

# CRE and Blockchain

Jason Normandin

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National Association of REALTORS®



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# Cryptocurrency and Blockchain

A shared history

# Recognize these names?

DigiCash

B-Money

Bit Gold

Hashcash

















































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# Then came Bitcoin

- 2008 – Satoshi Nakamoto publishes *Bitcoin: A Peer-to-Peer Electronic Cash System* and invents **blockchain**.
- 2009 – Bitcoin launched.
- 2010 – First Bitcoin transaction for 2 pizzas.
- 2017 – Property in Austin Texas sold for Bitcoin.

# 1,500+ coins now built on blockchains

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 BC	 BCN	 BCX	 BDC	 BEC	 BEE	 BEER	 BEL	 BELI	 BEN	 BET	 BFC	 BIL	 BIRD	 BITS	 BLA
 BLC	 BLL	 BLTZ	 BNS	 BOB	 BOC	 BONES	 BOS	 BOY	 BQC	 BSC	 BTB	 BTC	 BTCs	 BTE	 BTG
 BTL	 BTN	 BTP	 BUK	 BUR	 C2	 CACH	 CAGE	 CAP	 CASH	 CAT	 CATc	 CC	 CCC	 CCX	 CDC
 CDN	 CENT	 CGA	 CGB	 CHA	 CHC	 CHI	 CIN	 Cinni	 CKC	 CLR	 CMC	 CNC	 CNOTE	 COL	 CON
 CORG	 COYE	 CPR	 CRC	 CRD	 CREA	 CRN	 CSC	 CTC	 CTD	 CTM	 CYB	 DBL	 DDC	 DEM	 DGB
 DGC	 DIEM	 DIG	 DIME	 DMD	 DNC	 DOGE	 DOME	 DOPE	 DOT	 DPS	 DRK	 DRM	 DTC	 DUCK	 DVC
 EAC	 EBT	 ECC	 ECO	 EDISON	 EGC	 ELC	 ELP	 EMC2	 EMD	 EON	 ETC	 EUC	 EXC	 EXE	 EXN
 EZC	 FCK	 FCN	 FEC	 FEC	 FER	 FFC	 FLAP	 FLC	 FLO	 FLT	 FOX	 FRC	 FRK	 FRQ	 FRX

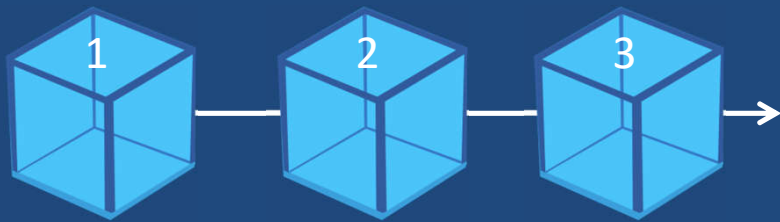


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# Blockchain is Great

But what is it?

# Data stored in a series of blocks



- Any new data or updates are stored as new blocks.
- No blocks are ever deleted.
- This series of blocks is called a ledger.

# Every block contains three things



Data: b4b65eb1bdf2854f485a1ea  
9140d226cab7e86e03ba47b8944  
0cd9c2b54f311f34f311f3101c7ea  
2f9101622607bf8725acb3cd1a5...

Block Hash: 3b1c48...

Previous Block Hash: 32c5a1...

- Data that needs to be stored. Can be new records or updates.
- The hash (digital fingerprint) of that data.
- The hash (digital fingerprint) of the data in the block before it.

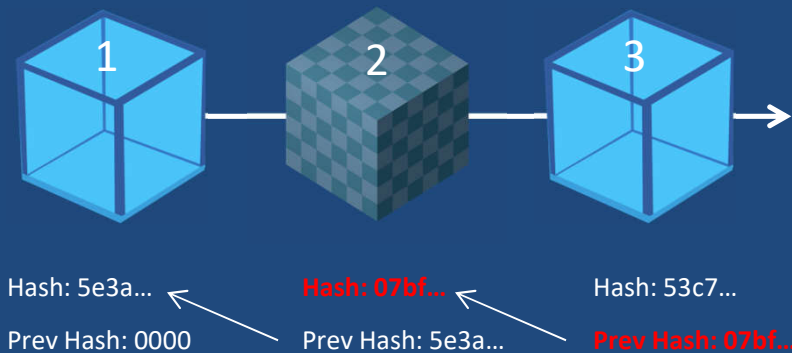


# This creates a secure chain of blocks



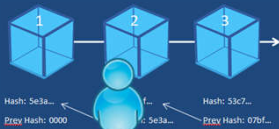
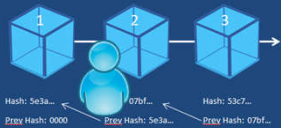
- Every block can insure the block before it hasn't been altered.
- Data can be verified all the way back to the first block (the Genesis Block).

# Changes to data immediately detected



- Any change to data makes the stored hash invalid.
- Any invalid hashes makes the database invalid.

# Blockchain ledgers are distributed

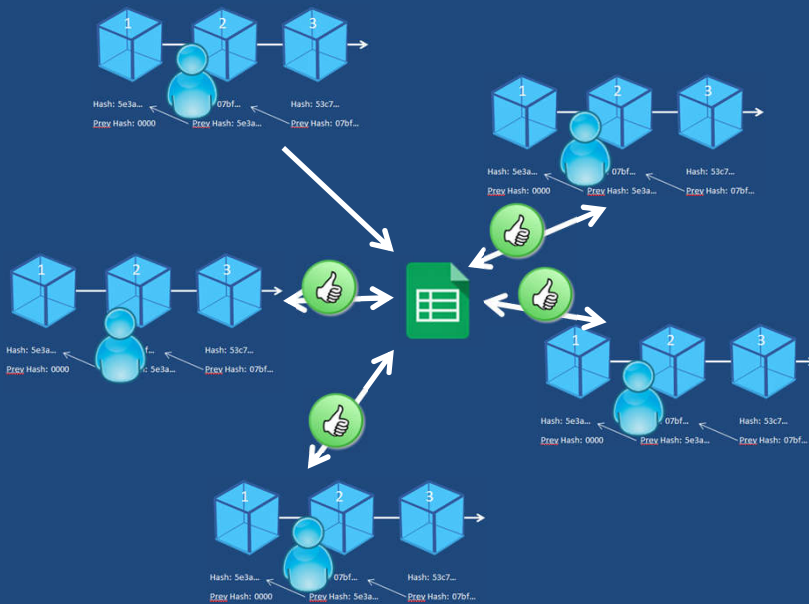


- Every participant has their own copy with the exact same data.
- State of every ledger constantly verified.
- Any altered ledger would be detected and voted off the network.



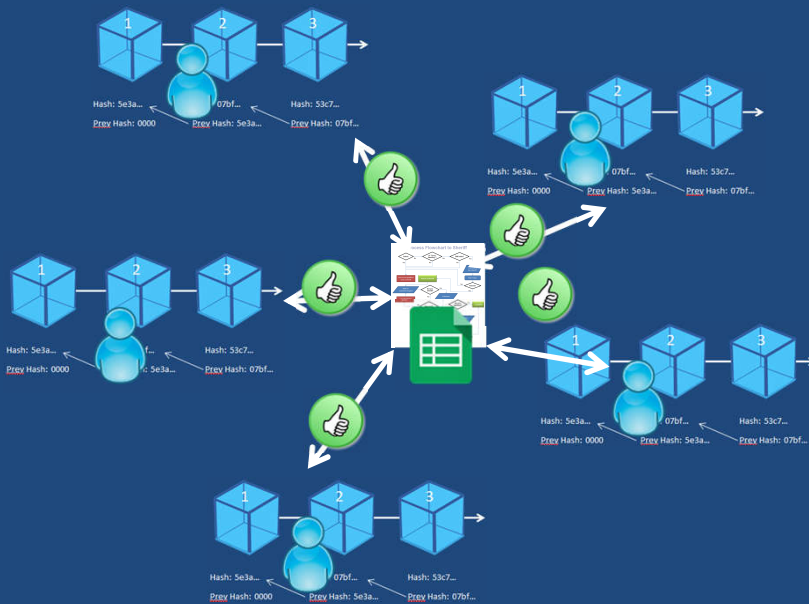
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# New transactions are proposed and voted on



- Is the submitter who they say they are?
- Is the transaction allowed?
- Does the submitter have correct privileges?
- Do ledgers match before?
- Do ledgers match after?

# Smart contracts are possible



- Like a contract with a flowchart attached.
- When conditions met, transaction takes place.
- Same verification steps take place.

# Benefits of blockchain software

- Really, really secure.
- Rock-solid record history.
- Allows participants to share a system and data without having to trust each other.
- Smart contracts are really powerful.

# Disadvantages of blockchain software

- Much more complex.
- Adding participants is cumbersome.
- Updating software is cumbersome.
- Data storage needs will grow forever.
- Smart contracts take a lot of work.

# What to remember

- Blockchain data is forever and it's (practically) fraud proof.
- The ledger is shared, no trust is required.
- A consensus model is used to make sure data and transactions are legit.
- Smart contracts can trigger actions automatically.



# The hype is thick

- “Put it in the cloud” replaced by “Put it on the blockchain”.
- Many tech companies scrambling to do something (anything) with blockchain.
- Companies rebranding: Long Blockchain Corp stock price jumped about 500%.

## Some data from Bitcoinist (May 2018)

- 80,000 blockchain projects have launched worldwide.
- 8% of those projects still active.
- Average lifespan of any given project is 1.22 years.

# Blockchain in Real Estate

What are we seeing?

# Property Titles

- 30% of title searches find defects: Improper recording/filing, failure to remove liens, missing spousal signatures, etc.
- Title searches are lengthy. Title insurance is expensive.
- Significant implications in foreign countries where land rights disappear.
- Sweden and Brazil are testing blockchain land title transfers.
- Vermont has already passed legislation that legalizes the use of blockchain to store land titles.

# Ubitquity



- Recording/tracking of real property titles.
- Currently beta testing with a Lands Records Bureau in Brazil.
- US-based, courting US municipalities.

\* All data is my good-faith understanding. Please don't sue me.

# MLS Systems

- How much value added by Blockchain?
- Most whitepapers talk about a “universal MLS system” on the blockchain (unlikely).
- Would provide a good starting point for smart-contract real estate transactions.

# IMBREX



- Participants list properties on Imbrex for small fee (paid in REX).
- Plans on rewarding participants for reviewing/curating data with REX.
- Plans on facilitating/enabling property sales with smart contracts.
- Currently has more than 2,000 listings (from Toll Brothers).

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# Smart Tenancy Contracts

- Security of Bond Deposit.
- Revenues/expenses automatically tracked and reconciled.
- Less flexible than drafted contracts.
- Lawyers may learn to code?

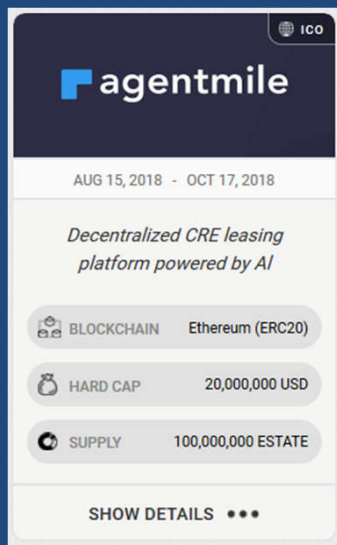


# Midasium



- Spun up by Lend2Fund, now out of business?
- Founder appears to have moved on to Lightstreams.

# REIT Altcoins



agentmile

AUG 15, 2018 - OCT 17, 2018

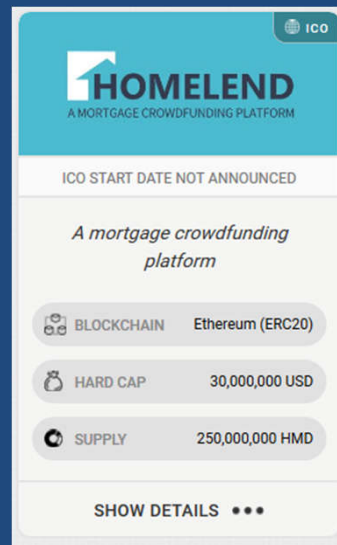
*Decentralized CRE leasing platform powered by AI*

BLOCKCHAIN Ethereum (ERC20)

HARD CAP 20,000,000 USD

SUPPLY 100,000,000 ESTATE

SHOW DETAILS ...



HOMELEND

A MORTGAGE CROWDFUNDING PLATFORM

ICO START DATE NOT ANNOUNCED

*A mortgage crowdfunding platform*

BLOCKCHAIN Ethereum (ERC20)

HARD CAP 30,000,000 USD

SUPPLY 250,000,000 HMD

SHOW DETAILS ...

- Cryptoslate reports 44 REIT altcoins.  
<https://cryptoslate.com/category/cryptos/real-estate/>
- Most are new-age REITs
- Others wrap existing practices in blockchain/altcoins.

# Transacting with Cryptocurrency

Can you? Should you?

# It's happening now

- March of 2014 – Villa in Bali\*.
  - September of 2017 – House in Austin Texas\*.
  - December 2017 – Condo in Miami. First all crypto transaction.
  - February 2018 – Mansion in Miami. Another all crypto transaction.
- \* They cheated a bit by exchanging Bitcoin for currency.

# Two significant barriers

- Cryptocurrency extremely volatile.
- Infrastructure isn't in place (loans, etc.)

# Increased Volatility = Increased Risk

Change in buying power: June 2017 to Aug 2017

- \$1,000 USD: \$1,000 to \$997.70 (-0.23%)
- 1 Bitcoin: \$2,442.02 to \$4,921.85 (+101.51%)

Change in buying power: Dec 2017 – Feb 2018

- \$1,000 USD: \$1,000 to \$990.09 (-0.99%)
- 1 Bitcoin: \$19,345.49 to (-64.14%)
- Who takes that risk? Buyer, seller, lender, agents.



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# Infrastructure not in place

- Issues with banks lending against crypto.
- Futures contracts are starting to come online, but only for Bitcoin so far.
- Title companies aren't set up for crypto.
- Search engines aren't set up for crypto.

# Recommendations

- **Contracts in US dollars.**
- Use a service like BitPay to change coins to dollars.
- Close the deal like any other.

\* I am not a lawyer. Please don't sue me.



# What has also worked

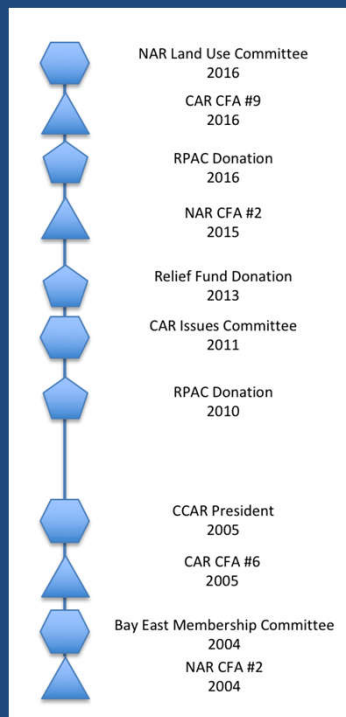
- Write the contract for specific value worth of a specific cryptocurrency (2 million USD of Bitcoin).
- Value of coin to be marked to market on specific exchange at specific date/time (day of closing, etc.).
- Use an escrow wallet.

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# Blockchain in Realtor Associations

What are we doing?

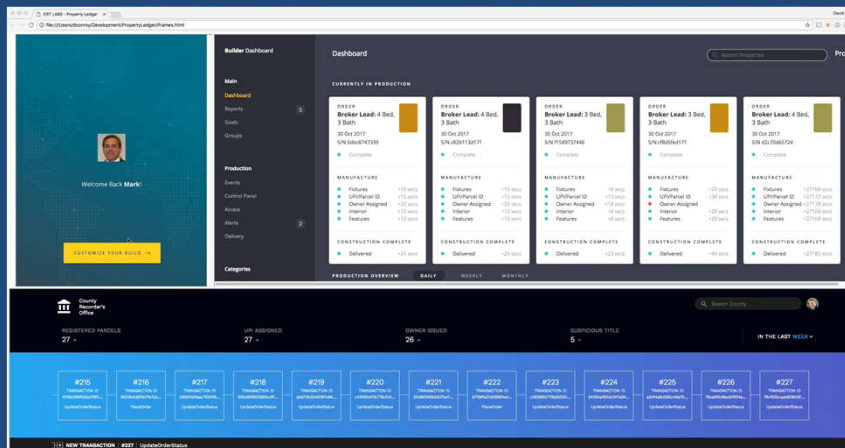
# BlockR - REALTOR® Association Blockchain



- Track engagement of a REALTOR®.
- Span association involvement.
- Committees, contributions, etc.
- Follows member movement.

# Property Ledger

- Track lifecycle of a new property.
- Model how different industry partners would interact with it.
- Current demo shows Brokerage view, Home Builder view, and County Records Office

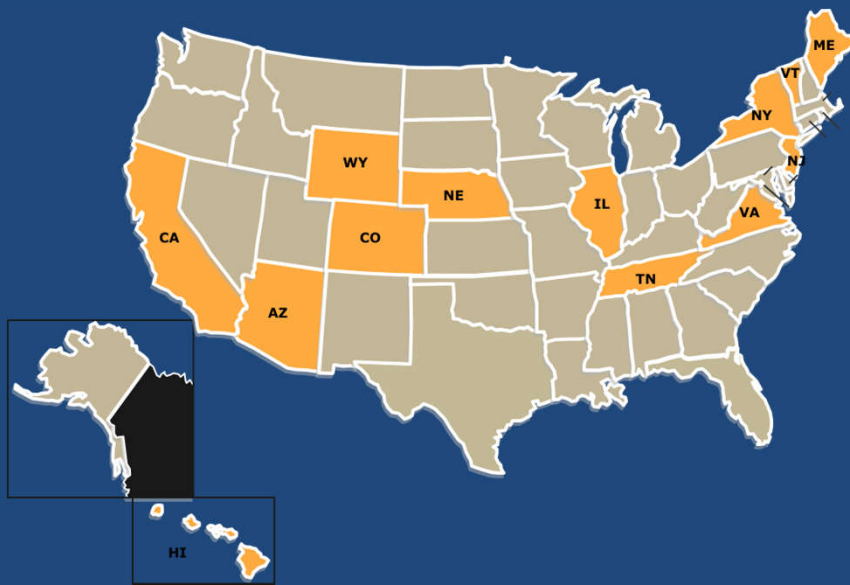


# Setting Standards

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- Workgroup started by RESO (Real Estate Standards Organization) in June 2018
- Workgroup will catalog property “events”
- Uses existing RESO API and Data Dictionary standards
- Meetings third Tuesday of each month

# Track/inform legislation



- 12 states working on blockchain legislation.
- Different definitions, descriptions and legal language.
- Working with GADs to unify where possible.

# Thank You!

Jason Normandin

[jnormandin@realtors.org](mailto:jnormandin@realtors.org)



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