



HELPING YOU MAKE BETTER
STRATEGIC DECISIONS
THROUGH INNOVATIVE AND
DISRUPTIVE TECHNOLOGIES

BLOCKCHAIN

A simplified guide for Boards on the application of the invisible technology.



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Everything will be tokenised and connected by a blockchain one day.

Fred Ehrsam
Co-founder of Bitcoin

BLOCKCHAIN DEFINED – HOW IT WORKS

While blockchain technology was developed almost a decade ago, there remains a significant gap between the initial hype about its promise to revolutionise business, and the tardiness with which it's been embraced globally.

Blockchain could be regarded as a slow burner due to a myriad regulatory, compliance and political hurdles, it is rightfully regarded as the most important technological breakthrough in 30 years.

Blockchain is being lauded as the second generation of the internet. But while the internet was all about the 'democratisation of information', blockchain is first and foremost about value. What makes blockchain a potential game-changer for doing business, both locally and within a global economy, is its ability to recognise, store and transfer value like never before.

The underlying technology

Developed as the underlying technology behind the peer-to-peer electronic cash system called bitcoin – aka cryptocurrency – the blockchain, in layman's terms is really a gigantic digital 'distributed ledger technology' where all transactions are tracked and open for all to see.

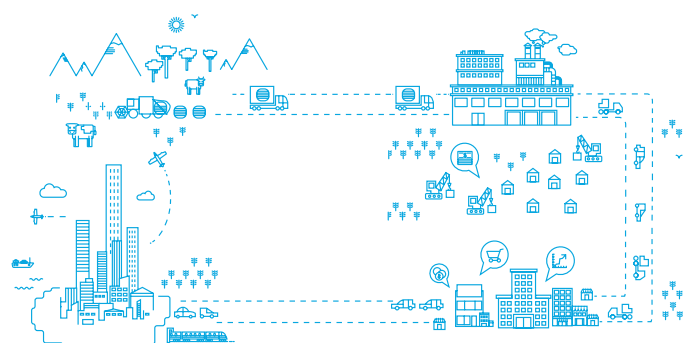
The beauty of blockchain's peer-to-peer network – which means it operates without a central server – is that online payments effectively function outside the world's traditional banking system, and the implications of this are enormous.

As a case in point, currency transfer – as we've witnessed cybercurrencies – can no longer be controlled by some nation-state or a super bank.

For example

Instead of requiring a trusted central authority like Pay Pal, blockchain acts like a default 'trust protocol' by deploying a certain number of grunty computers – aka miners – within its chain to verify transactions using increasingly complex algorithmic formulas within its network. The more 'miners' the blockchain deploys, the greater the blockchain network becomes.

Bitcoin uses cryptography to create a secure network of participants, each with their own view of the bitcoin ledger. It's this 'distributed ledger technology' (DLT) which enables participants to transact safely with unknown parties, on the pretext that they too are legitimate owners of bitcoin.



How does a blockchain transaction work?

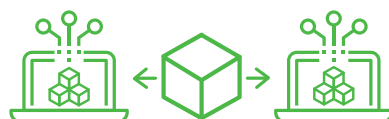
From preventing multiple medical insurance claims being lodged to game developers completing more projects for less money, blockchain could have revolutionary uses. Blockchain's main power lies in its abilities of not requiring trust, its inherent speed and being decentralised. We illustrate below how a blockchain transaction within an organisation could look like.



Australian-based Matrix Construction wants to send money to Torque Tiles in Turkey. The transaction is initiated by creation of a bitcoin wallet.



The transaction is represented online as a 'block'.



The transaction or 'block' is broadcast to all participating computers in the blockchain network.



Those in the network approve the transaction and validate it. This is stored into a 'block' and sealed with a lock (ie hash).



The block can then be added to the chain – this provides a permanent, unalterable and transparent record of the transaction.



The money successfully moves from Matrix Construction in Sydney to Torque Tiles in Ankara.

PRACTICAL APPLICATION

To really understand the different ways in which blockchain applications can meet business needs, we look at four initiatives¹ that have already been deployed. From shipping to retail to pharmaceuticals, these examples remind us that blockchain isn't just the way of the future – there are many ways distributed ledger technology is currently in action.

RECORD KEEPER

Ensures records cannot be corrupted or manipulated and they can be audited on demand.

Walmart

Following the US and Canada's 2017 outbreak of Shiga toxin-producing E.coli, which resulted in two deaths and 60 people falling ill, and the 2018 recall of nearly 15,000 pounds of imported beef and pork due to E.coli, Walmart has implemented a blockchain solution which is being used to track pork, from farm to supermarket shelf. Blockchain has reduced the time taken to track produce from six days to two seconds.

Coca-Cola

Coca-Cola, with the US State Department, are using blockchain technology to create a secure registry for workers. This is intended to prevent the use of forced labour worldwide and especially in countries where sugarcane is sourced. The system is designed to create a validated chain of evidence that will encourage compliance with employment contracts.

DIGITAL ASSET MARKET¹

Identifies new markets to facilitate the trading of new digital assets or using blockchain's cryptocurrency mechanisms for representation of physical ones.

NYIAX

Nasdaq has launched the New York Interactive Advertising Exchange (NYIAX) which allows publishers and advertisers to buy, sell and retrade premium advertising inventory – a platform addressing a U.S. digital display ad market worth \$32 billion.

BLOCKCHAIN DISRUPTOR¹

Decentralises business and/or technology functions, usually employing smart contracts with many raising capital through initial coin offerings (ICOs).

Synereo

Tel Aviv-based start-up Synereo has linked the attention economy to crypto coins, launching the WildSpark social network to build a system of rewards based on content posted on traditional platforms. These rewards hinge on users appreciating the content.

Gnosis

From climate change to epidemics and price forecasting, Gnosis is a prediction market platform built on blockchain protocol Ethereum – it provides its participants with a playful environment to predict outcomes and if right, get paid for them.

EFFICIENCY PLAY¹

Preserves current business model, usually led by a large multinational, focused on blockchain technology's immutability and traceability of records.

Maersk

Global leader in container logistics Maersk and IBM have launched TradeLens, an electronic shipping ledger which records details of cargo shipments as they leave their origin, arrive in ports, are shipped overseas and eventually received. All in near real-time.

Industry uses of blockchain

Banking & Finance

- Increasing speed of fund transfers
- Improved efficiencies in regulatory compliance

Health

- Storage of patient records
- Transfer between practitioners
- Drug supply chain integrity

Energy/Utilities

- Facilitating peer to peer transactions
- Smart metering

Government

- Increased accountability for public officers
- Integrity of data
- Reduced voter fraud

AREAS WHERE THERE IS A LACK OF CLARITY

It is difficult to talk about blockchain and to not talk about cryptocurrencies as this was initially invented to serve as the public transaction ledger of the cryptocurrency bitcoin.

Cryptocurrencies are digital currency in which encryption techniques are used to regulate the generation of units of currency. These currencies operate independently of a central bank.

Since the genesis of bitcoin (by far the most well-known cryptocurrency) other hundreds of cryptocurrencies have been created.

Recently, a matter that has been of public interest has been the volatility of its value. While on introduction in 2009 a bitcoin's price amounted to US\$0, its price during the years 2014 to late 2016 was ranging between US\$200 to US\$400. Then, suddenly it rose to US\$1k by the end of January 2017 and reached US\$20k in December 2017 (now approx. US\$6k).

Why such appreciation?

This appreciation appears to be the combination of significant changes in demand, driven by the limited number of digital currencies in circulation, a peak demand from late technology/investors adopters and obviously speculation.

Another challenge that has emerged with cryptocurrencies is in relation to the accounting, classification and valuation of these assets for financial reporting purposes. At this stage, the International Accounting Standards Board (the IFRS) has held discussions regarding the accounting of digital currency, but it has not yet issued any standard or

interpretation providing a clear guidance in accounting of cryptocurrencies. In fact, this issue is not even in their work plan of projects.

There are different views as to what class of assets they represent, whether they are financial instruments, inventory or intangible assets.

After doing further research, the best guidance available is perhaps the assessment prepared by the Australian Accounting Standards Board (the AASB) in its presentation to ASAF 2016 Meeting – Digital currency – A case for standard setting activity.

Tax issues

While the Australian Tax Office (ATO) has removed GST from digital currencies (from 1 July 2017), it remains unclear whether they are considered an asset and as such potentially subject to capital gains tax (CGT). Meantime, businesses paying employees' bitcoin as part of their salary will attract fringe benefits tax if it's processed under a salary sacrifice scheme. It will need to have normal pay-as-you-go deductions applied if not.

Any business receiving cryptocurrencies, like bitcoin as payment, will also need to record the transactions in terms of their value at the time in Australian dollars, and declare it as part of their taxable income.

UNDERSTAND:

- The potential impact of blockchain on the organisation by conducting scenario planning exercises.
- How enterprise structures must evolve to support blockchain.
- How regulations and standards will change to support blockchain.
- The risk management issues for the implementation of smart contracts.

RISKS

We have provided the checklist below to help you determine whether or not blockchain is the right fit for your business and your business' needs.

	YES	NO
Is this investment needed at all? <ul style="list-style-type: none">▪ What is the incremental business value from the blockchain project?		
Is blockchain the best option? <ul style="list-style-type: none">▪ What is the best solution for the problem /opportunity?▪ What risks do you want to manage/ reduce?		
What is the scope of the work? <ul style="list-style-type: none">▪ Should you launch an internal or external blockchain project?▪ Do you need to cater for compliance requirements?▪ Is scalability in the design of the blockchain required?▪ Is integration with existing enterprise based systems required and how will this occur?		
Who has skin in the game? <ul style="list-style-type: none">▪ Does the IT unit have the necessary skills to undertake the blockchain project?▪ Should you join a consortium, partner with a vendor or go it alone?▪ Will you need to provide access to third parties such as regulators and will they need full access or read only access?		

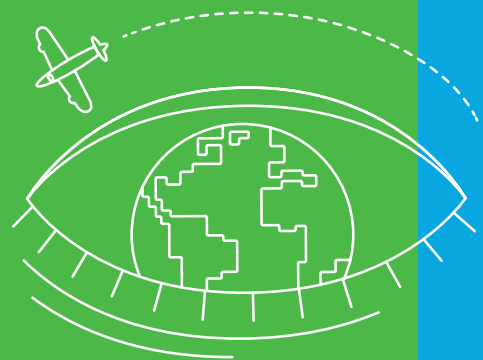
And, most importantly, when will this be implemented?

How did you do?

If you're unsure about any of the questions above, please contact your RSM risk advisor to get the clarification you need before committing to a blockchain project.

UNDERSTAND:

- The implications of automated processes triggered by the use of smart contracts on the organisation.
- The implications of removing intermediaries and regulators from the transaction process.
- The implications for interactions in the supply chain.



1 name
1 network
120 countries
800 offices
43,000 people

WHERE TO FROM HERE

Push past the hype and assess what the implications are of blockchain on your business model & governance. In doing so you should explore the potential new business opportunities & processes presented in a distributed and decentralised ledger system.

Understand the implications of smart contracts whose execution have no human involvement and what it means to the business approach to risk management. Jurisdictional challenges remain in determining which are the applicable laws & jurisdictions for a decentralised system.

Consider your competitor landscape and what is being done in preparing for blockchain. Alliances should be considered in the development of standards to ensure consistency especially in this early stage.

Engage with the supply chain to understand your approach to leveraging blockchain. This may not necessarily translate into a shared blockchain as there may be conflicting priorities and incentives.

Accept the technology is fast evolving and subject to rapid changes. A proof of concept with a limited lifespan may be the best strategic approach in an environment which has a lack of regulatory standards.

Seek advice on how to formulate an approach to address blockchain.

References

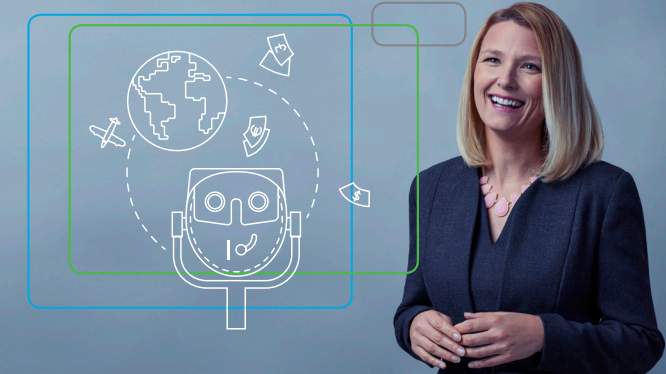
1. "Pay attention to these four types of blockchain business initiatives", Rajesh Kandaswamy and David Furlonger, *Gartner*, 19 March 2018; <https://www.gartner.com/doc/3868969/pay-attention-types-blockchain-business>

UNDERSTAND:

- The implications of information immutability.
- The time frames and limited value from the fast changing blockchain landscape.
- The benefits of limited scope engagement and development.
- The internal & external influences of blockchain initiatives.

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In addition to local knowledge provided by our advisers in 30 offices across Australia, we draw on our international reach and scale to ensure clients stay at the forefront of the world's best practices, technology and innovation within a rapidly changing global economy.

Providing ready access to expert corporate financial and advisory accounting services, RSM Australia's one-firm structure underscores a client-focused culture. This culture nurtures strong collaborative client partnerships across growth-focused entrepreneurial businesses, through to leading multinational organisations operating within diverse industry sectors, not-for-profit organisations and governments alike.

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In addition to these core services, RSM member firms also offer a wide range of specialist international services, such as wealth management, IT, consulting, legal and risk advisory, forensic accounting, human resource consulting, and global compliance reporting.



Bitcoin is a remarkable cryptographic achievement and the ability to create something that is not duplicable in the digital world has enormous value.

Eric Schmidt
CEO of Google

DID YOU KNOW?

Boards within the financial services and information technology industries have already commenced their process with 94% of executives surveyed in UK, US & Europe reporting their boards have already identified and bought into the promise of blockchain.

THE POWER OF BEING UNDERSTOOD

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