HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

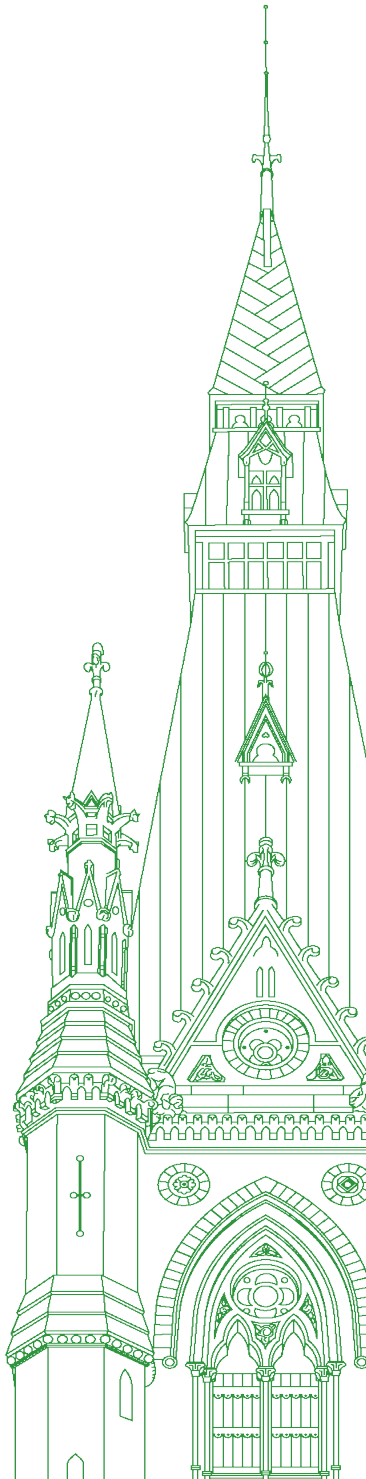
45th PARLIAMENT, 1st SESSION

Standing Committee on Industry and Technology

EVIDENCE

NUMBER 038

Thursday, May 7, 2026



Chair: Ben Carr

Standing Committee on Industry and Technology

Thursday, May 7, 2026

● (1100)

[*English*]

The Chair (Ben Carr (Winnipeg South Centre, Lib.)): Good morning, everybody.

We are continuing today with our study on AI. We have a few witnesses here in the first hour. We're going to have a few more in the second hour.

Joining us from the Centre for Designing Change, we have Kulbir Colin Singh Dhillon, who is the executive director. From INQ Law, we have Carole Piovesan, who is the managing partner. From Oracle, we have Hamza Jahangir, who is the vice-president, AI solution engineering.

Welcome to you all. Thanks for being here.

[*Translation*]

I can confirm that all audiovisual tests have been completed.

[*English*]

Mr. Singh Dhillon, this is just for you, sir, since you're in the room. If you're not using your earpiece but it's plugged in, please just make sure that it's placed on the sticker in front of you. That's to protect the health and well-being of our interpreters.

Witnesses, you'll have up to five minutes for introductory remarks, which will be followed by a line of questioning from the members representing the various political parties around the table.

With that, Mr. Jahangir, I am going to turn the floor over to you.

Hamza Jahangir (Vice-President, AI Solution Engineering, Oracle): Honourable Chair and members of the committee, thank you for the opportunity to appear today as part of your study on artificial intelligence.

I'm here on behalf of Oracle Canada. We provide cloud infrastructure, data platforms and AI capabilities that are used by governments and regulated industries. In Canada, we support public and private sector organizations, including SMEs, to adopt AI in ways that are secure, compliant and operationally practical. For over 45 years, Oracle has supported the Canadian public sector, including federal and all provincial and territorial governments. Throughout Canada, Oracle technologies support citizen services, finance, human resources, education, government operations, defence, intelligence and public safety.

AI is now a core driver of productivity and service delivery, from improving manufacturing and construction outcomes to strengthening cybersecurity and reducing administrative burden in the public sector. Realizing these benefits, however, depends on deploying AI with strong safeguards, transparency and accountability.

From our perspective, three priorities matter most for Canada: trusted data foundations, sovereignty and security by design, and enabling adoption at scale across Canadian organizations.

First is trusted data foundations. AI outcomes are only as strong as the data behind them. In many organizations, data remain fragmented, limiting reliability and increasing risk. Canada should prioritize policies and investments that enable secure data integration, strong governance and auditability, particularly for high-impact use cases. Organizations need to bring AI into governed data environments with clear, enforceable controls about who can access data, how it is used and how decisions can be tracked and audited. This level of traceability and oversight is essential for critical services and regulated sectors where accountability, risk management and public trust are paramount.

Second is sovereignty and security by design. Data protection and control are central concerns for Canadians and for this committee. Oracle already operates cloud regions in Canada—in Toronto and Montreal—supporting customers that require data residency and compliance with Canadian requirements. We also provide higher-assurance deployment models, including dedicated and sovereign cloud options that are designed to meet specific regulatory and national security needs through stronger operational control, segregation and compliance.

In practical terms, sovereignty must be grounded in verifiable safeguards, strong encryption, robust identity and access management, clear separation of duties and comprehensive auditability. Additional capabilities, such as confidential computing, can further protect sensitive data while it is in use. As Canada considers its policy approach, we would encourage a focus on measurable security outcomes and enforceable standards, ensuring that sovereignty is demonstrated in practice, not just defined in principle.

Third is enabling adoption at scale, especially for SMEs. While Canada has strong AI research capacity, adoption remains uneven. Many organizations, particularly small and medium-sized businesses, face barriers related to cost, skills and procurement complexity. Oracle works with Canadian organizations to modernize data platforms and deploy AI securely, including through partner-led models that help businesses adopt cloud and AI, with the controls required in regulated environments. Expanding skills development and certification pathways will also be critical to building the workforce needed to scale adoption across regions and throughout the supply chain.

In closing, Canada is well positioned to lead in responsible AI. Doing so will require a balanced approach of strengthening trust, advancing sovereignty and enabling practical adoption at scale.

Oracle stands ready to support this committee's work by sharing technical expertise and real-world implementation experience.

Thank you. I look forward to your questions.

● (1105)

The Chair: Thank you very much, sir.

Ms. Piovesan, we'll turn the floor over to you. You'll have up to five minutes.

Carole Piovesan (Managing Partner, INQ Law): Good morning, and thank you, Mr. Chair and honourable members of this committee.

As you heard, my name is Carole Piovesan. I am the co-founder and managing partner at INQ Law, where we advise clients on privacy, data governance and AI risk management, among other practices of law. I have previously appeared before this committee and the ETHI committee. I'm an adjunct professor at the University of Toronto faculty of law, where I teach AI regulation. I want to be clear that the opinions I share today are my own.

For the current study undertaken by this committee on data sovereignty, AI adoption and strategic industrial sectors in Canada, I offer three recommendations.

The first is to modernize Canada's federal privacy law, which is something this committee has heard multiple times from multiple witnesses. It is long overdue and an important step in Canada's strategy for data sovereignty. Though technology neutral, PIPEDA, in its current form, was not designed for such sophisticated data-processing activities or processing technologies as AI. AI systems are collecting, inferring, profiling and making decisions about Canadians under a statute that predates the smart phone.

The gap between what the law requires and what the AI practice demands is widening every year. Refreshed privacy law—modernized privacy law—would also support AI development. Updated rules on data collection, use and disclosure in the context of AI would enable the creation of trusted Canadian datasets for training AI systems and foster the private investment in AI development.

Privacy is a critical value in Canadian society that we must protect and defend. While modernized privacy law alone will not address all AI risks, it is one important and overdue step; and it is notable that provincial and territorial privacy commissioners are starting to weigh in on the use of personal information in the context of AI risking a fragmented approach and narrative on AI.

Second is to build a Canadian AI assurance market. You've heard many times in this committee, including from the speaker just before me, that Canada is known for responsible AI and has made significant investments in AI ethics, good governance policy and research over the past decade. We have an advantage in creating an AI assurance market like no other. Not only is that good business for Canada, it's also essential for supporting safe and beneficial AI development and deployment in Canada.

To that end, Canada should build a functioning AI assurance market with accredited auditors, testing labs and certification bodies that assess AI systems before and after deployment in high-impact contexts. Those building blocks already exist. Some are homegrown through some of our regulators, including Health Canada or OSFI, which have been piloting or embedding different AI assurance mechanisms into their sector guidance. Also, there's international guidance through the ISO 42000 series for AI management. Canada played an important role in the development of those standards.

Moreover, federal procurement and funding mechanisms should require assurance evidence for high-impact AI use cases, insurers should recognize certified AI governance in their underwriting, and standard-setting bodies should develop an accredited AI assurance profession. For Canada, this is also a commercial opportunity, positioning Canadian firms as the credible, trusted alternative in global AI procurement. It is also essential for the advancement of responsible AI, because governance without verification is aspiration. We can write rules, but unless there is an independent mechanism to test whether AI meets those rules in practice, in real-world deployments and not just lab benchmarks, the rules are largely symbolic.

Third, make AI safety Canada's signature contribution. Canada has a distinctive opportunity in AI safety. We have world-class AI talent and a long track record of responsible, multilateral engagement. AI safety should be Canada's brand. The Canadian AI Safety Institute is a start, but it must operate at full force, and it must be backed by the kind of sustained policy investment that signals to the world that Canada takes this seriously.

The core regulatory ask here is simple. Companies must demonstrate transparency in their risk management processes and show that the systems they are building will minimize harm.

● (1110)

Canada also has an opportunity to work multilaterally to secure international treaties and support among some like-minded countries.

In closing, here are three steps: modernize our privacy laws as the foundation for data sovereignty, build an AI assurance market that turns accountability into a competitive advantage, and establish AI safety as a sustained Canadian brand and priority at home and through coalitions around the world.

Thank you.

I welcome the committee's questions.

The Chair: Thank you very much.

Mr. Singh Dhillon, the floor is yours, sir.

Kulbir Colin Singh Dhillon (Executive Director, Centre for Designing Change): Good morning, Mr. Chair and honourable committee.

Thank you for the opportunity to be here today.

Canada has built a strong reputation in artificial intelligence. We are known globally for our research and our talent, and the foundations we've helped create in this field. The question in front of us now is not whether Canada understands AI, it's whether we are turning that understanding into real outcomes. The reality is that Canada doesn't have an AI research problem, rather, we have an AI translation problem.

We are very good at developing models and advancing ideas at a research level. We are much less effective at deploying these systems into the environments where they actually create value, for example, factories, supply chains, infrastructure and the core industries that drive our economy. The gap becomes even more important as AI evolves—and it is evolving on a daily basis.

We've seen a version of this before. In other sectors, early signals were dismissed as premature until they became dominant industrial realities. Physical AI is following a similar trajectory, and the window to build capability may be shorter than it appears.

We are now entering a phase where AI is no longer just digital. It's becoming physical, embedded into machines, robots and industrial systems that operate in the real world. This includes what we describe as “human-centred robotics” and, in some cases, “humanoid systems”, technologies designed to work alongside people, not just behind a screen.

This shift has direct implications for Canada's strategic industries, manufacturing, mining, transportation and construction, because this is where productivity, resilience and long-term competitiveness will be shaped.

Canada is not yet structured to lead in this next phase. We have the building blocks. What we are missing is the capabilities and the abilities to bring them together in a coordinated fashion, to test these systems, validate them, integrate them and deploy them at scale. This is the gap we are focused on at the Centre for Designing Change.

One example of this is a national initiative around human-centred robotics and humanoids. This is not about chasing a headline or building a single product. It is about using that platform to map Canadian supply chains; validate domestic capabilities; test systems in real environments, including extreme conditions; and ensure Canadian companies are part of what comes next.

This work builds on CDC's broader national efforts in physical AI, including recent work with NGen Canada examining Canadian industrial readiness and capability gaps in this space. If we don't build capability at that level, we risk relying on systems developed and controlled elsewhere in the very sectors we depend on.

This connects to a broader issue that has come up in this study, which is data sovereignty. Data matters, because it's the context of AI. Sovereignty goes beyond where data sits. It extends to who controls the systems, the infrastructure and, ultimately, the deployment layer. Without that, we may participate in the AI economy, but we won't shape how it operates.

As AI moves into physical environments, the challenge changes. It's no longer just about intelligence, it becomes about interaction. These systems are working alongside people. They need to interpret human behaviour, respond appropriately and know when to escalate or to step back safely. If they can't do that reliably, adoption will slow, not because the technology doesn't work but because people won’t trust it. This is what we mean when we talk about emotionally intelligent AI not as an abstract idea but as a practical requirement for safe and effective human-machine collaboration.

As we think about policy and regulation, the focus needs to expand. It's not just about developing AI, or even regulating it. It's about enabling deployment responsibly at scale and in the sectors that matter most.

If I can leave you with one thought, it is that Canada does not lack ambition in AI; we lack infrastructure to execute it. If we can close that gap, particularly in physical AI and strategic industries, we will have a real opportunity not only to participate in this shift but also to actually lead in it.

● (1115)

Thank you very much for your time.

The Chair: Thank you very much, witnesses, for your opening testimony.

We're now going to enter into the first round of questions.

Mr. Guglielmin, the floor is yours for six minutes, sir.

Michael Guglielmin (Vaughan—Woodbridge, CPC): Thank you, Chair.

Thank you to the witnesses today for all of your expert testimony.

Mr. Dhillon, we've heard a lot at this committee about artificial intelligence and its use case to increase productivity, help us with the productivity issues and improve efficiencies. Really we've heard two different sides of this argument with respect to jobs. On the one hand, AI as a tool could be used to create jobs, and we just need to re-skill people. On the other side of the equation is more of a quasi-doomsday scenario, where AI could lead to mass unemployment.

From your perspective, where do you think the truth is, and what do you think the impact of artificial intelligence on jobs will be?

Kulbir Colin Singh Dhillon: I describe in my book *Soulful AI* that AI should not be deemed to be a technology. Rather, it's a digital species. It's like no other development that's been created by humanity. You can't compare it to steam, electricity and computer power. The objective of AI is intelligence and the growth of its intelligence, so companies are currently working towards AGI, which is general intelligence, which means it's as good as if not better than humans, with superintelligence being maybe a decade or so behind that.

What will this do to the industrial revolution model that we all live in today? The reality is that we live in a period that is governed by the structure of industrial revolutions. We're currently in 4.0.

The largest line item on anyone's balance sheet, for any corporation or any company, is human labour. The trends over the last 40 years of sending products and services overseas were simply to offset the balance sheet for human labour and the cost of the hourly wage. Let's not kid ourselves that corporations and companies will not look to reduce the head count of their companies if they can, both digital and physical, because they will. These are the trends. Just this past Monday, I think, Meta announced 16,000 layoffs in its organization.

We are in a period when the growing use of AI, currently, I would think, attacking white-collar jobs, is occurring, but inevitably this will affect both blue-collar and white-collar jobs. Inevitably there will be a head count reduction.

● (1120)

Michael Guglielmin: Thank you for that.

You also described in your opening statement humanoid robotics as a strategic opportunity for Canada. I was wondering if you could briefly define what you mean by that and then say who you would say is winning that race today and where Canada currently ranks.

Kulbir Colin Singh Dhillon: I'll start from the back end of the question.

Who's winning the race today outright is China. China has registered 50 to 150 humanoid robotics companies. The advancements in humanoids in the past five years are all down to artificial intelligence. They are all down to edge computing with neural networks doing end-to-end communication. China's leading because, if we are not aware, China's going to have a birth rate drop-off that is going to make Japan's look like it was not an issue, and China's going to backfill that drop-off in birth rate with automation, period.

I think we all understand how we have things work economically, and there is a global race. The U.S. is behind, at 20 to 25 companies. Canada currently has two companies registered that are building humanoids. Our objective with our project, similar to when I built and worked on Canada's first electric vehicle, is to build a foundation so we can compete on a sovereign level globally, where we're not, as Canadians, having to buy Chinese products or U.S. products but rather buying Canadian products to service our own industries.

Michael Guglielmin: You have also mentioned that here we have world-class talent. We have world-class critical minerals. In some respects, especially with respect to education and information, we have a head start on artificial intelligence and advanced manufacturing. You've argued that our constraints aren't the capability. Our constraints are execution and capital.

In my view, the government's role is to provide the environment for that to flourish. What do you think our number one risk is if we get that wrong, where we don't create the environment to have these sorts of capabilities flourish, and we become importers of technologies from countries like China or the United States?

Kulbir Colin Singh Dhillon: I think that in the context of artificial intelligence—be it digital or physical—it is a moving target, and it's moving at a pace where, if you aren't on top of your large language models over a period of two or three months, you're falling behind.

I think there has been some really positive news over the past few months of capital coming back to Canada, where it is direly needed. I work with multiple start-ups, and I have my own. Every start-up needs two things: customers and capital.

If we don't get this right.... Let me just put into context physical AI, in the context of humanoids. Morgan Stanley's report from April 2025 suggests that by 2050, humanoids will be a $5-trillion revenue industry. In context, that's double the size of the global automotive industry.

I grew up in the auto industry. I spent 25 years there. Let's not kid ourselves. The IP and revenues go outside our country. We don't own a Canadian car company, nor would I recommend that we do in 2026. However, we have a golden opportunity to lead in physical AI because, as you mentioned, we have all the pieces here. I think we're in this imperative period over the next few years to come out and to lead. If we do this, I think we could truly be a global leader.

● (1125)

The Chair: Thank you very much.

[*Translation*]

Mr. Ntumba, you have the floor for six minutes.

Bienvenu-Olivier Ntumba (Mont-Saint-Bruno—L'Acadie, Lib.): Thank you, Mr. Chair.

Ms. Piovesan, in your presentation, you said that Canada was a leader in artificial intelligence research. You also added that we need to make AI safety Canada's signature contribution.

I'm going to go back in history a little to see how humanity has evolved and how man has adapted. Today, artificial intelligence has come along, and we're talking about jobs being at risk. In the past, at one time, people used horses. Then the first car was invented, and then it evolved to become the hybrid car and the electric car. That creates parallel professions.

Artificial intelligence is coming in forcefully, and it's evolving at a rapid pace, which will have repercussions.

What should our government do to mitigate these repercussions and find a solution?

[*English*]

Carole Piovesan: Absolutely, AI is going to have an impact on the job market. Part of this—and you've heard this before—is about redirecting where some of the jobs will be, and investing in and upskilling much of our labour.

I am in the legal profession, where we are acutely aware of the impact of artificial intelligence on the delivery or support of legal services, and we are actively thinking about ways in which our lawyers across Canada are being deskilled and about how we upskill.

Part of the reason that I suggest a Canadian AI assurance market is because AI is an incredibly important economic force. We have seen this through the inputs received by the government in response to the AI sprints. We need to think dynamically about where jobs will be created and skills will be needed, and redirect in those areas.

I would posit that an AI assurance market is one area where there are specific investments that can be made that leverage our existing strengths, that speak to the responsible made-in-Canada AI brand, and that advance safety mechanisms that can allow us to use this technology in a safe manner that is tested and verified.

[*Translation*]

Bienvenu-Olivier Ntumba: Thank you very much.

Mr. Dhillon, in your presentation, you said that Canada lacks infrastructure.

Can you tell us what needs to be done to get more? How do we get it built?

The research is done. Canada doesn't have a problem in that regard, but there's a lack of infrastructure.

What would it take, in concrete terms? How can we move forward on this?

[*English*]

Kulbir Colin Singh Dhillon: How can we get ahead with regard to the infrastructure? I think we need possibly two national policies that support AI and the implementation of physical AI. I think these have to identify key sectors, and then I think that becomes the foundation to really accelerate the adaption of artificial intelligence.

I've spent several years working with industrial revolution 4.0 digital manufacturing implementations, and I can tell you that it is an absolute struggle having companies adapt sensory technologies, IoT devices, to collect data in manufacturing here in Canada, specifically in the auto industry. I think it could be an uphill challenge if there isn't a national policy on AI and physical AI.

● (1130)

[*Translation*]

Bienvenu-Olivier Ntumba: When you hear about digital sovereignty and technological sovereignty, what do you think they mean?

How would you explain them to lay people who know nothing about these areas?

[*English*]

Kulbir Colin Singh Dhillon: Regarding data sovereignty, a lot of people think that data is magical and that any unit that is collecting data is somehow giving positive data. It doesn't work that way. Data is deemed to be dirty or clean. You have to sift through to get the quality out of the data.

AI is not the software on your phone or on your laptop; it's the data centres. The data used and the compute used need to be the back end of what AI is modelled on. In order for you to model your AI, you need to collect data. One of the reasons a lot of these large language models today have issues like biases is that they scrape the Internet to collect the data. Let's be honest. The Internet isn't exactly the most prestigious and pristine element. It's a bit of a cesspool at times.

Data sovereignty means that Canada is generating terabytes of data in every sector in municipalities, provincially and federally, and we need to find a strategy and build a system where we own our own data. Having that good, high-quality data potentially gives us an edge over our competitors.

[*Translation*]

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

Mr. Ste-Marie, you now have the floor for six minutes.

Gabriel Ste-Marie (Joliette—Manawan, BQ): Thank you, Mr. Chair.

Greetings to my colleagues and the three witnesses. I thank them for being with us today. Their testimony is very enlightening.

My first questions will be for Mr. Jahangir from Oracle.

A few weeks ago, we had Yoshua Bengio here. He told us that a strong regulatory framework would not hinder the development of artificial intelligence, that it was more the financial stakeholders who were reticent about the European or Canadian models.

Do you agree with what Mr. Bengio said?

[*English*]

Hamza Jahangir: I'm sorry; I didn't totally get the question. If you don't mind, could you repeat it one more time?

[*Translation*]

Gabriel Ste-Marie: I'll repeat my question.

A few weeks ago, Mr. Bengio came to meet with us. According to what he told us, a strong regulatory framework would not hinder the development of artificial intelligence, and the reluctance comes mainly from financial stakeholders, particularly with regard to the European model or the Canadian model.

Do you agree with that statement?

[*English*]

Hamza Jahangir: I first want to say that a regulatory framework is necessary to help accelerate AI development. Today—I think my fellow panellists touched on this—AI cannot be its own thing. It has to be part of a larger governance framework. In fact, the safety aspect of AI—delivering the right kinds of AI applications to the right end-users for human benefit—is what we are all working together on in order to get the right balance. Therefore, we continually balance new opportunities to improve the lives of citizens, government organizations and private-sector entities with safety. We truly look to regulatory bodies, whether governmental or non-governmental organizations, to help build that framework and put it in place.

In addition to comments being made around data, like the necessity of having the right, high-quality data powering large language models in order to get the right answers and do it securely and safely.... That is the larger problem statement that the whole industry and the world, right now, are experiencing.

Regulation and regulatory frameworks are, from my perspective, enablers, not hindrances.

● (1135)

[*Translation*]

Gabriel Ste-Marie: Thank you very much.

Does your company do business with National Defence or the Canadian military to get contracts?

[*English*]

Hamza Jahangir: Oracle is obviously a multinational organization. We have had contracts in place with the Canadian federal government, and the provincial and territorial governments—as I mentioned in my opening statement—for many years. We've been in existence for 40-plus years. For a large majority of that, we've always considered Canada to be one of the first markets we invest in, outside of the U.S.

[*Translation*]

Gabriel Ste-Marie: Okay. Thank you very much.

Your company, the parent company, is a super multinational, as you just mentioned. Your CEO is one of the richest people in the world. For a few years, he was even the richest. He is currently considering acquiring the American mass media network CNN.

What I'm concerned about and what I think my colleagues here are concerned about is making sure that large companies like yours respect Canadian law and protect personal data.

For example, yesterday we learned something in the media about ChatGPT, which was created by another big company, OpenAI. Privacy commissioners at the federal level and in some provinces have found that ChatGPT violated privacy laws without obtaining free and informed consent. OpenAI was not fined because the law was not adapted to the new reality.

In your opinion, should we adapt our laws to ensure better protection of privacy?

Might your company also have violated privacy laws, to your knowledge?

[*English*]

Hamza Jahangir: I'll comment based on our experiences. In my role today, I work with many governmental organizations in the U.S. and Canada. I've worked with our commercial industries, as well.

Broadly speaking, it is always a good idea to put as much protection of personally identifiable information about individuals...and continuously see what additional protections and guardrails we can put in place to enable more data protection, fundamentally.

Forgetting the large language model for a second, it's a belief we've had for decades that data is the most important asset in this kind of an architecture. From a protection and privacy standpoint, we want to enable it technically. In my domain, I'm a technical practitioner of this, so I'll speak to it from a technical standpoint.

We're continuously looking at additional technologies and capabilities, whether it's encrypting the data; controlling who has access to what, where and how; or auditability, so that you have complete lineage and traceability of what has happened in every system that stores these records. That is a consistent pattern and a consistent architecture that we've recommended to our Oracle customers everywhere.

Coming to the advent of large language models, and now with generative AI, we don't necessarily believe that it should get a special pass to go straight into your data and do whatever it wants to do. We believe that, at the very least, it should go through the same set of defensive layers that we've built around the data pre-AI so that you are safeguarded, just like a human being who tries to access data that they may or may not have authorization for. The AI model needs to go through those same layers, but now we're building much more robust protections, specifically for AI, on top of that.

To answer your question, I don't believe—

● (1140)

The Chair: Sir, I'm afraid I'm going to have to end there. We went quite a bit over, but there will be an opportunity for you to return to those remarks.

[*Translation*]

Thank you very much, Mr. Ste-Marie.

[*English*]

Ms. Borrelli, the floor is yours for five minutes.

Kathy Borrelli (Windsor—Tecumseh—Lakeshore, CPC): Thank you, Chair.

Thank you to our witnesses today. We certainly appreciate your testimony for this important study.

My question is for Mr. Dhillon. After yesterday's announcement from the Privacy Commissioner regarding an investigation into OpenAI privacy concerns, do you believe that strong enough action was taken? Do you believe we will see more cases similar to this if we deploy AI before proper legislation is in place?

Kulbir Colin Singh Dhillon: About a decade ago, I was hearing Ottawa pushing for Transport Canada to ease off on policies around autonomous vehicles, which, in theory, are machine learning and AI, but since the advent of large language models, it's all about bringing on the regulations, bringing on the policies. That's the essence of my book.

I refer back to the description I use of what we currently have as being a digital species. I've even heard that the U.S. is now considering bringing in regulations.

I feel, at this moment, that when it comes to privacy and safety around AI in general, including large language models, it should be very tight, but it has to be done on a global level because, again, economically, we're in a race. If some of our competitors are not willing to do so, it's a conversation internally with our partners on where we stand.

Kathy Borrelli: Given that our AI is so heavily integrated within foreign firms, do you believe that it can pose a greater risk for us?

Kulbir Colin Singh Dhillon: When we use OpenAI's ChatGPT, the data is actually going back to their data centres. It's not staying here with us, so there is a sovereignty issue, absolutely.

Considering that we have the godfather of AI in Ontario and in Quebec—because I believe there are two—and considering that we have some of the brightest minds in AI research, I think there is a golden opportunity for Canada to support its competitors—these are the large language models—where we have more oversight on the data that is then used and generated.

Kathy Borrelli: One concern we've heard throughout this study is this: AI systems are increasingly influencing decisions in hiring, lending, health care, policing and even public services, often without Canadians fully understanding how these systems operate or how decisions are being made. At the same time, many of these systems are being developed by large foreign technology companies with limited public transparency. The Canadian data collected usually falls under foreign legislation.

How do we ensure that Canadians retain oversight of AI decisions and ownership of our own data?

Kulbir Colin Singh Dhillon: The simple answer to that is to not necessarily use other so-called competitor products that don't belong to Canada. I don't think that's the easiest answer, because it is moving so quickly. Most companies and organizations are already developing and using large language models—now the prominent description of AI.

This goes back to my second response. Canadian companies—some of which are listed as part of this standing committee—need to be supported in order for us to compete. At the moment, it looks like there's a two-horse race between the U.S. and China, in terms of companies developing large language models. The frustrating thing for me is that we are the global centre of AI research: How do we not have a dog in this race?

With these changes, and with deglobalization, there is a golden opportunity for Canada to break its barriers on restriction and truly compete globally, but it's going to need support.

● (1145)

Kathy Borrelli: Thanks so much.

The Chair: Thank you, Ms. Borrelli.

Madame O'Rourke, the floor is yours for five minutes.

Dominique O'Rourke (Guelph, Lib.): Thank you, Chair.

Thank you to the witnesses.

I'd like to go to Ms. Piovesan first.

My concern is that we're waiting for this AI framework and thinking one framework or one law will do it all, but we're hearing about ChatGPT. Then we're going to get to agentic AI. Then we're going to get to superintelligence. Some witnesses said that we should have an AI conversation in every single standing committee, which I tend to agree with.

Is it one law? Is it several laws? Is there any way this framework will be comprehensive enough? My concern is that, regardless of what we table, people will say that it's too much or not enough. Then we won't move forward.

What are your thoughts on the best approach at this time?

Carole Piovesan: I tend to agree with you. It's not going to be just one framework. It's an overarching governance framework or strategy. An approach to what it means for Canada to properly govern high-impact AI systems in our jurisdiction is important.

I'll remind the committee that we already have laws in place governing certain aspects of artificial intelligence. Depending on the sector, we might actually have more guidance available to those operating.... For example, OSFI guidance has come out. They updated the model risk-management approach for financial services recently, in partnership with the Global Risk Institute and a series of financial operators. They have the Agile framework and the EDGE principles—again, so financial services have a governance framework for the use of AI in various contexts.

We can leverage what sectors are doing in order to inform what the centre ought to do, and to fill gaps. That is an important approach I raised in the ETHI committee last year—looking at different jurisdictions and how they have been modelling, or attempting to put together, an overarching framework. That framework doesn't have to be perfect. It has to create a narrative around what AI governance looks like and what we're drawing from, in terms of sectoral and existing provincial-territorial laws. Then fill in gaps to provide that clarity.

Dominique O'Rourke: Thank you.

I participated in an Inter-Parliamentary Union webinar on AI. They said, much to Mr. Jahangir's point, that data is the most important asset. I'm hearing that data is the new oil. We also heard from witnesses that it may not be possible to have that comprehensive auditability Mr. Jahangir referred to.

Ms. Piovesan, you said that we need an AI assurance market. We're hearing that AI can be verified at the moment it's launched, but with agentic AI or superintelligence, we don't know what it's going to do next.

Do we have that capacity now? What safeguards do we put in place, and how does this evolve over time?

Carole Piovesan: The AI assurance market is meant to address that exact point. We put in place the required professional skills, the technology that's needed, the process, the policy, the law and the framework to get us ready for agentic and superintelligence. That's exactly what the AI assurance market is meant to do.

It's also really core to who we are. Going back to 2017, Canada was the first to come out with an AI strategy and threw money behind it. I very much echo Mr. Singh Dhillon's point about how we are the leaders in AI research. We are also the leaders, in many ways, in AI ethics, AI governance and AI law and policy. It's not law on the books, but the thinking behind it. We should leverage the different values and skills we bring to Canada to get us ready for rapidly emerging technology as it changes.

Dominique O'Rourke: Mr. Jahangir, do you have something to say about the comprehensive auditability? Does it exist now?

We don't want to be researching and getting everything so perfect that we miss the boat on the commercialization and adoption.

● (1150)

The Chair: You have about 30 seconds for the reply.

Hamza Jahangir: We are working on specific initiatives and projects to meet auditability and traceability requirements. A lot of the ability to do that kind of audit, that governance, really starts with what the end-user is doing. What is the usage pattern of the AI? We want to ensure we're catching every interaction point and every transaction downstream from that initial user's prompt to a model. We are building traceability and auditability as a fundamental requirement. It's not an afterthought.

From a practical perspective today, we are seeing this. Again, it's evolving on how we're doing it, but it is certainly a foundation upon which we are creating certain levels of predictability and guardrails for end-users who are using this.

The Chair: Thanks very much.

[*Translation*]

Mr. Ste-Marie, you have the floor for two and a half minutes.

Gabriel Ste-Marie: Thank you, Mr. Chair.

Ms. Piovesan, in your presentation and in your exchanges with my colleague Ms. O'Rourke, you talked about assurance, assurance companies and the assurance market.

Since assurance regulation falls under provincial jurisdiction, not federal, have you had any discussions with provincial governments about this?

If so, what were their reactions?

[*English*]

Carole Piovesan: There is a need for coordination in Canada. We cannot have a fragmented assurance market in our country. We're moving towards greater mobilization and harmonization across Canada. Every jurisdiction has an important contribution to make. In fact, we could leverage some of the lessons from Quebec's law 25 and bake them into part of this assurance market. We really have to guard against over fragmentation. It will be extremely challenging, and it will create an uncompetitive ecosystem in Canada.

[*Translation*]

Gabriel Ste-Marie: Thank you very much.

Representatives from TELUS came to tell us that, when it comes to data protection, three things are important.

First, our privacy laws must be enforced.

Second, no foreign law should apply to our data in the specific case where a country demands that data collected here by a company be transferred to it.

Third, no country should be able to interfere with the proper functioning of the system. It's a question of who controls the switch.

Ms. Piovesan, in your opinion, should the government stop sharing sensitive information with companies that do not meet these three conditions?

[*English*]

Carole Piovesan: If I understand the conditions properly, regarding the sharing of information, again, turning to law 25 from Quebec, we have a precedent where you can undertake—in the Quebec context you are required to undertake—an assessment of data sharing. It's a privacy impact assessment where personal information of Quebec citizens or residents is going to move outside Quebec borders. That's a precedent that we have.

We see this in the EU under the General Data Protection Regulation. Where there are particular data transfers, there is a requirement for an assessment. In our existing law. we already have a requirement to establish contractual assurances for any data flow. We've seen this.

There are precedents for enabling and requiring, in fact, an assessment as well as taking into consideration how data flows outside a particular jurisdiction and certainly out of Canada.

[*Translation*]

The Chair: Thank you, Mr. Ste-Marie.

[*English*]

Mr. Guglielmin, the floor is back to you for five minutes.

Michael Guglielmin: Thank you, Mr. Chair.

Mr. Dhillon, I want to return to the discussion we were having about risk a few moments ago. We were talking in the context of our sort of missing the boat with respect to the auto sector and the opportunity to own our own companies, and how you definitely do not suggest that being repeated in the AI industry, especially with respect to physical AI.

Now, what would you say the specific risks are to Canada if a country like China or the United States sets the rules of the game when it comes to the use cases of these technologies? We know both these countries are making this a strategic industry.

● (1155)

Kulbir Colin Singh Dhillon: I think the best way to describe this AI revolution is like this: If we break it up from digital to physical, 80% of it is going to become physical, and 20% may stay digital. If those are the numbers, then physical means sectors, everything from mining to, say, aerospace or space. Therefore, the advancements of AI, both negative and positive, are going to mean revolutions in medicine and in manufacturing. China has already launched several of what it calls “lights-out” manufacturing facilities, and that basically means there's no heating or lighting because there are no humans working in those facilities. I believe Quebec has actually launched the first of its kind in Canada.

I've been here 33 years from the U.K. I've been frustrated for about 33 years about the pace of change here in Canada. If I go back to the Avro Arrow, I think it has a lot to do with the culture that changed in Canada. However, I think we have a golden opportunity because we are the centre of AI research, design and, as my colleague has said, policy as well. We have a golden opportunity to push forward. If we do, we could win. We could truly win because the back end of all of these is critical minerals, which we have an abundance of.

Michael Guglielmin: Scale AI's Julien Billot said publicly that the industry is waiting for a “signal from government”.

Would you say that, in the absence of that signal, the industry continues to sit on its hands—I don't want to say “sit on its hands”—with a lack of clarity? Does it put negative pressure on the innovative side of this or on the commercialization side?

Kulbir Colin Singh Dhillon: I think one of the challenges here is that we sometimes wait for government to support initiatives, but then you do get the RIMs or BlackBerrys that didn't necessarily need government support to scale. You get the Shopifys that didn't necessarily need government support directly to scale. I think we're at that moment. With the announcement of a sovereign fund, with the announcements and the relationships growing in Europe and Canada, and with the reduction of trade south of the border but then trade going global, I think that positions Canada truly to lead at this present moment.

However, rest assured that this is the new game in town, and it's not going away. AI will be an element of every sector. From education, K to 12, to space, there is going to be no sector, no element, that will be free from the implementation of AI, so we must lead on it.

Michael Guglielmin: I want to bring it back to workers for a quick moment.

If the United States, or China for that matter, captures the humanoid robotic industry through acquisition, scaling or standards setting, what would you say that would mean concretely for auto workers, say, in Windsor or Oshawa? Is there is a risk that we start losing productivity and production capacity?

Kulbir Colin Singh Dhillon: As I mentioned earlier, the OEMs in Canada are not Canadian. For the Detroit Three to have facilities in Canada and be able to reduce the head count, they'll 100% do it. Toyota has already mentioned a relationship with Agility Robotics, an American company. The reduction of the head count is inevitable. This isn't an “it could happen”; it absolutely will happen.

However, what we need to do, probably federally, is look at society 6.0. We're currently in what they deem society 5.0. What happened before the industrial revolution, the cottage industries and how have things changed? Now we should be forecasting the next 25 years to make sure we get this right. There will be an absolute head count reduction. There is no doubt about this. Everybody's talking about this. China is leading it. For Canada, it could mean the utopia as we go through the dystopia and the challenges over the next several years.

● (1200)

The Chair: Thank you.

Mr. Ma, you're last in this round. You have five minutes, sir.

Michael Ma (Markham—Unionville, Lib.): Thank you, Mr. Chair.

Thank you to all the witnesses for being here today.

My first question is for Mr. Jahangir. You mentioned the need for a skills development and certification pathway for AI. How do you envision the rollout of these certifications? Are you picturing something like the Oracle or Cisco certifications?

Hamza Jahangir: There are a variety of domains that, from a certification standpoint, we think about. Obviously, there are certifications, training and skills development for people who are in the AI research field, development or engineering to build next-generation AI applications. Oracle, just like many of our peer groups in the industry, relies heavily on digital training, in-person training and then certification paths for those technical professions.

What we are starting to also see sector by sector—which I think one of my fellow panellists mentioned—is a spectrum, whether it's all the way from K to 12 or space work. I'll just pick a sector in the middle, health care: There are now emerging specific skills and specific profiles of knowledge and expertise that are required. For example, for radiologists, we are seeing role-specific and profession-specific...who are going to be trained and certified in responsible usage of AI tools and models, not to replace them but to accelerate their work, to help them be better at analyzing image data, for example, with the power of digital vision-based analysis. Those are the ways that we see it, from a skills and training perspective.

I'll just say that we're early in the game here. This is maturing. This is changing. We have to continuously listen and learn from what actual, real end-users are experiencing, and from how they're using it to adapt all of our strategies to scale, to train and to enable the workforce. I believe we have to do this over the next many years, to help our employees, or even just average human users of AI, to continuously learn what is safe and responsible.

Michael Ma: Thank you.

My next question is for Ms. Piovesan. Earlier, you discussed creating a Canadian AI insurance market centred around responsible AI, in which we turn accountability into competitive advantage. Can you walk us through the use case for this insurance market? Also, based on what we just discussed about AI certification, does that play into the AI insurance market as well?

Carole Piovesan: To take your second question first, it certainly will play into the insurance market. In fact, we actually have a market that's already in development, with certain start-ups that are getting ahead and being supported, in some cases, by global insurance companies in providing AI-specific insurance. As well, we're finding that a large number of S&P 500 companies are starting to report their use of AI in their filings.

We take our fantastic research and move it into commercialization. I agree with what the other panellists have said, that we have to move faster on adoption. We have to move faster on national literacy for AI so that we know how to adopt it appropriately. At the same time, it is really important that we lead this framework we have been working on for years and move it into operationalization.

Singapore is a very interest market, where there has been an effort to take their AI-verified framework and start to identify ways of turning some of those requirements for validation, verification and auditing of those AI systems, into professional certifications that are governed by a body and reported to that body. I think there's a very interesting opportunity for Canada there.

Michael Ma: To follow up on that, your last point was about positioning Canada's brand in AI safety. If you were the marketing manager for this brand, what would you do to launch this strategy? What are we selling, and who are we selling it to?

● (1205)

The Chair: Answer very quickly, please. We're running over time. Thank you.

Carole Piovesan: We're lucky we have an AI minister. We would take that minister and start telling the world about how we are investing in safety and responsible AI, and building on over a decade of investment in those areas.

The Chair: Thank you.

Thank you, colleagues.

Witnesses, we very much appreciate you providing some guidance and insight here today. We're going to suspend for a few minutes.

● (1205)

_____(Pause)_____

● (1210)

The Chair: We are going to start our second hour here.

Welcome to the new witnesses who are joining us. One is online and three are here in the room.

Colleagues, we're going to have the first two rounds of questions but not the third, as we're running a little bit over time, but we're in good shape to get the ball rolling here.

From the Council of Canadian Innovators, we have Laurent Carbonneau, vice-president, policy and advocacy, and Daniel Perry, director of federal affairs.

Thank you very much for being here, and welcome.

Daniel, we saw each other 48 hours ago; it's nice to have you here.

From Hypertec Group, we have Simon Ahdoot, chief executive officer; welcome.

From Photonic Inc, we have Stephanie Simmons, chief quantum officer, joining us here today. “Chief quantum officer” is not a business card I would have seen when I was in school, and perhaps that speaks to where we are at this moment in time.

● (1215)

[*Translation*]

I can confirm that all audiovisual tests have been completed. We're ready to begin.

[*English*]

With that, Ms. Simmons, the floor is yours for five minutes.

Stephanie Simmons (Chief Quantum Officer, Photonic Inc.): Good morning, Chair and members of the committee. Thank you for inviting me to appear today.

My name is Stephanie Simmons, and yes, I am the chief quantum officer and founder of Photonic Inc. That will become a title you see throughout the industry, just like chief AI officer has come through. These things are going to change the world.

I'm also an associate professor of physics at Simon Fraser University, and I'm a Canadian research chair and co-chair of Canada's national quantum strategy's advisory council. I've been in quantum since 2001, so I've a lot to share. I thank you very much for your interest.

Photonic is proud to be a Canadian leader in quantum computing. We were founded and remain headquartered in beautiful British Columbia. Since beginning commercial operations in 2021, we have now raised more than $375 million and have over 160 employees in Canada and in various allied countries. At Photonic, our core mission is to commercialize the next branch of physics and build the world's first commercial-scale, fault-tolerant quantum computer and, as such, build a truly generational Canadian success story.

I'm here today to explain how quantum technologies that we and our peers in the sector are developing will complement and accelerate the fantastic work going on in the AI sector; give us all a preview of where the puck is going so we can prepare; and outline why supporting and anchoring Canada's quantum companies and talent is not just vital for the quantum sector but also for the AI sector and to ensure that the two sectors can combine to be a key driver of Canada's economic prosperity and national security.

What's quantum? Semiconductor physics has given rise to all of the computational gains and economic output we see today. Quantum technologies use the next set of physical laws that we can leverage for gain. They involve harnessing quantum mechanics to create capabilities that are beyond those of conventional, classical physics, like binary—zeroes and ones—physics. This will enable a range of highly impactful, dual-use technologies across quantum computing, quantum communications, quantum sensing and others, that will in turn unlock use cases in sectors across the board. This is a platform capability that offers exponential speed-ups or otherwise unobtainable capabilities.

Quantum technologies will not replace classical computing systems, which power much of our current digital infrastructure, including AI. However, they will work with them, enable them and make them better, just like the introduction of the airplane did not replace cars, trucks or ships in our transportation system but unlocked completely new capabilities, such as going to the moon, GPS and everything else on top of that. It also resolved formerly difficult and resource-intensive issues.

Similarly, you probably will not have a quantum laptop, but you might have your life saved by a drug that was designed with a combination of quantum and AI systems.

By themselves, quantum technologies offer exponential speed-ups in key algorithms and advantages in key algorithms, including some of the algorithms underpinning AI. The math of quantum is the math of AI, and they are expected to create a market worth hundreds of billions of dollars and hundreds of thousands of jobs in Canada in the next 10 years.

Excitingly, and relevant to the topic here today, quantum computing will be an enabler and accelerator of AI. For example, quantum computers will accelerate key parts of classical AI and machine learning that are currently bottlenecking and driving significant power consumption.

Quantum is far more power efficient. Quantum computers will also be able to improve AI decision-making and solution diversity of AI capabilities, specifically in places where the data needs to be very high in accuracy, and this covers the material world. Writ large, quantum can play a really key role in building out large chemistry models and large physical models beyond the large language models and capabilities of today.

The synergies work in the other direction as well. AI is across the entire quantum stack. It's right down on the metal, driving the quantum bits that we use, and it can also make it all the way through error correction to the algorithms becoming more reliable and efficient by using AI capabilities.

Given Canada's early investment and leadership in both of these sectors, it's critical that both quantum and AI continue to be supported in the government through responsible policies, programs and funding and its role as an early adopter and strategic anchor customer.

● (1220)

To be clear, quantum is at an earlier stage of its maturity cycle relative to AI, but imagine if we could go back to 2018 and predict that the AI wave was to arrive within the next few years. This is exactly the position we are in with quantum. We have a few short years to prepare for the wave that is to come. Fully deployed utility-scale quantum computers are not currently available in the market, but the industry is making incredible progress and they will arrive within the next few short years.

This gives Canada a real opportunity to cement its position as a global leader and ensure that we don't repeat the well-trodden path we heard about earlier this morning of technologies being invented, grandfathered and developed in Canada but commercialized mostly abroad.

The year 2025 marked an inflection point in Canada's leadership—

The Chair: I'm sorry to interrupt. I let you go a little over time, but I'm sure that members will return to you during the question rounds and you will have an opportunity to share a little bit more.

Stephanie Simmons: I was one sentence away.

The Chair: That's perfect. We'll get that sentence done in a little bit.

Mr. Perry, I will turn to you now. The floor is yours for up to five minutes.

Daniel Perry (Director, Federal Affairs, Council of Canadian Innovators): Thank you, Mr. Chair.

Good afternoon committee members.

My name is Daniel Perry. I'm the director of federal affairs at the Council of Canadian Innovators. I am joined by my colleague, Laurent Carbonneau, our vice-president of policy and advocacy.

The Council of Canadian Innovators is Canada's 21st-century business council. We represent over 175 Canadian-headquartered, high-growth technology companies operating across a number of sectors, including artificial intelligence, digital infrastructure, advanced manufacturing and defence.

As we take a look at the conversation today, I want to step back and look at the global economy. It is no longer neutral or rules-based. Leading economies are actively shaping markets and securing control over critical technologies, value chains and standards. They are doing this by leveraging economic policies and industrial strategies. We have seen this recently in the United States' national security strategy, where America is treating technological leadership, control over critical technologies and economic strength as core instruments of geopolitical power.

AI sits at the centre of this shift as a foundational layer of economic growth and national security. Global economies are becoming increasingly driven by intangible assets. This includes data, intellectual property and algorithms, which determine where value is created and captured. These assets alone make up roughly 92% of the S&P 500 and are approaching $100 trillion in value globally.

In an environment like this, firms that define and capture greater returns are those that are leading out of the gate, and it's the same with the countries that are hosting these competitive firms. This is important context for the committee's work.

Canada helped pioneer modern artificial intelligence, as we heard earlier on the panel today. However, as we outlined in our submission to the minister's AI strategy task force, we have not translated that leadership into scalable companies or sustainable economic advantages. This pattern is familiar, as we've seen it before.

We generate the ideas here but we fail to commercialize them. Early-stage scaling firms leave this country and are defined by others. With that, they take their IP, data and decision-making power outside Canada. At a time when our peer countries are moving aggressively, the continued delay in releasing Canada's AI strategy is not neutral. It is actually putting Canadian firms further and further behind in a race where speed, scale and early market positioning determine long-term winners.

As we outlined in our task force submission, we had three points. The first is enabling Canadian firms to scale here. The core barriers are well understood: access to capital, access to customers and access to talent. Without addressing these, Canadian firms will continue to grow inside foreign systems and we will lose control over long-term economic value.

Our second recommendation focused on building sovereign AI infrastructure. This is compute, cloud capabilities and data, which are all fundamental for economic infrastructure of the 21st century. Without domestic capacity, or control for that matter, both our companies and our public institutions are becoming dependent on foreign platforms and foreign legal systems.

Our final recommendation focused on high-value applications within Canada. These are areas where Canada has its natural strengths and an industrial base to perform under. These priorities align with what we're hearing from the government in its forthcoming AI strategy, as well as the details in the spring economic update.

The issue in Canada has never been identifying the priorities; it has been execution. One of the reasons we're struggling is we have key policy instruments that we are simply not using. If we take public procurement for instance, it is one of the most powerful tools that all governments have at their disposal but we're not leveraging it properly. Domestically, procurement makes up 14% of our GDP. This will validate Canadian technology when other governments purchase it, as well as help firms scale here in Canada.

There is also foreign direct investment. Canada's approach has largely been volume-driven rather than outcome-driven. Our success has been measured by how much capital enters the country, not by what we retain in terms of those intangible assets. Again, that's IP, data and the long-term economic value.

In strategic sectors like AI, it creates a real risk to our economic sovereignty, as well as our national security. If Canada does not reorient its approach, we risk becoming a branch-plant economy and we will miss one of the most important technological transitions of our time. The window is still open. There is time to act. What we need now is a coordinated strategy that aligns economic policy, industrial capability and national security objectives around one common goal, and that is building and scaling Canadian firms that own and control their assets.

● (1225)

This will set up the economy of today, tomorrow and for future generations.

With that, thank you. I look forward to your questions.

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

Mr. Ahdoot, the floor is yours for five minutes.

[*Translation*]

Simon Ahdoot (Chief Executive Officer, Hypertec Group Inc.): Thank you, Mr. Chair.

Thank you, committee members.

My name is Simon Ahdoot. I'm the president and CEO of the Hypertec Group. We've been in the IT industry for 42 years, since 1984. During that time, we've really seen every phase of IT evolve. Over the past 20 years, we have developed significant expertise in data centre construction and advanced computing.

What this allows us to do today is to be well positioned to meet the computing needs related to AI—which are really quite different from what we've seen in the past—while maximizing the sustainability and performance of these systems.

[*English*]

Speaking about AI, in general what we see as the key importance for artificial intelligence is first, overall, to fill a productivity gap. I was just walking down the road here in Ottawa. There's a lot of maintenance that needs to be done, but it's expensive. There are a number of resources we can put to it. If we could have that done more productively and more efficiently, then it would do well all around.

A lot of the time, we're importing a lot of things from abroad. If we could do them more efficiently here, that would be a way for us to make sure that we could deliver more competitive products and, frankly, not have to bring them in, but generate them internally.

We already have the capabilities, overall, for digitization and computer systems. What AI does, in large part, is reduce the friction in interacting with them.

For example, my wife is an audiologist. She will help people who have hearing loss, but she spends a significant portion of her time entering the information into a system. You have a professional who's very caring and capable in helping somebody who has a disability, and instead of interacting with people, she spends a lot of her time interacting with the software and the computer system. AI can help, in large part, to reduce that time and let the computer do more of its own work afterward, so constant human intervention is not needed for getting it done.

In order to develop those capabilities, it's going to be really important to ensure that infrastructure is available. Having those tools available to a population will enable us to make sure we can gain those productivity improvements that will help us be more competitive and, frankly, improve quality of life. That's AI as a whole, and the accessibility of it.

We talk about AI sovereignty, which is one of the big topics that's coming up right now. The first dimension is that question of accessibility. Do our citizens have access to those tools in the first place? Here in Canada, I think most people can access some basic tools, but there are still other considerations that make it a little bit more difficult.

The next level is commercialization. If we look at AI as an industry in the future, what proportion of that industry is being produced here as opposed to consumed here? Basically, are we a net consumer or a net producer of artificial intelligence services?

If we are a net consumer, suppose it is a $100-billion industry and we could consume 25% more than we produce. That would mean that $25 billion leaves the country every year. This can get very material. Canada has an opportunity to become a net producer, so it can actually help supply the world. There are additional advances to that, which I can go into afterwards.

The next level is very much one of the key topics that we must address. We talk about questions of confidentiality and protection, such as for data sovereignty. If we are completely dependent on the outside, there is a risk that they could withhold access to those systems.

There is also concern around the data. We talk about access to the data. When you look at that question of data sovereignty, artificial intelligence thrives on access to that data. Your data sovereignty is only as good as your AI sovereignty for whatever data that AI is accessing. It will be very important to consider maintaining the ability, developing the ability, ensuring that we're always able to stay competitive with the access, and being able to produce at least a portion of it locally, so that we can help succeed in the future.

Going back to that piece on commercialization, there's a value chain that goes into AI. In Jensen's speeches lately, he has been talking about this notion of a five-layer cake. It starts with power, goes to the data centre, then to compute, then you get into the models and then the applications.

The largest piece of that is going to be applications. At the end of the day, they're the ones who buy all the other layers underneath. Right now, we haven't settled what those winning applications will be. There's an opportunity for Canada to take a position in becoming the main provider, or at least an important provider, of those applications, and position ourselves as a net producer for the world. Being able to foster that is going to involve creating the infrastructure and creating the systems so we can actually deliver that.

● (1230)

When we look at the opportunity for Canada, currently the leaders in commercialization are the U.S.A. and China. I don't see that we'd be able to completely unseat them, but we can take a really important role. I see that we're first tier in AI research. We understand the importance of sustainable development, and we have an eye to safety, AI safety, and making sure that it's a net positive for the world.

What I see is that we have an opportunity to demonstrate to the world how to effectively enable AI in a way that's safe and sustainable and set that model so everybody can help do it the same way.

The Chair: Thank you very much.

Mr. Falk, the floor is yours for six minutes.

Ted Falk (Provencher, CPC): Thank you, Mr. Chair.

Thank you to all of our presenters today. I appreciate the testimony that you've provided to this committee.

We've heard a lot about sovereign compute and Canadian-controlled infrastructure.

In practical terms, what does AI sovereignty mean to you, Mr. Perry?

Daniel Perry: I would say that what it means to us is that we control our data, that it is stored here in Canada, that it's transferred here in Canada and that we have control over it.

Something that is very concerning, not just to CCI but also to our members, is the U.S. CLOUD Act, which is how the U.S. government can compel companies to provide data that's stored on their servers. Even with a Canadian company, my health data might be stored on a U.S. server, and the U.S. government can demand that it be provided. That's obviously forgoing not just my privacy but sovereignty as well, when we get to more technical issues of national security and other parts of how the government is working.

For us, it would be leveraging and finding opportunities to build sovereignty here in Canada and building a stack that is mostly Canadian, because we don't have the technology right now to be able to build out a full stack, but we want to make sure that we do the best we can to ensure that we're protecting Canadians, protecting their data and protecting their privacy, and that starts with sovereignty, so we need to own it. We need to be able to control it if we want to be able to protect ourselves.

Ted Falk: Thank you.

We've heard from a lot of witnesses during this study that we do a lot of developing here in Canada. We spawn a lot of ideas here, but when it comes to commercialization and expansion of those ideas, it usually lands up on foreign soil somewhere.

When you consider the resources that we have here, whether IP or people, what do you think our strategic or competitive advantage as a country is?

● (1235)

Daniel Perry: We are a very well-educated country, and we have seen that. That's why we are some of the greatest founders when it comes to artificial intelligence.

The challenge is how we commercialize it. Our IP practices in Canada need to be strengthened. We need better ways for people to come up with these great ideas and then transition them into companies and be able to grow them here.

One of the steps is access to capital, making sure we have capital systems in our country that can support these businesses, whether those are the banks, private investors or even the government to a certain extent. The next part is finding customers. One of the biggest challenges that our members find is selling to our Canadian government, and that is one of the biggest opportunities.

As I mentioned, procurement in Canada across federal, provincial and municipal governments makes up about 14% of our GDP. If we can raise that even slightly more towards Canadian innovators and Canadian companies, that will have a large effect.

Another challenge is that, when our companies go to sell abroad, the first question they get asked is, “Are you selling to the Canadian government?” and then the follow-up question is, “Why not?”

The challenge is that it's a very complicated process that favours the incumbents and favours bigger companies because of the hoops you have to jump through in order to be able to sell to the government. To be quite frank with you, a lot of scaling firms don't have the capacity, and they don't have the time. When we are making buy Canadian policies, we really need to understand who we're targeting these towards and make sure that the requirements in them meet the needs of the companies, understanding what talent we have here in Canada, and making sure that we're putting that talent forward and ensuring that they have access to the procurement process.

Ted Falk: In your comments, you made a reference to a branch-plant economy here.

Do you want to expand on that idea a little bit? What do you mean by that?

Daniel Perry: The branch-plant economy is when we have an economy here, but the assets don't stay here. The IP is stored elsewhere, in America, China or Asia. We do all the work. We come up with the ideas, but they leave the country. It goes back to the home country of the headquarters of the company.

That's why it's very important when we're making decisions about what a Canadian company is and how we support it. We need to understand where the management team is. Are they here in Canada, or are they elsewhere? Is the IP stored here? Where are the profits going? If they're flowing back to another country, that's not really providing value to Canadians.

At the end of the day, as I mentioned, a bulk of the S&P 500 is made up of intangible assets like IP, data and brands as well, so we really need to have a better understanding of what those assets are and how to better leverage them.

Ted Falk: We've also heard testimony that the industry and the folks working in AI desperately want regulations, and they want to know where the guardrails are. In the minute we have left to talk about this, can you present some ideas to this committee of where the guardrails should be and what boundaries we need to establish when developing AI policy?

Daniel Perry: When it comes to the guardrails and boundaries, I think we need to introduce something. At the end of the day, in order to move forward, we need to have agreeance as a country on where we're going. How we got here today.... We have agreeance on speed limits and we have agreeance on which way we travel on a road.

There need to be some basic guardrails in place because, at the end of the day, AI is changing rapidly. At the beginning of the year, AI looked different from how it looks now. We need to get the framework in place to help these companies move forward so that we can regulate them to a point that they can continue to grow but we're not over-regulating them. Having a foundation in place is a good step forward.

The Chair: Thank you very much.

Mr. Bardeesy, the floor is yours for six minutes.

Karim Bardeesy (Taiaiako'n—Parkdale—High Park, Lib.): Thank you.

Thanks to all the panellists.

I have a few questions about company formation and capital accumulation, and a couple of questions about the relationship between AI adoption and worker displacement.

We heard from the previous panel about the prospect of an assurance and insurance economy around AI. Now, from this panel, we're hearing more about the opportunities around data and data sovereignty, and their relationship to AI sovereignty.

I'll start with the CCI folks. What are the specific opportunities you're seeing around company formation that take advantage of some of the specific and unique data pools that might exist in Canada or elsewhere?

Laurent Carbonneau (Vice-President, Policy and Advocacy, Council of Canadian Innovators): That's a great question. It's something we actually talked about in our report to the minister in the scope of his task force.

The first piece, which Daniel walked us through, is the pillars of what we recommended. We said to look overall at the picture of scale, because if Canada isn't a place where you can scale a business, it's not going to be a place where you can scale an AI business.

The second piece is sovereignty. We need to be sure that we control our own light switches and plumbing to the maximum extent that we can. That still makes sense commercially.

The third piece, going to Mr. Falk's question, is, what assets we have that are unique. To pick up on Simon's comments earlier about the five-layer cake, the application layer is also incredibly reliant on really high-quality, domain-specific data. We have really good data in Canada. Those pools of data are typically not well governed. They are very split and there's a lot of public sector data that isn't well leveraged that we could be leveraging a lot better.

In the scope of the AI strategy that I understand is forthcoming, one thing that needs to be highly prioritized is how we make public sector data that is domain-specific and high-quality, like geospatial data, agricultural data and mobility data, available to Canadian innovators in a way that helps them scale their businesses and creates a unique selling point for Canada.

● (1240)

Karim Bardeesy: What private sector, data-safe sources are most germane to this? Obviously, we have some concentration in the economy, which creates some issues, but it also creates pools of data that are maybe larger than they are in some other sectors.

Laurent Carbonneau: That's a great question. I don't want to get too much into the weeds here on what might or might not be appropriate. Companies that own their data are free to make decisions about how they make that available, subject to privacy laws, etc., but we have a very data-rich financial sector and other sectors throughout the economy that are more regulated than others and might have access to lots of really rich data.

We caught the tail end of the last panel on industrial AI and physical AI. There's really interesting work going on in the robotics space in Canada. I think we're underrating ourselves as a player in that space, and there's some really good potential there. How that can be leveraged more broadly is, I think, an open question. It would be an interesting avenue to pursue a more fulsome discussion.

I would definitely start by looking at these places, like telecoms and the financial sector, that have very data-rich assets but are quite regulated. At this point, I don't think we quite know what to do with them.

Karim Bardeesy: Thank you very much.

I'll move on to Mr. Ahdoot and Ms. Simmons. I have a couple of questions.

From your perspective as company leaders or founders in your spaces, when you see AI technologies available in your spaces, how do you think about the adoption of those technologies and their relationship to your present or future workforce, including workers you might not need to hire because of the adoption of these technologies?

Simon Ahdoot: I think that when I look at the adoption of AI technologies, what I really look at is the additional headroom it gives me for the capacity I have, and my ability to be more competitive in delivering services, because in the IT space, in the technology space, things can move really quickly. AI as a technology that's really mainstream is maybe three or four years old, so that's really quick for such a huge impact. The ability to navigate that quickly is critical.

What I'm seeing directly within my organization is to be able to streamline a lot of processes, accelerate the change and make it so we can adapt to it much more quickly, scale up more quickly, so we can respond to those demands as they come, without needing to walk into that very extensive time it takes to build up capacity, so we can accelerate the building up of capacity and deliver better service. We wouldn't want to scale down, and we wouldn't want to increase the time to scale up too much. That's the main thing.

The other thing I would hope is that if all the other pieces that come around this—the accounting work and the legal work—accelerate, that would be very valuable. I just saw an example where we're working on a new facility and we work with a firm that handles the design. They leverage AI and are able to turn around a new design within a few days. We're able to be much more responsive, much more rapid, in finding the right design than we would be otherwise.

Karim Bardeesy: Thank you.

Ms. Simmons, I'm curious about the frictions or non-frictions in the quantum space, and the use of AI to do augmentation in the same kind of way that Mr. Ahdoot spoke about.

Stephanie Simmons: Absolutely. You'll hear across many different industries that it allows for a change of work, not just an expansion of work but a change. We've not reduced head count accordingly. We've actually accelerated our output. It's not just accelerating our staff, but also we are very excited about what quantum can do to further accelerate AI.

What I'm trying to communicate here is that this going to be a feedback loop where better computational structures, more fit for purpose, are on the horizon, which will change the capabilities further. It's one of these cycles where change is one of the constants of our lives, and we're getting good at and have to remain good at being responsive and adaptive to change. If anything, it's just allowing our staff to soak into that and to compete more in the global setting.

● (1245)

The Chair: Thanks very much.

[*Translation*]

Mr. Ste-Marie, you have the floor for six minutes.

Gabriel Ste-Marie: Thank you, Mr. Chair.

I'd like to welcome all the witnesses.

I'm going to start by addressing a comment to Ms. Simmons.

Ms. Simmons, thank you for your presentation. It was very insightful. In the coming months, our committee may conduct a study on the potential industrial applications of quantum computing and, more broadly, the second quantum revolution. We can come back to this then.

My questions will be for the Council of Canadian Innovators representatives. I'm also going to ask Mr. Ahdoot from the Hypertec Group to share his perspective.

Shared Services Canada has provided data on digital service contracts to the Standing Committee on Government Operations and Estimates for the past year. The value of the contracts is $3.2 billion. Half of them were awarded to foreign companies or subsidiaries of foreign companies. Half of the local contracts involved programming work on foreign platforms. We cannot, therefore, speak of sovereignty.

Realistically, what can be brought back home in all of this?

Laurent Carbonneau: Thank you for the question. I will answer in English to provide a slightly more technical response.

We just published a report called “Buying What We Build”. It's about public buying in Canada and what we can do with it.

[*English*]

To give a more fulsome answer, there are things we can do. There's a new buy Canadian policy in place that I think will be very helpful in moving the needle on this. Our recommendation to the government is that we treat the Canadian content portion, in services, of the policy as reflective of the innovative and value-added capacity that is added to the economy by companies doing business here and doing business with the government. In particular, we want to see that the Canadian content provisions for services reflect investment in IP, reflect investment in R and D in the country, reflect Canadian control and management, and reflect control of data.

I think if you added those criteria to how bids are assessed, you would see a switch to a more sovereign, more innovative and more value-added digital stack in Canada as part of the public service.

[*Translation*]

Gabriel Ste-Marie: Thank you.

Mr. Ahdoot, what are your thoughts on this?

Simon Ahdoot: A big part of the challenge really revolves around how people become aware of products. That's one of the challenges that isn't often mentioned. American brands, foreign brands, are often consumer brands, so they're very well known. Marketing is on a different level. When you're looking for a computer, for example, you will often think of Dell or HP. You don't necessarily know which brands are more business-focused. I would rephrase the challenge slightly. How can we raise awareness of companies that are truly there to serve business and government so that we can give them equal footing in a competitive environment?

Things and needs change. Knowing what the needs are and being able to influence decision-makers is helpful. In IT, the following situation often occurs. A product is designed by one of the major American players. Then, a call for tenders that includes these new requirements is issued. We're able to do that, but not necessarily as quickly.

So you have to be at the table to know what's coming and be able to bid and meet the requirements. Personal computers have been around for a long time. Can they be managed remotely, or not? What are the devices? It can take months to meet these requirements.

Rather than being surprised by what the requirements are, we need to work in partnership to develop Canadian capabilities. I think this will greatly benefit Canada, while allowing us to be competitive abroad.

Gabriel Ste-Marie: Okay, thank you very much.

You alluded to the fact that the government has adopted a buy Canadian policy, somewhat similar to the U.S. buy America policy. It's a commitment, but it's not bound by law. It's just a commitment based on the government's word.

Are you starting to see a change? Do you think it will take legislation to make sure the government does what it says?

My question is for the representatives of both groups.

Laurent Carbonneau: That's a very good question.

Honestly, I think it's a bit early for me to give a definitive answer on that. This has only been going for four months. I know the government now has a figure representing the value of the contracts awarded under this policy. I don't recall the exact number. I'm sorry.

I think it's a bit early, especially since we don't know exactly what it looks like when it comes to services. That's what interests us most. My concern is that, if we legislate a little too soon, we won't have learned all the lessons we should have learned before doing so. We should see how things play out a little more over the coming months and years before legislating on this.

● (1250)

Gabriel Ste-Marie: Okay. Thank you.

Mr. Ahdoot, what are your thoughts?

Simon Ahdoot: I agree that it's a bit early to see results. It's especially important to understand that, in the IT sector, it's really about everything related to graphics processing units, or GPUs, and artificial intelligence that's growing significantly. We haven't seen many government projects in this area over the past year.

In my view, government procurement is a way to ensure that Canadian firms are more competitive internationally. It's not just about the volume of purchases or the products entering Canada; it's about fostering the maturity of Canadian companies so that we can succeed abroad.

One of the witnesses, Mr. Perry or Mr. Carbonneau, said that if we go abroad to bid on major contracts and say that we don't do much business with the Canadian government, that we don't work on these products, it creates a certain issue. Being able to position ourselves for government contracts will go a long way toward ensuring maturity and market positioning.

Gabriel Ste-Marie: That's very well understood. I hope it will be understood within the government.

Thank you very much for your answers.

Thank you, Mr. Chair.

The Chair: Thank you, Mr. Ste-Marie.

There will likely be one minute remaining after Ms. Borrelli and Mr. Bains have spoken. If you'd like to use it, please let me know.

[*English*]

Ms. Borrelli, the floor is yours for five minutes.

Kathy Borrelli: My question is for Daniel Perry. As you likely know, Jim Balsillie came to committee on April 30. When asked about the Liberal government's performance over the last year with AI, Mr. Balsillie stated, “I would score that it did not attend. You have to understand this is a race, and we haven't gotten out of the locker room.”

What would your grade be for the current government, and do you believe Mr. Balsillie's comments reflect a broader concern that Canada is falling behind in the global AI race?

Daniel Perry: It's always hard to go up against Jim, so I'll let him speak for himself.

I do think we find ourselves in a real moment and a real challenge here. As I said in my opening remarks, the delay from the government on the AI strategy is putting our firms behind. We are seeing other countries scale up and innovate faster, and we are falling behind. This really is a moment for a generational change, not just for our generation but for future ones as well.

Once the AI strategy does come out, we are going to have to hit the ground running. Groups like the CCI and others are here to champion all Canadian companies to make sure they can meet the moment. We have a lot of great talent, great ideas and great companies, and we really want to make sure they are in the best position possible. We believe the AI strategy will be a good step towards this. We just need to see the details.

Kathy Borrelli: Adoption remains a challenge, particularly among small and medium-sized businesses. What are the biggest barriers preventing Canadian firms from integrating AI into their operations today? What role should government play in accelerating that adoption?

Daniel Perry: Government really needs to be on the forefront of this. Government has the tools and capabilities to be an early adopter and to signal to the market that AI is not something we should be scared of; it is a tool to help our productivity.

The government should be the first customer in the door. They should move forward first. When the private sector sees the government moving, that is a sign to them, a green light.

I would like the government to be that first customer, to find Canadian companies to work with and provide solutions. We have a number of great Canadian companies. We have the privilege of representing 175 of them, but there are many more out there.

Laurent Carbonneau: Just to add one thing, I think you've put your finger on the problem: Canada's economy is structurally extremely reliant on SMEs. SMEs are great, but our problem is that we can't grow these SMEs into larger businesses.

This is the challenge that CCI is here to address. We want to turn start-ups into big scale-ups that can compete internationally with the biggest of the biggest. That's what we struggle to do as a country because too many of our scale-ups get bought out and move to the States.

When we ask our companies why they are in Canada, they almost never say this is the best place for them to grow their businesses. They care about the country and want to stay here. They're invested here. Their families are here.

At CCI, we want to get where people say this is the best place to do it. That's a policy question, not a culture question.

● (1255)

Kathy Borrelli: Do you have any other practical recommendations that government could use to improve Canada's AI ecosystem?

Daniel Perry: A big part of it is the buy Canada piece, being the first customers and getting those purchase orders out the door to companies. Grants are great, but what really helps businesses is having those contracts. They can not only be given better terms when they go to banks but also be reassured when they sell abroad.

As I said, the first thing to find out is why the Canadian government is not buying from them. Instead of having to do that awkward dance, they can confidently say that the Canadian government is buying from them, and others should as well.

That is one of the first steps. I think it would create an environment for capital to grow here and would make it easier to invest.

Kathy Borrelli: Thanks so much.

The Chair: Mr. Bains, the floor is yours for five minutes.

Parm Bains (Richmond East—Steveston, Lib.): Thank you, Mr. Chair.

Thank you to our witnesses for joining us in this discussion.

Ms. Simmons, there have been challenges around scaling for decades, when businesses want to expand. Can you shed some light on how the modularity of Photonic's industrial design appeals to global markets?

Stephanie Simmons: It's wonderful. I think the whole landscape is shifting. We can hit bigger scales because of the tools we have. This is now a global marketplace, and Canada can compete.

There are glimmers of exactly what was shared in the previous comments. This is a wonderful place to build a business—almost. We have amazing talent. We have an amazing quality of life and a competitive spirit that can win if we double down on it.

The world wants to buy from Canada. We have a brand that is a competitive place to start from. I agree with the other comments—we need to buy Canada in a way that lets the rest of the world buy Canada.

One of the programs accelerating the entire quantum industry is the U.S. DARPA QBI. We should look to it, and we have looked to it. I'm so proud of the Canadian response to build a Canadian quantum champions program and to use those same kinds of instincts, which are to learn and to buy from Canadian businesses, and to put them into the position where they are then able to sell not just to the Canadian government, but also to other allied nations and beyond.

These programs are just getting started, and they're phenomenal.

Parm Bains: Ms. Simmons, you mentioned the U.S. There was a report by Bloomberg indicating that “Almost half of the US data centers planned for this year are expected to be delayed or canceled...[largely due to] the shortage of electrical equipment...transformers...and batteries.”

How will the architecture of Photonic's design be able to manage these kinds of shortages and bottlenecks? Maybe you can expand on that, and then speak to the challenges that exist in scaling AI-ready data centres in Canada.

Stephanie Simmons: I can speak to how quantum will help with a piece of that puzzle. I will give you an interesting data point. It would take more classical bits than there are atoms in the universe...than it would to encode 300 qubits. Just from a pure information density...quantum unlocks something that we have never ever seen before. Moreover, for Photonic's architecture, it would take less than 30 kilowatts to drive that kind of computing capability. Let's just think about what that means. This is what nature uses to compute, and we are going to be leveraging that for humanity's benefit. It does still take some time. We have some work to do, but the energy conversation shifts dramatically on a quantum platform.

Parm Bains: I'll go to Mr. Perry. In budget 2025 the government announced $1.7 billion to recruit top international researchers. What federal programs or policies could further strengthen recruitment and retention in the AI space, in your mind?

Daniel Perry: We are proud founding members of the global talent stream. That is a program that helps companies bring highly skilled individuals into the country to address the very specific challenges that they're having. I think it's leveraging programs like that and finding places where we can attract Canadian talent back to Canada. Like I said, we have really great institutions here. I think of the Waterloo region, for instance, with the presence that BlackBerry created; it really has become a hub for engineering. We see lots of those graduates go south of the border. A little bit changed just recently, but broadly speaking we need to find a way to bring them back.

That is creating opportunities for them here to create businesses that allow the businesses to scale here, but also allowing for competitive compensation packages as well. Also, it's just ensuring that we have an environment that entices them to stay here and build a business here.

● (1300)

Parm Bains: I'm from British Columbia. We have a lot of strength in B.C. in this space. How do federal investments in research, infrastructure and talent contribute to what we ultimately want to achieve as a commercialization and industry success?

Daniel Perry: I think what we need to do on that front is not just look at the amount of money we're spending, but look at the outcome—going back to the intangible assets of where IP is being generated, where it is being stored, where the data is being stored—and understanding how we are building for the economy of tomorrow. We do have lots of those strong assets, but when they reach the point of scaling and growing, they're leaving Canada. We need to find opportunities and ways to keep them here that create a better environment for them to grow.

The Chair: Thanks, Mr. Bains.

Witnesses, thank you very much for availing yourselves to us today. We appreciate your input.

Colleagues, this is the end of the fourth week of four in a row. We get two at home and then four or so back here. Rest up. We're going to continue this conversation when we return with some other businesses before us, but I think it's been an incredibly productive month's worth of meetings here. I appreciate everybody's collaboration and contributions as always, and I'll look forward to picking this up when we return in a few weeks.

Thanks very much to all members of the House of Commons support team as well.

The meeting is adjourned.