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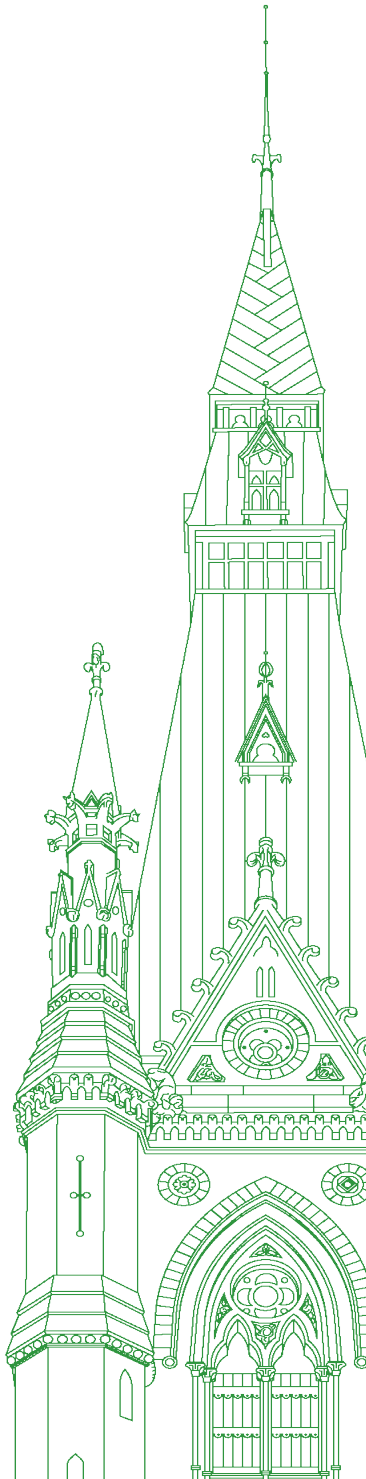

Chair: Mr. Joël Lightbound

Standing Committee on Industry and Technology

Thursday, December 8, 2022

● (1555)

[*Translation*]

The Chair (Mr. Joël Lightbound (Louis-Hébert, Lib.)): I call this meeting to order.

Welcome everyone. Welcome to meeting No. 50 of the House of Commons Standing Committee on Industry and Technology.

Pursuant to Standing Order 108(2) and the motion adopted by the committee on Monday, September 26, 2022, the committee is meeting to study the current state of blockchain technology in Canada.

Today's meeting is taking place in a hybrid format, pursuant to the House order of Thursday, June 23, 2022.

[*English*]

I want to thank all the numerous witnesses who are joining us today. Thanks for taking the time on this Thursday evening for discussions with us.

With us today we have Brad Mills, as an individual.

From Dapper Labs, we have Alison Kutler.

From the digital governance institute, we have Charlaine Bouchard, Guillaume Déziel and Jean-François Gauthier.

From Hut 8 Mining Corporation, we have Jaime Leverton.

From the Information and Communications Technology Council, we have Namir Anami.

From Futurity Partners, we have Tanya Woods with us in person in Ottawa.

From Mastercard, we have Jesse McWaters.

Thank you all for joining us. It is much appreciated.

Given that we have many witnesses and a lot of questions, we'll start without further ado with Mr. Mills for five minutes.

Mr. Brad Mills (As an Individual): Thank you, Mr. Chair and members of the committee, for inviting me to speak here.

My name is Brad Mills and I'm one of the founding members of the Bitcoin Coalition of Canada, which is an upstart multipartisan group working to educate policy-makers, journalists and everyday Canadians about the importance of Bitcoin. I am also an active angel investor and adviser in 28 Bitcoin start-ups, some of which are based here in Canada. These companies are working to help balance the scales of socio-economic justice for billions of people around the world who have been excluded from the traditional financial system. The Bitcoin companies I work with are positively impacting the environment, local economies and grid infrastructure.

My activities are primarily around financial literacy and financial inclusion for underbanked people living below the poverty line in countries across Africa and Latin America, but also for the millions of underbanked Canadians. Combatting poverty through Bitcoin education is personal to me. I grew up in an economic depression in Cape Breton Island, Nova Scotia, during the 1990s, when we had one of the highest unemployment rates in Canada.

My parents divorced when I was young, and when we were not on EI or welfare, we were living paycheque to paycheque. I lived in 19 different homes growing up, including government housing, and I know all too well the stress of having an empty bank account and seeing an overdraft charge put you into the negative.

I'll never forget what it felt like when my dad lost our home to the bank as the interest rates rose. I was part of the underserved and underbanked in Canada.

That said, I was lucky enough to be born in a country like Canada with a social safety net. My quality of life wasn't that bad. Money was just a thing we didn't have.

I escaped poverty through entrepreneurship. I bootstrapped a social gaming company that grew to a million players in 2009. For the first time in my life I had some extra money in the bank. I still lacked financial literacy, and it was during the global financial crisis, when most investments seemed unsafe, so I started learning about investing and the history of money.

I began buying gold because of its store of value properties. Soon after, I discovered Bitcoin. I understood that it was a decentralized digital gold, with no centralized issuer or company behind it and with an absolute limited supply, because only 21 million coins will ever exist.

I started saving in Bitcoin for the same reasons I bought gold, but I learned soon after that Bitcoin was much more than that.

Bitcoin is a once-in-a-species invention. It is the first time we've been able to create digital scarcity. Bitcoin is a fair and equitable base layer of money. It's open-source and auditable by anyone who wants to run the software. It doesn't matter if you're a kid in Nigeria, a fisherman in Cape Breton or a billionaire from New York—everyone is on the same footing on the Bitcoin network.

Most Bitcoiners describe Bitcoin as a savings technology. It makes saving and transferring money available and accessible to anyone, anywhere.

Eleven years after I first discovered Bitcoin, it's good to see that Canadians are among the fastest to adopt it. The Bank of Canada recently released a report that found that 13% of Canadians owned Bitcoin in 2021. It's worth noting that more Canadian women own Bitcoin today than Canadian men did in 2017.

This is where it's also important to recognize the difference between Bitcoin and everything else going on in the crypto space. As someone who worked on the financial committee of a large crypto fund, I have a unique perspective on stablecoins, DeFi and the broader crypto space. As an analyst doing due diligence on hundreds of blockchain projects in Web3, DeFi and NFTs, I had a front-row seat to the making of the bubble.

Unlike Bitcoin, these things are mostly just unregistered securities, often unethically launched and fraudulently pumped on unregulated crypto exchanges, leaving retail buyers holding the bag when the bubble collapses. These tokens typically have no real product-market fit, and barely anyone uses them outside of the speculators.

Last year, I started sounding the alarm, warning about the coming collapse of platforms like Celsius, Terra Luna and the UST stablecoin, as well as the FTX exchange, at least six to 12 months before they blew up. I'm proud to have directly helped save people from losing tens of millions of dollars in these Web3 crypto and DeFi schemes that exploded.

Millions of Canadians have exposure to Bitcoin. It should not be a partisan issue. This is why I'm very heartened to see members of Parliament coming together from both sides of the aisle to have these elevated conversations about cryptocurrency, blockchain technology, CBDCs and stablecoins.

I can help provide a rational framework for thinking about how Bitcoin should be treated differently from crypto and how we should embrace Bitcoin to increase the financial literacy of Canadians and promote financial inclusion through Bitcoin education.

Thank you once again for having me. I look forward to answering any questions.

● (1600)

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

We'll now move to Alison Kutler.

Ms. Alison Kutler (Head of Government Affairs, Dapper Labs): Thank you, Mr. Chair and members of the committee.

My name is Alison Kutler. I am head of government affairs at Dapper Labs. I'm pleased to join you today on behalf of our company, and want to open with our eagerness to work alongside government as a trusted resource while you explore a regulatory path forward for our vast and diverse industry.

By way of introduction, Dapper Labs is an exciting Canadian success story headquartered in Vancouver. We are the creator of the NFT and continue to be a world leader.

When we talk about NFTs, many people think of a picture of a funny ape that someone purchased with a Bitcoin, but our industry is very diverse. There are many different kinds of NFTs. Some enable access to communities, events or games. Some provide royalties or other rewards. They validate credentials or asset ownership, and are simply appreciated as art collectibles or mementoes.

NFTs possess three distinct characteristics that distinguish them from cryptocurrencies and other fungible tokens on the blockchain. NFTs are unique in nature, non-interchangeable and non-divisible. At Dapper we make digital collectible NFTs—you can think of them as digital trading cards—which also facilitate highly interactive experiences and are revolutionizing fandom. Our digital collectibles provide real utility. They strengthen relationships between fans and their favourite players and teams and entertainers, providing new creative channels for brand expression, engaged and exciting communities, and opportunities for consumers to be rewarded for their fandom, online and off-line.

As policy-makers around the world consider the role of NFTs in society, Dapper Labs serves as a great example of how digital collectibles can be a source of innovation that helps make blockchain technology accessible to everyone. In 2020 we launched NBA Top Shot, taking digital collectible NFTs mainstream and becoming the first blockchain product to surpass a million community members. We have developed the world's leading blockchain studio and continue to build consumer-facing experiences that allow people to interact with Web3 technology in a way that is easily accessible, secure, transparent and fun.

As the pioneers here, we also recognize and embrace the responsibility to set the bar high with best practices for how this new industry can promote innovation while ensuring that consumers are protected. We have instituted a comprehensive set of industry best practices, including a "know your customer" protocol, enhanced due diligence, sanctions screening and a transaction monitoring program. We also fully disclose the terms of each individual digital collectible NFT product prior to a purchase, so that consumers understand what they own.

All of Dapper Labs' digital collectible NFTs are built on the Flow blockchain, which is environmentally sustainable. Minting an NFT on Flow uses less energy than a Google search or an Instagram post.

It's important to remember that Web3 is complex. It can't be regulated through a one-size-fits-all approach or simply by copying existing financial services laws. We would like to ensure that NFT creators, big and small, can continue to innovate and develop ways for society to benefit from this exciting new technology. This is not to say that NFTs should not be regulated, just that they shouldn't be governed by what would be overly burdensome rules taken from other sectors. Rather, we would welcome a regulatory regime that will recognize the unique characteristics of NFTs and how they are used in the digital economy.

First and foremost, we need to establish clear definitions on what an NFT is and directions for how NFT service providers should be treated. We think seriously about fraud protection and implementing AML rules and KYC protocols that are proportionate to the risk. We also believe in standards for intellectual property protection and, in partnership with provincial regulators and agencies, enhanced consumer protection standards.

Most importantly, we support an open and engaged dialogue between industry and government. We hope Dapper Labs can be an example for Canadian policy-makers of the type of innovation that should be encouraged to make blockchain technology accessible to more communities, while doing so safely and responsibly.

Thank you for your time today. I look forward to answering your questions.

● (1605)

The Chair: Thank you very much, Madam Kutler.

We'll move now to the digital governance institute.

We have Madame Bouchard or Monsieur Gauthier.

[*Translation*]

Prof. Charlaine Bouchard (Research Chair in Smart Contracts and Blockchain, Université Laval): Hello.

Mr. Gauthier will actually be the one giving the presentation.

Mr. Jean-François Gauthier (Chief Executive Officer, Digital Governance Institute): Thank you very much, Mr. Chair.

I am very pleased to be here with you. My name is Jean-François Gauthier and I am the chief executive officer at the Digital Governance Institute, a non-profit organization that was founded almost 10 years ago. Our mission is to develop and implement open governance and collaborative management solutions in institutions and organizations for the common good.

Our passionate team wants to democratize the principles of collaborative management by using digital technology and the strength of collective intelligence as unifying tools. Our value proposition, as a non-profit organization, is to act to accelerate organizations' digital shift by establishing open and collaborative governance to support their growth.

I would like to introduce you to the people who are here with me today. First, there is Charlaine Bouchard, research chair in smart contracts and blockchain at Université Laval. She will be able to answer your questions later, or so I hope. Also here with me today is Guillaume Déziel, an administrator at the institute and, more importantly, a very committed entrepreneur in the area of culture and blockchains. He has a particular interest in their potential for recognition of rights holders.

In November 2019, the institute took the initiative to write a white paper on distributed ledgers and blockchains. The work was carried out by a steering committee made up of academics, entrepreneurs, lawyers and public administrators. The preparation of this white paper was made possible by the financial contributions of the chief scientist of Quebec, Hydro-Québec, the Quebec Department of the Economy, Innovation and Energy, the Quebec Department of Finance, Finance Montréal and the Hub Saguenay—Lac-Saint-Jean, and I thank them for that.

The two leading contributors to our white paper, Ms. Bouchard and Mr. Déziel, are experts who can talk to you about concrete applications of blockchains. I am proud to say that our efforts to produce this white paper were not in vain. An indirect benefit of our efforts was the creation of the first research chair on smart contracts in Quebec, at Université Laval. Another worthwhile benefit is the innovative projects on which Mr. Déziel is working, funded by the Canada Council for the Arts.

As I mentioned, the institute firmly believes in collective intelligence and empowering citizens. For us, distributed ledgers are a historic opportunity to give back to citizens the ability to manage their digital identity themselves.

In closing, I would like to quote a passage from the preamble of our white paper. It reads, and I quote:

> Throughout history, humans have stored information in protected places. Obviously, the form of these places has changed, but whether we are talking about a guarded building or a massive, ultra-secure server, the approach has remained the same. These are basically variations on the theme of a safe. Blockchains...have turned an old practice on its head.
>
> At a time when data theft is a new scourge around the world, when the arrival of 5G connectivity is exponentially increasing the data in circulation and when the AI revolution is under way, distributed ledger technology seems to be essential. It is becoming a new symbol of this digital age, which is making data a resource and the security of personal information a condition of success....
>
> This is a highly strategic issue. Quebec is currently a leader in AI research. This promising opportunity is based on expertise in the related field of big data.... By also developing its expertise on distributed ledger technology, including blockchains, Quebec will bring together the three pillars of the digital age and strengthen its position as a technological hub.

My colleagues will be pleased to answer your questions on the concrete applications they are working on right now.

Thank you.

● (1610)

The Chair: Mr. Gauthier, Ms. Bouchard and Mr. Déziel, we thank you for being with us this evening.

I will now give the floor to Jaime Leverton of Hut 8 Mining Corporation.

[*English*]

Ms. Jaime Leverton (Chief Executive Officer, Hut 8 Mining Corporation): Thank you, Chair and members of the industry committee, for having me here today.

My name is Jaime Leverton, and I am the CEO of Hut 8.

As we begin, I would like to acknowledge, on behalf of Hut 8, that our corporate office is located on the unceded territories of the Anishinabe, Wendat, Haudenosaunee, Mississaugas, and the Mississaugas of the Credit First Nation. This land, as well as other territories across Turtle Island that Hut 8 operates in, continue to be home to diverse indigenous peoples who we recognize as contemporary stewards of the land and vital contributors to our society.

Hut 8 is one of North America's largest innovation-focused digital asset mining pioneers and high-performance computing infrastructure providers. It is the only dual-listed digital asset miner with 100% Canadian operations. We have the highest unencumbered self-mined inventory of Bitcoin of any digital asset miner or publicly traded company globally. We are also the first Canadian digital asset mining company to list on the Nasdaq.

Hut 8 was named after the building at Bletchley Park in the United Kingdom, where Alan Turing created the Bombe, a machine that could quickly crack the Enigma code and intercept enemy communications during World War II. Turing's world-changing work in Hut 8 saved countless lives and transformed cryptography as we know it. His advances in code breaking laid the foundation for blockchain technology as it stands today.

I'd like to start by emphasizing the strength of talent we have in this innovative industry, based right here in Canada. Hut 8 is a Canadian success story. We're proud of our roots. Each member of our executive team comes to Hut 8 from other established industries. In fact, our seasoned executive, 40% of whom are female, have a collective century of experience leading businesses in other established Canadian industries.

Hut 8 is the exemplification of the innovation economy. As seasoned leaders we're applying our knowledge and expertise to help drive the growth of Bitcoin adoption and blockchain in Canada and around the globe. We are very much in the nascent stage of understanding the potential of blockchain adoption and the positive effects it promises to have on Canada's economic sectors. However, with a laser focus on regulating, with the end goal of driving innovation, the Canadian government has a generational opportunity to take a leadership role in driving both Canadian and global adoption of blockchain technology. These hearings are a great first step toward achieving that unique position.

We are proud to be taking part in your study and believe that collaborating with industry to achieve our mutual goals is very encouraging. In addition to abundant talent, Canada also has abundant natural resources to support Bitcoin mining, which in turn stabilizes the blockchain. Many miners in Canada harness the country's hydro and nuclear energy sources to power their operations. On our end we use Canada's natural cooling system, our cold winters, to minimize heat and mine much more efficiently than many of our global peers. It's not well understood that Bitcoin mining can also help stabilize energy grids, which is something other large, industrial-scale workloads simply cannot do.

At our Medicine Hat facility, for example, we work with the city to manage energy consumption in real time. If the city needs us to power down to meet residential and industrial demand because of a storm or peak usage, we can do so in less than two minutes, and power back up just as fast, ensuring the most efficient and consistent use of the available energy. We are also proud to be one of the largest taxpayers in the city of Medicine Hat.

While innovation can go a long way to improving environmental goals, so too can bold corporate leadership. Hut 8 is committed to achieving carbon neutrality by the end of 2025. We're proud of this ambitious target that is a shared priority with our government.

As you've heard over the past few meetings, blockchain has a wide range of potential applications that can change how we do things across many industries. Advancements in blockchain technology will happen with or without Canada. While we were disappointed in the defeat of Bill C-249, I'd like to thank the committee for conducting this study and taking recommendations for how to best regulate the space with the goal of growing the sector while protecting consumers.

We hope the future of digital asset regulation in the country works within our current financial system to improve financial inclusion. We're all working with regulatory bodies and authorities, but as a country we need a concrete framework to protect consumers, attract investment, innovate and grow the economy.

Bitcoin and the blockchain represent a new level of both the Internet and the global financial system, one that empowers individual freedom that traditional banking services cannot provide. Like in any industry, bad actors exist, and fraud cases like we are currently seeing with FTX emphasize the need for co-operation between government and business. We've heard a lot about risk and consumer protection in this study. I think it's important to note that while digital assets like Bitcoin have lost significant value in the past nine months, this is not entirely abnormal. Many securities fluctuate in the same way, yet we don't use that rationale to stifle venture capital investments.

The UN has estimated that up to 5% of global GDP, equivalent to $4 trillion U.S., is used for money laundering and illicit activity, which is 400 times more than the criminal activity across all cryptocurrencies.

● (1615)

At Hut 8, we understand very well the cyclical nature of Bitcoin, which is why we have an investment strategy to hold our digital assets. Our business is a long-term play operating on the belief that digital assets like Bitcoin and technologies like blockchain have tremendous growth potential and applicability as the innovation economy takes shape.

Simply put, with the right regulation and a laser focus on driving innovation, Bitcoin and blockchain technology stand to benefit most major industries around the globe. Digital assets should be regulated and treated as personal property. By focusing on the end user, we are able to ensure that we keep the rights and needs of Canadians in mind, which is crucial.

We look forward to submitting our recommendations to this committee on what a future regulatory framework might look like.

Thank you. I look forward to your questions.

The Chair: Thank you very much, Madam Leverton.

We'll now turn to Namir Anani from the Information and Communications Technology Council.

Mr. Namir Anani (President and Chief Executive Officer, Information and Communications Technology Council): Good afternoon.

Thank you for the introduction.

[*Translation*]

I want to begin by thanking you for this opportunity to address the House of Commons Standing Committee on Industry and Technology as part of its study on blockchains.

[*English*]

My name is Namir Anani. I am the president and CEO of the Information and Communications Technology Council, the ICTC. As a neutral centre of expertise with over 100 employees across Canada and a mandate of advancing Canada's digital advantage in a global context, the ICTC strives to provide forward-looking research, evidence-based policy advice and innovative capacity-building solutions to assist Canadians and policy-makers, as well as businesses, leverage the full potential of the digital opportunities in today's and tomorrow's economy.

For a bit of background, my presentation today briefly expands on the merits of blockchain technology, its derived markets and its potential to heighten Canada's economy and job market while unleashing new economic activities as part of the evolving Web3 and the Internet of value.

For a bit of context, it is fair to say that the construct of the global economy is based on a set of contracts, transactions and records to govern our economic, legal and political systems. They protect assets, establish and verify identities and document sequences of events. They also govern interactions among nations, businesses, communities and individuals.

Blockchain has in recent years emerged as the foundational technology offering solutions to improve business value chains, enhance efficiencies and enable a system of trust based on consensus, while unlocking at the same time further economic activities without the need for a trusted third party intermediary.

Applications of this technology, as you may have heard so far, have enabled solutions in trade and supply chain management, financial services, health care, manufacturing, identity management, smart cities, art and media, property and title transfers and many others.

The ecosystem of blockchain now extends to smart contracts, digital assets, tokens, NFTs, DeFi, stablecoins and cryptocurrencies, much of which will be discussed today.

Here are some relevant facts on the Canadian economy and globally as it pertains to blockchain and Web3.

In 2020, building on the ICTC's earlier survey of Canada's blockchain ecosystem, the ICTC published a report entitled "Chain Reaction: Investment in Canada's Blockchain Ecosystem". The report highlighted the growth potential of blockchain technology and outlined critical factors for the Canadian economy.

An overarching theme of this report is that "Canada punches above its weight" in global blockchain innovations and entrepreneurial capacity, with a workforce of around 16,000 professionals—much higher now since the report was done almost three years ago—supported by world-class academic and research institutions. As for examples of Canadian leadership, obviously we've all heard of those, including the intellectual property and genesis of the development of Ethereum.

In terms of the global blockchain technology market, it is forecasted, according to Precedence Research recently, to grow at a rate of 87.1% CAGR—that's combined annual gross rate—from 2022 to 2030 and is expected to surpass $1.59 trillion U.S. by 2030. The token economy market size alone, which is built on blockchain and is part of Web3, is estimated to be around $17 trillion U.S. by 2030, according to recent Boston Consulting Group research.

Also, market forecasts by Cisco estimated that by 2027 as much as 10% of the global GDP could be stored on blockchains. Additionally, a recent LinkedIn report on global blockchain talent insights, with a focus on Web3, highlighted that Canada has one of the highest demands for talent in this space among countries such as Spain, France, Singapore and the U.S.

On the regulatory side, while important strides have been taken by FINTRAC and IIROC to govern crypto transactions, the broader regulatory uncertainty pertaining to the evolution of Web3 in Canada remains a significant barrier that can potentially curtail investment and innovation in this space.

The European Union, as you have heard, so far has recently introduced the MiCA—markets in crypto-assets—regulations, which address crypto-assets that are not currently governed by existing regulations, such as e-money tokens, stablecoins, NFTs, utility tokens or asset-referenced tokens—I call them ARTs. These are all part of Web3.

In summary, the blockchain worldwide market is growing rapidly and is very competitive, with many countries fast-tracking the development of blockchain platforms as well as talent and investment attraction. Topping the list are Estonia, Switzerland, the United Arab Emirates, Sweden, Singapore and the United States, as well as many other countries.

● (1620)

In conclusion, for Canada to be a leader in this environment, an all-encompassing strategy is needed to address the following. First is supporting research in this space, with a focus on commercialization through targeted investments. Second is favouring foreign direct investment attraction that promotes blockchain and Web3 advancement while growing the ecosystem of entrepreneurs and jobs in Canada. Third is carefully establishing a regulatory regime that enables certainty and transparency and supports innovations while sending a signal to global markets that Canada is the prime place for blockchain and Web3 development. Last is preparing Canada's talent for Web3, and tomorrow's Internet of value economy will be critical to maintaining Canada's innovative capacity in this space.

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

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

We will now turn to Tanya Woods from Futurity Partners.

Ms. Tanya Woods (Chief Executive Officer, Futurity Partners): Good afternoon honourable committee members.

Thank you for committing to listen, learn and consider how blockchain and digital asset technology is being used today and can be used in the future to best support Canadians and their capacity to confidently engage in the digital economy.

My name is Tanya Woods. I'm the CEO of Futurity Partners, a strategic advisory firm working globally with future forward public and private organizations innovating with blockchain, AI, quantum and Web3 technologies to achieve positive public impact objectives.

I join you today as a legally trained subject matter expert with nearly 20 years of experience working on decentralized and digital technologies and related global legal and policy issues.

Some of my relevant contributions include writing the first academic paper on smart contracts for music rights for Web3 in 2008 and catalyzing the payout of $50 million in unpaid royalties to Canadian musicians. I've innovated world-leading copyright enforcement provisions targeting bad actors in peer-to-peer ecosystems and participated as a member of Canada’s trade negotiating team, advancing global and digital enforcement agendas.

I founded Canada’s first blockchain and digital asset trade association, the Chamber of Digital Commerce Canada, where we created the first-ever blockchain policy strategy for Canada and designed the first-ever economic study, measuring the economic contributions of the industry.

I've designed and built the first decentralized in-kind donation platform that enables in-kind donations to flow easily, quickly and accountably to charities and not-for-profits in real time.

I'm here today to support your work, because Canada's blockchain innovation ecosystem has the capacity to punch well above its weight globally if provided with the right conditions for success. While not a panacea, today we are discussing an incredibly transformative technology vertical that has the power to correct and improve outdated systems and processes, as well as people’s lives.

I would like to share two short use cases that demonstrate the public importance of this technology we are discussing today.

The first use case relates to cybercrime and human exploitation. Today, more than 40 million people are estimated to live in modern slavery, being trafficked and exploited, including here in Canada. Most cross-border trafficking happens using falsified identity documents. Blockchain innovators are working today to advance digital identity technology, so that every person has incorruptible identification credentials. The benefits of digital identity go beyond human exploitation and include enhancements to fight against money laundering, terrorist financing and other areas of organized crime.

In 2019 it was a blockchain cybersecurity start-up that enabled the U.S. department of justice and global law enforcement officials to take down the world's largest child pornography ring. The ring and its cast of characters was as global and decentralized as the Bitcoin they used to purchase access to clips of child sexual abuse. What foiled the ring was the fact that the Bitcoin transfers were traceable on public Bitcoin blockchain ledgers.

The immutable, verifiable nature of blockchain-based transactions continues to enable law enforcement officials to work together to uncover the dark web and decentralized crime rings that exploit vulnerable people. The jurisdiction of digital assets and custody solutions are key to swift and effective enforcement measures. While incredible progress is being made, a general lack of broad blockchain and digital asset policy consideration, combined with outdated legislation and insufficient funding resources, continues to impede law enforcement's capacity here in Canada.

My second use case is about climate innovation. Today it remains unclear when a digital asset token would be considered a security or a mere digital token to enable some other form of useful purpose to its owner, like a utility token.

Public companies in Canada and globally have been told they must prepare for mandatory ESG disclosures imminently. One way these companies are taking positive steps on climate change is by purchasing carbon credits. The carbon credit market is complex and challenged by a lack of transparency and traceability, and authenticity issues regarding the credits sold and the projects related to the credits.

One group of Canadians has positioned itself to become the global leading carbon utility token issuer and trading platform, leveraging digital asset technology to represent verified carbon credits, and providing a blockchain accounting ledger to track credit purchase and retirement.

● (1625)

Because Canada has not provided clarity regarding utility tokens, the team has had to establish a company outside of Canada and seek regulatory approval in another jurisdiction to ensure that it can move this much-needed innovation forward in step with public company demand and need.

In a world of greenwashing and ever-urgent climate and social impact priorities, Canada should be an obvious jurisdiction for social and environmental innovation that promotes transparency, accountability and impact, and it is not.

I encourage the government to continue this dialogue and to establish a working group of experts to advise on beneficial public blockchain innovation. A lack of knowledge or familiarity with the subject matter must not be used to justify delaying the adoption of positive public and socially beneficial innovation. This is not a moment to politicize this technology. Now is the time for government to move swiftly and holistically to ensure that blockchain and digital-asset innovation evolves and serves the best interests of all Canadians.

Thank you for your time. I look forward to answering any questions you may have.

● (1630)

The Chair: Thank you very much.

For our last testimony, we have Jesse McWaters from Mastercard.

The floor is yours.

Mr. Jesse McWaters (Senior Vice President, Global Head of Regulatory Advocacy, Mastercard): Thank you.

I'm honoured to have the opportunity to represent Mastercard in today's important discussion on blockchain technology.

Mastercard's operations today are about much more than just our card network. Our business is focused on enabling trusted digital commerce across multiple payment rails, including cards, real-time payments and now blockchain-based networks.

When we think about blockchain, we consider it within two distinct dimensions: first, as a novel technology with the potential to transform how information is shared and how value gets moved, and second, as the underlying engine for a rapidly growing community of crypto-asset ecosystems.

As a technology company, Mastercard invests heavily in blockchain research. We have one of the largest blockchain patent portfolios in the payments industry, and we are exploring a range of applications, many of which are unconnected to existing crypto-asset ecosystems. This includes building new, next-generation digital ID systems, streamlining trade finance and enabling proof of provenance within complex supply chains.

At the same time, Mastercard plays an important role as a payments company. For consumers who choose to interact with crypto-assets, we help them safely bridge the gap between the world of crypto and traditional finance. We do this by establishing secure and compliant on- and off-ramps for funds and by enabling the issuance of cards that let individuals seamlessly fund transactions using value stored in their crypto accounts.

Our due diligence processes have long recognized the risks inherent in novel ecosystems. We apply strict criteria to our partnerships with crypto-asset service providers, requiring compliance with all relevant regulations and a commitment to robust standards of consumer protection. We fundamentally believe that a blockchain-powered future isn't possible without accountable systems that ensure safety, compliance and good governance.

Recent developments in crypto have underlined the importance of these principles, as well as the detrimental effects of unclear regulation and lax enforcement. In contrast to those who suggest that regulation would stymie the rapid pace of crypto's innovation, we believe that effective regulation will accelerate the most beneficial kinds of innovation while mitigating many of the evident risks.

As this committee considers the regulatory frameworks required for blockchain-based systems, we humbly present the following three suggestions.

First, the regulation of crypto assets should begin with the goal of being technology neutral. This means establishing frameworks that avoid regulatory arbitrage by establishing a consistent burden of compliance across similar types of regulated assets and activities. An excellent example of this is the Financial Action Task Force, a global anti-money laundering standard setter that has provided clear guidance on how existing financial-crime rules should be applied to firms handling crypto-assets.

Second, where new regulation is required to accommodate the distinct characteristics of a blockchain-based ecosystem—for example, to recognize the unique cybersecurity risks and challenges faced by crypto-asset custodians—those new rules should aim to deliver the same regulatory outcomes as comparable assets and activities for a given level of risk.

Finally, a particular focus should be given to stablecoins. Efforts to bring stablecoins into the regulatory perimeter are under way in many advanced economies, including the European Union, the United States and the United Kingdom. Canada may wish to consider the merits of a comprehensive regulatory regime for stablecoins that imposes robust requirements for liquidity and capital management, as well as standards for redeemability, consumer protection, operational resilience and the resolution of stablecoin arrangements in the event of failure.

In closing, we believe blockchain has the potential to drive significant value across a wide range of use cases, but that any system trusted to move value needs clear rules to manage risk and address unforeseen governance challenges. We are eager to collaborate with this committee and with similar efforts across the country to ensure safety, security and compliance across the financial system.

Thank you so much for your time. I look forward to answering your questions.

[*Translation*]

The Chair: Thank you all for your testimony. It was very interesting.

Without further ado, we will begin the discussion with Ms. Rempel Garner.

● (1635)

[*English*]

Hon. Michelle Rempel Garner (Calgary Nose Hill, CPC): Thank you, Mr. Chair.

Ms. Woods, is it fair to characterize Web3 technologies as much broader and more far-reaching than just cryptocurrencies?

Ms. Tanya Woods: Absolutely.

Hon. Michelle Rempel Garner: Would you characterize jobs that are created by Web3-enabled technologies as digital economy jobs?

Ms. Tanya Woods: They're absolutely digital economy jobs.

Hon. Michelle Rempel Garner: Are those the types of jobs that you envision when you hear politicians talk about the transition from a natural resource-based economy to a digital economy?

Ms. Tanya Woods: Definitely, in part.

Hon. Michelle Rempel Garner: In the report the Chamber of Digital Commerce issued in 2019, you stated, "Approximately 37 percent of all Canadian blockchain activities take place in Western Canada."

Is that correct?

Ms. Tanya Woods: There was and still is a sizable amount of activity in western Canada.

Hon. Michelle Rempel Garner: If there isn't an adequate non-balkanized regulatory framework produced by Canada and its various subnational governments, do we risk pushing some of those jobs out of western Canada to other jurisdictions?

Ms. Tanya Woods: There's no question.

Hon. Michelle Rempel Garner: Do you think this is problematic in trying to achieve a diverse economy in western Canada?

Ms. Tanya Woods: Absolutely.

Hon. Michelle Rempel Garner: Would you recommend that the government use its convening powers to work across different jurisdictions within Canada to come up with a regulatory framework for the Web3 operating environment?

Ms. Tanya Woods: To the extent regulation is required, yes, and there should be collaboration.

Hon. Michelle Rempel Garner: Should that effort have industry in the driver's seat in terms of outlining the balance between the need for regulation and the risk that it will actually stifle innovation and make us non-competitive?

Ms. Tanya Woods: The rapid rate of change that industry is leading can really only be best understood by industry. Yes, engagement is really important.

Hon. Michelle Rempel Garner: Would you echo Mr. McWaters' comments with regard to the need to utilize the standards for existing types of asset classes in terms of crypto-assets as much as possible?

Ms. Tanya Woods: To a certain extent. The caveat is that they're not exactly the same.

Hon. Michelle Rempel Garner: Right.

Ms. Tanya Woods: The reality is that a lot of them are different, but also, simply because one type of approach worked years and years ago doesn't mean it still works. I feel this is a moment in time when reflection is required.

Hon. Michelle Rempel Garner: Would you recommend that the government work with provincial governments and industry to develop a framework that could harmonize the tax and accounting treatment of digital assets across the country?

Ms. Tanya Woods: Absolutely.

Hon. Michelle Rempel Garner: Would you recommend that the government use its convening power to work with provincial governments to standardize procedures for verification of the identity of customers who conduct digital asset transactions?

Ms. Tanya Woods: Yes. I'll add on that I believe harmonization will be required globally.

Hon. Michelle Rempel Garner: Do you believe that if the government does not act on that we will become uncompetitive in terms of being able to promulgate regulations with other jurisdictions in that regard?

Ms. Tanya Woods: Yes.

Hon. Michelle Rempel Garner: Would you recommend that the federal government use its convening powers to work with provincial governments to harmonize the terminology and definitions used across Canada to describe different categories of digital assets?

Ms. Tanya Woods: Without question, I do. In 2019 we did a light survey of seven pieces of legislation, and none of them described digital assets in the same way.

Hon. Michelle Rempel Garner: Would you recommend that the government work with the province and innovators in the area to develop a regulatory framework to mitigate the risks of fraud and market abuse, particularly through education for those who sit on governance bodies as it relates to the oversight of crypto-assets like we saw with FTX, but also within the political milieu and in the general public?

Ms. Tanya Woods: Yes.

Hon. Michelle Rempel Garner: Do you think the government is providing adequate educational resources at this point?

Ms. Tanya Woods: Certainly not.

Hon. Michelle Rempel Garner: Would you recommend that the government put together a framework using its convening powers with provincial governments to increase guidance on how digital assets, including fungible and non-fungible tokens, are to be issued?

Ms. Tanya Woods: Yes.

Hon. Michelle Rempel Garner: Is there adequate guidance in Canada in that regard right now?

Ms. Tanya Woods: No.

Hon. Michelle Rempel Garner: How far behind are we with regard to other countries? How much is the lack of this type of guidance costing the economy right now?

Ms. Tanya Woods: That's a good question. I'm going to tip to anybody in the panel who can answer with hard numbers. I'd rather answer with hard numbers. However, the broad answer is quite a bit: We're very behind. We've lost the confidence of our innovation community, because we don't see where we're having support.

I think that's a broad statement but quite likely true across the board.

● (1640)

Hon. Michelle Rempel Garner: I would encourage all the panellists to provide information on those hard numbers.

In closing, I had really hoped that the conversation around this issue would be deeply non-partisan, given the importance of this sector, potentially, to the growth of the Canadian economy. Would you characterize it as productive for any political actor to politicize the entire industry of Web3 as a platform, as opposed to trying to achieve a regulatory framework that both achieves protections for consumers and sets Canada up for growth?

Ms. Tanya Woods: No, it's not productive. I think too much politicization has happened. It's time to get back to work.

Hon. Michelle Rempel Garner: In closing, would you recommend that this committee express to the government the importance of the Web3 ecosystem in terms of the long-term growth of the Canadian economy?

Ms. Tanya Woods: It's fundamental. The government has been very supportive of the video game industry. I sit on the board of a publicly traded metaverse stage and production facility, the only one in Canada. It's groundbreaking; it's leading, and it's founded by video game industry veterans. They've struggled to get funding. I've never seen this kind of struggle happen before in the games industry, but technology and content digitization evolve, as does the digitization of every industry sector. It's time to look at it together, holistically. These are not partisan issues.

Thank you.

Hon. Michelle Rempel Garner: Thank you.

The Chair: Thank you very much, Madam Woods and Madam Rempel Garner.

We'll now turn to Mr. Gaheer for six minutes.

Mr. Iqwinder Gaheer (Mississauga—Malton, Lib.): Thank you, Chair, and thank you to the witnesses for appearing before the committee.

My first question is a general one, I think everyone would agree. Do you agree that a lack of regulation creates a risky environment?

Ms. Woods, there are fears that a lack of regulatory oversight will lead to scams and market manipulation. Among the high-profile cases is OneCoin, which was revealed as a Ponzi scheme. People felt like they were getting in because they didn't want to miss out on the next Bitcoin. Do you agree that a lack of regulation creates a risky environment?

Ms. Tanya Woods: It does, without a doubt.

Mr. Iqwinder Gaheer: Yes. So how does a government go about regulating it? The decentralization of authority means that no one's empowered to enforce law and order in the network, with no moderators, leaders or regulatory body. Moreover, since the users are in different countries, it means you're crossing jurisdictional grounds. How do you go about regulating?

Ms. Tanya Woods: One must start in this way—informing oneself. The other way is that one must continue engaging the industry. I'm certain that all the participants online would have a view of their own individual niche and aspect of this, but it starts with education. The challenge is that you can't sit and wait until you feel educated. You need to start engaging in dialogue with industry, because this innovation moves incredibly quickly.

Mr. Iqwinder Gaheer: Thank you.

Mr. McWaters, you mentioned asset-specific regulations. Could you speak a bit more about that?

Mr. Jesse McWaters: The core of what I was trying to communicate is that we have established regulation that governs particular types of activities. It's in the interests of the Canadian people to ensure, wherever possible, that we achieve consistency across that.

I can give an example. Within the context of making payments—for example, on a peer-to-peer or a person-to-merchant basis—we should strive to have anti-money laundering with sanctions, screening and KYC requirements applied consistently across those, whether one is using a peer-to-peer app, a Bitcoin, a credit card or some other form of payment technology. Otherwise, we see regulatory arbitrage and we see activity flowing towards less regulated and less effectively supervised aspects of the payment system.

Mr. Iqwinder Gaheer: Great. Thank you.

We have a lot of witnesses today. Does anyone else want to speak on the regulation and the fact that it's so decentralized?

Go ahead, Mr. Mills.

Mr. Brad Mills: Thank you.

Mr. Chair, I take a bit of a step back from a lot of the conversation about Web3 and comparing that to Bitcoin.

Web3 is typically a marketing term. It's an all-encompassing term that covers things like NFTs, security tokens and DAOs.

For a lot of the stuff, existing regulations can address a lot of these use cases, whereas something like Bitcoin is decentralized. There is no central party. There's no company that controls Bitcoin. Nobody can enforce changing the monetary policy of Bitcoin or issuing more coins. You're not reliant upon the efforts of others. We have clear definitions around what makes something a security. A lot of times these Web3 projects are run by companies. I agree that we should have regulatory clarity, but I feel as though we do kind of have regulatory clarity. It would just be better if we would come together and make clear what a proper path forward would be.

There's nothing wrong with digital securities. There's nothing wrong with a coin, like FLO coin or something, being registered with the Canadian securities agencies. There's nothing wrong with being a digital security and trading compliantly. It's just that currently, there's a lot of undisclosed risk in these things for investors, like large grants of coins for anonymous founders or team members or venture capitalists who can take these extra bags of coins they got in the early launch of their project and maybe even issue more.

I would also love to be part of the conversation. Bitcoiners would love to be part of the conversations, because you really can't lump Bitcoin in with the rest of everything else that's going on.

● (1645)

Mr. Iqwinder Gaheer: Mr. Anani.

Mr. Namir Anani: Thank you.

If you look at the example of the market and the regulations in Europe in terms of markets and crypto-assets, they looked at utility tokens. They actually left Bitcoins and Ethereum out of this outlook. They looked at utility tokens and stablecoins and NFTs, specifically if they fractionalized, because then they become a security.

What is important here is that they looked at not only how to create consumer confidence but also how to create more stability in the marketplace and attract investment. Europe is a large market for crypto-assets. It represents 25% of the world economy in terms of crypto-asset trading.

I think if we're going to develop a regulatory system to manage that from a consumer point of view, capping certain trading, as MiCA has done on certain transactions up to $200 million per day, which is a small amount, then we have to go beyond that and send a signal that we are in an innovation environment in which experimentation is going to be important, and that we're going to allow for regulatory sandboxes.

It's true that regulators have to work directly with industry because that's where the main knowledge and innovation take place, but we have to allow for some regulatory sandboxes to do that experimentation, to have a better understanding of intended and unintended consequences, whether in terms of the period of time, capping trading or demanding specific aspects that could be measured at a specific period of time to make that happen.

That would be my recommendation on that.

Mr. Iqwinder Gaheer: Thank you.

I think I'm out of time.

[*Translation*]

The Chair: Mr. Gaheer, your time is indeed up.

I see that Ms. Bouchard has her hand up and since she is from Université Laval, which is dear to my heart, I will give her a bit of time to briefly respond.

Prof. Charlaine Bouchard: I think that it is now time to intervene and protect consumers. We have been conducting experiments for several years now. Think about the FTX scandal. I believe that is the most obvious example of the need to protect consumers.

Thank you.

The Chair: Thank you very much, Ms. Bouchard.

Mr. Déziel, I will give you the floor as long as your comments are very brief.

Mr. Guillaume Déziel (Administrator, Digital Governance Institute): Thank you, Mr. Chair.

I completely agree. I think that regulation is needed to protect people because, if not, they do not have any alternative or a safe place to go. At the very least, the financial market authorities must be able to send and train workers to help people in this area.

Without those resources, people are being thrown to the wolves. They are being left to fend for themselves. One of my family members got duped by an untrustworthy broker. It is important to remember that blockchains are a place where brokers disappear. Those who claim to be brokers are not necessarily dangerous, unless they are not regulated.

● (1650)

The Chair: Thank you.

Mr. Lemire, you have six minutes.

Mr. Sébastien Lemire (Abitibi—Témiscamingue, BQ): I will try to take five and a half minutes since the witnesses are from Quebec and the Digital Governance Institute.

I thank them for being here today.

Mr. Gauthier, I commend you for your generous contribution and your leadership in encouraging Quebec businesses to digitize. We would like to have more time to consider your document in its entirety. Would you be willing to submit the white paper you talked about as brief to the committee?

Mr. Jean-François Gauthier: I don't see a problem with that. I would, of course, be pleased to do so.

Mr. Sébastien Lemire: Thank you.

Ms. Bouchard, your background is very impressive, and Quebec is grateful to be able to count on your know-how. You are a pioneer and a researcher who has explained to us how notaries use blockchains in their practice in the form of smart contracts.

Can you tell us about your application? I think that it could revolutionize the way other professions, such as chartered accounting and engineering, do business.

Prof. Charlaine Bouchard: Thank you for your comments, Mr. Lemire.

Blockchain technology is a data certification and integrity technology. Over time, as blockchain technology emerged, we saw that there was confusion between the notary, a public officer, and the notary public. Quebec notaries are not the first in the civil law tradition. In fact, French and Italian notaries are similar. We developed a whole smart contract mechanism, among other things.

We know that blockchain technology has three main advantages. The first is the automation of transactions. The second is the certification of data, which in my opinion is the ideal technology for registries containing sensitive information. The third is the possibility of dematerializing shares into tokens to do business on a global scale.

We are therefore in the process of prototyping and implementing a notary blockchain, which will be done in three phases. One of the phases will involve automating notarial contracts. Because of the COVID-19 crisis, notaries are now notarizing digitally and that will continue. We are integrating smart contracts, which will help save a lot of time. Obviously, this is all being done for the benefit of Quebeckers. In another phase, notaries will use certain types of tokens to dematerialize property, shares and intellectual property rights.

Basically, that is what we have planned for the coming months.

Mr. Sébastien Lemire: According to a university article, blockchain technology can address increasingly complex supply chain management challenges for some products, but it also presents issues. For example, since each node in a blockchain registry is potentially located in a different part of the world, it could be hard to decide what laws apply and what courts have jurisdiction to address potential supply chain management issues.

I am thinking here of the smart ports project. According to the logistics of transport, documents must be submitted for every load and every customs obligation. What measures could be taken to manage this potential problem? Is the blockchain technology currently being used in managing some supply chains sufficient? If so, how are problems managed?

Prof. Charlaine Bouchard: I can provide the first part of the answer.

There are advantages to blockchain technology, mainly for data integrity, as I mentioned earlier. In terms of supply chains, this technology will also protect data and streamline processes, in addition to decreasing resource waste and abuses. However, it will not fix all the problems.

We of course have to make the distinction between public blockchains and private blockchains. In the case of a private blockchain, the problem would be different from what we see with a public blockchain.

In the example you gave, where it would be a public blockchain, you identified an important element. There are potential problems. That is a case where action would be needed to protect our data and ensure it was not sent across the Atlantic or around the world. That's an important element.

In the example you gave, there are tremendous advantages to using this technology, but you would need a framework. The technology cannot be deployed without regulation. That's an example of a limit.

● (1655)

Mr. Sébastien Lemire: Thank you.

M. Déziel, there is a lot of information on your website about the place of technology in free and open digital media in preserving and promoting Quebec cultural content. Your proposal for a digital cultural strategy hints at solutions for recognizing the true value of our authors' and creators' work.

Could you explain the role of blockchains in this context?

Mr. Guillaume Déziel: Thank you for your question.

The importation of the digital lock model is the first application we saw to protect how cultural content is consumed. With this kind of model, specific permission from a particular blockchain is required to execute, run or read a file or content. It's one of the options.

However, anything called shared and nano-management of revenues—I think Ms. Woods spoke about it at the beginning of the meeting—would seem to be much more obvious and useful.

In the cultural industry, there is a huge number of revenue sources that pay less and less. Managing all of this is an enormous task, and it can sometimes cost more to manage the revenue than its actual value. I hope I'm being clear. In such cases, it is so appealing to have the equivalent of an Excel spreadsheet that would receive revenues on one side and automatically distribute them to the people who should be receiving them on the other, without human intervention, seamlessly, transparently and in perpetuity, that it is probably what we will see happen in the future. It's just a question of time.

There is also the issue of the user's experience. It's probably the only area that is slowing down the adoption of blockchain technology at the moment, as it means users are responsible for the keys to their own safes. This is noteworthy. I think it's a question of time until all users are better able to manage that. As the representative for Mastercard said earlier, huge investments are needed in security platforms that will manage other people's keys, if necessary. It's clear that people will really need to be educated, which will, generally speaking, lead us to adopt these technologies more quickly.

Mr. Sébastien Lemire: Thank you very much.

The Chair: Thank you.

I will now give the floor to Brian Masse for six minutes.

[*English*]

Mr. Brian Masse (Windsor West, NDP): Thank you, Mr. Chair, and thank you to the witnesses for their testimony.

I'll turn this over to Madame Bouchard to start, and then to anybody else who wants to talk about this, because you brought up about the not-for-profit as well.

I'm concerned about fraud and how we move forward on a solid policy and also deal with the fraud that is part of every industry. There have been lots of significant problems, and public confidence has been shaken, I think, most recently.

How do we deal with that? How do we build a path forward to get over that and to build confidence and accountability?

[*Translation*]

Prof. Charlaine Bouchard: That's a big question.

There are two things to consider in connection with fraud. First of all, there is the technology itself. Blockchain technology is one of the safest and efficient on the market because of its characteristics. The other witnesses before me have spoke about concepts like cryptography, data integrity, transparency and traceability. Those are the key features of blockchain. To give you an example, Bitcoin has never been counterfeited since its first appearance in 2008.

Unfortunately, in most instances, it's the use of the technology by individuals that will lead to fraud. That means that it's both extremely difficult and very easy to answer your question. The use of the technology by individuals has to be within a framework. My colleague mentioned earlier that it was important to invest in platforms. I agree with him, but the platforms also require a structure, because some people, some human beings, can hide behind them.

Blockchain technology eliminates some of the intermediaries, but also introduces new ones. Like any technology, blockchain is used in a world in which some individuals will misuse them, And that, unfortunately for the fierce advocates who have developed these technologies, will require protection for consumers.

In short, the strengths of the technology's characteristics need to be distinguished from its use by people who use it incorrectly and commit fraud. These people have to be dealt with.

Thank you.

● (1700)

[*English*]

Mr. Brian Masse: Thank you.

I see that I have three others, and I probably have about three minutes left.

I can start with Mr. Mills and go across the board. If you can take a minute...I would like to hear from everybody on this. It's an issue I have a lot of interest in.

Please begin, Mr. Mills.

If everybody could take one minute, Mr. Chair, that should hopefully get all of the testimony in.

Mr. Brad Mills: Thanks.

Mr. Chair, one of the important things we should be looking at to make Canada safer from fraud in crypto markets.... I'm going to take a progressive, open view here. Let's say that not everything that's happening in blockchain tokens and digital assets or whatever is fraudulent, pump and dumps, and stuff like that. I'm not saying that right now.

I'm saying, let's say there are some digital commodities. Maybe it's not just Bitcoin. Maybe there are other things, as well, that meet the guidelines that would make it safe for people to want to invest long term or save in Bitcoin. Personally, I think it's just Bitcoin.

One thing for sure is that we do not have friendly banking regulations for Bitcoin companies. I think we need to improve on that, especially working with companies that are creating this SPDI framework in Wyoming to be able to allow companies like Shakepay, which has a million Canadian customers who have Bitcoin, to have a bank charter.

Canadians would be able to put their Bitcoin in Bitcoin banks, rather than resorting to going off and speculating at these companies that are not even holding Bitcoin; they are just pretending to sell you Bitcoin overseas.

Mr. Brian Masse: Thank you.

Please, go ahead, Mr. Déziel.

[*Translation*]

Mr. Guillaume Déziel: I would answer that question by reiterating the importance of taking action to regulate the technology so that people know what they mustn't do, and in particular, to establish institutions to regulate those who take initiatives and seize opportunities in this field.

For example, one of the reasons why I was willing to visit a cryptocurrency exchange platform was that it had a registration number from the Financial Transactions and Reports Analysis Centre of Canada. It's reassuring for consumers to see that these platforms are regulated. That doesn't mean that they won't still be able to play games with money, given that human behaviour is not infallible. Our authorities, institutions and governments nevertheless need to establish systems to approve startup companies, perhaps even by encouraging the various financial market authorities to create sandboxes, and ensure that these businesses are properly guided and structured from the outset. That would be very reassuring to citizens.

● (1705)

[*English*]

Mr. Brian Masse: Thank you.

Mr. McWaters.

Mr. Jesse McWaters: Thank you.

As Madame Bouchard said, crypto has seen the appearance of new intermediaries. I think two are particularly important for achieving trust in the ecosystem. Those are exchanges, or virtual asset service providers, and stablecoin issuers.

In the case of exchanges, it's particularly important to ensure that appropriate supervisory regimes exist around the segregation of customer assets. One reason the failure of FTX was so challenging was the commingling of FTX assets and customer assets in inappropriate ways.

With respect to stablecoin issuers, it's critical that the stabilization mechanism underlying that stablecoin be effectively monitored to ensure that the stablecoin is appropriately collateralized, either by being wholly collateralized by bank deposits in the case of an e-money type of stablecoin, or by being issued by a bank institution in the case of a tokenized, deposit-style stablecoin.

Thank you.

The Chair: Thank you very much.

We'll now turn to Mr. Williams for five minutes.

Mr. Ryan Williams (Bay of Quinte, CPC): Thank you, Mr. Chair.

Through you, I've been very consistent when I ask panellists questions.

I'm trying to get a scope of anyone who has any hard data on the size, worth and number of jobs that blockchain is worth to Canada right now. Do any witnesses have that data?

Mr. Namir Anani: Maybe I can add a little.

The study we did back in 2020 indicated that there were approximately 16,000 in the workforce in Canada. With the CAGR at the time.... In fact, even in 2017 we estimated that it was growing by 33% year over year.

We definitely need a more in-depth analysis of this market. As I highlighted earlier in my briefing, the market's growing quite considerably across the globe, with many countries taking a first-move advantage in that space.

There's potential for us to not only develop the talent, but to lose that talent to south of the border, to many other countries in Europe and potentially to Asia.

Mr. Ryan Williams: Thank you. I'm sorry for interrupting you, but I have only so much time.

Does anyone else have anything else to add? If not, the witnesses can also submit data.

[*Translation*]

Mr. Guillaume Déziel: I'd like to point out that requests have been made for objective data on this area. The problem in our industry is that analyses are qualitative, not quantitative. For example, I can tell you with certainty that all Bitcoin miners have left Quebec since the introduction of a moratorium and a number of deterrent pricing measures.

As an entrepreneur, I can assure you that I have trouble finding developers of Solidity code on Ethereum, because they are leaving to work for other companies outside Canada. There are fewer and fewer of them. They either go to Toronto, or get out of Canada. It's therefore difficult to find accurate data. On the other hand, I would encourage you to include an institution that could measure this type of effect in the regulations.

Thank you.

[*English*]

Mr. Ryan Williams: Thank you so much.

Ms. Woods, what are the potential uses of blockchain by government?

Ms. Tanya Woods: That's a huge question. I'm sure you know that, which is probably why you asked.

Passports are a great example. Driver's licences, health cards and anything that relates to needing to show identity is a digital identity use case. It underpins every time you need to take out something to do something. Digital identity is huge.

In my opening, I spoke about crime and what's happening with crime, whether it be the financing of crime or crimes happening through technology. I really can't emphasize enough to this group that it's imperative that law enforcement is funded properly and equipped to handle crimes of all natures, because they're increasingly having a blockchain bent to them. For clarity, though, fewer than 1% of blockchains actually support criminals and criminal activity, so it's a minor piece of it.

When we look at research and data—cancer research, for example—it's making sure the data collected from all the testing that's happening in all the medical research is verified, confirmed and time-stamped, etc. That's very important.

When we talk about the creator's rights, back in 2008 I imagined a world in which licensing was spontaneous for copyrights of all kinds, in any kind of content. I was ahead of my time, unfortunately. Now I get to be happy and see people innovating in this space. Those royalties are worth billions. The entertainment industry is not a small industry. It's huge. So it goes.

● (1710)

Mr. Ryan Williams: Thank you very much.

Mr. Chair, I'm ceding one minute of my time to Mr. Perkins.

Mr. Rick Perkins (South Shore—St. Margarets, CPC): Thank you, Mr. Chair, and I apologize to the witnesses in advance for this.

I'd like to move the motion I gave notice of earlier today. I believe the clerk has circulated it:

> That the chair report the following to the House: That the committee recommends that the Government of Canada freeze CPP and EI increases for small and medium-sized enterprises to help offset the financial burdens caused by labour shortages and high inflation.

I will briefly speak to it.

EI, in particular, has been consolidated into general revenues. It is running a massive surplus. It's much higher than needed to support the program. It's at a time when small businesses and workers are suffering from the costs of high inflation. Putting on a higher payroll cost and reducing paycheques in the next calendar year will only harm an already fragile economy.

The Chair: Thank you very much, Mr. Perkins, for bringing this motion to the floor.

Are there any comments?

I'll just give my two cents, as chair. It's not on the substance of the motion, but on the interest. Given that we have so many fascinating witnesses, we should proceed with this matter as quickly as possible.

Go ahead, Mr. Fillmore.

Mr. Andy Fillmore (Halifax, Lib.): Thanks, Mr. Chair.

It's my strong feeling that.... There's a committee report on SMEs going to the House shortly. That's really the place for recommendations.

I'll add a short, personal editorial. It doesn't seem like the right time, at all—in a moment of inflation—to be giving employers a pass on their contribution to workers' EI and CPP benefits. People are going to be needing those benefits intact and undiluted.

I regret to say that we'll be unable to support the motion.

The Chair: Thank you, Mr. Fillmore.

I see Mr. Masse.

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

I thought long and hard about this motion. I appreciate the intent of it. I can't support it for a couple of reasons, which I think are important to put on the record. I think the intent is genuine.

First of all, I would prefer a system like the one the United States has had over the last several decades. It's called an earned income tax credit. It returns the contributions to workers and their families directly. Small, medium-sized and independently owned businesses get a repertoire of tax breaks that are geared towards various government services, policies and supports. This is actually a 50-year-old legislation. It was originally introduced in the United States by Richard Nixon, of all people. The workers get that money back directly.

I'm also concerned about employees still paying. Obviously, the Canada pension affects the long-term earnings for families.

I'm much more sympathetic towards a small business for something like this, versus a medium-sized one. I know there's a big difference between what they're each going through, right now.

Additionally, with the labour shortage, this is an issue related to wage suppression that could take place against workers with regard to their capital in the free market economy.

Lastly, it would affect the surplus. As New Democrats, we have advocated for changing the EI system quite extensively, for decades. I know it's under review now, but even recently, in my riding, we had severance taken away from workers because of the broken system. We think people who have already paid into...those types of services should be expanded, especially when you have marginalized workers who can't get employment insurance. That includes women, who are overrepresented among those who cannot get EI right now. I would rather expand the EI that people have already paid into...for those workers, versus reducing those opportunities, later on.

[*Translation*]

The Chair: Thank you Mr. Masse.

Go ahead, Mr. Lemire.

Mr. Sébastien Lemire: Thank you, Mr. Chair.

Although we were in favour of the idea of supporting our small and medium-size enterprises, particularly in view of the labour shortage and inflation, the Bloc Québecois will not support this motion.

[*English*]

The Chair: I see no further members who want to intervene on this subject.

Mr. Perkins, my astute observation tells me this motion will not pass. Do you want a recorded vote?

● (1715)

Mr. Rick Perkins: I want a recorded vote.

(Motion negatived: nays 7; yeas 4)

The Chair: Thank you very much, and thanks for your co-operation in dealing with this matter as swiftly as possible.

[*Translation*]

You've run out of time, Mr. Williams and Mr. Perkins.

Mr. Dong, you have the floor now for five minutes.

[*English*]

Mr. Han Dong (Don Valley North, Lib.): Thank you, Chair.

I want to thank all the witnesses for coming today, and we have quite a few of you. I apologize for that little interruption, but that's normal. I want to assure you that this committee is non-partisan, at least less partisan than what's going on in the House.

Speaking of the House, there was a private member's bill that spoke to cryptocurrency, but what we have in front of us—this is the third meeting on it—is broader than that. We've heard from multiple stakeholders from different aspects, and they've given us very valuable opinions on this technology.

First of all, would you agree that this is a broader, more comprehensive study than what was presented in the House?

Ms. Tanya Woods: This is a broader study than what was presented in the House.

Mr. Han Dong: In your statement and answering the questions, you talk about the current government having provided support in digital technology. Is that correct?

Ms. Tanya Woods: For digital technology, yes.

Mr. Han Dong: In comparison to the last government, because I saw in your resumé that you've been in this industry for 15 years, would you say the current government has made more investments in science and technology?

Ms. Tanya Woods: I would need the numbers to answer that truthfully.

Mr. Han Dong: Could you look at the numbers, because I just want to give the committee a good...? Your testimony is very important, so could you look into the numbers and get back to us?

Ms. Tanya Woods: Yes, I can.

Mr. Han Dong: I'm sure you have heard this being brought up in question period quite a few times. Mr. Poilievre gave the advice to Canadians during the pandemic that they should invest in cryptocurrency to guard against domestic inflation.

Yes or no, do you think it's good advice to give the general public?

Ms. Tanya Woods: I don't give investment advice to anybody.

Mr. Han Dong: There you go.

Also, I collect from your testimony that you said you believe there is lack of guidance from the government, or government sectors, or government agencies, and also educational programs for the general public on digital financing. It would be very irresponsible, given the context, to give the general public the advice that they should invest in cryptocurrency to safeguard their savings.

Ms. Tanya Woods: I'm an incredible promoter of digital skills, digital literacy, cyber-literacy, and blockchain education. I've been supporting the development of programs for digital skills, including the digital skills strategy for Canada since its inception.

I believe there's a lot of literacy generally that Canadians would benefit from, including financial literacy at the most basic levels.

Mr. Han Dong: Right.

Ms. Tanya Woods: I'm a strong supporter of education.

Mr. Han Dong: On that, what can government do to give it a boost, so more people are aware of what cryptocurrencies are, the risks associated with them, what blockchain technology is and how much it can change our lives in the future?

Ms. Tanya Woods: That's a fantastic question and a critical one.

It's as much a question for children as it is for teachers, adults and every Canadian. The more we can understand the environment we exist in, the better, and the better we're able to make informed decisions.

What this government can do is fund programs for digital literacy that include blockchain education, crypto education, NFT education, metaverse education and so on. It's fundamental.

The other thing this government can do is inform and support agencies that are working to protect the public interest, and equally equip them with resources to gain this education.

● (1720)

Mr. Han Dong: That's very helpful.

You also mentioned that there's outdated legislation that we need to look into. Can you be more specific on that?

Ms. Tanya Woods: I can give you one example, and I would encourage this committee to reach out to Canadian law enforcement and include them in this discussion. I think it's really important that you hear from them. I was part of a Chatham House Rule discussion most recently in Ottawa, maybe about a month and a half ago, and I heard from law enforcement officials who had to take evidence back and forth from court several times to be empowered to make a seizure against a criminal who they clearly knew and had evidence to support was a criminal, because the Criminal Code provisions were out of date.

The Criminal Code provisions, as I understand it from their hearsay, are not adequate to address digital asset crime and crypto crime.

Mr. Han Dong: That's very helpful.

Ms. Tanya Woods: They need some support. This is part of my recommendation for a holistic approach, looking at each piece as we go through the system. That would require strengthening to support Canadians.

Mr. Han Dong: You also talked about trade.

The Chair: You're already over time, but we'll get back to you, Mr. Dong.

Mr. Han Dong: Very well, we'll talk about trade later.

Thank you.

Ms. Tanya Woods: Thank you for your questions.

The Chair: Monsieur Lemire.

[*Translation*]

Mr. Sébastien Lemire: Thank you, Mr. Chair.

Mr. Gauthier, My question is about education. Are we giving our fellow citizens, employees and leaders the skills and training needed to understand the impact of important new technologies like blockchain? Are we as a society able to adapt to the needs?

Mr. Jean-François Gauthier: Your question is particularly applicable to me because Quebec's Institut de gouvernance numérique was advocating that the province should adopt a digital strategy for Quebec in 2014. From the outset, we had been proposing that the government do some serious exploration of these issues throughout Quebec as a way of educating all citizens and increasing their literacy. It has become a major economic and social problem.

Unfortunately, for all sorts of reasons, the government decided not to move forward on it. However, I think that it's never too late to get things right. In a context like that, you are absolutely right: very strong measures should be taken to increase people's digital literacy to help them do a better job of managing their digital identity.

As I was saying in my introduction earlier, I believe blockchain technology is a historic opportunity to change paradigms, not only with respect to digital identity, but also on how to administer technologies within the government. As Ms. Bouchard mentioned earlier, secure distributed ledger technology could eventually make it possible to do what we are now doing differently.

As we all know, you can't solve a problem by sitting all the people who caused it around a table. I didn't say that; it was Einstein. In matters of technology, we can't just continue to do what has been done for years, which is to continually pile things up. The structure has become too unstable and the model that we have been using clearly has to be changed in order to better exploit government technologies.

Mr. Sébastien Lemire: Who currently benefits from the absence of a legal or legislative framework with respect to the digital economy?

Mr. Jean-François Gauthier: I believe that Mr. Déziel could answer that better than I can, but I believe it's undeniable that the absence of regulations is benefiting people with bad intentions and causing people to lose the trust they ought to have in blockchains. For me, it's a disaster. As we've been saying from the outset, there absolutely has to be a legal framework to counter what is happening.

Mr. Déziel, if you could take it from here, I'd appreciate it.

Mr. Guillaume Déziel: Thank you very much.

I would add that it's not just a regulatory matter. It's important not to forget that with distributed technologies, you can't, unfortunately, always regulate everything because that would be like turning a Robocop loose in the wild.

Some people have tried to stop Bitcoin, but they've never managed to do it. It's unlikely that they ever will, and even quantum computers won't be able to do it, according to some of my sources.

Since you can't regulate everything, you have to work much harder on encouraging best practices surrounding the regulatory system. For example, you can probably not stop Bitcoin, but you can encourage people to become knowledgeable and digitally literate about the importance of cryptocurrencies in our environment. You can encourage the use of secure technologies like blockchain. For example, you've just voted on a motion, and could have done so using blockchain technology without any problems or any risk of falsification.

I think that you have a role to play, not only in preventing dishonest people from acting as go-betweens to profit from this environment, and also in encouraging best practices and knowledge. I can't emphasize this enough.

● (1725)

Mr. Sébastien Lemire: Mr. Chair, rather than ask a third question, I'd like to let Mr. Anani answer the question I've already asked.

The Chair: Please go ahead, Mr. Anani.

Mr. Namir Anani: Thank you very much.

I'd like to add a few words on education, because it's a key issue. There are indeed many avenues to be dealt with.

It should really begin in elementary schools. Education in this area is needed to develop future talent.

Second, work is needed with post-secondary institutions because it's important to develop talent to meet industry needs.

Third, it's essential to work directly with the industry, which is made up primarily of small companies and micro-enterprise that do not have the means to learn about and acquire these technologies to reduce their administrative burden, whether in the manufacturing sector, where they could certainly improve the supply chain, or in health. It's therefore important to do that.

Fourth, citizens need to be trained to adopt the proper approach and to develop the confidence needed to work in that field, and also to become consumers of these products.

Mr. Sébastien Lemire: Thank you sincerely.

The Chair: Thank you very much.

Mr. Masse, you have the floor for two and a half minutes.

[*English*]

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

I'll go back to Mr. Anani. I'm hoping perhaps you can answer this, and maybe someone else wants to chime in as well. If we're looking at trying to create some standards and norms, and as the world grapples with trying to have some type of common link together, would we be better off, as a first step forward, trying to engage the United States and Mexico in our agreement, like USMCA or CUSMA or whatever, versus through our major trading partners? Are we better to work through an entire more universal approach, a multilateral approach, with other nations?

I see Mr. McWaters wants in as well, which is great. I'll go to Mr. Anani and then Mr. McWaters, and then to whoever else wants to comment. We have about two minutes to go.

Mr. Namir Anani: It is clear that it's best to work with our trade partners, actually, and that's not only the United States and Mexico. Let's not forget the CETA with Europe as well. Specifically, they developed this MiCA regulation, and I think we can leverage lots of these aspects, and maybe go beyond it, creating the regulatory sandboxes that are necessary. Having worked in the regulatory domain at the CRTC, I believe there are instances where innovation requires experimentation, and we have to think larger than that.

We have to also look at what's happening around the world. Singapore is developing lots of these capabilities, as are smaller countries like Malta, Estonia and others, but it's good to start with our trading partners.

Mr. Brian Masse: Quickly, I'll go over to Mr. McWaters and Mr. Mills. I think I have about a minute and a half, so I'll turn it over to the chair as well, please.

Mr. Jesse McWaters: I would concur that there's value to interacting with our trading partners, but like Mr. Anani I would suggest that looking at the MiCA comprehensive crypto-asset regulation in Europe would be valuable, as would looking at a number of the international regulatory standard-setters that exist in this space.

There is extensive work under way by the Financial Stability Board and the Committee on Payments and Market Infrastructure of the Bank for International Settlement on setting appropriate standards in this space, as well as, specifically within the context of KYC and AML, the Financial Action Task Force. All of these are helping to establish standards that can then be interpreted within national regulatory jurisdictions in ways that promote regulatory harmonization and heightened levels of compliance.

I would suggest that Canada be as actively involved as possible with those ongoing undertakings, which are in flight at the moment.

● (1730)

Mr. Brad Mills: Mr. Chair, that was a great question.

I would also frame this in terms of the need for us to be progressive in looking at regulations. The SEC has a really great framework around what is a security and what is not a security, and we should definitely be working with United States regulators to apply that here. However, I think we also have to look at what the demand is for using things like stablecoins in Canada, with more and more people needing to send remittances across borders with Bitcoin and stablecoins. Why don't we have more progressive banking regulations here in Canada to allow companies like challenger banks to come up into Canada, like Cash App and things like that?

I think we shouldn't just be trying to clamp down more on things. We should be trying to follow the lead there as well as using open banking a bit more and giving consumers more of a choice.

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

That was all of your time, Mr. Masse.

[*Translation*]

Before moving on to Mr. Généreux, I need the unanimous consent of the committee members to extend the meeting by at least 20 minutes.

Since no one has voiced opposition, silence means consent.

You have the floor, Mr. Généreux.

Mr. Bernard Généreux (Montmagny—L'Islet—Kamouraska—Rivière-du-Loup, CPC): Thank you, Mr. Chair.

Thank you to all the witnesses.

Ms. Woods, in the spring we experienced a passport crisis in Canada. In response to Mr. Dong's question, you said that the government could use blockchains.

Whether for the issuing of federal passports or provincial driver's licences, would there have been a faster and more secure response if blockchain technology had been used?

The passport issuing process is already very secure in Canada, and there's nothing to indicate that it's regularly targeted by fraudsters. If blockchain were used, would it make the process more secure and would it take less time?

[*English*]

Ms. Tanya Woods: The short answer is yes. Canada undertook a trial regarding passports. There was actually an innovation effort done some years ago, I believe, with the Netherlands. It is possible. In retrospect, hindsight is 20/20, but it's not too late. We're going to have to do this. The world is moving in this direction. There's a very natural evolution toward biometric passports that will really secure these credentials.

[*Translation*]

Mr. Bernard Généreux: Is blockchain really foolproof?

You mentioned identity earlier. I put that question earlier to a witness at a different meeting. There are eight million people on Earth. Could we one day have a system based on blockchain in which each individual would have everything about them linked to their identity, including what they consume, even groceries? That would make us all, individually and collectively, part of the same system.

[*English*]

Ms. Tanya Woods: When I speak to the context of human trafficking, there is innovation happening. I'll let my friends participate, because I can see hands up as well. On the question of incorruptibility, I am certain there are comments to add. When we speak of something like human trafficking, one of the solutions I'm working on is with Global Innovators. The solution is thinking through customs and border officials who have to read passports. Oftentimes, these documents are falsified. People are given fake identities so they can be pulled across the border and continue to be trafficked.

In this case, this is another set of government representatives working with other government representatives around the world to try to design a system so that it can be stopped. This is a fantastic use case. It's a very important use case. When we talk about digital identity, it needs to be incorruptible, but cybercrime will continue. Cybersecurity threats will continue, so money and the expectation of constant innovation should be there.

[*Translation*]

Mr. Bernard Généreux: Did you have anything to add, Mr. Déziel?

Mr. Guillaume Déziel: Yes. If you had to make a dozen eggs secure, would you tend to put them all in the same basket or place them at different locations?

Firstly, the design of distributed technologies makes them a better response to security issues, because not all the data is in the same location.

Second, there has been a lot of conversation about how quantum computers might be able to crack blockchain technology. Until proven otherwise, and I'm talking about Bitcoin here, many believe that the difficulty involved in proof of work, because the structure is changing all the time by those using the data, is such that it can be protected and resist a quantum attack.

I would say that blockchain technology is much more secure than putting all your eggs in the same basket, by which I mean a central database somewhere in the cloud.

● (1735)

Mr. Bernard Généreux: Thank you.

Ms. Leverton, you spoke about innovation and how the government could take advantage of opportunities available through these new technologies. Based on what the previous witnesses have said, there is currently a brain drain in this field.

What sort of government assistance would you like to see for these technologies with a view to supporting innovation in Canada?

[*English*]

Ms. Jaime Leverton: The lack of clarity and the lack of support from a funding perspective have ultimately driven a lot of our talent away. Canada was very early in this ecosystem. Tons of talents were born in Canada. They are subsequently taking their businesses, their innovation and their property, and establishing themselves elsewhere in the world.

We've touched on the UAE a number of times throughout the past couple of hours. I've had the privilege of spending quite a bit of time over there. It has done an incredible job of attracting and supporting talent and start-ups in this space. It's working collaboratively between the public and private sector, with the support of the sovereigns. It's doing an incredible job of taking a leadership position in building up those ecosystems and owning global talent, much of which is Canadian.

[*Translation*]

Mr. Bernard Généreux: Mr. Chair, do I have a bit of speaking time left?

The Chair: I'm afraid you don't really have any, Mr. Généreux.

Mr. Bernard Généreux: Thank you.

The Chair: I'm sorry to disappoint the witnesses.

I will now give the floor to Mr. Fillmore.

[*English*]

Mr. Andy Fillmore: Thank you, Chair.

I'll be sharing my time with our esteemed chair.

It occurs to me that we've heard a lot of testimony that blockchain is very effective for secure transactions or digital identity. You can spend time and you can mine for coins and make some money.

I would like to turn the conversation. It's more of a philosophical answer that I'm looking for.

Mr. Gauthier, you used the term “collective intelligence”. That was very interesting to me.

What are your best hopes for blockchain to uplift us as a culture and as a society? What is the promise of blockchain that we're not seeing when we focus too much on making money from it?

[*Translation*]

Mr. Jean-François Gauthier: Thank you for your question.

I believe that blockchain technology is a historic opportunity for giving power to the people, by giving them the capacity to manage their information themselves. I firmly believe that each individual ought to be responsible for managing their personal information. As was mentioned earlier, blockchain could give citizens the ability to manage their personal information and decide whether or not to authorize communication.

Apart from information management, one of the aspects in which I am most interested from the democratic standpoint is the current loss of confidence in our democratic system. Concrete measures are needed to give citizens back their ability to partake in public sector decision making. People have to become directly involved.

We need to make use of this intelligence to make decisions based on facts. It's called outcome-based budgeting. So we need to use our citizens' intelligence to help make decisions, and to determine the directions of our programs, on the basis of facts rather than opinions or habits that lead us to place our money where we expect it has to be placed because that's what we've always done.

A major paradigm shift is needed in how things are managed. Digital governance means open governance. Through the use of a digital tool, people are going to be able to participate much more actively in the decision-making process.

● (1740)

Mr. Andy Fillmore: Thank you, Mr. Gauthier.

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

[*English*]

Mr. Mills, I will go to you. I hope you'll have the chance to answer.

I was listening recently—and I'm not sure I understand it all, because I'm not a technology geek—to Gary Gensler's MIT class on Bitcoin and blockchain from 2018. Gary Gensler, for those who don't know, is the chairman of the U.S. Securities and Exchange Commission.

What struck me were the two things the class focused on, which were the technological innovation of Satoshi Nakamoto with blockchain and how it solves, for one thing, the double-spending problem, as well as monetary innovation.

One thing I noticed from Gensler was that he said Bitcoin has the potential “to be a catalyst for change in the fields of finance and money”.

I'd like to hear you, Mr. Mills on what the value proposition of Bitcoin is.

Mr. Brad Mills: As I've said in my opening statement, that's something that is really important to me. It's the reason I'm still in Bitcoin 11 years later, and why I'm spending my money and putting my money where my mouth is to help the billions of people around the world who live under some sort of financial oppression.

This is a real problem that we don't really pay too much attention to here in the west because we have a money system that works. We have banks that work pretty well. It's not something we think of as a day-to-day need—that we need Bitcoin as payment method—but for people I'm talking to and working with in Nigeria, El Salvador and places around the world.... I mean, there are 200 million people in Nigeria who are experiencing hyperinflation right now, and they're turning to Bitcoin as a tool that's kind of like a shield to pick up.

Earlier, something was mentioned about Bitcoin not being used as a tool for protecting against inflation. That's another thing we should try not to be partisan about, where we look at something someone says and then ascribe those values. Bitcoin is a tool for good for the world and for the billions of people who live under financial oppression. For people in Nigeria, even though Bitcoin maybe went down 70% from when some of them bought it, they're currently limited to withdrawals of $45 naira a day from their accounts, so they have no choice but to turn to something like Bitcoin. As well as companies, like mining companies that do off-grid mining, there are 300 million people in Africa who don't have access to secure power. Bitcoin positively impacts the grid and, in a way, is going to accelerate the world's adoption of clean energy.

I think Bitcoin is a tool for freedom. That's one of the things that makes me so excited about Bitcoin. I would love to see more people who are in poverty in Canada be lifted up and be reframing themselves from short-term thinking to long-term thinking and saving. Trading cryptocurrencies and minting NFTs and trading them might be fine if you're a stock trader or something like that. The real innovation here is being able to save in a disinflationary money that is free from the corruptible influences of a CEO or any world government that can change the monetary policy on you, as billions of people are experiencing all over the world.

The Chair: Lebanon is also a quite telling example of that, with people being prevented from withdrawing from the traditional legacy banking sector.

That allows me to pivot to Madam Leverton. I'll ask this in French.

[*Translation*]

Ms. Leverton, you mentioned Bitcoin mining by Hut 8. What's the environmental impact of this? It's a question that often comes up.

I'd also like other witnesses to comment on the environmental impact of cryptocurrency mining, and Bitcoin more specifically, which require a lot of energy.

[*English*]

Ms. Jaime Leverton: Yes. Mining in the context of your question is really proof-of-work mining. Proof of work is the type of mining used for Bitcoin. Ethereum used to use that same technology, but recently moved to proof of stake.

Brad did a very good job of touching on it. We in the mining industry see it as a potential for significant good in addressing the environmental crisis and helping to fund a faster move to cleaner energy and cleaner technologies. We're seeing incredible innovation happening, with people converting what would otherwise be flare gas or waste gas into Bitcoin mining at flare sites, which keeps that carbon from being emitted into the atmosphere. We're also seeing incredible innovation happening in using landfill waste as a source of energy to be converted into Bitcoin, reducing the landfill emissions.

Brad talked about the work being done in developing nations, where a mine can be set up and help support the creation of new clean energy, a mine that otherwise wasn't able to be created, in part because of the transmission and distribution problems, whereas a Bitcoin mine really can be set up in very remote areas and act as a way to digitize energy. What Bitcoin really is at the end of the day is digitized energy, which can then be transferred in a seamless and decentralized manner.

● (1745)

[*Translation*]

The Chair: Thank you very much.

I'm giving the floor now to Mr. Déziel and Ms. Bouchard.

Mr. Guillaume Déziel: What I'd like to add to the environmental argument is the fact that it really depends on the energy sources. We in Canada have are fortunate to have more clean energy sources than anywhere else in North America. When doing the calculations, the energy source has to be taken into consideration before examining the energy consumption aspects if we are to get an accurate calculation for the environmental impact.

Moreover, Bitcoin and other non-inflationary cryptocurrencies also provide a solid foundation for lowering energy use. If we are going to discuss the environmental footprint, then it's important to ask whether the economic system within which we operate, the debt-based monetary system that constantly goads us to consume more, is necessarily the right foundation to build on.

I'll end by pointing out that paper money has not been backed by gold since 1971, and is now tied to a country's sovereignty, and hence its status, along with its military and geopolitical alliances. That means it can go all the way to nuclear weapons. That's been included in the arguments. What's really needed, then, is an attempt to put it all in perspective when we ask whether or not Bitcoin mining is a pollutant.

The Chair: Ms. Bouchard, Please be brief. I've been overly generous towards myself and my speaking time has come to an end.

Prof. Charlaine Bouchard: I'd like to add two minor points.

First of all, proof of work and blockchain are emerging systems. A lot of research is under way and things are going to change. What we often forget is that blockchain is very interesting in terms of decentralizing energy systems. All kinds of studies have demonstrated that, and I would ask you to look at the ones published about blockchain, which introduces opportunities for consumers of energy.

In a New York suburb, the prototyping carried out by Transactive Grid clearly demonstrated the benefits of blockchain in terms of decentralized energy trading, metering, investments, carbon trading, network management and so on.

Thank you.

The Chair: As I understand it, Hydro-Québec will always produce for maximum demand, and there will therefore always be an energy loss. When you mine Bitcoin, I think that the technology could be interesting in terms of using the energy you need and then transferring some of it around the world through blockchain transactions.

Ms. Leverton, over to you to conclude the discussion.

[*English*]

Ms. Jaime Leverton: Thank you so much.

I talked about that in my opening remarks. In the example of our site in Medicine Hat, our ability to consume that energy when it's not required by the local community means it's a completely efficient system.

● (1750)

The Chair: We'll have Mr. Vis, please.

Ms. Jaime Leverton: The other thing I want to point out is that Hut 8 is one of the founding members of the global Bitcoin mining council, which publishes research on a quarterly basis that specifically addresses the energy sources of Bitcoin mining around the world. What we've been able to demonstrate quarter over quarter is an increased use of renewable energy sources, and we're one of the most renewable-intensive industries on the planet, with over 58% of the Bitcoin mining industry using renewable sources.

One of the challenges we face as an industry is that it is so transparent. Our energy use is well understood and well known, therefore it gets a lot more attention, whereas if you look at other industries, fiat or gold mining or even the gaming industry, for example, you really can't quantify the amount of energy they use the way you can with Bitcoin.

We think of proof-of-work mining as a feature. This transparency and this decentralization are features of the system, and the ability to use it for the greater good, not just in the output of Bitcoin itself but in the ability to monetize energy and to build stable, renewable grids, is truly incredible technology.

The Chair: Mr. Mills, you have the final word, briefly, because we have to go vote.

Mr. Brad Mills: Mr. Chair, I want to put in one final point of consideration for everybody. Bitcoin founders and entrepreneurs are interested in these other use cases, like decentralized identity and peer-to-peer technology like the decentralized web. It is being built out on stacks, on layers on top of Bitcoin, even without blockchain at all. You don't necessarily need that.

The Chair: Thank you, Mr. Mills.

I'm sorry. I assume you want to go to the Lightning Network. That's also very fascinating. It's a very interesting technology for those curious enough to take an interest beyond the caricature of Bitcoin bros and the like.

Thank you very much for sharing your thoughts and knowledge with us.

[*Translation*]

That's the end of the meeting.

Thanks to everyone, the analysts, the members, the interpreters and the clerks.

The meeting is adjourned.