



# REGULATING BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES: CHALLENGES AND OPPORTUNITIES FOR CANADIAN INNOVATION

MARCH 14, 2016  
TORONTO, CANADA

CONFERENCE REPORT





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## ABOUT THE ILRP

The International Law Research Program (ILRP) at CIGI is an integrated multidisciplinary research program that provides leading academics, government and private sector legal experts, as well as students from Canada and abroad, with the opportunity to contribute to advancements in international law.

The ILRP strives to be the world's leading international law research program, with recognized impact on how international law is brought to bear on significant global issues. The program's mission is to connect knowledge, policy and practice to build the international law framework — the globalized rule of law — to support international governance of the future. Its founding belief is that better international governance, including a strengthened international law framework, can improve the lives of people everywhere, increase prosperity, ensure global sustainability, address inequality, safeguard human rights and promote a more secure world.

The ILRP will focus on the areas of international law that are most important to global innovation, prosperity and sustainability: international economic law, international intellectual property law and international environmental law. In its research, the ILRP is attentive to the emerging interactions between international and transnational law, indigenous law and constitutional law.

## ABOUT THE AUTHORS



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She has extensive experience as a senior executive of various departments of the federal government, including national security coordinator for the Department of Justice Canada, and legal adviser to the Department of National Defence and Canadian Forces.

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## EXECUTIVE SUMMARY

The emergence of distributed ledger technologies as the next significant advancement in computing has prompted institutions in the public and private sectors to consider how their services and technological infrastructure are going to be impacted in the near future. While the Canadian financial sector is moving to exploit the technology's potential to add efficiency to transaction-clearing processes, Canadian regulators and government agencies are grappling with questions concerning the legal treatment of cryptocurrencies and other implementations of distributed ledgers. Driving many of these developments are Canadian entrepreneurs at the forefront of the technology, who are concerned about preserving an ecosystem conducive to continued innovation yet enthusiastic about displacing the players by whom that ecosystem has so far been defined.

The purpose of this round table event was, therefore, to engage key experts and stakeholders in a discussion about interactions between players in the distributed ledger technology space and to identify opportunities for Canada and its regulators to ensure the country's continued leadership in this realm. The event was comprised of five panel sessions, with the first aimed at providing a comprehensive overview of both technical and legal developments in the area. The second and third sessions homed in on distributed ledger innovations within and outside of traditional markets. Finally, the event concluded with two sessions devoted primarily to the path ahead for regulators of domains affected by distributed ledger technologies.

## INTRODUCTION

On March 14, 2016, the International Law Research Program of the Centre for International Governance Innovation (CIGI) held a round table discussion dedicated to regulation of distributed ledger technologies. The event, conducted under the Chatham House Rule,<sup>1</sup> brought together 45 participants, of whom 20 spoke as part of one of five panel sessions. The following stakeholder groups were represented: think tanks, educational institutions, private sector institutions, private legal practice and foreign and Canadian public sector institutions.

<sup>1</sup> The conference was conducted under the Chatham House Rule. Under this protocol, those present, including media, “are free to use information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.” For a full explanation of the Chatham House Rule, see [www.chathamhouse.org/about-us/chathamhouserule](http://www.chathamhouse.org/about-us/chathamhouserule).

## OBSERVATIONS FROM THE CIGI ROUND TABLE

### Stage-setting Panel: Decentralized Ledger Technologies in Canada – The State of Play

A panellist posited that, by proposing a way to ensure the validity of transactions through a mechanism for reaching decentralized consensus, a paper credited to Satoshi Nakamoto solved a problem inherent to nearly all transactions: the problem of trust. Ultimately serving as the basis for blockchain-powered innovations, such as Bitcoin, that paper may well have rendered obsolete the premise that trusted intermediaries play an indispensable role in relations between unacquainted parties. As a result, affected institutions and individuals presently face a future defined by massive disintermediation, sweeping automation and shrinking transaction costs. But, in light of the relative infancy of distributed ledger technologies, the true character of that impending reality is contingent upon choices that participating developers, lawmakers and users alike have yet to make. Those choices, for example, involve distinguishing between system designs with varying levels of centralized control and appreciating developments in computing that alter the scalability and pragmatism of distributed ledgers.

This session's panel, thus, tended to reason in terms of challenges and opportunities presented by changes likely to come as a result of the growing adoption of decentralized ledger innovations. From an institutional perspective, those changes will likely prompt organizations to consider how they can leverage the technology to further digitize their operations. However, transformative initiatives require buy-in from high-level officials, which can be especially challenging when dealing with a technology novel enough to be plagued by regulatory, and even theoretical, uncertainty. Thus, as a panellist noted, education of regulators, among other decision makers, is essential for establishing leadership in realms affected by disruptive technologies. Panellists further observed that educational engagement can, for example, lead to the identification of the vulnerabilities of a given technology and, drawing an analogy to the Canadian financial sector's relative resilience during the 2008 financial meltdown, create well-managed systems that exhibit a capacity to withstand crises.

Panellists also discussed challenges and opportunities posed by distributed ledgers from a legal perspective. While the technology presents some obvious benefits, such as greater financial inclusion and increased transaction speeds, user anonymity inherent to some of its implementations makes it suitable for illegal activities, such as money laundering. A panellist explained how the Canadian legal framework has so far taken account of the technology across different areas of law, such as consumer protection law, criminal law and tax law, by citing instances of those areas' oversight bodies overtly turning their minds to virtual currencies. With respect to Canadian

tax law, in particular, it was observed that the Canada Revenue Agency (CRA) was one of the first government agencies in the world to engage the subject of virtual currencies by issuing guidance regarding the tax treatment of transactions involving such currencies.

The path ahead for agencies such as the CRA is not entirely clear, however. One line of discussion during this session addressed privacy issues that arise with respect to regulatory enforcement as it pertains to cryptocurrencies: to a certain degree, enforcement requires identification, which renders complete anonymity unlikely. An alternative view is that decentralized ledger technologies offer policy makers the chance to think about regulatory compliance in a new way. As one panellist suggested, software-powered transaction mechanisms could allow for regulations to be embedded in the code itself, facilitating, for example, immediate accounting and remission of taxes owed directly to the government at the time a qualifying transaction takes place. Other ideas included the use of distributed ledgers with read-only keys for government agencies, as well as more traditional techniques, such as vendor-reporting requirements and the monitoring of chokepoints at which cryptocurrencies are converted to fiat money, for example.

### **Panel 2: Distributed Ledger Innovations Within Traditional Financial Markets**

For as long as the global community struggles to adopt distributed ledger systems in a sustainable and uniform manner, it will require trustworthy institutions to enable community members to trade in and out of those systems. Thus, despite widespread rhetoric promising unprecedented disintermediation, major financial and payments institutions see great potential in embracing blockchain technology as a way of abandoning legacy systems and capitalizing on efficiency-related gains stemming from the ability to perform secure transactions with minimal clearing time. In this way, as one panellist explained, banks and other financial institutions can be seen as agents of disintermediation rather than as its victims; internally, transactions often involve several players whose operations can be automated with the use of a blockchain.

Meaningful widespread adoption of blockchain and other distributed ledger technologies by financial giants will likely prove difficult, however. As one participant pointed out, large traditional institutions are seldom seen as champions of innovation. Further, according to a panellist, adoption issues may have less to do with technology and more with the other three components of organizational infrastructure struggling to keep pace with technological developments: people, processes and governance. Nonetheless, despite having a rather limited role in ground-level innovation, financial industry titans are working to understand blockchain technology and to identify the risks it conveys, now that it has solidified its place in the future of finance.

Central to identifying those risks are questions around the proper regulation of distributed ledgers. Here, regulators and their subjects face certain dilemmas. Perhaps the most obvious obstacles are jurisdictional: transactions often defy the political boundaries in which regulators operate. Further complicating the regulatory environment with new rules and restrictions also makes it more difficult for businesses to manage compliance, in particular if they operate in multiple countries. Finally, regulators must appreciate that distributed ledgers do not pose merely technological issues but also require governments to grapple with profound macroeconomic questions concerning the role of central banks and the money supply. In light of the hurdles to effective regulation of distributed ledgers, the panellist who identified them stressed the importance of establishing frameworks for cooperation between innovators and regulators. Regulators have a stake in a successful deployment of distributed ledger technology, which could radically change how they gather actionable intelligence and manage compliance. However, conflicts between regulators and disruptive companies at this time will likely impede innovation, and a lack of dialogue between the two will likely yield laws that fail to provide firms with the flexibility necessary to deploy new innovations.

### **Panel 3: Distributed Ledger Innovations Aimed at Displacing Traditional Financial Markets**

The current state of distributed ledger technology is characterized by its emergent properties and applications, each of which could fundamentally alter the nature of several types of institutions and those institutions' services. For example, one panellist described his experience in an ongoing digitization of a developing country's government services. This prompted the panel to contemplate the feasibility and potential consequences of using different implementations of the technology underlying blockchains to replace the vast majority of ledger-based infrastructure traditionally maintained by states for their citizens. Such infrastructure may include services ranging from the postal service to land title registry administration. A participant speculated about the threat faced by governments that rely on centralization in exercising power: that of being undermined by distributed ledgers used by citizens anonymously.

The blockchain ecosystem is far from having achieved disintermediation, however. Wallets and exchanges for virtual currencies are just two examples of intermediaries vital to how the industry around blockchain technology works. Nonetheless, a panellist was skeptical of larger institutional players' participation in the development of blockchain technology, given that their market share is widely expected to shrink. In emphasizing how much more innovation has yet to take place, the panellist expressed concern with respect to the introduction of blockchains into permission-based environments, such as banks, which are likely less conducive to continued innovation. The panellist further stressed that



regulators should recognize the risk of over-regulating, thereby potentially stifling the kind of economic growth Canada could benefit from in deploying blockchain technologies, and instead advocated for regulating around “pockets of innovation.”

#### **Panel 4: Do Blockchain/Distributed Ledger Technologies Need a Transnational Governing Body?**

Often central to any discussion about the regulation of a new technology are questions about the standardization of that technology. Ultimately, it is hoped that platforms powered by distributed ledgers will be stable and reliable enough for everyone to benefit from. But stable and reliable platforms require agreement on basic principles or benchmarks that users can look to in evaluating a platform’s essential features, such as its security. The fact that the distributed ledger technology space is open to any actor who desires to participate was seen by the panel as indicative of a healthy ecosystem. At a certain point, however, any such actor will have to think critically about its role in the ecosystem and about the values to which it proposes to adhere. It is in this arena, in the panellists’ view, that Canada could exhibit leadership by providing guidance to ecosystem participants.

A panellist explained that, when a technology is novel enough to be subject to multiple coexisting standards, which is characteristic of the blockchain industry’s current state, the standard with the greatest number of users ultimately prevails, even despite being inferior. This is often a result of direct competition between those standards, in the course of which users pick the winner by virtue of subscribing to one standard over another. However, this type of competition is not necessarily informed by an appreciation of a given standard’s origins or the principles around which it was crafted. One panellist pointed out Canada’s unique position in this area of distributed ledger technology, referring specifically to the many Canadian companies and individuals who have played a pioneering role in the sector. It was suggested, therefore, that Canada has both the capacity and the opportunity to ensure that emerging standards for distributed ledgers benefit from the country’s strong adherence to the protection of personal information and its high reputation for rule of law.

## **CONCLUDING OBSERVATIONS**

Given the infancy of distributed ledger technologies, regulators of domains affected by them have yet to settle on an approach to governance. Yet, as one panellist noted, inaction by regulators is not necessarily akin to taking a *laissez-faire* stance. Rather, regulators might be wise to act only where their actions could provide participants in the distributed ledger ecosystem with greater certainty moving forward. Inaction may also be warranted because current thinking on regulatory enforcement is simply too limited. For example, with respect to the feasibility of incorporating regulatory requirements

into the software code underlying a blockchain to ensure enforcement, a panellist expressed skepticism, noting that any given implementation of the technology can be replicated to exclude unwanted regulatory controls.

By placing an over-emphasis on technology, Canadian regulators could risk misplacing the burden of compliance or missing altogether an opportunity to engage in worthwhile regulation. As one panellist pointed out, imposing obligations on programmers to add specific elements to the code they write is a poor way of apportioning responsibility for the conduct of software users. Instead, as members of the panel proposed, lawmakers should focus on the human side of the equation by working cooperatively with actors in the distributed ledger technology space and being open about upcoming regulatory efforts. With respect to disincentivizing illegal conduct, a panellist remarked that proper deterrents are already in place and suggested that regulators should continue to work within existing legal frameworks rather than attempt a premature freeze-framing of a rapidly evolving ecosystem.

## **CIGI ROUND TABLE AGENDA**

Monday, March 14, 2016, 8:30 a.m.-6:00 p.m.

Four Seasons Hotel, 60 Yorkville Avenue, Toronto, Canada, M4W 0A4

8:30-9:00 a.m. — Breakfast and Registration

9:00-9:30 a.m. — Welcome, introductions & expectations of the workshop

9:30-11:00 a.m. — Stage-setting Panel: Decentralized Ledger Technologies in Canada – The State of Play

- Innovation & adoption in Canada
- The law as it stands
- Canada's evolving policy approach

11:00-11:15 a.m. — Health Break

11:15 a.m.-12:45 p.m. — Panel 2: Distributed Ledger Innovations Within Traditional Financial Markets

- Improving inter-institutional clearing and settlement processes
- Non-financial enterprise uses and their security/privacy implications
- Staying in the good graces of regulators

12:45-2:00 p.m. — Lunch

2:00-3:30 p.m. — Panel 3: Distributed Ledger Innovations Aimed at Displacing Traditional Financial Markets

- Potential societal gains from disintermediation
- Should regulators fear or embrace disintermediation? Can incumbent innovators, disruptors, and regulators peacefully co-exist?
- Looking ahead: How might private, permissioned ledgers interface with one another, with public blockchains, and with sovereign cryptocurrencies?

3:30-3:45 p.m. — Health Break

3:45-5:15 p.m. — Panel 4: Do Blockchain/Distributed Ledger Technologies Need a Transnational Governing Body?

- The case for decentralized governance
- The case for global governance
- Never the twain shall meet?

5:15-5:50 p.m. — Concluding Observations: Opportunities for Canadian Innovation in Blockchain/Distributed Ledger Policy and Regulatory Approaches

5:50-6:00 p.m. — Wrap-up of Workshop

6:00-7:00 p.m. — Reception

7:15-9:00 p.m. — Private dinner

## ABOUT CIGI

The Centre for International Governance Innovation is an independent, non-partisan think tank on international governance. Led by experienced practitioners and distinguished academics, CIGI supports research, forms networks, advances policy debate and generates ideas for multilateral governance improvements. Conducting an active agenda of research, events and publications, CIGI's interdisciplinary work includes collaboration with policy, business and academic communities around the world.

CIGI's current research programs focus on three themes: the global economy; global security & politics; and international law.

CIGI was founded in 2001 by Jim Balsillie, then co-CEO of Research In Motion (BlackBerry), and collaborates with and gratefully acknowledges support from a number of strategic partners, in particular the Government of Canada and the Government of Ontario.

Le CIGI a été fondé en 2001 par Jim Balsillie, qui était alors co-chef de la direction de Research In Motion (BlackBerry). Il collabore avec de nombreux partenaires stratégiques et exprime sa reconnaissance du soutien reçu de ceux-ci, notamment de l'appui reçu du gouvernement du Canada et de celui du gouvernement de l'Ontario.

For more information, please visit [www.cigionline.org](http://www.cigionline.org).

## CIGI MASTHEAD

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