Blockchain Technology for Recordkeeping

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Background

For Canada to be successful in the 21st century, we need to anticipate the challenges ahead and keep our minds open to the potential futures facing us all. This is the inspiration behind SSHRC’s Imagining Canada’s Future initiative.

This research was supported by the Social Sciences and Humanities Research Council of Canada.
Goal and Scope of the Study

• Goal: survey existing knowledge about blockchain technology from as wide a range of sources as possible to ascertain the degree to which the technology can be helpful versus unhelpful (merely hype or may introduce unintended negative consequences).

• Examined our sources through the lens of *archival science*.

• Other aspects of the technology and its application, such as its use as a basis for various cryptocurrencies, were outside the scope of the study.
Methodology

• Three phases:
  1. A literature search and review phase (Phase I);
  2. A thematic synthesis and consultation phase (Phase 2), and
  3. A final write-up and dissemination stage (Phase 3).
Blockchain technology is fundamentally a recordkeeping technology, as much as it is a value transfer technology.
Key Findings

Many current and proposed applications of blockchain technology aim to address recordkeeping challenges; that is, they offer a new form of records storage, use, maintenance or control of records.
Key Findings

A number of the claims associated with use of blockchain technology recordkeeping are overhyped
Key Findings

There appears to be little awareness in the blockchain community of archival science theory, principles and practice, or of recordkeeping requirements and standards derived from them.

More interaction between the archival and the blockchain communities would promote greater awareness.
Key Findings

There is relatively little academic research focused on the recordkeeping implications of this technology. Academia-industry collaborations in the application of blockchain technology for recordkeeping are also mostly absent.
Key Findings

As a recordkeeping technology, the future development of blockchain technology will benefit from the theoretical and practical knowledge of archival science.

Equally, research is needed to adapt archival science theories and practice to capturing, managing and preserving blockchain records.
Key Findings

*Blockchain records must be managed as legal evidence alongside other records in order to meet business and societal purposes. This includes determining how they will be dealt with under existing laws of evidence as well as how best to preserve their long-term authenticity and accessibility as evidence.*
Key Findings

Future research on the impact of blockchain technology on financial stability should consider whether its widespread use for recordkeeping could be a contagion channel for financial systemic risks.
Key Findings

There is growing support for the introduction of technical standards relating to blockchain technology as a spur to innovation e.g. ISO, W3C, OMG

Standards focused on use of the blockchain for recordkeeping can help assure that blockchain technologies embed existing recordkeeping solutions and requirements in much the same way that earlier standards outlining functional requirements for electronic records management systems (ERMS) ensured that these systems supported effective recordkeeping
Key Conclusions

Interdisciplinary research should be conducted that integrates the expertise of legal, economics, archival, diplomatic, forensic, and computer and information academic researchers with blockchain start-ups and solution providers.
Next Steps

- Created a blockchain research cluster at UBC (Blockchain@UBC)
- The cluster will operate with the understanding that combining applied and basic research produces higher-impact research, compared to doing them separately
- Involving industry as research collaborators means that barriers to transfer of knowledge from research will be lower, as industry partners can work alongside academic researchers in the creation of directly applicable research output (i.e., no ivory tower!)
How we will build an industry-academia collab

- **Mitacs Accelerate**: Start Now
- **SSHRC Insight**: Spring 2017
- **NSERC CREATE**
- **NSERC CRD**
How we will build an industry-academia collab

Mitacs Accelerate supports collaborative research between for-profit or approved non-profit organizations, interns, and faculty supervisors at Canadian universities. You get cost-effective access to university researchers and resources and a consultative project plan. Matching starts at dollar-for-dollar.

Who is eligible?
- Businesses and approved not-for-profit organizations operating in Canada
- All sectors and academic disciplines
- Interns: current graduate students (master’s or PhD) and/or postdoctoral fellows

A flexible and scalable option for any organization
- Applications accepted anytime
- Evaluation completed in 6-8 weeks
- Projects can be as long as you need (minimum of 4 months)

Mitacs Accelerate is a national research internship program that has supported over 10,000 collaborations since 2003.

Participating companies say:
- 92% would recommend the program
- 66% said project results have been or will be commercialized
- 34% identified new markets

Source: Mitacs Accelerate Outcomes: Industry Partner Survey (January 2015)
Benefits & Objectives

• Access university expertise
• Build a customized research plan with support from Mitacs representatives
• Augment industry R&D budget
• Get better leveraging for projects with interns to identify new markets, commercialize results, and assess potential employees
• Learn about and influence global standards development
• Learn about global innovations and implementations
For more information:
www.blockchain@ubc.ca

To download the full Blockchain for Recordkeeping report:
http://www.blockchainubc.ca/main/dissemination