BIG DATA & BLOCKCHAIN

#ParkarPaysItForward

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AMA Shared Interest Group

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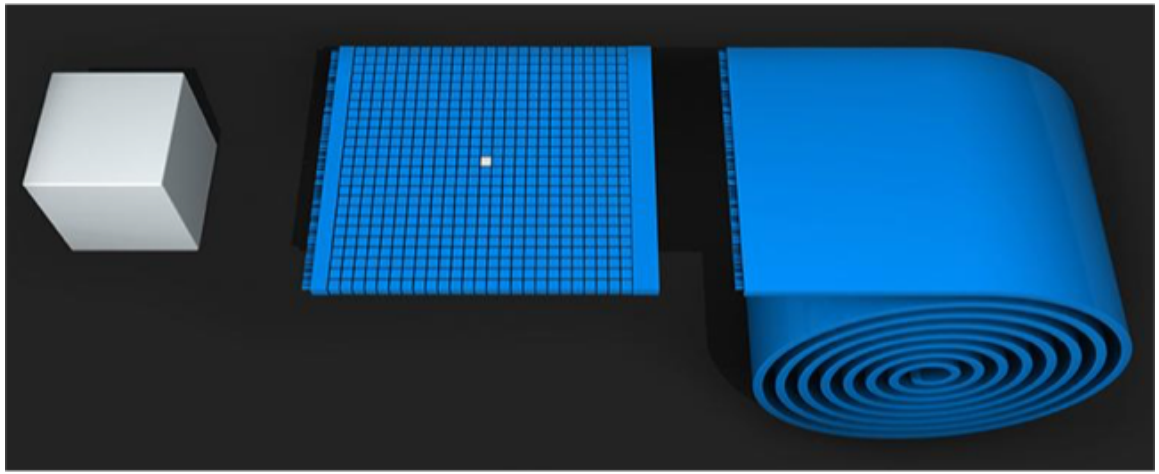
What is a Blockchain?

- A blockchain is a **database that is shared** across a network of computers.
- Once a record has been added to the chain it is **very difficult to change**.
- To ensure all the copies of the database are the same, **the network makes constant checks**.
- Blockchains have been used to underpin cyber-currencies like bitcoin, but many other possible uses are emerging.

What are the Components?

Records are **bundled together into blocks** and **added to the chain one after another**.

The basic parts:



THE RECORD (single transaction)

THE BLOCK (bundle of records)

THE CHAIN (all blocks linked together)

Blockchain Record Flow

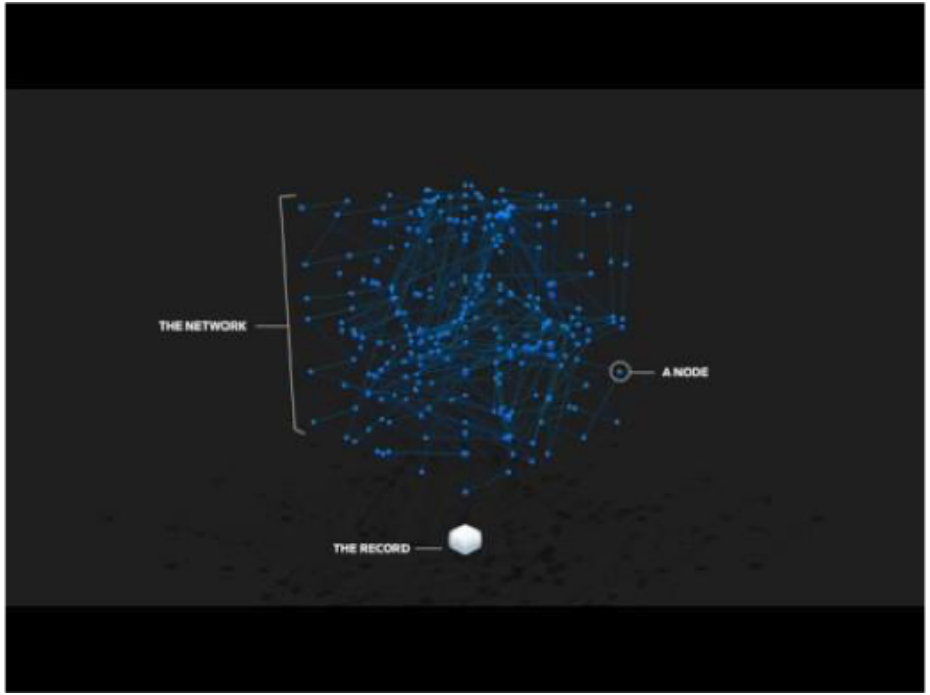
STEP 1:

A trade is recorded. For example, let's say Mr Pink is selling two of his coins to Mr Green for $100. The record lists the details, including a digital signature from each party.

Blockchain Record Flow

STEP 2:

The record is checked by the network. The computers in the network, called 'nodes', check the details of the trade to make sure it is valid.



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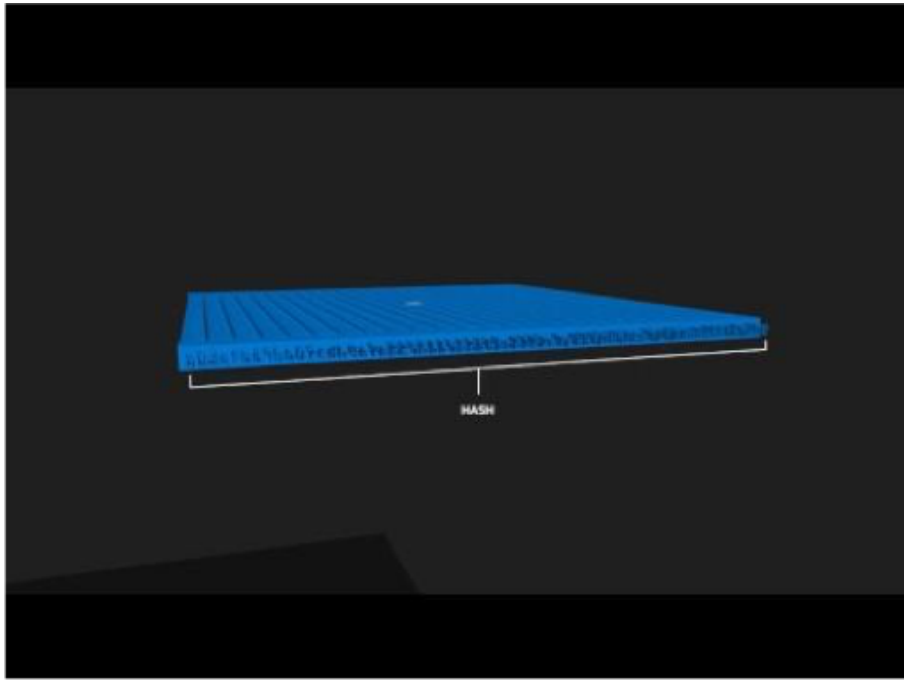
Blockchain Record Flow

STEP 3:

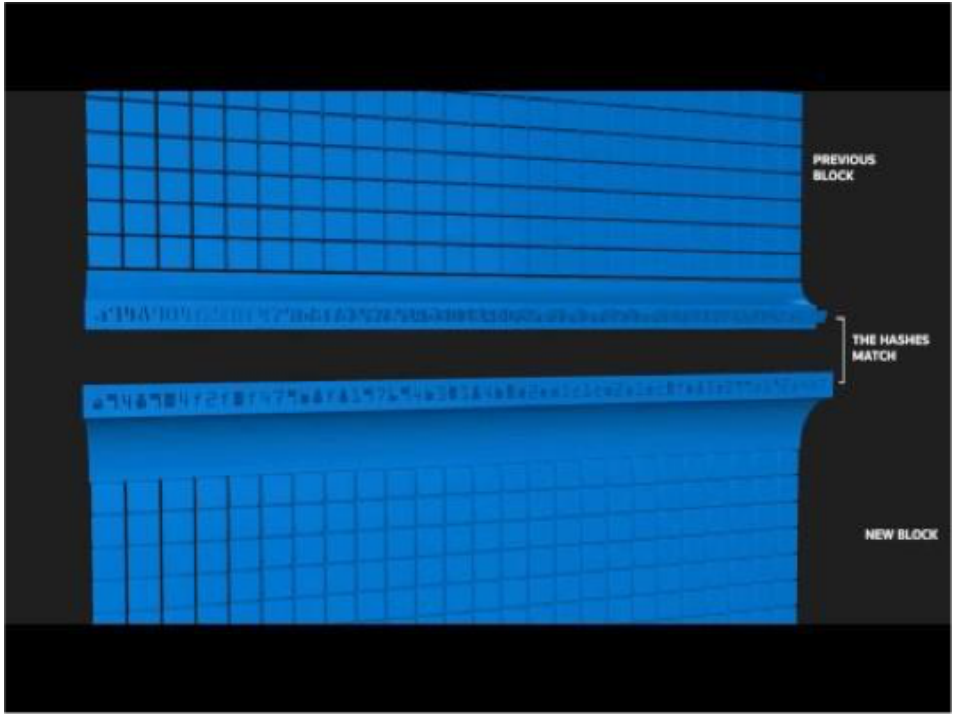
The records that the network accepted are added to a block. Each block contains a unique code called a hash. It also contains the hash of the previous block in the chain.



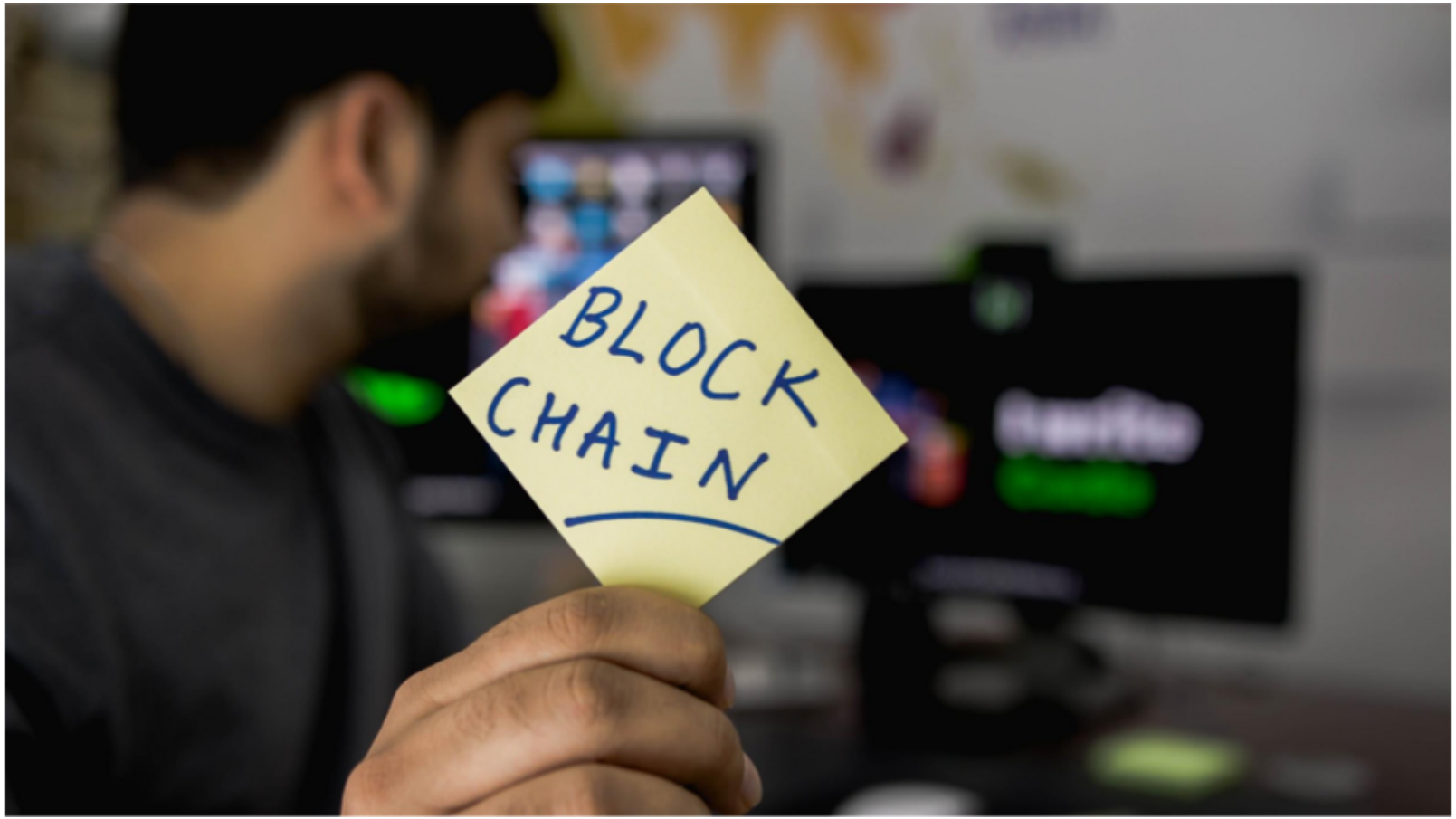
Blockchain Record Flow

STEP 4:

The block is added to the blockchain. The hash codes connect the blocks together in a specific order.



BLOCKCHAIN POP QUIZ

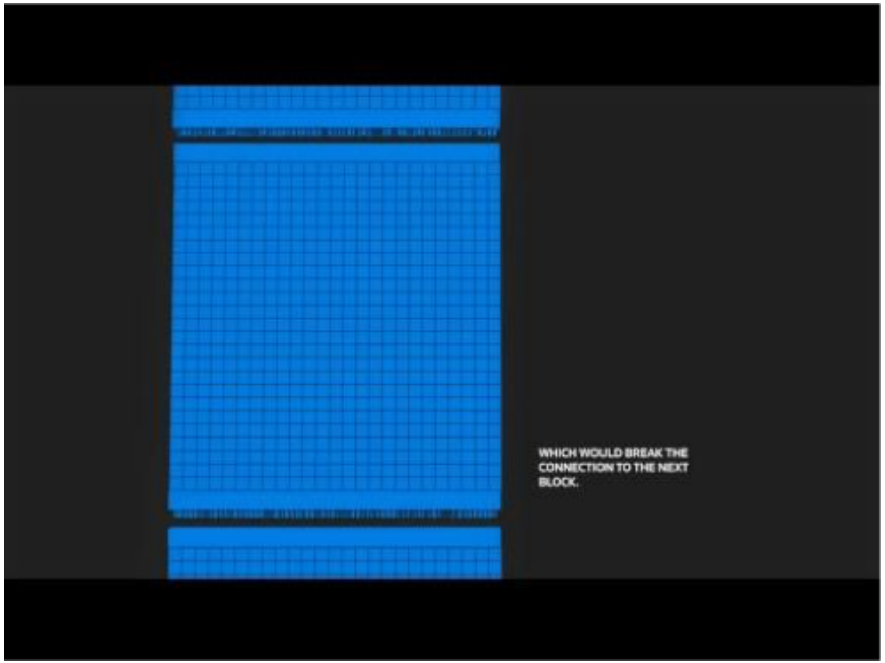


Records Are Immutable

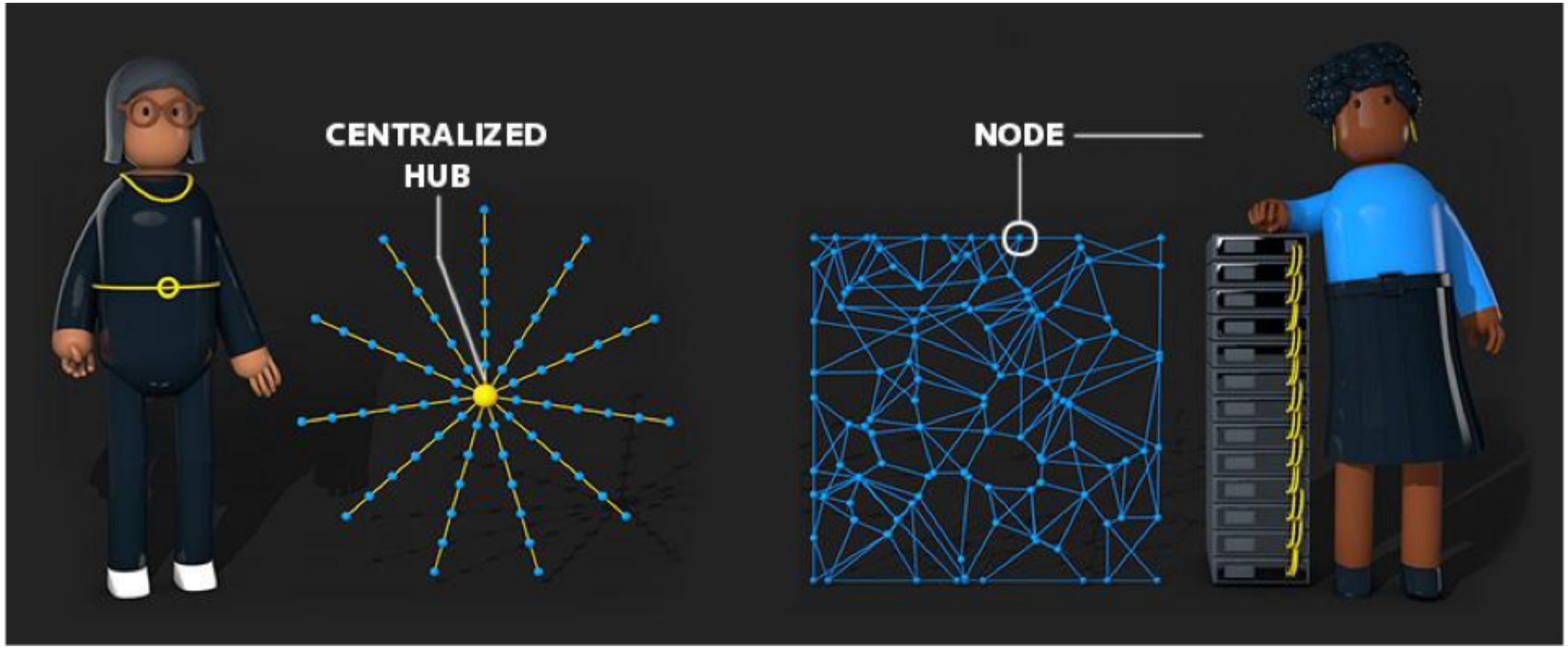
A **hash code** is created by a math function that takes digital information and generates a string of letters and numbers from it.

1. **No matter what the size of the original file, a hash function will always generate a code of the same length.**
2. **Any change to the original input will generate a new hash.**

The changed hash breaks the chain.



Trust and Consensus



The Blockchain & Bitcoin Connection

- Blockchain was created to enable **Bitcoin**
- Bitcoin is the first ***decentralized*** **digital currency** as it does not rely on a central government authority
- Bitcoins are a **scarce asset**
  - Created through a digital mining process
  - Finite number of Bitcoins (21m)
- Is Bitcoin a real currency?
  - Currency = A store of value, medium of exchange, and unit of account
  - Bitcoin is still an inherently **volatile asset**
  - Can it be collected, traded, and…. SPENT (NewEgg/Overstock)
  - As digital currencies evolve so too does the nature of money, banking, and worldwide financial transactions

Compelling Blockchain Use Cases

Smart Contracts

- Digitizing law; contractual instruments
- Execute commercial transactions and agreements automatically

Clearing & Settlement

- Greater trade accuracy, and a shorter settlement process
- Short-term win with real cost savings

Payment

- Digitizing law; contractual instruments
- Execute commercial transactions and agreements automatically

Digital Identity

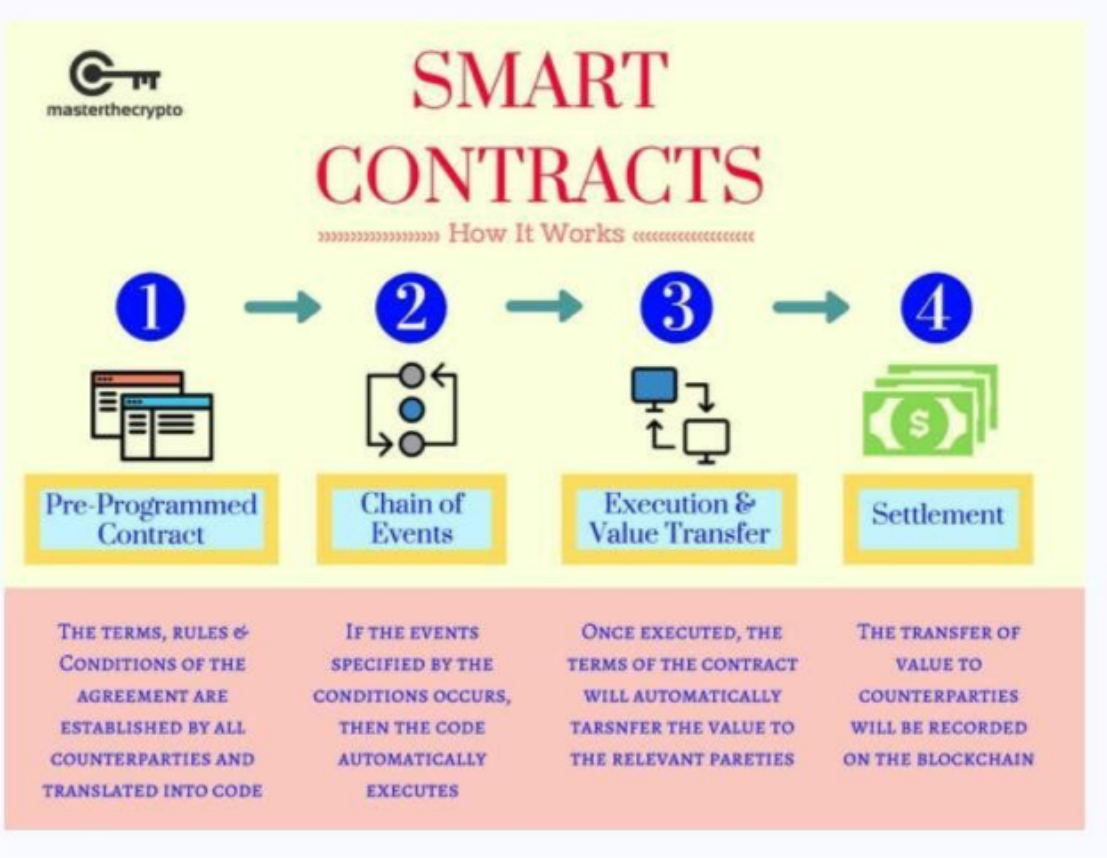
- Greater trade accuracy, and a shorter settlement process
- Short-term win with real cost savings

Ethereum - Blockchain Evolved

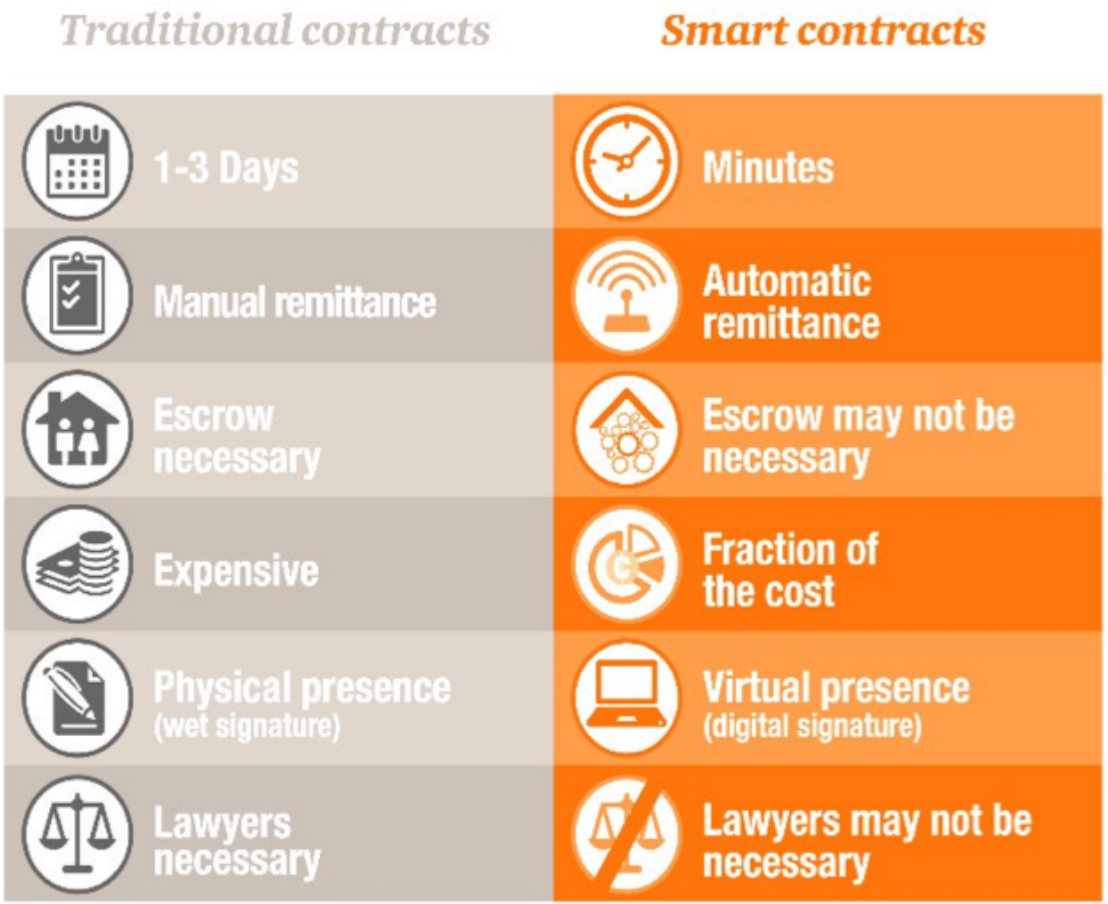
Ethereum allows true business logic to sit on top of the distributed ledger (blockchain) allowing for intelligence to be added into the process.

- Using Ethereum you can build all of this logic into what's called a **smart contract**
- Companies are now looking at using **blockchain as part of their core infrastructure**
- The other significant benefit of Ethereum is that it allows **anyone to create a token** to be used for these transactions on the underlying Ethereum platform making it much easier for people with new concepts, like us, to create smart contracts to get these ideas to market much faster.

Smart Contracts



Traditional vs. Smart Contracts



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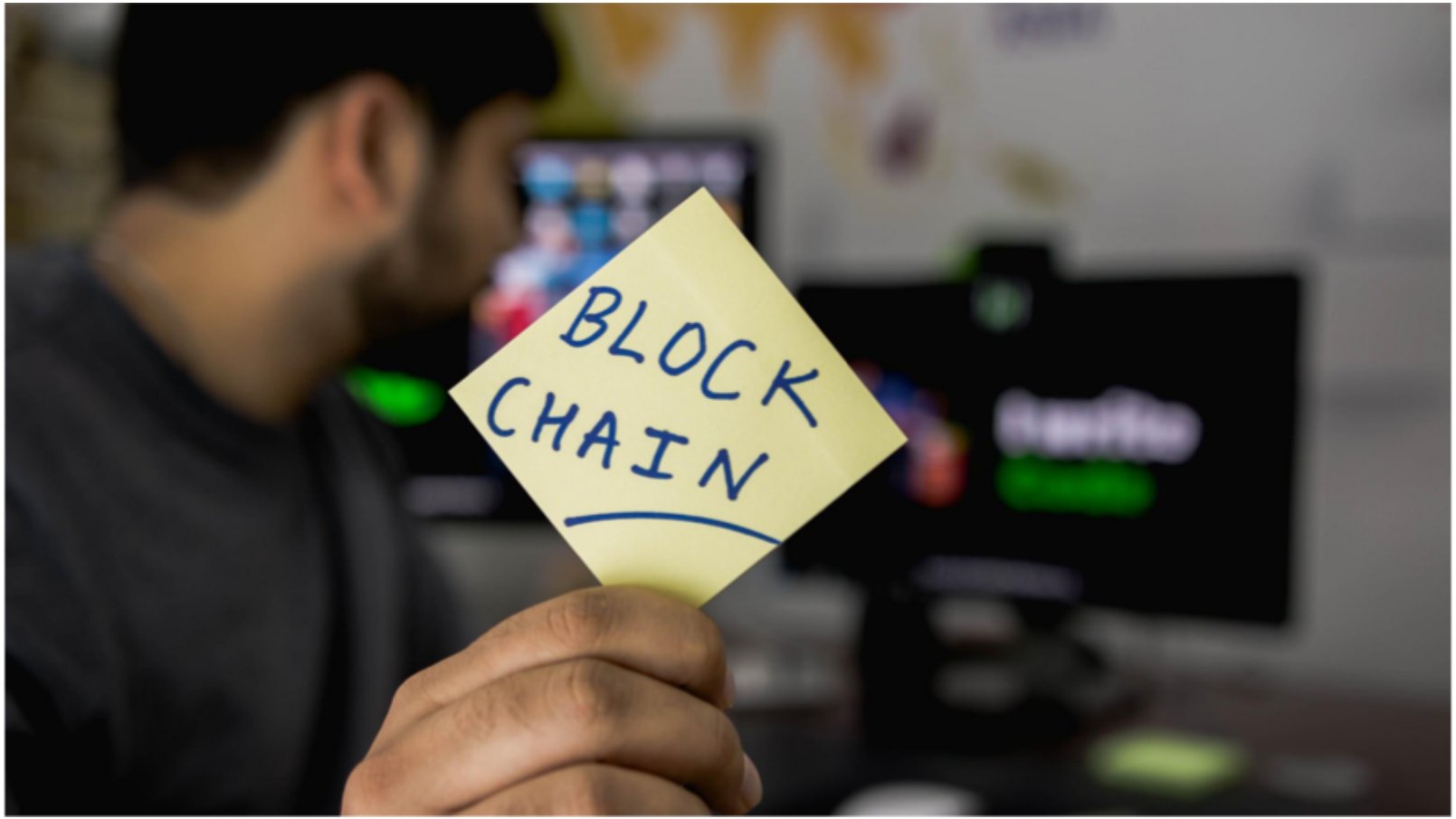


What is an ICO?

In an **Initial Coin Offering**, a project creates a certain amount of a digital token and sells it to the public, usually in exchange for other cryptocurrencies such as bitcoin or ether.

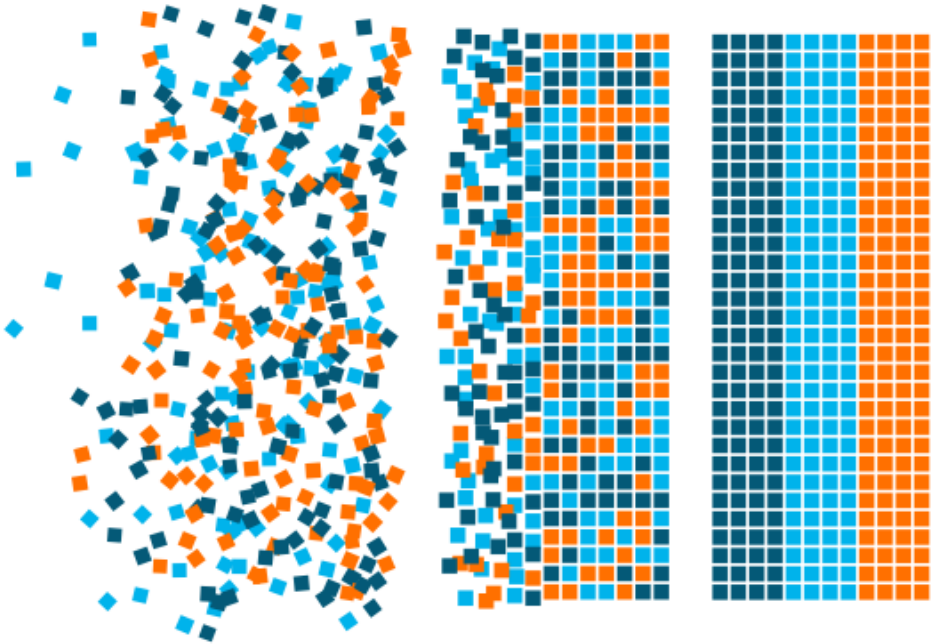
- The token has an **inherent benefit** – it grants the holder access to a service, a say in an outcome or a share in the project's earnings.
- The benefit will be in **increasing demand**, which will push up the market price of the token.

Tokens, especially those of successful sales, are usually listed on exchanges, where initial buyers can sell their holdings and new buyers can come in at any time. As a type of digital crowdfunding, token sales enable startups not only to raise funds without giving up equity, but also to bootstrap the project's adoption by incentivizing its use by token holders.

What is an STO?

The **Security Token Offering** is emerging as a powerful and valuable alternative to private equity and venture capital financing for companies globally.

What is Big Data?



'Big Data' is a term used to describe collection of data that is huge in size and yet growing exponentially with time.In short, such a data is so large and complex that none of the traditional data management tools are able to store it or process it efficiently.

Why Big Data and Blockchain?

My experience with data solutions pointed me in the direction of blockchain to solve the issue of needing advanced technical resources or deep pockets to allow for scale

Solutions in the big data or analytics space can be costly and require deep technical knowledge

The technology behind big data scales in a way that's similar to how distributed blockchain technology works

Data processing and storage is expensive even when using cloud solutions such as AWS

Centralized systems are hacked often while decentralized data is much harder to get deep access to

Most "off the shelf" solutions today are still 6 figure solutions with multi month lead times for implementation

Internal technology teams are often very busy so getting these initiatives off the ground can be slow and difficult

Issues around data trust and ownership can be mitigated by using blockchain technology

Data marketplaces can use blockchain to prove data provenance

Big Data Blockchain Projects

Big Data Block

Storj

Provenance

Quadrant Protocol

Advertising Blockchain Projects

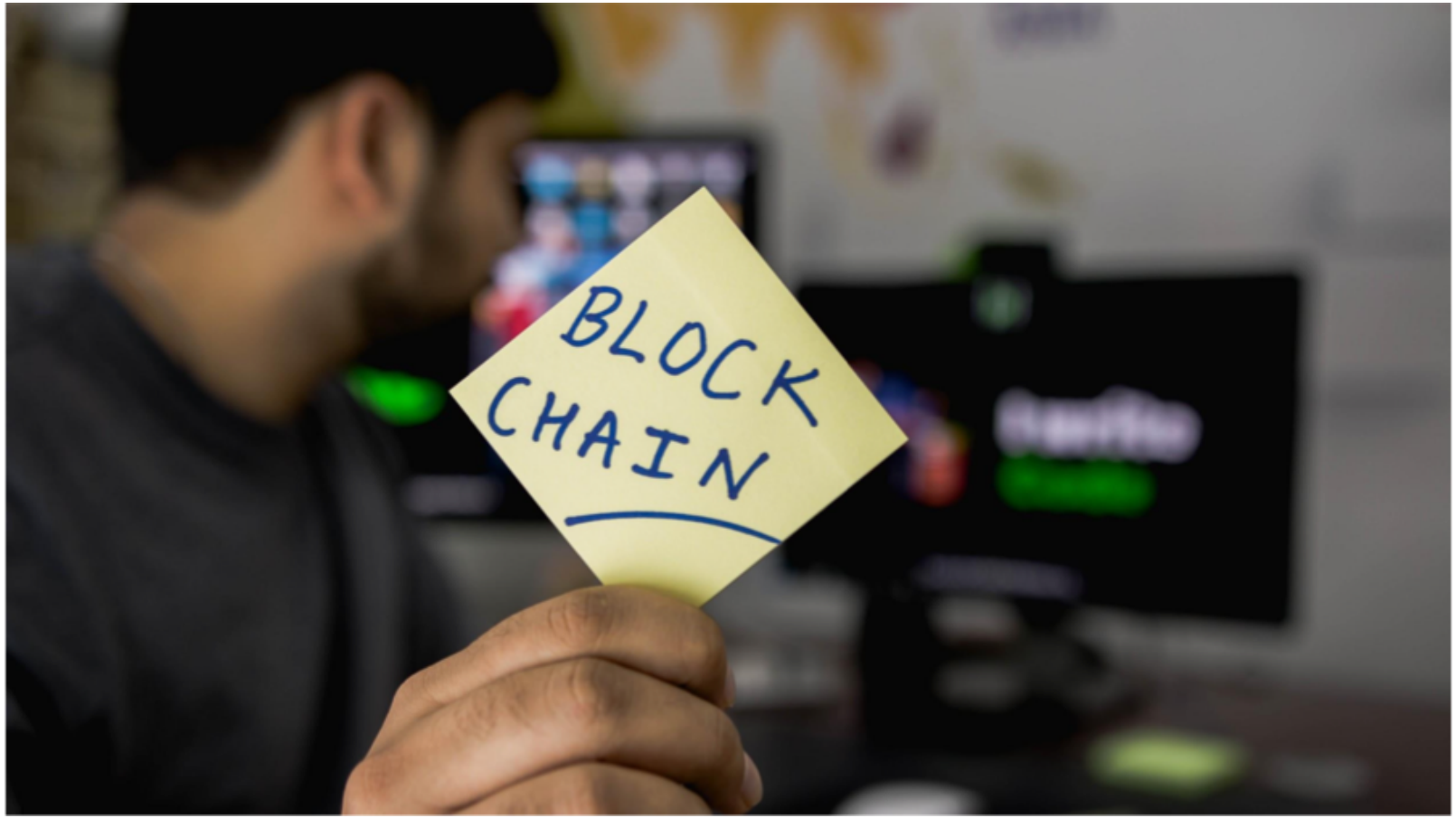
AdEx

AdBank

BAT

LeadCoin

BLOCKCHAIN POP QUIZ



5 MINUTE BREAK

Go, Cubs, Go!


WRIGLEY FIELD
HOME OF
CHICAGO CUBS
GO CUBS GO!
GET OUT AND PLAY TODAY!
TOYOTA

Group Workshop #1

What problems do customers have with the ticket purchasing experience?

Discuss with your Table

Re-energize the Cubs fan around the ticket purchasing experience

- The Rickett's are upset at the amount of scalped and counterfeited tickets happening at Wrigley Field and the decline in ticket sales regardless of the popularity of the Cubs.
- How can we leverage blockchain to build trust into the ticket buying process?
- What KPIs will you use to drive the project?
- How can we be faster at doing this than any other baseball franchise?
- What new slogan will we use to share this new initiative with our fans?

Present to the Room

Let’s Bring it Home

Group Workshop #2

What problem at your company can be solved by blockchain and big data?

Discuss with your Table

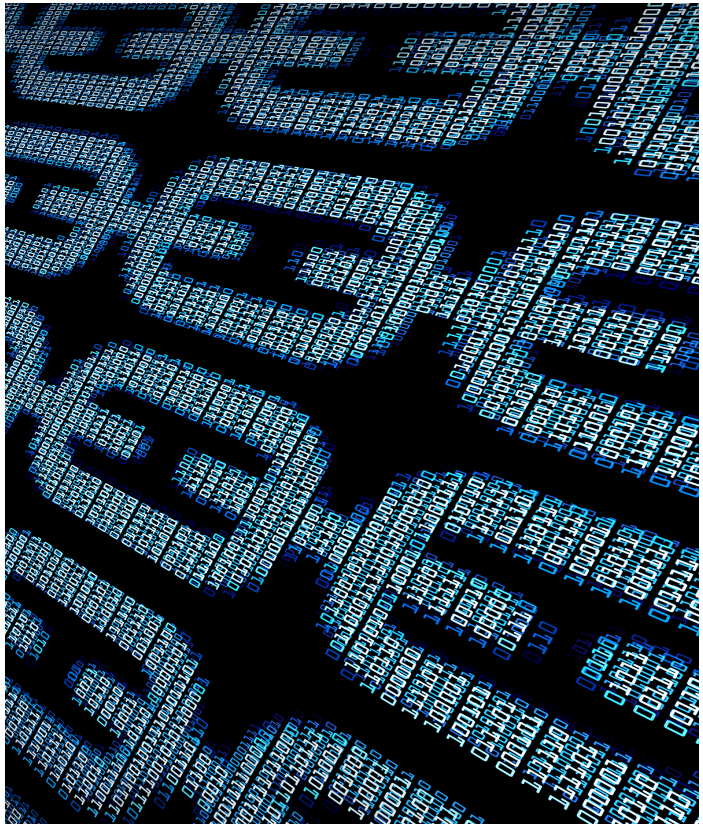
Brainstorm a Blockchain + Big Data Solution for your Company

- Write down the problem statement
- Write down 3-5 benefits that would come with a blockchain solution for that issue
- Write down 3 key people that could help you bring this to life
- Create a slogan the project

Present to the Room

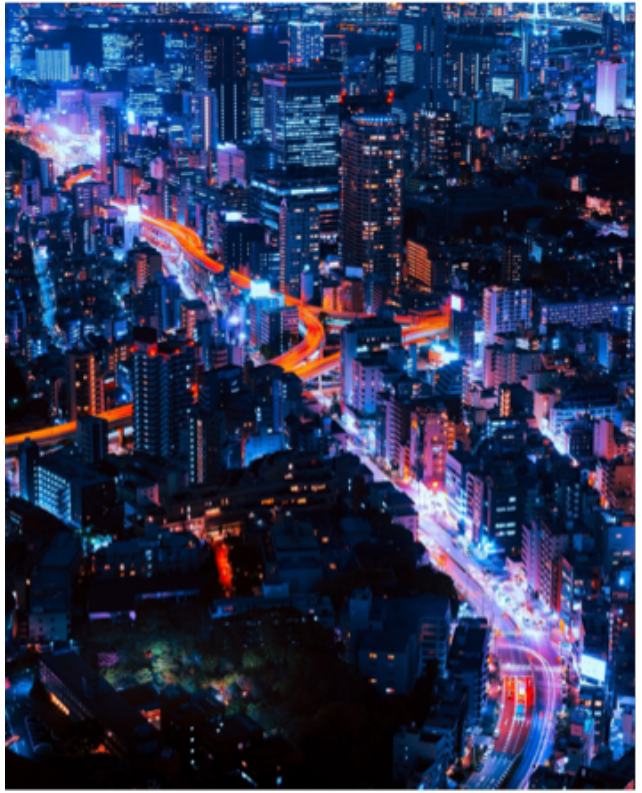
Key Takeaways on Blockchain

- Cryptocurrencies are not required for a blockchain solution
- Blockchain is a distributed database with trust built in
- Blockchain is a perfect fit for processes that need checks and balances in place
- There are three main components to a blockchain: the record, the block, and the chain
- Bitcoin needs a blockchain to work
- If data is changed, the chain breaks
- Permissionless blockchain solutions are the open solutions (Ethereum)
- Permissioned blockchains are the private options (Hyperledger)
- Blockchain has drawbacks
    - Not currently fast
    - Scalability of the distributed ledger is a challenge



2019 and Beyond

- Blockchain adoption increases and real use cases continue to go live
- Security and asset backed tokens become a significant financial vehicle
- Data privacy/security becomes more of a focus with blockchain helping to address some of the current issues
- Distributed computing starts to become the new “cloud”
- Marketing starts to leverage new blockchain based tools for ad buying
- Privacy rules and issues require marketing to build new trust mechanisms with individuals
- People take more ownership of their data
- Data continues to grow exponentially
- Companies that harness their data for more insights have more success
- AI/ML become more useful for marketers
- SMB’s start to up their analytics game to better compete



Questions?

Thank You!

www.think.parkar.consulting/ama-on-bigdata