

Digital Policy Hub – Working Paper

From Wampum to Blockchain: Establishing Digital Provenance in Canada

Nathaniel Sukhdeo

Winter term – 2025–2026 cohort

About the Hub

The Digital Policy Hub at CIGI is a collaborative space for emerging scholars and innovative thinkers from the social, natural and applied sciences. It provides opportunities for undergraduate and graduate students and post-doctoral and visiting fellows to share and develop research on the rapid evolution and governance of transformative technologies. The Hub is founded on transdisciplinary approaches that seek to increase understanding of the socio-economic and technological impacts of digitalization and improve the quality and relevance of related research. Core research areas include data, economy and society; artificial intelligence; outer space; digitalization, security and democracy; and the environment and natural resources.

The Digital Policy Hub working papers are the product of research related to the Hub's identified themes prepared by participants during their fellowship.

Partners

Thank you to Mitacs for its partnership and support of Digital Policy Hub fellows through the Accelerate program. We would also like to acknowledge the many universities, governments and private sector partners for their involvement allowing CIGI to offer this holistic research environment.



About CIGI

The Centre for International Governance Innovation (CIGI) is an independent, non-partisan think tank whose peer-reviewed research and trusted analysis influence policy makers to innovate. Our global network of multidisciplinary researchers and strategic partnerships provide policy solutions for the digital era with one goal: to improve people's lives everywhere. Headquartered in Waterloo, Canada, CIGI has received support from the Government of Canada, the Government of Ontario and founder Jim Balsillie.

About the Author

Nathaniel Sukhdeo is a Digital Policy Hub doctoral fellow and a Ph.D. student in law at the University of Victoria. During his Digital Policy Hub fellowship, he will be examining an integration of Indigenous legal orders into Canadian digital governance policies to enhance democratic resilience and digital security. He holds a juris doctor and juris indigenarum doctor (Indigenous legal orders) from the University of Victoria Faculty of Law, a master of public administration from the Royal Military College of Canada and a B.A. in political science from Western University. Nathaniel's professional experience is as a naval warfare officer in the Royal Canadian Navy and as counsel with the Department of Justice Canada.

Copyright © 2026 by Amal Hussein

The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the Centre for International Governance Innovation or its Board of Directors.

Centre for International Governance Innovation and CIGI are registered trademarks.

67 Erb Street West
Waterloo, ON, Canada N2L 6C2
cigionline.org

From Wampum to Blockchain: Establishing Digital Provenance in Canada

Nathaniel Sukhdeo

Bottom Line Up Front

As Canada shifts toward an intangible economy, traceability remains vital in efforts to combat intellectual property (IP) theft. Canada faces a concurrent public policy issue in fulfilling its fiduciary duties to protect Indigenous interests under section 35 of the Constitution Act, 1982; to uphold the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP); and to fulfill Indigenous Peoples Economic and Trade Cooperation Arrangement (IPETCA) obligations. Canada remains without the necessary legislation or digital tools to meet the challenges posed to its national security interests, fulfill its UNDRIP obligations and close the gaps in IP law for Indigenous rights holders. This working paper argues that the Canadian government should adopt provenance-oriented distributed ledger technologies (DLTs) to address evolving IP challenges.

Key Points

- IP theft poses a national security threat for Canada as it implements its Defence Industrial Strategy, demanding firmer assertions of control.
- Haudenosaunee legal processes of validating events and accounts through wampum share the provenance and validation objectives that DLTs are designed to achieve.
- Canada remains without the necessary legislation or tools to address challenges posed to its national security interests and Indigenous rights holders.
- Canada's Intellectual Property Strategy does not provide the necessary mandate and scope to promote government adoption of DLTs or to fulfill obligations to Indigenous rights holders.
- Canada and Indigenous nations have the chance to advance their relationship with *sui generis* legislation and formalize the protection of Indigenous knowledge and cultural expressions as registrable IP.

Recommendations

- **Recommendation 1:** Revisit the scope of the legislative objectives of Canada's Intellectual Property Strategy and co-develop *sui generis* legislation with Indigenous peoples that addresses issues of registrability, under the auspices of national security and economic interests, to fulfill obligations under IPETCA and UNDRIP.
- **Recommendation 2:** Develop a state-backed and regulated DLT for IP through Industry Canada, managed by the Canadian Intellectual Property Office (CIPO) and co-governed with Indigenous rights holders, to ensure there is a public record of IP control for accountability and that Indigenous rights are centred in decision making, learning from the Haudenosaunee operationalization of provenance.
- **Recommendation 3:** Support capacity development through an expansion of the Indigenous Intellectual Property Program (IIPP) for First Nations, Inuit and Métis to adopt DLTs in the assertion of their inherent rights. Expanding the IIPP will promote broader learning about the benefits that Indigenous legal processes, such as reading wampum, have had for communities that use those legal tools to trace and validate law and historical events.

Introduction

As Canada shifts toward an intangible economy, traceability remains vital in efforts to combat IP theft. Traceability can be achieved through the legal principle of provenance, the official record of ownership tracing origin and custody.¹ While digital tools such as DLTs are increasingly used to trace ownership and control of both tangible and intangible assets, Canada's legal traditions are not necessarily based on provenance in a way that would inspire confidence in these tools. However, Canada's multi-juridical and legally pluralistic environment offers comparative legal traditions for considering how operationalizing provenance might promote societal and political objectives. Various bodies of Indigenous legal orders have operationalized provenance to verify decisions made within a nation and, externally, between nations. Haudenosaunee law is one example of this operationalization, continuing from time immemorial to the present day, providing an unbroken record of treaty relationships with the Dutch, British and Canadian governments, as observed by the Quebec Superior Court in *R. v. Montour*.² Considering how the Haudenosaunee have operationalized provenance as a legal process, this working paper argues that the Canadian government should consider adopting provenance-oriented DLTs as a policy solution to address the evolving online disinformation and IP challenges.

Methodology

This working paper employs a comparative qualitative approach (Wilson 2008) and legal narrative analysis (Asch, Williamson and Paige 2021). It briefly examines certain legal traditions outlined in written accounts of Kayanerenkó:wa, the constitution of the Haudenosaunee Confederacy. The working paper focuses solely on written works detailing Haudenosaunee legal traditions, acknowledging that English explanations may not fully capture the original understanding of these traditions. It will not engage with or explore legal definitions of Indigenous cultural property and IP, or arguments surrounding *sui generis* legislation.

Background

IP is widely regarded by many countries, except Canada, as essential economic infrastructure, and is protected through investment in IP development (Hinton 2025). Jim Balsillie has warned that Canada lacks a national data strategy and that there are only limited programs to build the country's IP assets, leaving it unable to assert data protection or collect "rents" on Canadian IP (Dawson 2025). In his submissions for the House of Commons study on Competitiveness in Canada, Balsillie warned that "Canada's pre-pandemic GDP per capita in 2019 was 3 per cent lower than in 2010. By comparison, the United States, which has aligned its economic policy strategies with contemporary economic realities, experienced a 35 per cent increase over the same period. The gap between Canadian and US performance is much wider — and would be set in sharp relief if the changing wealth effects from privately owned assets were included in this measure" (Council of Canadian Innovators 2021).

¹ *The Law Dictionary*, s.v. "provenance" (see <https://thelawdictionary.org/provenance/>).

² *R v Montour*, 2023 QCCS 4154 [*Montour*].

More than 20 years ago, IP theft from Canada was already estimated to cost around \$22 billion annually (Canadian Chamber of Commerce 2008), and this figure has only grown as Canada's intangible economy has expanded rapidly alongside improvements in digital infrastructure. IP theft has become a global issue, with non-allied foreign actors increasingly targeting vulnerabilities and a lack of awareness in Western countries (Hinton and Witzell 2023). IP theft is also emerging as a national security threat for Canada as it implements the Defence Industrial Strategy, which aims to promote defence innovation and research, demanding a firmer assertion of control over IP. In September 2025, the Canadian Security Intelligence Service warned that international pitch competitions could significantly threaten Canadian start-ups' IP security (Chase and Fife 2025). These concerns will continue to grow as Canada starts to heavily invest in defence research and innovation in the coming years, and as it turns to Indigenous knowledge to assert its Arctic sovereignty as a key part of national defence (Simon 2026; Stroud 2025), supported by Canada's Arctic and Northern Policy Framework, which recognizes Indigenous and scientific knowledge as equally valuable contributors to decision making by the Canadian Armed Forces (Crown-Indigenous Relations and Northern Affairs Canada 2022).

Canada faces a concurrent public policy issue in fulfilling its fiduciary duties to protect Indigenous interests internationally, as part of its obligations under, but not limited to, section 35 of the Constitution Act, 1982,³ the United Nations Declaration on the Rights of Indigenous Peoples and IPETCA.⁴ Under the Copyright Act,⁵ anyone who publishes traditional knowledge and cultural property, including through appropriation, becomes the "legal owner" in common law, automatically displacing Indigenous peoples from their inherent right to control and own that IP (Ha 2025). With the rise of artificial intelligence and malicious actors seeking to profit from e-commerce, Indigenous knowledge, histories, stories and symbols are being expropriated by non-Indigenous digital actors without proper provenance, transparency or legal accountability. Little, if any, of the economic benefit from such IP is ever returned to Indigenous rights holders (Anderson 2010; Vezina 2020). For Indigenous communities or individuals choosing to adopt IP marks or labels for their traditional knowledge or symbols, robust digital infrastructure is needed to enable the tracing of ownership and control (Anderson 2010). The House of Commons Standing Committee on Indigenous and Northern Affairs produced a report in October 2025 that recommended engaging Indigenous rights holders on potential amendments to IP laws and a federal framework regarding protections for Indigenous intellectual and cultural property.⁶ However, at the time of writing, the necessary legislation or digital tools to meet the challenges posed to national security interests and Indigenous rights holders remains undeveloped.

Haudenosaunee legal processes of bringing issues across the council fire and validating events and accounts through various forms of wampum share common policy objectives with those that DLTs are designed to achieve: provenance and validation. DLTs could offer the same kind of digital validation as an evidentiary tool for ownership and control of both intangible and tangible Indigenous

3 Constitution Act, 1982, s 35, being Schedule B to the Canada Act 1982 (UK), 1982, c 11, online: <<https://laws-lois.justice.gc.ca/eng/const/page-12.html#h-55>>.

4 Indigenous Peoples Economic and Trade Cooperation Arrangement, 10 December 2021 (entry into force 23 June 2022) [IPETCA], online: <www.international.gc.ca/trade-commerce/indigenous_peoples-peuples_autochtones/ipetca-text-acecpa-texte.aspx?lang=eng>.

5 Copyright Act, RSC 1985, c C-42 s 5.

6 House of Commons, *First Nations, Inuit and Métis Identity and Participation in Federal Procurement* (October 2025) (Chair: Terry Sheehan), online: <www.ourcommons.ca/documentviewer/en/45-1/INAN/report-1/page-21>.

knowledge, cultural expressions and IP, just as wampum has provided in accounts of treaty relationships with the Dutch and the British. DLTs provide a register to track ownership and control, helping to prevent theft and fraud.

DLTs

DLTs are encrypted digital infrastructures composed of linked blocks of information that reveal each stage of a digital asset's movement and ownership. This technology includes tracking cryptocurrencies, digital registries, and the origin and use of intangible cultural properties such as oral histories, songs, stories, crests and symbols, as well as the digital twins of tangible assets such as physical, intellectual and cultural property, including recordings of songs and stories (Draeger 2015; Khairalla 2024; Maupin 2017; Patel and Ganne 2020; Tria, Arcelli and Federico 2021; US Government Accountability Office 2022). Blockchain, as an example of a DLT, creates a secure, transparent record of every step in a transaction. It starts with verifying original ownership of IP at a specific time using unique markers (a combination of letters and numbers) as the initial link in the chain of blocks. Subsequent actions are recorded as blocks with different unique markers to track control of IP. If an attempt is made to commit fraud by erasing or modifying a previous block, the chain becomes “broken,” invalidating the fraudulent activity or theft (DLTs such as blockchain have been adopted across industries for many uses, far beyond the common perception of cryptocurrency).

The London Bullion Market Association (2022) recently launched its Gold Bar Integrity Database, which uses DLT to track physical gold bars through digital twins recorded on the blockchain. This blockchain system for gold aims to promote provenance and transparency by clearly showing all market participants, the mine and the country in which a gold bar originated, and how it has changed hands along the way to its current ownership (World Gold Council 2022). Applications of DLTs by various governments in addressing specific public policy issues include the adoption of a central bank digital currency,⁷ a digital ID and a land property-tracking system to promote transparency and provenance (Jūrmalis, Berķe-Berga and Urbāne 2025; Laptev and Feyzrakhmanova 2021; Watters 2023). In the United States, the Department of Homeland Security⁸ has adopted DLT tools, including blockchain, to address national security challenges such as digital credentialing to prevent forgery and counterfeiting, promoting unchangeable records that can be publicly verified and supply-chain traceability for natural resources and e-commerce to enhance provenance of products.

⁷ Regulation (EU) 2022/858 of the European Parliament and of the Council of 30 May 2022 on a pilot regime for market infrastructures based on distributed ledger technologies, and amending Regulations (EU) No 600/2014 and (EU) No 909/2014 and Directive 2014/65/EU [2022], OJ, L 151, online: <<https://eur-lex.europa.eu/eli/reg/2022/858/oj/eng>>.

⁸ See www.dhs.gov/science-and-technology/blockchain-portfolio.

Canada's Obligations: Indigenous Cultural Property and IP

Canada has a range of domestic and international obligations to Indigenous peoples that it must uphold to protect their rights, especially in safeguarding Indigenous cultural property and IP from theft. As a participatory economy under IPETCA, Canada has committed under article 8(d)(xx) to consider “approaches to develop domestic processes, including cross-border trade processes, to facilitate tracing, authenticating, and protecting Indigenous-owned production and Indigenous-made products, including Indigenous artistic and cultural property and heritage, and to promoting the mutual recognition of those domestic processes among the participating economies.”⁹ Furthermore, under article 4(a)(x), Canada commits as a state to “enable and support Indigenous peoples to develop trade and other economic opportunities through access to and use of existing and new technologies, and recognise traditional knowledge and Indigenous worldviews in relation to digital issues.”¹⁰ Canada’s endorsement and implementation of UNDRIP as domestic law requires respecting article 31,¹¹ which affirms the right of Indigenous peoples to maintain, control, protect and develop IP over cultural heritage, traditional knowledge and cultural expressions. Additionally, section 35(1) of the Constitution Act, 1982, recognizes and affirms “the existing aboriginal and treaty rights of the aboriginal peoples of Canada.”¹² While the 2014 *Tsilhqot’in Nation*¹³ decision from the Supreme Court of Canada affirmed the necessity of consent in activities affecting Aboriginal title, this working paper assumes that future jurisprudence will likely affirm the inclusion of Indigenous intellectual and cultural property rights as an extension of the current definitions of Aboriginal title and rights when it comes to legal questions on ownership, control and Canada’s obligations concerning free, prior and informed consent (Henderson 2021).

In 2024, the World Intellectual Property Organization (WIPO) proposed the Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge¹⁴ to address the relationship between IP, genetic resources and traditional knowledge, including provisions specifically for Indigenous peoples. Despite being a WIPO member, Canada has not yet decided whether to sign or accede to the treaty as of winter 2026.¹⁵ Regardless of its intentions, Canada should not rely solely on international treaties to fill the growing domestic regulatory gap in protecting the cultural and IP rights of Indigenous peoples, including the infrastructure necessary to defend those rights against foreign and corporate interests. Inaction on adequately protecting Indigenous

9 IPETCA, *supra* note 4, art 8(d)(xx).

10 Ibid, art 4(a)(x).

11 *United Nations Declaration on the Rights of Indigenous Peoples*, GA Res 295, UNGAOR, 61st Sess, Supp No 49, UN Doc A/RES/61/295, 46 ILM 1013 (2007), art 31.

12 *Constitution Act*, 1982, *supra* note 3, s 35(1).

13 *Tsilhqot’in Nation v British Columbia*, 2014 SCC 44 (CanLII), [2014] 2 SCR 257.

14 *Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge*, 24 May 2024, TRT/GRATK/001 (not yet entered into force).

15 See https://ised-isde.canada.ca/site/canadian-intellectual-property-office/en/patents-based-genetic-resources-and-associated-traditional-knowledge#New_WIPO_treaty.

rights can have legal and financial consequences for both the Government of Canada and Canadian taxpayers at large, akin to the \$4.8 billion price tag Canada paid to acquire and complete the Trans-Mountain Pipeline in the face of the Federal Court of Appeal's ruling in *Tsleil-Waututh Nation v. Canada*¹⁶ (Borrows 2020).

It is important to recognize that the Intellectual Property Strategy¹⁷ remains a legal policy tool that Canada and Indigenous communities can collaboratively leverage to promote the use of digital frameworks, such as DLTs, to enhance Indigenous rights holders' control over intellectual and cultural property. Without co-developed *sui generis* legislation that interprets international IP standards in relation to Indigenous laws and world views (Moody 2019), Canada must consider tools such as DLTs to meet its domestic and international commitments to Indigenous peoples, including fulfilling measure 101 of its UNDRIP Action Plan (United Nations Declaration on the Rights of Indigenous Peoples Act Implementation Secretariat 2023).

Haudenosaunee Legal Traditions: Comparative Approach to Provenance

The intention of this section is not to explore or critique Haudenosaunee legal traditions, but rather turn to them for policy inspiration in a legally pluralistic environment. The analysis relies exclusively on accounts of Haudenosaunee legal practices drawn from established Canadian jurisprudence and scholarly works, to maintain a doctrinal approach (Hill 2017; Fenton 1998; Porter 2008; Williams 2018). To understand the successes of implementing a provenance-based infrastructure, this working paper examines Haudenosaunee legal traditions through a comparative law perspective for policy inspiration. It does not aim to critique or engage with Haudenosaunee legal orders or traditions, but rather briefly explores how some processes of the world's oldest living participatory democracy can demonstrate the value of adopting a provenance-based policy approach as Canada works to address legal gaps in regulating the digital economy.

In *R. v. Montour*,¹⁸ Justice Sophie Bourque of the Quebec Supreme Court heard expert testimony as it related to the origin and present-day validity of 10 treaties negotiated between 1664 and 1760, along with the *Tehontatenentshonteronhtahkwa*, also referred to as the “Covenant Chain” in English, which is an overarching oral meta-treaty.¹⁹ The *Montour* case illustrated how the provenance-oriented legal processes of the Haudenosaunee Confederacy were able to accurately and confidently recount the origin and intentions of legal documents such as treaty or wampum, and a recalling of legal events, with precision detail so as to remove any ambiguity or doubt by the court on the validity or intention of the treaty, despite the notions of the Crown to the

¹⁶ *Tsleil-Waututh Nation v Canada* (Attorney General), 2018 FCA 153.

¹⁷ See <https://ised-isde.canada.ca/site/intellectual-property-strategy/en>.

¹⁸ *Montour*, *supra* note 2.

¹⁹ *Ibid* at para 2.

contrary.²⁰ Haudenosaunee lawyer Kayanesenh Paul Williams (2018, 21) observed that “the images, words, and even sequences of words used in treaty council are linked not only to all other treaty councils, but to their sources in the laws of the Confederacy. This is important not just historically but also legally.”

The testimony in *Montour* confirmed that the Haudenosaunee validate intentions, understandings and historical events through at least two legal processes: the bringing of issues across the council fire and through the reading of wampum. The testimony presented the concept of “bringing an issue across the fire”²¹ as representing the Haudenosaunee legal principle of perpetual relationships, rather than one-time transactional interactions.²² The Covenant Chain is just one example from the case, where the court found that the British had adopted and recognized Haudenosaunee law and legal processes in treaty making, including the repetition of language to “facilitate access to publicly-held information,” recognizing that repetition “preserves the consensus about the story being told, and it keeps fresh an awareness of agreements made and mutual responsibilities undertaken together.”²³

A common legal tradition for the Haudenosaunee to validate the words spoken is through reporting with wampum strings and belts (Fenton 1998, 476–77) — and in the context of the Covenant Chain, this includes reiterating the language of the meta treaty and reaffirming commitments.²⁴ In a comparison of legal processes, while the British used writing as an evidentiary method to document oral accounts of events, the Haudenosaunee used wampum as a mnemonic device (Williams 2018, 112) to achieve the same legal objectives. Williams (ibid.) observed that “both sacred and permanent, the belts and strings of shell beads stood as symbols of the concepts of the law, and later as symbols and records of the promises and principles of the treaties. When wampum was not available, other objects were used to preserve words, even temporarily: history records councils in which sticks or furs were used in this way.” Wampum has three mediums (individual beads, strings of beads and woven belts) and acts as a recall device for words that have been spoken and evidence of events that have occurred (ibid.). Williams (ibid., 197) further observed that when it came to the use of wampum in the bringing of the Great Peace, “the act of putting beads in a string, for Hiawatha, was a physical manifestation of his desire to gather his scattered thoughts and feelings and to restore a sense of order. Stringing beads, as any beadworker knows, is a way to impose coherent order and direction upon chaos. It is an act of reunification.” Haudenosaunee legal processes demonstrate a clear operationalization of provenance. Through both processes, the Haudenosaunee can trace the origin of comments and thoughts, and can trace the evolution of relations and events, promoting accountability and transparency as legal principles that maintain a functional democratic system.

20 Ibid at paras 473–9.

21 Ibid at para 185.

22 Ibid at para 184.

23 Ibid at para 959.

24 Ibid at paras 959, 985.

Analysis: Combatting Intellectual and Cultural Property Theft

The transsystemic analysis that follows adopts the methodological perspectives of legal scholar Val Napoleon (2019, 21), who argued that “Indigenous law is concerned with the same human problems as Canadian law which is evidenced by indigenous legal aspirations of dignity and agency, community safety, fairness and accountability. These aspirations are common themes shared across multiple indigenous legal orders in Canada.” It draws on Haudenosaunee legal traditions to guide an operationalized legal response to issues affecting both Canadians and Indigenous peoples. While this working paper focuses on issues related to IP, it also recognizes broader applications of DLTs, such as combatting misinformation.

Researchers at the University of British Columbia have already explored the use of DLTs for Indigenous data sovereignty within the context of Coast Salish fisheries management, demonstrating its application beyond typical IP settings (Lemieux, Shrestha and White, n.d.). However, Canada’s Intellectual Property Strategy funding and legislative amendments do not provide the necessary mandate and scope to promote government adoption of DLTs or to fulfill Canada’s obligations to Indigenous rights holders. Therefore, Industry Canada must act on three fronts: expanding the program mandate, broadening the agency mandate and introducing new legislation.

First, expanding the IIPP grant could help Indigenous rights holders develop capacity to use DLTs for tracing the control and ownership of their IP, knowledge and cultural expressions in future legal cases. Currently, the IIPP grant is designed to support small-scale initiatives focused on protecting Indigenous IP, knowledge and cultural expressions, which suggests that the funding mainly targets registration of IP. Broadening the scope of the IIPP grant to include a dedicated funding stream for Indigenous peoples to adopt DLTs would align with the grant’s overall goal of supporting IP compliance. Such an expansion would also foster innovation that supports the broader intangible economy that could be harmonized with any state-led legislative and digital infrastructure efforts.

Second, Canada must concurrently embrace organizational innovation that supports the co-development of a national DLT with Indigenous partners. State-backed DLTs exist in both Europe and Asia. The European Union’s DLT, for example, is managed by the European Union Intellectual Property Office across 10 IP offices and enables users to leverage the blockchain’s immutable nature to track IP use and status changes, timestamp IP certificates and develop an IP wallet (Rosati 2024). To create and manage a national DLT with adequate resources and oversight, Canada must expand the mandate of CIPO to align with international trading partners’ actions. The CIPO mandate²⁵ should explicitly include serving as a registry office that oversees the state-backed DLT, which, in practice, would mean that CIPO both records and facilitates the transfer of IP rights.

²⁵ See <https://ised-isde.canada.ca/site/canadian-intellectual-property-office/en/cipo-mandate>.

Lastly, current regulatory standards accepted under the common law do not necessarily include Indigenous IP, knowledge and cultural expressions as registrable (Innovation, Science and Economic Development Canada, 2020). Canada has an opportunity, as part of its broader measures under the UNDRIP Action Plan, to develop *sui generis* legislation that bridges the technical language gap in IP standards. Just as the Covenant Chain was recognized as a valid meta-treaty despite not conforming to conventional European standards, Canada and Indigenous nations have the chance to advance their relationship with *sui generis* legislation and formalize the recognition of Indigenous IP, knowledge and cultural expressions as registrable, focusing on their distinctive use in forms deemed most appropriate by Indigenous rights holders on the international IP stage, such as trademarks, copyright and so forth.

Recommendations

- **Recommendation 1:** Revisit the scope of the legislative objectives of Canada's Intellectual Property Strategy and co-develop *sui generis* legislation with Indigenous peoples that addresses issues of registrability, under the auspices of national security and economic interests, to fulfill obligations under IPETCA and UNDRIP.
- **Recommendation 2:** Develop a state-backed and regulated DLT for IP through Industry Canada, managed by CIPO and co-governed with Indigenous rights holders, to ensure there is a public record of IP control for accountability and that Indigenous rights are centred in decision making, learning from the Haudenosaunee operationalization of provenance.
- **Recommendation 3:** Support capacity development through an expansion of the IIPP for First Nations, Inuit and Métis to adopt DLTs in the assertion of their inherent rights. Expanding the IIPP will promote broader learning about the benefits that Indigenous legal processes, such as reading wampum, have had for communities that use those legal tools to trace and validate law and historical events.

Acknowledgements

I would like to thank my academic supervisors, Sarah Morales and John Borrows; my CIGI mentor, Risa Schwartz; my CIGI Digital Policy Hub peer, Jeffrey Klinck; and my University of Victoria colleague, Brandon Montour, for their time and feedback. I also want to thank the Digital Policy Hub team for their continued support of the fellowship program.

Author's Note

The views expressed in this publication are from a personal perspective and do not represent the views or the positions of the author's employer.

Works Cited

- Anderson, Jane. 2010. "Indigenous/Traditional Knowledge & Intellectual Property." Issues Paper. Durham, North Carolina: Center for the Study of the Public Domain, Duke University School of Law. <https://web.law.duke.edu/cspd/itkpaper4/>.
- Asch, Jessica, Tara Williamson and Leslie-Ann Paige. 2021. *Toolkit: Coast Salish Laws Relating to Child and Caregiver Nurturance & Safety*. Victoria, BC: Indigenous Law Research Unit and NIL TU/O Child and Family Services Society. <http://hdl.handle.net/1828/15032>.
- Borrows, John. 2020. "Indigenous Diversities in International Investment and Trade." In *Indigenous Peoples and International Trade: Building Equitable and Inclusive International Trade and Investment Agreements*, edited by John Borrows and Risa Schwartz, 11–42. Cambridge, UK: Cambridge University Press.
- Canadian Chamber of Commerce. 2008. "Submission to the Government of Canada on the Proposed Anti-Counterfeiting Trade Agreement (ACTA)." April 30. www.international.gc.ca/trade-agreements-accords-commerciaux/assets/pdfs/CanadianChamberCommerce.pdf.
- Chase, Steven and Robert Fife. 2025. "CSIS cautions tech startups about pitching at events organized by China." *The Globe and Mail*, September 7. www.theglobeandmail.com/politics/article-csis-warns-tech-startups-about-pitching-at-events-organized-by-china/.
- Council of Canadian Innovators. 2021. "Re-Building Canada's Institutional Capacity for Policy-Making in the Modern Economy." Submission to the House of Commons Standing Committee on Industry, Science and Technology. May 19. House of Commons of Canada. www.ourcommons.ca/Content/Committee/432/INDU/Brief/BR11374233/br-external/CouncilOfCanadianInnovators-e.pdf.
- Crown-Indigenous Relations and Northern Affairs Canada. 2022. *Canada's Arctic and Northern Policy Framework*. September 22. Ottawa, ON: Government of Canada. www.rcaanc-cirnac.gc.ca/eng/1560523306861/1560523330587.
- Dawson, Tyler. 2025. "Tech is wreaking 'catastrophic costs,' Jim Balsillie warns." *National Post*, October 27. <https://nationalpost.com/news/balsillie-tech-catastrophic-costs>.
- Draeger, Dennis D. 2015. "More than Money: Get the Gist on bitcoins, blockchains, & smart contracts." Prepared by Foresight Gist for the Research and Statistics Division, Department of Justice Canada. <https://canlii.ca/t/t1rc>.
- Fenton, William N. 1998. *The Great Law and the Longhouse: A Political History of the Iroquois Confederacy*. Norman, OK: University of Oklahoma Press.
- Ha, Kyungwon. 2025. "Preserving the Past, Protecting the Future: A Path to Safeguarding Indigenous Knowledge in Canadian Law." Canadian Bar Association, December 12. www.cba.org/sections/aboriginal-law/resources/essaywinneraboriginal2025/.
- Henderson, James (Sa'ke'j) Youngblood. 2021. "The Indigenous Domain and Intellectual Property Rights." *Lakehead Law Journal* 4 (2): 93–113. <https://llj.lakeheadu.ca/article/view/1787>.
- Hill, Susan M. 2017. *The Clay We Are Made Of: Haudenosaunee Land Tenure on the Grand River*. Winnipeg, MB: University of Manitoba Press.
- Hinton, Jim. 2025. "CSIS warning shows Ottawa can't keep ignoring Canada's IP crisis." *The Globe and Mail*, September 18. www.theglobeandmail.com/business/commentary/article-csis-intellectual-property-ip-security/.
- Hinton, James W. and Mardi Witzell. 2023. "Canadian IP Is Draining Abroad: That Needs to Stop." Opinion, Centre for International Governance Innovation, May 10. www.cigionline.org/articles/canadian-ip-is-draining-abroad-that-needs-to-stop/.

- Innovation, Science and Economic Development Canada. 2020. "Introduction to Intellectual Property Rights and the Protection of Indigenous Knowledge and Cultural Expressions in Canada." July 20. Ottawa, ON: Government of Canada. <https://ised-isde.canada.ca/site/intellectual-property-strategy/en/introduction-intellectual-property-rights-and-protection-indigenous-knowledge-and-cultural>.
- Jūrmalis, Nauris, Anželika Berķe-Berga and Marta Urbāne. 2025. "Advancing Asset Tokenization in the European Union and Latvia: A Regulatory and Policy Perspective." *Laws* 14 (1). <https://canlii.ca/t/7nl9b>.
- Khairalla, Roula. 2024. "Preparing for the Crypto Winter: Complexities in Cryptocurrency Exchange Insolvencies." *Canada-United States Law Journal* 47 (1): 185. <https://canlii.ca/t/7ncf8>.
- Laptev, Vasilij Andreevich and Daria Rinatovna Feyzrakhmanova. 2021. "Digitalization of Institutions of Corporate Law: Current Trends and Future Prospects." *Laws* 10 (4). <https://canlii.ca/t/tskm>.
- Lemieux, Vicki, Sushant Shrestha and Lee White. n.d. "Data Sovereignty for Indigenous Sovereignty." Blockchain@UBC. <https://blockchain.ubc.ca/research/data-sovereignty-indigenous-sovereignty>.
- London Bullion Market Association. 2022. "LBMA and WGC launch Gold Bar Integrity Programme." March 28. www.lbma.org.uk/articles/lbma-and-wgc-launch-gold-bar-integrity-programme.
- Maupin, Julie. 2017. *Blockchains and the G20: Building an Inclusive, Transparent and Accountable Digital Economy*. Policy Brief No. 101. Waterloo, ON: CIGI. www.cigionline.org/publications/blockchains-and-g20-building-inclusive-transparent-and-accountable-digital-economy/.
- Moody, Oluwatobiloba (Tobi). 2019. *Protecting Traditional Knowledge and Traditional Cultural Expressions*. Conference Report. Waterloo, ON: CIGI. www.cigionline.org/publications/protecting-traditional-knowledge-and-traditional-cultural-expressions/.
- Napoleon, Val. 2019. "Did I Break It? Recording Indigenous (Customary) Law." *Potchefstroom Electronic Law Journal* 22: 1–35. <https://journals.assaf.org.za/index.php/per/article/view/7588>.
- Patel, Deepesh and Emmanuelle Ganne. 2020. "Blockchain & DLT in Trade: Where Do We Stand?" White Paper. November. Geneva, Switzerland: World Trade Organization. www.wto.org/english/res_e/publications_e/blockchainanddlit_e.htm.
- Porter, Tom. 2008. *And Grandma Said...Iroquois Teachings as passed down through the oral tradition*. Xlibris.
- Rosati, Eleonora. 2024. "From Web 2 to Web 3: Harnessing blockchain technology for IP." European Union Intellectual Property Office, January 21. www.euipo.europa.eu/da/news/from-web-2-to-web-3-harnessing-blockchain-technology-for-ip.
- Simon, Mary. 2026. "National Indigenous Defence Conference." Speech by the Governor General of Canada, February 27. www.gg.ca/en/media/news/2026/speech-national-indigenous-defence-conference.
- Stroud, Abbey. 2025. "Guardians Of The Arctic: Indigenous Knowledge At The Core Of Climate And Security Policy." NATO Association of Canada, November 19. <https://natoassociation.ca/guardians-of-the-arctic-indigenous-knowledge-at-the-core-of-climate-and-security-policy/>.

- Tria, Giovanni, Angelo Federico Arcelli and Andrea Federico. 2021. *Blockchain Technology and Crypto-Assets as a New Form of Payment Tool*. Conference Report. Waterloo, ON: CIGI. www.cigionline.org/static/documents/2021_CIGI-OliverWyman_conference_report.pdf.
- United Nations Declaration on the Rights of Indigenous Peoples Act Implementation Secretariat. 2023. *United Nations Declaration on the Rights of Indigenous Peoples Act Action Plan*. December 13. Ottawa, ON: Department of Justice Canada. www.justice.gc.ca/eng/declaration/ap-pa/ah/p2.html.
- US Government Accountability Office. 2022. *Blockchain: Emerging Technology Offers Benefits for Some Applications but Faces Challenges*. March. Report to Congressional Requesters. GAO-22-104625. Washington, DC: US Government Accountability Office. www.gao.gov/assets/gao-22-104625.pdf.
- Vézina, Brigitte. 2020. *Ensuring Respect for Indigenous Cultures: A Moral Rights Approach*. CIGI Paper No. 243. Waterloo, ON: CIGI. www.cigionline.org/publications/ensuring-respect-indigenous-cultures-moral-rights-approach/.
- Watters, Casey. 2023. "When Criminals Abuse the Blockchain: Establishing Personal Jurisdiction in a Decentralised Environment." *Laws* 12 (2): 33. <https://doi.org/10.3390/laws12020033>.
- Williams, Kayanesenh Paul. 2018. *Kayanerenkó:wa: The Great Law of Peace*. Winnipeg, MB: University of Manitoba Press.
- Wilson, Shawn. 2008. *Research Is Ceremony: Indigenous Research Methods*. Winnipeg, MB: Fernwood.
- World Gold Council. 2022. "London Bullion Market Association and World Gold Council announce the launch of the Gold Bar Integrity Programme." Press release, March 28. www.gold.org/news-and-events/press-releases/gold-bar-integrity-programme.