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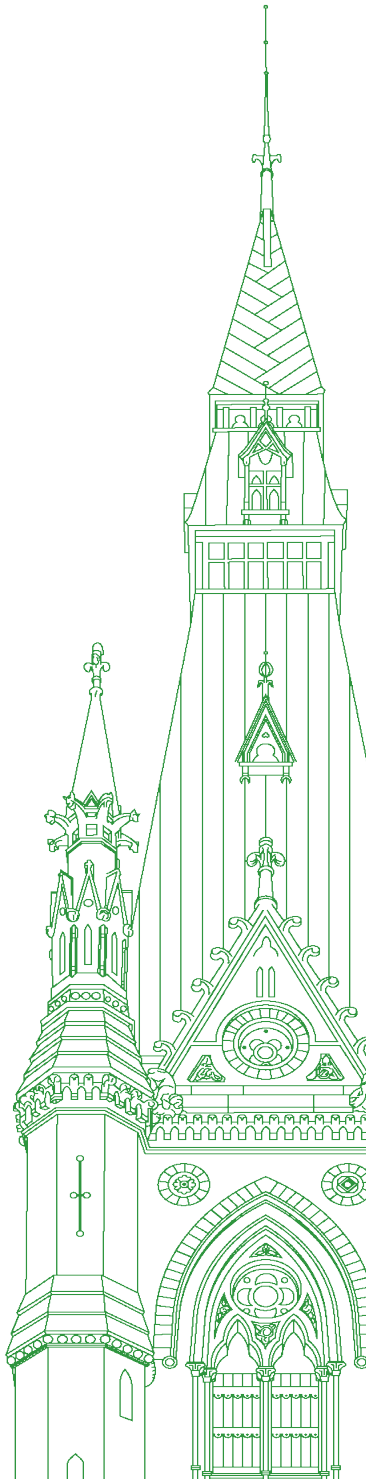

Chair: Salma Zahid

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● (1100)

[*English*]

The Chair (Salma Zahid (Scarborough Centre—Don Valley East, Lib.)): I call this meeting to order.

Welcome to meeting number 13 of the Standing Committee on Science and Research. The committee is meeting to study private sector investment in research and development in Canada.

I would like to make a few comments for the benefit of all witnesses and members.

Please wait until I recognize you by name before speaking. For those participating by video conference, click on the microphone icon to activate your microphone, and please mute yourself when you are not speaking. For those on Zoom, at the bottom of your screen you can select the appropriate channel for interpretation: floor, English or French. All comments should be addressed through the chair.

For this panel, I would like to welcome our three witnesses.

We are joined today by Jesse Vincent-Herscovici, chief executive officer of Axelys; Gay Yuyitung, executive director, McMaster industry liaison office, McMaster University; and Sarah Watts-Rynard, chief executive officer of Polytechnics Canada.

Thanks a lot for appearing today. All of you will have five minutes for your opening remarks. Then we will go into rounds of questioning.

We will start with Mr. Vincent-Herscovici.

Please go ahead. You have five minutes for your opening remarks.

Jesse Vincent-Herscovici (Chief Executive Officer, Axelys): Thank you very much, Madam Chair.

[*Translation*]

Good morning, vice-chairs and committee members. Thank you for inviting me.

I am pleased to be here today to share Axelys's point of view. The Quebec government has given our organization the mandate to transform the results of public research into practical innovations that meet market needs, support our businesses, and bring sustainable benefits to society.

The issue before us today is neither technical nor simple. It's about our capacity as a country or province to transform collective intelligence and pooled investments in public research into practical solutions for citizens, businesses and communities.

First, I would like to point out that the calibre of Canadian scientific research is exceptional and recognized the world over. We have lots of ideas. What we lack are the mechanisms to systematically transform our discoveries on a large scale into something of value for society. We are responsible for approximately 3% of global scientific publications, but register only one patent per thousand publications. By comparison, the U.S. registers 2.5 patents per thousand publications, and South Korea, four patents per thousand publications.

The Canadian private sector contribution to R and D is much lower than what we see in the highest-innovation economies. Just to give you an idea, less than 10% of Canadian university inventions gets licensed or transferred to businesses. Meanwhile, the average among members of the Organisation for Economic Co-operation and Development, the OECD, is over 20%. Furthermore, Canadian businesses invest only 0.9% of GDP in private sector R and D, while the OECD average is 1.6%. What that means is that discoveries are made, but creating value falls by the wayside. Talent is not the issue, the innovation chain is. Research is funded, but technology maturation, moving from the idea stage to the adoption stage, is underfunded. Also funding is often fragmented, diluting the benefits for society in the process. In short, we produce amazing vegetables, but we barely harvest them.

Since its creation in 2021, Axelys has held consultations that have all led to the same conclusion: this is a structural issue, not an occasional problem. As a result, Quebec set about reinventing the process of unlocking the value of public research. This policy resulted in the creation of an integrated model to identify high-potential inventions, promote their maturation, coordinate efforts, and support the transfer of those inventions to businesses that can bring them to market. This model led to the creation of Axelys. Thanks to this model, we were able to draw three essential conclusions.

To begin with, well-managed intellectual property becomes a collective economic asset, and its benefit is not secondary or optional. It is nothing short of a strategic asset and a lever for economic sovereignty.

In the innovation sector, we often talk about “death valley”, meaning the gap between invention and commercialization. Canada actually has many death valleys. When technological maturation lacks funding, most promising innovations don't move past the prototype stage in public research labs.

Finally, when it comes to identifying needs, business participation in public research projects increases private sector research and development, and makes inventions that come out of laboratories more relevant, which creates a positive loop.

That is quite the challenge in a fast-changing global environment. A strong economy no longer relies on its production capacity alone. It must also be able to adapt to market changes in real time by having, protecting and using technologies through IP ownership.

● (1105)

The United States, Europe and Asia have already made the shift and have all adopted strategies to support the innovation cycle value chain.

Threat and competition come not from other provinces, but from other countries. The most innovative economies are the ones that stand out, those that are better at capitalizing on their public research investments. Nowadays what's at play is skilled jobs, our capacity to develop our own technologies, and our economic sovereignty.

There are four federal levers that can help us face these important issues and reach the shared objective of keeping the value we create here.

First, we recommend that the federal government implement an IP action plan, with support for capturing the value of public research. These measures need to align with the various provincial programs in place.

Second, we recommend that the federal government fund and support technological maturation, not only discovery.

Third, we recommend that the federal government boost domestic private investment by encouraging Canadian businesses to invest earlier in public research inventions through tax incentives based on national impact.

[*English*]

The Chair: I'm sorry for interrupting. Could you wind up in a few seconds, please?

Jesse Vincent-Herscovici: I will with pleasure, Madam Chair.

[*Translation*]

Finally, I would like to talk about a collective challenge we face. Canada has already shown it can rally around a priority issue. We did it in the case of research security, and the principles of diversity, equality and inclusion, and we can do it to promote public research. We've already shown in Quebec that a coordinated and structured approach can transform scientific discoveries into innovations. Thanks to this approach, 89.5% of the technology transfers supported by Axelys have been to small and medium-sized businesses in Quebec.

It can be done. We just have to focus on the structural aspect.

[*English*]

The Chair: Thank you.

We will now proceed to Madam Yuyitung, who is representing McMaster University.

Please go ahead.

Gay Yuyitung (Executive Director, McMaster Industry Liaison Office, McMaster University): Good morning, Madam Chair. Thank you for the opportunity to speak today.

McMaster University ranks among Canada's most research-intensive institutions and is in the world's top 100. With $425 million in sponsored research income, nearly half from non-government sources, we are a leader in industry engagement, advancing discovery and applied research that fuels innovation and improves human and societal well-being.

The role of colleges, polytechnics and universities in Canada's innovation ecosystem is a means to an end. They lay the foundation by generating IP, training talent and supporting the ecosystem, but their full impact depends on mobilizing these assets with private sector partners to bring products to market and drive growth.

At McMaster, we've expanded our commercialization and innovation efforts to build a culture where entrepreneurship is integral to education and research. Through initiatives like the McMaster seed fund, The Forge, The Clinic and the Heersink school, we've trained thousands of students, faculty, staff and clinicians at our affiliated hospitals. We've mentored over 400 student-led companies and invested in more than a dozen research-based start-ups. These ventures have created over 1,000 jobs and raised more than $80 million in the past decade.

Universities also help small and medium-sized enterprises, SMEs, create IP and access research expertise and infrastructure. McMaster and its affiliated hospitals carry out over 500 partnered projects annually. A new partnership with Western University will provide shared assets to 13 research facilities, creating a regional node that supports SMEs and maximizes federal and provincial investments.

These successes show what's possible when post-secondary institutions, the private sector and government work together. However, Canada still faces challenges. The first is a lack of enough experienced executives who can scale ventures. Without these leaders, companies often turn to C-suite talent based in the U.S., leading to company expansion beyond our borders. The second is that limited risk capital—from seed to large investments—forces start-ups to seek funding abroad at a much earlier stage, increasing the likelihood of these ventures leaving Canada. The third is that partnership, tech transfer offices and entrepreneurship programs at colleges and universities remain underfunded despite being critical to these commercialization pathways.

To address these gaps, we recommend three actions.

First, invest in talent, from students to executives. National programs like the Dalhousie-led Lab2Market or the SFU-led invention to innovation, alongside university and college initiatives, are building entrepreneurial mindsets and should be continued. However, Canada needs a federal attraction strategy for experienced executives with wraparound supports to retain them, particularly to address gaps in key growth sectors such as AI, nuclear, life sciences and defence. By combining business leadership with technical expertise here at home, we can scale and keep companies in Canada.

Second, strengthen risk capital across all stages of growth. Canada needs a federal program, similar to the U.S.'s SBIR, which provides non-dilutive funding to small businesses. Building on successful early-stage funds, like Calgary's UCeed, the MaRS investment accelerator fund and McMaster's seed fund, we should expand seed equity financing and also create incentives for Canadian VCs to make follow-on investments in life sciences and deep tech. Ensuring that Canadian capital is available means our most promising start-ups can scale without surrendering control to foreign investors.

Third, ensure stable funding for partnership, tech transfer offices and entrepreneurship infrastructure. These programs are essential for moving ideas from lab to market, yet they often operate as unfunded mandates. A dedicated federal stream tied to performance metrics, patents, licences, partnerships and start-ups would build lasting commercialization capacity and allow institutions to scale their impact.

Focused action can create strategic innovation clusters in high-growth sectors. Consider radiopharmaceuticals, which is a global market projected to reach $33 billion in five years. McMaster is home to Canada's largest research reactor and world-class nuclear facilities, which enable cutting-edge research and produce medical isotopes that treat 70,000 cancer patients annually.

This infrastructure, combined with our nuclear-enabled McMaster Innovation Park, is creating a radiopharmaceutical hub. The park is home to the Centre for Probe Development and Commercialization, CPDC, which was originally a federal centre of excellence founded by former McMaster professor John Valliant. The CPDC has already produced two major spinoffs: Fusion Pharmaceuticals, which was acquired by AstraZeneca for $2.4 billion in 2024 and still headquartered and growing at the park, and AtomVie, which was incubated at McMaster and is expanding to a new Hamilton facility with a $90-million investment.

● (1110)

A strong pipeline of medical isotope start-ups is emerging across the country. These can leverage university infrastructure, but they still need executive talent and financing to scale. With coordinated government support, Canada can lead globally in nuclear medicine. By investing in people, capital and infrastructure, we can turn Canadian discoveries into companies that scale at home and compete globally.

Thank you.

The Chair: Thanks a lot.

We will now proceed to Ms. Watts-Rynard, representing Polytechnics Canada.

Please go ahead. You have five minutes.

Sarah Watts-Rynard (Chief Executive Officer, Polytechnics Canada): Thank you, Madam Chair.

I am pleased to be back before this committee as you study how to promote and grow private sector investment in research and development in Canada.

Polytechnics and institutes of technology are experts in partner-driven problem solving, helping organizations of all sizes adopt new technology, implement new systems and commercialize new products. They offer space, equipment and expertise to businesses that either lack their own R and D capacity entirely or stand to benefit from additional external support. In short, they are Canada's innovation intermediaries, and they make research and development activity attainable to the many rather than reserved for the few.

To undertake this work, polytechnics engage faculty and students in industry-designed projects of all descriptions. Businesses bring them a problem to be solved, a process to be streamlined or a product to be prototyped and tested. When the collaboration is complete, the intellectual property rests with the business partner, leaving it in the hands of people who create jobs, sell products and grow the economy.

This is research with a defined purpose and recognized economic value. It is also the sweet spot for private sector investment in R and D. For every $100 polytechnics receive in federal research investments, business partners contribute $72. By comparison, this country's elite universities leverage less than four dollars for every $100 they receive.

There are important reasons for these differences. Discovery research is responsible for things we haven't even begun to recognize as having economic value. Applied research, on the other hand, puts those discoveries to work.

Artificial intelligence is a great example. In the early days of AI research, it was theoretical—science fiction. It was the same with plug-in cars, 3-D printing and autonomous robots. These are great ideas and interesting research questions, yet the value of AI won't be realized until companies of all sizes have found ways to integrate it into their operations.

Robots need a purpose. Even the widespread use of electric vehicles is a challenge given Canada's geography and cold climate. This is where the real-world application of research becomes an economic engine, and this is where private sector investment ramps up.

To grow R and D investment in Canada, I urge you to consider the value proposition of the entirety of the research ecosystem. We sink billions of dollars into discovery research but spend precious little to spur adoption and experiment with implementation. In a country of small and mid-sized businesses, particularly one where the government prefers to buy from established firms overseas rather than its own innovators, it is hard to bet the store on an interesting idea.

Many smaller firms have limited technical staff, inadequate facilities and tight budgets. The risks of going it alone are significant. According to a recent Statistics Canada report, post-secondary institutions are well positioned to serve as innovation catalysts. More than 19,000 small and medium-sized enterprises pursued this type of support in 2023.

Approximately 10% of those SMEs were served at one of Canada's 13 polytechnic institutions. More than half said their collaborations increased their R and D capability, 48% indicated this work improved their competitiveness, 26% gained access to new markets and 21% reported increased productivity. At the same time, more than 18,000 students were part of these projects, developing Canada's innovation-enabled talent pipeline.

Once businesses engage with supports at polytechnics, they tend to come back for more, often at their own expense. Simply put, polytechnic applied research de-risks innovation and supports companies on their R and D journeys.

If the federal government wants to see more private sector investment in research and development, it needs to enrich the programs that enable it. We continue to undervalue this part of the research ecosystem, investing less than 3% of federal resources in polytechnics and colleges. It isn't that the private sector isn't interested in R and D, but we've done a poor job of activating the near-to-commercialization end of the R and D ecosystem. We could do much better.

Thank you for inviting me to be here today. I look forward to your questions.

● (1115)

The Chair: Thank you.

Thanks to all three witnesses for their opening remarks.

We will now go into the rounds of questioning.

MP Ho, please go ahead. You have six minutes.

Vincent Ho (Richmond Hill South, CPC): Thank you, Madam Chair.

My first question is for Ms. Yuyitung.

Canada is in the middle of a cost of living crisis, an affordability crisis. We're in a productivity crisis as well. We're seeing GDP per capita going down in real terms after adjusting for inflation. We're seeing investment flee at a record level. It's gotten worse this year. It's been pretty bad for the last 10 years, but it's gotten worse. We're seeing investment-per-worker collapse by 10%.

We're seeing talent and capital flee. What are some ways we can stop that flight from happening?

Gay Yuyitung: I can speak from our experience, which is that having more Canadian companies here would help do that. I have nieces and nephews who are going down to the States for jobs because jobs are paying higher there. I think having opportunities here for investment in Canadian companies would help shore up Canadian...and help grow talent. We have a lot of students who want to grow and stay in Canada, so as I mentioned before, having investments and early-risk capital for those companies to grow and stay here is important. Having universities, polytechnics and colleges that can help support the R and D effort at the early stages is also critical, as is having the follow-on to keep them here.

● (1120)

Vincent Ho: What's stopping early-stage capital from forming here? What are you seeing as your challenges? You work with a lot of...research and innovation. In your experience, is it high taxes, high regulation, a combination of both or other factors?

Gay Yuyitung: I'd say it is probably a combination of both. Speaking personally from what we've seen, we've created our seed fund specifically to address that gap. We're trying to find where we can do that, but it's not sustainable, so I think that's where the private side and government can help step in and shore up risk.

I've heard this asked before: How do we get the return to stay in Canada, whether it's actual equity investments that can help companies...? Canada keeping a piece of that would probably help.

Vincent Ho: That's a good point. We're seeing 50% of university-funded intellectual property ultimately get assigned to foreign firms. This is taxpayer money being spent on research that is ultimately going to be put in the hands of foreign ownership. We know how important intellectual property is. I think there's a statistic saying that 90% of the market capitalization of the publicly listed companies in the S&P 500 is represented by intellectual property. For most of those firms, value is derived from intellectual property.

What are some ways to keep ownership in Canada? Is it through existing government programs? Are they writing cheques without any equity ownership or without any strings attached?

Gay Yuyitung: I'd say it's a combination. I think that we as universities, colleges and polytechnics are teaching about the importance of IP and the importance of keeping it in Canada. We're teaching that to our students and start-ups.

I think they are facing a big hurdle if they get American investors. If they get American CEO talent, that tends to move companies to other areas. If there's no follow-on financing that VCs can provide that stays in Canada, then those companies will go where the market is welcoming them.

I think it's a combination of the tax incentives and the regulatory side that can help these companies stay here.

Vincent Ho: My next set of questions is for Mr. Vincent-Herscovici.

You mentioned the theme of economic sovereignty and how we can strengthen it. In the last committee meeting, we were talking about how the Liberals established the strategic innovation fund and spent tens of millions of dollars writing cheques to foreign companies that are multinational. Mastercard was one of them. At the same time, we have a start-up ecosystem in Canada that is starving for capital. It could use some of the tens of millions of dollars—billions of dollars—that they fund every year.

How do we make sure that this money goes to Canadian companies and that Canadians benefit from the use of those tax dollars?

Jesse Vincent-Herscovici: First of all, it's important to work with multinationals. Obviously, we need multinationals in Canada. They are part of the innovation ecosystem. There's nothing wrong with having a place for multinationals. However, we need to make sure, especially for our SMEs—we're a nation of SMEs—that there is a mechanism to get intellectual property out of public research and into SMEs if there is an opportunity to do that.

Of course, start-ups have their place as well. There is a much higher risk when you talk about start-ups, because there are so many other factors that could influence their survival. Is there a reflex to look within the Canadian geographical market? Are there existing SMEs that could put to use the fruits of an invention from research? Have we structured the intellectual property well, and do we have a mechanism to get it to SMEs?

There should be a prioritization to look at this. When there are public dollars, do we first consider an SME, which is the fabric of the nation? There may be an opportunity for a start-up if we feel like there is a place for that start-up in the Canadian ecosystem and Canadian market. If not, there's nothing wrong with considering working with a multinational.

● (1125)

The Chair: The time is up for Mr. Ho, so maybe you can come back to that in the second round.

We will now proceed to MP Jaczek for six minutes.

Please go ahead.

Hon. Helena Jaczek (Markham—Stouffville, Lib.): Thank you so much, Madam Chair, and thank you to all our witnesses.

I would like to start with Mr. Vincent-Herscovici.

In the strategy you developed at Axelys, you described a continuum going from the research piece all the way through to commercialization. A previous witness told us that there were real risks of hosting Canadian and Quebec data on servers located in the United States or under the jurisdiction of U.S. courts.

From your perspective, how do you feel about the issue regarding sufficient data hosting infrastructures in Canada that are not subject to U.S. control?

Jesse Vincent-Herscovici: There are not...and this is of utmost importance. We're becoming more and more aware of this. It is such a costly space to get into. Other players are so advanced that the situation is dire enough to activate very serious mechanisms to ensure that.... The word sovereignty comes into play here in terms of data—who hosts it, who has access to it and who can profit from it.

The answer would be no, there are not enough Canadian resources to keep the data and exploit AI tools to then drive intelligence from that data, which is so critical, as we're seeing it more and more now.

Hon. Helena Jaczek: What would you recommend there? What initiatives might be necessary in order to achieve protection for the digital data of Canadians?

Jesse Vincent-Herscovici: To be clear, this is a bit outside of my domain of expertise, but I'm happy to weigh in with regard to some of the interactions that Axelys has had.

There are two recommendations. One is to identify large enough technological players invested in Canada that have an interest in further investing, making sure they have the support to do that. The second is to identify strategic partners across the country that are able to pilot initiatives on these platforms very early on.

I'll give a quick example on the Axelys side. In the last 18 months, we've developed in-house a national language-based AI platform, GenAI, in order to mine our own data. We've done years and years and thousands of reviews—landscape analysis. I cannot afford to put this on a server if I don't know that I can control the safety of it. We've developed it in-house, and right now we're storing it very locally as much as possible. We would be very happy to have a domestic provider with pure Canadian servers that are truly controlled by Canadian companies.

I'm looking for that. We're having a few early discussions. There are a few contenders that would be open to exploring these kinds of pilots, but we need support because it's so costly to do that.

Hon. Helena Jaczek: Thank you so much.

Ms. Watts-Rynard, you represent Polytechnics Canada. In the course of this study and in previous studies this committee has embarked on, I've become really impressed with how applied research seems to be leading to opportunities for commercialization, IP protection and so on.

From your perspective, when there is a proposal and an idea that seems to have some commercial opportunity, what processes do polytechnics go through to assess the potential for a particular project? Is there a review committee at each polytechnics that looks at an idea and determines whether it is worth pursuing through to commercialization and IP protection?

Sarah Watts-Rynard: For the most part, the companies that are coming to polytechnics already have a sense of the idea themselves and are trying to pursue it. Within each institution, there is an intake process as we're thinking about those projects, but it's really designed around whether we have the expertise and the faculty to be able to contribute. Also, is the idea connected to the curriculum so we know that students will be able to learn from it too?

It's a lot less about trying to assess whether an idea has commercial value and more about how we help a company or an entrepreneur who has come in and get them to the next stage of their own journey. They're going to retain their IP, so it's very infrequently about creating IP and much more about how we can take things to the next level and prepare a business partner for whatever they need, whether it be in process improvement or prototype development.

● (1130)

Hon. Helena Jaczek: How much time do I have?

The Chair: You have 30 seconds.

Hon. Helena Jaczek: I have a quick question for Ms. Yuyitung.

You talked about the need for experienced executives, and it sounds a bit like what we've just heard. How do we develop experienced executives here in Canada?

Gay Yuyitung: I'd say there are two strategies to it. As we have a few here, one is trying to further develop them and bring them in. There is also an attraction strategy we can bring forward for Canadians who are expats.

The Chair: Thank you.

We will now proceed to MP Blanchette-Joncas for six minutes.

Please go ahead.

[*Translation*]

Maxime Blanchette-Joncas (Rimouski—La Matapédia, BQ): My first question is for Mr. Vincent-Herscovici.

Thank you for joining us today.

Axelys is at the centre of Quebec's model for capturing the value of research.

Could you explain how your approach differs from what exists elsewhere in Canada, especially how you connect public research with college centres, technology transfer college centres, and businesses?

Jesse Vincent-Herscovici: Thank you for the question.

Two key elements stand out from the usual process for capturing the value of research.

The first one is including the entire innovation cycle value chain I talked about earlier, because you have to start from the beginning. Our mandate and that of Ms. Watts-Rynard's organization are slightly different. Right from the start, we try to measure the market potential of a promising invention and possible spinoffs. We do so before moving on to the next step, which is to see whether we can register it as intellectual property.

We then move on to technological maturation and the pathway to the market, to potential buyers. We don't want to move too fast if we don't see potential spinoff. We have teams that do the analysis, and project managers to work on the pathway, and assess the real value and fair trade value between the public dollars invested in the technology and the investment that will be needed to get the technology to market. We need to strike that balance, and different types of expertise are needed. There can be only one pathway, though, one overall picture. We have to avoid breaking things up too much, with too many smaller mandates.

The second element is really important: the benefits. We don't measure the benefit to the research establishment transaction-wise. Obviously, there needs to be some value for the establishment, but what we're looking for are the benefits for society. Where could the invention have the most impact for society in order to justify the investment of public funds? Sometimes we could get more money dealing with a multinational, but we prefer to transfer the technology to a Quebec or Canadian SME, domestically, because it will have a greater impact nationally.

These are two fundamentally different elements.

Maxime Blanchette-Joncas: Thank you.

Let's stay on the subject of benefits.

In Canada, only Quebec has implemented such a complete integrated model. It comprises Axelys, Synchronex, the Conseil de l'innovation du Québec, and the 59 college centres for technology transfer. That said, Axelys has yet to receive any funding from the federal government.

Do you think this lack of national recognition or support limits your ability to work nationwide and maximize the value of research done in Quebec?

Jesse Vincent-Herscovici: Having that support would certainly help us move faster.

The different levels of government provide several funding tools and mechanisms, but everything is fragmented. What that means is that, instead of being invested and leveraged in Quebec, that money is invested elsewhere piecemeal. That can actually be harmful when different bodies try to do the same thing and want the lion's share. It doesn't necessarily allow for the same pace of progress or for investment outcomes to be scaled up across the country.

Let me give you a few examples. A provincial ministry can fund higher education. The Fonds de recherche du Québec funds a lot of research infrastructure. The federal government mostly funds research projects through its three councils or more specific programs from the Department of Industry. Without proper coordination, funding can't be aligned, and the benefits can't be felt nationwide. Everything is fragmented, scattered here and there.

● (1135)

Maxime Blanchette-Joncas: The Quebec model for capturing value has already been proven. You also talked about the transfer rate, as well as measurable and recognized results, but there is no federal program to support businesses such as Axelys.

Does the lack of mechanisms limit your ability to scale up the economic benefits and co-operate nationwide?

Jesse Vincent-Herscovici: Absolutely. There's no denying it. With cuts affecting everyone, how we invest in and build our research capacity is very important. We need to coordinate funding and mandates now more than ever, because organizations already exist to build this capacity.

We're starting to do it organically. We're working with a network of CEOs of organizations similar to ours elsewhere in the country, including Export Development Canada and Intellectual Property Ontario. We're trying to do similar things and hold informal meetings to share best practices. It's a natural thing to do, but it also needs to be structural. We have a memorandum of understanding with the Fonds de recherche du Québec to coordinate these efforts, and another with the Natural Sciences and Engineering Research Council of Canada. Again, it's a natural thing to do, and we're doing it ourselves.

It's important to structure this correctly and make sure we can work across the country.

Maxime Blanchette-Joncas: Many countries that excel in innovation, the U.S., Germany, Israel and South Korea, for example, have direct incentives built into their research programs to unlock the value of research. The more a discovery is transferred or commercialized, the more support it gets.

Do you think something similar could be built into federal programs, to encourage organizations such as Axelys to tangibly increase the economic impact in Quebec?

Jesse Vincent-Herscovici: Yes. Quebec just revised its industrial R and D tax incentives, specifically to encourage precommercialization, infrastructure and so on.

We work with Quebec's finance department to support patents arising from public research and, where public research has produced technologies, to incentivize taking them further. I think aligning those measures with federal tax measures would be a very positive step. Quebec's revised model is a good example of changes that are helpful.

Again, that alignment matters because it allows for co-operation at the national level versus a patchwork of efforts.

[*English*]

The Chair: Thank you.

This ends our first round. We will start our second round with MP Mahal for five minutes.

Please go ahead.

Jagsharan Singh Mahal (Edmonton Southeast, CPC): Thank you, Madam Chair.

I would like to continue with Jesse Vincent-Herscovici.

It's quite astonishing to know—I think I'm having goosebumps—that the majority of our data is not stored in Canada. It goes to the U.S. or to other jurisdictions.

We have a government that has been in power for the last 10 years, at least, and now it's into its 11th year. Do you think it's a serious concern that oversight didn't happen when they did not think of the national security of military files? We can talk about a lot of important things. How important is it to you that we maintain all data within Canada? How badly has the government been lacking there, and what should they do to correct the mistakes they've made in the last 10 years?

Jesse Vincent-Herscovici: I will repeat that this is not my area of expertise. I really want to be clear that I have to caveat my answer. I'll try to be limited to what I've seen.

My understanding is that many of the servers are in Canada. It's just that they're not owned by a fully Canadian-owned organization, which leaves the door open to potential risks, if ever situations were to happen geopolitically that would require them to be open.

I think much of the data is actually stored in Canada, but it's not owned by fully Canadian corporations. Again, this is not my area of expertise.

Jagsharan Singh Mahal: I can fill that in.

We had a former MP here, Ryan Williams, who commented during the committee meeting that, while we have all the data in Canada, the foreign companies that own it still have access to it. It's not access-immune.

Jesse Vincent-Herscovici: Thank you. This is the precision I wanted to make. It's technically in Canada, but it could be.... That's the limit of my expertise there.

To answer your question, we need to find opportunities to pilot things here as much as possible and to build capacity in Canada. We can't just do that ad hoc. We need to find strategic partnerships where there are high-value potential usages of these servers, then make sure capacity is given to organizations that provide both the storage space and the computing capacity, and to organizations that want to deploy the intelligence out of that data. That link is where data becomes useful, very potent and potentially very impactful for Canada.

It's about finding linkages between the service providers, the actual infrastructure and the ones using it so that we're talking not just about storage space but also about strategic deployment in areas that are priorities for Canada, like intellectual property and maximizing the fruits of our public research.

● (1140)

Jagsharan Singh Mahal: Is the government doing enough when it comes to protecting data and making sure we have it stored in Canada, or does it need to do more on this?

Jesse Vincent-Herscovici: Measures like creating mandates dedicated to artificial intelligence—like the one created in recent history—are a step in the right direction. I think we must do much more.

Jagsharan Singh Mahal: More needs to be done when it comes to national security and issues that matter to Canadians. Thank you for that answer.

You were not able to complete your answer in regard to MNCs, the development of small Canadian companies, and supports from government. Can you expand on the portion left out of your testimony?

Jesse Vincent-Herscovici: Sure. Thank you.

We are a nation of small and medium-sized companies that generally underutilize intangible assets like intellectual property. We know that the proper use of intellectual property by a company is directly linked to or has a high impact on productivity rates, the potential to compete and the potential to export. I think we should be much more careful about how we manage intellectual property when there are partnerships with public research.

I have a bit of a distinction. I don't think it's enough to say that a company is given IP rights in a project and that we cede all intellectual property without knowing whether or not they know how to manage it. If we give it to a start-up, what happens if that start-up gets acquired very early in its existence by a company in another region? That intellectual property is gone and we don't track it. What happens if the start-up does not survive, like the majority of start-ups? What happens to the intellectual property we've invested in?

Finally, if we give exclusive intellectual property rights to one organization, we lose the potential to share it with multiple other SMEs that could have competed and used it in more non-competitive areas than the one that was initially collaborating with the public research entities.

I think we need to be more sophisticated in the way we negotiate and handle intellectual property, in general. It's not enough to say that a company has a right to exploit IP, because often it does not get exploited and is left on the shelf. Others cannot then exploit it, because it wasn't well packaged.

The Chair: Thank you. The time is up.

We will now proceed to MP Rana for five minutes.

Please go ahead.

Aslam Rana (Hamilton Centre, Lib.): Thank you very much, Madam Chair.

Thank you to all the witnesses for their valuable time.

Ms. Yuyitung, Canadian companies such as Enedym, VoxNeuro, Acuity Insights, Elarex and Synmedix show McMaster's growing success in commercialization. In fact, McMaster's affiliated start-ups have created over 500 highly skilled jobs in Canada and 800 globally. They have generated more than $20 million in annual revenue and secured over $570 million in investments. They have reached a combined market capital of $715 million in total. These are very attractive numbers.

What are the most common investor concerns you see when researchers pitch their tech-based start-up ideas in Canada?

Gay Yuyitung: I'd say the team is a critical piece investors are always looking at. That's why I was advocating that we consider supporting the training of highly qualified personnel. It's also about having executive management that can continue to scale those companies. That is critical. We also see IP and all the regular things.

I'll also point to one of the other things I've heard before: the ability of companies to grow in Canada by selling in Canada, and having investor and purchasing confidence in Canadian companies among Canadians.

● (1145)

Aslam Rana: Which federal or provincial policies can push private investors to invest more in this research work?

Gay Yuyitung: From a private equity perspective, it's probably a risk-and-reward sort of equation. I think that does exist here. I'd like to think it shouldn't be a problem. The other thing would be partly awareness of what colleges, universities and polytechnics can provide.

I would also say to go back to the whole idea of a coordinated strategy from the federal government to say that this is what is needed. We can only do so much from our perspective. We don't control the markets, but if there are policies that can encourage companies to stay in Canada, that would be what's needed.

Aslam Rana: Would you elaborate, please, on how Canadian start-ups emerging from research are currently attracting private sector investment? What works and what doesn't?

Gay Yuyitung: Having a good story and being able to pitch well may seem superficial, but it's about having the backup of data and a team behind you that can prove either you've done it before or you'll be able to do it and have a good pathway. I think that's what we're teaching them.

Aslam Rana: Can you please tell the committee about the major obstacles for research teams or institutions trying to move innovations from the lab into the private sector?

Gay Yuyitung: I'm sorry. I missed the first part of the question.

Aslam Rana: Can you please tell this committee about the major obstacles?

Gay Yuyitung: I'd go back to what I was recommending as actions. It's about senior leadership. There is some here, but it's about having the ability to pay quality leaders, whether they're already in Canada or we're attracting them to come to Canada.

One of the things we hear a lot from our start-ups and small businesses is that they need to go to the States at a much earlier stage to get financing. Whereas in the U.S. there are programs that give millions of dollars to de-risk something, our start-ups are getting hundreds of thousands, if that, and they're struggling to do that.

It's just apples to oranges. It's not a good comparison to say that you can do as much with much less.

Aslam Rana: What strategies would you suggest for Canadian research-based start-ups to become investment-ready and attract global investments?

Gay Yuyitung: I think they're already doing it. They are tapping into a lot of the programs we have through Life Sciences Ontario or the colleges, universities and polytechnics. We have commercialization resources and supports for them. Ontario has a regional innovation centre network that supports them as well.

Aslam Rana: Thank you very much.

The Chair: Thank you.

We will now proceed to MP Blanchette-Joncas for two and a half minutes.

[*Translation*]

Maxime Blanchette-Joncas: Mr. Vincent-Herscovici, I want to give you an opportunity to elaborate on your fourth recommendation.

I'm clear on the first three, developing an IP plan, funding technological readiness and introducing incentives to unlock the value of research.

Could you explain your fourth recommendation, please?

Jesse Vincent-Herscovici: I really appreciate your giving me this opportunity, because that recommendation deals with a crucial element.

The fourth recommendation is about making incentives available to researchers and the research community to unlock the value of their research results.

Right now, a young college or especially university researcher has to do three things for their dean: publish as soon as possible; do a good job teaching and be well regarded—getting students in seats is the business model, after all—and obtain funding from the three granting councils. Promoting research value is not one of those three things.

The third mission of graduate research and higher learning institutions is to have an impact on society by adding value. That requires incentives, because publications alone are no longer enough.

Maxime Blanchette-Joncas: Earlier, I believe you said your transfer rate was 89%.

Jesse Vincent-Herscovici: Yes, it's 89.5%.

Maxime Blanchette-Joncas: Very precise. I like that.

I'd like to understand what that rate means in terms of economic spinoff in Quebec, but also for the rest of the population.

● (1150)

Jesse Vincent-Herscovici: It's a very high rate. As the other witnesses told you themselves, the average rate for the transfer of Canadian inventions to businesses all over the country is between 33% and 50%. Bringing that up to almost 90% has a huge impact. It means that our small and medium-sized businesses are able to leverage those inventions.

We also know that inventing, while important, is not enough. Only when an invention meets a genuine societal need and brings added value does it become an innovation. To make that happen, we need to spend more time ensuring that the transfer happens here, with our businesses, before the technology is transferred out of the country.

Maxime Blanchette-Joncas: What I'm gathering is that your formula in Quebec is working. Is that correct?

Jesse Vincent-Herscovici: Our proof of concept holds a lot of potential. It just needs to be scaled up.

Maxime Blanchette-Joncas: Thank you.

Do you have any other compelling information you'd like to share with us today?

Jesse Vincent-Herscovici: I suggest making IP more of a priority and looking at how heterogeneous the current environment is. The universities all have different collective agreements, so IP is managed differently. Best practices do exist, and some models appear to have more spinoff in the country than others.

I think it's important to look at that and find ways to have a more consistent approach in how IP is managed.

[*English*]

I got you in advance this time, Madam Chair.

The Chair: Thank you. We have to keep track of time.

The last two rounds of questioning will be for MP Baldinelli and MP Jaczek for three minutes each, and then we will end this first panel.

Tony Baldinelli (Niagara Falls—Niagara-on-the-Lake, CPC): Madam Chair, I want to thank the witnesses for being with us this morning.

I indicated at our last meeting that I was going to bring forward a motion for the study on AI. I want to do that during my time period. If I could, with the indulgence of committee members, I want to table this motion:

> That, pursuant to Standing Order 108(3), the Standing Committee on Science and Research undertake a study of no fewer than four meetings on the federal government's approach to artificial intelligence, considering the committee's mandate to study matters related to science and research, which includes AI technology; that the committee invite:
>
> (i) the Minister of Artificial Intelligence and Digital Innovation to appear for one meeting for no less than two hours,
>
> (ii) federal officials from Innovation, Science, and Economic Development Canada, and
>
> (iii) a range of AI industry representatives and experts; and
>
> that the committee report its findings and recommendations to the House.

That is the motion before us.

The Chair: Thank you, MP Baldinelli.

We have a motion on the floor. Is there any debate?

Go ahead, Monsieur Blanchette-Joncas.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Madam Chair.

I would like to propose an amendment to Mr. Baldinelli's motion, to expand the study on AI. Basically, I want us to look at the relationship between AI and innovation and scientific research.

I printed out the amendment for my fellow members.

[*English*]

The Chair: I will suspend the meeting for two or three minutes so that the amendment can be circulated to all members. Please have a look.

The meeting is suspended.

● (1150)

_____(Pause)_____

● (1150)

The Chair: I call the meeting to order.

The amendment proposed by MP Blanchette-Joncas has been circulated to all members. Now we have an amendment on the floor.

Is there any debate on the amendment?

Seeing no debate, is everyone in favour of the amendment?

(Amendment agreed to [*See Minutes of Proceedings*])

The Chair: We are back to MP Baldinelli's motion as amended. Is there any debate on the motion as amended?

Seeing no debate, is everyone in favour of MP Baldinelli's motion as amended?

(Motion as amended agreed to [*See Minutes of Proceedings*])

The Chair: That was simple and easy.

● (1155)

Tony Baldinelli: Thank you, Madam Chair.

The Chair: With that, we will end this panel.

Thank you very much to all three witnesses for appearing before the committee.

We will suspend the meeting for five minutes so the witnesses for the second panel can take their seats.

The meeting is suspended.

● (1155)

_____(Pause)_____

● (1200)

The Chair: I call the meeting to order.

Good afternoon, everybody. I would like to make a few comments for the benefit of our witnesses on this panel.

Please wait until I recognize you by name before speaking. For those participating by video conference, click on the microphone icon to activate your mic, and please mute yourself when you are not speaking. For those on Zoom, at the bottom of your screen you can select the appropriate channel for interpretation: floor, English or French. As a reminder, all comments should be addressed through the chair.

I would like to welcome our three witnesses on this panel. We are joined today by Dr. John Hepburn, dean emeritus, University of British Columbia. By video conference, we are also joined by Jim Balsillie, founder and chair of the Centre for International Governance Innovation. Our third witness for today is Dr. Julie Konzuk, senior principal representing Geosyntec Consultants, Inc.

All witnesses will have five minutes for opening remarks. We will start with Dr. Hepburn.

You will have five minutes for your opening remarks. Please go ahead.

John Hepburn (Dean Emeritus, University of British Columbia, As an Individual): Thank you very much, Madam Chair.

Thank you to the members of the committee for addressing this important and long-standing topic.

I'd like to recognize my former CIFAR colleague, Jennifer McKelvie, who suggested that I speak to this committee.

I found out from the member from Hamilton that you've read my bio, so I won't go through the details, other than to point out that in addition to being an academic researcher, I've had three important executive posts relevant to today's considerations.

First, I was vice-president of research and international at the University of British Columbia, which is, I would argue, Canada's second most important research university. As part of that job, in addition to managing the research enterprise and promoting it, I was in charge of the university-industry liaison office, which is a very large tech transfer office at the University of British Columbia.

I was then the vice-president at the Canadian Institute for Advanced Research, which is a splendid Canadian research organization. It is undervalued, I think.

Finally, most recently, I was CEO of Mitacs, which promotes largely industry co-operation—but also not-for-profit and academic co-operation, including with colleges and polytechnics—through student internships. It is a very important and good organization.

There have been a lot of reports, a near-infinite number of reports, written about the so-called Canadian paradox: How can we have in this country the world's best, or among the world's best, post-secondary institutions with the fabulous research my former colleague Jesse talked about yet have such terrible and declining industrial innovation?

Peter Nicholson posited in a report from some years ago that a lot of this is due to the structure of the Canadian economy. We've based our economy on things like foreign-company resource extraction and being, as Peter Nicholson said, at the bottom end of the American supply chain. We also protect key industrial sectors from competition.

This strategy, such as it is, has worked out not too badly for us until, obviously, very recently with changes south of the border. It's not a winning strategy going forward to rely on large American multinationals, for example.

At the risk of oversimplifying the issue, I think a major problem is the scale of Canadian companies. Canada, compared to the Americans and compared to other economies, has a much larger fraction of the workforce working in small and medium-sized enterprises. It is much larger than that of the Americans, for example. We don't have, except in protected sectors, large Canadian companies.

When you look at broad-based research investments, the larger the company, the more the investment. We have many small companies in the tech sector. We're very good at starting companies based on research, largely university-based research, but those companies are busy trying to survive to develop technology, generally the sole technology on which they're based.

Because of my background, I'll talk about university-based research and the commercialization resulting from that.

I would argue the problem is not that university-based researchers don't want to commercialize their inventions. A former colleague from McMaster University was here and the polytechnics were here. There is no shortage of enthusiasm for doing this sort of research.

A single example is Pieter Cullis, who's renowned for developing the lipid nanoparticles on which messenger RNA vaccines are based. He's a colleague at the University of British Columbia who's founded 11 companies. This is fairly typical. Nobel Prize winner Mike Smith founded a company as well.

There's no shortage of company start-ups. There's no shortage of transfer of technology to small companies. However, if we go back to the biotech example, UBC is responsible for founding most of the biotechnology companies in the Lower Mainland in the Vancouver area.

Nevertheless, the typical pattern for these companies is that, as they get to phase one clinical trials, which are expensive—and phase two and phase three are even more expensive—they have to sell their technology to an American company or a multinational company—it doesn't have to be American—in order to afford the very high cost of clinical trials. It's estimated to be $1 billion to bring a drug to market. With that sale, the IP goes.

● (1205)

I would argue that—

The Chair: I'm sorry for interrupting, but your time is up. Can you quickly wind up in the next 10 seconds?

John Hepburn: Sure.

I have three recommendations. First, we've heard about IP; we need to have a better system for supporting the development and protection of IP. Second—and I'd argue this is critical—we need to have a better system for allowing companies to scale, not just allowing them to start. Finally, we need to have a better system for creating venture capital for small companies. Other countries have done this through matching programs.

I'll stop there. Thank you very much.

The Chair: Thank you.

We will now proceed to Mr. Balsillie for five minutes.

Please go ahead. The floor is yours.

Jim Balsillie (Founder and Chair, Centre for International Governance Innovation): Madam Chair and honourable members of the committee, thank you for the opportunity to appear before you today.

The digital transformation of the past 40 years has created a new economy in which wealth, power and security are rooted in the ownership of intellectual property and the control of data and AI. Prosperity today comes from new owned ideas that generate new high-margin revenue. Intangible assets now constitute over 90% of the S&P 500's total value, up from 17%.

Canada missed this shift. The federal government spends approximately $7.5 billion annually on research funding, with $4.2 billion via the granting councils and $3.3 billion internally.

When I last appeared before this committee in March 2023, I focused on Canada's failure to adopt a framework to own, control and commercialize IP from publicly funded R and D, and I recommended building institutions and capacity for the knowledge-based and data-driven economy. Since then, there hasn't been a single new policy or institution created to meet the need for strategic reorientation.

Simply put, you cannot commercialize what you do not own. If you don't own an idea, then you won't invest any more than you would build a house on land you don't own or at least have prior explicit permission to build upon.

Canada has world-class universities, researchers and students. Our higher-education R and D spending ranks among the highest in the OECD, with billions invested each year, yet the translation of that investment into ownership and economic outcomes for Canada remains negligible.

Because we missed the shift from a production to a knowledge-based economy, Canada's standard of living has been in steady decline. Over the past five years, GDP per capita has fallen by 0.4% a year, the worst among the top 50 developed countries. The OECD projects we will be the slowest-growing advanced economy through 2060. Both are a direct result of policy failure attuned to changing global realities. At the household level, the consequences are clear: As paycheques shrink, costs continue to rise.

Because IP and AI data directly determine wealth and power at both the firm and national levels, smart innovation economies reoriented to own and protect those assets and capture their economic and security spillovers.

South Korea elevated its intellectual property office to a full ministry, signalling that IP is a national economic priority. The Israel Innovation Authority office is located next door to the Minister of Finance. China built industrial strategies around massive portfolios of patents and data assets in AI, blockchain, clean tech and advanced manufacturing. Germany's Fraunhofer institutes convert public research into domestic industrial capacity, strengthening national champions in global networks. In the U.S., the Bayh-Dole Act is a sophisticated ownership framework that grants government march-in rights when publicly funded assets fail to serve the public interest. I could go on.

Meanwhile, AI has emerged as a new factor of production and a form of machine knowledge capital that both competes with and complements human expertise. It is transforming industries and the workforce at scale. Approximately two million AI-related patents have now been granted globally, yet Canada does not appear among the top 100 holders even though our publicly funded research helped build the foundations of the field.

Now politicians are exhorting Canadian businesses to adopt AI, which is to say to buy technology from abroad despite inventing it here with taxpayer funds because we have not secured the IP rights to deploy the AI into new processes, products and services. How is this a path to sovereignty and prosperity?

Lastly, I want to address the myth that a lack of business investment is the reason for Canada's low productivity. Canadian firms are not lazy; they are rational. They will not invest because the policy conditions do not support earning a return. Until we fix this, domestic BERD trend lines will not reverse.

These are my recommendations to this committee: One, embed domestic value-capture provisions into the granting councils; two, establish a sovereign innovation asset bank; and three, build institutional capacity for the knowledge-based and data-driven economy. The solution is not to spend more or less on R and D but to strategically course correct by creating institutions and capacity to ensure Canada generates intangible assets and then captures the economic and security benefits from its investments.

Thank you. I look forward to your questions.

● (1210)

The Chair: Thank you.

We will now proceed to Dr. Konzuk for five minutes.

Please go ahead.

Julie Konzuk (Senior Principal, Geosyntec Consultants, Inc.): Thank you, Madam Chair, for the opportunity to address this committee.

I'm here representing Geosyntec Consultants, a multinational engineering and science consulting firm operating in 10 countries with nearly 200 employees in Canada.

Innovation is a strategic pillar for us. We drive it by partnering with universities and our clients to translate academic advances into practical solutions. To support this, we have developed several internal programs that fund university collaborations, and we invest in employee-led R and D. I have chaired several of these internal R and D committees and have also served as an industry partner in university consortiums.

Over the past decade, Geosyntec has invested millions in internal research. Last year alone, we collaborated with 113 universities globally, including 11 in Canada. Beyond self-funded research, we have secured millions in client-sponsored R and D annually for over 20 years, again often partnering with universities.

As a consulting firm, our revenue model is “brains by the hour”, so non-billable R and D time represents lost revenue for us. This limits our capacity for substantial self-funded R and D, and we are heavily reliant upon client or government funding to push forward our innovations.

Our primary motivation for collaborating with academia is early access to innovations. Canadian universities are world class, and our federal NSERC funding is a key driver of cutting-edge research. The ability to match our funding with NSERC support has been crucial for these successful partnerships, and it helps to successfully fuel early-stage innovations.

We have observed, at least in our industry, that Canadian universities rarely take innovations through to full commercialization—obviously, we've heard differently today in other industries—especially for services rather than products. Geosyntec's expertise lies in advancing and commercializing practical solutions. Our collaborations have led to the development of technologies across various sectors and the creation of two businesses: a specialty laboratory and a remediation technology vendor. Both of them were a direct outcome of university partnerships.

I have two specific examples where we as innovators, in partnership with universities, have had the greatest success in pushing forward innovations.

The first is the U.S. Department of Defense programs. Their SERDP and ESTCP initiatives, as well as other programs, fund R and D for military readiness across a number of categories. This funding is open to universities, consultants and industry. These programs excel at scaling technologies because funding is inclusive of those who are experienced at scale-up. However, recent administrative changes in the U.S. government have resulted in this funding becoming more challenging for us to win, and there is a risk that the government may restrict Canadian participation in the future.

The second example is research consortiums. When our industry partners, universities and consultants form these consortiums, the R and D is focused on practical solutions that benefit industry. These structures facilitate direct collaboration and effective commercialization, but are not supported by current Canadian government funding programs, which is making them a little more rare despite their proven effectiveness.

In closing, to accelerate innovations through to commercialization, I encourage the committee to consider the following.

First, allocate increased defence spending to support innovation in all the ways that support our military readiness—that is, anything the military spends money on. This can include military technologies, the environment, health care, material sciences, electrification, the energy transition, climate resilience, AI, etc. Funding should be available for both fundamental research and commercialization and should be open to all involved in the commercialization process. Industry partners should be Canadian, but global university collaboration could be encouraged to bring high-value innovation to Canada and directly benefit Canadians.

Second, expand NSERC to fund the development and management of commercialization-focused research consortiums that include industry, universities and consultants.

Third, reduce interprovincial barriers to commercialization, such as by streamlining permitting for pilot testing and establishing federal approval mechanisms for new technologies so that we can avoid having to go through province-specific mechanisms.

Thank you for considering these recommendations to strengthen Canada's innovation ecosystem.

● (1215)

The Chair: Thanks to all the witnesses for their opening remarks.

We will now start our fourth round of questioning. We will begin with MP Baldinelli for six minutes.

Go ahead, please.

Tony Baldinelli: Thank you, Madam Chair.

Thank you to the witnesses for being with us this afternoon.

I found it quite interesting, Mr. Balsillie, when you talked about how the “digital transformation of the past 40 years has created a new economy”, and you indicated that Canada has missed the shift.

Mr. Hepburn, you talked about the structure of our economy placing us basically at the bottom of the U.S. supply chain. Times have changed over the decades, and we're missing the shift, to Mr. Balsillie's point.

Mr. Balsillie, I was reading an article from the National Post in June. In it you indicated that the key is the “capture structure” to ensure good ideas are commercialized in Canada. Could you expand on that, please?

Jim Balsillie: I'd be happy to.

The traditional production economy operates on positive rights where you own something physically. The ideas economy, that 90% piece, operates on negative rights, which are legal structures that allow you to tell somebody, "You can't use my idea." That is the capture structure, its legal frameworks.

The strategic thinking in institutions in Canada has been completely opposite to that shift over the past 30 or 35 years. That's why you've seen a precipitous decline in Canada's productivity and GDP per capita.

● (1220)

Tony Baldinelli: Mr. Hepburn, you talked about the scale of Canadian companies, the lack of large industries based in Canada and Canada being more a country of smaller SMEs.

You talked in one of your recommendations about allowing companies to scale. How would you do that? In what ways can the government be supportive to ensure that happens?

John Hepburn: Basically, we can learn lessons from other jurisdictions. For example, Israel, which everybody always points to as the great innovation nation, has chief scientists whose job it is to look into commercialization rather than the support of research.

The ill-fated Canada innovation corporation was an example of an attempt to create support for growing companies. Creating funds where government funds are basically low-interest or zero-interest loans matched by private capital is important.

The main value I saw in the proposed structure for the Canada innovation corporation is that it was to be non-governmental, arm's length and run by successful entrepreneurs rather than by government, providing matching funds and supporting start-ups in their ability to scale.

Tony Baldinelli: It's also a foundational policy idea about how one goes about supporting the economy and this shift.

Mr. Balsillie, you mentioned that you've been appearing before government in this committee since 2023. Going back to the article from the National Post, you said:

> I was in Ottawa yesterday dealing with them on this. We have to get the ex-ante capture structures right before we throw more money into it. But that's been a product of this colossal policy failure because they've used production economy attitudes where it's a market failure, that you fix the market with a grant.

Could you expand on that? Essentially, the government is taking an approach of just buying jobs rather than supporting the creation of an idea and then scaling on it. Can you elaborate on that?

Jim Balsillie: I quite disagreed with the Canada innovation corporation, absent the precondition that I talked about, because we keep thinking it's Ken Arrow economics from the 1950s, as if it's an incentive structure where you have to tweak a granting council, share a risk or change a tax factor. In fact, the difference between us and a $1-trillion participation in these things is not a tweak here or a tweak there from the incentives.

If you look at the notes that I gave you as a committee, I gave a small example of the dozen elements of strategic frameworks the U.S. has deployed in these negative rights structures just this year. They really have nothing to do with grants, innovation corporations or the changing of taxes. It's about the legal frameworks to *ex ante* capture structures in a way that makes them richer and more powerful. That form of thinking has been absent in our policy architecture from the day the economy started changing to this intangibles economy, to a degree, about 35 years ago.

I'm not saying spend more, and I'm not saying spend less. Let's get more out of the money we spend, understanding the nature of the legal frameworks so we can enclose and capture them and can charge a rent for them. That's why I say people are not going to build a house on land they don't have ownership of or a right to. People say if we just give more money, start a new investment corporation or change a tax act, then it makes sense. No. If the government subsidizes half the money, it's only half-senseless, but it still hasn't addressed the precondition.

Where do we capture the benefit of our $7.5 billion a year in research funding? You will find there is no institutional apparatus, no capacity and no orientation to that, and there's a direct link between that failure and our inability to grow in this innovation-productivity realm, whether it's in new industries like biotech or traditional ones like value-added energy or farming.

● (1225)

The Chair: I'm sorry for interrupting, but if you could—

Tony Baldinelli: Thanks so much.

The Chair: Thank you.

We will now proceed to MP McKelvie for six minutes.

Please go ahead.

Jennifer McKelvie (Ajax, Lib.): Thank you, Madam Chair.

My first question is for Dr. Konzuk.

I absolutely heard the advocacy for spending on defence. I think some of your colleagues have good examples from the Dover Air Force Base—my research had examples from the Vandenberg Space Force Base—of something that was done very well by our neighbours to the south and that we can learn from.

Likewise, on your comments about interprovincial barriers, we've certainly heard about that, not just on the environmental side through you, but also on health—for example with drug approvals and things like that being different across the country.

What I was hoping you could elaborate on a bit more is the work you've done with NSERC, particularly on the alliance grants, and the idea you're bringing forward on commercialization-focused consortiums. How do you see this working, and what role would NSERC and/or the federal government have in that?

Julie Konzuk: The NSERC alliance grants have been very useful for us in building relationships with new professors and in being able to support early innovation work. I think to get it beyond the next stage, NSERC is a bit less useful for us, just because we can't capitalize on some of that. The university partners we work with aren't necessarily interested in setting up their own businesses and pushing forward technology, so that's been our role, typically.

Usually we get the funding from our clients to do that, or from the U.S. government. One great example of a university consortium we've been involved in is the groundwater university consortium that's based out of the University of Guelph. They have brought together a number of universities across not only Canada but also the U.S. A number of our clients, which include a number of multinational firms, are also sponsoring this.

The group meets twice a year, and industry partners are in the same room as university partners. Part of the day is put aside for brainstorming about the research directions so that university partners have an opportunity to provide direction to the university. It also provides us with an opportunity to be in the room with our clients and listen to their solutions, and then work with our university partners to help them develop technologies.

Jennifer McKelvie: That's great.

My next question is for Dr. Hepburn.

You started to touch on having a better system for IP. I'm sure Geosyntec has had this as well: You're working with a university and you retain non-exclusive rights to reproduce or use information for non-commercial purposes. It's very difficult to commercialize. There's a huge amount of overhead going into the university sector. Interestingly, we're learning more that colleges and polytechnics don't do that and the IP remains with the business that's coming in.

What are your ideas about transforming the way we handle IP in universities? I'll also note that the number of patents happening in universities is quite low because it's not really a criteria for success. It's publish or perish, and commercialization isn't necessarily rewarded as much.

What are your thoughts about IP and transforming it so we have better commercialization?

John Hepburn: First of all, I agree with Mr. Balsillie that we need to do a much better job of IP protection in Canada. A lot of the problem with the post-secondary system is that the handling of IP is very fragmented. I listened in on the previous panel, and Jesse talked about that.

Universities all have different IP policies. They are all responsible for developing and protecting IP, but they often have little expertise and there's no financial support. They do it off the sides of their desks, and that is typically how multinationals come in to take the IP, because they're willing to pay the cost of developing the IP.

I would absolutely agree with having better coordination and the better policies and laws that Mr. Balsillie referred to. We need to take seriously that universities are great at generating IP and talent. There's no question about that. However, it's the follow-on of protecting IP that we fail at. A lot of that is about the scale of most of the generators of IP, the lack of expertise and the lack of support. We need better central support and coordination of IP protection.

● (1230)

Jennifer McKelvie: How do we strike the right balance between discovery and innovation and commercialization in our funding? You've worked at both CIFAR and Mitacs. I'm wondering if you could comment more on Mitacs, for example. How do we strike the balance properly as we go forward with looking at our funding programs?

John Hepburn: I don't think the balance is that bad. NSERC, for example, does a good job of supporting both. Supporting more training programs, such as the work-integrated learning programs that Mitacs specializes in, would be good because IP is also transferred through talent.

The Chair: Thank you.

We will now proceed to MP Blanchette-Joncas for six minutes.

Please go ahead.

[*Translation*]

Maxime Blanchette-Joncas: My first question is for Mr. Balsillie.

During our study on support for the commercialization of IP, you told the Standing Committee on Science and Research that we couldn't commercialize what we didn't own. Two years later, Canada is still spending more than $7 billion a year on public research, with no clear strategy to capture the value of patents, data or innovation.

What do you think of that?

[*English*]

Jim Balsillie: I'm having an issue with interpretation.

The Chair: We'll stop the clock. You have to click at the bottom of your screen for interpretation and select the language of your choice.

Jim Balsillie: Thank you. Please go ahead. I apologize.

The Chair: MP Blanchette-Joncas, please start from the top.

[*Translation*]

Maxime Blanchette-Joncas: I'll start over.

Is the interpretation coming through, Mr. Balsillie?

[*English*]

Jim Balsillie: Yes, it is.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Mr. Balsillie.

In 2023, the committee did a study on support for the commercialization of IP, and you told the Standing Committee on Science and Research that we couldn't commercialize what we didn't own. Two years later, Canada is still spending more than $7 billion annually on public research, with no real strategy for capturing the value of the resulting patents, data or innovation.

What do you think of that?

[*English*]

Jim Balsillie: Well, I don't want to be polemic, but it's a foundational public policy failure. When you keep doing that, your GDP per capita goes down, your costs go up and people get hurt. Canada is in the hole it's in because of a policy failure that no other country in the world has.

I keep imploring that we have to do better for the younger people in this country who want a better, sovereign and more prosperous future. There's no excuse for this inattention. It has to be dealt with institutionally, and it should have been done 30 years ago.

[*Translation*]

Maxime Blanchette-Joncas: In 2023, in its report on support for the commercialization of IP, the committee laid out 14 specific recommendations for developing IP and commercializing research. Two years later, not one of those recommendations has been implemented.

Would you say that the real problem in Canada is actually an implementation deficit, not an innovation deficit?

[*English*]

Jim Balsillie: It's a deficit of policy thinking. The speaker before me hit it right: You gave the most important job, which is capturing the benefits, to the universities, with their fragmented, non-scale and non-core aspects. Other nations around the world create centralized agencies, institutions or Crown corporations to manage this strategically. Until we do that, the failure will continue. It needs to be done at a proper scale, with proper expertise and focus, and it needs to be delineated *ex ante* upstream from the source of the funds, which is the federal government.

There's been absolutely no attention paid to this in a proper manner over the past 35 years. We've been last place in the OECD in productivity because of it. It will keep going that way until we stop approaching it with inattention.

● (1235)

[*Translation*]

Maxime Blanchette-Joncas: We know that large multinationals can use their high profile and money to snap up our researchers, but at the same time, our local institutions—colleges, CEGEPs and regional research hubs—are managing to innovate in concrete ways by partnering with small businesses here.

How can we get the government to support more of that co-operation, instead of letting foreign giants scoop up our talent and ideas?

[*English*]

Jim Balsillie: The problem is that there's an asymmetry where our companies and researchers are [*Technical difficulty—Editor*] absent some form of centralized resources and centralized policies and an orientation to growing Canadian companies.

The reason Canadian companies are small is that we don't orient to growing them. We orient to helping foreign firms, whether it's through our research policies or SIF funding. It goes on and on. You need to deal with this through a centralized agency that's highly expert in it, whether it's for [*Technical difficulty—Editor*] and so on and so forth.

Every country in the world does it except Canada.

[*Translation*]

Maxime Blanchette-Joncas: A previous witness stressed the fact that we lose our innovations to foreign players, mainly Chinese and American, as a result of universities, researchers and research hubs partnering with foreign private companies such as Huawei or Tesla. At the end of the day, is Canada funding research here to benefit foreign economies?

How do we prioritize our small and medium-sized businesses in those partnerships, so we can keep and commercialize our innovations?

[*English*]

Jim Balsillie: Yes, 100%, Canada's research and innovation strategy is global philanthropy. It's how we give to foreign countries. The problem is that we don't have a policy where the individual researcher or university has to make decisions that benefit Canada economically where the economy is at hand. That's not to say all research is about commercialization. It naturally flows to the more high-profile or sophisticated partner. Thus, Canada continues to lose its scale.

Again, the answer is some kind of expert centralized agency or Crown corporation that does this. Think of the Fraunhofer institute. It has 80 research institutes around Germany, 30,000 employees and one centralized expert tech transfer centre that manages this for everybody. I chaired a panel in Ontario on intellectual property. Ontario alone—a small fraction of the size of Fraunhofer's research—has over 30 tech transfer offices. It's fragmented, non-coordinated, non-expert and non-scale.

It's a structural problem of inattention.

The Chair: Thank you.

We will now start our second round with MP DeRidder for five minutes.

Please go ahead.

Kelly DeRidder (Kitchener Centre, CPC): Thank you.

Mr. Balsillie, as the MP for Kitchener Centre—Canada's innovation capital—I consistently see how the current government is crushing our innovations' economic potential. Something you said really struck me today.

You appeared here at this committee in March 2023 and recommended building capacity for a knowledge-based, data-driven economy. Since then, almost three years later, not one policy has been created to meet the needs of a strategic orientation.

On top of that, your warning of $100 billion lost annually from unowned IP really hits home. It hits home because Kitchener start-ups are directly impacted by red tape, high taxes, no IP strategy and a lack of policy, which is preventing investment.

Where is this failure coming from? What can be done to fully unleash Kitchener's innovation engine and reverse the damage of this lost decade?

Jim Balsillie: The failure comes from the stewards of public money. They give the money away. They require that, for instance, you keep accounting so that you don't pay for a trip with it, of course, yet there isn't an approach that manages this in a way that captures the benefits to Canada. It's a policy inattention that is inexplicable, and we're paying a very sorry price for it.

My only question is, how low does it have to go before people realize that this is where the prosperity is, where the good jobs are and where the tax base comes from? This is where the future philanthropists and venture capitalists come from. If we don't address the upstream as a condition of funding from an institutional and policy point of view, rather than taking a downstream fragmented approach, it's just Einstein's definition of insanity, which is doing the same thing over and over again and expecting a different outcome.

● (1240)

Kelly DeRidder: I absolutely agree that it's a philanthropic world. That being said, you have added tremendous value to our community. You founded the Centre for International Governance Innovation. You also have the Balsillie School of International Affairs, which is a collaboration between our universities and your foundation to develop policy. You also gave $10 million to our Perimeter Institute, which helped it open. It is literally one of our driving forces of local innovation and tech in Kitchener. On top of that, you've supported our cancer centre at Grand River Hospital and our Waterloo Regional Children's Museum.

You are the example of success when the IP stays in Canada. You can innovate, monetize and scale in the communities where this innovation is developed. What has changed or has not been done in the national landscape that causes companies to no longer be able to monetize and scale here, and what causes them to head south instead?

Jim Balsillie: We became much more fixated on foreign companies and giving Silicon Valley all they need, or other international companies—you name it—around the world. When we were emerging with RIM, the orientation was to help grow Canadian companies. We felt it in Ottawa and felt it in Queen's Park, whereas the last era has been much more about giving the keys to foreign companies, and somehow some crumbs will fall off the table that benefit us. When you do that, you lose all the wealth effects. You lose all the security effects, and you're easy, vulnerable prey to strategic behaviour, which is what we're experiencing now.

I don't know what happened that we lost the plot about growing our own companies, growing our own country and growing our own economy. It's very tragic because it's avoidable, and it's fixable, but the most vulnerable and the young are the ones who are paying the highest price.

The nature of economic policies that we're dealing with now is not the same as it was 30 years ago. It's such a shame because Canada has tremendous potential, but the policy approaches have failed all the citizens, entrepreneurs and business people with that potential.

Kelly DeRidder: I see that failure happening in my home riding, for sure. I think when we can effect good policy that supports our innovation, we can only succeed. It's really unfortunate to hear that today we're using taxpayer dollars to buy our innovation back. That's not a path to sovereignty at all.

Can you expand further on what you're seeing happening with regard to our taxpayer dollars buying our own innovation back from other countries?

The Chair: I'm sorry to—

Jim Balsillie: Sure. The fundamental AI was funded by taxpayers for 30 years at the University of Toronto—

The Chair: I'm sorry for interrupting. The time is up. If you would like to respond in writing for that, it would be great.

We will now go to MP Hepfner for five minutes.

Please go ahead.

Lisa Hepfner (Hamilton Mountain, Lib.): Thank you, Chair.

I want to say hello again to Mr. Balsillie. I don't know if you've made the connection, but I was a journalist in Hamilton during basically all the years you were trying to bring an NHL team there. Gary Bettman sneered in my face when I brought up the idea with him, but I just want to say that your efforts were very appreciated in Hamilton during all those years.

I'll pick up where my colleague Ms. DeRidder left off and give you a chance to expand.

When you were running Research in Motion, I think you had 44,000 to 45,000 patents in your name. You are a person in Canada who has more IP than maybe anyone else. That wasn't 30 years ago. It was a long time ago, but really, what has changed since then? Why were you able to build a huge company in Canada—Research in Motion—and get all these patents? Today, we're struggling to do the same.

● (1245)

Jim Balsillie: My mentors for commercialization were in the United States. They helped me navigate the State Department on our geopolitical issues, and they also showed me how to file, generate and navigate the global IP landmines. I kept coming back to Ottawa and saying, “What you're articulating as how the world of business works is not what I'm experiencing in the world, and it's not what I'm experiencing in Washington.” They were just not interested in that. There was a certain narrative of “Cut taxes. Cut regulations. It's a free market. Hands off.” I just didn't experience that in the world.

As to the nature of ideas, the asset is created by the government and changed hundreds of times per day. As this became more and more important and interleaved with data and AI, the role of the public-private frameworks soared in strategic relevance and strategic behaviour. That's what wasn't in Canada's policy thinking, but it's what I experienced around the world.

Lisa Hepfner: I find it really interesting that you're calling for more government intervention, for another government body to help maintain our IP here in Canada.

I'd like to turn to Mr. Hepburn because I only have a couple of minutes left.

Mr. Hepburn, I found your testimony very interesting—the fact that we have no shortage of enthusiasm for commercialization but that innovators here have to sell their intellectual property to the United States to afford clinical trials.

It occurred to me that when we do have a big company in Canada, we tend to vilify it. I'm thinking of Loblaws or Air Canada. When they get really big, they seem to take on all the ire of struggling Canadians. I don't know if you have any thoughts on that.

I typically serve on the heritage committee, and we talk a lot about artists' IP, our cultural IP and how we're losing our cultural sovereignty to other countries because we're losing the rights to ideas.

Can you comment on those ideas?

John Hepburn: In Canadian policy, there is a bit of an obsession with small and medium-sized enterprises, which is fine; we need to help small companies get established. A lot of the large companies that are vilified are in this protected sector, and maybe that's why they're vilified. I say that having avoided a five-hour delay on Air Canada by flying Porter yesterday.

The difficulty is in helping provide policy frameworks. The biotech industry is a particularly pointed example, because it's the policy of large multinational pharma companies to buy IP from small companies. They've long since abandoned doing a lot of their own research. They let others do their own research, typically with government support, especially in Canada. Then they simply buy it if it's a successful thing, or they create an agreement—which I've seen over and over again in Vancouver—where they'll give a lot of money to get a potential drug through phase one clinical trials. The founders will say, “That's great—lots of money”, but of course the sting in the tail is that if they're successful at phase one clinical trials and it looks like they really have something profitable, they're told, “You're our company now.” I think that's creating the environment....

Biotech is completely about intellectual property and about patent protection in particular. It's great that we protect the patents, but if we don't allow companies to succeed in Canada, then we know where the patents go. They get sold to some big multinational, which then develops the technology and makes the profits from it.

Lisa Hepfner: Thank you.

The Chair: The time is up.

We will now proceed to MP Blanchette-Joncas for two and a half minutes.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Madam Chair.

I'm coming back to you, Mr. Balsillie.

You said we need a single consistent approach and a clear position, rather than a fragmented system.

Quebec has successfully built a comprehensive ecosystem. We have a chief scientist, a chief innovator, a research and innovation investment strategy, players such as Axelys and Synchronex, 59 college centres for technology transfer, and financial levers including Investissement Québec, the Caisse de dépôt et placement du Québec and the Fonds de solidarité FTQ.

As you can see, we have an ecosystem that works in an integrated way towards a shared vision under a consistent governance structure with innovation expertise.

Do you think Quebec already has the integrated model Canada is still looking to build?

● (1250)

[*English*]

Jim Balsillie: Directly, no, I do not think Quebec has taken the right approach. You have 59 tech transfer offices. The maximum you should have is two or three.

Second of all, if how they do the granting councils, do the partnerships and manage the frameworks is not managed upstream by Ottawa, then even if you do everything right, they're such a big actor in funding and so on that you're lost before you start.

[*Translation*]

Maxime Blanchette-Joncas: How do you think it's possible to make the ecosystem better when the provinces all have different models and no integration? I described Quebec's ecosystem, which is already developed.

Ultimately, how do we get the best return on public investment?

[*English*]

Jim Balsillie: When you look at the tech transfer offices, invariably they're subscale and non-core and don't have enough expertise. Think of Fraunhofer. Fraunhofer's research is probably 10 times bigger than Quebec's when you look at the scale of all of Germany—or maybe five—yet they have one. You have 59 and you're maybe a fifth of the size. You're two orders of magnitude more fragmented than Fraunhofer, as an example.

Second of all, if it's not aligned in coherent orientation with Ottawa, which is writing the cheques and setting up the programs, it's not going to work. When you just look at the outcomes, it's a very technical game. It's about enclosure. If one small leak in the enclosure system is mismanaged, most of the benefits leak out.

That's how the system of intangibles and negative rights works. We need a comprehensive reapproach.

The Chair: Thank you. The time is up.

We will now end this panel with two minutes for the Conservatives and two minutes for the Liberals. Then I need four or five minutes at the end for one or two questions for members regarding committee business.

Mr. Ho, you have two minutes.

Vincent Ho: My question is for Mr. Balsillie.

You mentioned in your opening statement that the OECD projects that we'll be the slowest-growing advanced economy through to 2060 as a result of bad policy.

At the household level, people are feeling it with shrinking paycheques and rising costs. We see that in other metrics. We see a productivity crisis over the last 10 years, GDP per capita in real terms falling and investment per worker collapsing. It's no wonder the Prime Minister is asking Canadians to sacrifice more. Things are looking pretty bleak.

We know there are over 134 federal innovation programs. The Liberals, a couple of years ago, announced that they would launch the Canada innovation corporation. It looks like another federal bureaucracy.

Do you see an issue with that? Do you think that just pouring more money into it—they've announced $2.6 billion for it and it keeps getting delayed—and adding more bureaucracy is the approach? Do you think we have to spend our money a bit more wisely?

Jim Balsillie: It is a strategic orientation issue of managing the enclosure.

I will give an example. We started a sovereign compute fund for $2 billion plus, but the first $240 million was given to an American firm called CoreWeave. That's like using your health promotion program to buy cigarette machines for the cafeteria.

We cannot afford to be counterproductive in these things because we're vulnerable and our resources are scarce. We cannot waste our compute and data management, which is a factor of production. We cannot mismanage our intellectual property, which is $7.5 billion.

I believe the budget this week is the most important budget of my lifetime. It's an opportunity to reorient to actually gain the benefits of the big intangibles bar. We have all the potential to be a very prosperous and sovereign nation, but we must update our thinking institutions to attune to 21st-century realities. We have not done that yet.

The Chair: The time is up.

We will now proceed to MP McKelvie for two minutes.

Jennifer McKelvie: Thank you, Madam Chair.

My question is for Dr. Hepburn.

You mentioned some researchers and companies coming out of UBC that were extremely successful. That's not necessarily the case everywhere.

Is there a secret sauce that the ones that make it have, or is it more the industry they're in? They all seem to be medical. What is the recipe for success?

● (1255)

John Hepburn: A lot of it is luck. There was a very large company, QLT, that had a technology that was superseded by an American firm. Then they made some bad management decisions and they went away.

AbCellera is a current darling and is founded by a colleague, Carl Hansen. They delayed going for investment capital until they were better developed, so they didn't have to sell out the IP they'd grown, but they're lucky as well. They had a technology that fairly rapidly got into the clinic. Typically, the delay getting into the clinic is a decade or more, and it's tough to survive and do the necessary regulatory steps to do that.

Other companies have typically been bought out because that's the way to survive. You've heard about the valley of death. An organization whose founding board I was part of—the Centre for Drug Research and Development—provided facilities for developing and doing the necessary preclinical work to bring something to clinical trials. It's now adMare. It partnered up with a Montreal organization.

There are things like that, but all of these things help small companies survive. They don't help them grow into big companies. Growing into big companies is where the problem is.

Jennifer McKelvie: Do you have any recommendations on how to grow into big companies or how can we support the move from the pilot stage to full commercialization and implementation?

John Hepburn: Well, Mr. Balsillie keeps—

The Chair: I'm sorry for interrupting. The time is up for MP McKelvie.

Maybe you can send that in writing—

John Hepburn: If I could, I'll just say that Fraunhofer is a model. We don't have that here.

The Chair: Thank you.

With that, I want to thank the witnesses for appearing before the committee and for their important input into this study.

I have just two things to ask of members.

The first thing is that we have the study budgets to adopt. The clerk sent two draft budgets on Friday, October 31.

The first one is for the briefing session with the chief science adviser in the amount of $1,000. Is everyone in favour of adopting that budget?

Some hon. members: Agreed.

The Chair: The second item is in regard to the private sector study in the amount of $45,000. The budget was circulated to everybody. Is everyone in favour of adopting that?

Go ahead, MP Baldinelli.

Tony Baldinelli: I just have a question with regard to the science adviser. Will she be appearing in person or virtually?

The Clerk of the Committee (Cédric Taquet): She confirmed that she will be appearing in person.

Tony Baldinelli: Thank you.

The Chair: Are there any questions on the budget? Can we adopt it?

Some hon. members: Agreed.

The Chair: The next question is in regard to the motion adopted on artificial intelligence. I think that after this study, my understanding is that members would like the study on that artificial intelligence motion to start. We would like to receive the lists of witnesses as soon as possible so the clerk can start scheduling those meetings.

What is the date by which members can send in lists of witnesses? On Wednesday, we will have a few minutes for committee business, but I think the first meeting will be on November 24, probably, based on the calendar we are working on right now.

What is the deadline for witness submissions? On November 24, we are expecting that we will have the first meeting.

Tony Baldinelli: Could it be Monday, November 10?

The Chair: Next week is a non-sitting week, but we really need the lists of witnesses. Would Monday, November 10, work for everybody? Are all in favour?

Some hon. members: Agreed.

The Chair: Okay, so the lists of witnesses for the motion on artificial intelligence by MP Baldinelli should be submitted to the clerk of the committee by November 10 at 5 p.m. eastern time.

Is it the will of the committee to adjourn the meeting?

Some hon. members: Agreed.

The Chair: The meeting is adjourned.