

## Article Information

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## Blockchain - Emerging Legal Issues

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### What is Blockchain?

Blockchain is a peer-to-peer operated public digital ledger that records all transactions executed for a particular asset. Currently, Blockchain only covers Bitcoin (an online currency). However, Blockchain is evolving to be applied to a broader range of crypto-currencies and other asset classes.

The Blockchain maintains this record across a network of computers, and anyone on the network can access the ledger. Blockchain is 'decentralised' meaning people on the network maintain the ledger, requiring no central or third party intermediary involvement.

Each time a Bitcoin transaction is executed, that information is recorded on a 'block' through a kind of time-stamp. Users known as 'miners' use specialised software to look for these time stamped 'blocks', verify their accuracy using a special algorithm, and add the block to the chain. The chain maintains chronological order for all blocks added because of these time-stamps. It therefore becomes a chronological record of all transactions executed over Bitcoin. However, as discussed below, this type of technology as it evolves could be applicable to other types of assets as long as the asset is capable of being recorded.

### What are its implications for business?

The evolution of Blockchain technology will cause significant disruption, as well as present significant opportunities. For example:

- *Financial Services Disruption:* Banks maintain ledgers that record assets, and each transaction adjusts these ledgers, keeping everyone's bank balance up to date as payments and transfers occur. Blockchain can perform this intermediating function in a cheaper and more secure way, and disrupt the role of Banks.
- *Financial Services Opportunity:* Leading banks are experimenting with Blockchain technology as an alternative way of transferring money, particularly internationally. Currently, leading banks including the Commonwealth Bank of Australia, National Australia Bank, Barclays, Bank of America and JP Morgan are working on a Blockchain project with financial innovation firm, R3. It is hoped that the project will deliver a more efficient and cost-effective international settlement network and possibly eliminate the need to rely on central banks.
- *Keeping Track of Property:* Businesses including car leasing companies are looking into using Blockchain as a tool to keep track of their leased assets as they move from lessee to lessee.
- *Unbreakable Contracts:* Blockchain has the ability to self-execute 'smart-contracts'. Smart contracts are agreements written in code and enforced by software through pre-programmed conditions. When the conditions are met, Blockchain can execute the contract and perform the transaction. Smart contracts could cover simple transactions such as online shopping through to more complicated equity issues and other typically manually intensive agreements.

### What is the status of its development?

At this point, applications of Blockchain beyond Bitcoin are at an “experimental stage”. The financial services companies are leading the way in developing applications of Blockchain to their businesses. Major international banks such as UBS, Citi, Deutsche and Bank of America are all researching new applications of Blockchain through the creation of “innovation labs”. CIO of UBS, Oliver Bussmann, predicts “a trusted Blockchain solution could emerge as soon as the middle of 2016”. Other applications, like “unbreakable contracts” and ownership records, are a few more years away.

### **What are the evolving legal issues?**

Blockchain presents a significant opportunity to carry out banking transactions, maintain property registers, and enter into contracts in cheaper and more secure ways. These new applications present significant legal disruptions in the areas of banking and finance, intellectual property, and general commercial contracts. The existing regulatory frameworks will also evolve to accommodate Blockchain. For example:

- *Banking and Finance:* Blockchain has the potential to replace banks as financial intermediaries for transfers and exchanges of money. Existing regulation may need to adjust classifications of currencies, property and commodities. Existing regulatory frameworks will also need to evolve to address issues of taxation, national security, and money laundering since Blockchain can seamlessly facilitate cross-border transfers.
- *Real Property and Intellectual Property:* Blockchain has the potential to track changes in ownership of an asset. This has the potential to replace domestic title registries like property title registries. It may also apply to track ownership and licensing of intellectual property. However, existing intellectual property laws may need to focus more on the in rem title rights rather than in personam contractual rights between the creator and licensee.
- *Contract Law:* Self-executing ‘smart’ contracts created using Blockchain technology would create significant challenges to existing contract law. Since the contracts self-execute, it would be hard to void these contracts on existing grounds of duress, mistake or misrepresentation. Self-executing contracts might also make specific enforcement remedies obsolete. Furthermore, lawyers will need to become familiar with creating and advising on Blockchain contracts, and might need to learn coding.
- *Privacy:* Blockchain is a public ledger that anyone can view, although the identities of the transactors are anonymous. However, if people can use transactions to guess a party’s identity, there may be privacy concerns for contracts and property ownership.
- *Decentralised Organisations:* Blockchain can be used to create new entities called ‘decentralised organisations’ that are like corporations without legal personality, made of autonomous individuals given discrete tasks and rewards. Existing corporations law does not facilitate and regulate these new entities.

### **What is next?**

Many applications of Blockchain are still in their infancy and may take some time before they are advanced enough to take on real-world use rather than experimental trials. However, the fintech space is moving at a rapid pace as innovation takes centre place in the financial industry. Given the level of interest from major banks, it is likely that in time Blockchain will gain wide-spread acknowledgement and use. We will continue to remain well-informed of developments in the area and its possible application to our clients.