Blockchain, bitcoin etc. – where are we in the paradigm shift

Notes from the Talk **Tuesday 5 March 2019**

By Gail Chatziyakoumis – BE Eng, CBDE

We start with a short recap of the previous talk; reviewing "What is a blockchain?" then we dig a little deeper into where and how blockchain technologies are being used and who is using them. We will learn about Smart contracts, Decentralized Autonomous Organisations and some of the projects already up and challenging the status quo.

Blockchain can:

- you can buy without a merchant
- bet without a bookie
- get insurance without an underwriter
- access finance and loans without a bank
- trade without an exchange
- etc

What do all these statements have in common? They dis-intermediate the process, removing the need for a trusted third party

Blockchain & Bitcoin - what are they?

Blockchain is the an unchangeable shared record with a new block added every 10 minutes.
Bitcoin was the first to use the blockchain concept
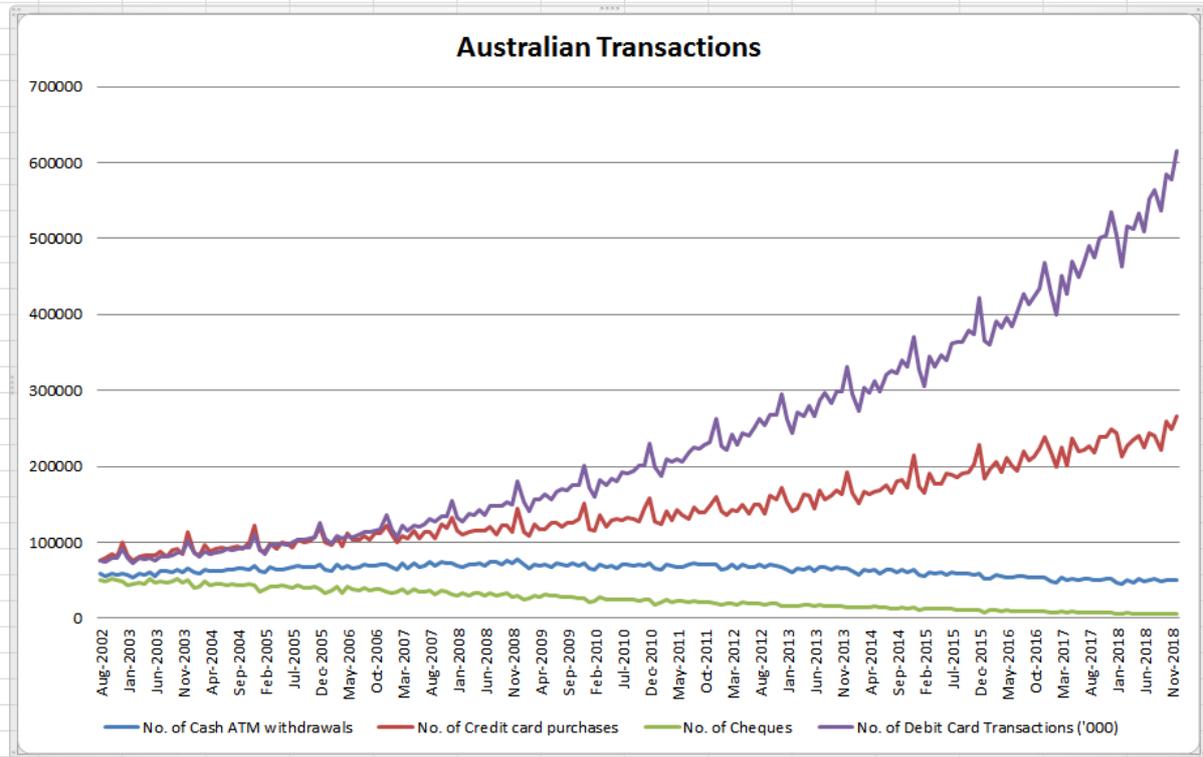**Cryptocurrencies** use the blockchain program with innovations

Let's simulate the making of a blockchain

Block 3			
9/8/2018	2.18pm	TX1 Account 222	1 BTC
		TX1 Account 614	48.009 BTC
		TX1 Account 175 (Fee)	0.001 BTC
9/8/2018	2.18pm	Account 175	Balance 50 BTC
		Previous no. of character in block 2	37

Block 2			
9/8/2018	2.16pm	Account 832	Balance 50 BTC
		Previous no. of character in block 1	35

Block 1			
9/8/2018	2.15pm	Account 614	Balance 50 BTC

Cryptocurrency is digital currency and is indistinguishable from digital cash .

Australian Transactions

Legend: No. of Cash ATM withdrawals — No. of Credit card purchases — No. of Cheques — No. of Debit Card Transactions ('000)

The recent uptake in debit cards i.e spending your own savings using card rather than cash
https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html

Lets compare the existing digital banking to crypto banking

Bendigo Bank has a demonstration account. Found at
https://demo.bendigobank.com.au/banking/accounts
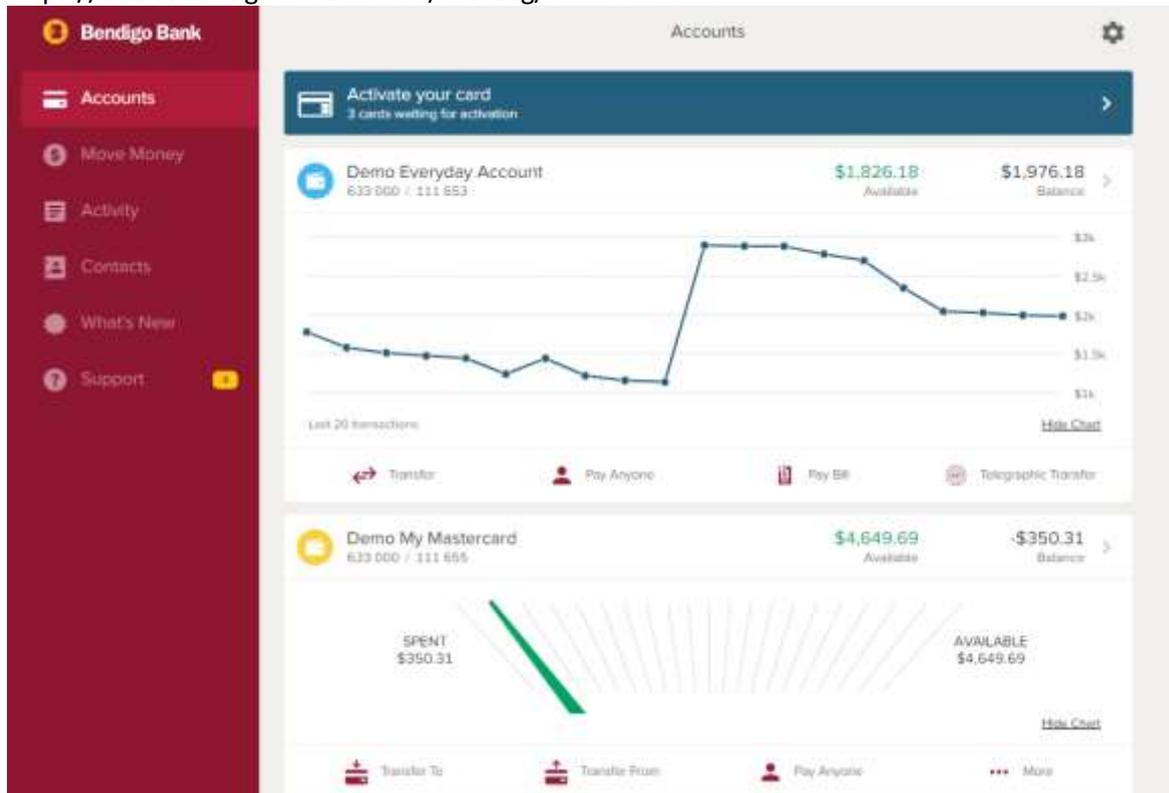
This is 3 separate screen on the Commonwealth mobile banking app

This bitcoin Address is like saying your account just like account 222 above is the key to blockchain ownership. We have used coding to work out the secret key from the public key. Easy to verify but hard to guess.

Bitcoin Address

SHARE

1B7MRjjQ4T5937ZUubaZubzyJfF3nt6vGh

Private Key

SECRET

KyPtAthAdzceo3FeMUW5JsAbQR8mEKC6JyhqKoZke2EVCTFLkbpn

Transactions can be checks at many different website all connected to the blockchain
Here are a couple of examples.
https://live.blockcypher.com/btc
https://www.blockchain.com/btc
Be your own bank at https://www.blockchain.com/wallet

Smart contracts
- Bitcoin like Blockchain that you can add computer instructions too
- Trusted to do as instructed
- Can Tokenise assets
- How do you know you own something? Documents and if these are on a blockchain and you have the only key i.e only you can transfer them to someone else then you own it.

Blockchain in the Art world
https://www.maecenas.co/ is fighting to bring trust back to art as 40% are thought to be forgeries.

Andy Warhol's Multi-Million Dollar Painting Tokenized and Sold on Blockchain 5/9/18. In a world first, an artwork worth millions of dollars has been tokenized and sold on blockchain. Called "14 Small Electric Chairs", a two-meter high painting by the late renowned American visual artist Andy Warhol, was sold on blockchain-based art investment platform Maecenas to qualified participants. Approximately US$1.7 million was raised in the cryptocurrency auction for a 31.5% stake of the artwork whose total valuation was US$5.6 million. More than 800 bidders signed up for the auction which was conducted entirely using a smart contract.

Blockchain in the Advertising world - Atayen has created a decentralized application
based on the Smart Advertisement Transaction Token (SaTT), which means that the objectives of an ad are woven into a smart contract. The DApp independently measures the number of user interactions with advertising content, and as soon the goals agreed upon between the advertiser and publisher are met, the DApp releases the payment in SaTT to the publisher.

Blockchain as a Proof of education –- I qualified in Dec 2018 as a Certificated Ethereum
developer but don't take my word for it , go to

https://www.btacertified.com/certification

and choose CBDE - Certified Blockchain Developer - Ethereum

then add my token

0x769116e495a75c66b5c73a8f0b677bd11c1c20f5acca29cb9610d2fcab56e315

That will show you I am certified. This is coded on the Ethereum blockchain and the website uses the token to decode it and present it to you.

Blockchain in Elections
MiVote is an information platform that presents you with a variety of perspectives on all major issues up for debate in the Australian Parliament and many others that affect our lives, via the MiVote App. The MiVote App enables you to make an informed, well rounded decision and have your say on where you want our country to go. Putting REAL change at your fingertips.
These people are based in Collingwood. MiVote's technology platform for direct democracy was spun out of MiVote late last year to form Horizon State. Now it is the tool being used for blockchain confirmed voting. E.g. S.A Government to conduct election of Recreational Fishing Advisory Council on it 19 Feb 2019

Blockchain to clear and settle shares

ASX CHESS system -https://www.asx.com.au/services/chess-replacement.htm

Announced 2017CHESS is the core system that performs the processes of clearing, settlement, asset registration, and some other post trade services which are critical to the orderly functioning of the market. ASX is replacing CHESS with distributed ledger technology (DLT) which will provide a broader range of benefits to a wider cross section of the market.The system will be designed without access barriers to non-affiliated market operators and clearing and settlement facilities. It will also give ASX's customers choice as to how they use ASX's post-trade services.

Blockchain in the Power industry

Power Ledger and Yolk Property Group have signed an agreement to work towards applying Power Ledger's world-leading blockchain technology for solar energy trading between residents at the near-completed Evermore residential development at White Gum Valley (WGV).Residents will be able to save on their power bills using a combination of rooftop solar PV panels, battery storage and Power Ledger's blockchain technology.

Blockchain in the Travel industry

Qld initiative to encourage people to travel to QLD using cryptocurrency. Australia- Qld Tourism grant-Travelbybit is a blockchain start-up that allows payments of services and goods through crypto.

Blockchain Browser

The Brave browser works on the BAT Basic Attention Token- cuts out all tracking and ads and pays you in BAT tokens for your attention which you can then use to tip content providers that you like e.g channels on youtube. You can download it for free. https://brave.com/
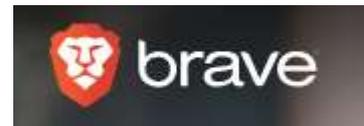
Smart contracts solving fraud in blockchain ICO's

ABYSS is a gaming platform that ran a DAICO not an ICO but Distributed Autonomous Initial coin offering- like IPO initial public offering. This allows investors to vote for a refund if milestone goals are not met in the projects.

Blockchain solving identity issues.

uPort is a way of registering identity on the Ethereum Blockchain. It enables users to identify themselves and send either information or value to others in a clear , transparent way. The city of Zug in Switzerland uses its identity management for government services. Read all about it at www.uport.me

The future:

Governments around the world have been criticized for rigging or influencing elections, and not just their own. Bringing the security and transparency of a public blockchain to voting and other government services could bring an end to this controversy. Perhaps blockchain will help to stop these shadowy practises.

Three generations of blockchains.

Generation 1: 2009 Bitcoin and Money Transfer started Jan 2009

Bitcoin a form of money which can be transferred between two people without any middleman

Generation 2: Ethereum and Smart Contracts started July 2015

Smart contracts help you exchange money, property, shares, or anything of value in a transparent, way avoiding the use of a middleman.

Generation 3: Cardano started Dec 2017

The first two generations of blockchain with added improvements of security, flexibly and scalablity is called Cardano.

https://blockgeeks.com/guides/what-is-cardano/ According to Charles Hoskinson,

What technology comes after blockchain –Hashgraph

released July 2017
Uses the gossip protocol (not a blockchain)
Uses much less energy than Proof of work Blockchain
Much faster than blockchain – 7 vs 250,000   transactions /sec
Bank grade security

In conclusion:

Blockchain has continued in use along with smart contracts and DAICO's because they solve the basic problem of TRUST. Governments and big business are using it to win back trust in institutions.

Learn more by reading "Life after Google" by George Gilder

YouTube DW documentary How cash is becoming a thing of the past

https://youtu.be/GbECT1J9bXg

Or visit the Blockchain Centre 710 Collins St, Docklands VIC 3008 a shared innovation hub

The notes from my first talk can be found at

http://u3astonnington.org.au/downloads/course-notes.html