[00:00:01 The CSPS logo appears on screen.]

[00:00:04 Tom Dufor appears in a video chat panel.]

Tom Dufour, Statistics Canada: Good afternoon, and welcome back to the 2022 data conference on Driving Data Value and Insights for all Canadians. Good afternoon and welcome back to the 2022 Data Conference, Driving Data Value and Insights for All Canadians. We hope you enjoyed the first set of sessions this morning. Just a reminder that we are taking questions through this webcast platform. In the upper right hand corner of your screen, please click “participate” and you can ask your questions from there. Now it is my pleasure to invite Taki Sarantakis, the President of the Canada School of Public Service to introduce our next fireside chat. Taki over to you.

Taki Sarantakis, Canada School of Public Service: Thanks so much, Tom. And welcome back everybody. Hope you continue to enjoy the conference. So, today in this panel, we are going to look inside now. We've spent some time talking about data generically, talking about data in a broader context, but with this panel, we're going to spend a lot of time looking at some of the mechanics within the government of Canada on data. And we have three wonderful speakers for you that I will introduce actually one at a time. So, I am going to start with Canada's top head honcho on data, the Chief Statistician of Canada, Anil Arora. And I'm going to ask Anil to briefly talk a little bit about the role that his organization plays in data, and then I'm going to do the same with our other two guests, and then we'll get into a discussion. So, Anil over to you, my friend.

Anil Arora, Statistics Canada: Well, thank you very much Taki, and it's an honour to be with you and my fellow panelists. I would say we've had a traditional role as a statistical agency, obviously dealing with huge volumes of data, converting them into insights. And we are the ones put it out. People would say, that's great. That must be the truth. And off we go use it and we're off. I think, but more and more we're seeing ourselves playing a data stewardship role. In other words, it's now a partnership. It's now a team sport. Data come from so many different sources and those sources are just getting even more prolific. So, we're focusing a lot more on turning our mechanics that we use inside really as services outside. So, we're now trying to add value to how society, how the governments and even the private sector start to make better use of data in responsible ways.

And that just means that we're building more resilient and sustainable frameworks. Things like necessity proportionality, ethical frameworks, good governance privacy protection confidentiality. How do you deal with cybersecurity and the de-identification, anonymization of data? How do you start to think horizontally? How do you link data sets and un-duplicate them? How do you use good standards and definitions? Understanding the metadata behind it. And we're starting to put together tools and platforms and using them as enabling services for the rest of society and government. And I would say the last thing we're doing is promoting and communicating

so that we don't have polarized discussions, but actually people understand the value of data and why it matters to them.

Taki Sarantakis: That's a terrific overview of some of the amazing things that Statistics Canada does for us in Canada. I'd just like to hit on one point for the audience, Statistics Canada, since its origin, when it's been the agency of record for data and information. I don't know how many of you know this, but outside of the government of Canada, these decisions are used by businesses, by provincial governments, by municipalities, by school boards, to determine everything from where we should have hospitals, how big a school should be, where hospitals need to be modernized, where maybe schools need to be consolidated, et cetera. So, it's one of the unsung services that the government of Canada provides to all Canadians through the different orders of government. Our second guest is Mr. Francis Bilodeau, the relatively new Associate Deputy Minister of ISED. And ISED does a lot of data plumbing within the government of Canada. Mr. Bilodeau, over to you to give us a little overview of some of the highlights of what data means in your world.

Francis Bilodeau, Innovation, Science and Economic Development Canada: Sure. Thanks Taki. Pleasure to be on the stage with all of you. ISED does a number of things. Number one, we are in many ways the department that interacts with business and that sets the market framework policy, the rules. So, the rules are really important, like rules around how we think about privacy, how we think about competition and what that means in the modern world. How do you establish rules of the road that will allow innovation, but will also protect citizens and provide, I guess, a global competitive advantage for Canada, is part of our thinking. We also work with industry on a lot of emerging technology. Things like the Pan-Canadian AI strategy, how do we develop a Canadian competence in areas that will drive the future of data, the future of technology and position us for success?

We're also the regulator of the telecom industry. And so, we know internet and capacity and the infrastructure that underpins it is critical to us being able to be inclusive around how we use technology and allow us to have the speeds and the capacity we need to leverage data. I think I'm also wearing a few past hats. I was also before this, the CIO for the government of Canada for a period and early on in sort of this government's life, heading up the results and delivery unit at PCO. So, we've been around various facets of data, from how do we use data for policy decision making? How do we build the plumbing within the government? And now how do we enable business to thrive in a data and digital economy?

Taki Sarantakis: Terrific, thank you so much Francis. And our third player, it probably comes from an organization that is the least well known of the three today that are on the panel with us, but an incredibly important organization that you really should get to know more about, if you're interested in the world of data. Chantal, may I ask you to come forward and tell us a little bit about... Maybe also tell us a little bit about yourself too, because you're probably less well known to many in our audience, but then talk about the role in a few minutes that your organization plays on data. Chantal.

Chantal Guay, Standards Council of Canada: Thank you so much. Thank you very much Taki, for the introduction. Yes. I think that we're not known because we're part of this invisible shield that is all around us. And that ensures that when you press the switch on your coffee machine in the morning, you don't electrocute yourself. So, we are so successful at doing what we're doing with standardization that you forget we're there. So, I think it's one of the reasons why we're not that visible, but we're so important, right? And certainly, in my role as CEO of the Standards Council, I'm expected to keep a very close eye on any initiative within the standardization space that we'll contribute to the long term health, the wellbeing and the economic prosperity of Canadians. And obviously the choices we make in data governance will have implications for all three. Data is universal. It touches every aspect of our lives. And we know that right now, data is being generated, analysed, exchange, used, applied faster than ever before.

And the handling and management of data impacts everything from finance to healthcare, from education to recreation, from manufacturing to retailing and establishing a common language for data sharing is paramount and is a critical task. And that's where Standards come in. They are essential for collaboration. Imagine one moment, Wi-Fi without international standards establishing the rules to design and use it. This great meeting would not happen. So, how can we reap the full benefit of a digital economy that also takes into account the health and safety of people, organizations, but also communities? We need a first common set of standards for harnessing and sharing data. The good news is, we have the tools to become a leader, an influencer internationally in data governance and big data. It's a matter of understanding the tools we already have in our toolbox and how we can make use of the existing best practices here, and on the international stage.

The benefits of standardization are very well known in traditional sectors. As I mentioned before, we don't fear electrocution when we use our appliances in the house, but we're not at this point in the digital world. Rules governing digital technology, data privacy or safety are still in their infancy. And the best place to start and to safely harness the benefits is really to have career and standards and also conform in the assessment. And that's our expertise. That's what we do. We bring people and ideas together on complex issues to find solutions. And that's what we did two years ago with the Data Governance Collaborative. And I hope you had a chance to look at the document. If not, I invite you to go and look at it. It's really Canada's guide to a safer and more secure digital infrastructure. Two hundred experts came together to look at what were the key issues, what needed to be developed, and we're working on it right now. And it's great to be part of this conversation Taki, thank you.

Taki Sarantakis: Thank you so much, Chantal. What a wonderful introduction to you and your wonderful little organization. I really like this notion that you've introduced about standards. And standards like infrastructure for me are things that should work in the background without anybody even noticing it. And when you start noticing infrastructure, when you start noticing standards, that means there's something wrong. That means something isn't working seamlessly a bridge is rotting or a road has eroded. For those of us in the audience a little bit older, you remember earlier days, parallel

ports and serial ports. And, oh my God, this works with this. This doesn't work with that. And then one day somebody said, "Hey, let's have this new standard. Let's have a port that's a universal port." And same with electricity. So, one of the things Chantal that you hit on, and I'll ask each of you to talk about this in turn, maybe I'll flip back to Anil.

But Chantal hit on it, and Anil also talked about a little bit, is this notion of standards. The data is raw, data is there, but to really make use of data, we need some either principles or standards or procedures. Harken back to electricity. Like whether you use AC or DC. Anil, start us off in realm on why just having the data in and of itself isn't good enough.

Anil Arora: Yeah. Thanks for that Taki. First of all, let me just sort of paint the context a little bit. We did a first in the world study in 2018, which showed that the value of data in this country exceeds that of the value of our natural resources and the investment that we make in this country in a year in data, exceeds that of the investment that we put in so many of our sectors. So, I just want to pick up on Chantal's point and take your point, Taki, and take it to an entirely new level. People understand the physical infrastructure. A bridge doesn't work, car falls down, it's a tragedy, it's terrible. Okay. But now, when you look at data and how prominent it is in the decisions that we make, whether they're policy decisions, whether they're regulatory decisions, the same application of standards multiplied by a huge factor now apply to both the benefits that you can get when you standardize and when you make sense and you understand, and also the risks when you don't get it right.

I mean, just look at the pandemic and look at the hundreds of billions of dollars that governments had to spend to keep businesses afloat, to keep citizens going, to make tough decisions. Guess what? They were all based on data. And so, if you don't understand whether this data set includes or excludes a certain population, or you don't have the disaggregation or the detail to understand what type of business is it, or what type of population, or where is that population located? And you just made decisions based on averages, I think there could be some real issues. And I would say just now take that up even one more level of importance, which is what we learned. It was obvious before, but boy did it come home that our health, our economy, our society, our social fabric, our institutions are all linked together.

Our environment has now just as much of an impact on our health outcomes. The amount of greenness in an urban setting. The inequities of the infrastructure, how many beds per capita, for example, in one area. The integration to the transit system, for example, has a very disproportionate impact now on different parts of our country, different parts of our population. So, it is vital now that we understand all those things that you said early on, that you take for granted. But as Chantal said, we are now building- this is that exciting part of Canada where we're building that data infrastructure. And it means that we have to pay attention. So, if we, as public servants who are attending this session, don't pay attention to those things, guess what? We will have those problems. And they will be much greater because we would've spent the

money. We wouldn't know what it's achieving. And we will be running blind on some of the most important decisions that are important in today's context.

Taki Sarantakis: Thank you. Francis, you have a little organization in your vast empire call Measurements Canada, that some of us know, some of us don't know. But if you go get gas in Ontario, I think across Canada, there's a little sticker on the pump and it says Measurements Canada. And it basically says this is what a litre is, and then you have, this is what a kilogram is, and this is what a metre is. So, we've been doing this stuff for a long, long time in other realms, but now you have some other responsibilities too, vis-à-vis data, and what's going on in the rest of the world. And as Anil and Chantal have pointed out, this is a time where the world is starting to write or rewrite some of these rules around data. Maybe give us a little bit of a flavour of some of those things Francis, because your department plays a big, big role in helping to interface with the rest of the world in international organizations, in some of these areas.

Francis Bilodeau: Sure. And Measurement Canada is actually a great example of how things are changing. The fuel pump was the number one focus. We're moving to electric cars. How are we going to measure charges and charge against electric cars for example? Interesting challenges. I'm going to take sort of broadly, and there's a broader array of rules that play together to create the environment. We've got the legislation, we've got the regulations, we've got the standards, and then we've got the enforcement component of them. And each of them play in data. And you were touching on this, but it's not a space that we've historically legislated or regulated, but it is actually a space where interestingly enough, that giants of technology are now asking us to step in, because trust is important, because interoperability is important. It's also a space, particularly around the standard space, where there's a competition going on across jurisdictions.

So, having the standards, establishing the standards, being part of a group that uses a set of standards is important to our businesses, because their technologies are built to those standards and are more easily exportable in areas that have common standards. So, we are developing some other jurisdictions. China, the US are all in the process of thinking about their legislation and their regulation and their standards. And in some cases, the legislation that are being put in place and you can think of a GDPR. So, the EU's legislation on privacy and how you think about data and protect privacy is actually applied outside their borders, to any companies that interface with them. And so being part of the right coalitions, helping to set those is actually an area of competitive advantage for our businesses and really important for our future prosperity.

Taki Sarantakis: Absolutely. I think in my little mind, one of the ways of translating this is you don't want to have a beta machine in a VCR world, and you don't want to be a DVD player in a Blu-ray world. And to use one of our former ministers expressions, "You don't want to be a Blockbuster in a Netflix world." Chantal, talk to us a little bit about how a standard is developed. Like talk to us a little bit about what it takes to get an electrical outlet, to have two prongs or three prongs, or what it takes to say that this is what we're going to do in this area. Maybe if you want to use data, go ahead but use

any area, because I think it's really important for us to understand that these things aren't hazards, they're not accidents. Like there's a lot of thought and even negotiation that goes into creating a standard. And maybe if you could give us a little bit of a 101 overview of how does something become a standard.

Chantal Guay: Okay, I'll try to be brief, but really development of standards in Canada or at the international tables, such as ISO and IAC is very similar in terms of process and principles. First, you want to have the right people at the table, which means you want to have a balanced representation of interests, right? If you're going to develop something that is linked to industry, yes, you want to have the industry present, but you also want the ones that are going to use the products such as consumers. And also, those that will be regulating it. So, we want to really have at the table, the people that will be able to evaluate the impacts of that standard, of course they are experts. You want that expertise at the table, but really balanced representation is key so that there is uptake going forward, and it's actually going to be fit for purpose in the end. So, that's a very important first principle of standard development.

The second one is the process that is used, and we refer to it as transparency. There is conversations, everything is recorded, and every comment or question raised has to be disposed of. So, there has to be discussion. You can't just discard a comment that has been done. The third very important principle is that we refer to it as coherence. We want to make sure that if we develop, for example, a standard for an electric car, we look around what's being done elsewhere, either in Canada or abroad. So, we don't first recreate the wheel and or second create something that is completely different. So, the example of AC/DC is a bad example. We end up with two different systems and you have to travel with your little adapter when you go from one country to the next.

The fourth very important principle is the input of public in every standard that we develop in Canada, that is a national standard of Canada, and is the same thing for ISO and IAC, there has to be public consultation, right? So, it's not just done in the corner of a desk, and we do it, and we decide. We actually share again with the desired outcome of having a standard that is going to be fit for purpose and help and meet the needs. So, I would say that, that's in essence, how we do it. And I would say the last and key principle of standards is consensus. So, balance representative of interest and conversation where we say, okay, we're all comfortable with this standard. Now we can go for public consultation, and after disposing of all the comments, we then issue it or publicize it, or make a publication. I hope that answers your question, Taki.

Taki Sarantakis: That's a wonderful overview of standards. And again, if you notice something, the standard isn't as good as it should be. If you don't notice something, as you travel seamlessly from province to province on a road, or airplane goes around the world. The standards that either facilitate what you want to do, or they frustrate what you want to do. And in data, we want to make sure that the standards that we're writing now in Canada and around the world are things that facilitate rather than frustrate. I'm going to ask each of you the same question in, but I'm going to do it in a bit of a goofy way. So, Anil, I'm a half empty kind of person. I think Francis is a half empty kind of

person too. I think you're a half full kind of person, Anil. Chantal, you look like you're a half full kind of person.

Anil, why don't you tell us from the perspective of standards in data, tell us a little bit about the half full side. Then we'll go to Chantal, to also give us a little bit on the half full side, which is the stuff that we're good at. And then maybe I'll go to Francis, to ask about the stuff that not so much that we're not good at, but the stuff that we have to get better at. Because you can be amazing at something, but if the world keeps changing really, really quickly, you might not be where you want to be, just because of that change. So, Anil, and then Chantal, tell us a little bit about some of the things that, from your perspective, work vis-à-vis data and standards. Work well.

Anil Arora: The reason why Statistics Canada is cited, I would say internationally as one of the best statistical agencies in the world, if not the best, is because we put so much emphasis on the sense making. And that we push the envelope, both domestically and internationally on emerging structural changes, societal changes, business changes, economic changes. And we get ahead of the curve, and we sit at those tables and we drive. Whether we use mental health as one of- or cognitive disabilities in the definition of disabilities. Whether we use inclusive society with the disaggregation of the different types leveraging on the diversity that this country has in the definition of what does a full and inclusive population look like? How we're pushing the envelopes on including environmental lenses, into our economic and in our social aspects.

And I could go on and on and on, but that's the reason why. And it's not just because, well, it's to Statistics Canada does a good job, well, because that information now becomes available to all citizens in this consensus based way that Chantal talked about. This is exactly the first thing that we do as statisticians. You take a concept, poverty, you take inclusion, you take these very nasty, difficult, nebulous kinds of things, and you define them. And you say, "This is our definition, and it is iterative. It'll change." And then we say, "Okay, based on that common standard, that classification, that definition," then you say, "Okay, what are the sources of data? What's the data strategy? Who do you work with?" And then you say, "Okay, how is it that you turn them into known facts that are statistically defensible with errors and deviations?"

And then you say, "Okay, what is the sense? What is the making or what is the story that they're telling us?" And then we present them to decision makers, whether it's in the federal government, whether it's in, as you said, every business uses, that information of demographics or what's happening in their local community to say, "Where should that product be at eye level, so that it responds to their clientele?" Just a simple example. And the reason why Canada punches well above its weight to your half glass full is because we have the information that allows us to know that probably won't work, but this will probably work. And it's going to address those integrated set of issues that we have.

So, this is the- to folks that are attending this conference, we must pay attention to these things. They may be the non-sexy, the things that you take for granted. Nobody else is going to build them. We build them. We build those standards. Thus, we have to pay more attention to things like metadata, para-data, micro data, public use data, anonymized data, de-identified data. We have to educate. We have to build those resilient systems. We have to agree on definitions, not perfect, but consensus based, look at them internationally, have a more sophisticated conversation about the public good that comes out of this. I think the dialogue becomes very, very polarized. And you just say, "Well either you do it or you don't." And that's not the reality in which we work as a society, and we all pay a price if we become polarized in those things. So, it is a science. You have to invest in these frameworks and definitions. It's hard work. It is consultative. So, it is a team sport. And then we have to be transparent, and we have to actually demonstrate our resolve. And lastly, we have to communicate the value proposition. That is why Canada punches way above its weight, because we are an information, data driven society. And we cannot lose that strategic advantage.

Taki Sarantakis: I love the way you frame that Anil, and the way I remember how you framed an issue like this is I think I remember the way people frame all issues when they frame them well, which is the “what,” the “so what,” and the “now what.” And I think what Anil was saying, if you want to remember in a shortcut way, is that the base is the “what,” and that's really a big, big part of our job as public servants. Because if we get the “what” wrong, we're also going to get the “so what” wrong. And our political masters, when they take decisions will also get the “now what” wrong. So, it's this feedback loop that has to work with each other. And it has to start with understanding the data. Chantal, continue the positivity of what we're doing well in Canada.

Chantal Guay: Yeah, we're very positive and we're half full, but we're also very realistic. And I would say what you describe as the feedback loop, I will call it the quality circle, which is a concept that when you look at the international level, Canada put on the map with ISO 9,001, we led the development of that plan, do, check, review. Which is: what is the need? Am I designing properly? Am I putting the process in place to deliver that services, that product? Am I doing it properly? I check it. And if I'm not right, or if I have to improve, I continuously improve. So, I would say we strive for excellence. And that quality circle is extremely important for certainly the standardization system. But I would say as a whole for Canadians, and I think Anil has spoke about what they do at Statistics Canada, and how they look at it, but we strive for excellence.

We always look for ways to improve. And certainly, what we have done at Standards Council of Canada in relation to data is really listening to the needs. Looking at what's coming down the pipe. What challenges are we facing and what can we do to help? And we're not afraid to shake the box. We're not afraid to say, "We're taking too long to develop standards. Are the other tools that we can use so that we can have something not in two years, but in six months?" So, we are always looking at improving and meeting the needs of the stakeholders of Canadians, but also of issues. Of situations that happen like the pandemic, right? There was a big issue with N-95 masks

in the pandemic. The issue was raised, and we found solution. We convened people together and we developed solutions.

We care, we want to find solutions, and we always look at better ways to do it. Another example of data, it's great we collect data, but a lot of that data is biased. When we develop standards, when we look at safety, for example of people in a car, the data is a white male with the size of like a European white male. The data we have to develop standards for safety in cars, doesn't protect women as well as men because of the type of data we use. So, we're not trying to raise that point to say, "We need in the future. If we want to be inclusive, if we want to have standards that provide value to everyone, all Canadians, we cannot just be using data sets of white male." I could add heterosexual and without disabilities, we are putting that on the agenda in Canada and the international level to make sure that standards development in the future is a lot more inclusive and serves the entire population. That's another example of things, yes, we're really good at what we do, but we're never satisfied. We want to be better. And we want to make sure that are designed for all, and standards can provide value and benefits to all.

Taki Sarantakis: I love that Chantal, because sometimes these discussions, they sound very esoteric, but when it comes down to it at the end of the day, it's about the seatbelt. It's about the airbag. It's about the cancer treatment. And if you haven't done things like checked the population, that's getting treated by cancer. Like a lot of clinical trials are overwhelmingly male, historically. They haven't included half the population. And so, in addition to many, many, many other types of biases in the framework. Could you repeat the quality circle for us? Was it plan, check, review, redo?

Chantal Guay: Plan, do, check, review.

Taki Sarantakis: Plan, do, check, review.

Chantal Guay: Do, check, review.

Taki Sarantakis: Do. That's amazing.

Chantal Guay: And again, Canada led the development of ISO 9,001, which is quality management standard. It's the most largely used standard in the world. And I'm very proud of that. And I've used that, and we use it at SCC. I've used it as a consulting engineer, but it's a fantastic standard for managing quality and meeting the needs of your customers, or your clients or your stakeholders. That's a wonderful tool.

Taki Sarantakis: Absolutely. Now Francis, let's get grumpy. I've known you for a long, long time. You're actually not that grumpy. And you're certainly nowhere near as grumpy as I am, but let's go glass half empty. What are some of the things we need to work on vis-à-vis data?

Francis Bilodeau: So, I'm not going to point to things we need to work on. Maybe I'll point to things that worry me or that keep me up a little bit at night. And I would bucket it into two things. The pace of the change we need to have and the scale of it. If you think about what we do as government, almost all of it is being transformed by data and the tools and the rules and our capacity to work in that space has to transform. As government, we do security and defence. Cyber security is a whole new ballgame for us, even how we do warfare is changing around digital and data. We're a legislator, we're a regulator. Do we have the knowledge, the capacity within government to be able to legislate industries that are moving so quickly, social dynamics that are moving so quickly? We administer justice and enforce, like, do our enforcement agencies, whether it's the competition bureau or the privacy commissioner, do they have the capacity, the tools, the rules that they need to be able to enforce the rules we put in place? And then we provide services to Canadians. Are we equipped to do that in a way that's going to maintain trust?

So, if I'm putting my old hats as the GCCIO, and I look at our internal rules, our internal capacities within the civil service, there is still too often a siloing of our information, which limits our capacity to act. And we still don't. We talk about sort of standards for industry. We still don't have sort of a broadly adopted standard for within the government of Canada that will maximize how we use data. Like that's a major impediment and a challenge for us. And then if we look at the world outside of our walls, and I look particularly at private business, our allies, competitors, et cetera, are moving quickly to occupy the space around things like how you think about AI regulations, how you think about algorithms. I was reading that China is looking for example, at issues around competition.

Like, how do you think about whether the Uber is increasing your fares on the basis that they know you have money or you've in the past used luxury vehicles? How do we think about that? How do we regulate? How do we legislate? So, I would say, I worry about pace of change. I worry about scale. And not just in our own capacities, but relative to others, with regards to our competitive advantage in modern economy.

Taki Sarantakis: Absolutely very well said. And one of the things that you really touched on there that really should hit home to everybody in the audience is, data touches us in any of our capacities as a public servant. Whether we're regulators, whether we're program administrators, whether we're service providers, whether we're lawyers, whether we're HR, whether we are on and on and on of the 72 classifications we have in the government of Canada. We have to, and I'll say it more grumpily than Francis did because he said it very, very wonderfully. We have to get better with data quickly. We have to get more comfortable with data. We have to appreciate its power and we have to start using it in our everyday jobs to inform our decision making and our access. Anil, one of the things that Francis raised indirectly, and I'll put a word on it is culture. In the government of Canada, we have a funny culture, vis-à-vis data.

We segment it. We hide it. We maybe even hoard it. We kind of all have, yeah, that's what the system says, but I've got this black book that actually says how many

contracts we have or how many employees I have, or what the projection is for P-9. Yeah, you can't rely on PeopleSoft, you can't rely on Phoenix. But here look, look at my black book. Maybe talk to us a little bit about how dangerous that mentality is. Because I think it's a mentality that continues to be a little bit too prevalent, at least for my liking. So, maybe me talk to us a little bit from what you see from your vantage point.

Anil Arora: I think there are elements of that are very, very true. I think data is more and more seen as power and controlling the narrative, so that's one. Two is that, in the lack of an arbitrator of some sort, guess what, you can find whatever data to draw the line that you think best fits your narrative. And so, there is, I think this incentive that gets built, which says, well, if I share the data and somebody else has the narrative, well then you know what, I'm going to get marginalized and somebody else going to tell my story for me on my behalf. And then I'm going to be in this defensive. We have to rise above that Taki. I think ultimately, we're here to serve Canadians.

We're here to have resilient and high performing businesses that create standard of living. We want to have inclusive societies. We want to have inclusive growth, et cetera. We want to punch above our weight globally. And if we do that, if those mindsets set in at those very small examples that you gave, imagine what we'll do when it comes to... So, we have to stop thinking of a program as my program. And as long as I have the outputs to defend that I did a reasonably good job, that should be good, because then I'm protected. I think we need to actually step back and say, what's the real outcome that we want? Who am I going to have to partner with? What are the indicators that I'm going to have to hold myself to account and how I'm going to partner with various parts of the society and with parts of the government, et cetera, to actually address those tougher issues? Is my program actually having the desired inclusive growth?

Is it having the right environmental lens? Is it having the right competitive lens? And that just is a very different context. And we weren't built in that context, Taki. I think we were built in no, no, no, you have your act, you have your mandate, you have your minister's commitment. And so as long as you stay within at lane, you're okay. So, then that actually starts whether it's the law, whether it's the policies, they prevent you from actually moving towards those outcomes that you want and starting to think about the enterprise level or that competitive level. And so unfortunately, well meaning as they may be, historically based as they may be, they really prevent us from getting at the truth of what's actually happening. And frankly, there's a cost associated with that- a social cost and economic cost.

And so, we need to start to pivot from what have been vertical systems and accountabilities. And as you said, silos, to more horizontal ones. And then is a tough pivot, but let me tell you, as Francis said, other countries are doing it, some other provinces are doing it, and we in the federal government, this is my half glass empty are a little bit slower to figure out how do we go about doing it? What are the first steps? Well, let me tell you, there are organizations, there are people working on these things,

let's work with the Chantal's. So, let's work with the Statistics Canada folks. So, let's work with the ISED folks, all those folks that are actually moving in that direction. And we need to collectively change the dialogue so that we can have a full-some dialogue that actually says these are the true issues. And we're going to have to use data, going to have to share. We're going to have to be upfront with Canadians about the value proposition, transparent, and we need to invest in the skillsets in the infrastructure and in those frameworks that we've all been talking about so that we can have that honest conversation Taki, thank you.

Taki Sarantakis: Absolutely. And this is no easy issue, even in smaller organizations. And remember we're the largest organization in Canada, even in somewhat new organizations. And remember we're one of the longest, oldest organizations in Canada. I remember reading one of the histories of Amazon. And Amazon, like, new organization, 1995, '96, '97 was created. And by I think it was 2003- so, four or five years later, Jeff Bezos, the CEO said, "Oh my God, my CD division keeps it this way. And my DVD division keeps data this other way. And my book division won't share the data with like the digital book division." And then he said, "Enough. Stop. We're not going to be trading emails anymore. We're not going to be trading Excel sheets anymore. All of our data becomes corporate data." That is to say in our language enterprise data across.

So, there's no more Canada School of Public Service Data, no more ISED data, no more Transport Canada data. It becomes government of Canada data. And then you access data through APIs or other standard ways of pulling from the one source of truth. Francis, talk to us a little bit about like you deal with the private sector probably more than the rest of us. Talk to us, is there a different mindset in the private sector, vis-à-vis data? What are some of the things that you've noticed vis-à-vis data and the private sector that you interact with and compare that with the public sector that you live in?

Francis Bilodeau: I would say, I mean, one of the key differences is for a lot of private sector organizations, data can be turned into money. It's a commodity that they are able to use and to monetize. And so that leads to various behaviours, that is, there is information hoarding, especially across competitors. There's also many lines of businesses that are built around capturing some data to be able to, for example, tailor services, et cetera. But I think, and we've seen it in the banking sector. I think there's a couple drivers that are there naturally, which all relate to a little bit, the bottom line, and enhance sort of seamless experience for clients that will bring them A, to that business or to purchase more services for the business. Has a lot to do with how they use the data as a strategic asset.

And then their competitive position vis-à-vis others are highly influenced by the data they have. And actually, like a lot of the biggest companies, the fastest growing companies are the ones where data is their core asset, data and intellectual property. I did want to touch on one of the points around sort of the siloing of data that you were talking with Anil. I also think that more and more, I mean the quantity of data across governments, whether it's federal provincial, municipal, particularly at the city level,

companies like I was talking to Equifax the other day, the amount of data that they have, for example there's dangers around privacy data, et cetera. But the amount of data means that we can't be effective without working outside of our own walls.

And so, there's a notion of hoarding and notion of thinking about how we leverage our own data, but we also need to be really actively thinking about who else is out there? Who's able to draw insights that we can draw in? Who has the data? Who's able to work with us to be able to make sure that we stay relevant in our advice to make sure that we stay relevant with our service provision? So, it's beyond sort of our own walls. I think we need to think differently about how we work with those outside of our walls, whether that's private business, whether that's universities, whether that's other levels of government.

Taki Sarantakis: Absolutely. And a couple of things to pull out from what Francis said there, one data has tremendous value and Anil mentioned that at the beginning, but I think it's fair to say that the private sector saw the value of the data a little bit earlier than we did, because as Francis said, they could monetize it. And number two, you have an interest sometimes in hiding data like proprietary data in certain areas. But most people are going the other way. They're putting a lot of their systems online for better or worse, and people can see the data. There's a mix. It's not absolute in one way or the other, but how you view data, whether you view it as a threat or as a value, or as something that needs to be shared so that people can add to it, or whether you view it as this little piece of gold that I got a tuck in my pocket, and only I have it that really indicates and drives how you deal with the data.

Chantal, we talked a little bit about standards. We've talked about electrical standards. We've had railway standards. We've had 3G standards, 4G standards, 5G standards, that assure that when you go to London or to the United States or to PEI that our phones still work on those networks, what are some of the data standards that are either currently being negotiated now, or that you see we will have to be at the table to start giving that Canadian input in. And hopefully, like you said, using the ISO 9,000 being leaders in the data standard world?

Chantal Guay: Thank you, Taki. I'll answer the question in French. I want to mainly talk about our artificial intelligence expertise in Canada. We've been leaders since the Montreal Declaration, right? It was done in Montreal in 2017 on responsible development. Our Canadian values are very important—we always bring them to the table and we know. Francis talked about it. We have a pan-Canadian strategy on artificial intelligence. We have our network of experts. We have a great grab on AI-driven supply chains. We, at the Council, obviously saw the scope of these activities and we wanted to be sure that we would have this expertise, this leadership, on the international stage. And that's what we did. In fact, we lead the committee that deals with trustworthiness, so trust in the ISO committee on artificial intelligence, and we're currently writing the first international standard on management systems. We're very good in management systems, we created ISO 9001 40 years ago, 30 years ago and we're writing the international standard.

And in fact, this standard will be, it will be very useful because it will establish common references for process controls in organizations that develop and use artificial intelligence. And of course, we want to make sure that we're also preparing the Canadian market to continue everyone's efforts, and in particular the Department of Innovation, Science and Economic Development. And we're currently developing an accredited certification program for a Canadian certification. According to this new standard, which is called ISO 42001 and we launched—we'll launch a pilot program this year—the accreditation precisely to identify and meet the needs of the market for artificial intelligence here in Canada.

So I think this is a demonstration of the leadership that we want to continue to have in this field, and we're very proud to be holding the pen because we often say, we, in our world, we often say that the one who has the pen and who writes the standard defines the standards. Defines the market entry and that's certainly something we've been doing at the Standards Council of Canada for many years, is to guide our innovators and make sure that if their technology, their approach, if they want to export to other countries, we make sure that they have an important place on the international standardization stage and if possible that they are the ones who write the standard so that we can integrate the performance of their technology into that standard so that it becomes the benchmark. This gives them a very significant competitive advantage and we have many examples, not only in the field of data, but also in the field of, for example, we have made great strides internationally with this approach. So, this is an example, Taki.

Taki Sarantakis: Yes, thank you, Chantal. It's amazing because artificial intelligence is the future. And it's the near future and also, as this technology is linked with all kinds of everyday items, cars, railways, health and everything, all things. We're proud that Canada is there to help write the rules. So, we're going to close with Anil. And Anil, the specific way I'm going to ask you to close in our last minute or two, is you were with us yesterday as one of the co-hosts of this wonderful, wonderful conference. And during the course of your opening remarks, you were a lot more coherent than I was, and a lot more interesting. And you also did something that I love when people do it. You issued a call to arms, to people attending this conference and through the people at this conference to the 250,000 public servants in the government of Canada. Take a minute or two, and maybe take us home at the end of this session with your call to arms. What do you mean by it? What do you see it as? And what do you hope will be the outcome of it?

Anil Arora: Well, thank you, Taki. Look, I think if one thinks that you keep the foot on the brakes, everything will be okay. And so, if we've just played the defensive game, when it comes to data, if you think that's somehow going to be something that'll just go away and everything will be you, okay, I've got news for you. You're going to have to use all the tools. You're going to have to use the accelerator. You're going to have to use the steering wheel. You're going to have to use all the mirrors, lane detects, et cetera, because we need to move forward. And frankly, in this country and our position internationally, if we don't, there is a huge price to pay. Whether it's our policies and

social and economic future, or whether it's our position globally, we need to get far more sophisticated in how to deal with data, and we need to figure out how we have the right competence, how we have the right frameworks, how we have the right conversation with Canadians, how we work in a team spirit as Canada, when it comes to leveraging.

Data is not a passive commodity. It is enabling a way of building the standard of living for our future. And I think as public servants, we need to build that capacity, that expertise, leverage on the strengths that exist within the system, have that mature dialogue and see how we can actually move forward. Because without it, we're not going to go anywhere if you just stay in the car and keep your foot firmly planted on the brakes, not a good place to be. Thank you.

Taki Sarantakis: What an inspiring way to finish off this delightful hour of this wonderful conference, Chantal Guay. Francis Bilodeau, Anil Arora, thank you so much for your insights and for your energy over the last hour. So, appreciated. Kara back to you. I'm sorry. I missed my cue.

Kara Beckles: Thank you. What an insightful and engaging session. It was particularly interesting to hear all of the areas where we as a country are doing well and leading, but on the flip side, the reality that the water line is constant moving and there's areas where we're playing catch up and really need to move faster. So, thank you Anil for also reminding us that we all have a role to play in this. So, thank you, Anil, Chantal, Francis and Taki. We'll now take a health break. However, we won't be meeting here immediately afterwards. Instead, we invite you to choose one of the simultaneous sessions at which [unintelligible] at 2:15 p.m. EST via V Expo. Please ensure you keep the virtual lobby, the V Expo page open at all times. This link hub will allow you to navigate through the different portions of the conference. There you'll find your way to GC message, partner kiosks networking opportunities, and most importantly, the conference sessions. Should you leave the V Expo window, however, don't worry. You can just refer back to the reminder email that you received this morning. The sessions will be followed by another health break, which means we'll see you back here at 3:35 p.m. EST. Have a good break, have a good session and see you later. Thank you.

[00:59:18 The video chat fades to CSPS logo and "canada.ca/school-ecole".]

[00:59:25 The Government of Canada logo appears and fades to black.]