

Blockchain & CRE:

Demystifying “Blockchain”; Issues, Obstacles, and Developments in the Commercial Real Estate Industry



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Winstead PC

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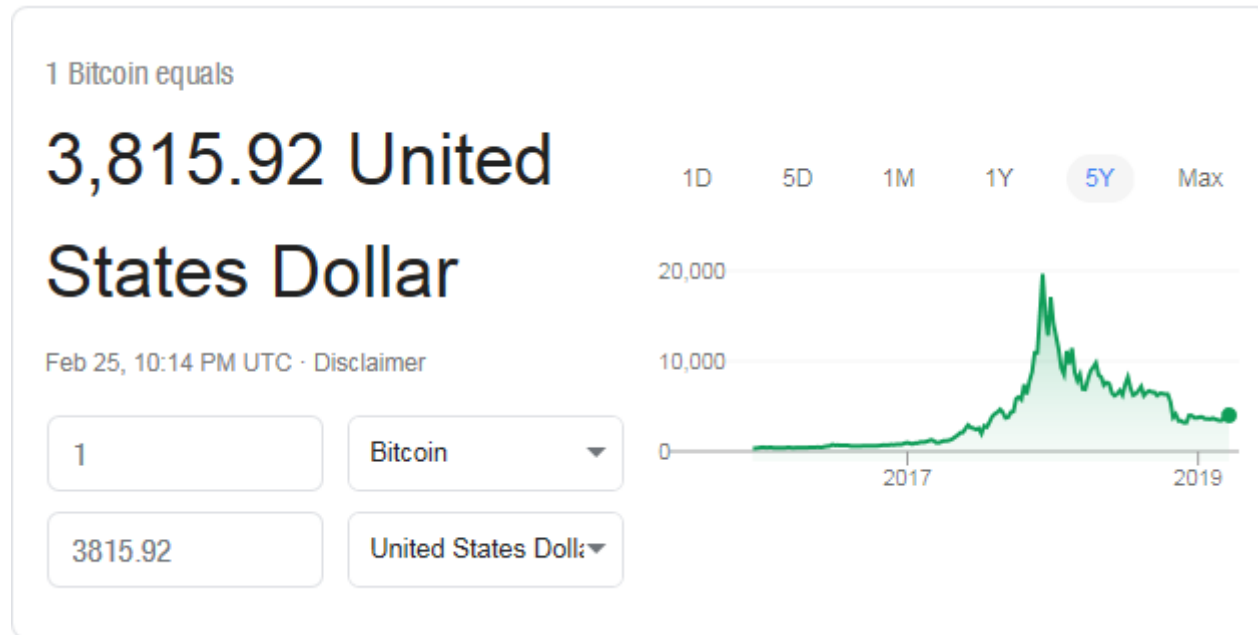
What is a blockchain?

Hype v. Reality



What is a blockchain?

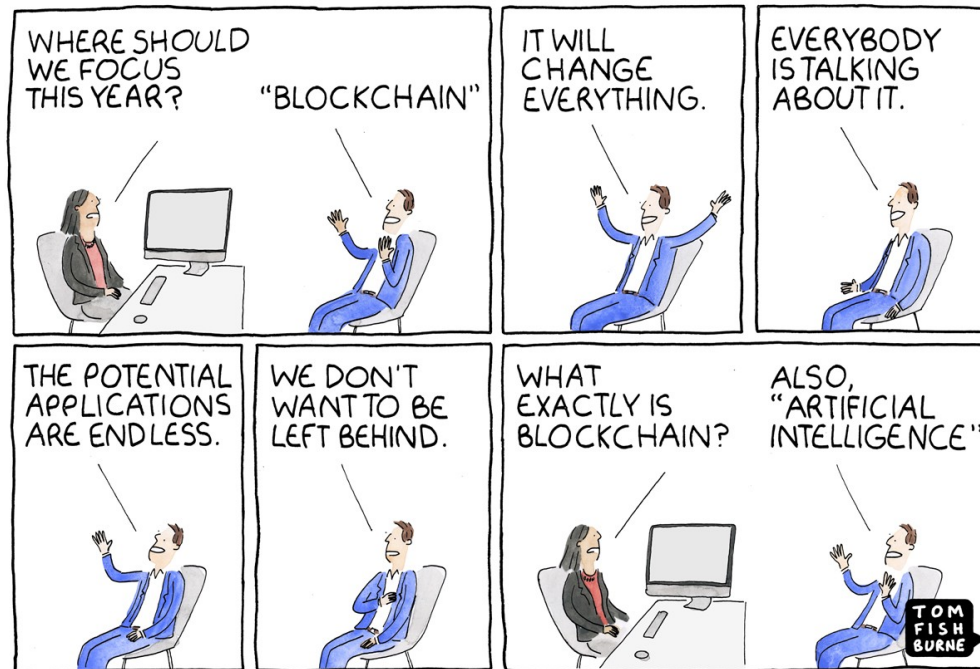
Hype v. Reality



Source: Google BTC → USD as of February 25, 2019

What is a blockchain?

Hype v. Reality



© marketoonist.com

What is a blockchain?

A distributed ledger of data and/or transactions that is maintained on a shared network.

- Anonymous?
- Decentralized?
- Immutable?

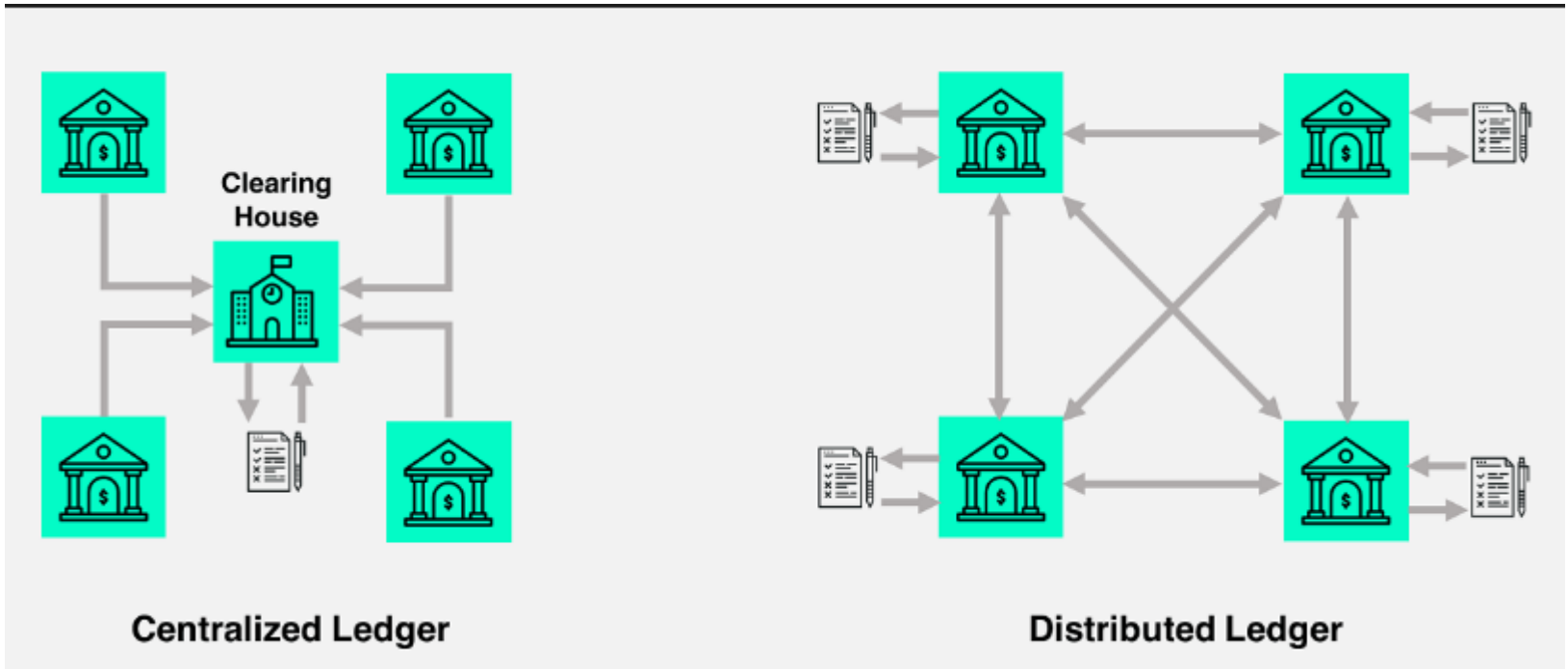
What is a blockchain?

On a blockchain, transactions are recorded chronologically, forming an immutable chain, and can be more or less private or anonymous depending on how the technology is implemented. The ledger is distributed across many participants in the network — it doesn't exist in one place. Instead, copies exist and are simultaneously updated with every fully participating node in the ecosystem. A block could represent transactions and data of many types — currency, digital rights, intellectual property, identity, or property titles, to name a few.

Source: MIT Sloan School of Management – “Blockchain Explained”
<https://mitsloan.mit.edu/ideas-made-to-matter/blockchain-explained>

What is a blockchain?

“Centralized” vs. “Decentralized” Ledger



Source: TradeIX - <https://tradeix.com/distributed-ledger-technology/>

Blockchain Origins

Satoshi Nakamoto

“Bitcoin: A Peer-to-Peer Electronic Cash System”

(October 2008)



Satoshi Nakamoto



Satoshi Nakamoto is the name used by the unknown person or group of people who developed bitcoin, authored the bitcoin white paper, and created and deployed bitcoin's original reference implementation. As part of the implementation, they also devised the first blockchain database. [Wikipedia](#)

Born: [5 April 1975](#) (age 43) (claimed); [Japan](#) (claimed)

Fields: Digital currencies, computer science, [cryptography](#)

Blockchain Origins

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

Source: Satoshi Nakamoto – “Bitcoin: A Peer-to-Peer Electronic Cash System” (October 2008)

What is a blockchain?

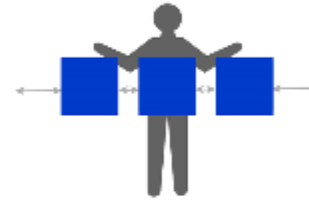
Immutability: “Block” + “Chain”

Building a blockchain.

As each transaction occurs, it's put into a block.



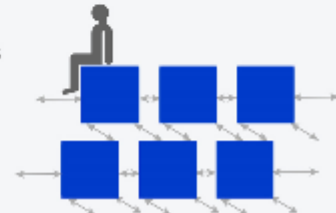
Each block is connected to the one before and after it.



Transactions are blocked together.



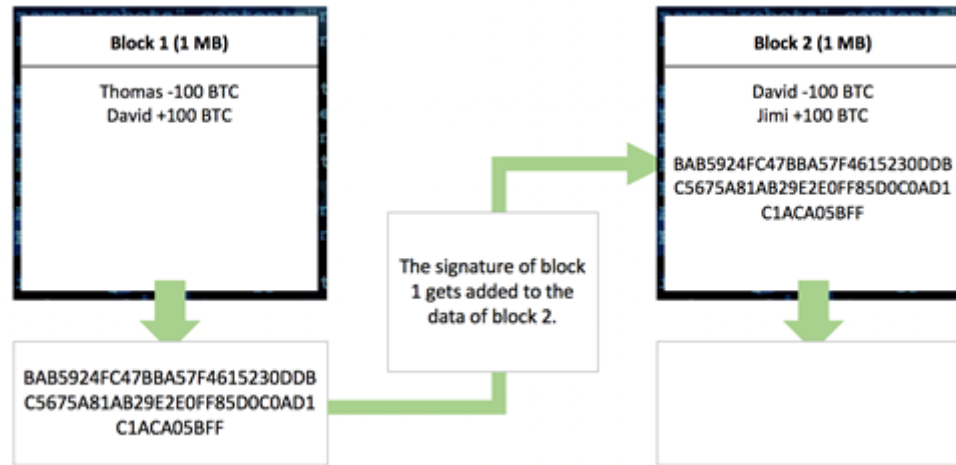
Each block is added to the next in an irreversible chain.



Source: American Land Title Association - <https://www.alta.org/news/news.cfm?20180419>

What is a blockchain?

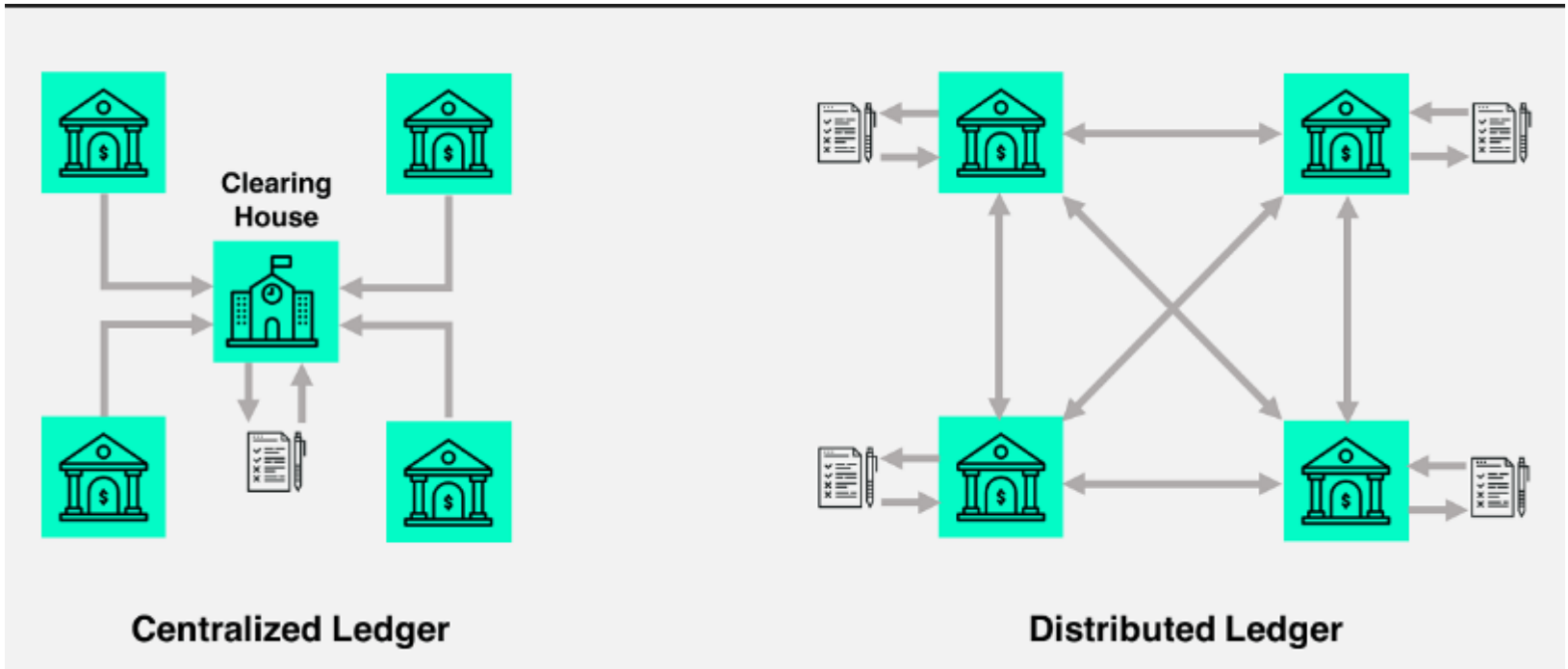
Immutability: “Block” + “Chain”



Source: <https://medium.com/coinmonks/blockchain-for-beginners-what-is-blockchain-519db8c6677a>

What is a blockchain?

“Centralized” vs. “Decentralized” Ledger

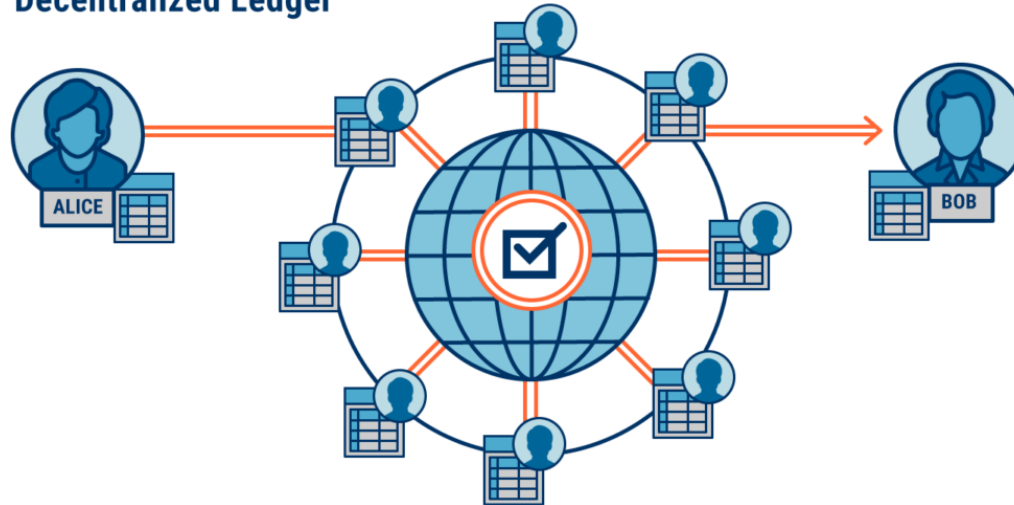


Source: TradeIX - <https://tradeix.com/distributed-ledger-technology/>

What is a blockchain?

Another Illustration of a “Decentralized” Ledger...

Decentralized Ledger



CBINSIGHTS

Source: CB Insights:

https://www.cbinsights.com/research/blockchain-real-estate-disruption/?mc_cid=fa908532ef&mc_eid=f8c50a3f14

What is a blockchain?

Immutability: Proof of Work vs. Proof of Stake

Proof of Work vs *Proof of Stake*



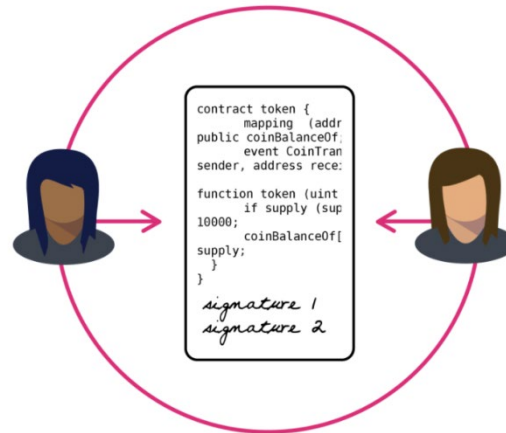
proof of work is a requirement to define an expensive computer calculation, also called mining



Proof of stake, the creator of a new block is chosen in a deterministic way, depending on its wealth, also defined as stake.

Source: Blockgeeks:
<https://blockgeeks.com/guides/proof-of-work-vs-proof-of-stake/>

Smart Contracts



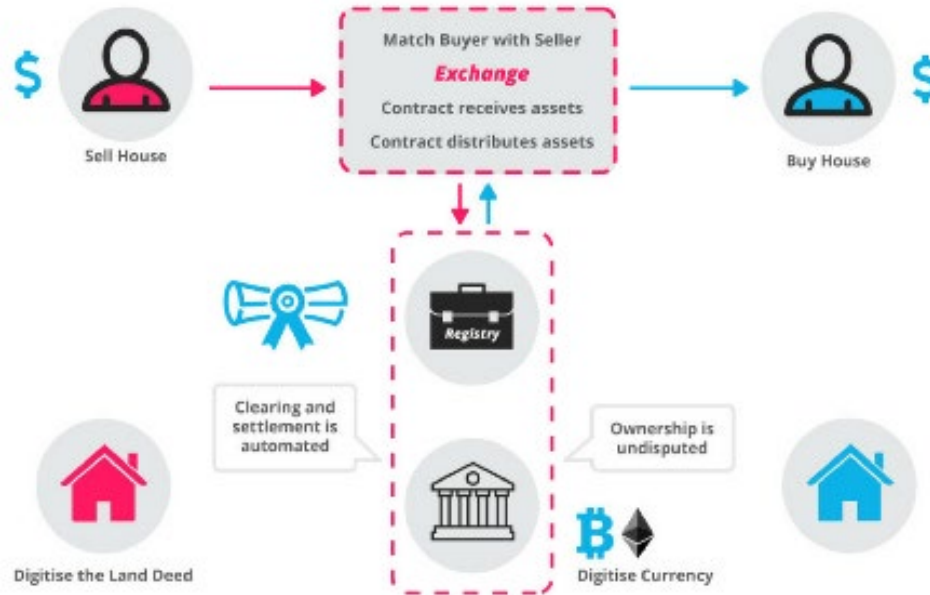
Source: CoinDesk – how do “smart contracts” work - <https://www.coindesk.com/information/ethereum-smart-contracts-work>

Smart Contracts

- “If x, then y”
- Decentralized contracts and dApps
- Automation
- Transaction execution and costs
- Tokens / Tokenization

Source: CoinDesk – how do “smart contracts” work - <https://www.coindesk.com/information/ethereum-smart-contracts-work>

Smart Contracts



Source: Blockgeeks (via Crypto Realty Group) – “What is a Smart Contract?” - <https://www.thecryptorealtygroup.com/whats-a-smart-contract/>

Blockchain & CRE

- Originations & Due Diligence
- Escrow Management
- Property Management
- Title searches & records / Deeds
- Secondary Markets
- Mortgage Onboarding & Servicing

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Originations & Due Diligence

- Listing Data (brokers vs. third-party portals) for multiple-listing service/MLS
- *Imbrex / REX* working with Toll Brothers listing service
- **Pros:** Startups attempting to disrupt subscription-based MLS services by allowing brokers, title companies, appraisers, etc. to directly provide information about a property.
- **Cons:** “Too much noise” - competing data from multiple sources may affect consistency; who validates?

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Originations & Due Diligence (cont'd)

Example: *Instant Property Network (IPN)* being tested by RBS and Barclays as of April 2019 on the R3 blockchain network

- Resi only
- Due diligence monitoring (zoning, survey, title matters)
- Examples and success rate TBD

Source: Alistair Marsh, *Bloomberg*, "RBS Join Blockchain Trial to Speed Property Sales" (April 4, 2019), <https://www.bloomberg.com/news/articles/2019-04-04/barclays-rbs-join-blockchain-trial-to-speed-property-sales>

Prop trade blockchain startup gets backing from Barclays, RBS

The banks are among 40 financial institutions now testing Instant Property Network, which promises to save real estate industry \$160B a year

April 05, 2019 11:15AM



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Title & Deed Records



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Title & Deed Records

- Standardizing local land deed records to be immutable.
- Corrections as to incorrect deeds and consensus by local municipalities
- Universalizing records for title searches and title insurance
- **Example:** *Teton County, Wyoming working with the Open Index Protocol to track land transactions, mortgages, liens and releases from 1996*
- **Pros:** Incremental standardization of land records (local towns, expansion into other counties, consensus mechanisms); important in developing countries for land rights (Zambia)
- **Cons:** Obtaining consensus as to incorrect deeds or chains of title.

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Tokenization

- Fund formation and capital generation, REITS, cash flow distributions
- **Example:** *\$30mm East Village condo offering tokens for investors on Ethereum in 2018 (to complement traditional funding)*
- **Pros:** Potential for increased liquidity and raising capital
- **Cons:** Securities law framework (or lack thereof); FINRA, Reg D requirements; market for secondary trading?



Blockchain & Charlotte

Hype...

“As a technologist, the technology is fascinating. We have tried to stay on the forefront. I think we have somewhere around 15 patents, most people would be surprised at Bank of America with patents in the blockchain or cryptocurrency space.”

– **Catherine Bessant**, Chief Operations & Technology Officer, Bank of America (January 2016)

- As of July 2018, *Bank of America* held 45 blockchain-related patents (relating to payments, wire transfers, digital storage keys, digital currency exchanges).

Blockchain & Charlotte



STARTUPS

Charlotte could soon be on the national map for blockchain tech



By Andrew Dunn | [✉](#) | January 26, 2018

Views: 4,451

Charlotte's future lies in financial technology, building on our decades of experience as a banking center.

And nothing is more exciting in the world of fintech right now than blockchain. Remember how 10 years ago, every smart developer was building an iPhone app? That's how things are becoming right now with blockchain.

Blockchain & Charlotte

...vs. Reality(?)

*“Now I’m more in throw-down mode. I’ll say to anybody, bring me a use case that makes sense, and I will look at it,” Bessant said. “But in financial services, it’s a really tough model.”–
Catherine Bessant (January 2019)*

“...and there is no sign yet that Wells Fargo and Bank of America are throwing in the towel. [Tim] Sloan said Wednesday that he thinks blockchain technology will have an impact over time, while Bessant said that BofA is experimenting aggressively.”

Source: Kevin Wack, “American Banker”, March 29, 2019 “BofA, Wells Fargo sour on blockchain” - <https://www.americanbanker.com/news/bofa-wells-fargo-sour-on-blockchain>

Blockchain & Charlotte

...vs. Reality(?)

“ **We are near the end of the hype cycle** and have not found a great consumer solution for distributed ledger technology **until now** . . . [Real Estate] is an industry that is ripe for this, where a complex difficult process for customers could be made cheaper and more transparent.”

– *Dan Salmons, Director of Mortgage Innovation at RBS*

Source: Alistair Marsh, *Bloomberg*, “RBS Join Blockchain Trial to Speed Property Sales” (April 4, 2019), <https://www.bloomberg.com/news/articles/2019-04-04/barclays-rbs-join-blockchain-trial-to-speed-property-sales>

Blockchain Adoption Hurdles

- Why not just use a shared database? (i.e. Slack, Google Docs, etc.)
- Human Error?
- Automation & CRE = lol(?)
- Banks & Title Companies \neq Decentralization
- Regulatory Considerations



I thought they were
my friends, until they
asked me to join their
pyramid scheme.



someecards
user card

Questions?

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Fintech, Cryptocurrencies & Emerging Technologies Group



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