

BLOCKCHAINS AND FINTECH

PRESENTED BY



neuroware

BUT LET ME FIRST INTRODUCE NEUROWARE



Mark Smalley - CEO

Living in Malaysia for the past 19 Years

Building Web Applications for 15 Years

Spent 10 Years Building Tech Communities

Developing Blockchains Apps for 5 Years

Ruben Tan - CTO

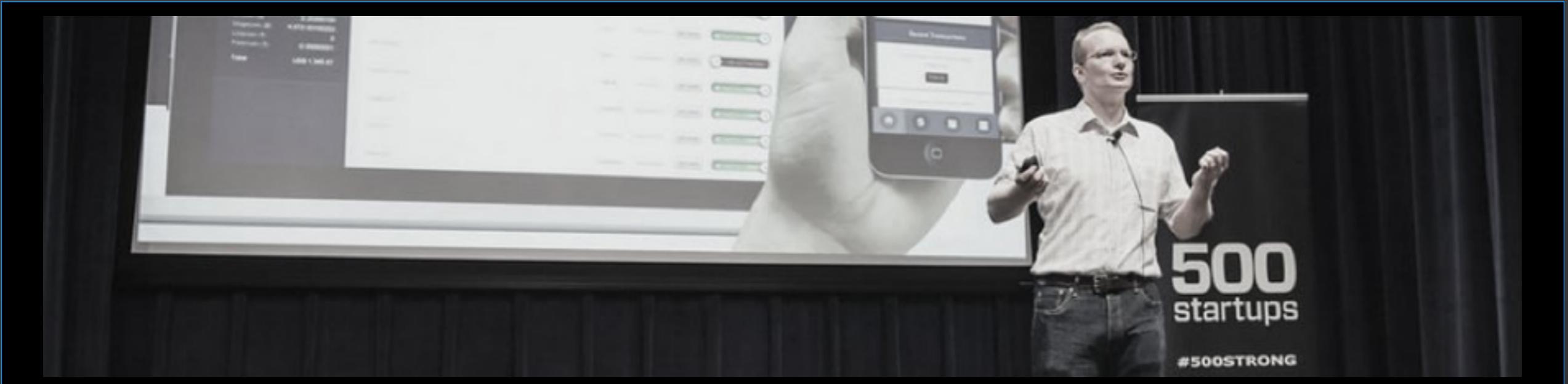
Building Web Applications for 10 Years

Active Community Evangelist & Presenter

Early Developer at MyTeksi and OnApp

Studying Distributed Consensus for 5 Years

EXPERIENCED INNOVATORS IN AN EARLY ECOSYSTEM



- **1st Malaysian Company** to Graduate from 500 Startups in Silicon Valley
- **1st Company in Asia** Providing Public Blockchain APIs & Developer Toolkits
- **1st in The World** to Develop Non-Financial Blockchain Agnostic Protocols
- Helped Organize World's 1st Bank-Backed Blockchain Hackathon (DBS)
- Over 15 Years of Collective Blockchain Development Experience

RECENTLY LAUNCHED CORTEX - WORLD'S 1ST BLOCKCHAIN O/S

CORTEX

dashboard add domain add user add database add api key help credits : 11.00000000 flush logout

DASHBOARD

DOMAINS

USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

You are currently logged-in with your private key!
Please remember to logout when you are done editing in order to remove the private key from localStorage.

YOUR PROFILE

EDIT

Name: Mark Smalley
Title: Co-Founder & CEO
Company: Neuoware

CURRENT USAGE

REPORTS

Domains: 3 / 10
Sub-Domains: 64 / 100
User Accounts: 5 / 10
Databases: 72 / 100
Active Modules: 2 / 7
Active Protocols: 3 / 8

RECENT ACTIVITY

MORE

Updated DNKey on mark.neuoware.io
12 seconds ago by Mark Smalley

Added new user johnny.neuoware.io
1 minute ago by Mark Smalley

New Everstore db at team.neuoware.io
3 minutes ago by Mark Smalley

New wallet for mark.neuoware.io
1 hour ago by Mark Smalley

Added new user johnny.neuoware.io
2 days ago by Mark Smalley

New Everstore db at team.neuoware.io
3 weeks ago by Mark Smalley

New DNKey on keys.neuoware.io
3 month ago by Mark Smalley

A BRIEF HISTORY OF MODERN MONEY

WHERE NO IDEA IS A NEW IDEA

IT ALL STARTS HERE - ON THE ISLAND OF YAP



SHOPPING WAS NOT EASY



SO THEY CREATED THE WORLD'S FIRST PUBLIC LEDGER



WHERE UPDATES REQUIRED GROUP CONSENSUS

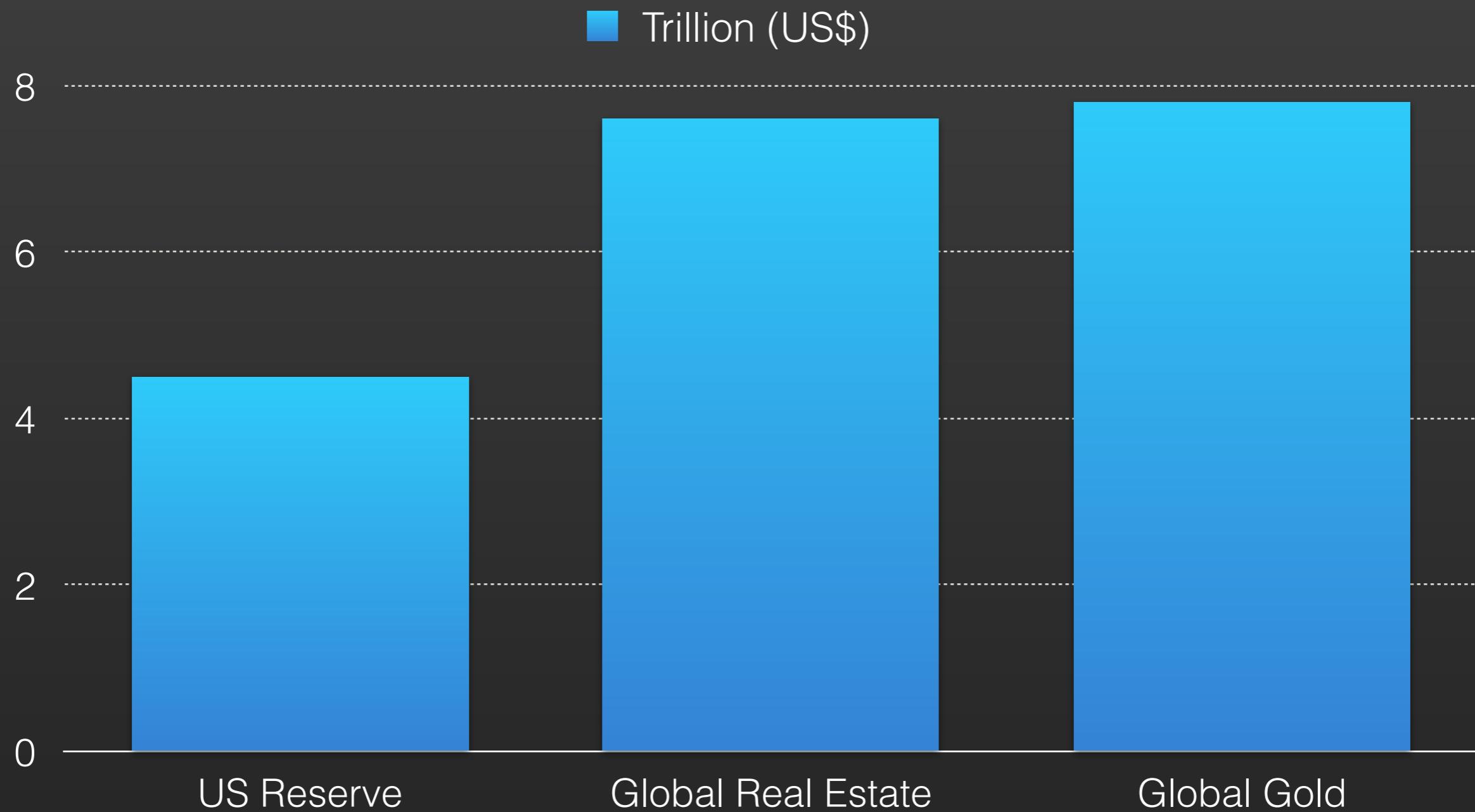


- Size wasn't everything
- The history of each stone determined it's individual value
- Conducting transactions quite literally involved a song & dance
- This required the majority of people from the village to be present

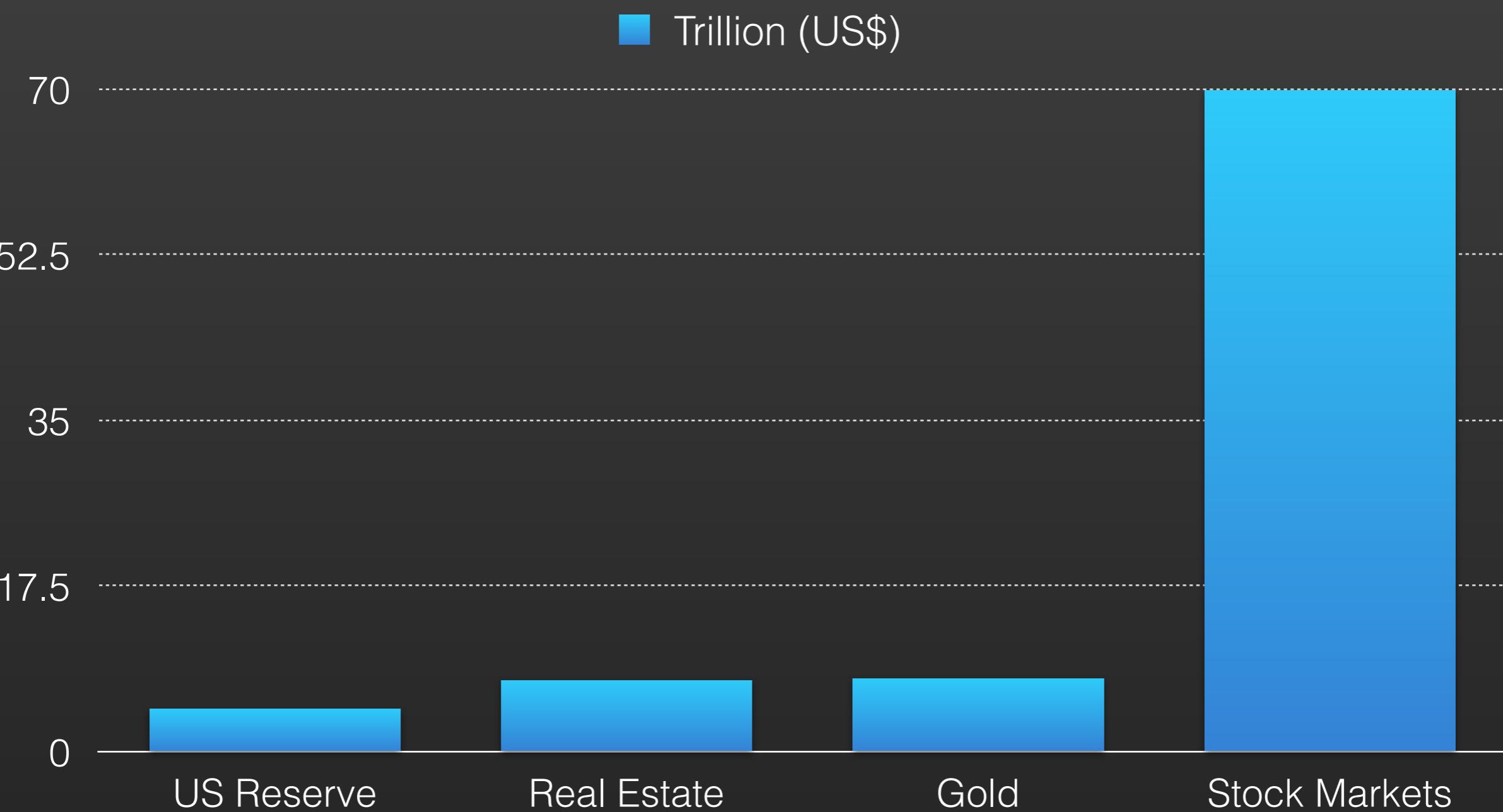
BUT IT COULD NOT SCALE - THEY EVENTUALLY SWITCHED TO US\$



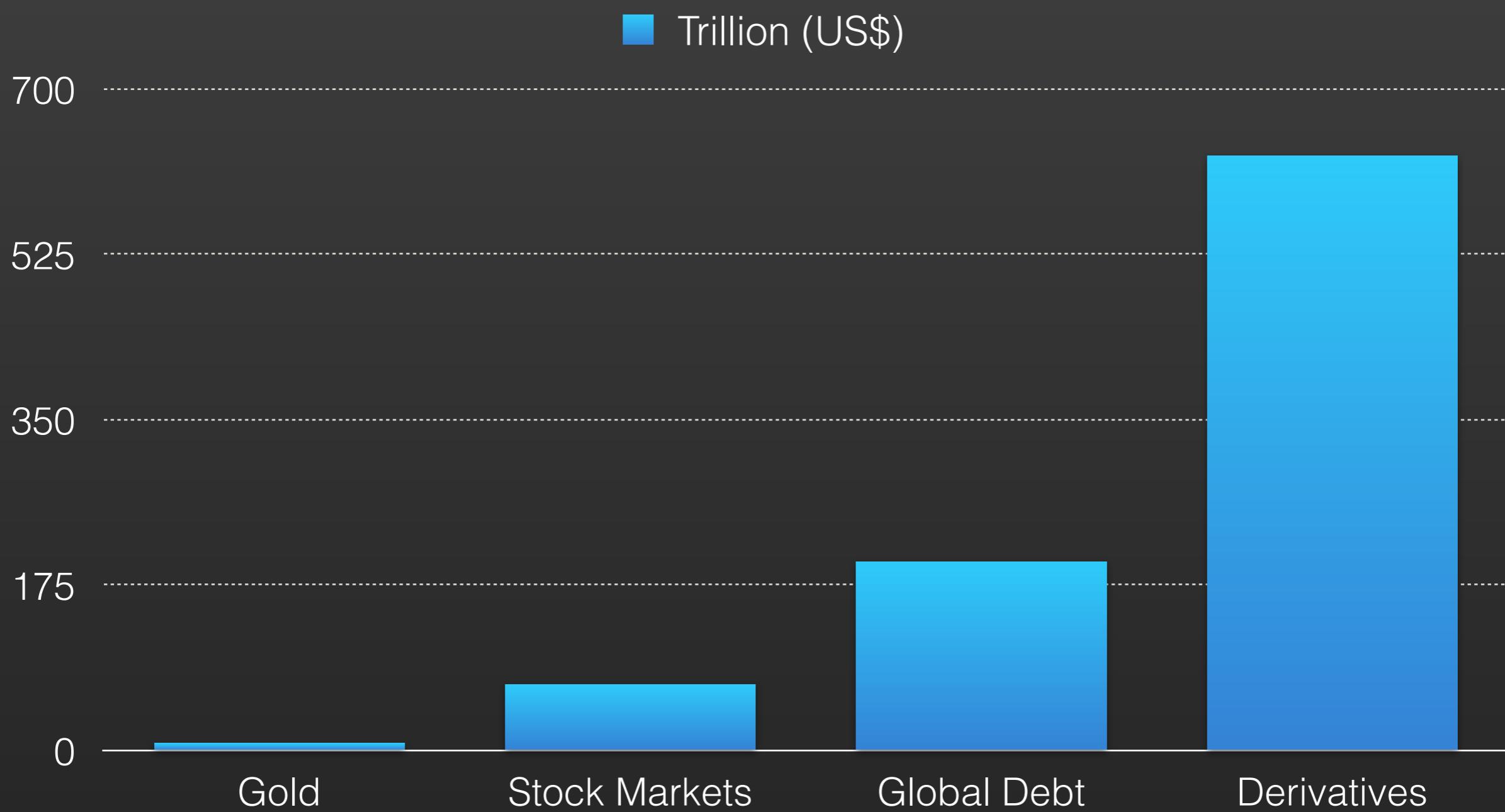
WHEN WE THINK OF THE US DOLLAR WE THINK OF **REAL MONEY**



AND THEN CAME DIGITAL CENTRALIZED ASSETS



AND WITH IT CAME THE RE-CREATION OF ~~MONEY~~ DEBT



IT ALL ENDS IN TEARS (512 US BANKS CLOSED SINCE 2008)



World War 2
US\$3 Trillion

2008 Bailout
US\$8.5 Trillion

All other US
Wars Ever

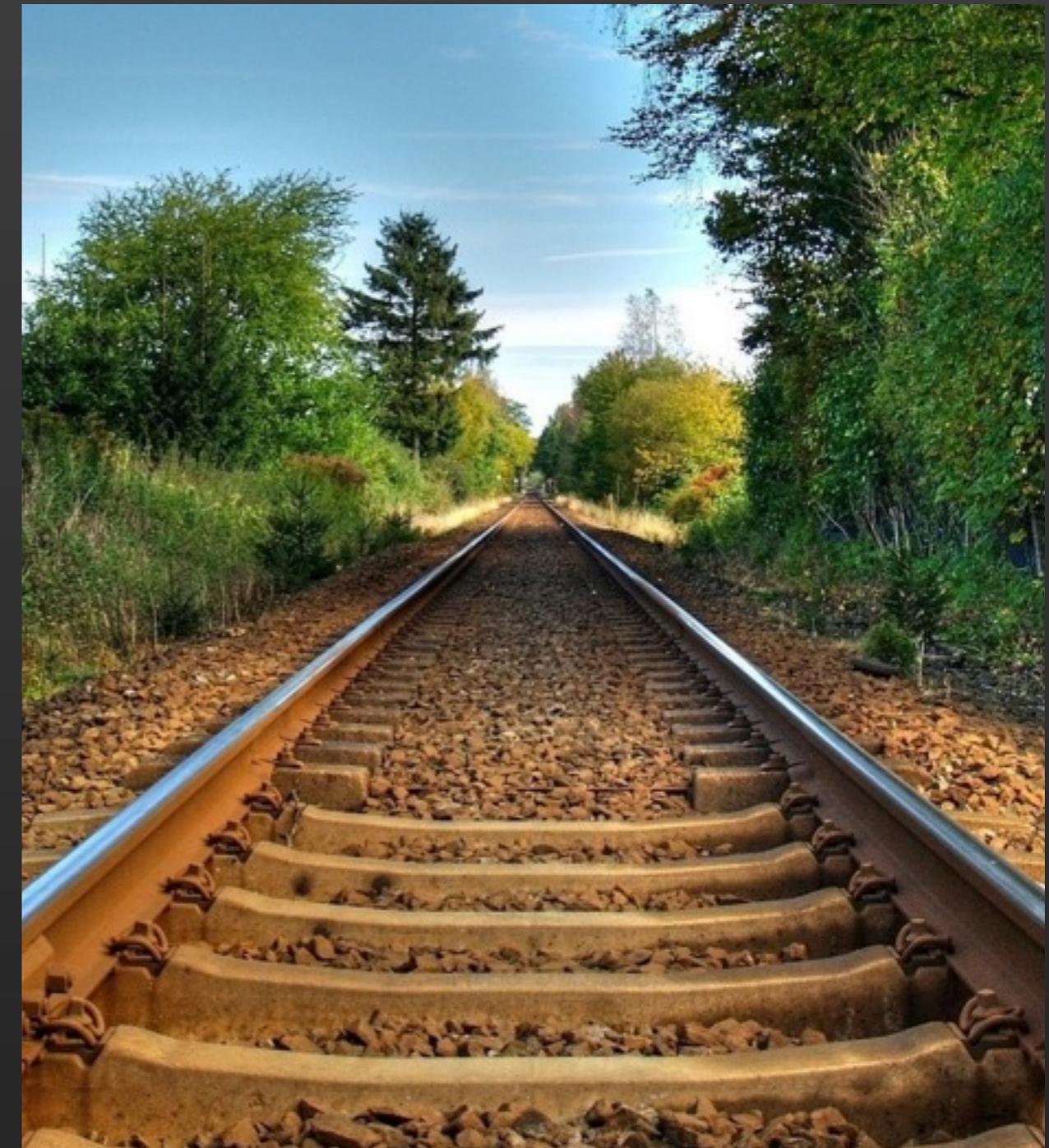
This really annoyed
Satoshi Nakamoto

A TIP-TOE INTO BITCOIN
MAGIC INTERNET MONEY

BITCOIN

VS

BLOCKCHAINS



DOGECOIN

VS

RIPPLE



ETHEREUM

VS

PRIVATE CHAINS



WHAT'S THE MAIN BENEFIT OF A PUBLIC BLOCKCHAIN ...?



WHAT ARE THE BENEFITS OF DISTRIBUTED PUBLIC LEDGERS?

- They provide an immutable tamper-proof audit-trail of the truth
- Data can be easily shared and independently verified by third-parties
- Vastly increased security that is much less vulnerable to attack or outage
- Programmable contracts that can radically reduce human errors and costs



“While Fintech Disrupts Banks,
the Blockchains Disrupt Fintech”

INTERESTING BITCOIN BLOCKCHAIN FACTS TO REMEMBER

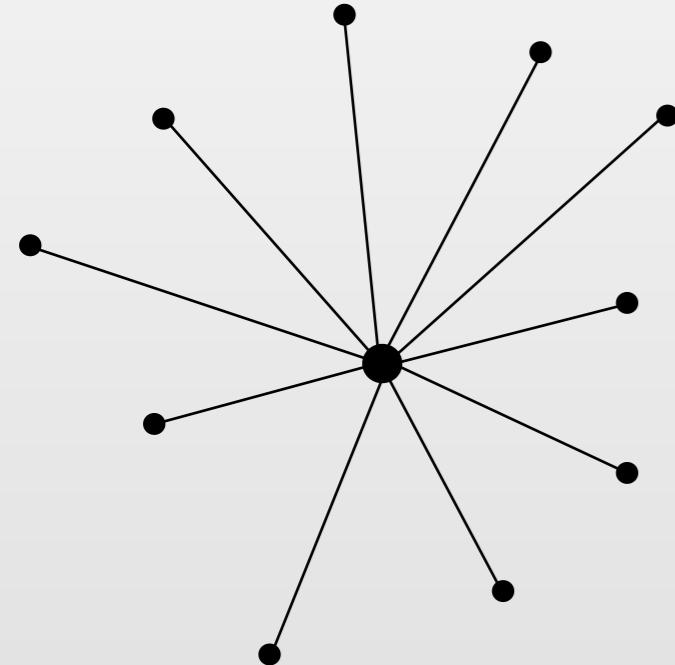
- Bitcoin blockchain released in January 2009 by Satoshi Nakamoto
- We do not know who Satoshi is, or what their religion or political views are
- However, the bailout of 2008 was cited as primary catalyst for its creation
- US\$13 per coin in 2013 (which is when we bought) - now US\$540 per coin
- The Bitcoin network is currently processing over 200,000 daily transactions
- The network's market capitalization is currently around US\$7 billion
- 21 million maximum finite supply, decreasingly dispersed every 10 minutes
- **But most importantly of all is the technology behind it...**

BITCOIN AND BLOCKCHAINS HAVE NO NEW TECHNOLOGY

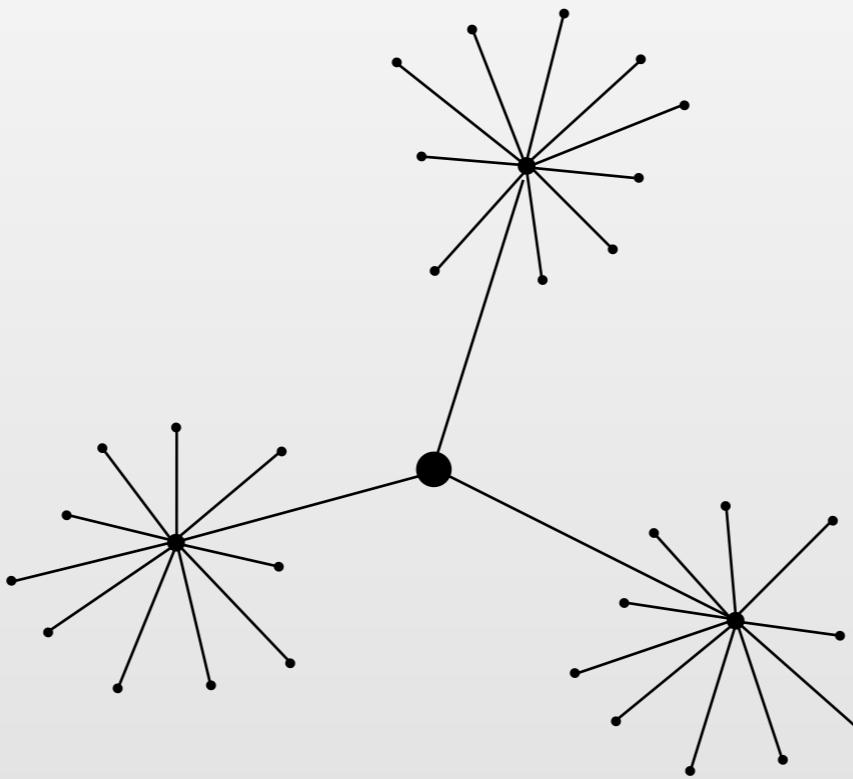


- HASH - Theorized in the 1800s - Coined by IBM in the 1950s
- SHA - Encryption method first introduced by US Navy in 1993
- P2P - Peer to peer protocol popularized by Napster in 1999

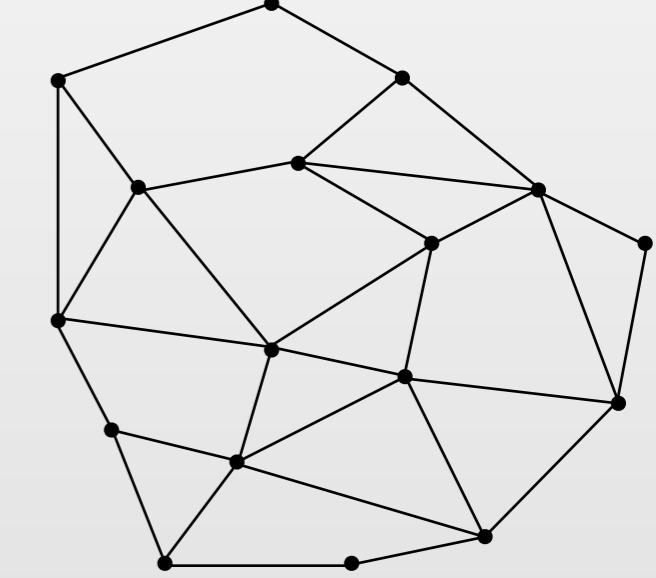
THE EVOLUTION OF EVERYTHING ...?



CENTRALIZATION
DATABASE

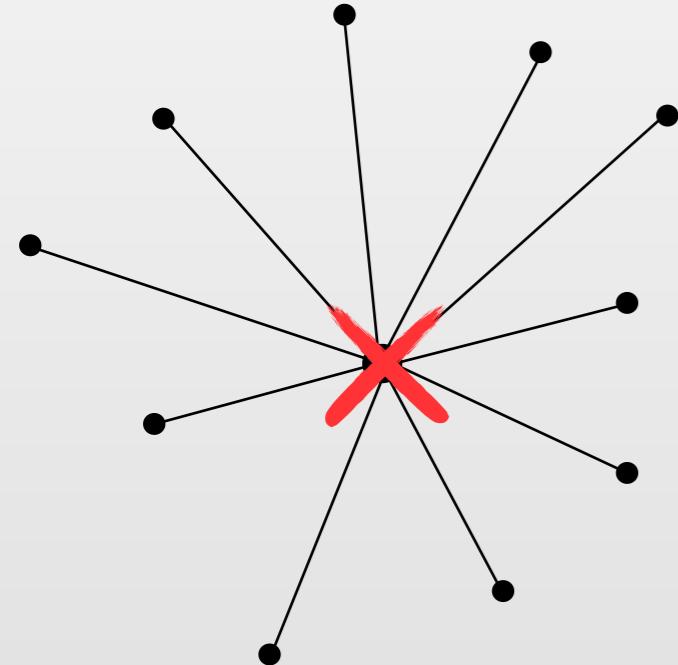


DECENTRALIZATION
THE CLOUD

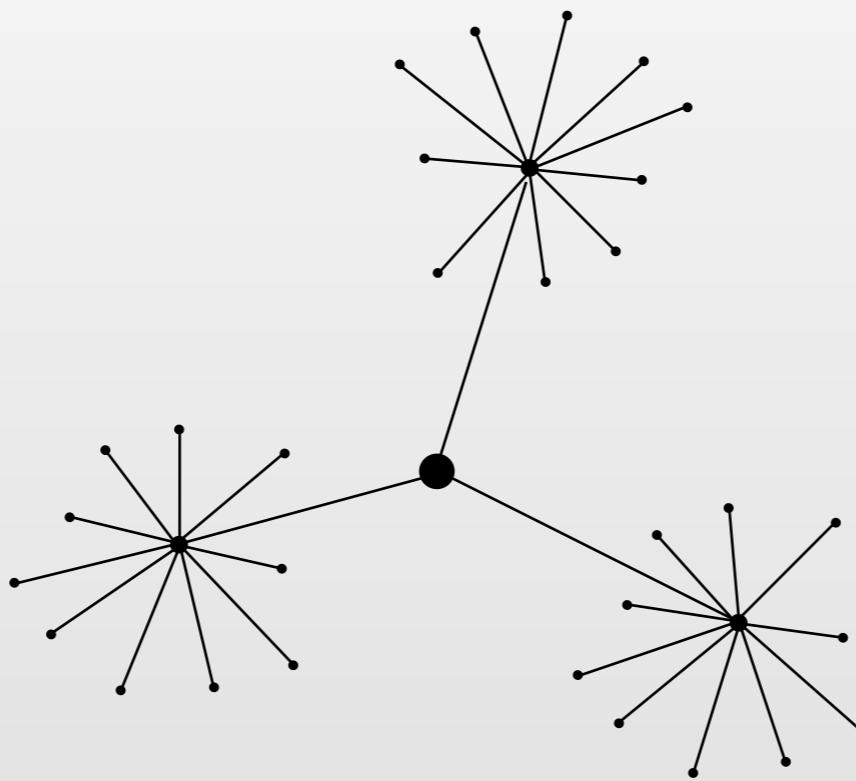


DISTRIBUTION
BLOCKCHAINS

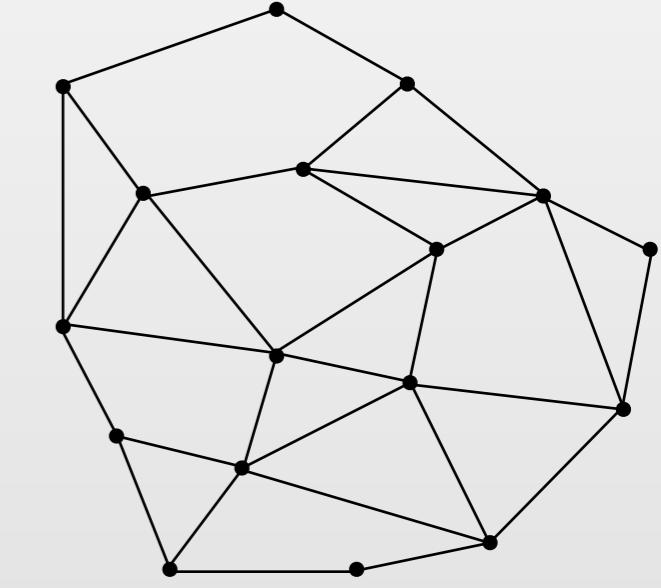
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CENTRALIZATION
DATABASE

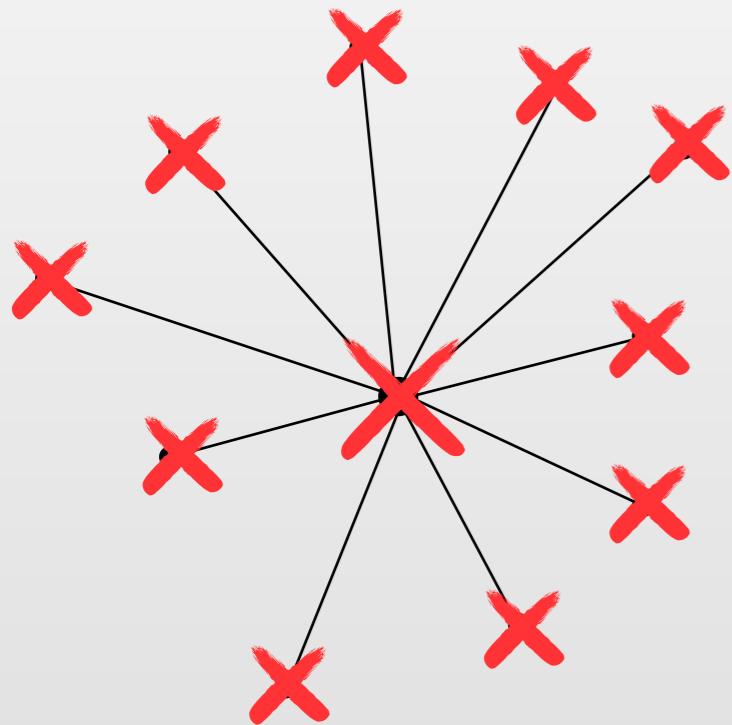


DECENTRALIZATION
THE CLOUD

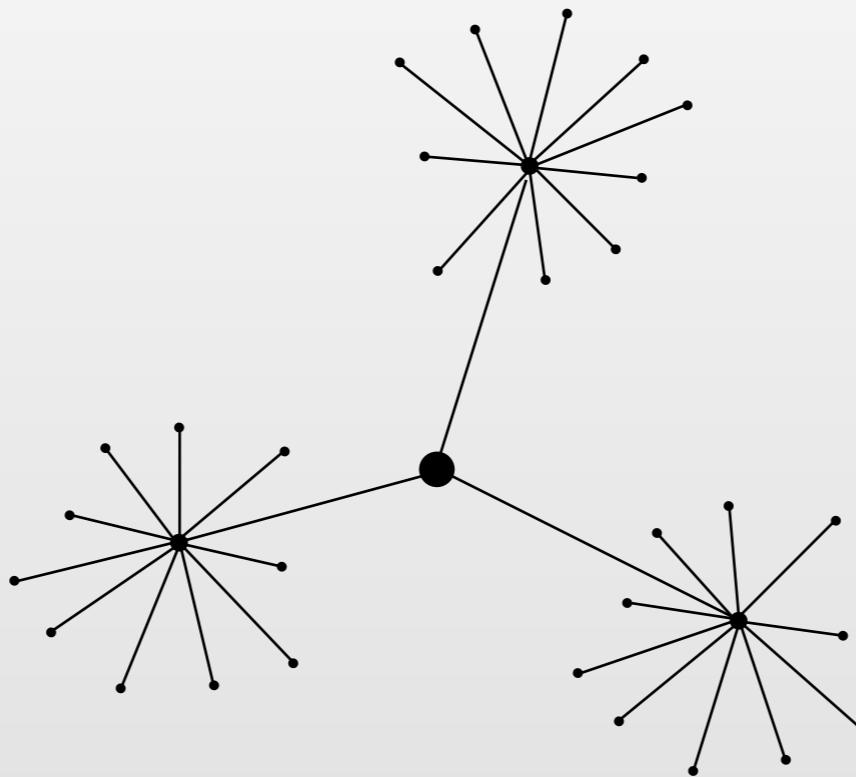


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BLOCKCHAINS

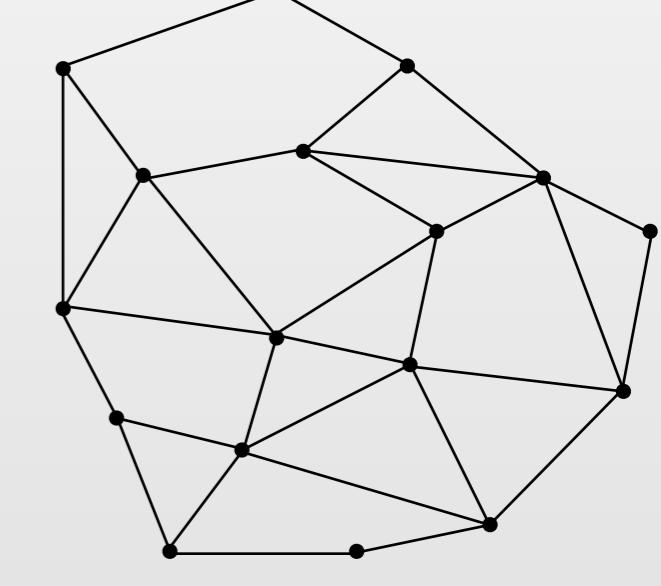
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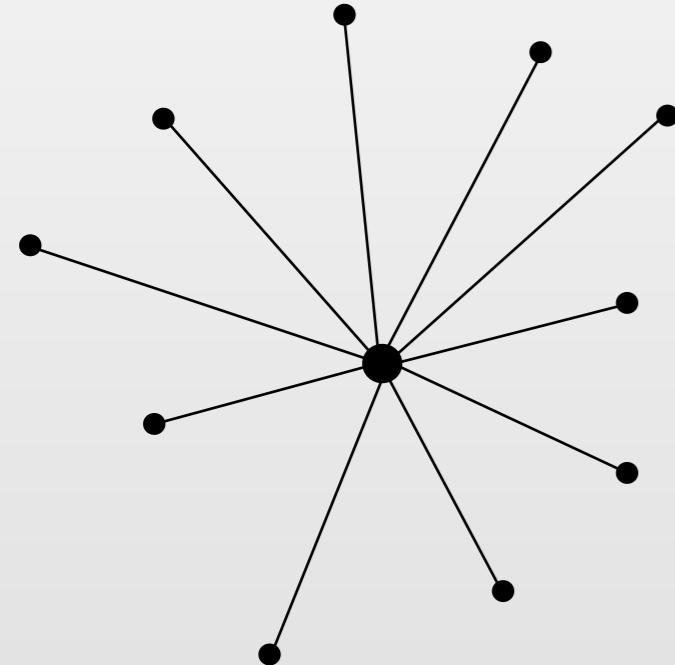


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THE CLOUD

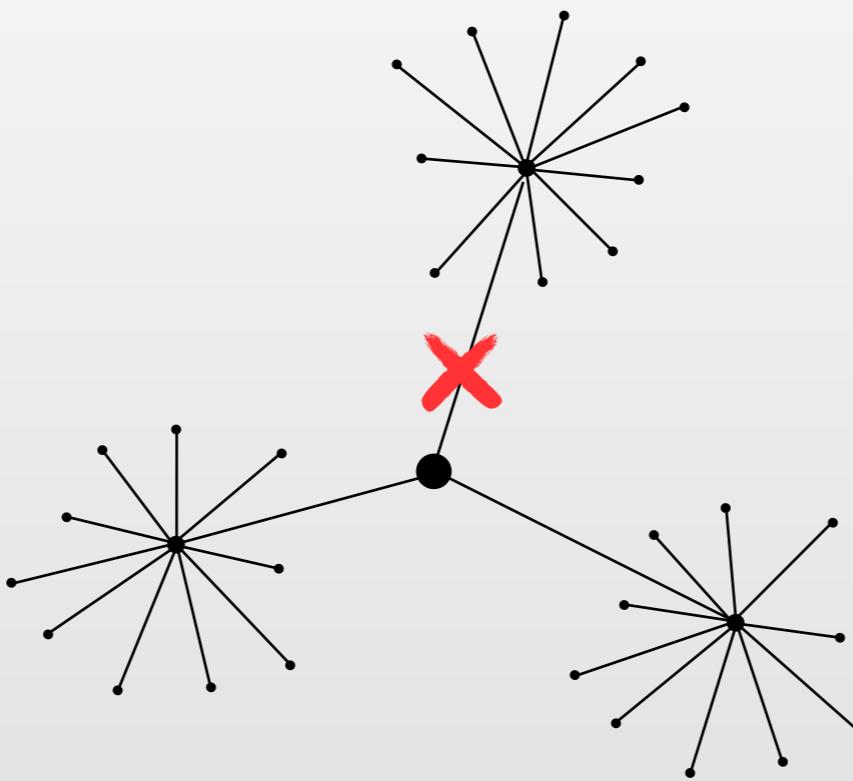


DISTRIBUTION
BLOCKCHAINS

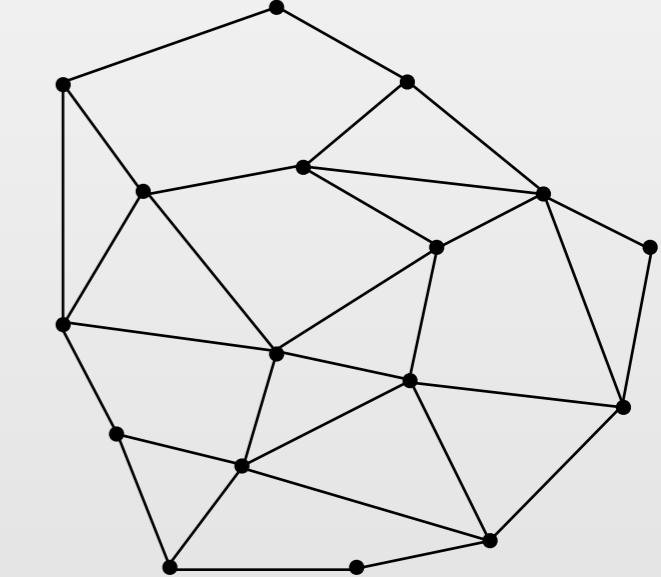
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DATABASE

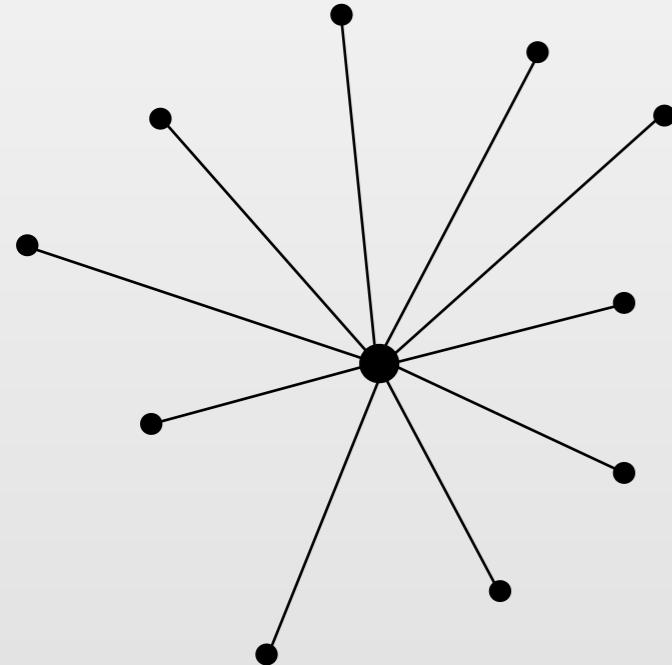


DECENTRALIZATION
THE CLOUD

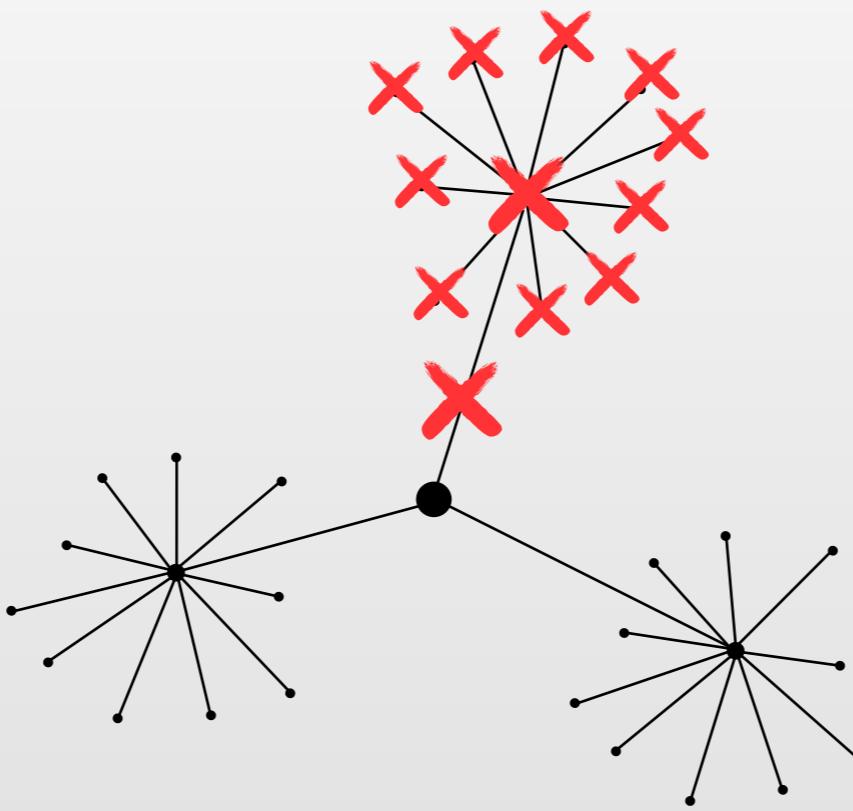


DISTRIBUTION
BLOCKCHAINS

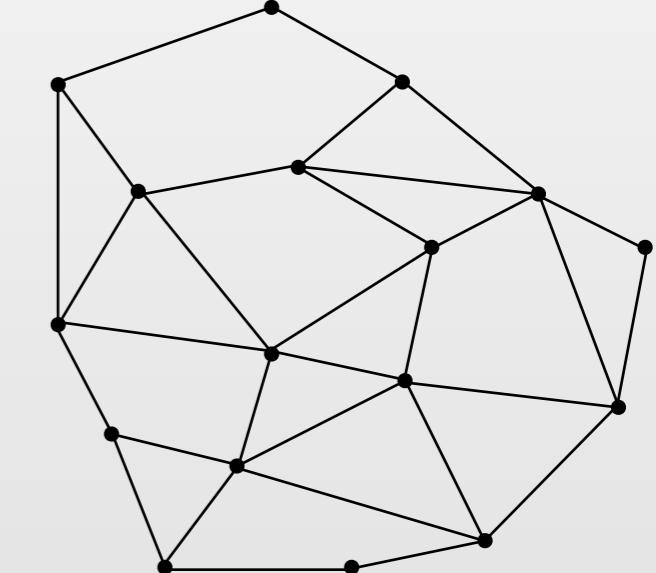
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DATABASE

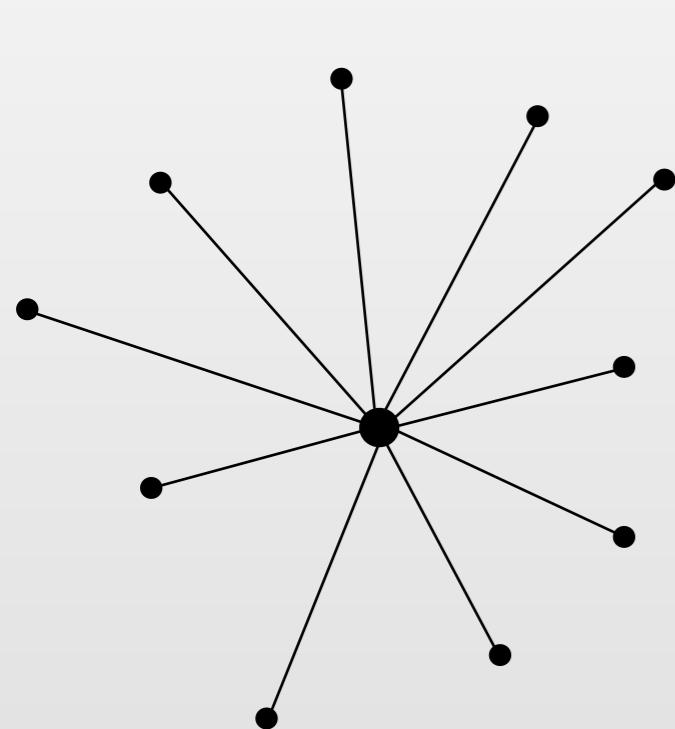


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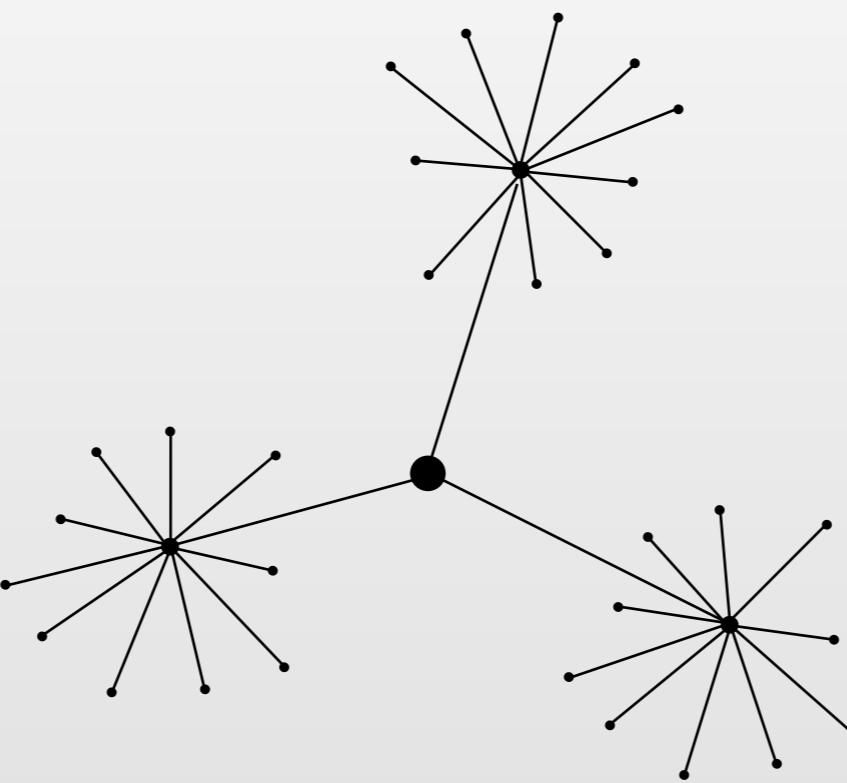


DISTRIBUTION
BLOCKCHAINS

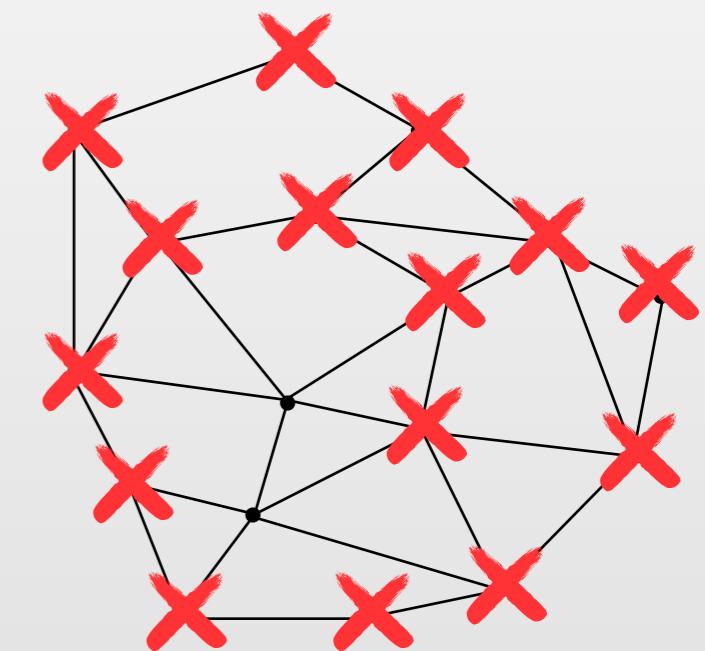
THE EVOLUTION OF EVERYTHING ...?



CENTRALIZATION
DATABASE

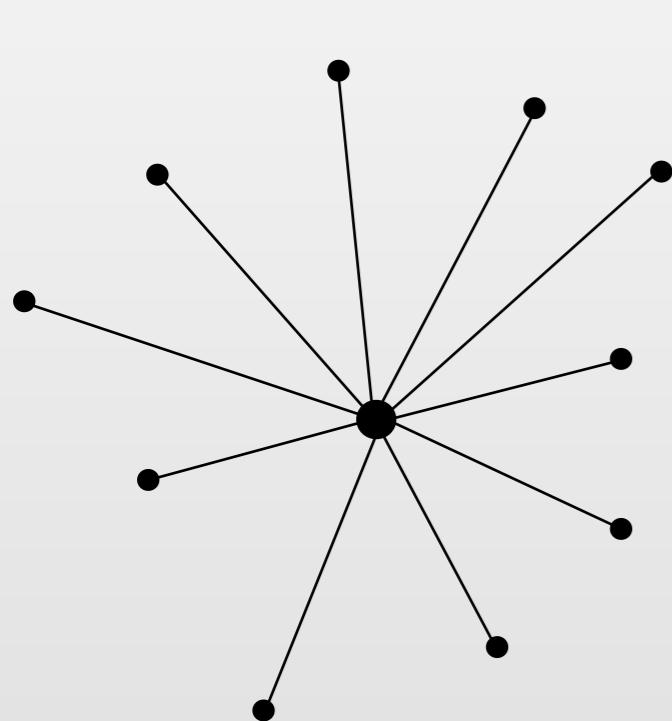


DECENTRALIZATION
THE CLOUD

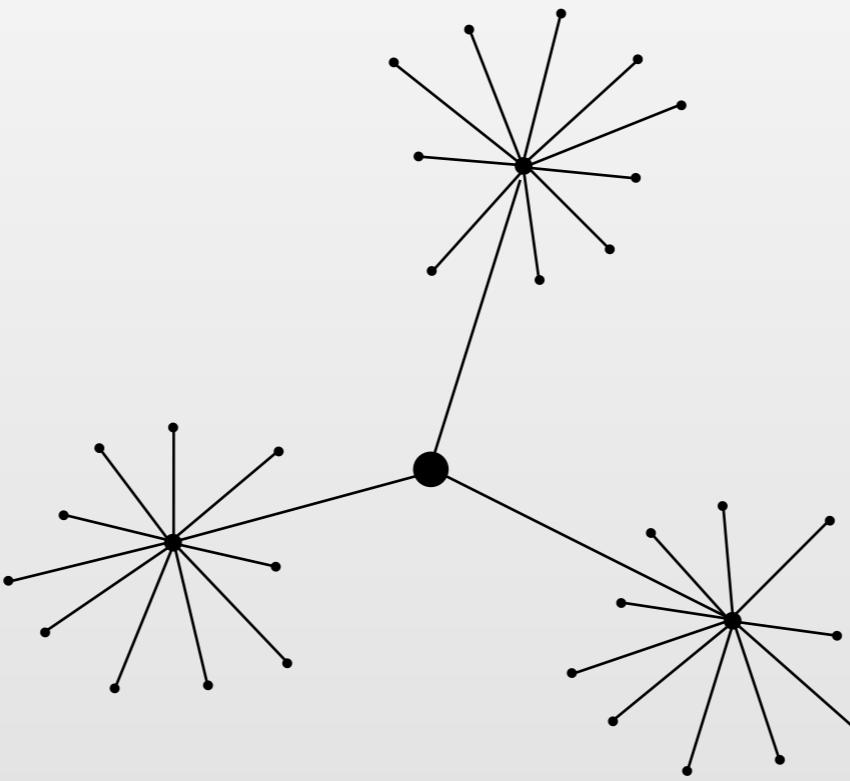


DISTRIBUTION
BLOCKCHAINS

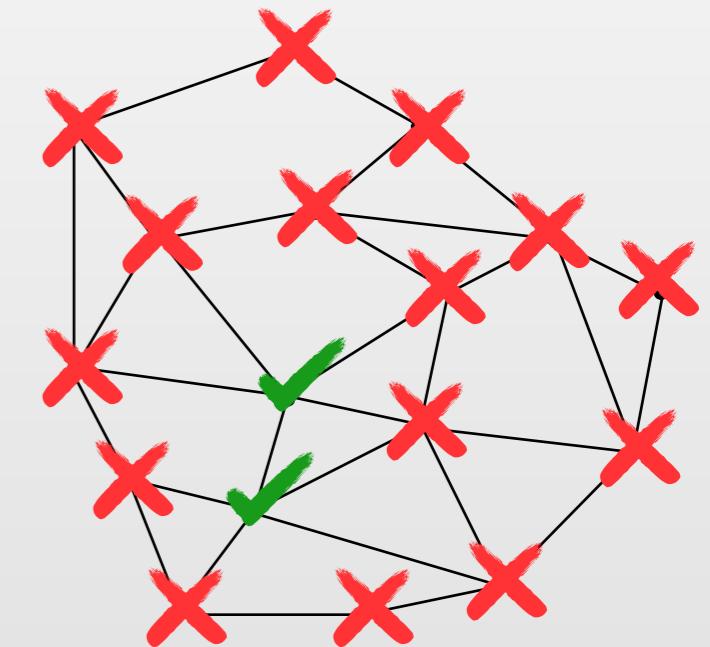
THE EVOLUTION OF EVERYTHING ...?



CENTRALIZATION
DATABASE



DECENTRALIZATION
THE CLOUD



DISTRIBUTION
BLOCKCHAINS

BLOCKCHAINS ARE SIMPLY A NETWORK OF NODES

- Each member of the network runs their own node and all nodes are equal
- The blockchain becomes more secure as more nodes join the network
- All transactions across the entire network are tracked by each node
- **There are no actual coins** - there is only a ledger of who owns what
- Cryptographic key-pairs represent accounts and passwords
- On the blockchain - no one knows you're a fridge



EVERY ACCOUNT IS MERELY A SET OF KEYS



EACH “ADDRESS” REQUIRES A PRIVATE KEY TO ACCESS IT



SOME ADDRESSES EVEN REQUIRE MULTIPLE KEYS



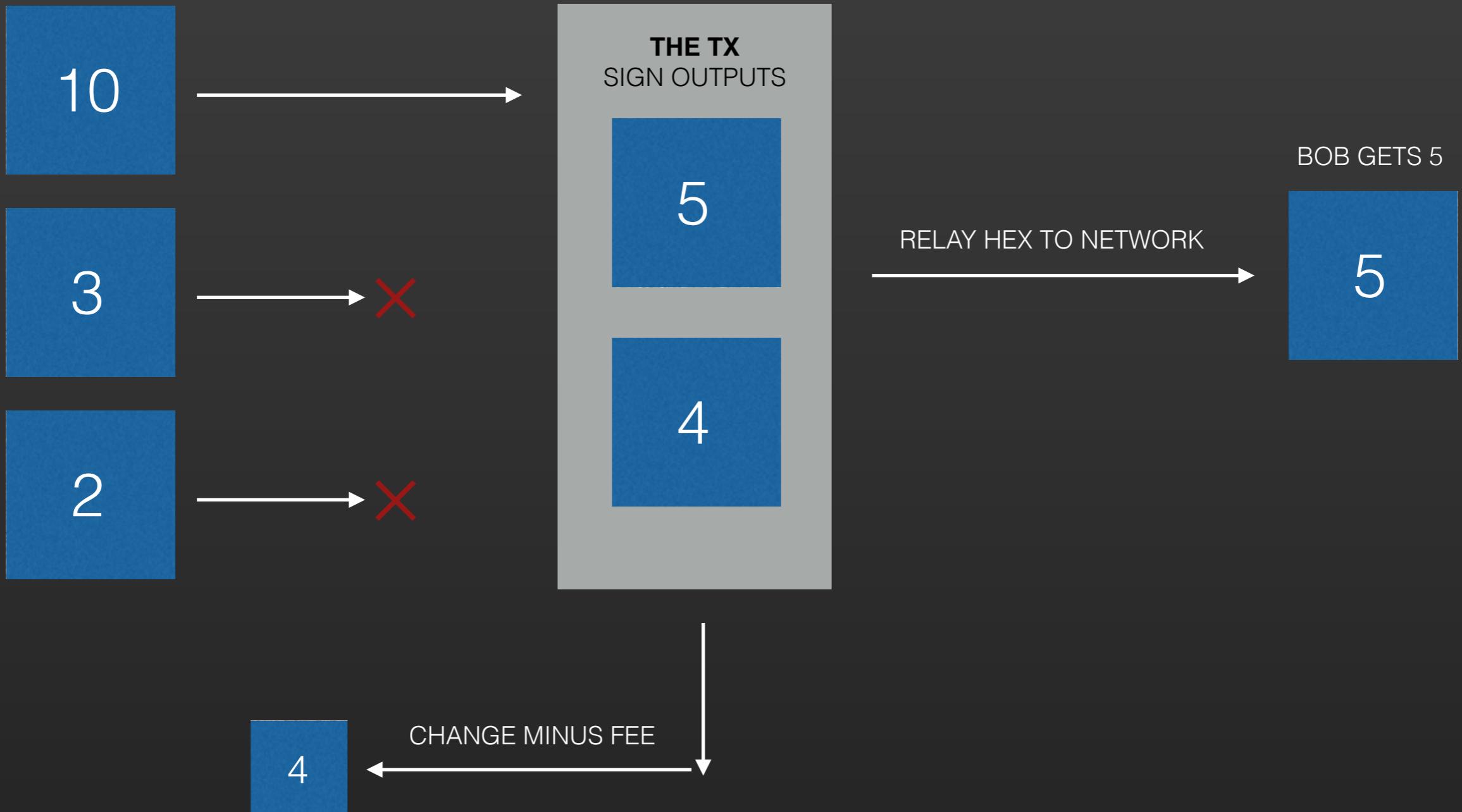
WHAT'S IN A BITCOIN TRANSACTION?

- Multiple unspent inputs are used in order to form the total value sent
- Cannot send proportions of inputs, must use all and send the change back
- Because a single transaction can send multiple values to multiple outputs
- Fees are based upon the total size (inputs and outputs) rather than value
- Paying these fees is done by forgetting to send some value to someone
- Transaction scripts can contain complex variables (multi-sig & timed locks)



ALICE CAN'T SEND WHAT SHE DOESN'T HAVE AND BOB WANTS 5

ALICE'S UNSPENT INPUTS

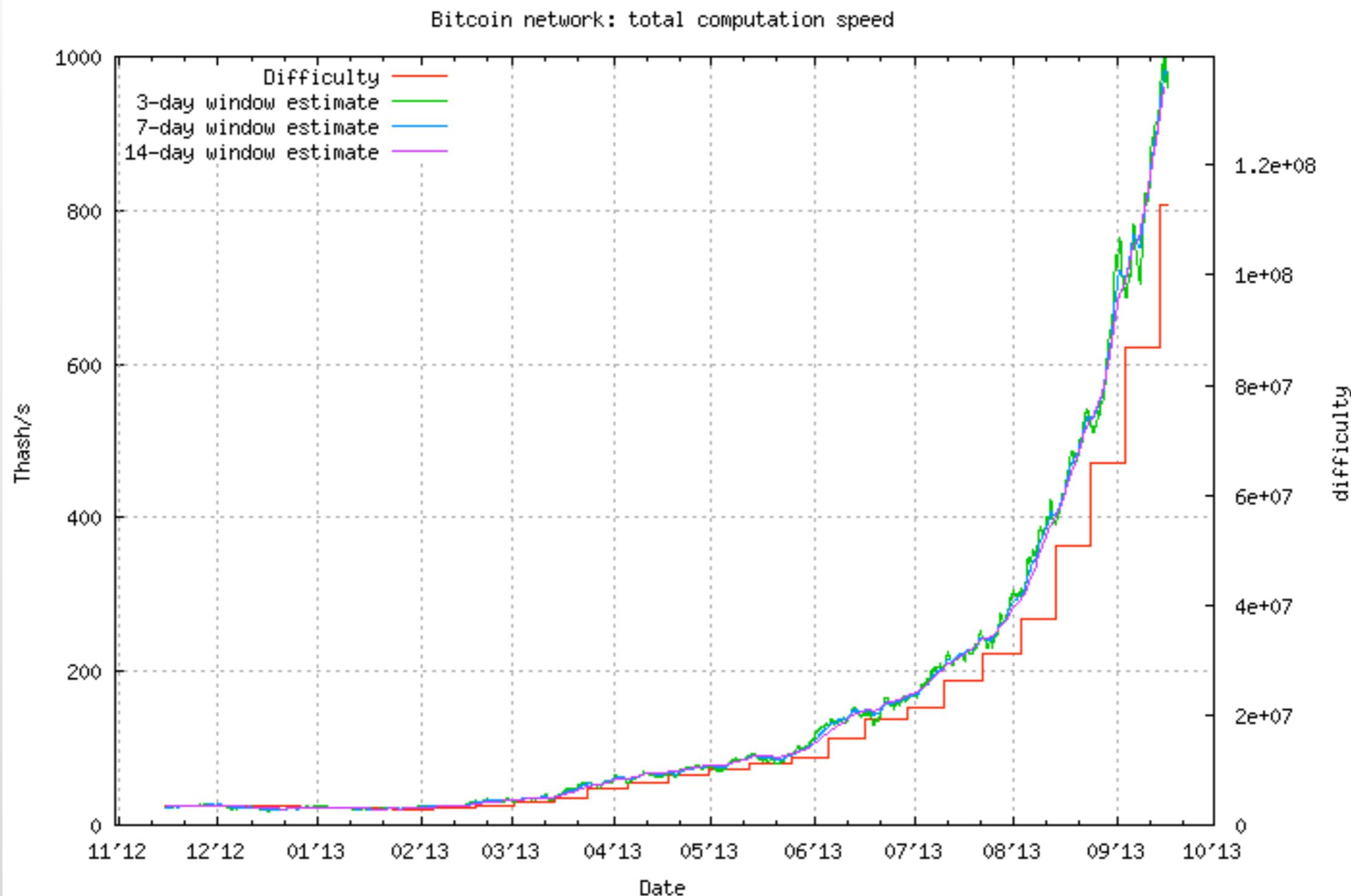


PUTTING THE BLOCKS INTO THE BLOCKCHAINS

- Transactions are batched into blocks every ten minutes (with Bitcoin)
- To reach **consensus** as to which node has the right to add the next block to the chain, miners compete in a race to solve cryptographic equations
- They then add a nonce (one use number) to the block and hash it
- If the hash has X number of zeros at the beginning it becomes a valid block
- Otherwise the miners increase the nonce and they hash the block again
- Solving these cryptographic equations is becoming increasingly difficult



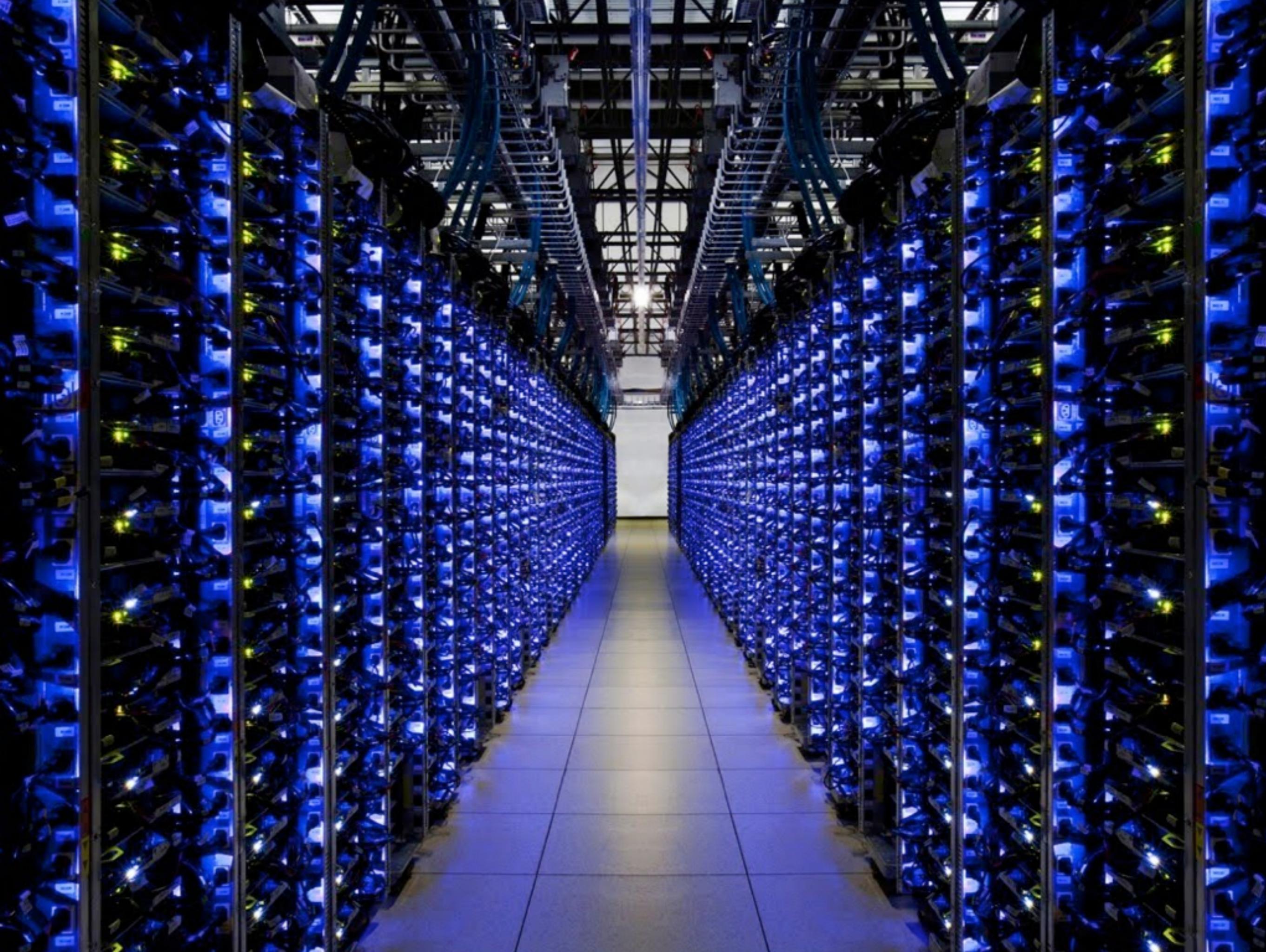
THIS IS THE HASHING POWER OF THE NETWORK IN 2013





MINING IS NOW A BILLION DOLLAR BUSINESS





BITCOIN ISN'T EVERYTHING
BILLIONS INVESTED IN BLOCKCHAINS

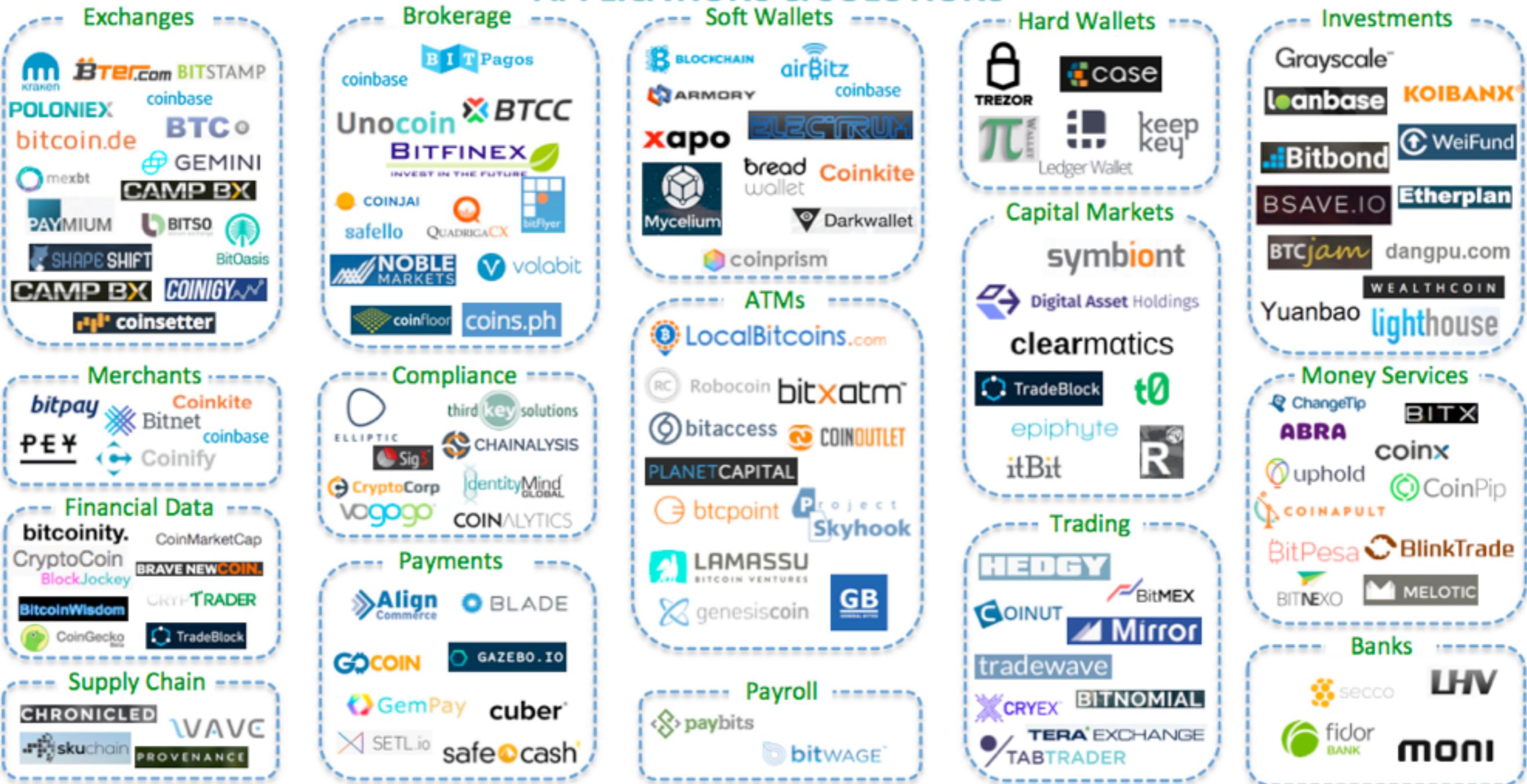
BANKS ARE MOVING FAST DUE TO ECOSYSTEM MATURITY

As of January 2016, more than 60 banks and leading financial institutions have made statements confirming that they are actively working on blockchain projects.



BLOCKTECH in FINANCIAL SERVICES Landscape

APPLICATIONS & SOLUTIONS



MIDDLEWARE & SERVICES



INFRASTRUCTURE & BASE PROTOCOLS



SOME OF THE INSTITUTIONS LEADING THE WAY



Custom blockchain
for settlements



Standard
Chartered



Blockchain based
trade finance platform

Blockchain based
loyalty platform

Blockchain based
remittance platform



multiple blockchains for cross-
border payments and loyalty

Deutsche Bank



Exploring KYC and AML
via the blockchains



Patented a blockchain
based wire transfer system



NASDAQ®

IBM

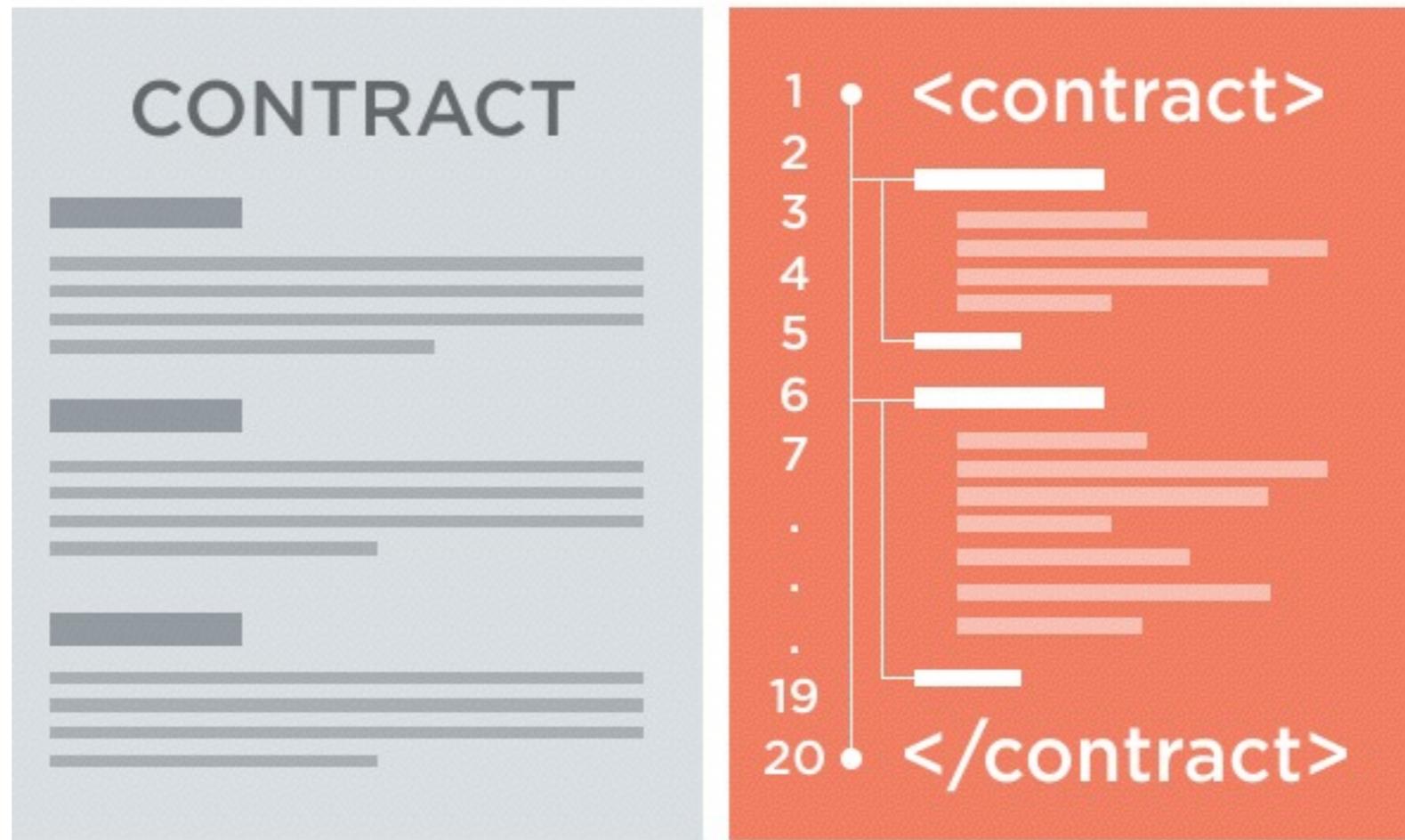
ETHEREUM TAKES THINGS ONE STEP FURTHER



THE WORLD'S SUPER COMPUTER...?

- Raised US\$15 Million in crowd-funding when launching their Ether currency
- Aiming to be the first turing complete blockchain, they have almost achieved it
- Heavily supported by Microsoft & also being used by IBM for their IoT platform
- Recently raised US\$150 Million in crowd-funding their own venture fund
- However, the more moving parts a system has - the more likely it is to break

SMART CONTRACTS ARE EVERYWHERE



- Even Bitcoin utilizes basic smart contracts (with over 100 script functions)
- Smart contracts are snippets of code stored and executed by the network
- They can perform transactional based events if defined conditions are met

WHAT'S REALLY IN A TRANSACTION?

CO-FOUND... BLOCKSTR... Blockstrap msmalley/f... Everstore ATA-Plus A... Legality of ... bitcoin tran... mining bitc... Mining Bitcoin i... BlockAuth http://...0fd21

api.blockcypher.com/v1/btc/test3/txs/235a88e9853c1c116ef47f795f13ce200c2e1bf37667e99973e1c829f95t

bitcoin transaction script

```
{ "block_hash": "00000000009f30c59abf2f8556c0949c79b54764f4cbb223ca43527394d3ee2f", "block_height": 847281, "block_index": 24, "hash": "235a88e9853c1c116ef47f795f13ce200c2e1bf37667e99973e1c829f95b95f7", "addresses": [ "mpNENnsFcL8a5hPxwfPrYPkZqAkbbFpxLF", "mq7tNFrbi3E3fsuUbsTsA7keoeYL6gYzv2" ], "total": 86124000, "fees": 10000, "size": 339, "preference": "medium", "relayed_by": "", "confirmed": "2016-05-16T07:51:20Z", "received": "2016-05-16T07:51:20Z", "ver": 1, "lock_time": 0, "double_spend": false, "vin_sz": 2, "vout_sz": 1, "confirmations": 19557, "confidence": 1, "inputs": [ { "prev_hash": "bb4cef4d48dba1916c73552342b660be00535c43ad47462abf43a402cc2a61a1", "script": "4730440220618bd76a683d2603edb570e66b851f85dd594abd7a3c25a2b29064b01695907502201edeac4cd777e04a393cf1bca0d7ba5916e3fc8c67efa33268a936bf96b9a7e012103530d0cbdfcd448b8d96ac9c1cbdc88a2f60e05a7f16e7ab321185afb0523e9fc", "sequence": 4294967295, "addresses": [ "mpNENnsFcL8a5hPxwfPrYPkZqAkbbFpxLF" ], "script_type": "pay-to-pubkey-hash" }, { "prev_hash": "42662b2544a7f59a1abd004a8e15c714f108f553f1dd3f0617982eb5b8ac468c", "script": "483045022100f7ab281bcb605550098f62a097b6dbef79a9f35261aae9dc01aec54a08e8212b02201261b2d0f44545a551fe54f1777597e747523f0a66b7cf74521828c67f23887012103530d0cbdfcd448b8d96ac9c1cbdc88a2f60e05a7f16e7ab321185afb0523e9fc", "output_value": 7555000, "sequence": 4294967295, "addresses": [ "mpNENnsFcL8a5hPxwfPrYPkZqAkbbFpxLF" ], "script_type": "pay-to-pubkey-hash" } ], "outputs": [ { "value": 86124000, "script": "76a914695469844938fd58e5cf59987f4cc063d4d657a788ac", "addresses": [ "mq7tNFrbi3E3fsuUbsTsA7keoeYL6gYzv2" ] } ] }
```

DECODING SCRIPT HEXES

- 80% of transactions are known as **standard transactions**
 - OP_DUP OP_HASH160 <pubKeyHash> OP_EQUALVERIFY OP_CHECKSIG
- Approximately 1% of transactions contain **OP>Returns**
 - OP_RETURN <hexedData> - can you find Gandhi?
- There are even a few hidden puzzles on the blockchain...

OP_HASH256

6fe28c0ab6f1b372c1a6a246ae63f74f931e8365e15a089c68d6190000000000

OP_EQUAL

ETHEREUM TAKES THINGS ONE STEP FURTHER

```
contract MyToken {
```

```
    /* Public variables of the token */
    string public standard = 'Token 0.1';
    string public name;
    string public symbol;
    uint8 public decimals;
    uint256 public totalSupply;
```

```
    /* Allow interface to create tokens */
    function MyToken( ... )
```

```
    /* Send coins */
    function transfer( ... )
```

```
    /* Allow another contract to spend some tokens in your behalf */
    function approveAndCall( ... )
```

```
    /* A contract attempts to get the coins */
    function transferFrom( ... )
```

```
}
```

CURRENCIES CAN BE MANY THINGS - EVEN VOTING RIGHTS

- Symbol = %
- Decimals = 2
- Name = Equity

Contracts can also be linked, which allows governance contracts (DAOs) to then be able to vote and control upon custom currency transfers...

IMITATION IS THE BEST FORM OF FLATTERY



- 1st Generation of Alt-Coins forked each other with minor tweaks
- Basic breakout alt-coin successes included Litecoin and Dogecoin
- Dash (previously known as DarkCoin) worth noting due to governance
- See the Malaysian-Based **CoinGecko** for a better list!

DISTRIBUTED LEDGERS AND FINANCIAL TECHNOLOGY

IN BANKS WE TRUST

- ➊ Banks traditionally play three **fundamental** roles:
 - ➊ STORE DEPOSITS
 - ➋ MAKE PAYMENTS
 - ➌ PROVIDE CREDIT

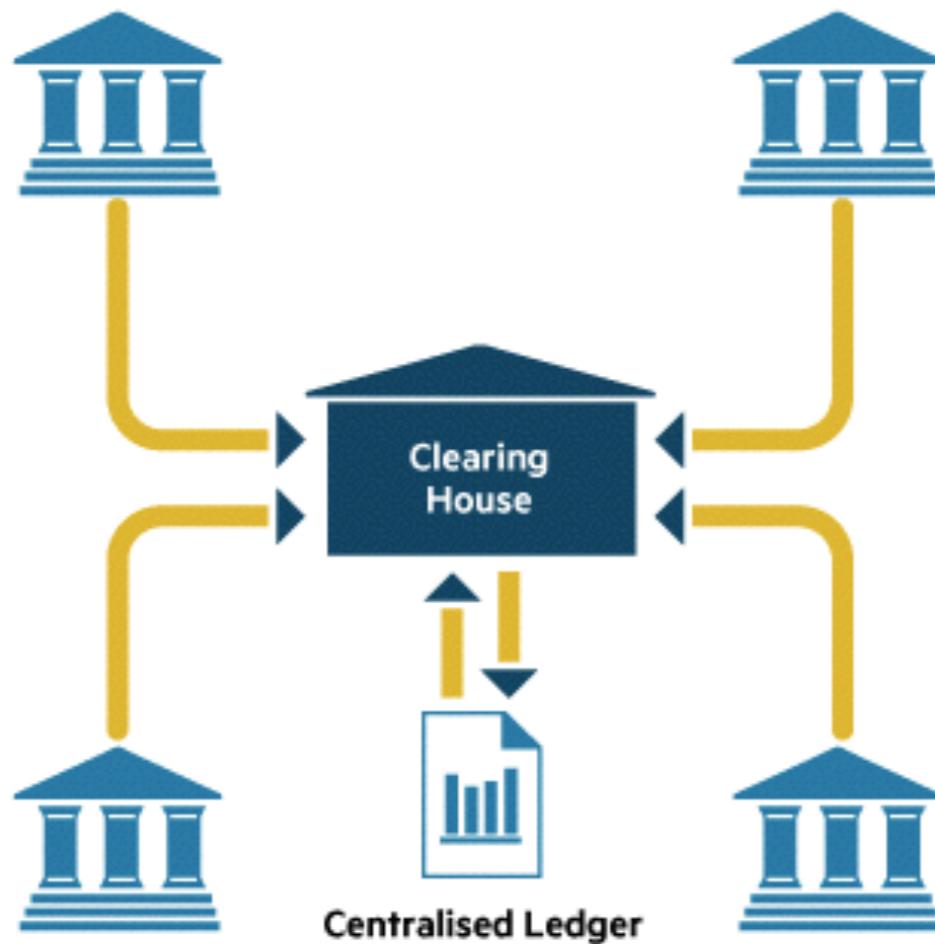
- ➋ Perhaps more importantly, banks are also the custodians of **trust**:
 - ➊ TRUSTEE SERVICES
 - ➋ ESCROW PAYMENTS
 - ➌ LETTERS OF GUARANTEE

BANKING ON THE FUTURE OF BLOCKCHAINS

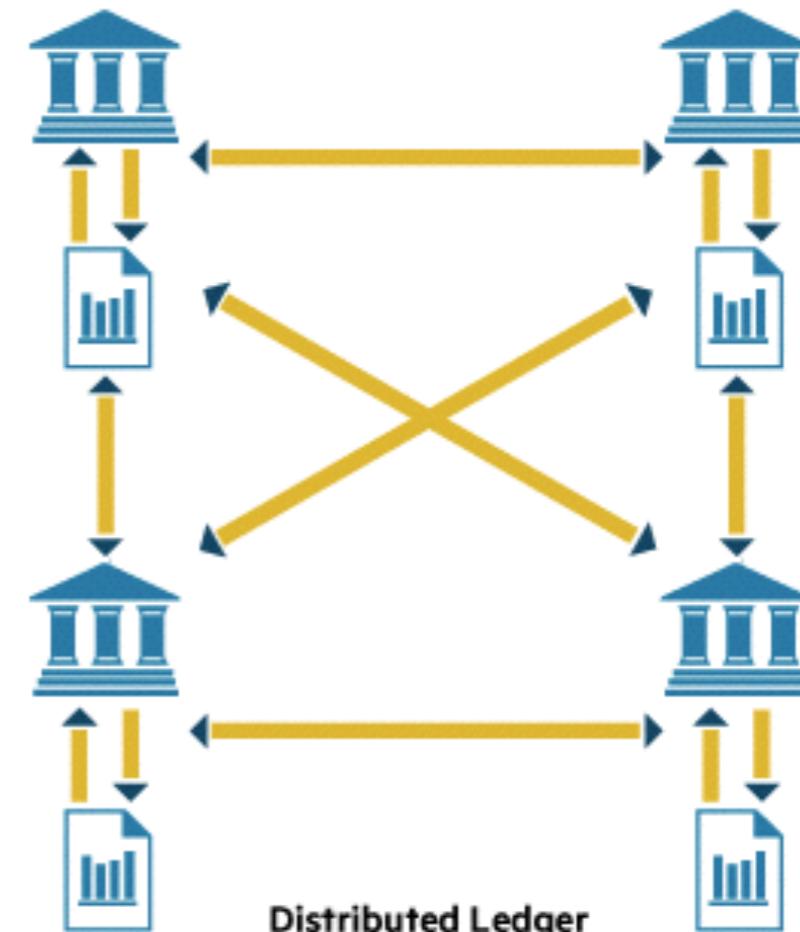
- With banks already KYC and AML compliant, there are no entities more suited to be offering digital currency brokerage and key management
- With the advent of smart-contracts, banking becomes a sequence of code
- Regulation and compliance would be designed as part of the protocol
- If retail and commercial banking processes were 100% based upon blockchains, staffing requirements could be reduced by at least 90%
- Existing internal infrastructure can be replaced by distributed protocols



FINTECH IS THE MOST OBVIOUS CHOICE FOR DISRUPTION



THE OLD WAY



THE NEW WAY

- Reconciling Multiple Central Ledgers Vs Auto-Audited Distributed Ledgers?
- Batch Processing CSVs every 24 Hours Vs Really Real-Time Settlement?

SAVING COSTS TOGETHER

X



Visitors look at devices at Accenture stand at the Mobile World Congress in Barcelona, February 26, 2013. REUTERS/Albert Gea/File Photo

Mark Smalley
BLOCKCHAIN E... 6d

+ 2 reflips

♡ 1 like

Leave a comment

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**Blockchain could save investment banks
up to \$12 billion a year: Accenture**

- McKinsey believes Financial Services will save US\$110 Billion in 3 Years
- This has brought together competitive companies like never before ...

OVER 100 BANKS JOIN R3 - BLOCKCHAIN CONSORTIUM



R3 is an innovation firm focused on building and empowering the next generation of global financial services technology.

STARTING WITH THE BIGGEST PROBLEMS

15 R3 Members Trial Distributed Ledger Tech for Trade Finance

Pete Rizzo (@pete_rizzo_) | Published on August 10, 2016 at 14:09 GMT

NEWS



Banking consortium R3CEV revealed today that 15 of its members have completed a distributed ledger trial focused on applications in trade finance.

The test reportedly focused on how its distributed ledger platform [Corda](#) could be used in accounts receivable invoicing and letter-of-credit (LC) transactions. Further, it follows news that Bank of America, HSBC and the Infocomm Development Authority of Singapore completed a [similar trial](#) today using software created by the Linux-led [Hyperledger](#) project.

In statements, CEO David Rutter cited the announcement as evidence of the power of the startup's distributed ledger platform Corda.

Rutter said:

"These trials have proved that the blockchain-inspired technology used on our Corda platform holds the key to transforming trade financing for modern financial markets."



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Contributions go towards 2017 Investments in new bitcoin projects – like testing how bitcoin micro-payments can replace paywalls and obtrusive ads.

BTW, you can do this automatically with Brave 😊

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DON'T MISS A SINGLE STORY

BANKS BEGIN CLEARING WITH DIGITAL CURRENCIES

Global Banks Test Ripple's Digital Currency in New Blockchain Trial

Michael del Castillo (@DelRayMan) | Published on October 20, 2016 at 13:40 GMT

FEATURE



It's no secret that cryptocurrencies have undergone a dramatic rebrand.

No longer perceived as a [detiment](#) to banks and governments, cryptocurrencies are now being hailed as "digital assets". As more and more financial intuitions become comfortable with the blockchain technology on which they are based, they are openly discussing a future when the financial tools are [just another part](#) of the industry.

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R3 Banks Trial Blockchain Identity Registry

Stan Higgins (@mpmcseweeney) | Published on November 11, 2016 at 15:17 GMT

NEWS



Ten global banks have tested a distributed ledger-based know-your-customer registry through the R3 blockchain consortium.

BBVA, CIBC, ING, Intesa Sanpaolo, Natixis, Nordea, Northern Trust, Société Générale, UBS and US Bank took part in the three-month initiative, R3 said earlier this week. The registry enabled the banks involved to create and manage digital identities within a shared system, providing a mechanism for adhering to KYC regulations in the finance space.



The startup said of the test:

"The project simulated establishing the identity of both a legal entity and an individual using KYC data and identity attestations by third-parties."

News of the trial comes days after R3 kicked off [a new research outfit](#) in partnership with the Monetary Authority of Singapore, the city-state's central bank. That effort is aimed at creating a test environment for blockchain applications, as well as a hub for financial institutions in the region looking to explore the tech.

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R3 + IBM WORKING TOGETHER

\$11 Trillion Bet: DTCC to Process Derivatives With Blockchain Tech

Michael del Castillo (@DelRayMan) | Published on January 9, 2017 at 12:59 GMT

FEATURE



The Depository Trust & Clearing Corporation (DTCC) has selected a series of firms to help integrate distributed ledger technology into its first large-scale, real-world application.

In the single, complex deal involving a distributed ledger consortium, a stock exchange, a tech

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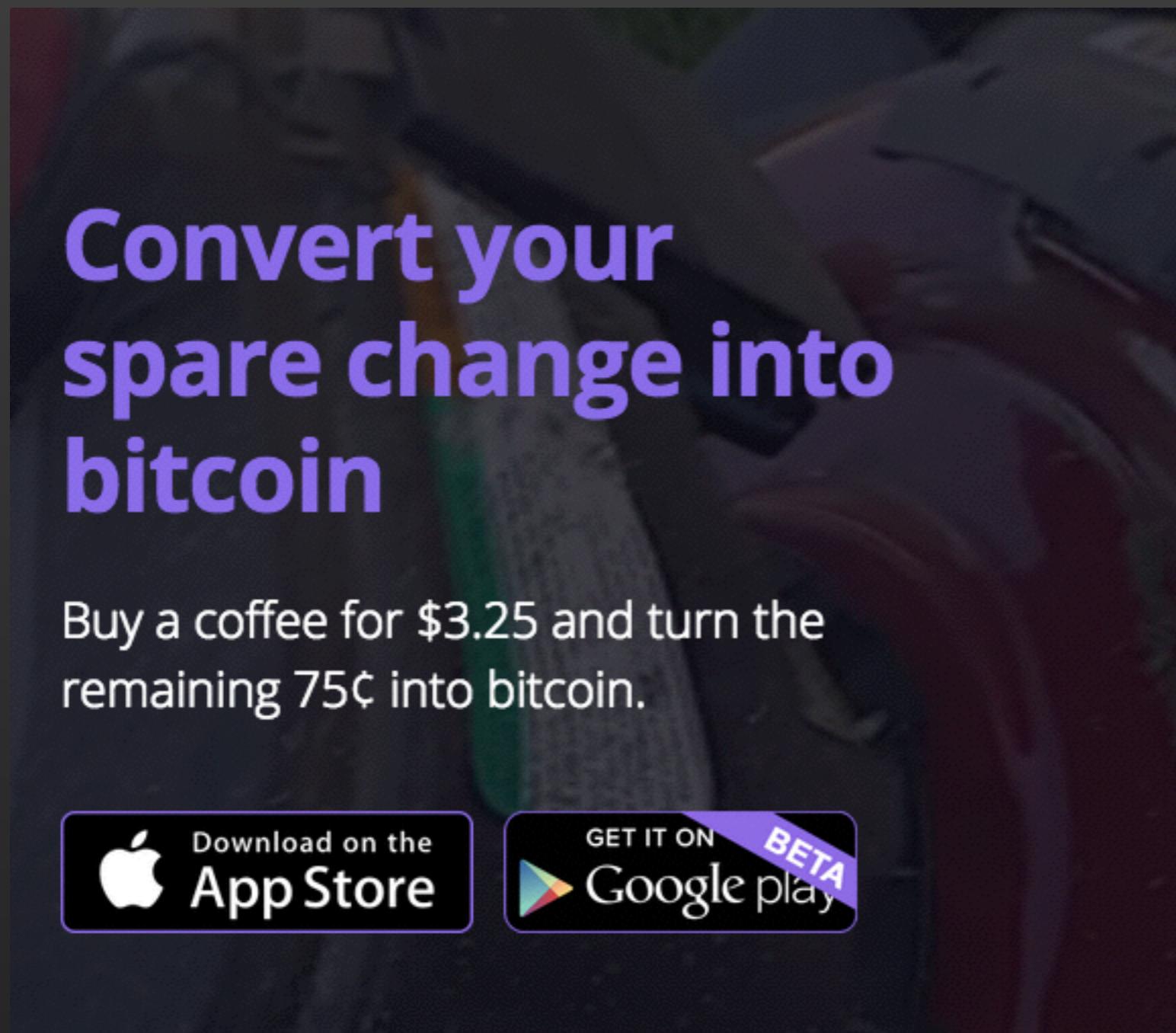
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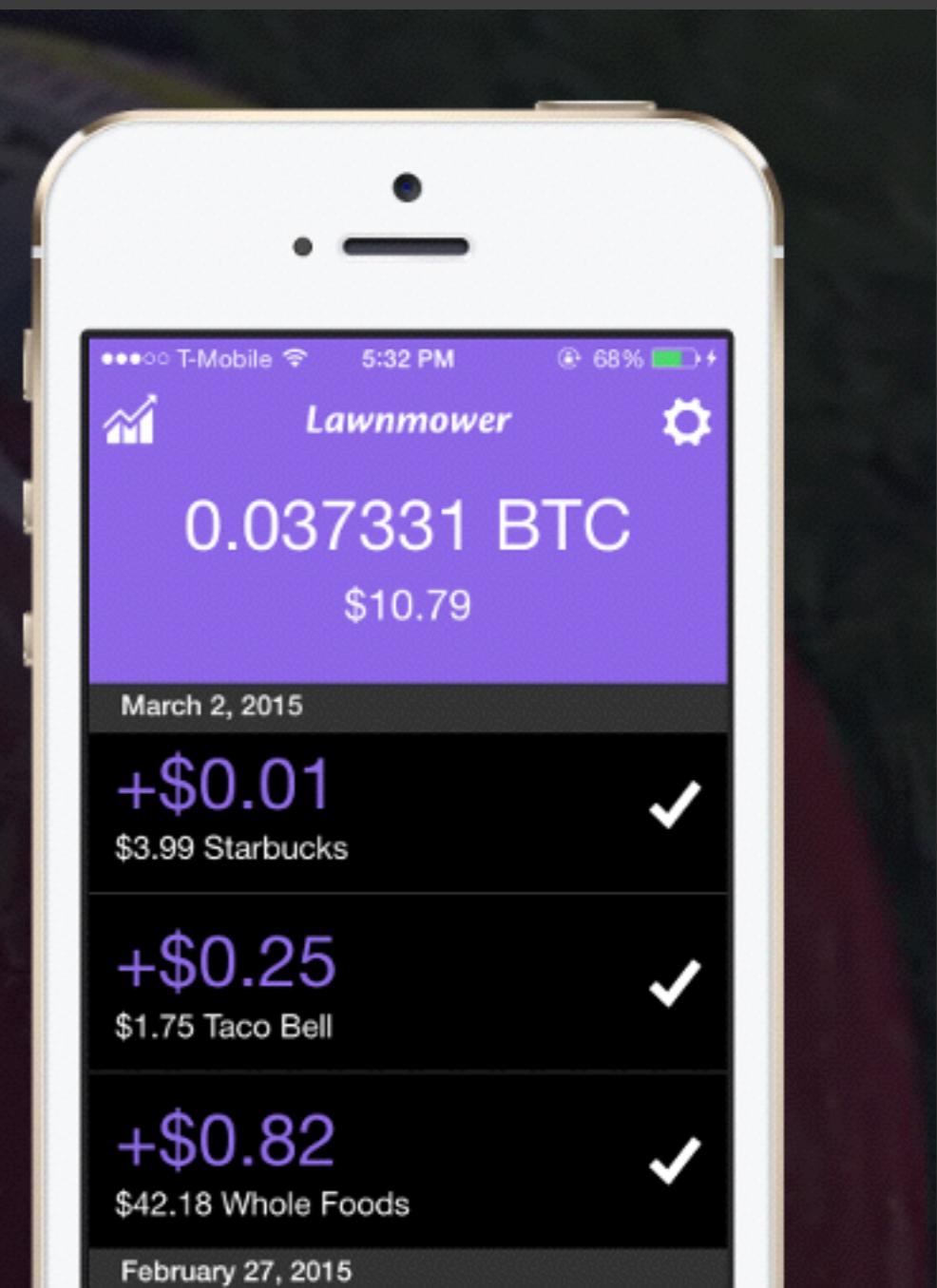


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Date	Transaction	Amount	Status
March 2, 2015	\$3.99 Starbucks	+\$0.01	✓
	\$1.75 Taco Bell	+\$0.25	✓
	\$42.18 Whole Foods	+\$0.82	✓

February 27, 2015

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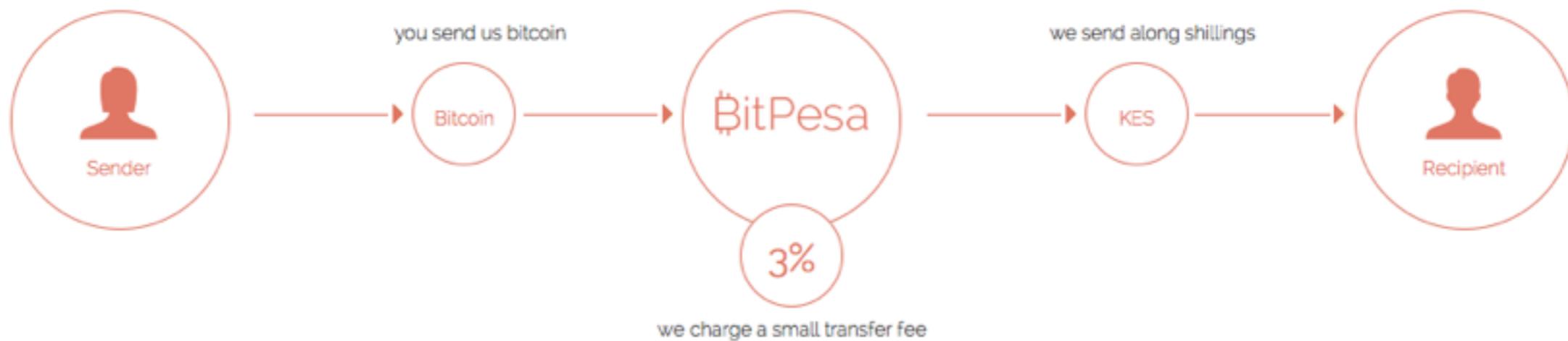
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SLIDE # 63

BITPESA - REMITTANCE VIA BITCOIN



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A screenshot of the BitPesa MultiPay web application. The interface shows a sidebar with contacts: Khalil Mangalji (selected), Patrick Katho, Elizabeth Rossello, Amy Ludum, Charlene Chen, Bob Aman, Mawuli Kofo, and Will Binnis. The main area displays a table for entering payment details:

Name	Phone	Email	Amount
Khalil Mangalji	+254 732 890 195	khali@bitpesa.co	300 CEDAR KES
Bob Aman	+254 732 890 195	bob@bitpesa.co	300 CEDAR KES
Amy Ludum	+254 732 890 195	amy@gmail.com	300 CEDAR KES
Robert Murch	+254 732 890 195	robert@bitpesa.co	300 CEDAR KES
Charlene Chen	+254 732 890 195	charlene@johu.co	300 CEDAR KES
Elizabeth Rossel	+254 732 890 195	elizabeth@bitpesa.co	300 CEDAR KES

Below the table is a red 'Pay!' button. At the bottom left is a '+ New Contact' button.

LAMASSU - THE MOST POPULAR BITCOIN ATM



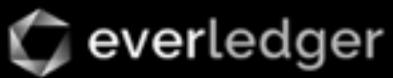
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BLOCKCHAINS AND ASIA

DBS + STANDARD CHARTERED FIRST BANKS IN ASIA

DBS, Standard Chartered Develop Distributed Ledger for Trade Finance

Pete Rizzo (@pete_rizzo_) | Published on December 17, 2015 at 05:24 GMT

NEWS



Singapore's DBS Bank has reportedly partnered with multinational banking firm Standard Chartered to create a distributed ledger project for trade finance.

[Bloomberg reports](#) officials at both firms stated today that they have completed initial testing for the idea, and that they are seeking to collaborate with other firms on the initiative in 2016.

While light on details, the article went on to indicate that DBS and [Standard Chartered](#) were considering various distributed ledger technologies to achieve project goals.

The article reads:

"In pursuing the technology that underpins cryptocurrencies, including bitcoin, Standard Chartered and DBS are developing a new approach that could transform the trade finance business by speeding up banking transactions, while cutting costs and boosting transparency."



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2ND PLACE WINNER OF THE DBS BLOCKCHAIN HACKATHON

The image shows a hand holding a white smartphone displaying the HyperBank mobile application. The app's interface includes a header with the 'hyperbank' logo and a user profile for 'Tristan Gomez'. Below this are two main sections: 'Monthly Accounts' (12) and 'Monthly Transactions' (128) on top, and 'Total Accounts' (28) and 'Total Transactions' (1,286) on the bottom. A transaction history section follows, showing three entries: '2 Hours Ago - New Account Manuel Rigardo', '18 Hours Ago - TX Jarvis Silo to Manuel Rigardo', and '1 Day Ago - New Account Jarvis Silo'. At the bottom are five navigation icons. To the right of the phone is a laptop screen displaying the HyperBank website with the tagline 'hyperlocal banking for the unbanked'. It features a text input field for 'enter your email for updates or application for beta access' and a yellow 'APPLY' button. The background of the slide is a blue textured pattern.

The application that was previously known as NuBank won 2nd place at the recent [DBS Hackathon](#) in Singapore and is now HyperBank.

We utilize the blockchains in order to provide a secure and fully auditable digital trail of transactions but avoid volatility by keeping transfers at fixed local currencies with multi-signature signing from top-tier institutional financial partners.

Consumers communicate using standard SMS functionality directly with their village elders who then use their smartphones to record and relay transactions to the blockchain - providing fully distributed M-Pesa functionality.

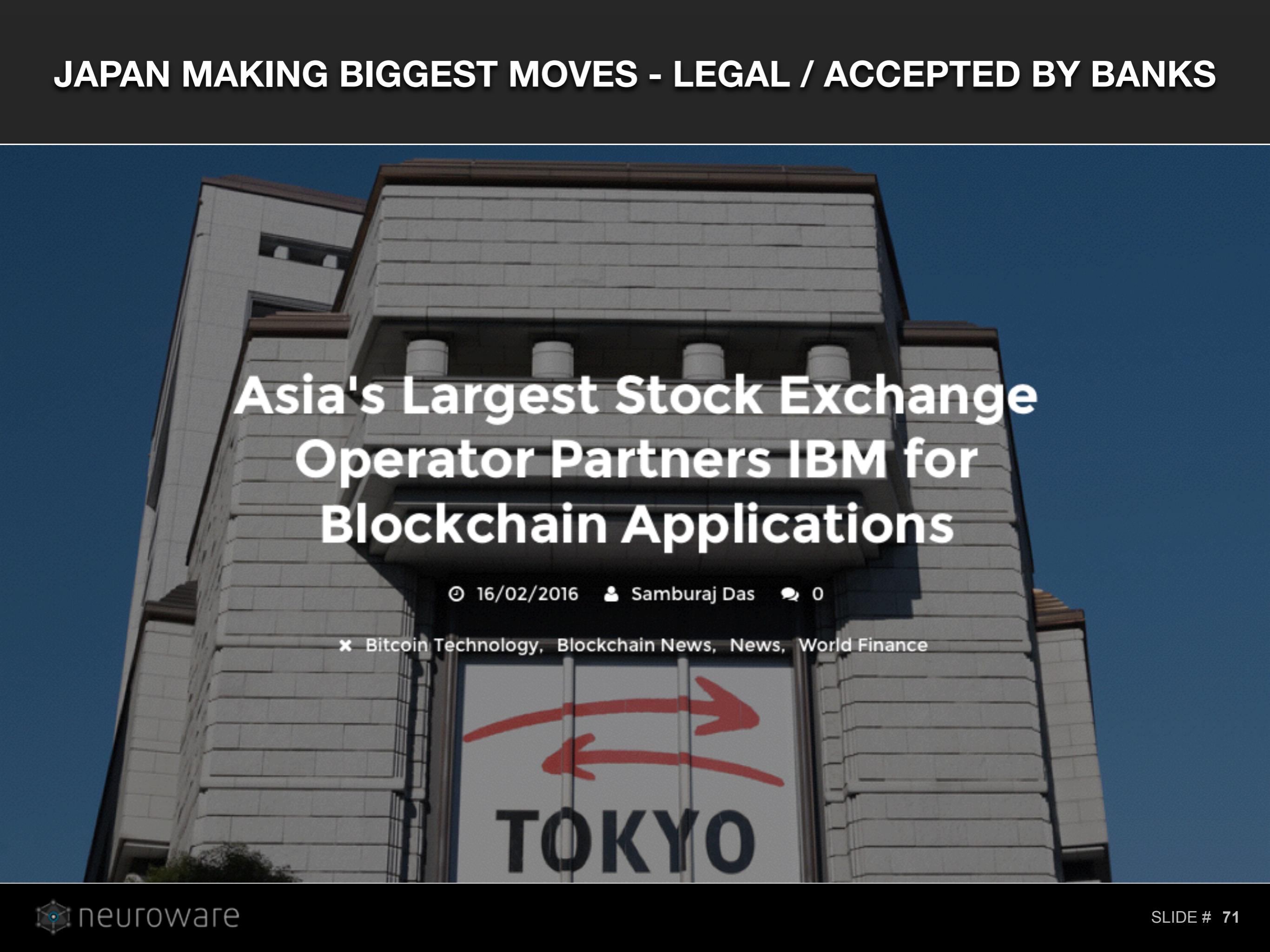
STOCK EXCHANGES ARE QUICKLY CATCHING-ON TOO

Australian Stock Exchange Confirms Upcoming Blockchain For Settlements

© 22/01/2016  Samburaj Das  0

 Bitcoin Technology, Blockchain News, FinTech News, News

JAPAN MAKING BIGGEST MOVES - LEGAL / ACCEPTED BY BANKS



Asia's Largest Stock Exchange Operator Partners IBM for Blockchain Applications

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KOREA ARE BUILDING PROTOTYPES TOO



Korean Securities Exchange is Building Blockchain Trading Platform

⌚ 01/03/2016 💬 0

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OCBC IS FIRST BANK TO WORK ON SETTLEMENT IN SEA

OCBC Trials Blockchain for Interbank Payments

Stan Higgins (@mpmcseweeney) | Published on November 14, 2016 at 14:07 GMT

NEWS



One of the five largest banks in Singapore has tested a blockchain-based payment service, with an eye to develop commercial products around the tech.

OCBC Bank used the tech to send funds between its operations in Singapore and Malaysia, as well as transmit money to the Bank of Singapore, a private banking business it owns. The bank said it worked with [BCS Information Services](#), a local payments firm, to develop the prototype.



The test is the latest for [Asia's banking sector](#), the members of which have spent much of the past two years investigating use cases, investing in startups and pursuing commercial applications.

Praveen Raina, OCBC senior vice president, was quoted as saying:

"We hope this will be a catalyst for more banks to adopt the blockchain technology so that, together, we can achieve efficiency and cost effectiveness while delivering more high-value financial services to our consumers."

Though the bank announced its move on its official group [website](#), the details of that announcement appear to have been removed at press time.

The move comes as the Monetary Authority of Singapore (MAS), the city-state's central bank, has moved to create a pro-fintech environment within the domestic finance sector. Earlier this month,

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BANKING • NEWS

Singapore's Central Bank to Test Blockchain-Backed Digital Currency

Pete Rizzo (@pete_rizzo_) | Published on November 16, 2016 at 12:30 GMT NEWS



The Monetary Authority of Singapore (MAS) will soon test how it could issue digital currency using a blockchain-based interbank payment system.

According to [Bloomberg](#), the planned proof-of-concept will be supported by blockchain consortium [R3CEV](#), as well as eight banks and an unnamed local stock exchange. The Development Bank of Singapore, HSBC, Bank of America, JPMorgan, Credit Suisse and Bank of Tokyo-Mitsubishi are all said to be participating.

In a speech on Wednesday, MAS managing director Ravi Menon said the test could come to include other central banks. Further, he credited the bank's desire to remove cost and friction from traditional bank transactions as the motivation for the effort.



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ASIAN BLOCKCHAIN CONSORTIUMS BEGIN IN JAPAN

42 Banks Join Blockchain Consortium in Japan

Stan Higgins (@mpmcseweeney) | Published on November 1, 2016 at 12:22 GMT

NEWS



Forty-two local and regional banks in Japan have joined a new blockchain consortium focused on cross-border payments.

Launched by financial services group SBI and a joint venture co-launched with distributed ledger startup Ripple, the consortium's membership includes a wide range of both large and smaller institutions. The launch of the consortium comes days after SBI announced that it would establish its own digital currency exchange in Japan.

Those involved in the project plan to share resources and collaborate on a cross-border proof-of-concept, with an eye to create a basis for commercial-scale products next year.

SBI said in a statement:

"The Consortium will promote discussion, from both technical and operational perspectives, on activities required in domestic and foreign exchange services to utilize blockchain and other new technologies, consolidate domestic and foreign exchange services, and build 24-hour and real-time remittance infrastructure, and will try to finish PoC by next March to move forward commercial base."



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KOREA IS THE NEXT COUNTRY TO LAUNCH A CONSORTIUM

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TRENDING
CoinDesk's 2016 in Review
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BITCOIN PRICE INDEX (24H)

USD -1.06% **\$903.05**
CNY 5.89% **¥6,264.81**
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27 Financial Firms Form Korean Blockchain Consortium

Stan Higgins (@mpmcseweeney) | Published on December 12, 2016 at 15:00 GMT

NEWS

315 64 1

A new blockchain consortium has been formed in South Korea, with both established finance firms and technology startups on its membership roster.

According to one of the group's members – blockchain startup [The Loop](#) – the new initiative will focus some of its efforts on building tools for managing trade finance processes.

The firm said in a statement:



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INTRODUCING THE BLOCKCHAIN EMBASSY OF ASIA



BlockChain Embassy Asia

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We are a non-profit digitally distributed organization that is using and promoting blockchain governance as a method for collaboration between various business entities and existing community efforts across Asia

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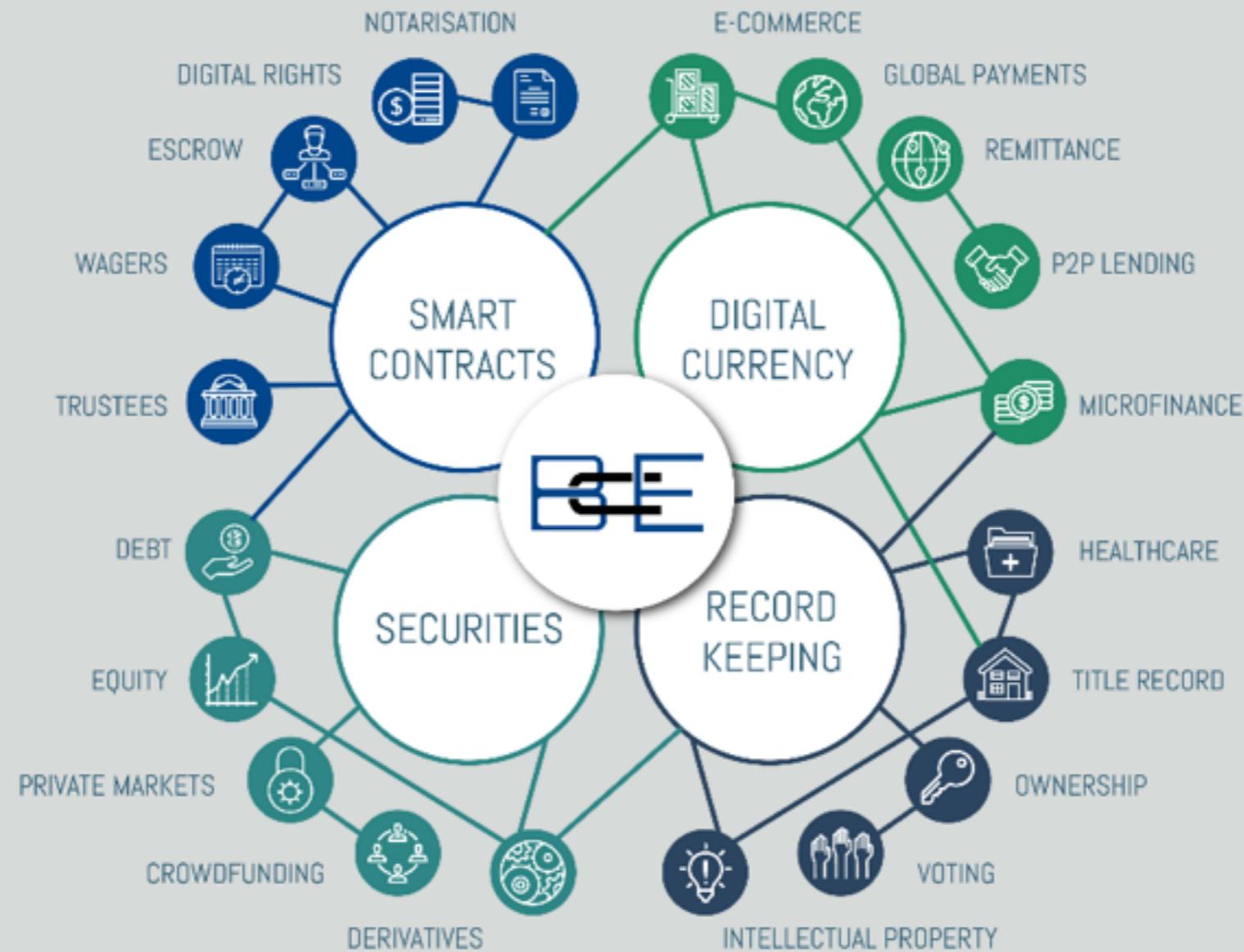


Education Ambassador

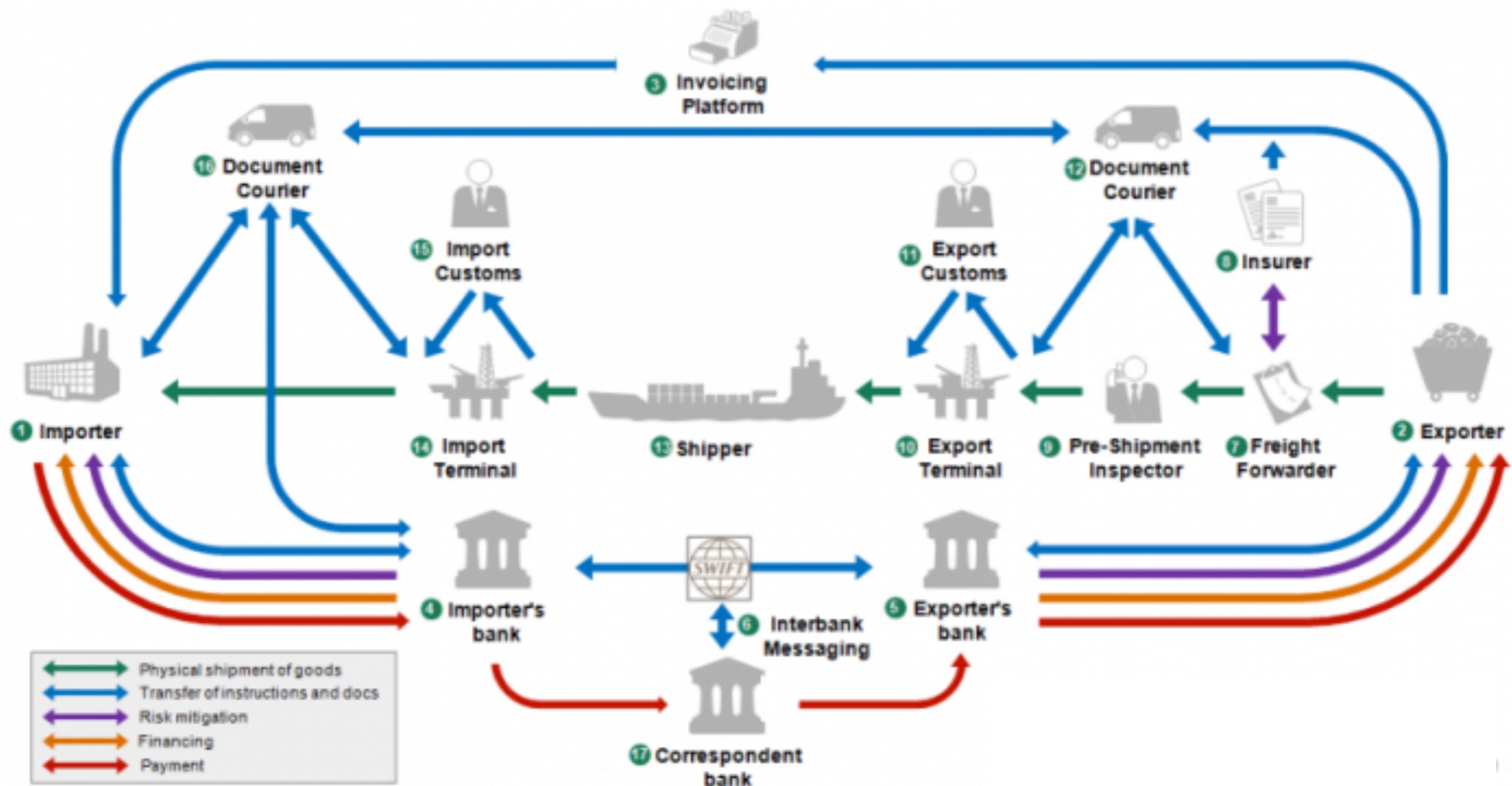


Technology Ambassador

BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS



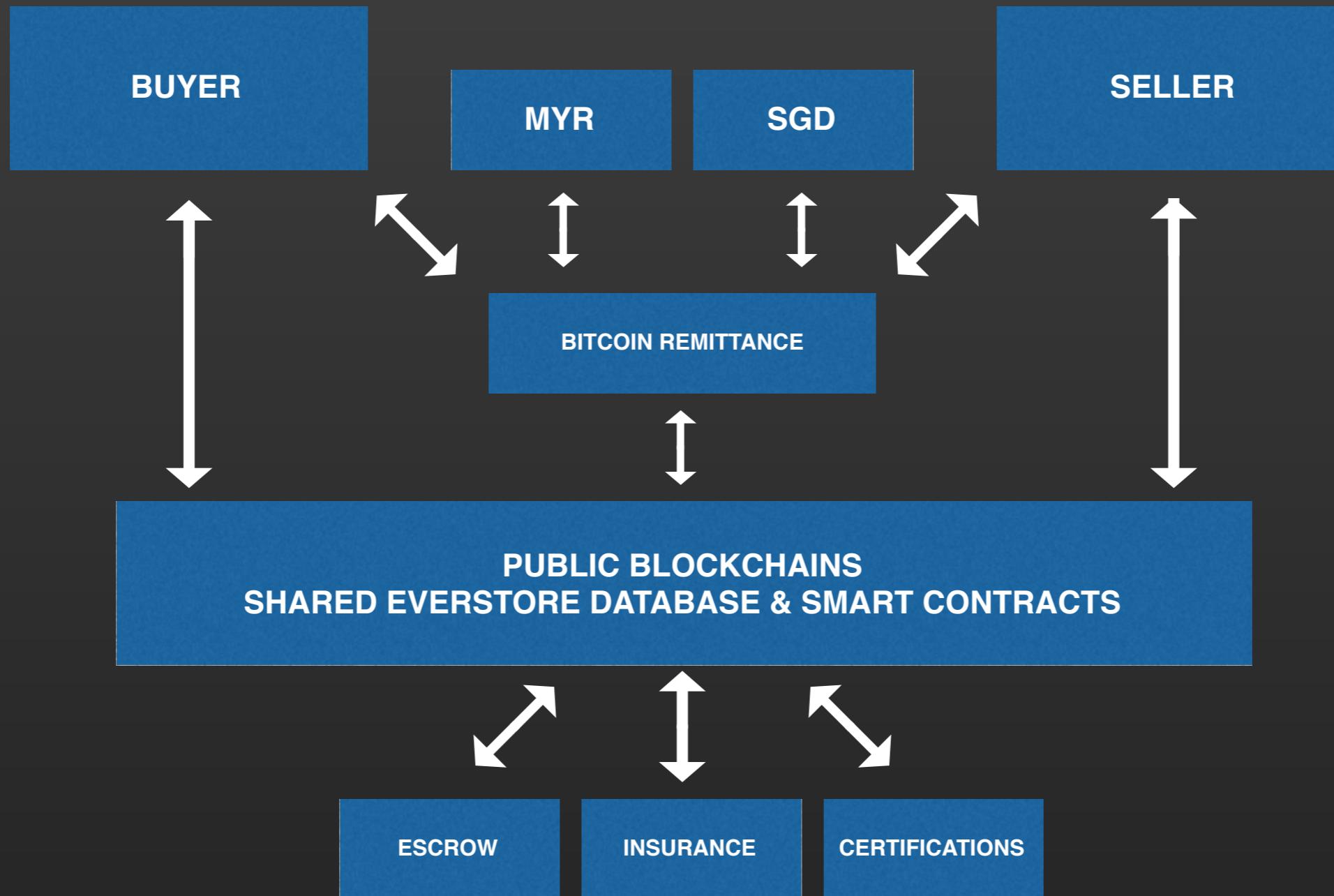
TRADITIONAL SUPPLY CHAINS ARE COMPLICATED



COMMON PROBLEMS WITH THE MAJORITY OF SUPPLY CHAINS

- Multiple entities maintaining multiple copies of the truth within easily compromised closed silos requiring painfully slow & expensive reconciliation
- Time consuming requirements for setting-up third-party financial trustees and physical escrow accounting processes between each transaction
- Lack of automation between checkpoints, processes and sensory inputs
- Excessive use and reliance upon physical paper-trails and certification
- **ALL OF THESE PROBLEMS EXIST DUE TO A LACK OF TRUST**
(if only there was a way they could all use the same source of truth)

SIMPLIFYING SUPPLY CHAINS WITH BLOCKCHAINS

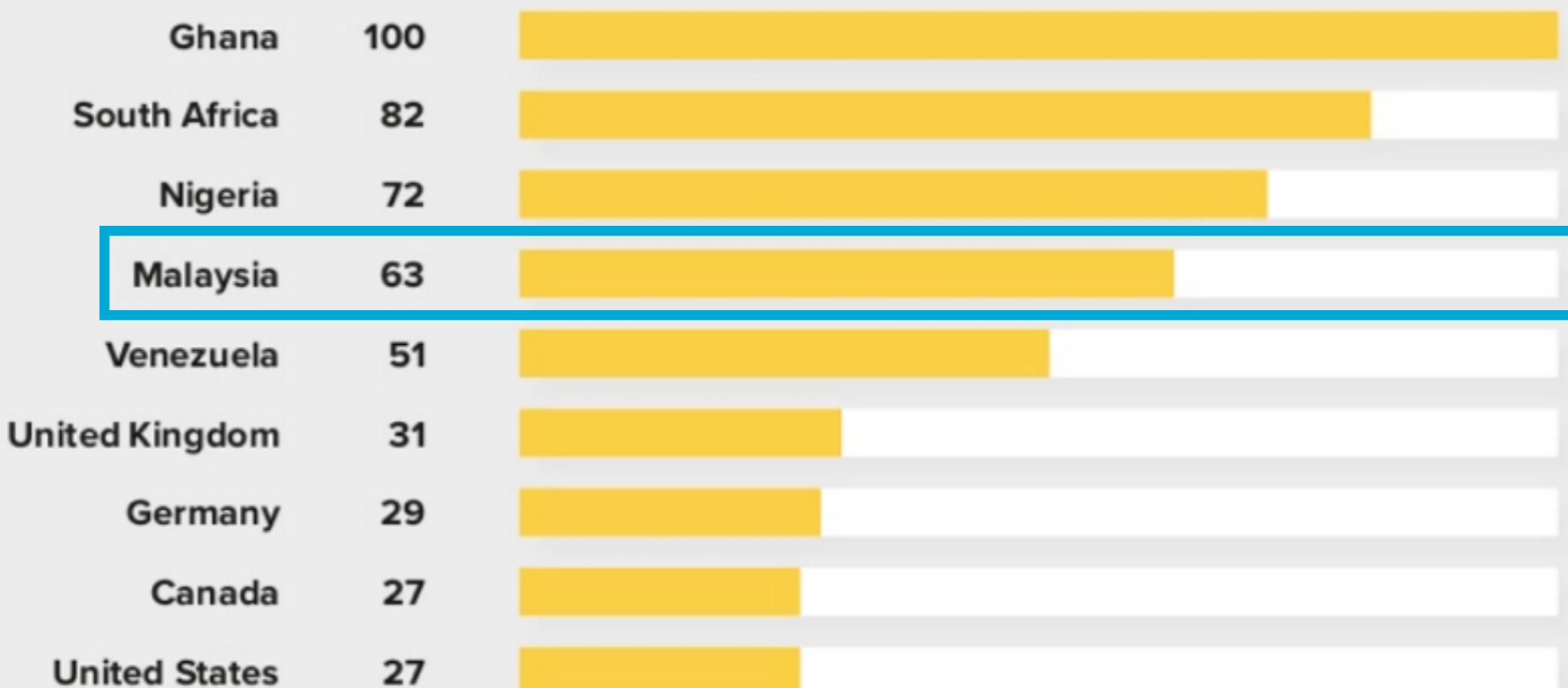


BLOCKCHAINS IN MALAYSIA

WHERE DO WE (**MALAYSIA**) STAND ...?

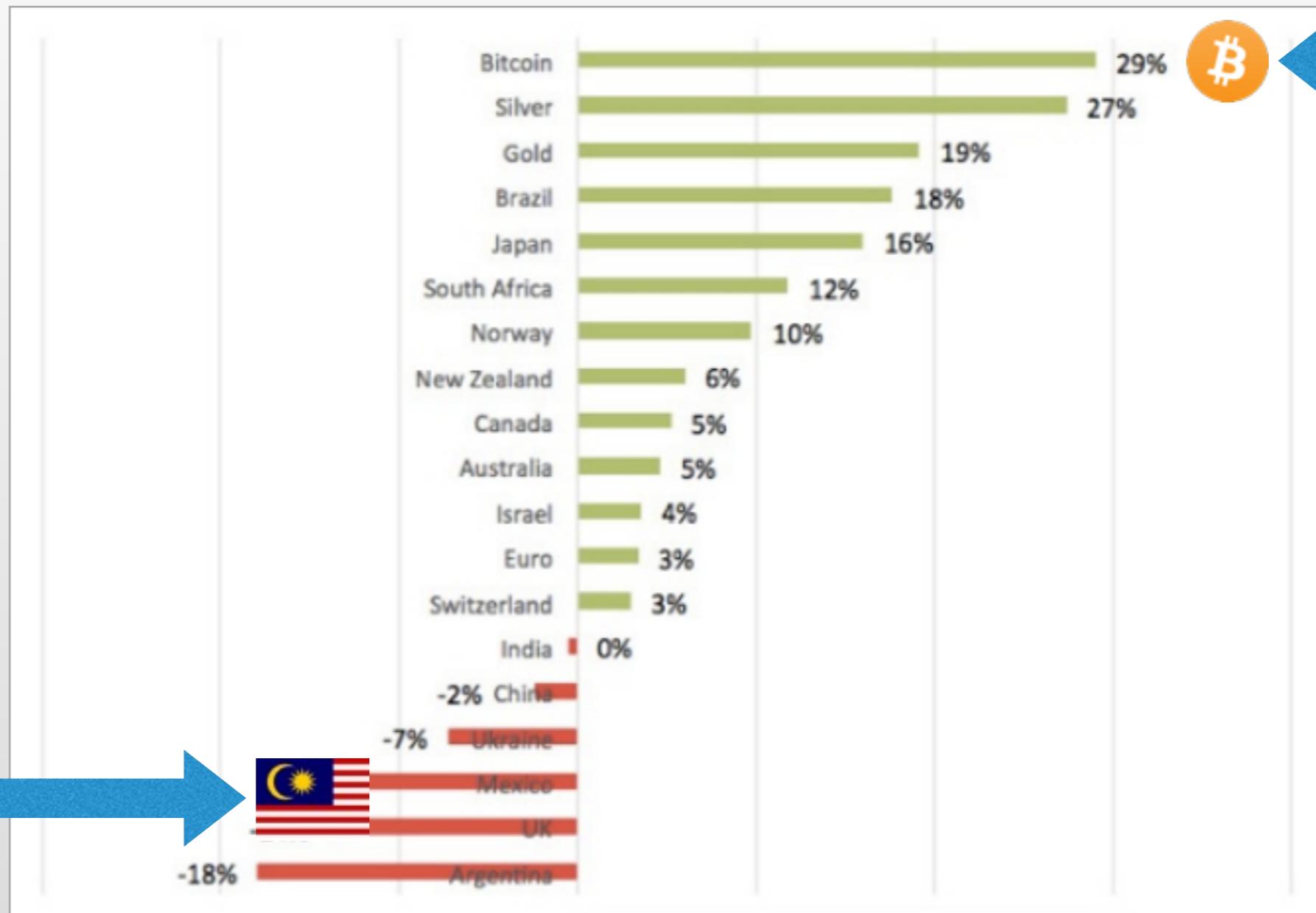
from the coindesk.com most recent quarterly report

MOST INCREASED INTEREST IN BITCOIN



WHERE DO WE (MALAYSIA) STAND ...?

also from the coindesk.com most recent quarterly report - but not the MY part



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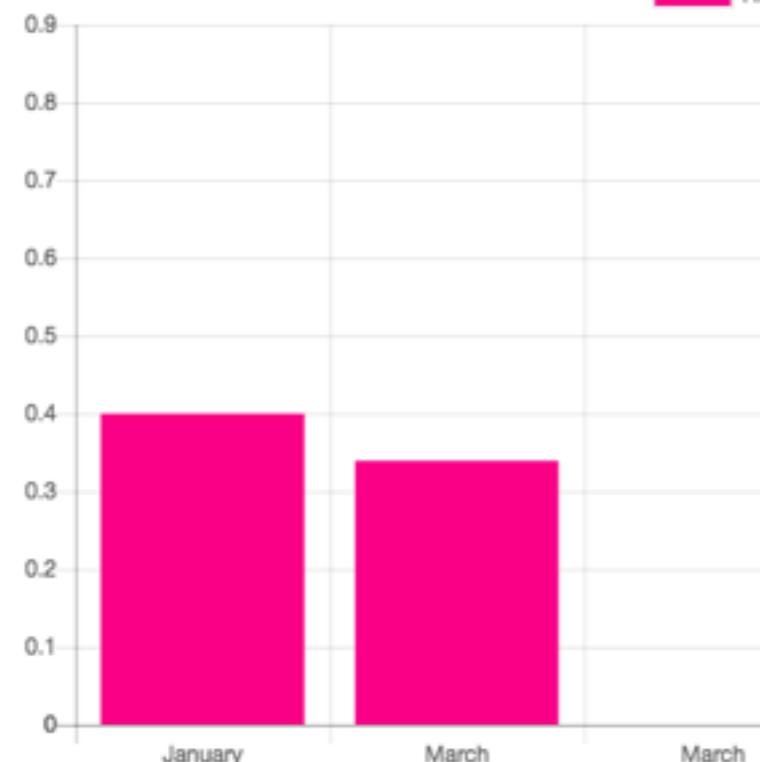
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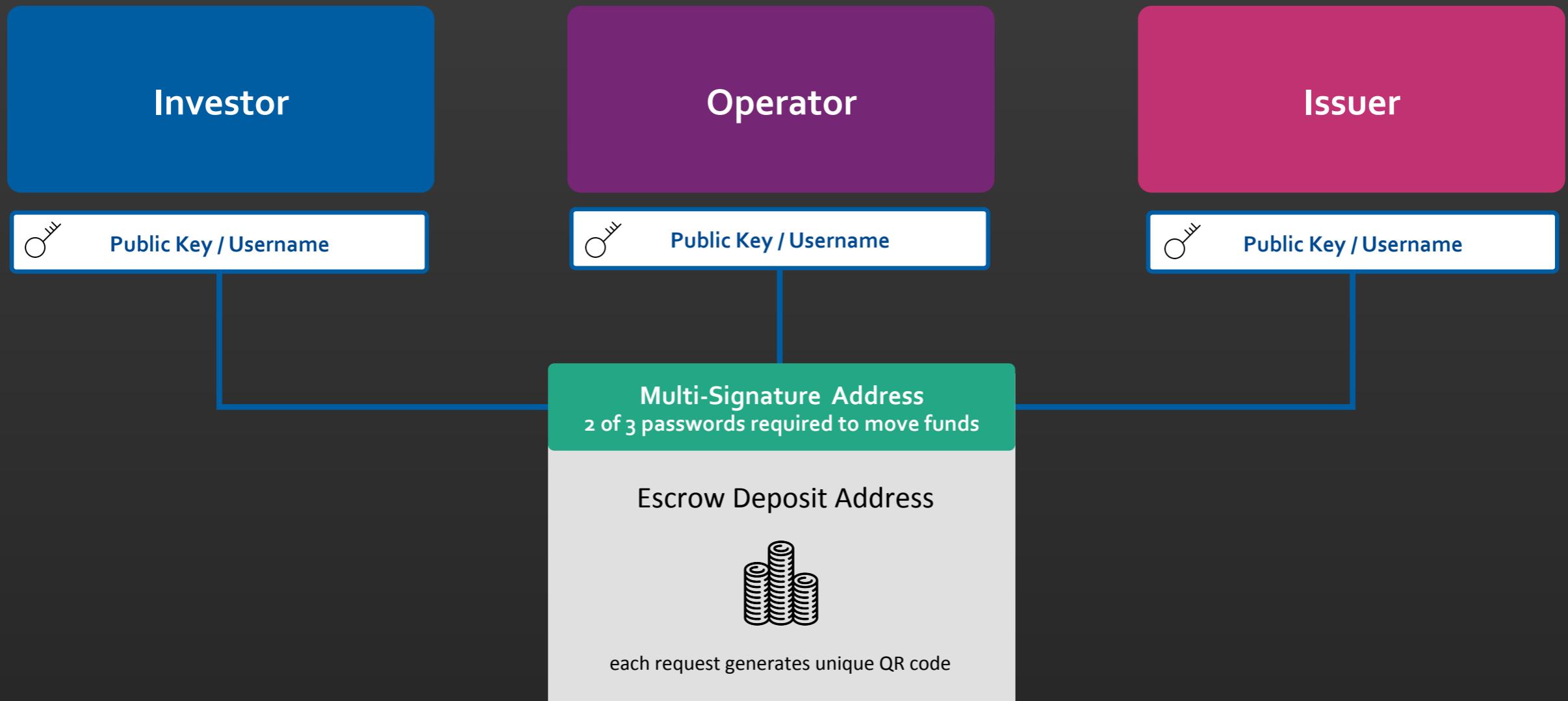
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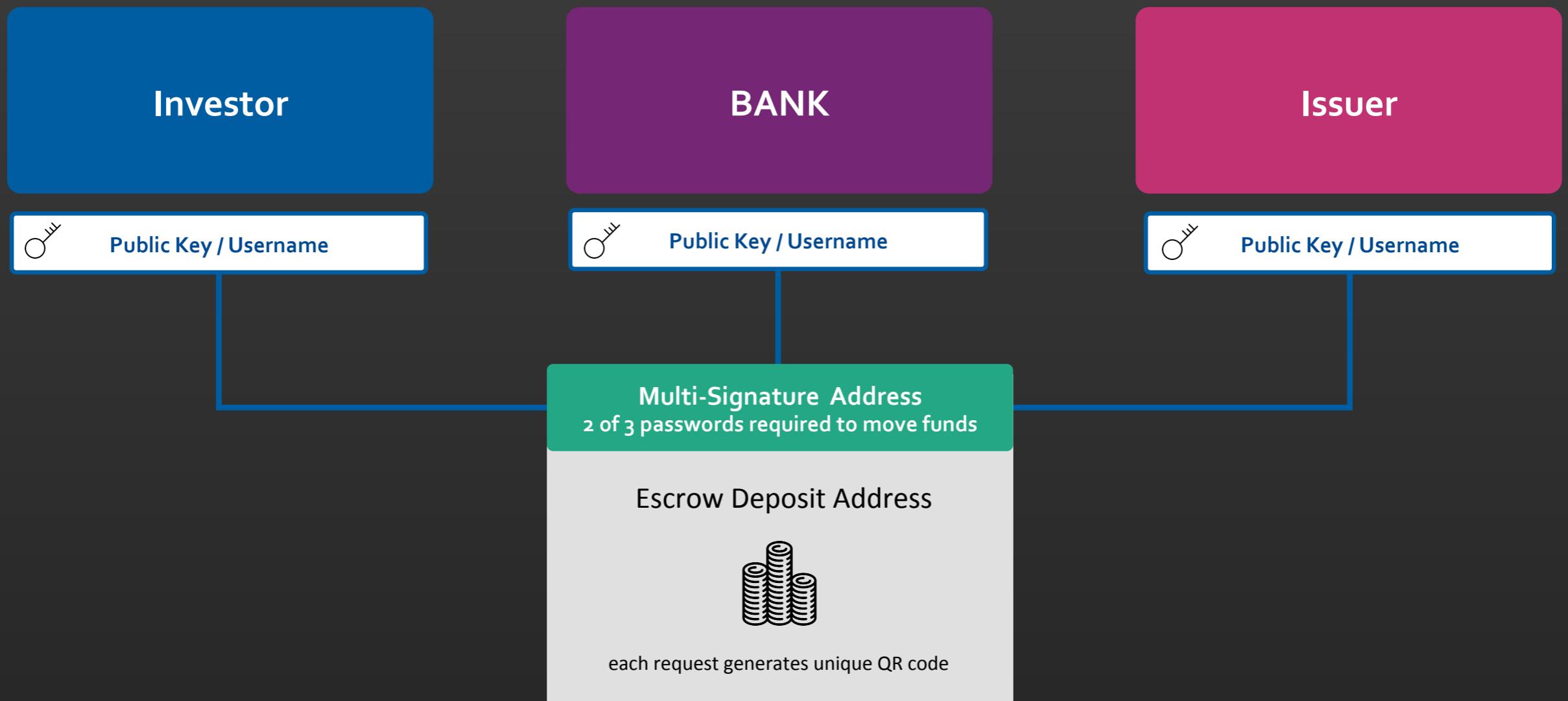


Kyri - Co-Founder & Director
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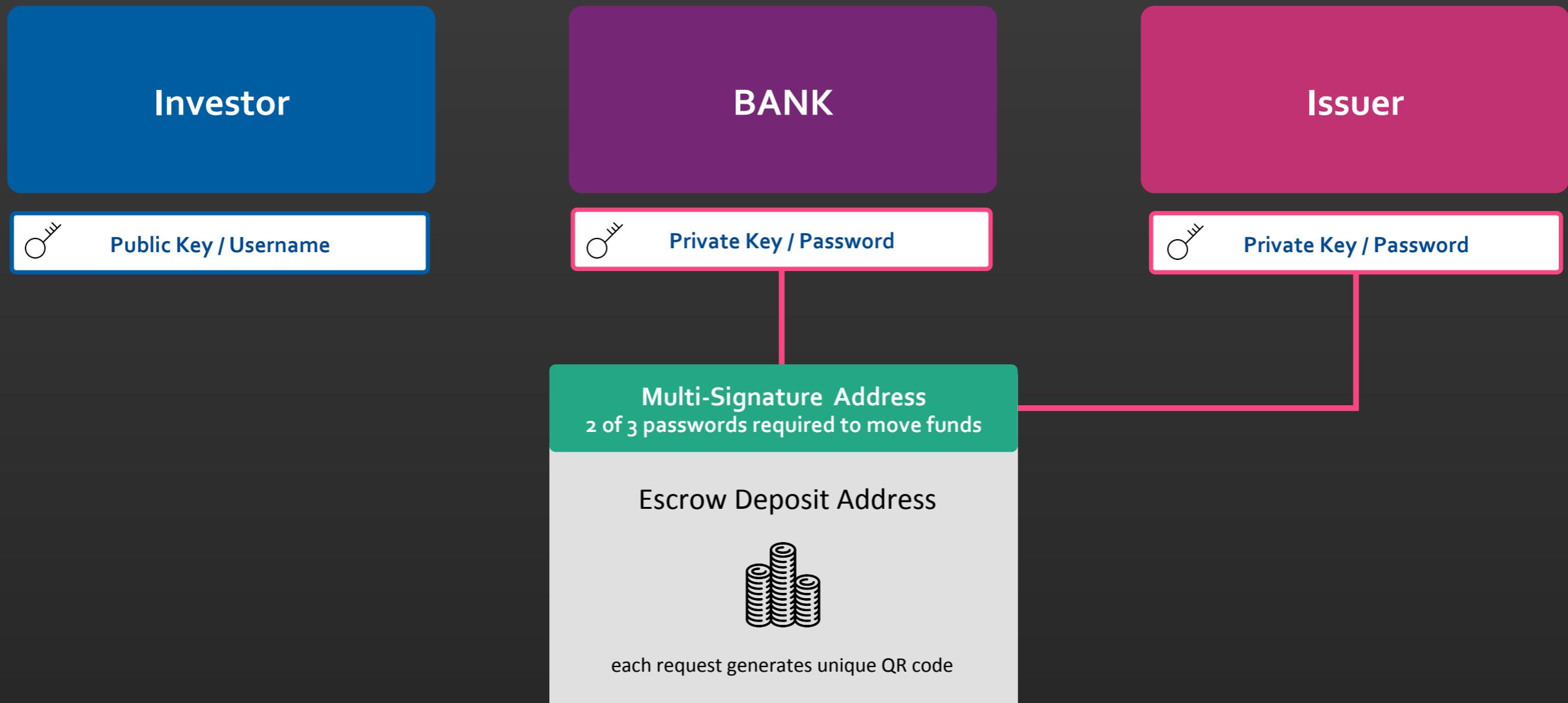
CURRENT MULTI-SIGNATURE BITCOIN SOLUTIONS IN MALAYSIA



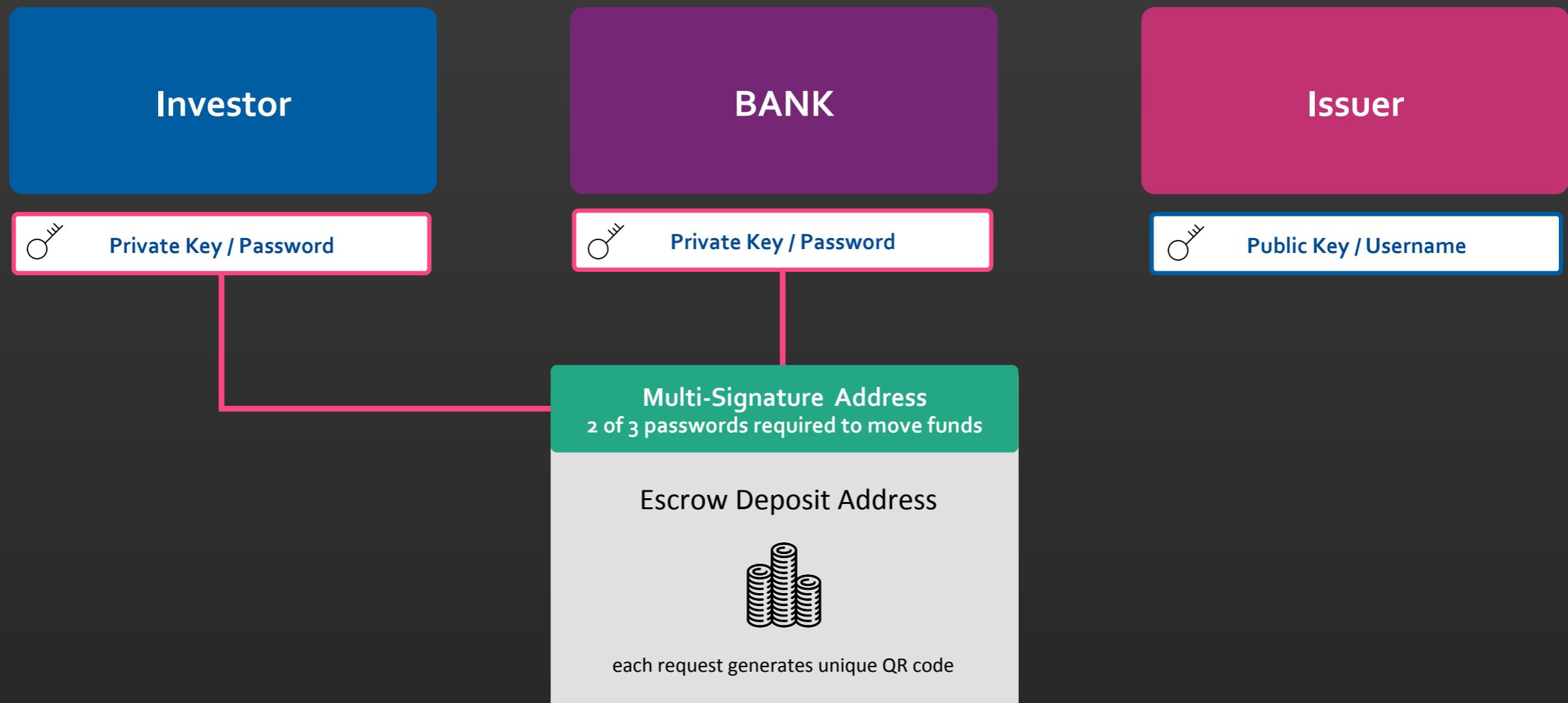
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COMPLETING AN EQUITY CROWDFUNDED INVESTMENT PROCESS



REJECTING INVESTMENT OR RETURNING FUNDS TO INVESTORS



TO SUMMARIZE

- The next IT revolution is already underway and finance is only its first target
- Although the future of Bitcoin is uncertain - blockchains are here to stay
- Distributed ledger technology will continue growing at an increasing pace
- **Like databases, there is no blockchain suitable for every use-case**
- Remember to keep a blockchain-agnostic view when developing solutions
- Don't forget that whatever is controlling the private keys **owns** the money

THANK YOU

NOW IS THE TIME TO QUESTION THINGS

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