (Kitchener—Waterloo, CPC): Thank you very much, Mr. Chair. Thank you to all of our witnesses for your presentations this morning and for contributing to our important study on IP.

Ms. Peters, I'll start with you. Thank you for your excellent presentation. We've had a number of meetings now on this study, and themes are now starting to emerge. One of them, I think, is this important aspect of ensuring that SMEs are properly supported, that they have the resources they need to navigate through the IP process, and that they are assisted with respect to education.

Could you elaborate on this particular priority and how government might play a role in assisting with these important objectives?

Ms. Avvey Peters: Thank you for the question. I think the reason we and others suggest a focus on SMEs is that we know they are a driver of job growth. They grow more quickly than their start-up counterparts or their multinational counterparts. In our context, we think of them as the gazelles, those that are on a large growth trajectory.

The challenge they often have is the lack of a sophisticated understanding of their IP as an asset and of how to manage it creatively. Often, as soon as they cross the border and try to start doing business in the U.S., they're surprised, shocked even, by patent litigation. They are caught flat-footed often.

I think organizations like ours can certainly play a role in helping educate the SMEs and the individual entrepreneurs. I think there's not a lot of education in place at the university level to help companies understand what happens when their IP strategy goes awry. I think there's an opportunity for us to act as partners as we try to seek a solution to help small-sized and medium-sized enterprises.

Two of the largest issues that companies say they have in patent protection—my colleague from Mitacs referred to them—are the cost and also the speed with which they can obtain these things. If there are measures we can take to alleviate those two items, I think that would go a long way toward helping mid-sized companies really protect their IP.

● (0920)

Mr. Peter Braid: Great. You also drew a correlation between more effective IP management and less frequency of litigation. Could you speak to that correlation?

Ms. Avvey Peters: Again, it goes to an overall strategy our companies need to find. I'll give you a local example. John Baker is a Waterloo region entrepreneur who founded a company called Desire2Learn while still a student at the University of Waterloo. When John started to do business in the U.S., he found himself in a Texas courtroom defending his intellectual property.

John learned the hard way how to do this. He did not have a strategy in place in advance. He was able to get advice from other Canadian entrepreneurs who'd had similar experiences, but it was a long and painful process for him.

Now John is one of Canada's leading experts in how to manage your IP creatively and how to license pieces of it to generate revenue that you can then flow back into the business for other things. He now has a very sophisticated understanding of all the different ways his IP can be leveraged. But it would have been a whole lot better had we collectively, as a tech community, been able to teach him how to do that in advance rather than after the fact.

Mr. Peter Braid: In Waterloo region we see an average of more than one start-up a day created. It's the highest rate in the country. These companies make it through the valley of death, and then 60% are sold to the U.S. How do we, as policy-makers, address that? How can we see that ratio come down? What role will better protection of IP in Canada play in that?

Ms. Avvey Peters: I think IP certainly does have an important role in that. In some ways that issue is more one of access to capital, and I know there are other conversations happening about how to increase access to capital for early-stage companies.

As you're building your start-up you're trying to figure out if you can grow it to a billion-dollar company in Canada, or if you can grow it to a certain point, at which time you need to figure out what your exit strategy is. So if I am acquired by another company, my intellectual property will go to that buyer. Often that acquiring entity is not inside Canada. And that's the real risk, in our view. If we're not growing a strong enough crop of mid-sized companies, our start-ups are acquired and their assets, including the IP that they've generated, end up leaving Canada, and any commercial exploitation of that IP results in job creation somewhere else.

I don't know that it's just an IP challenge; there's certainly a large capital aspect to it. But with those two pieces together, if we can grow our companies to a larger footprint and have them anchor here, that means the job creation and the consequent productivity will happen in Canada.

Mr. Peter Braid: Excellent.

I'll turn to you, Mr. Kolada. SDTC helps with the creation of clean technology start-up companies and the growth of those companies. Are you seeing the same phenomena happen with clean tech companies in Canada, that a certain percentage reach a point and then get sold to the U.S.? What can we do about that?

Mr. David Harris Kolada: Yes, it's a dynamic that we see across Canada in a variety of technology sectors, although—and I don't have statistics on this that I can quote—certainly anecdotally what we see is that in clean technology the phenomenon is a little less pronounced, for a couple of reasons. One is that typically, to get over that valley of death is an even greater effort within the clean tech sector because of the capital intensity that is required to get these technologies piloted and demonstrated so that customers start buying them, which requires a partner with industry earlier, getting that buy-in from the customers, and getting the various parts of the ecosystem involved, which is one of the things our program does at that stage.

Once they are able to get over that hump, what we do find is that there are more physical assets and there are more linkages to the different parts of the supply chain, for example. So the exit opportunities are less likely to result in removal of the IP or the employment or the assets from Canada. Regarding the percentage that is going to buyers outside of Canada, again, I don't have statistics on that. But if the technology persists and continues to be sold and developed and marketed around the world, and the jobs and the assets that have been built in Canada remain in Canada, we view that as a very positive sign. Rather than looking at the percentage of foreign ownership, we like to look at the prevalence of the Canadian-funded and Canadian-built technology that continues to be sold and deployed globally.

● (0925)

The Chair: Thank you, Mr. Kolada and Mr. Braid.

We're now on to Madame LeBlanc, for seven minutes, please.

[*Translation*]

Ms. Hélène LeBlanc (LaSalle—Émard, NDP): Good morning. Thank you for your very interesting testimonies. It fuels our discussion.

Mr. Fortin, what type of intellectual property are you developing in the aerospace industry? What challenges are you facing to develop that intellectual property? Could you give us some examples?

Mr. Clément Fortin: It is important to remember that CRIAQ is a network. For each project, there are at least two industrial partners and two research partners, in this case two universities or research centres. The project is developed within a team. On average, the projects include three or four small or large businesses, as well as three or four universities or research centres, if not more. The intellectual property that is developed is shared, but since the needs are expressed mainly by the large businesses, whereas the SMEs have access to this intellectual property at the end of the project, the results are gathered and used by the medium and large businesses, with the goal being to become more competitive on the market.

As for challenges related to intellectual property, it is always good to define things properly at the outset. That is why our intellectual property agreement enables us to lay the proper groundwork. There was no significant debate. There always is when the project is in development, but once the project is done, there aren't any problems.

Universities are first in line to request the patent. If they do not wish to, the business can. Even if the university does do it, the businesses have a licence that is free, universal and so on. So there is no debate over determining who owns the patent or intellectual property.

I'll give you a concrete example. A business recently requested a patent in relation to one of its projects. After one year, since the deadline was nearing, someone from the university called me to say that those participants would like to get the product back to eventually continue to develop it. I phoned the president of the SME, who told me that they did not intend to push the technology any further. So the university will continue to develop it.

I think it is important to specify that the relationship isn't bilateral, but multipartite. In fact, several partners share the intellectual property. An SME that is part of a project will be able to fully benefit from it, just like the large and medium businesses and all the other participants.

Ms. Hélène LeBlanc: Thank you very much.

This approach is very much a collaborative one. Do you think that it encourages innovation more than a more closed and secret approach to intellectual property?

Mr. Clément Fortin: CRIAQ was created based on an open model of innovation. Every two years, we have a research forum, and businesses are asked to present project ideas before the whole group. We had one recently in May, and 600 people attended. The project ideas are relatively simple. At the start, there are three slides, then, afterwards, a discussion is held. People look for industrial partners and research partners. The project is developed jointly by the two parties. There are always surprises.

I'll give you a very concrete example. Two years ago, Bombardier proposed developing a new research theme on the inside of aircraft. We're talking here about interior design. At the time, we were told that no university researchers were interested in the interior design of aircraft, especially the interface between wood and polymer, in the case of corporate aircraft. There were 10 researchers. I was director of the mechanical engineering department at the École polytechnique at the time.

One day, a young researcher I knew very well came forward. He said that, while he was doing his doctorate in England, people had developed a technology for measuring the surface finish of Aston Martins, the type of car James Bond drives; they have a very fine surface finish. He suggested using that technology to measure the quantified finishes, the original finishes of Bombardier aircraft, when they leave the factory. That way, measures can be established when they come back. Bombardier would never have found that researcher and the researcher would never have found a business to promote his research.

The advantage of open innovation is that it gives rise to plenty of surprises, to partnerships that we didn't expect. At our last forum, the SMEs were strongly encouraged to put forward project ideas. Some of them did. The large businesses joined the SMEs, saying that they were going to develop this technology with them. Of course, the SMEs are well positioned to benefit greatly from these technologies.

● (0930)

Ms. Hélène LeBlanc: In terms of intellectual property, do you think that this type of collaborative approach is a solution for the future? Will the businesses that use those models benefit from them in the short and long term?

Mr. Clément Fortin: We think open innovation is good only in the initial stages of technology development. More and more, we are seeing that businesses are interested in pushing this further. For example, there are projects with 3M Canada where resins will be developed. So we can get results, even in open innovation, that are very applicable and marketable.

At the same time, we are going to push that thinking more to take the research even further. There are ways to combine things and create a project architecture where the industrial fabric will benefit.

I find that surprising, but the businesses really want us to push the open innovation model further, to the point where we are almost at commercialization.

Ms. Hélène LeBlanc: Thank you very much, Mr. Fortin.

I would like to ask Harris Kolada, from Sustainable Development Technology Canada, a question about clean technologies.

One thing surprised me during your presentation. In fact, you said that Canada exports a lot of clean technology. In that case, why are we not using them here, in Canada?

[*English*]

The Chair: As briefly as possible, please.

Mr. David Harris Kolada: Yes, that's a very good question. It's hard to answer that quickly.

There's an inherent conservatism, we believe, in Canadian industry in regard to adopting technologies early—to avoid taking the risk. That's number one.

Number two—and this is being addressed by the new government program around this issue—some of the large potential adopters and deployers of technologies are governments, and there hasn't been, until recently, an organized program and funding to bring in these technologies and to be the first adopter of some of them.

But we are seeing some promising signs in that regard, and also in some of the leading companies globally that are headquartered right in Canada. We are seeing some progress there as well, but we are behind—it's true.

[*Translation*]

Ms. Hélène LeBlanc: Thank you.

[*English*]

The Chair: Thank you very much, Mr. Kolada and Madame LeBlanc

Now we'll go on to Mr. Albrecht for seven minutes.

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

First of all, I think it's pretty obvious that the common theme coming through here is collaboration: collaboration among you as partners and also between industry and the post-secondary institutions.

I'm from the Waterloo region as well. With my colleague, Peter Braid, I'm very proud to have worked with maybe all of you, or almost all of you—I haven't met Mr. Fortin.

Communitech has a great record in the Waterloo region, and one of the things I would like Ms. Peters and Mr. Kolada to comment on is the whole issue of IP as it relates to the university. The University of Waterloo has a regime that is a little different as it relates to intellectual property protection. You've given us the example of Desire2Learn. We know about RIM and the fact that these companies were started by students before they graduated.

There's some support for the idea that because of the freedom of intellectual property ownership following the producer, it would create more opportunities for commercialization, yet I noticed that in Mr. Kolada's comments he said that universities have “inconsistent” IP licensing. He went on to say that it creates some challenges.

Ms. Peters, could you just comment on your experience working in an incubator setting with many emerging high-tech companies, a number of them coming from the University of Waterloo and that regime, and how, in your view, that has affected commercialization? Maybe Mr. Kolada could comment from the other perspective. We had witnesses here—I believe last week—who commented on the fact that there are some areas internationally where there is a common IP regime across the university spectrum, and I don't see that happening quickly here.

I just wondered if you could follow up on those points. Thanks.

● (0935)

Ms. Avvey Peters: Sure, and thank you for the question.

I think you're absolutely right. Every Canadian university has its own method of IP ownership, its own policy. The University of Waterloo's policy is a creator-owned policy, which is quite different from other university IP policies.

The challenge I think goes to the theme that I think we've been exploring. Collaboration is really the key, and finding ways to reduce the hurdles for effective collaboration is the important piece, so organizations like Mitacs that can broker those good, solid partnerships between a business and a university and help make those connections are good ways to advance IP. The collaborative model that Monsieur Fortin has described again is a great way to do that.

I think the challenge that many universities have in thinking about IP and in negotiating agreements with industry partners is that if you're making a complex product—a BlackBerry, for example—the number of individual patents and licensing agreements for all of the parts and all of the software...it's a very complex item. The number of agreements with individual patent owners would be quite complex.

What often happens, especially if you are a smaller company, is that you're faced with this very challenging landscape of how many agreements, how many university partners, how many individual researchers, and what other industry collaborators need to be negotiated with, so is it worth it, how quickly can it be done, and how much is it going to cost? Those are the things that I think are top of mind for companies.

Mr. Harold Albrecht: Mr. Kolada, could you comment on the fact that the inconsistent IP rules across the university spectrum are, in your view—at least I think I heard you say—a detriment to you, and on whether or not you think it would be wise for universities to come together and try to have a common approach?

Mr. David Harris Kolada: Certainly, and thanks for the question.

To clarify, this view comes from our portfolio companies, the SMEs that are trying to commercialize these technologies. Of course, we work very collaboratively with universities—they are members of our consortia—and we encourage that going forward.

What we hear about is how complex and difficult it is for the entrepreneurs. It seems that every time it's a one-off, so while we agree that it would be very difficult, given the history, to sort of standardize and harmonize the procedures across Canadian universities, efforts to make it simpler and more efficient, I think, could be implemented on a case-by-case basis, and we would encourage that.

Part of that, potentially, is around the incentives, around the tech transfer offices within the universities. It's sort of like a "no one got fired for buying IBM" type of thing. Similarly, no one got fired for putting the can on a potential technology that didn't get spun out.

If it does get spun out and the university doesn't get their fair share, and it ends up being a big winner, then it looks as though someone hasn't done their job properly. If there were more of an incentive to get these technologies spun out more effectively so that there was a portfolio approach—if there were some winners and some losers, and that was part of the accepted procedure—maybe these could happen a bit more efficiently and there could be a bit more volume, because, as I think Rob mentioned, sometimes by the time you get these things spun out and patented, the market's moved by.

● (0940)

Mr. Harold Albrecht: Do I have another minute or two?

I'll just go on to Mr. Annan, then, with regard to Mitacs.

You indicated that your partnerships have grown. I think you said you went from 18 in 2007 to 2,000 in 2012. That's an amazing record of growth. Have you seen a corresponding increase in the number of IP applications, and then, more importantly, in actual examples of commercialization?

I know that's probably going to follow the growth of your partnerships by a few years, but are you seeing the corresponding movement as well?

Mr. Rob Annan: Thanks for the question.

Yes, absolutely, we are seeing it. You point out rightly that there is a bit of a delay. We are very much still a research organization, so we don't tend to work very close to the commercialization end. We're really more in the middle, not right at the very early discovery end, so we're seeing things sort of moving through the pipe as we move forward.

There are certainly examples where bringing in researchers.... For instance, we had a small company in Ontario—SideStix, I think it's called—that was developing prosthetic devices to assist with walking, and they really needed just to do some quality control research on some of the materials they were using in order to put some of the final pieces together for that commercial application. That was completed and rolled out.

What we often see, as I said in my presentation, is that companies have intellectual property that needs some expertise, perhaps, not to develop brand-new IP but maybe to refine it or to get more information around it. That's a key part of that commercialization process, but it isn't necessarily geared towards the creation of brand-new IP. We're certainly seeing commercialization happening through our companies. There's no doubt.

The Chair: Thank you, Mr. Albrecht.

We now go to Mr. Regan for seven minutes.

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

Thank you to the witnesses for coming today. It's nice to have you with us.

Let me start with Ms. Peters.

I'm interested in your comment about the State of Israel, which, as you say, has standard agreements. Could you elaborate on how those work and whether you think that's a model Canada should follow? I presume it's legislated in Israel if it's required, obviously, that everybody supply everyone. Are there problems with that "one size fits all" approach?

Ms. Avvey Peters: I don't know all of the details, but my understanding is that this standard agreement is for state research centres that are receiving funding from government and partnering with industry, so part of the condition for receiving that funding is that the industry-academic collaboration agreement is standardized; it makes the process more efficient, and everyone has the same common understanding going into this kind of relationship as to what will happen.

It removes that speed barrier, if you will.

Hon. Geoff Regan: Thank you.

[*Translation*]

Mr. Fortin, would there be any problems if we had that kind of system in Canada? Should that kind of system be limited to government research centres? Are there any obstacles to collaboration that should be removed?

Mr. Clément Fortin: There wouldn't be any problem with applying that kind of system if a large part of the money came from the government. We receive 75% of our funding from governments: 25% from the provincial government, and 50% from the federal government. The agreement works very well and it is unique. It transcends the intellectual property policies of universities. There are 20 or 30 universities participating, and they all agree. It is sometimes difficult when they are new.

If a significant amount came from the government and a generic agreement set out the principles, we would work with that. If an entrepreneur wanted to obtain funding, it would be up to him to develop his own agreement. I have been an entrepreneur, and I can imagine that you can develop your own agreement. You can be more flexible. I think the generic agreement could work in the majority of cases.

[*English*]

Hon. Geoff Regan: Mr. Kolada, you talked about the valley of death. We heard previously that it's an area where there's a lack of support for the development of new technology and start-ups. Do you see impediments at that stage that are problematic? Are there things government does or doesn't do that need to change?

● (0945)

Mr. David Harris Kolada: Yes, it's fraught with a number of issues.

The principal issue is really just a matter of the risk/reward at that stage from an investment perspective and also from a customer adoption perspective.

Taking the customer's perspective for a moment, the risks from deploying a technology that has not been, in their view, sufficiently proven or de-risked are so great that they could jeopardize their business or people's lives. For example, in a wastewater treatment plant, a clean water drinking plant, or a multi-billion dollar facility where something gets implemented that has not been correctly scaled up, the loss, potentially, of business and opportunity would be massive. That's a big obstacle to adoption.

The key issue there is being able to get it demonstrated to the point where these issues are identified and worked out prior to commercialization. That takes money. There's no two ways around it for these capital-intensive industrial technologies.

Where the government can play a role, as I mentioned earlier, is in being a guinea pig, in some cases. They could use the assets the government owns to demonstrate in a controlled environment, and get some of these bugs worked out and the scalability issues addressed. If it's a lighting technology in some of the built environments, such as in some of the buildings the government owns, for example, it doesn't necessarily mean writing a cheque. But it could mean utilizing their assets in a novel way.

From an investment perspective, the venture capital community, which is the prime funder at these early and mid stages.... Certainly with clean tech, which is the perspective we bring, it's very difficult to make money in this valley of death stage. The amount of time between when they invest and when they can see an exit is long. And the amount of money required to get to that next valuation point and a potential exit is high. To the extent capital can be brought to bear, such as SDTC, in a situation where you're doing that de-risking and are providing the private sector some capital that matches theirs—it's a partnering process as opposed to just throwing money at things, which may or may not work—we find it to be very effective. In fact, we think it's a model that could be replicated in other high-capital-intensive industries beyond clean tech.

Hon. Geoff Regan: You don't seem to be saying that government should be choosing the winners in terms of investing, at that stage, with dollars.

May I ask whether you think it's a difficulty for government to choose among the different technologies, or choose the winners, in the sense of saying that these are the ones we're going to partner with to try things in government? Would the list be endless? Obviously, it's much broader than lighting. There are some things that perhaps government couldn't be a guinea pig for, but in choosing to be a guinea pig, aren't there times when we have to kind of choose and say that we think this one is going to succeed and that one isn't?

Mr. David Harris Kolada: Absolutely. I have a couple of thoughts on that point.

First, on that adoption and piloting type of scenario, I think there are ways that.... If you set up things like the CANMET lab, for example, in Alberta, which is specifically for oil sands-related technologies, it's built; it's there specifically for those kinds of technologies at that phase. You're not picking winners. You're bringing them in and allowing them to use the facilities to scale up the technology. If you're getting a little bit downstream on that, certainly there would need to be fairly tight criteria in terms of which technologies could be brought in and demonstrated or piloted.

In terms of funding and the model that we use, I think it's very important that we're an arm's-length entity, and we do pick winners. That's our job. We're a policy instrument of the government. We operate within a very well-defined environment. Within that, we only fund the best technologies that we find.

So we think it's important that this kind of following the private sector money and matching it...but also being able to intelligently determine which technologies get funded and which ones don't is critical.

Hon. Geoff Regan: Thank you very much.

The Chair: Thank you, Mr. Regan.

We'll move on to the second round now, five minutes for each.

I would just caution that pretty well everybody went over their time in that round. I know we're not dealing with a simple area, but we probably need to keep our questions a little narrower and our answers a little tighter.

Mr. Carmichael, for five minutes.

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

Thank you to our witnesses.

With that caution, I will try to be precise. Perhaps I will just carry on with my colleague's line of questioning.

Mr. Kolada, when you talk about IP and obviously selecting those that are going to truly lead to success, I take that's probably the standard by which you demand or you expect that applicants will have their IPs fully secured. They have gone through the process of IP application and securing it before they get to you, have they?

● (0950)

Mr. David Harris Kolada: Thank you for the question.

It varies. We deal with companies, as you are aware, or projects that are in the development and demonstration phases—so completing the development and then doing a demonstration project. Depending on where in that spectrum they fall, the answer will vary. Obviously, the earlier they come, the less buttoned-down their IP typically is, but that's not always the case.

So when we say that the IP must be secured, we mean appropriate for that stage...and also to have a defensible plan. When we're doing our due diligence—I'm participating in a round of due diligence this fall—often what we're looking for is that they have started to do the work in terms of searching for prior art, making sure they have a path to market and a freedom to operate. It may be that it's using trade secrets, and not patents at all. It's to have a strategy that makes sense and that is appropriate for their sector.

Mr. John Carmichael: Thank you.

Now, to that, when you talk about the different levels of being buttoned-down, does the fact that a patent application might not be completely buttoned-down provide you any additional flexibility in terms of refining what appears to be a good idea, a good direction, and give you the ability to then develop it to a better-refined solution?

Mr. David Harris Kolada: What I would say is that the more buttoned-down it is, and the clearer we can see that they have a freedom to operate and a market that they can attack, the more likely it is we are going to fund them, number one, and the more likely it is we'll be able to fund them in a greater amount and attract more capital from the private sector.

If you have a fairly small market that you can address, that's not interesting to us. We're motivated to deliver the benefits to Canadians in terms of the environmental benefits and the economic benefits. So the bigger the bang for the government's buck we can get, the more interested we are. If it's a very niche market where there are a lot of competitors that have potential patents out there that they may bump into, that makes it less interesting for us.

In terms of what we can do inside the project, that really is a function of the other members of the consortium and a variety of other factors, rather than specifically the status of their patents.

Mr. John Carmichael: That makes good sense.

You mentioned that Canada is the second location for registration of IPs. Is the U.S. first, in your business?

Mr. David Harris Kolada: Absolutely, far and away; it's considered the gold standard.

Mr. John Carmichael: Yes. We have heard that before. I just wanted to verify it.

What about Asia? What's happening in Asia with clean technology? Are we starting to see growth there, or is it still a ways away?

Mr. David Harris Kolada: There is huge growth in Asia in everything, so absolutely there's a massive market for clean technology. I think it was in 2010 that China surpassed the U.S. as the number one region for investment into clean technology. They are the global leaders. They are aggressive. If you look at their latest five-year plan, it's pivotal. It's a central pillar to how they are going to be managing their economy—or how they manage their economy. It's actually quite insightful to see the amount of money they are investing into it.

The risks still exist, though, in terms of bringing North American-developed IP over to those regions. I'm thinking that's where you're going with your question. I think they are more manageable than they were, but there is still a long way to go. There are significant risks entailed in that.

Maybe I will stop there. I am trying to keep my answer concise.

Mr. John Carmichael: I apologize for not bringing the rest into the discussion, but I'm just curious about this.

When you talk about developing Canadian-owned...and you mentioned to one of my colleagues earlier that naturally we want to keep Canadian-developed and Canadian-owned IP in Canada. Where do you see that going in terms of what this government can do to better facilitate that commercialization and enhance the likelihood of keeping Canadian-developed IP in Canada, keep it Canadian-owned?

Mr. David Harris Kolada: That's a great question.

Mr. John Carmichael: I guess that's too big.

Mr. David Harris Kolada: There are a variety of things, some of which we've touched on. The one that we haven't touched on is supporting the venture industry. To the extent that there are Canadian-based venture firms that can support Canadian companies, which they typically do because they're close to home, that will help. To support them at all the different parts of the ecosystem is critical. We're an important part at an early stage. We hand off to the venture guys, and if there aren't the venture firms to fund them at the next stage, they'll get funded by foreigners and they'll be more likely to leave.

● (0955)

The Chair: That's great.

Thank you, Mr. Kolada. I'm sorry, I need to be more assertive on this now.

Now on to Mr. Stewart, for five minutes.

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

Thanks to the witnesses for all their information today.

From my perspective, you all seem to be pushing for closer ties between universities and industry. That seems to be a theme that's emerging here, and I'm asking you to help me understand the balance that you're seeking or what might be appropriate. In terms of just focusing a bit, I'd like to think about a single professor in a university and how they are supposed to use their time.

Traditionally it's been that the professor teaches or publishes in academic journals, essentially, and all that information that they publish in academic journals is open for public consumption and for companies and other academics to look at and evaluate. A lot of this is built into the tenure structure, which is, of course, very hard to renegotiate. In fact, it's one of those sacrosanct parts of a university. We've had presidents and vice-presidents in here saying that they don't want to touch it with a ten-foot pole, because first of all, you would have faculty leaving, especially the high-priced faculty, who would leave if you messed with their tenure structure.

Research grants traditionally were established to maximize academic freedom, and this, in a way, attracted high-priced talent to universities. They could get big grants, they could look at whatever they wanted to, they would publish that and make it open to the community. And this may or may not have had a commercial application. That wasn't necessarily something they cared about that much and it wasn't essentially their job. Their job was to teach and to publish. So it was very much focused on the choice of the researcher.

But now the granting system is changing a bit. It's moving away from that. We see a decline in discovery funding, which encourages academic freedom, and it's more toward pushing academics toward collaboration with industry.

If we're thinking about a single professor in a university who has to decide between teaching and publishing in journals, and now is looking at industry collaboration, which is going to take time away from one of those two core functions, I'm just wondering how you see what should be sacrificed. Should it be the teaching side or should it be the open publishing side? Because that's what's going to happen.

I will leave that open to all of you to decide.

Mr. Rob Annan: I can speak just a little bit about the Mitacs experience with that. What you say is correct. There are a lot of demands on a professor's time. In addition to teaching and research, there are administrative duties; there are all sorts of duties. So there's no doubt....

We have found a lot of success in employing graduate students and post-doctoral fellows as that bridge. They're able to bring a lot of the expertise from the university system, have access to the supervisor for consultation, but then also move into the industrial space. It benefits the student, who gets this experience in networking, but it also serves as a link between them. That's really effective.

I'll also just suggest that not only is the funding system changing, but academia is changing. I come from academia, and even when I was there you could see that professors were much more ready to work with industry; they see it as a positive, generally. They're just pressed for time. In the same way, companies, especially start-up companies or small and medium enterprises, are also pressed for time, and I think the lack of time and ability have been a real pressure point as well.

That's where we have found that by having people who actually go out and try to match.... We have a matchmaking service, effectively, and we're very proactive about it. Everyone is keen. We have very few people who tell us no. But we actually help put them together; they don't just find each other.

Mr. Clément Fortin: From my experience as a university professor for 30 years, as a global picture my recommendation is that 40% should be teaching, 40% should be research, and 20% should be administrative. With regard to that 40% on research, one has to realize that discovery grants are very small. A starting discovery grant is about $20,000 per year, and the highest is around $50,000—sometimes it goes to $70,000. You would be able to support two graduate students with this.

With collaborative research, our average project at CRIAQ is about $1 million, and the highest one is $1.8 million. With the amount of money we bring to professors for doing good research, as I was saying earlier, you have to balance it between....

You have to see that the professors there have very good science; they publish in good journals. One of them from McGill was telling me recently that he went to a conference and people from Boeing and Airbus were there. It was a plenary session and it was full, because he was talking about real industrial results from his projects. His graduate students are superb and doing very well.

I don't see a contradiction, a dichotomy between research.... Of course, you need to keep a balance between push, which means ideas that come forward from the university system, and pull. That balance, to me, would be in the range of 80 to 20, or something like this. That would be a very helpful research system.

● (1000)

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

Now on to Madam Gallant for five minutes.

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

Since the initial testimony I've been scrolling through the SDTC website, looking at the different program funding they have.

My first question is, what sort of money—in total or breaking it down—is the federal government allocating to these different programs?

Mr. David Harris Kolada: In our program we fund a project consortium in each case. The government money, which is the money we provide into that project consortium, is on average across our portfolio 33%. It's capped at 33%; in practice, it's actually about 29%. It's about a two and a half to one leverage within the project. That's in the SD tech fund, which is the $590 million fund that's been in place since 2002, with successive recapitalizations.

In the NGBF, the next-generation biofuels fund, it's similarly one-third government money through SDTC and two-thirds from the private sector in each case.

In the SD tech fund, we track follow-on financing that comes into our companies after our money, and we then see a further leverage of eight to nine times capital coming into those companies on top of our money. It's quite a significant amount of private sector money, which actually exceeds the two and a half to one, and then more money coming in afterwards.

Mrs. Cheryl Gallant: During the witness's testimony, he stated that the majority of the companies are bought out by U.S. companies.

Mr. David Harris Kolada: I believe that was Ms. Peters who mentioned that.

Mrs. Cheryl Gallant: Ms. Peters, was that comment accurate?

Ms. Avvey Peters: It wasn't specific to clean tech, no. The stat I was referencing is in the Canadian International Council's report. It shows that of Canadian companies that are acquired, there's a large proportion of them that are acquired by a foreign buyer, which means that the intellectual property assets leave Canada.

Mrs. Cheryl Gallant: My concern is that the Canadian taxpayers are funding substantial amounts of money toward the clean tech sector—and other sectors, but specifically clean tech—and with the potential for them to be purchased by a non-Canadian company, that country then reaps the economic benefits of everything we've put into it. That's a rather large concern.

Have you looked at the results over time to see what percentage of these companies that you've funded have been retained in Canada?

Mr. David Harris Kolada: I don't have specific statistics I can quote to you at this time. We do track companies that are ultimately exited down the road. Typically that's well downstream from us. We invest at a fairly early stage, pre-commercial. Most of the companies that would be acquired would be acquired later on, several years past our funding.

As I mentioned in answer to Mr. Braid's question, we believe that in clean tech the likelihood of the companies and the assets and the employees staying in Canada is higher. We have seen that. We also see more of these companies going public on the TSX, so they remain independent, trade on the Canadian stock exchange. I believe 30% or 40% of the clean-tech companies listed on the TSX are SDTC-funded companies. That's an available financing mechanism that allows them to stay and to be independent.

We've seen very good success in terms of our companies being able to ensure the Canadian shareholders and the Canadian government reap the economic benefits through the funding to SDTC. Of course, the environmental benefits are global benefits, so whether they're commercialized by an independent company, all of whose assets and employees stay in Canada, or acquired by a foreign company and deployed, we believe those benefits continue to accrue.

Of course, the shareholders do benefit through M and A; that's an important part of the life cycle. If investors and founders can't get some exits, then they won't be able to start up the next company and start over again.

● (1005)

Mrs. Cheryl Gallant: Apparently I only have 40 seconds.

I am interested in this literature and knowing more about the companies you have supported in terms of hydrogen production, combustible engines, or the fuel cell technology. Maybe I'll have another chance to ask that.

Thank you.

The Chair: That would be best.

Mr. Harris, you have five minutes.

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

Thank you, everyone, for your presentations this morning. It's given me lots of questions. I think we've caught some valuable information.

I'm going to start with one quick yes or no question for the entire group. Of course, Mr. Carmichael and others have mentioned that keeping companies Canadian and the work happening here is incredibly important, but recently we've seen a change to the Investment Canada Act threshold for review. Before, a review would be triggered if a company was worth $300 million or more. That threshold has now been raised to $1 billion.

A voice: In four years.

Mr. Dan Harris: Yes, in four years, but it's going up.

Does anyone in the group here think that's going to help keep companies Canadian? Just a quick yes or no.

Ms. Avvey Peters: I don't know.

Mr. Dan Harris: I don't know is an acceptable answer.

Mr. Clément Fortin: It's difficult to say. It's going to keep the big ones, but there are multiple small and medium ones.

Mr. David Harris Kolada: Similarly, I don't have a view on that.

Mr. Rob Annan: I'm afraid I can't comment. I don't have any particular expertise in the area.

Mr. Dan Harris: No, that's fine.

We have some serious concerns about the changing of the threshold, because now when we talk about the disappearance of small and medium enterprises, these are all smaller groups, but when you get past that valley of death, when you start to grow and start to hit large evaluations, changing from $300 million to $1 billion, a lot of companies could fall prey to foreign takeovers without there being any review for net benefit to Canada. We find that troubling, especially when the government has repeatedly promised to define net benefit and has yet to do so.

Ms. Peters, on a similar topic, of course, we're studying intellectual property here right now. Intellectual property itself is not subject to review by Investment Canada. So if you take a situation like Nortel, their intellectual property was sold at a higher value than all the bricks and mortar assets. One of the questions we're raising here is whether we think perhaps intellectual property should be, or at least be considered to be, part of the review process. Do you have a comment to make on that?

Ms. Avvey Peters: The only thing I would say is that I think it's evident from the investor perspective that intellectual property is a really attractive part of the asset base when they're choosing to invest in a Canadian company. It's up to us to look at how we are capitalizing companies as another important means of retaining the company in Canada, helping it to grow. I think we'd all like to see more billion-dollar companies in Canada. The challenge, if you're a three-person start-up, is how do you get from here to there. Having a good solid intellectual property management strategy is a piece of that. Having access to talent and access to capital are the other important pieces.

Just to reinforce what I said earlier, I don't think Canadian companies, especially the small and medium-sized ones, have a sophisticated understanding yet about how their own intellectual property assets can help them to stay and grow and maximize that potential.

Mr. Dan Harris: Great. Thank you.

Mr. Kolada, I think you were the one who spoke about Canada being at the low end for PhD graduates. Was it you or...? Oh, sorry. My apologies. I actually have separate questions for both of you, but I'll go on that one.

Of course, it's incredibly important to increase the number of PhD graduates, and we actually have to have jobs for them afterwards. I believe there's a lack there, and organizations like Mitacs and CRIAQ, of course, are incubators and provide those kinds of opportunities. Is there any kind of quick fix you see that could help that?

● (1010)

Mr. Rob Annan: We're working on it. I don't know if it's necessarily a quick fix per se. The challenge, of course, is that it's a bit of a changing of culture in the business community. In other countries there's greater receptivity to hiring PhDs for non-specific technical tasks, and you have PhDs who are in management and other parts of the company, whereas in Canada I think there's a bit more of a tendency to see PhDs as simply highly specialized technical labour.

Our companies, after they've hosted a student through an internship, recognize that these students have skills beyond just a specific technical task. In fact, they have analytical skills, and the list goes on. We're working hard to provide additional skills in terms of business knowledge, professional skills, soft skills, to accompany these and help them transition. But the figures are clear: countries where you have higher levels of PhDs being produced, produce higher numbers of patents. There's a correlation between the two. It's a different sort of business culture.

The Chair: I'm sorry, you're over your time.

Now we go to Mr. McColeman, for five minutes.

Mr. Phil McColeman (Brant, CPC): Thank you, Chair, and thanks to the witnesses as well.

I want to go down the line of questioning and get your views on best practices. I know we had the comments about Israel and standardizing something, where everybody knows the way things work and how to play the game, and it simplifies and maybe streamlines things. I've had a lot of familiarity with Mitacs, in terms of what you're trying to do in terms of integrating the post-grads and the doctoral students into industry. There are obviously some places in the world, some countries in the world, that perhaps have it right, or got it better, let's put it that way, than we do. What are some examples you can offer this committee of other jurisdictions? We had the Israel example, so in a similar vein, on other fronts, what are some other jurisdictions we can learn something from?

Mr. Rob Annan: I would just make one very brief comment, because I know we're pressed for time. I agree that there are a lot of potential gains to be made from standardizing things, but at the same time, I think it's important to recognize that this may not necessarily be the right answer either. In fact, a variety of approaches may generate new ideas for best practices, so learning between institutions is important. Waterloo is a great example of how to manage IP, but UBC, which I think many people would argue is at the other end of the extreme in terms of IP being developed at university, also has a high rate of start-up companies. So they have different approaches. The UBC model maybe has more hands-on incubating, while Waterloo is more hands off, inventor-driven. In the United States, for instance, there isn't a standardized sort of IP regime for universities, and they're quite successful.

Mr. Phil McColeman: Do any of the other witnesses care to comment on what you've seen out there in other jurisdictions in the world?

Mr. Clément Fortin: We have to remember that the U.S. is still a very good model. I think they have very good universities and they've developed a lot. They've slowed down, but I think they can recuperate. Germany certainly has a very solid research culture, a very strong industrial base, and they have their own models with their front offers and so on. It's a very well-established model. Now people are mentioning Korea, where their innovation is really progressing well.

For me, the U.S. is still the reference. We know that when we go for IP in the U.S. we have to be quite ready to fight, but on our side we have to be more ready to face the competition.

Ms. Avvey Peters: The other example that may be worth examining is Denmark, which has a regional model for tech transfer. Rather than every individual university having a tech transfer office, there is one in a regional context, which acts as the central area of expertise, and companies and universities alike have access to that regional expertise.

● (1015)

Mr. Phil McColeman: I'm interested in going back to John Baker as an example of how a true entrepreneur fights through the battles on his own and picks up all this knowledge. I spent some time with John in Brazil, actually, as he was expanding his market even further around the world. I was thinking that all of the effort we're trying to do here is to help those entrepreneurial types accelerate their businesses and keep them in our country. I guess the vehicles we've chosen for doing that are constantly, I suppose, under the scrutiny of government, because government money is evolving in there.

Is there any other obvious tool in the toolbox we could be looking at as a government in terms of supporting the John Bakers of the world, other than what we're doing right now?

Mr. David Harris Kolada: I just want to highlight one of the recommendations we mentioned earlier. Filing for patents is expensive. It's a complex, lengthy process. The Alberta Innovates voucher program is very interesting. I don't know if you're familiar with it. Basically what it does is allow pre-approval of spending for service providers to get IP patented. Again, it's a matching program. If the company looking to file for a patent puts up 25%, Alberta Innovates puts up the remaining three-quarters for the service provider—the patent agent or the law firm—and then the work is completed. It's an interesting model to look at. To the extent that there's more support for getting some of these things pushed through, I think that's a very helpful thing to look at as well.

The Chair: Thank you very much.

Now we'll go on to Madame LeBlanc, for five minutes.

Ms. Hélène LeBlanc: I'm going to be brief.

[*Translation*]

I will speak in French.

You spoke about using a pull model instead of a push model. It was also mentioned that models tend more and more towards research that is a little more directed. What about academic freedom? Do universities have reservations about that?

Mr. Rob Annan: I'm sorry, but I am going to answer you in English.

[*English*]

I think researchers are all a little bit anxious because of this pull, which Mr. Fortin mentioned as well, between discovery research and sponsored or industry-focused research. I'm not exactly sure where that balance is, and it will be different across the different disciplines. Some disciplines, such as engineering and physics, the sort of harder sciences, are often a little bit more attuned to working with industry. We're working proactively with other academic associations to try to also reduce the anxiety among other disciplines, such as humanities and social sciences even.

Once people start working with industry, they see it, in a way, as almost an addition to what they're already doing. You absolutely need a foundation of basic research, with the freedom to explore and have new ideas that no one can imagine. But supplementing that with an industrial application can actually benefit even the discovery side. It provides outlets for the students. There are any number of advantages. I think as people get more and more experienced with it, that tension is disappearing.

[*Translation*]

Ms. Hélène LeBlanc: Thank you.

[*English*]

Mr. Kennedy Stewart: Just to continue this conversation, focusing on students a little bit, I think it's a great idea. I think that was in the Jenkins report and actually is something the Conservatives have been pushing a bit in their policies to increase co-ops. Maybe we can talk a little bit about the direct placing of students in industry to provide a bridge. I think we can talk about that a little bit.

Maybe you can tell me more about why companies don't hire more PhDs. Why is there this reticence? Why don't they know what a PhD can do for them?

● (1020)

Mr. Clément Fortin: As was said, one of the problems is the culture. I think if you are a very product-driven company and you have to push the products out the door and that is what you do, and you make money doing it, that's fine. If you're in this culture and don't have a longer-term vision of where you should be five years or three years down the line, you don't deepen your knowledge so that you can create more value for your company. It's a culture change that you have to move up the chain.

In Canada, we've been very successful. We're resource rich. We've been very successful in traditional manufacturing, in traditional companies. This move to a higher level of R and D in a global economy to be more competitive I think is the change that has to be done, and it's not easy to do.

Mr. Rob Annan: No, and I have to agree with those statements. I'll add one more, which is that because we don't have a lot of large companies in Canada, we also don't tend to produce people with the experience to be R and D managers within smaller companies. In the United States, you'll often have these large companies—like an IBM or a Google or what have you—where people move up the R and D chain. They get to a certain point where they leave and then they can run an R and D shop somewhere else.

In Canada, we don't have the companies that are spinning out these experienced R and D managers. If you're a small company and you have 12 employees, you might want to be doing more research, but you don't have anyone there who can be dedicated full time to managing new PhDs coming into your shop and engaging in research.

We've launched a program that tries to address this gap, or whatever it is, to try to train research managers, but there are some structural elements and cultural elements, as well as historical elements. It's a real challenge.

Mr. Kennedy Stewart: Okay. What could government do to help with that?

Mr. Rob Annan: It could invest in our management program. No —

Voices: Oh, oh!

Mr. Kennedy Stewart: Something a little less self-serving—

Mr. Rob Annan: I think what Monsieur Fortin was talking about in terms of increasing some of the competitive pressures, so that there's the need to innovate, may well be part of it. Companies will recognize that they need to be doing more R and D on an ongoing basis.

The Chair: Thank you very much.

Mr. Lake, five minutes.

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

I'm still trying to get my head around Mr. Harris's last line of questioning. I don't know too many Canadian SMEs for which a $1 billion threshold would come into effect when someone is considering buying them, but maybe our definition of small and medium-sized enterprise is a little different.

Also, by the way, section 20 of the Investment Canada Act.... He's not really listening now anyway—

Mr. Brian Masse (Windsor West, NDP): On a point of order, Mr. Chair—

Mr. Mike Lake —but section 20 of the Investment Canada Act does list six factors to be taken into account for the purposes of determining it.

Mr. Brian Masse: —I'd like to know how Mr. Lake knows what Mr. Harris is thinking.

Mr. Mike Lake: I can't figure that out, for the life of me, actually —

Mr. Brian Masse: Yes, that would be interesting to know.

Voices: Oh, oh!

Mr. Mike Lake: Anyway, as our economy gets stronger relative to the rest of the world, we are going to attract foreign investment. Many of us would think of that as a good thing.

I did want to follow up on that line of thought a little bit. When we talk about small and medium-sized companies being bought or pursued by foreign entities—and we've had a little bit of conversation about that—to what extent is that a positive?

Someone starts a company. They have a really good idea, they build it up a little bit, and a buyer comes along who offers them the opportunity to cash in, in a sense, and maybe use the money they make from that sale to start a new company.

I think this concept of serial entrepreneurship is a concept that's really important to the success of the tech sector particularly, but of many sectors. I see a few of you nodding. Maybe I'll start with David and then hear from each of you on it.

Mr. David Harris Kolada: Thanks for the question. I'm glad to come back to this topic.

I have just a couple of things to bring forward. The first is that we're great at creating companies in Canada. We're a prolific creator of small companies. In fact, when I was a venture capitalist in the late nineties, some research I did showed that in the greater Toronto area there were more tech start-ups than in Boston and Austin, Texas, combined, and they are two very large tech hubs in the States, outside of California. So that's not the problem in Canada.

The problem is twofold. The first is killing off the under-performers. That's just part of the life cycle. Some companies should not proceed. They should just shut down early because they don't have a winning technology in the global marketplace.

The second thing is that we don't put enough money behind our winners. This is part of the issue in terms of companies getting bought too early. It's that we don't fund them to the point of a sufficient value threshold where they can attract a significant offer that is going to really deliver benefits to the shareholders and to the economy in Canada, or for them to be able to go it alone for an extended period of time—to be public, to be independent.

So there are a couple of things to consider in terms of that issue.

I agree that M and A by foreign or Canadian buyers is a good thing. It's absolutely necessary. But M and A too early is not a healthy thing.

● (1025)

Mr. Mike Lake: Avvey, do you want to jump in?

Ms. Avvey Peters: Sure. I would absolutely agree with that. We do see M and A activity as a great exit for entrepreneurs. It helps them to start their next venture. In the best case when a Canadian start-up is acquired by a big multinational.... I'll give you another Waterloo example.

About four or five years ago now, Google came to the Waterloo region to acquire a 14-person start-up called Reqwireless. There's now a 400-person R and D engineering shop of Google in the Waterloo region. It certainly isn't the case that they gobbled up a start-up, sucked all the talent down to California, and we don't see those engineers anymore. As David said, the worst case is when that kind of thing happens: when a company is acquired too early and hasn't had the opportunity to really exploit what its commercial potential is.

So I think the key to this is really, as David says, to capitalize companies appropriately and give them the opportunity to strengthen their footprint in Canada and grow more jobs in Canada.

Mr. Mike Lake: David, I'm going to come back to you, then, and ask what it looks like for you when companies are capitalized properly. You say that we're not funding them well enough. Who's the “we” that you're referring to there?

Mr. David Harris Kolada: That's a good question. That was the royal “we”—the ecosystem within the Canadian innovation value chain. It ranges from the angel investors to some of the intermediate early-stage, such as SDTC, venture capital, etc. But it's really in those stages.

If you look at the average amount of capital that a U.S. company raises, it's about two or three times what the average Canadian company raises at an equivalent stage and sector, so we're fighting with one hand behind our back.

The question is, how does it look for us within clean technology—

The Chair: We have to move on. We're going to have to go a little bit over time to make sure we get through our third round, and there's a question that I absolutely want to make sure I ask this panel.

We've had a lot of conversations over the years regarding the gap between the research lab and the shop floor—taking IP and commercializing it. One of the professors I spoke with in the not too distant past said that one of the things they feel is very much a cultural aspect with Canadian universities.... This professor referred to the Ivy League universities, where they pay their professors for nine months, and for three months they have to be in the private sector. They have to start their own business, they have to be involved in emerging technology businesses, etc.

How much of a factor do you think that is here in Canada?

Mr. Rob Annan: Maybe I'll lead off.

I'm not sure about that model in particular, but I will suggest, both from our experience at Mitacs and my personal experience in academia, that the demands on professors' time tend to preclude a lot of this sort of activity. My background is in biochemistry, and I know a lot of professors who would love to be starting up companies, and even have started companies, but they don't ever really get any traction because they just don't have the time to dedicate to it. Maybe the increased research and teaching requirements at universities have precluded that, I'm not sure. Maybe freeing them up three months a year would actually do something like that.

I think the desire is there.

Mr. Clément Fortin: I think the Canadian research system in universities is performing well. I'm not sure that going on the nine months out of 12 system that is done in the States in some cases would give.... In the nine months you would work in industry, which would be good, you could find.... But the funding system has to be changed totally. What's happening in the States in this case is that the NSF is funding salaries of professors. In Canada we'd have to raise the NSERC funding by a lot to go to this system.

I've done it myself. I've spun off a company, started it, and spent three years full time, almost five, doing this. There are not that many professors who are ready to do this. Even if you go on a 9-12 system, I don't think you would get a lot. I think it's a cultural thing.

● (1030)

The Chair: Thank you very much.

Madam Gallant, for five minutes.

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

Back to hydrogen, which I mentioned had peaked my curiosity with SDTC. I know that AECL is developing technology for reactors so that in off-peak hours they can use the energy for electrolysis to produce hydrogen—be it for combustible engines.... They're also working on catalysts for the fuel cells. We've heard about the Volt, which is online, and the Prius, and I know that New Flyer bus lines in Arnprior is converting transit buses using fuel cells.

SDTC has pumped a lot of money into the hydrogen economy. When can Canadians reasonably expect to be able to utilize this technology, utilize hydrogen as a fuel? After all, the emission is water, something that is going to be in higher demand.

Mr. David Harris Kolada: Thank you for the question. I will preface my comments by saying that I'm not an expert in hydrogen, but it is an important part of our portfolio. We have supported several hydrogen technologies.

In terms of when Canadians can benefit, I would say very soon. There's a very good proof point in terms of Mercedes locating their first hydrogen engine manufacturing plant in Vancouver, which is a technology that SDTC funded and helped commercialize. We're also investing in several other hydrogen technologies, mostly in the industrial sector, not in the consumer automotive area. Most of our portfolio is directed in that way—forklifts, buses, etc.

We were actually very pleased last week that SDTC received an award at the global hydrogen conference in Toronto around our work in getting hydrogen to market. So there is some early evidence of success, and we believe more to come.

Mrs. Cheryl Gallant: With SDTC, are you putting money towards the technology behind actually producing the hydrogen? With the nuclear reactor, for example, in the non-peak hours, when we have that extra electricity, Ontario consumers are paying Americans to take our excess energy.

Is SDTC involved at all in helping to fund the research to get the production online?

Mr. David Harris Kolada: I'm going to say generally no, although that is subject to going back and looking at our hydrogen portfolio in more detail. I believe the majority of our projects in hydrogen are related to applying technologies to specific industries, as opposed to generating hydrogen. One exception may be the case of Hydrogenics, which we've provided some funding to, which was the merger.... Stuart Energy was one of the historical companies behind that. A good chunk of their business is generating hydrogen, but we're backing the application of that technology to specific solutions that industry needs, such as energy storage for cell towers, so that instead of using diesel generator sets, there would be a hydrogen fuel cell to provide power when the grid is down, for example.

Mrs. Cheryl Gallant: Thank you.

Mr. John Carmichael: Thanks. I'll be quick.

Just taking it down a different path, clearly the relationship between academia and industry is growing and thriving. We've had earlier testimony from a corporate perspective that boards of directors, for example, don't have the education, training, or knowledge to value IP in a corporation. Could you talk about M and As and some of the work that's going on in publicly traded markets now? Is there a deficit? Is there something we should be doing to ensure that director education is enhanced? Is it even a valuable part of the equation?

Would anybody like to answer?

Mr. Clément Fortin: From what I know of corporate boards, I think today they're very concerned about IP issues and so on. I think in Canada now we've moved quite a bit. It's down in the culture. When you get into operations and you get into product development and all the really technical things, the culture is different, and this is where we have to change. This is my perspective.

Mr. David Harris Kolada: I would offer that I think if you attract venture investment, the venture board members, who would typically be a significant part of your board, are very attuned to this issue, because it goes directly to the valuation of the company.

For companies that have not gone the venture route—which is fine, and many companies are just able to commercialize and succeed without venture capital—I think there is a gap. It's generally a question of building good boards, and the IP issue demonstrates that need to have good boards with independents whose members are qualified.

So I think generally having a higher standard for building an independent qualified board of directors for these independent companies is an important issue.

● (1035)

The Chair: Thank you.

We now go to Mr. Harris.

Mr. Dan Harris: Thank you.

Mr. Kolada, I apologize for almost putting words in your mouth earlier.

Mr. David Harris Kolada: They were good words. They just weren't mine.

Mr. Dan Harris: But following up, of course, we heard from you today about all the investments and the future of clean tech. That seems to fly in the face of what we oftentimes hear in other areas from the government or from certain industry areas, which really call clean tech or the environment a barrier to further economic development.

Would you agree or disagree with that statement?

Mr. David Harris Kolada: At SDTC, I think we've shown over 10 years that supporting technologies that are good for the economy and good for the environment is not a contradiction in terms. They're actually synergistic. If you're developing a technology that saves money, that takes something that's a waste stream and turns it into a valuable commodity and a revenue stream, that creates a very strong business case.

We look at only those technologies that have a very strong business case, those that the market is pulling through. We talked about push and pull. It's appropriate in an academic setting to have the pull and the push. But when you get to the stage where SDTC is playing, we're looking for market pull. If there isn't a strong market pull for something, we won't back it.

So there's a natural synergy, because we have the customer or a supply chain partner in our consortium putting money behind this technology and saying, “This is strategic to our business. We're going to put our money into it to make sure it gets to market.” Well, how is that bad for the economy? And at the same time, we have measurable benefits to the environment. It's a core part of our program. So everything we back, we believe has both attributes.

Mr. Dan Harris: Excellent. Thank you. I completely agree with that.

In one of your earlier statements you mentioned that governments, as well as Canadian business and industry, are perhaps slow adopters. Is there any particular reason why government perhaps isn't taking more of a leadership role in adopting clean tech to pave the way for the other sectors in Canada's economy?

Mr. David Harris Kolada: I said we're seeing the government taking an increasing role in this regard.

Mr. Dan Harris: Increasing, but they're still lagging.

Mr. David Harris Kolada: We're very encouraged to see that. It's something we've been calling for, for a long time. We're very happy to see the progress that's been made.

Mr. Dan Harris: There's always room for improvement.

Mr. David Harris Kolada: I think the chronic issue, frankly, is within industry. It's quite a shame, because if you look at clean tech, it's one of the areas where we have large anchor tenant companies in many of these sectors, whether it's in oil and gas, forestry, agriculture, or transportation; we have world-leading companies in each of those sectors headquartered in Canada. It's something you can't say for many other sectors.

The disappointing thing is they are slow to adopt, and it really is a cultural issue in terms of risk aversion.

Mr. Dan Harris: I apologize. I'm glad you're wrapping up.

[*Translation*]

Mr. Fortin, I would really like to ask you some questions about MDA and RADARSAT, but I have unfortunately run out of time.

[*English*]

As such, Mr. Chair, I believe now would be the time to restart the debate on RADARSAT, in having MacDonald, Dettwiler and Industry Canada come to the committee to report as to what problems exist and why the program seems to be frozen in time.

We've heard time and again here from the government and from the parliamentary secretary that there is a commitment on their side. This debate was started nearly a month ago. We still have not seen any movement from industry or any public signs that funding is going to be allocated for the program.

In the context of Investment Canada and in the context of the IP study we're doing, this is a tangible area where a Canadian company has a lot of intellectual property and where we feel currently the government, through their inaction, is risking the health and the future well-being of that high-tech strategic asset, which was blocked from being sold to an American company to protect our interests.

I apologize to the witnesses for taking this opportunity to start this debate again, but this is a tangible area where we can have an impact, and as of yet we have not got agreement from the government side to bring MDA and Industry Canada, as well as, thanks to Mr. Regan, the industry minister, to come and explain what the delays are or to establish a timeline to see what we can do to move this program along.

● (1040)

The Chair: Mr. Harris, your time is up on that. I need to move on to the next questioner now.

Mr. Dan Harris: Yes, but I do believe I've just restarted debate on an existing motion.

The Chair: No, we're in a regular meeting where we have time allocation for different questioners. The government has advised me they rest, so if Mr. Regan wants to give you his time...he has five minutes, and then our meeting is over.

Hon. Geoff Regan: I do have a couple of questions, but they may not take long. I'll finish quickly.

Mr. Dan Harris: If you want to share your time, I appreciate it. Thank you.

Hon. Geoff Regan: We'll see what happens.

Thank you, Mr. Chairman.

Mr. Annan, you highlighted the speed at which technology is developed and becomes outdated these days.

In view of that, is the patent process itself obsolete? If not, what has to change?

Mr. Rob Annan: I'll preface this by saying this is outside my particular expertise. Our experience, at least at Mitacs, has been that the projects we're engaged in are relatively short term, so the projects tend to be somewhere like four to eight months. Often the research going on there doesn't generate enough long-term IP. Things move pretty quickly. The problem arises from the fact that the university, especially the student, wants to publish their work, often as a thesis or as a paper, so sometimes there are some conflicting timelines there. Once in a while we will have to delay a publication.

In terms of the overall future of IP in the tech-based...I suspect my colleagues, especially at Communitech, would be able to better answer that.

Hon. Geoff Regan: Mr. Kolada.

Mr. David Harris Kolada: I would actually defer to Ms. Peters on that question.

Hon. Geoff Regan: Pardon me; I meant Communitech.

Ms. Avvey Peters: I think the experience that some of our companies have is that things take longer than they expect. Partly that's their lack of familiarity with the process. There is an administrative burden often. I think anything we can do to streamline the speed with which companies can register and defend their intellectual property is a good thing.

Also, to go back to the financial burden, for a small company some of the costs involved are quite extensive. It makes it difficult for them.

Hon. Geoff Regan: What's the first step you would take to streamline the process you spoke of?

Ms. Avvey Peters: I would actually have a conversation with a bunch of CEOs of small and mid-sized companies to gather their experience. Certainly I would leverage groups like ours in order to have that dialogue, in order to seek that kind of feedback.

I don't have personal experience in dealing with registering intellectual property, but certainly our companies do, and would be more than happy to share it.

Hon. Geoff Regan: Thank you.

Mr. Clément Fortin: There are some patent offices that are very, very busy; time is the essence there. It takes time to get that. For a company, I think it's a race. You have to race quickly with your technology and protect it as you go along. It's a dynamic process.

Hon. Geoff Regan: We've also heard that there's a lack of patent agents outside of the biggest cities. Except for Toronto and Vancouver, I don't know where else there are many.

Mr. Clément Fortin: I'm not surprised. Montreal, I'm sure, has some.

Hon. Geoff Regan: Montreal no doubt would.

Let me read something to you, Mr. Clément.

[*Translation*]

I will read you a paragraph from a report that was drafted recently.

[*English*]

Dr. Richard Hawkins at the University of Ottawa, in *Looking at Innovation from a Uniquely Canadian Perspective*, wrote:

> ...there is a significant risk that too many of our policies and public resources for innovation and industrial diversification will be directed inefficiently to markets in which we have little or no comparative, positional or competitive advantage. This creates a high risk that too few resources will flow to promoting productive and sustainable development in markets with immediate growth potential and in which already we enjoy considerable and even potentially exclusive opportunities and advantages over the long term.

He also talks about the concern that we're overly dependent on natural resources and financial services.

Do you see that as a concern, and how would you respond to it?

● (1045)

Mr. Clément Fortin: My first reaction is that we have to go for the best university research and for what companies need. Companies are strong in some markets, so if we poll their needs, obviously we'll orient our efforts there. We obviously have to leave some space for free research and good ideas that would....

I would not over-constrain the system. I would see companies that come with ideas, ready to invest, as a good sign that we're aiming in the right direction. That would be my way of looking at it.

Hon. Geoff Regan: Thank you.

I think we've left one minute for Mr. Harris, perhaps, or maybe one and a half.

The Chair: [*Inaudible—Editor*]...23 seconds.

Mr. Dan Harris: Well, thank you.

As I said before, I think the time has come to restart the debate on my motion with respect to RADARSAT.

I'll just quote the Prime Minister really quickly on this, from an article that states:

> "The eyes on these satellites will pick up a breaching whale through the fog in the utter blackness of the Arctic winter," he said. "From Afghanistan to the Arctic, from the coast of Somalia to the shores of Nootka Sound [on Vancouver Island], we will be able to see what the bad guys are up to."

Well—

The Chair: Thank you, Mr. Harris.

Leaving off with a quote from the Prime Minister is probably the best thing we could do.

Voices: Oh, oh!

The Chair: I wish all of the members a very productive time in their constituencies and also enjoyment of some of the summer weather.

I want to thank the witnesses very much. Those were very informative rounds. We appreciate your time and appreciate your answers.

The meeting is adjourned.

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