

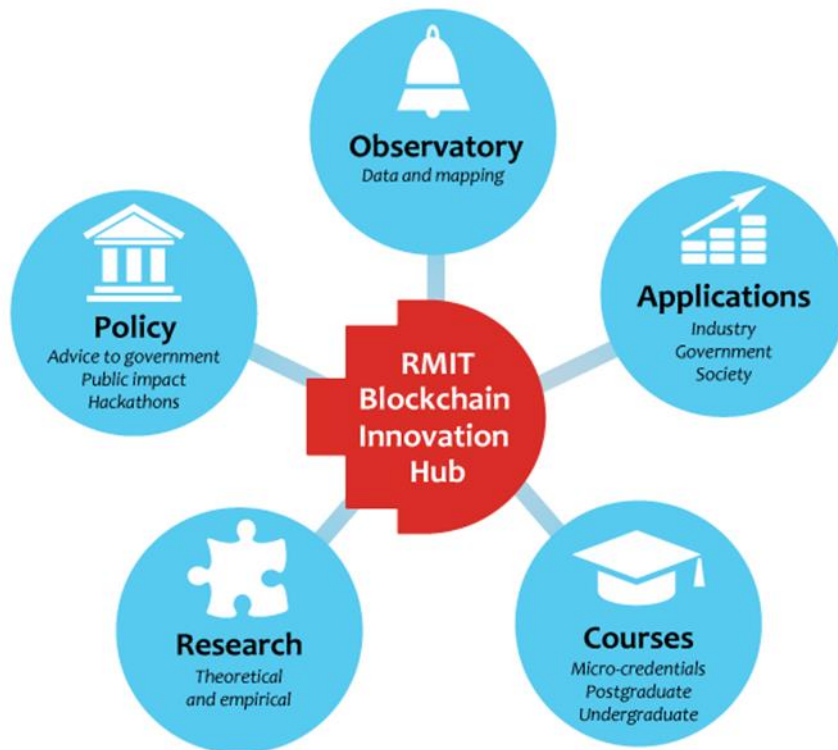
The RMIT Blockchain Innovation Hub: a new approach to social science research on blockchain technology

Sinclair Davidson

RMIT Blockchain Innovation Hub

About us: RMIT Blockchain Innovation Hub

@BlockchainRMIT



Director:

Prof Jason Potts

Key Researchers:

Dr Chris Berg
Prof Sinclair Davidson
A/Prof Marta Poblet
A/Prof Ellie Rennie
Prof Julian Thomas



The blockchain: Five complementary technologies

- Asymmetric cryptography
- Peer to peer networking
- Append-only databases
- Game theory
- Consensus algorithms

- Economics seems missing
 - Game theory is a sub-field



Towards a Cryptoeconomics

- Traditional economics mostly concerned about allocation decisions.
- Traditional economics mostly interested in efficiency and optimisation.
- The economic problem:
 - How to coordinate economic activity when faced with distributed information, and positive transactions costs?
- Before 2009:
 - Prices
 - Trusted 3rd parties
 - Government regulation
- After 2009:
 - Prices
 - Trusted 3rd parties
 - Government regulation

 - Distributed ledgers



Towards a Cryptoeconomics

- Austrian Economics is interested in Distributed Information and Entrepreneurship.
 - What cryptographers call ‘byzantine fault tolerance’ and economists call ‘robust political economy’ is the same thing.
 - Computer scientists and economists have been working on similar problems.
 - How to provide incentives to cooperate in the presence of distributed information.
- But Austrian school economics is not enough!
- New Institutional Economics.
 - Agency Theory
 - nexus of contracts
 - Transactions cost economics
 - Contracts and management of contracts (governance)
- Blockchain is a governance structure that facilitates a nexus of contracts.



Institutional Cryptoeconomics

- What sort of technology is the Blockchain?
 - Production technology
 - General purpose technology
 - Lowers production costs
 - Exchange technology
 - Lowers transaction costs
 - Institutional technology
 - Lowers information costs
- There already exists a body of economic theory that examines the consequences of both information costs and transaction costs.
 - Ronald Coase 1990 Nobel Laureate
 - Oliver Williamson 2009 Nobel Laureate

Williamson: The economic institutions of capitalism

- Transaction cost economics poses the problem of economic organization as a problem of contracting.
 - A particular task is to be accomplished.
 - It can be organized in any of several alternative ways.
Explicit or implicit contract and support apparatus are associated with each.
 - What are the costs?

Before 2009				
Hierarchy				
Government	Firms	Market		
After 2009				
Government	Blockchain	Firms	Blockchain	Markets

What does this mean?

- So very frightening consequences follow from that insight:
 - Massive disruption
 - Future for some people could be Orwellian
- Firms will be nexuses of short term contracts:
 - Teams without the need for monitors
 - Where will the boundary of the firm be?
 - Will there be a need for shareholder capitalism?
- Firms can place their income statements and balance sheets on the blockchain as a smart contract that updates in real time.
 - What need for accountants/Auditors?
 - What need for corporate regulators?
 - Instantaneous bankruptcy.



What does this mean?

- The welfare system could be operated as a smart contract.
 - Track assets, liabilities, and income in real time and adjust welfare payments in real time.
- A truly global blockchained financial system:
 - What will the monetary authorities actually do?
 - Taxation implications?
 - Poll tax
- The future of work?
 - Smart workers will write sub-routines for the blockchain.
 - Anonymous payment in wallet when used.
 - Superstar effects
 - What will aggregated inequality statistics look like?
- That's just the beginning ...

Conclusion

- We have a theory:
 - Austrian School economics + Williamson and Agency Theory
- We have an agenda.

Keep up to date with our work

- <http://sites.rmit.edu.au/blockchain-innovation-hub/>
- <http://cryptoeconomics.com.au/>
- <https://medium.com/@cryptoeconomics>
- @BlockchainRMIT
- @cryptoeconomico