

Blockchain Technology for Recordkeeping

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InterPARES Trust European Team Workshop

October 24, 2016

Oslo and Akershus University College of Applied Sciences



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Background

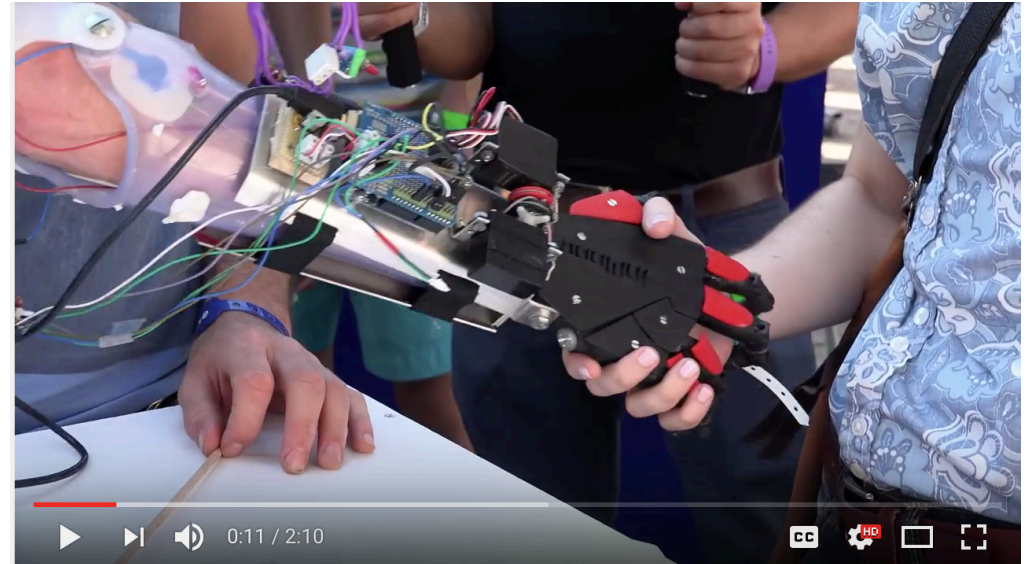
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Asking tomorrow's questions **today.**

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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.



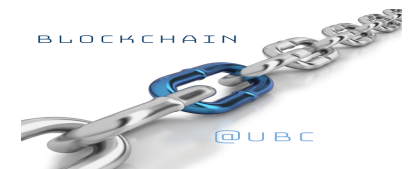
This research was supported by the Social Sciences and Humanities Research Council of Canada



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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.



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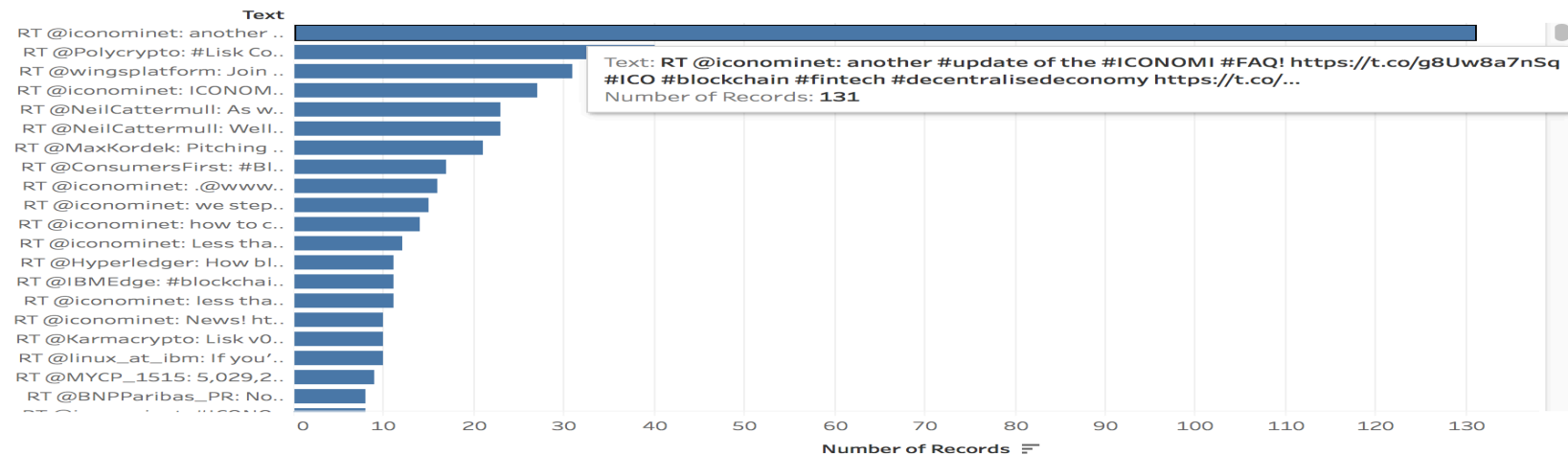
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Methodology

- 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).

Top Tweets



Key Findings

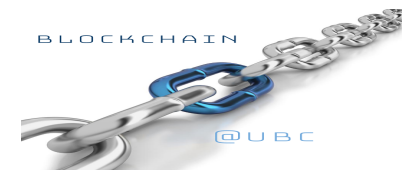
***Blockchain technology is fundamentally a recordkeeping technology,
as much as it is a value transfer technology***



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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



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Key Findings

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



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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



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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



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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



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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



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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



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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



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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



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Next Steps

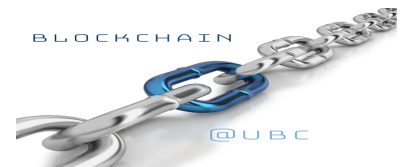
- Created a blockchain research cluster at UBC (Blockchain@UBC)
- The cluster will operate with the understanding that combining applied and basic research produces higher-impact research, compared to doing them separately
- Involving industry as research collaborators means that barriers to transfer 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!)

Blockchain@UBC

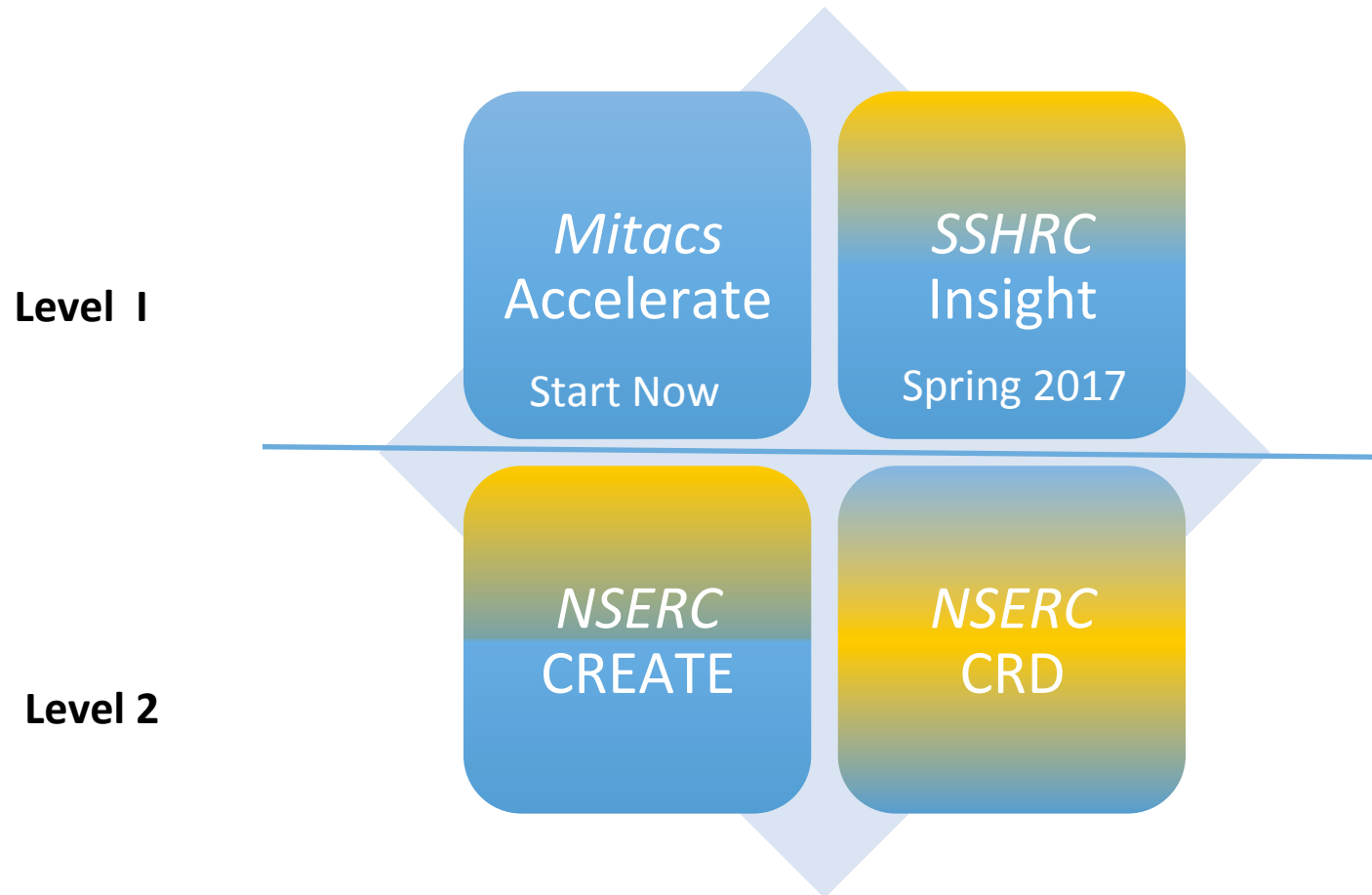
Blockchain@UBC is a collaborative research cluster focusing on blockchain technology as one component of investigating the broader research question "How can emerging technologies be leveraged to benefit Canadians."

As an emerging technology, there is no universally agreed definition of the blockchain, but it is often described as a distributed ledger that maintains a continually growing list of publicly accessible records secured from tampering and revision. Over time, the blockchain is said to create a persistent, immutable, and ever-growing public ledger that continually updates to represent the latest state.

Since the launch of the first blockchain, Bitcoin, in 2009, innovation and investment in this technology has moved at a rapid pace. According to some sources, in 2014 and 2015 alone, more than \$1 billion of venture capital was invested in the emerging blockchain ecosystem, and the rate of investment is almost doubling annually. Some even say that blockchain will follow the



How we will built an industry-academia collab



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How we will built an industry-academia collab



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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?

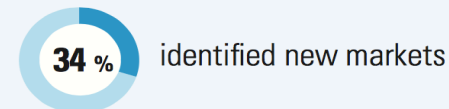
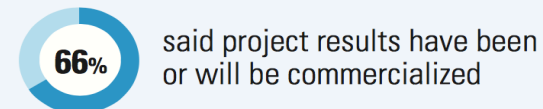
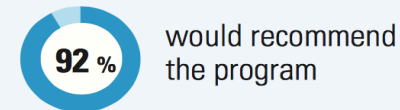
- Businesses and approved not-for-profit organizations operating in Canada
- All sectors and academic disciplines
- Interns: current graduate students (master's or PhD) and/or postdoctoral fellows

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:



Source: *Mitacs Accelerate Outcomes: Industry Partner Survey* (January 2015)



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- 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



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For more information:
www.blockchain@ubc.ca

To download the full
Blockchain for Recordkeeping
report:

[http://
www.blockchainubc.ca/main/](http://www.blockchainubc.ca/main/)



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The wordmark for the Government of Canada, with a small Canadian flag above the letter 'a' in 'Canada'. Below the wordmark is a blue horizontal line.
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