

# Major Banks Analysis

“ **Blockchain – a FinTech opportunity.** ”

Much attention has been made around the rise of cryptocurrencies and the technology start-ups that are capitalising on this emerging field. Bitcoin, the first and arguably the largest cryptocurrency, was set up in 2009 and now several thousand businesses worldwide accept bitcoins in exchange for everything ranging from digital content, fashion and pizza.

However, PwC and the wider market believe that the key innovation behind cryptocurrencies is the “distributed ledger” or blockchain.

A blockchain is a cryptographically secure, distributed database that maintains a continuously growing list of records. These records can only be appended to by a majority consensus of participants in the blockchain.

The blockchain consists of transactions and blocks. A block represents a transaction that has occurred e.g. something financial, a step in a process or an agreement between two parties. Blocks in the chain will point to the previous block and creates a verifiable trail leading to the current state.

Blockchain relies on three important concepts:

### 1. Distribution

The blockchain is distributed across many participants where all parties have a consistent picture of the current state including resources at play, who owns them and who is entitled to share or transfer these resources.

### 2. Immutability

Blockchains cannot be tampered with or modified. Each transaction is cryptographically signed such that everyone can look at the transaction but no one can modify it.

### 3. Consensus

No one person gets to decide whether a transaction gets added to a chain. If a majority agrees to include it, everyone will update their copy of the ledger.

As a result, blockchains are **secure, transparent** and open opportunities to **reduce cost** both in transacting and in technology infrastructure.

**Cryptocurrency is but just one use of blockchain technology. There is a wide range of applications lying within reach to the banking sector.**

Blockchains can be used in almost anything that requires a set of processes with concerns of security, consistency and uniformity.

Some examples of usage include:

**Clearing/Settling Trades:** Companies like Ripple are using blockchain to facilitate real-time cross-border settlements without correspondents.

Similarly, Skuchain provides a financial instrument called a “Bracket” that allows trustable interactions between Buyers and Sellers and provides a cheaper alternative to traditional letters.

**Anti-money laundering/Know Your Customer:** Use of blockchain technology to trace ownership across many client transactions.

Scorechain is an example of a start-up that is providing a risk management and compliance solution for business users of Bitcoin.

**Smart Contracts:** Computerised protocol that can automatically execute the terms of a contract based on a set of rules. Because these are in the blockchain, they are immune to modification and transparent to both parties.

Eris Industries has opened up their platform for secure, low-cost blockchain and smart contract technology.

In addition, companies such as Chain.com are enabling organisations to design and deploy blockchains for a wide variety of assets using their platform as a service.

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## Whilst there is much opportunity, blockchain technology also poses some unanswered questions...

**Security concerns** related to the anonymity of users participating in public blockchains given the relative newness of available technology.

### Can blockchain operate at scale?

Given how new some of these platforms are questions are raised around how can blockchain scale without compromising on security, speed or cost.

**High system latency** compared to traditional payment systems (e.g. card schemes). As an example, blockchain payment systems can take between 3-5 seconds (Ripple) up to 10 minutes (Bitcoin) to settle.

**Fluid regulatory environment** given that there is no global regulatory body to set standards on global transactions. Preliminary regulations are being drafted in some parts of the US which could impact adoption rates. However, we see that reduction of settlement risk and easy access to transaction data may provide some incentives for regulators to react positively towards blockchain technology.

## Blockchain in Capital Markets

Given the benefits and challenges of blockchain, we believe that there is a real opportunity in modernising and reducing cost in less automated and less heavily traded markets that still carry high clearing and settlement risks.

Capital markets have been touted by blockchain analysts as being a suitable candidate for this technology.

Historically, a central authority has been positioned as the mitigating factor for inherent risks associated with post-trade processing. Blockchain potentially replaces this with a distributed, private blockchain platform that will lead to more efficient processing and significant market savings for participants.

Aite Group cites two US based entities Depository Trust & Clearing Corporation (DTCC) and Continuously Linked Settlement (CLS) as being potential targets for blockchain. These two organisations are responsible for billions of dollars in settled transactions per day and generates significant revenue (2014 revenue for DTCC was US\$1.49bn).

Blockchain has the potential to become the next generation technology platform for these organisations and either replace or complement their existing business model.

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**“ Capital Markets are an obvious target for platform and operating model modernisation through blockchain.”**

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## Summary

Cryptocurrencies has captured the imagination of the financial services industry but it is the potential of blockchain that is warranting more serious attention.

Blockchain has a wide variety of applications in financial services but institutions should be aware of the limitations and risks in adopting new technologies.

In order to maximise the value of these applications, we advocate including key business stakeholders early in the process. This will not only reduce the time to evaluate potential use cases but will increase the business buy-in of the solution.

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