

BLOCKCHAINS AND FINTECH

PRESENTED BY



neuroware

LET ME FIRST INTRODUCE THE NEUROWARE CO-FOUNDERS



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

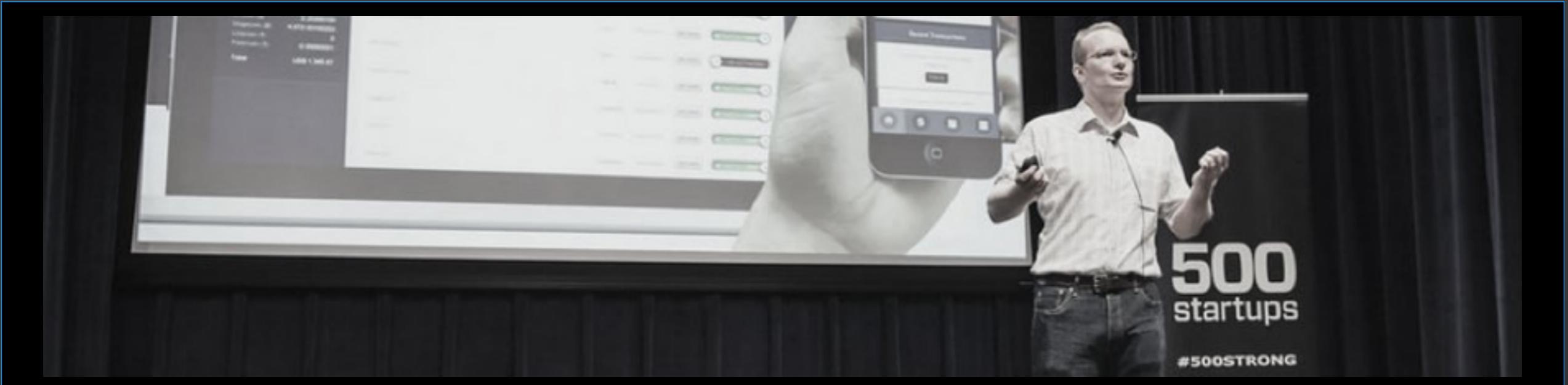
Building Web Applications for 10 Years

Active Community Evangelist & Presenter

Early Developer at MyTeksi and OnApp

Studying Distributed Consensus for 5 Years

EXPERIENCED INNOVATORS IN AN EARLY ECOSYSTEM



- **Only 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

WE'VE SPENT TWO YEARS DEVELOPING OUR BASE PROTOCOLS

CORTEX

EVERSTORE

DISTRIBUTED
STRUCTURED DATA

 **blockauth**

DECENTRALIZED ID &
AUTHENTICATION

 **dnkey**

KEY LOGISTICS &
BROADCASTING

NEUROWARE'S AGNOSTIC PROTOCOLS

DESIGNED TO WORK WITH ANY BLOCCHAIN

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

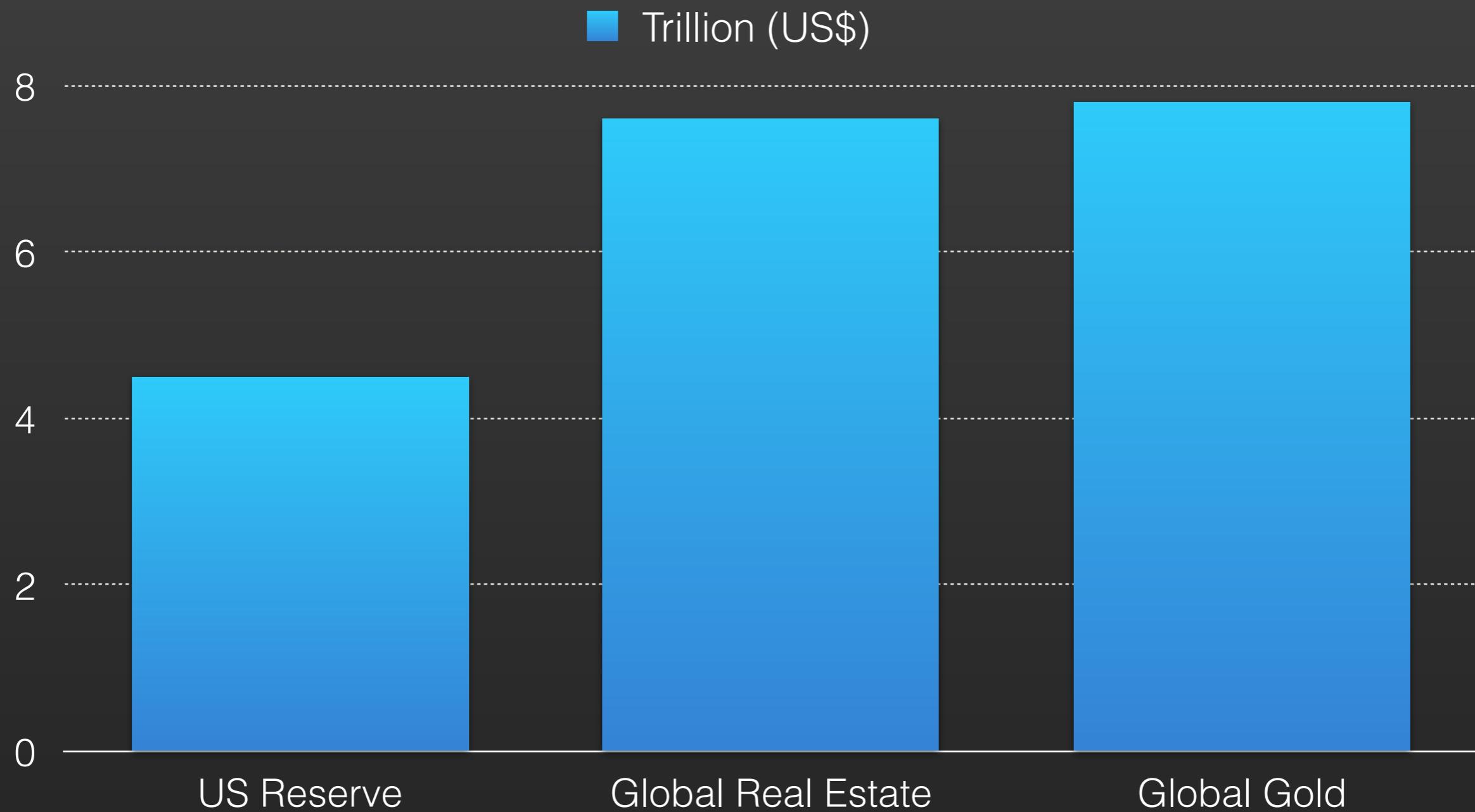


- Size wasn't everything
- The history of each stone determined it's individual value
- Conducting transactions quite literally involved a song & dance
- This required the majority of people from the village to be present

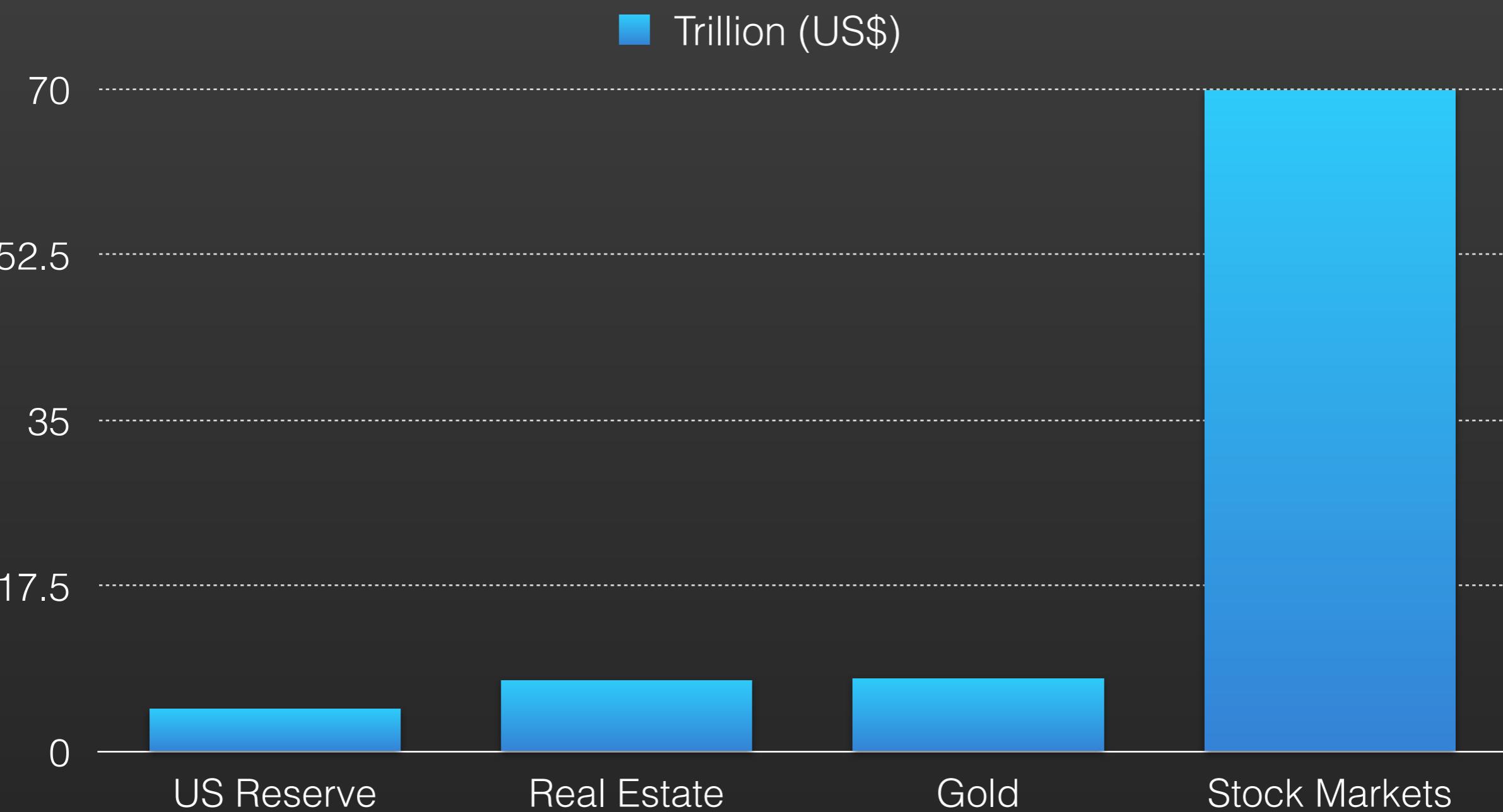
BUT IT COULD NOT SCALE - THEY EVENTUALLY SWITCHED TO US\$



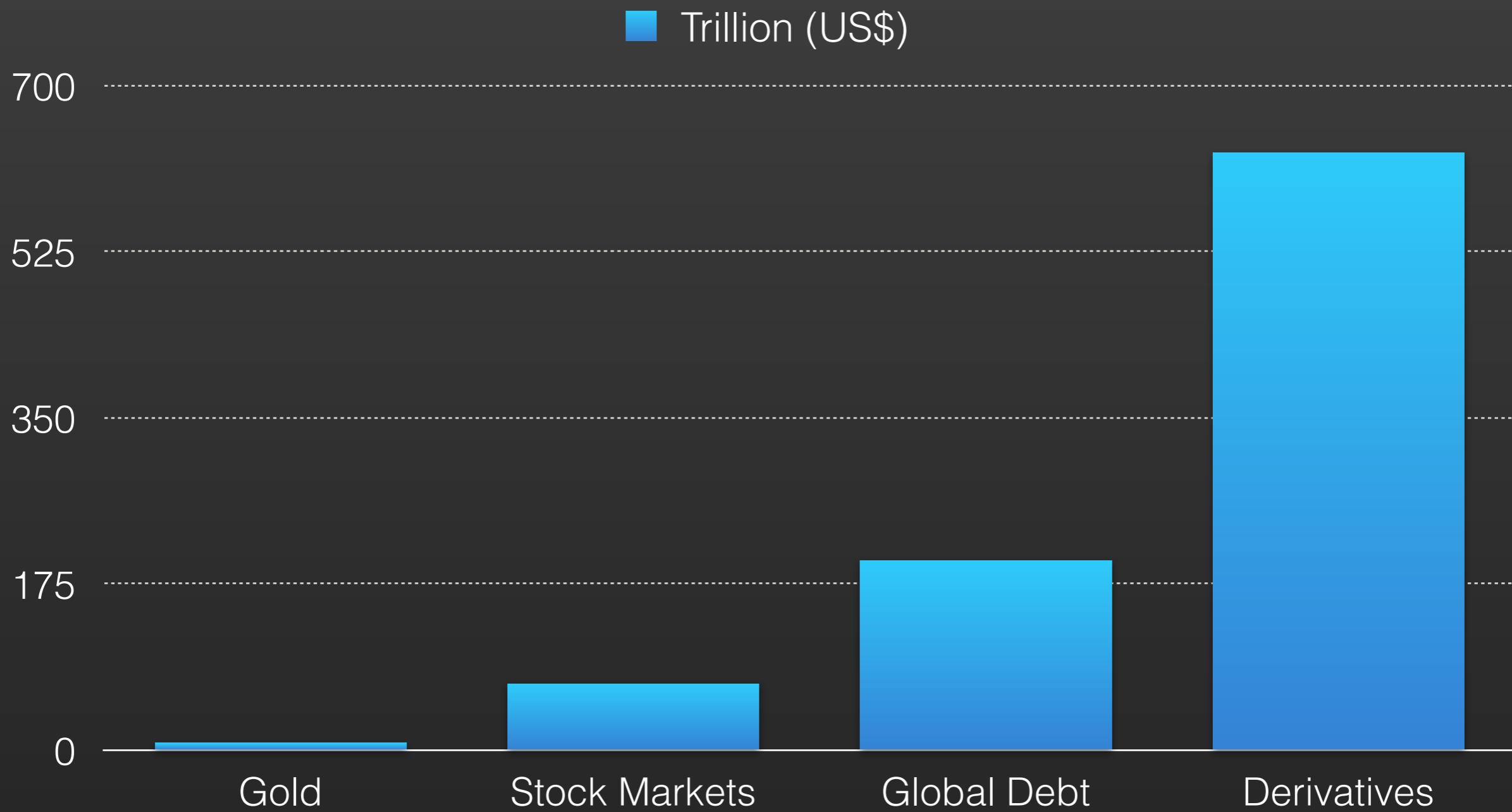
WHEN WE THINK OF THE US DOLLAR WE THINK OF **REAL MONEY**



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)



All other US
Wars Ever

2008 Bailout
US\$8.5 Trillion

This really annoyed
Satoshi Nakamoto

A TIP-TOE INTO BITCOIN
MAGIC INTERNET MONEY

BITCOIN

(the first application / popular digital asset)

vs

BLOCKCHAINS

(the underlying tech / shared public ledger)



DOGECOIN

(cheaper and faster copy - but less secure)

vs

RIPPLE

(not everyone is equal - not a blockchain)



ETHEREUM

(built from scratch to do things differently)

VS

PRIVATE CHAINS

(very similar to traditional databases)



BREAKING DOWN THE **BASIC TERMINOLOGY**

- Distributed Ledger Technology (DLT) is the top-level terminology
- Blockchains are one sub-set of distributed ledgers
- Public chains are another sub-set of blockchains
- Bitcoin is just one of a thousand different public blockchains
- There are hundreds of private chains & distributed ledgers without blocks
- From distributed DNS to file-storage & asset transfer - they do many things

However...

- When you are able to transfer a native asset on its ledger - magic happens:
- **THE TRANSFER AND SETTLEMENT OCCUR AS A SINGLE EVENT**

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

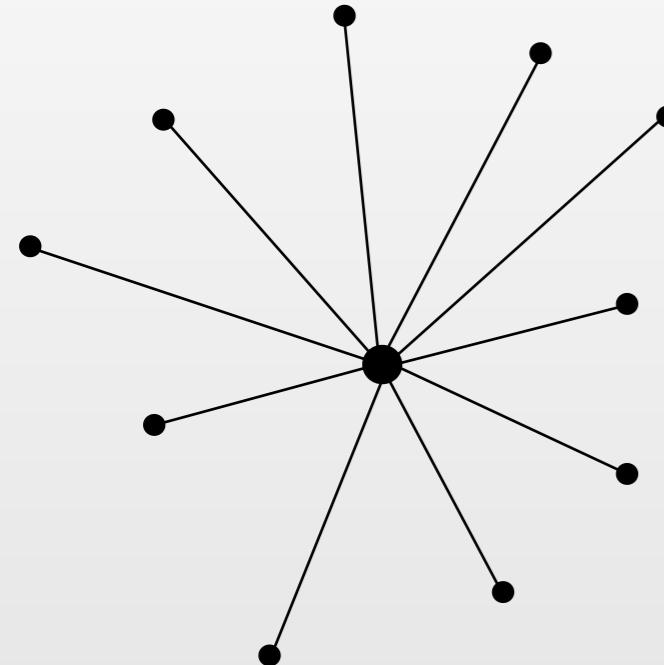
- Bitcoin blockchain released in January 2009 by Satoshi Nakamoto
- We do not know who Satoshi is, or what their religion or political views are
- However, the bailout of 2008 was cited as primary catalyst for its creation
- US\$13 per coin in 2013 (when we bought) - now over US\$1,000 per coin
- The Bitcoin network is currently processing over 250,000 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

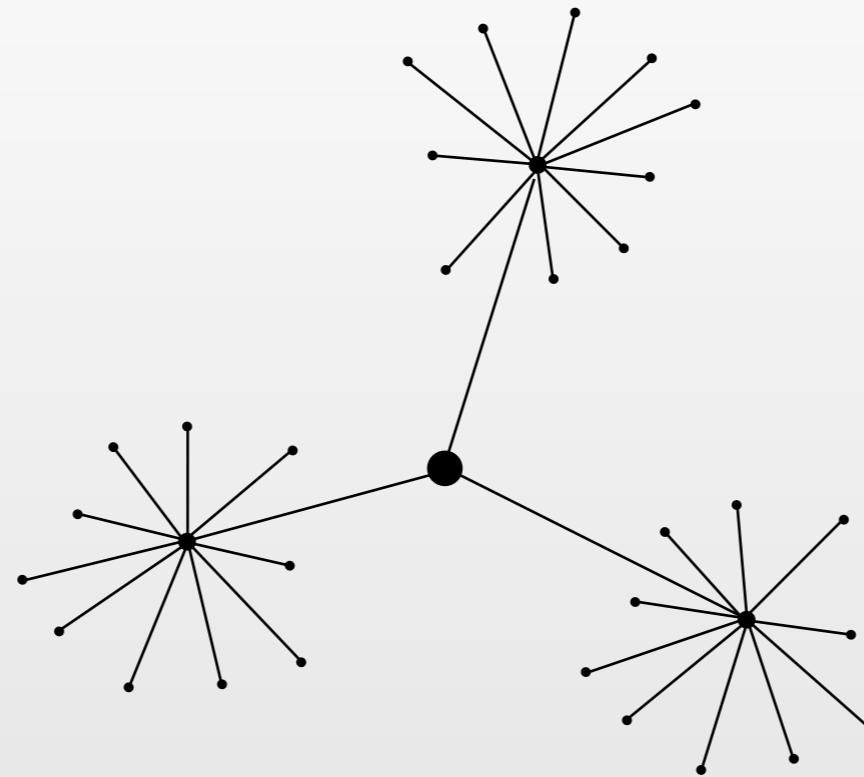


- HASH - Theorized in the 1800s - Coined by IBM in the 1950s
- SHA - Encryption method first introduced by US Navy in 1993
- P2P - Peer to peer protocol popularized by Napster in 1999

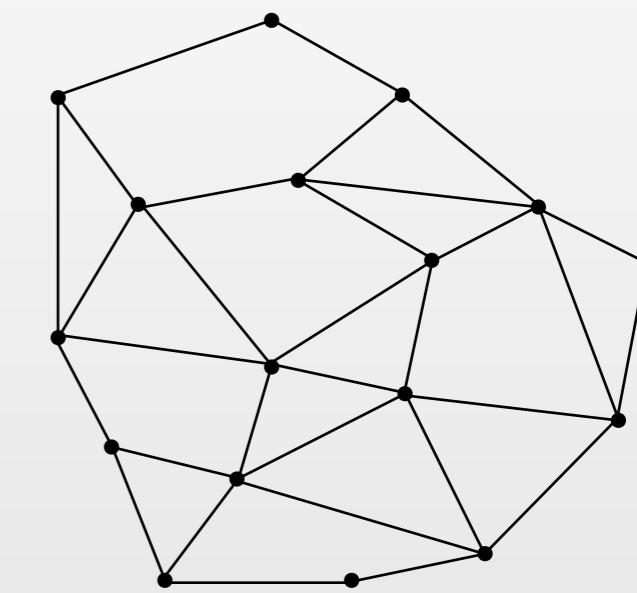
COMPARED TO WHAT...? **TRUTH** CAN ONLY BE STORED ONE WAY



CENTRALIZATION
DATABASES



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



BITCOIN ISN'T EVERYTHING
BILLIONS INVESTED IN BLOCKCHAINS

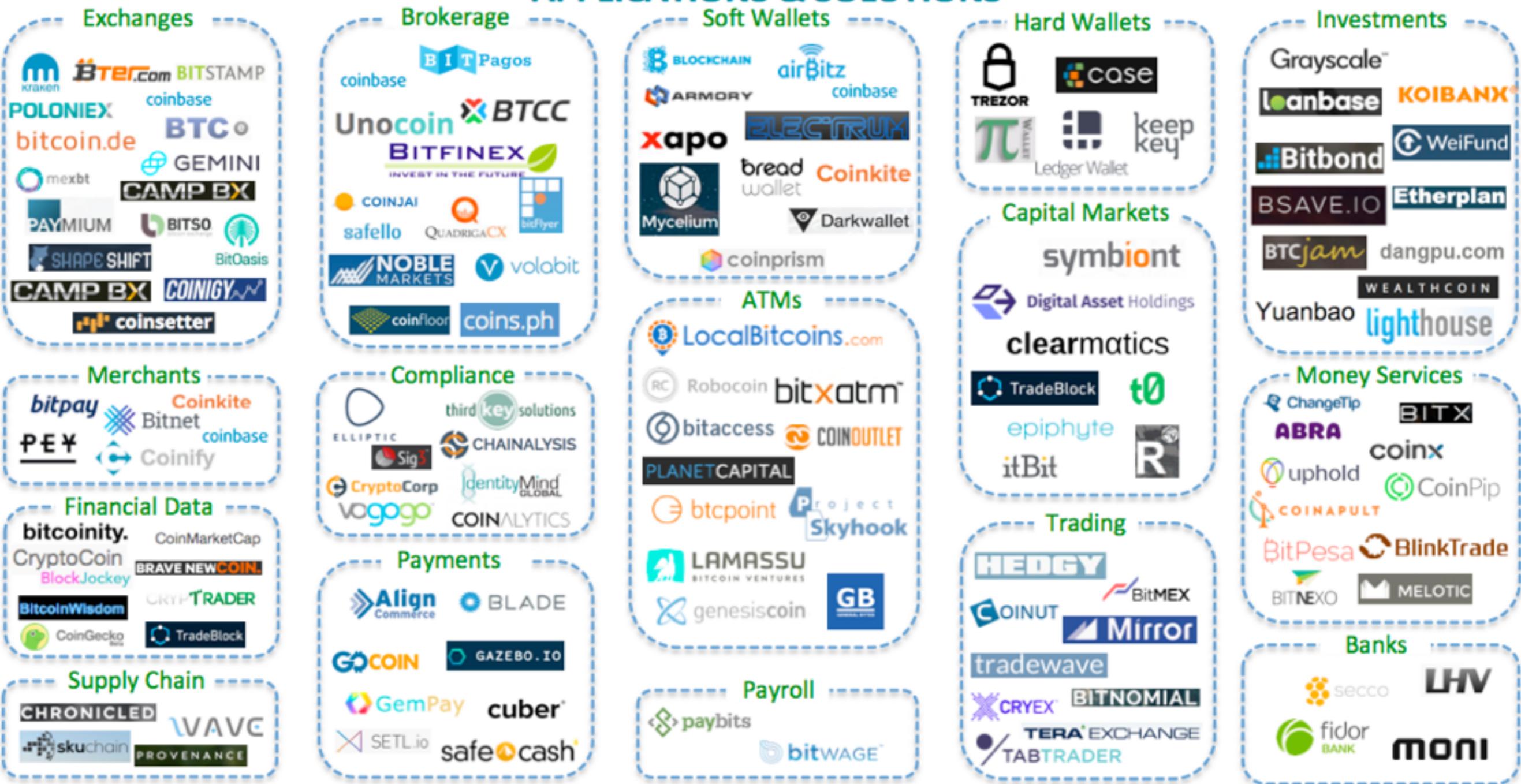
BANKS ARE MOVING FAST DUE TO ECOSYSTEM MATURITY

In 2016, over 100 banks and leading financial institutions started blockchain projects, with more than US\$1 billion dollars being invested into the ecosystem - in just one year!

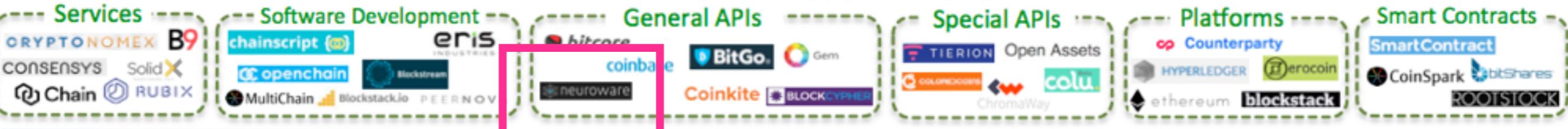


BLOCKTECH in FINANCIAL SERVICES Landscape

APPLICATIONS & SOLUTIONS



MIDDLEWARE & SERVICES



INFRASTRUCTURE & BASE PROTOCOLS



SOME OF THE INSTITUTIONS LEADING THE WAY



Custom blockchain
for settlements



Blockchain based
trade finance platform



Blockchain based
loyalty platform



Blockchain based
remittance platform



multiple blockchains for cross-
border payments and loyalty



1st Bank in ASEAN to join an
Asian Blockchain Consortium



Patented a blockchain
based wire transfer system



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

CUSTOM TOKENS 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



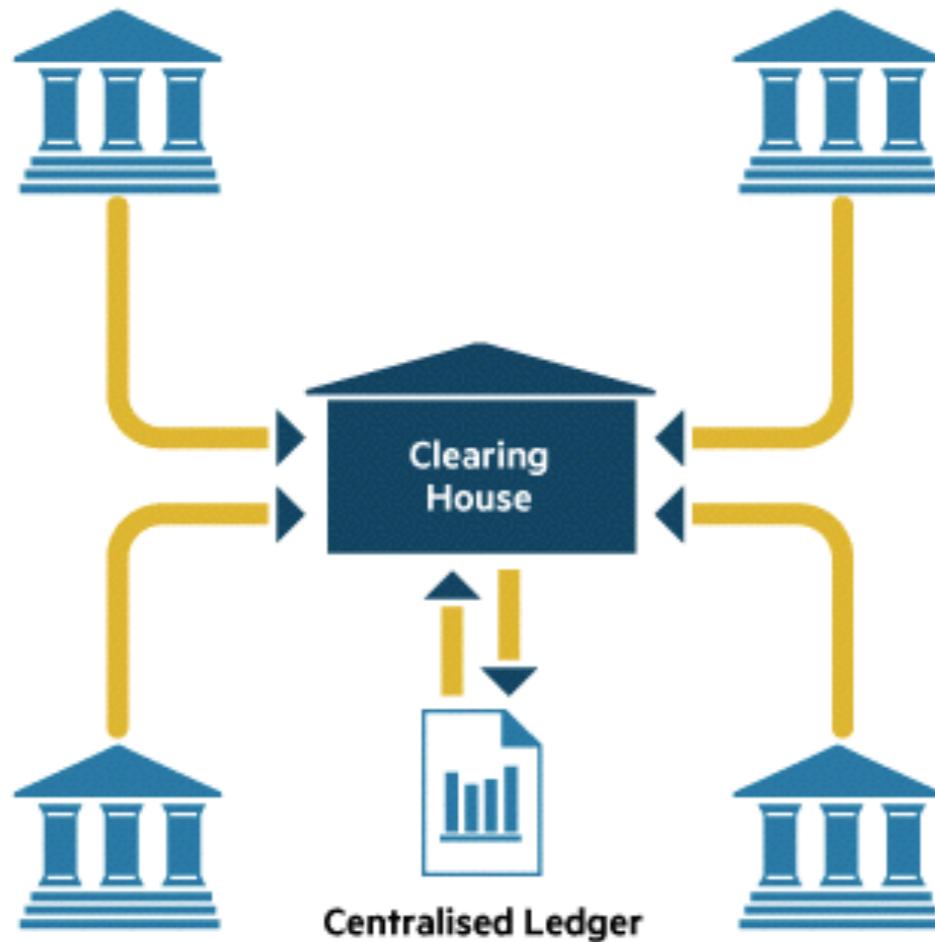
- 1st Generation of Alt-Coins forked each other with minor tweaks
- Basic breakout alt-coin successes included Litecoin and Dogecoin
- Dash (previously known as DarkCoin) worth noting due to governance
- See the Malaysian-Based **CoinGecko** for a better list!

DISTRIBUTED LEDGERS AND FINANCIAL TECHNOLOGY

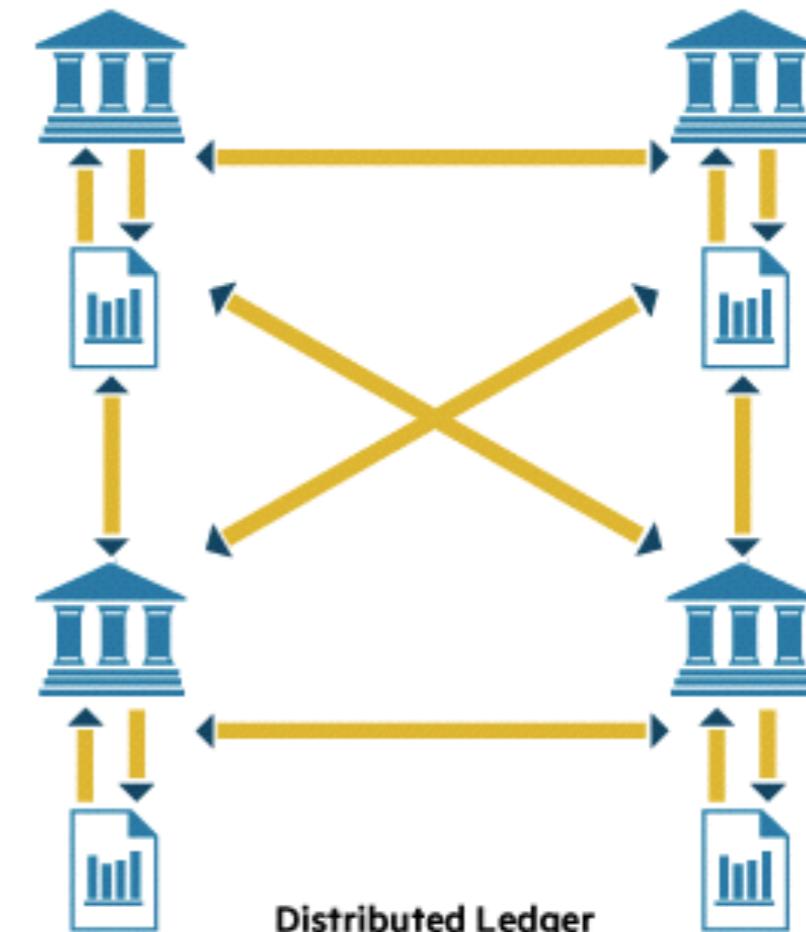
McKinsey's Blockchain Insurance Report

- Speed up and simplifying the on-boarding of new customers (KYC)
- Automate underwriting and claims handling (emerging markets & IoT)
 - Increase effectiveness of fraud detection and pricing
 - Drastically reduce administrative costs
- Currently tracking 20+ blockchain insurance solutions
- Allianz, AXA and Generali have started investing in blockchain tech

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?

VISA THE FIRST TO BRING NEW CLEARING SYSTEM TO MARKET



Note: Conceptual vision for discussion only. Service is in development and availability, features, functionality and timing remain subject to change.

Visa Confidential

BITJAM - P2P LOANS - FIRST TO BE FUNDED BY 500 STARTUPS

[Log In](#)[Sign Up](#)[More ▾](#)

Safe and easy
bitcoin lending.

Invest your Bitcoins and Earn Now

19.3% APR

- Protect from bitcoin volatility
- Peer to Peer lending with credit scoring
- Security done right

[Grow my Bitcoin](#)

Personal loans using Bitcoin from

6.7% APR

\$

1

0

≈ \$ 218.58

Select the purpose of your loan

Your Email address

[Get my Bitcoin](#)

Ribbit Capital

500
startups

FundersClub™

TC

TNW
THE NEXT WEB

Bloomberg

neuroware

LAWMOWER - AUTO SAVINGS ACCOUNT - RECENTLY AQUIRED

The image shows a smartphone displaying the Lawmower app's transaction history. The screen shows a balance of 0.037331 BTC (\$10.79) and a list of recent transactions:

- + \$0.01 ✓ (\$3.99 Starbucks)
- + \$0.25 ✓ (\$1.75 Taco Bell)
- + \$0.82 ✓ (\$42.18 Whole Foods)

The phone's status bar indicates it is connected to T-Mobile, the time is 5:32 PM, and the battery level is 68%.

Convert your spare change into bitcoin

Buy a coffee for \$3.25 and turn the remaining 75¢ into bitcoin.

Download on the App Store GET IT ON Google play BETA

ABRA - REMITTANCE VIA BITCOIN - RECENTLY RAISED US\$12M

(also referred to as über for money - they turn people into tellers)

Abra is a digital wallet that lives on your smartphone.

DEPOSIT

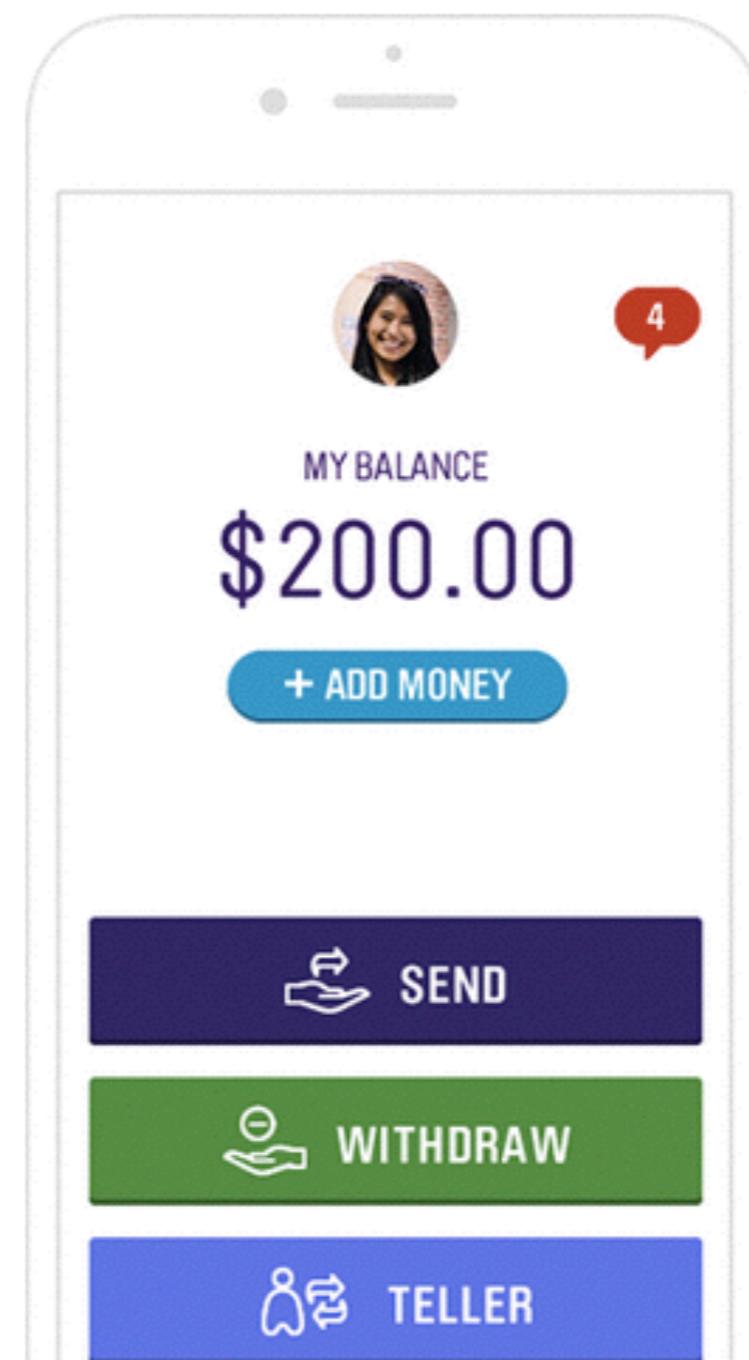
Fund your wallet with your bank account or use cash by visiting an Abra Teller in your area.

SEND

Use the Abra app to send or receive money worldwide with no fees. Buy things online wherever Abra is accepted.

WITHDRAW

Use the app to transfer funds to your bank account, or find a nearby Teller to get cash.



LAMASSU - THE MOST POPULAR BITCOIN ATM



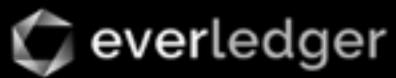
Order

Getting Bitcoin
can't be easier.

SEE PRODUCTS



BLOCKCHAINS CAN REPRESENT VARIOUS VALUES



[Home](#) [API](#) [Timeline](#) [Smart Contracts](#)

PROTECTION.

We are a fraud detection system, overlaying big data from closed sources like insurers and law enforcement.



BIG EXPECTATIONS NOW SET

- Accenture claim investment banks can save US\$12 billion a year
 - McKinsey believes financial services will save US\$110 billion in 3 years
 - White & Case say banks can reduce infrastructure by \$20 billion a year
 - Bank of England says DLT could add 3% to a country's economic output
-
- 80% of top banks to launch DLT projects by 2017 - World Economic Forum
 - IBM reports that 15% of big banks will be using blockchains by 2017
 - IBM also reported that 65% of top banks will have blockchain trials by 2020

R3 - WORLD'S LARGEST BLOCKCHAIN CONSORTIUM

- Founded by ex-banking CEOs with their CTO as ex-CIO of IBM
- Over 100 financial institutions joined R3 (with large annual fees)
- Members are then able to engage R3 consultants for pilot projects
- Originally utilizing privately forked Ethereum & Eris solutions
- 15 members trial distributed ledgers for trade finance in 2015
- 10 banks trial blockchain (KYC) identity registry in 2016
- Now heavily promoting Corda (in-house permissioned ledger)
- Opened a lab in Singapore and started working with MAS
- Currently in the process of raising US\$200 Million in funding

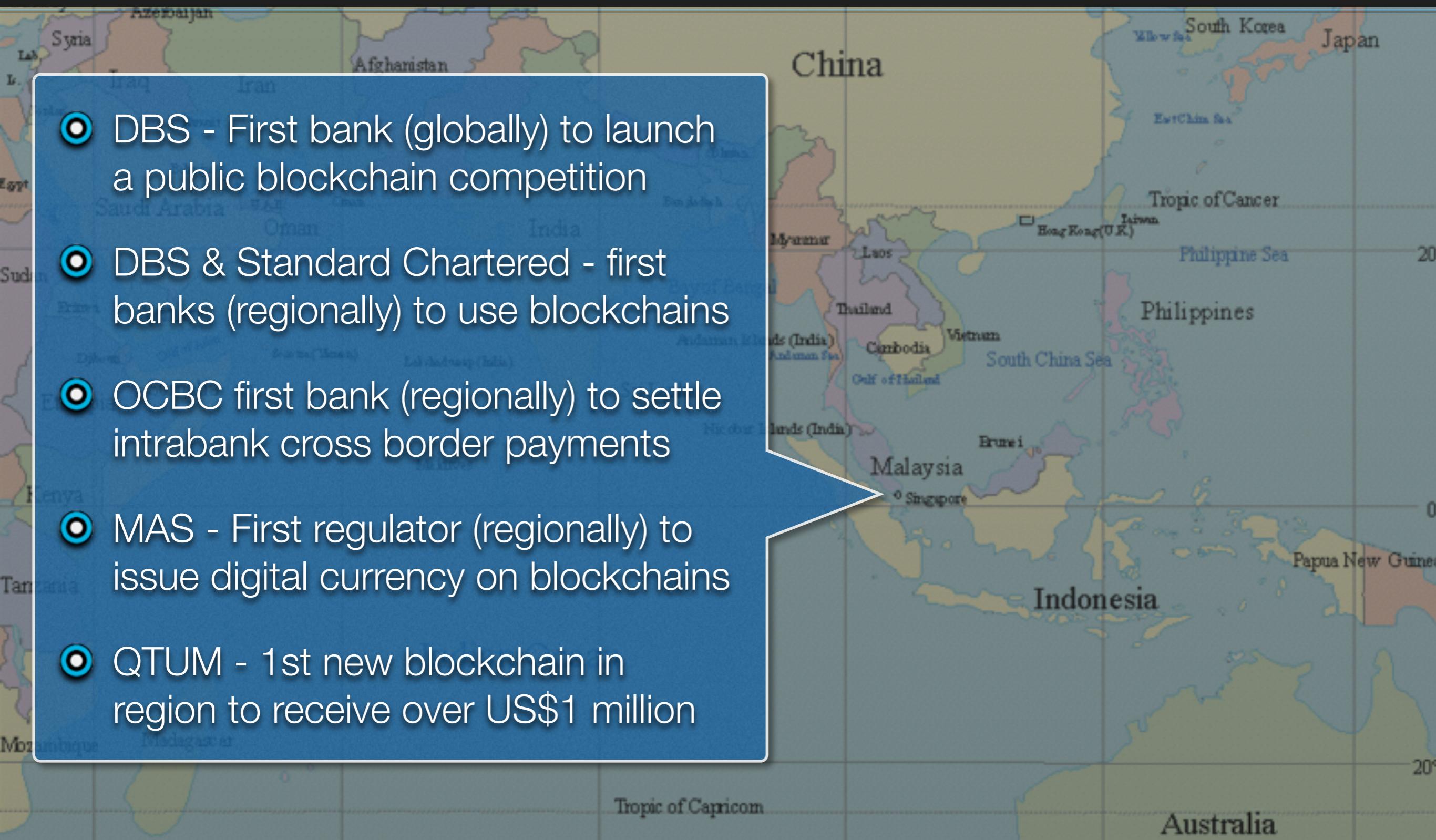
NOW OVER 35 BLOCKCHAIN CONSORTIUMS WORLDWIDE



BLOCKCHAINS AND ASIA

SINGAPORE

- DBS - First bank (globally) to launch a public blockchain competition
- DBS & Standard Chartered - first banks (regionally) to use blockchains
- OCBC first bank (regionally) to settle intrabank cross border payments
- MAS - First regulator (regionally) to issue digital currency on blockchains
- QTUM - 1st new blockchain in region to receive over US\$1 million



SINGAPORE

Otonomos
@Otonomos

@Otonomos is serving clients from 26 countries as of July! Can't wait to see how many more by the end of the year!

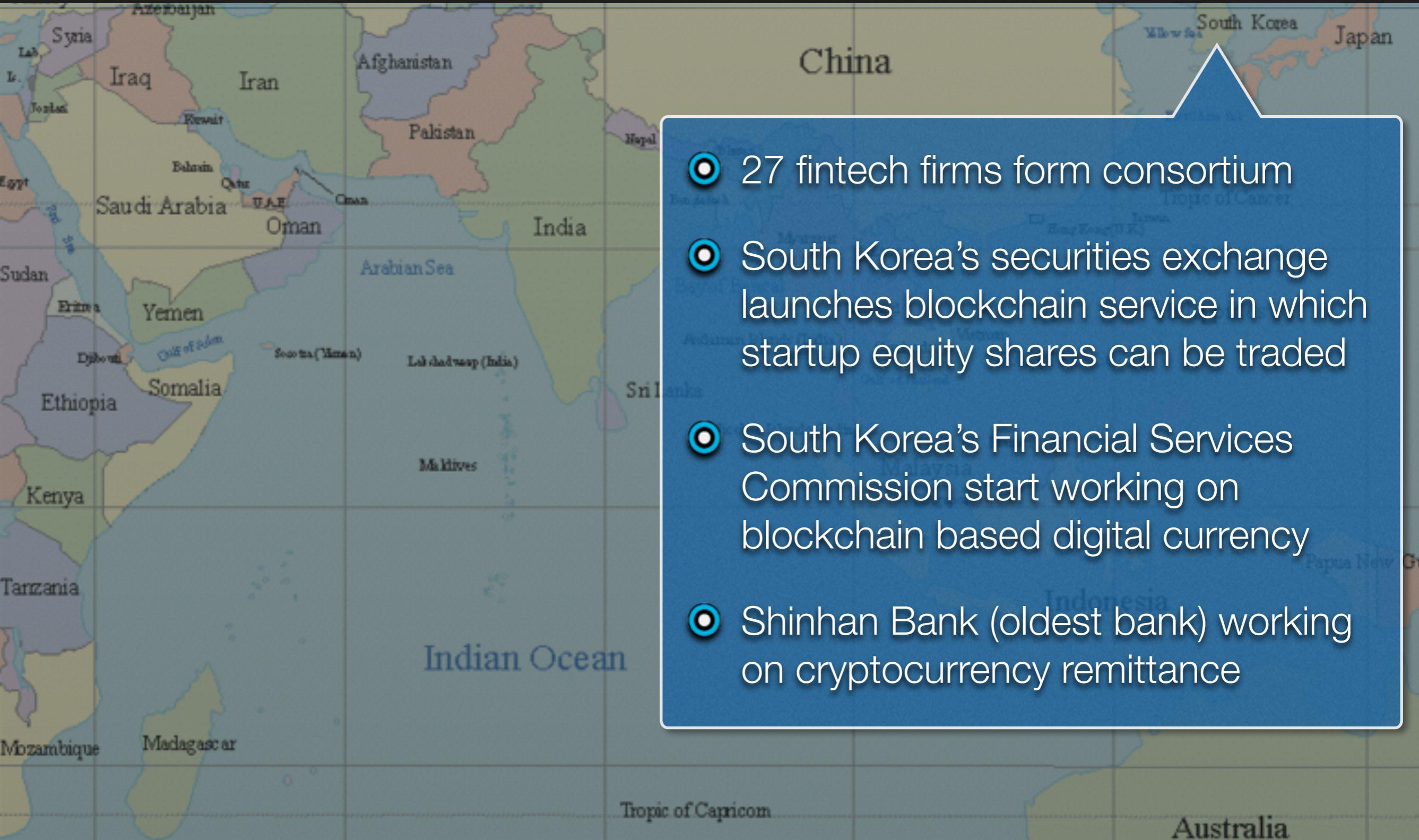


Incorporate online in Singapore, Hong Kong, UK, Cayman Islands and BVI via blockchains

CHINA

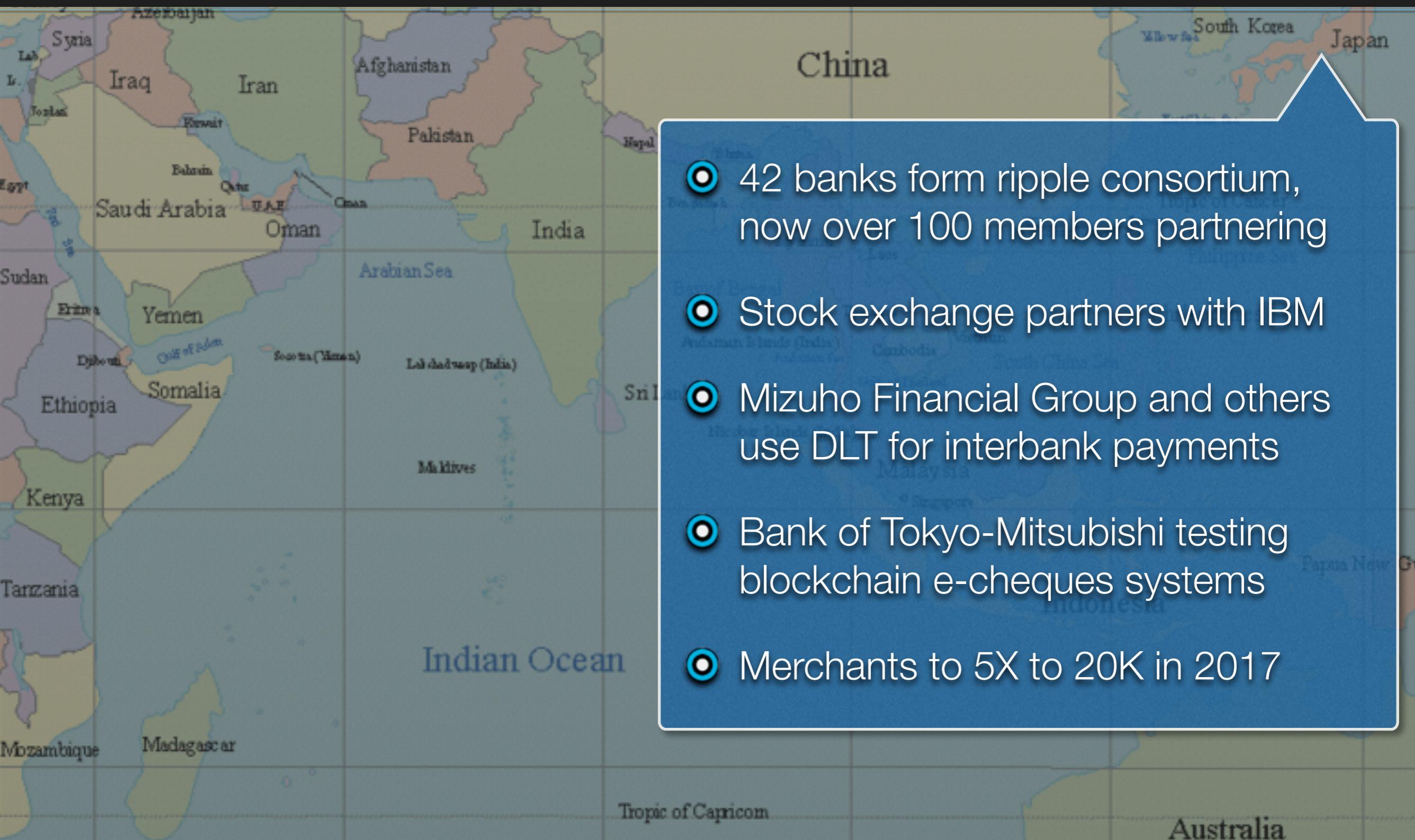


KOREA



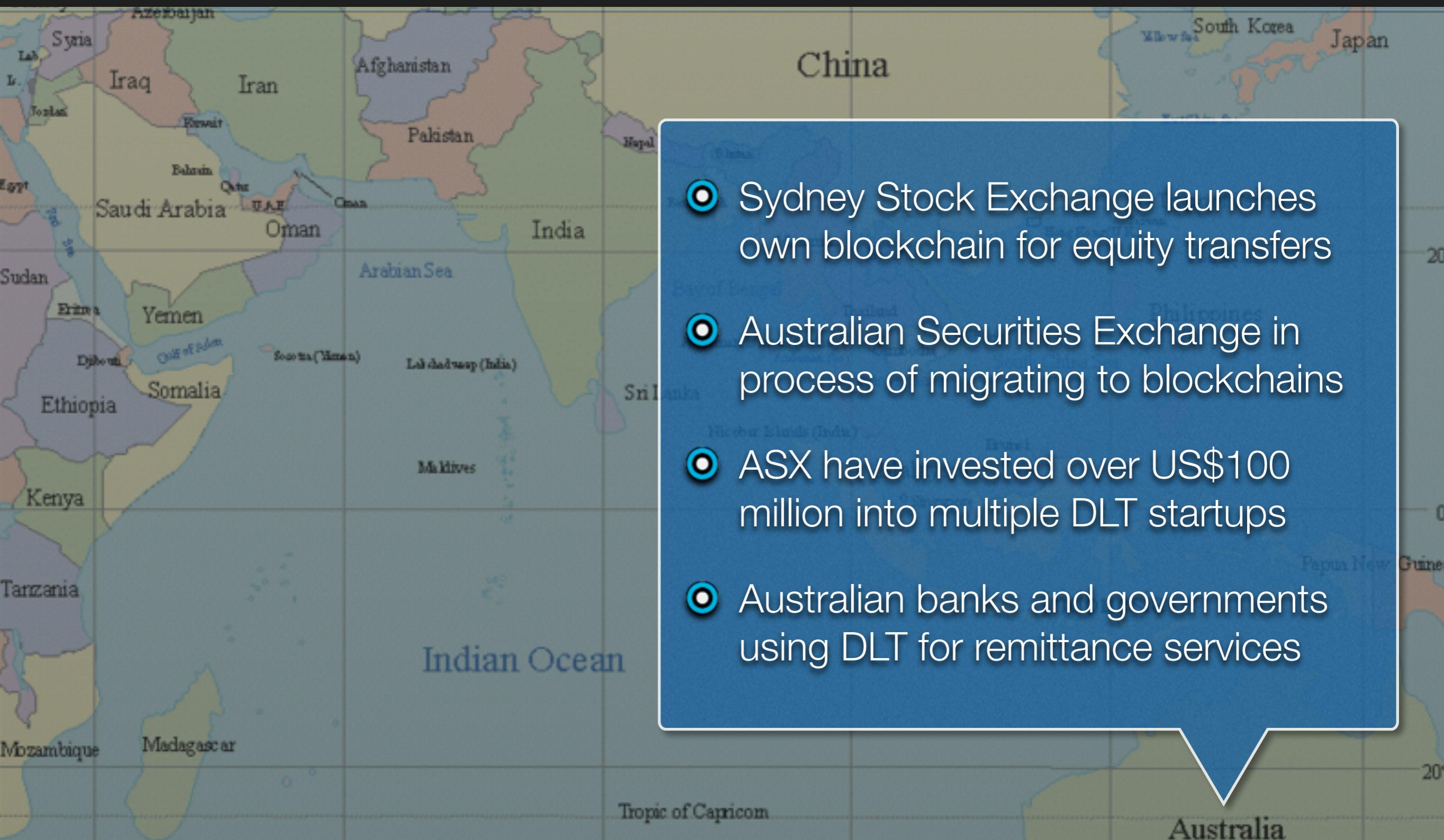
- 27 fintech firms form consortium
- South Korea's securities exchange launches blockchain service in which startup equity shares can be traded
- South Korea's Financial Services Commission start working on blockchain based digital currency
- Shinhan Bank (oldest bank) working on cryptocurrency remittance

JAPAN



- 42 banks form ripple consortium, now over 100 members partnering
- Stock exchange partners with IBM
- Mizuho Financial Group and others use DLT for interbank payments
- Bank of Tokyo-Mitsubishi testing blockchain e-cheques systems
- Merchants to 5X to 20K in 2017

AUSTRALIA

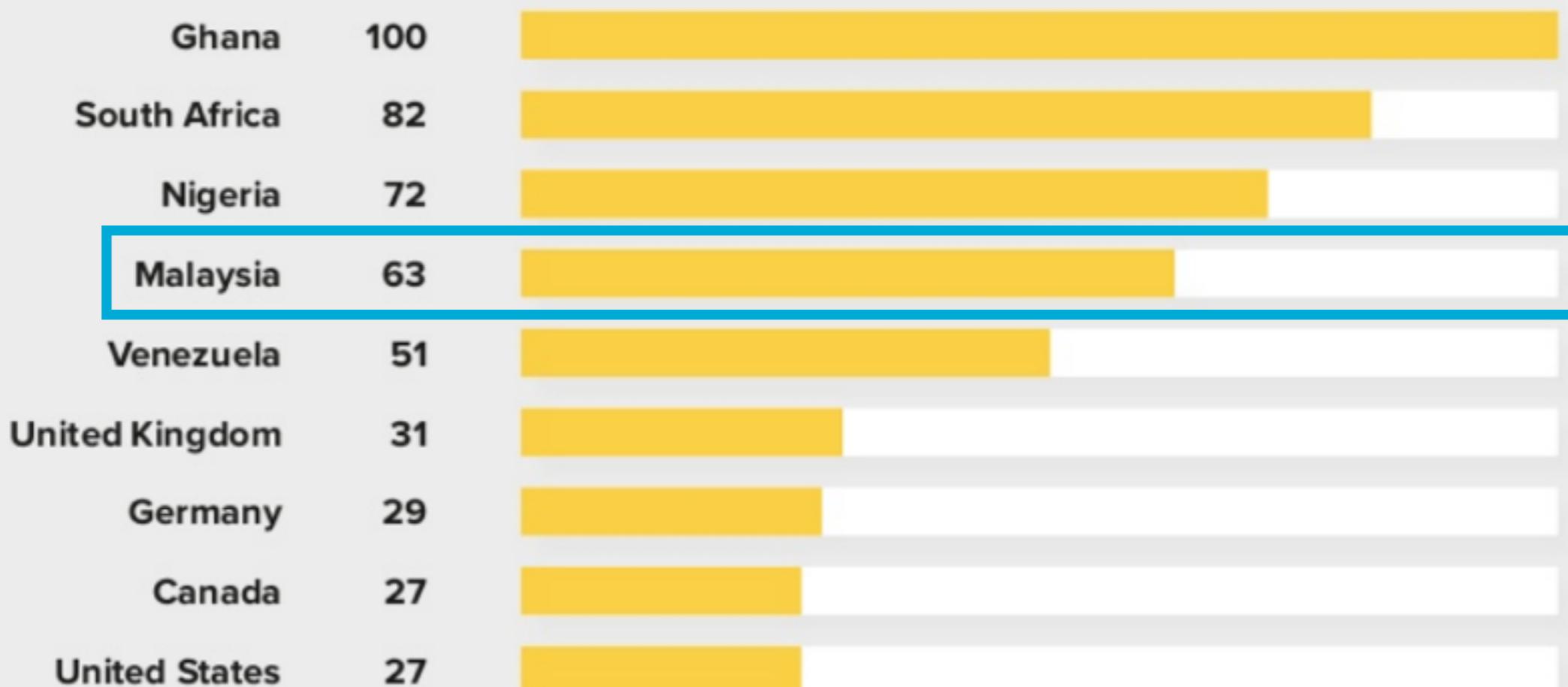


BLOCKCHAINS IN MALAYSIA

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

from the coindesk.com most recent quarterly report

MOST INCREASED INTEREST IN BITCOIN



THE BLOCKCHAIN EMBASSY OF ASIA - MADE IN MALAYSIA



BlockChain Embassy Asia

AMBASSADORS

USE CASES

CONTACT EMBASSY

TOOLBOX

NEWS

**our mission is to educate organizations throughout asia in both
the legal and technical implications of distributed ledgers**

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

REQUEST MEMBERSHIP

9 FOUNDING MEMBERS FORM THE STEERING COMMITTEE

Malaysian BlockChain Ambassadors



Trustee Ambassador

MahWengKwai
& Associates



Banking Ambassador

CapitalBay

Invoking Ambassador

REDmoney

Media Ambassador



IoT Ambassador

ataplus

FinTech Ambassador

iTrainAsia

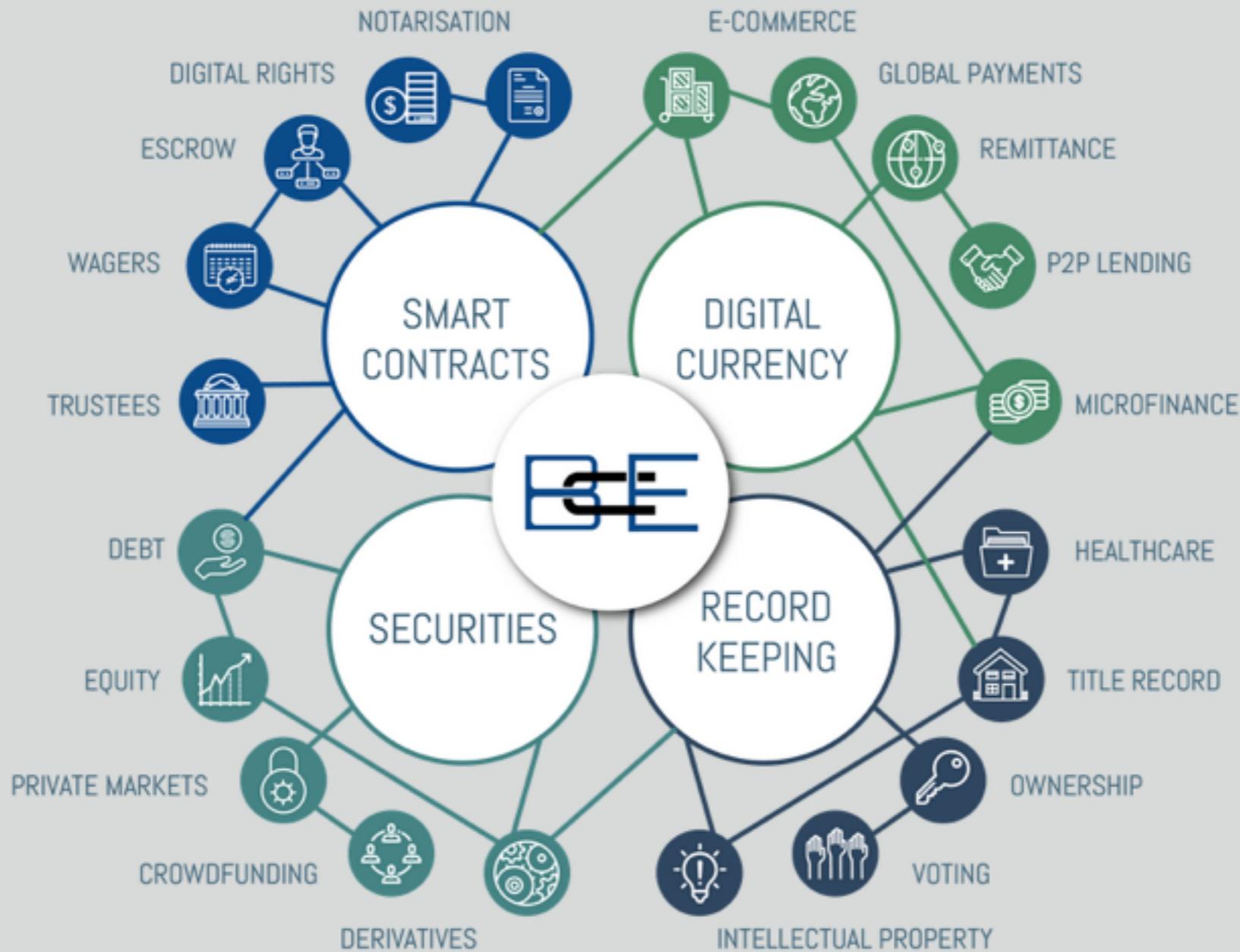
Education Ambassador

R^①

Technology Ambassador

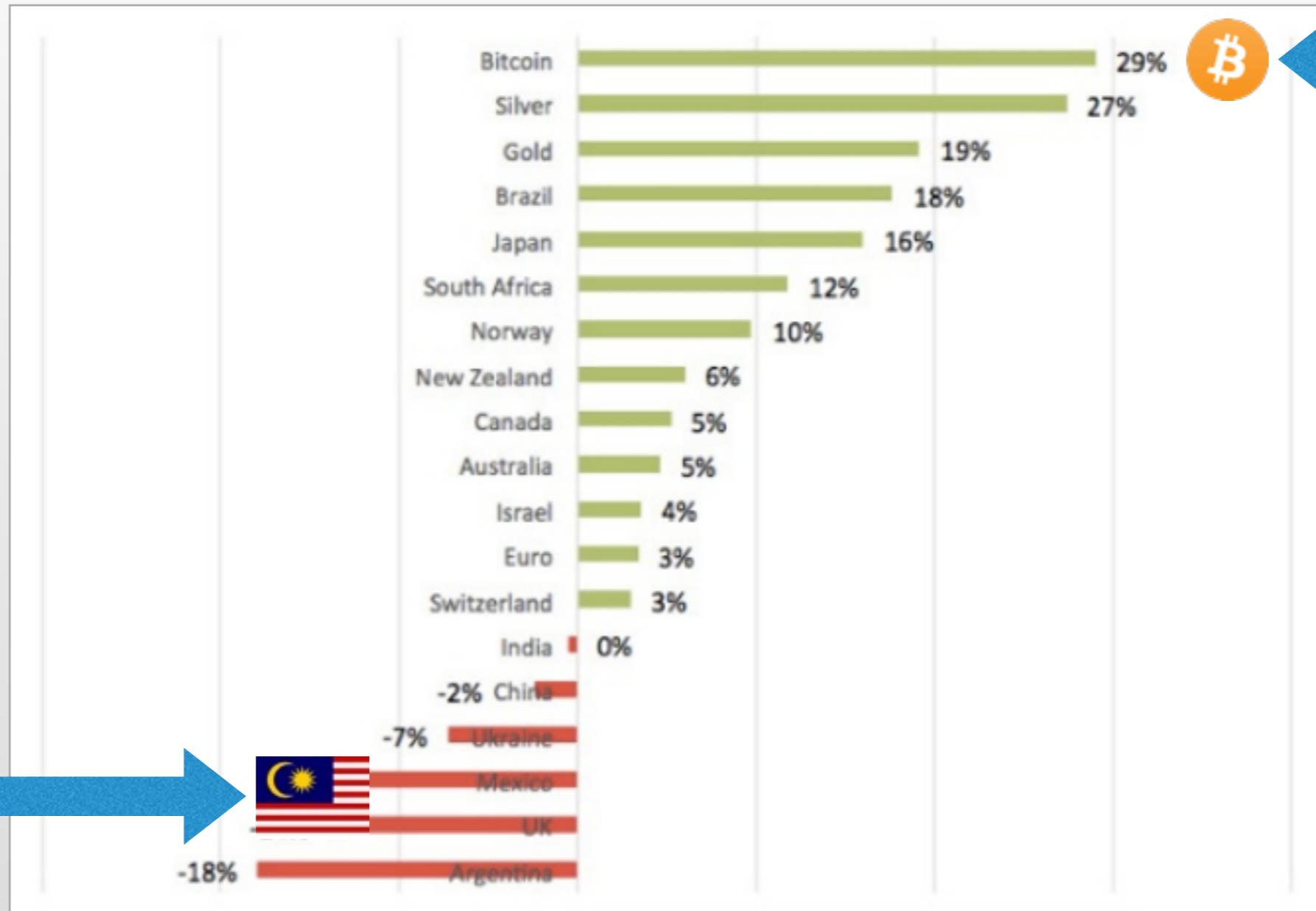
BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS

(now drawing attention from international banks seeking partnerships)



WHERE DO WE (MALAYSIA) STAND ...?

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



MONEY MATCH FIRST IN MALAYSIA TO USE RIPPLE

Malaysia: MoneyMatch raises \$150k seed from Australia's Kosciuszko for forex platform



Enter Your Email Go

[Subscribe to our newsletter](#)



ETHERSCAN FOUNDED BY A MALAYSIAN - FUNDED BY DCG

Etherscan
The Ethereum Block Explorer

HOME BLOCKCHAIN ACCOUNT TOKEN CHART MISC

LOGIN Search by Address / Txhash / Block / Token GO LANGUAGE

TOTAL SUPPLY OF 88,464,230.97 ETHER
\$10.56 @ 0.01085 BTC/ETH

LAST BLOCK 3104622 (14.40s Avg)
Hash Rate 7,768.31 GH/s

TRANSACTIONS 16160931
Network Difficulty 111.68 TH

14 day Ethereum Transaction History

Blocks View All

Block 3104622 Mined By Ethpool_2
> 15 secs ago
3 txns IN 12 secs
Block Reward 5.0015 Ether

Block 3104621 Mined By Ethermine
> 27 secs ago
5 txns IN 13 secs
Block Reward 5.00409 Ether

Block 3104620 Mined By 0x96338149e9f6c26...
> 40 secs ago
4 txns IN 4 secs
Block Reward 5.00187 Ether

Block 3104619 Mined By DwarfPool1
> 44 secs ago
0 txns IN 20 secs
Block Reward 5 Ether

Transactions View All

TX# 0X8C82912A90EB24422A0DD89... > 15 secs ago
From 0xea674fdde714fd9... To 0xdc17d353b01285...
Amount 1.0045803417014828 Ether

TX# 0X30803DA432AD0EC50B674EB... > 15 secs ago
From 0xf34a762291e2578... To 0x6fc82a5fe25a5cd...
Amount 0.09972424738776952 Ether

TX# 0X9F3AEC03CD8978780C11C59... > 15 secs ago
From 0x2e67179261a34b... To 0x44e9bfd5eb0651...
Amount 1.506161 Ether

TX# 0X69429B51113744361D7EF7D... > 27 secs ago
From 0xea674fdde714fd9... To 0xb2db64a2574811...
Amount 1.0055965023717969 Ether

OUR FIRST CLIENT IS ONE OF SIX LICENSED ECF OPERATORS

ataplus

Dogecoin (Testnet) Blockchain / ATA-Plus V0.0.1 / Datastores / Investments

Credits: 254.00000000 FLUSH LOGOUT

COMMITS

DATASTORES

ISSUERS

COMPANIES

INVESTORS

INVESTMENTS

SECTORS

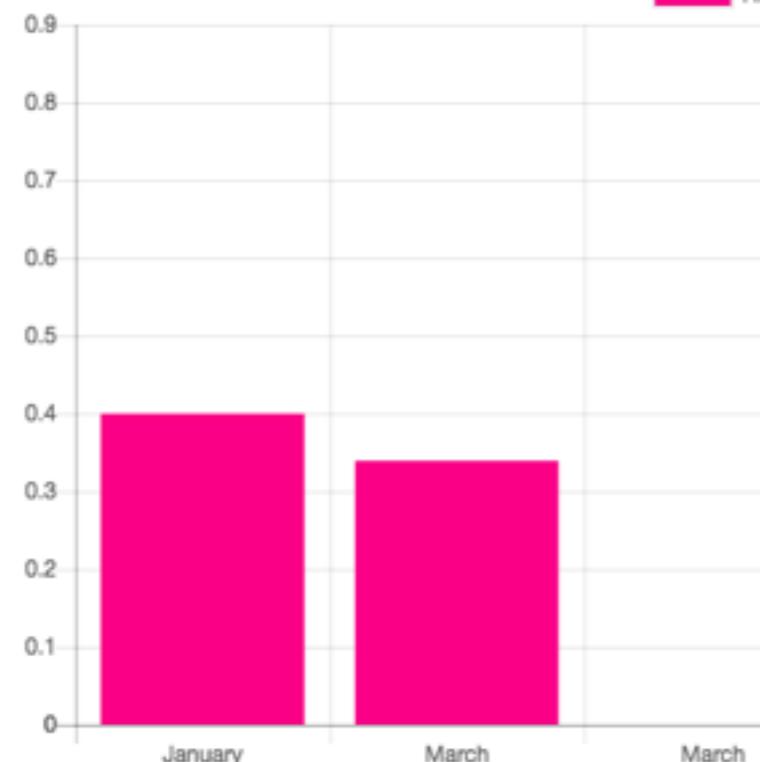
ADD NEW

SCHEMA

DOCUMENTATION

6 Months Sitewide Total Investments

RM Invested (Millions)



“For ECF to flourish, there must be a deep depository of trust and transparency that is frictionless & inclusive. Neuoware’s tech enables us to provide all that and more!”

sort by

Most Recent

search investments

f2583c4bbbc1d7f70fe776ef8de24e3e9131884de2be5ed3365fe72e53fa2177

EDIT

DELETE

SCHEMA

Key

Value

Index: Investment ID [auto]

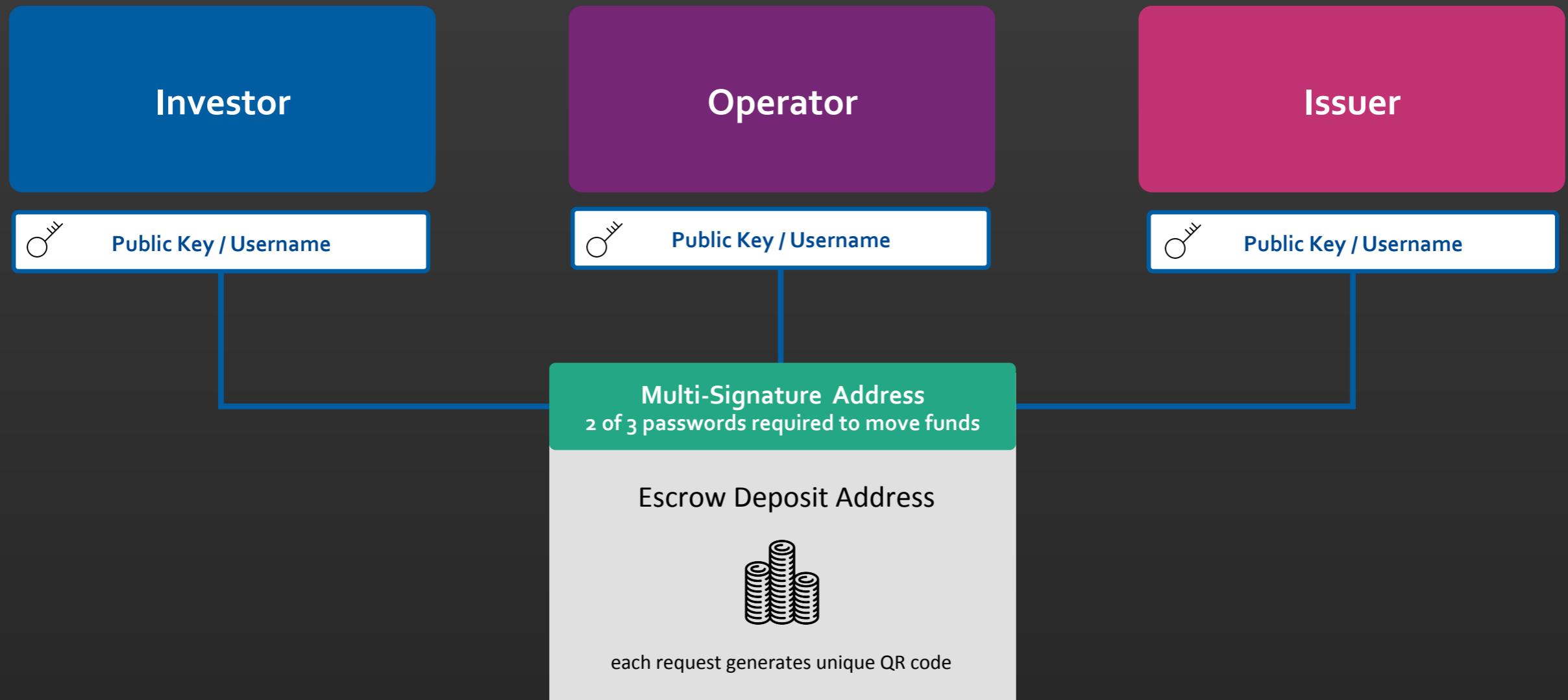
bf28617205e695439c0dd2285a76d7c1

powered by neuoware

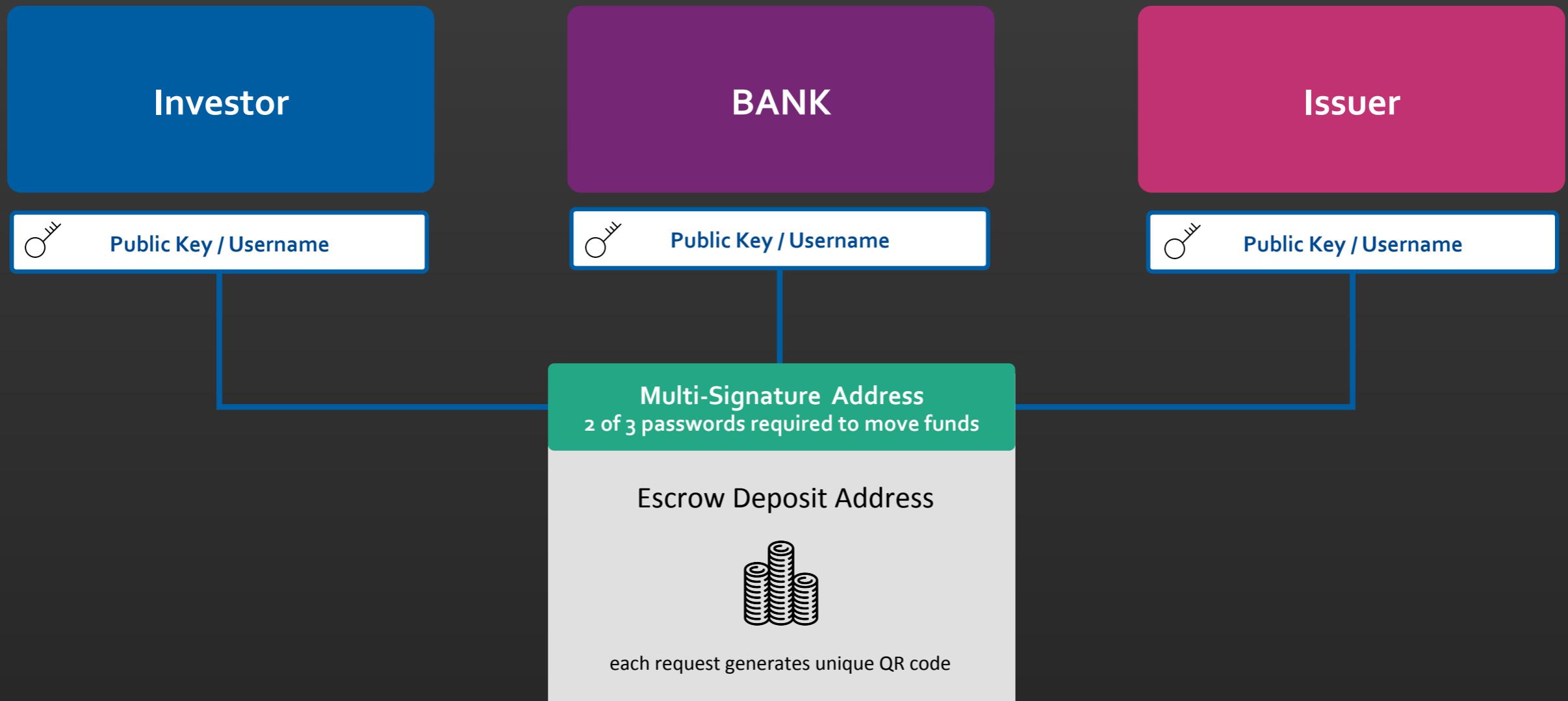


Kyri - Co-Founder & Director
of Licensed ECF Platform

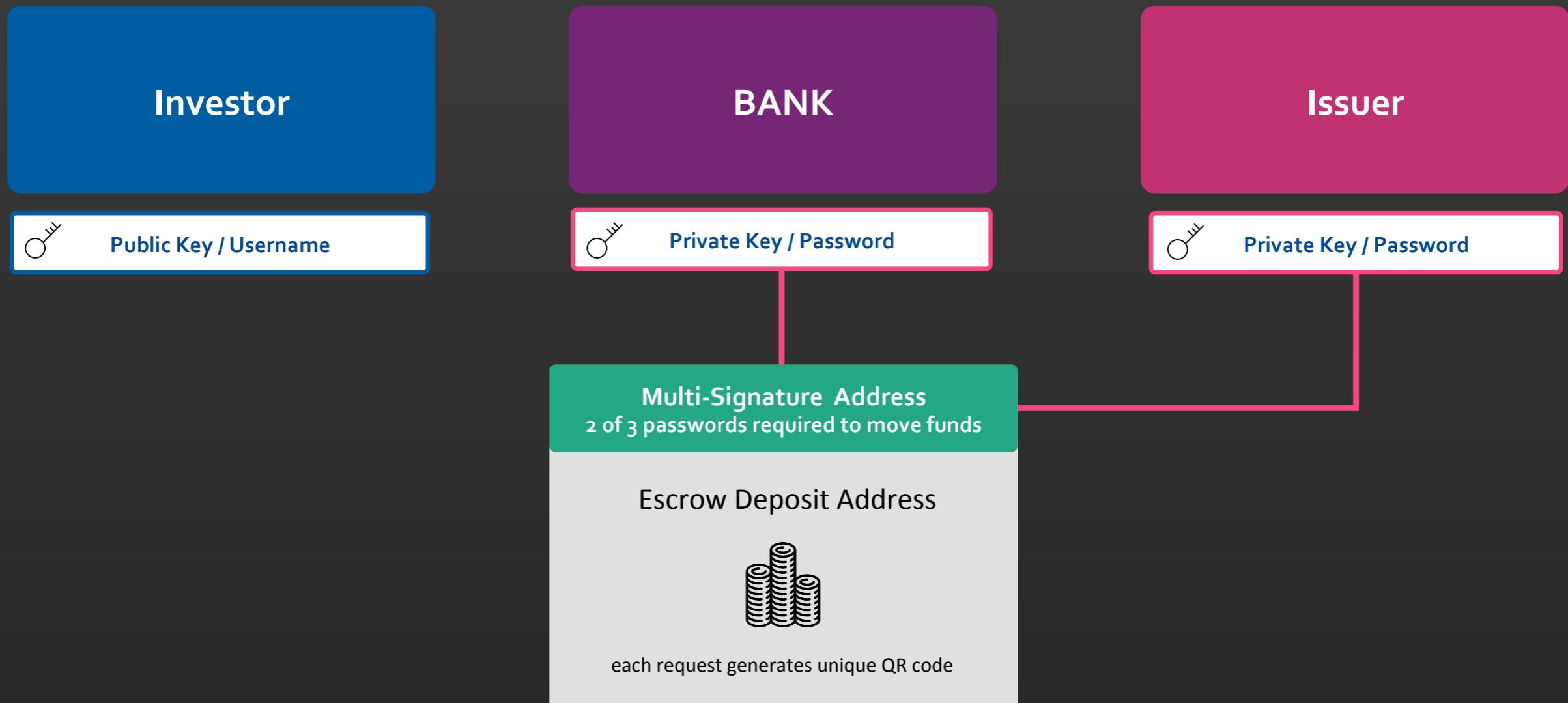
CURRENT MULTI-SIGNATURE BITCOIN SOLUTIONS IN MALAYSIA



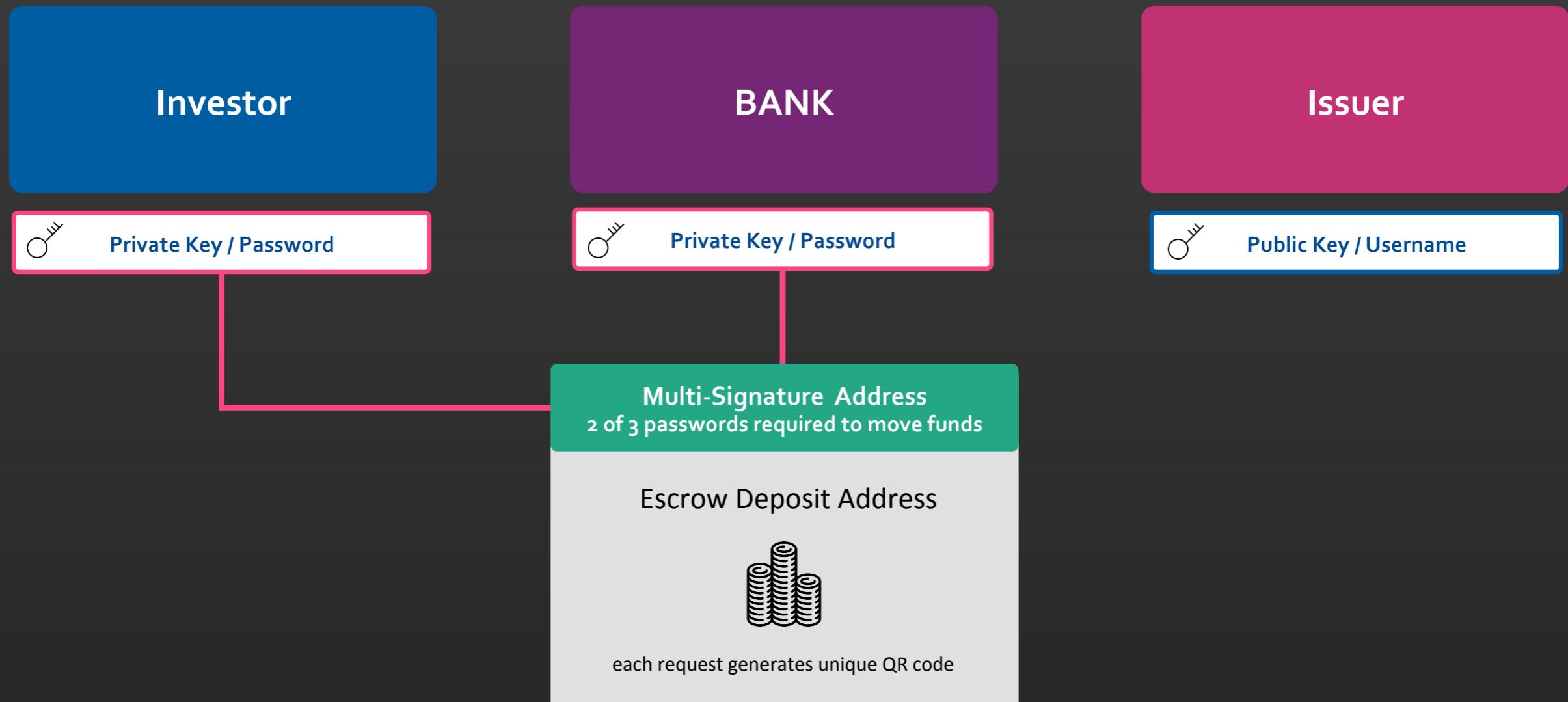
REMOVING THE ECF OPERATOR - SANCTIONED BY REGULATORS



COMPLETING AN EQUITY CROWDFUNDED INVESTMENT PROCESS



REJECTING INVESTMENT OR RETURNING FUNDS TO INVESTORS



CRYPTO TRUSTEES ARE THE FOUNDATION FOR EVERYTHING

- Unlike financial trustee services, crypto-trustees do not move or even store funds anywhere - as they are merely multi-signature key signing processes
- Multi-signature solutions are required for a whole host of services:
 - Escrow payments or refundable crypto payments
 - Identity management and KYC processes
 - Distributed governance & user roles
 - Recoverable shared data services
- In all cases, those issuing multi-signature processes can:
 - Automatically audit everything any anything
 - Guaranteed levels of shared responsibility & liability

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**

THANK YOU

NOW IS THE TIME TO QUESTION THINGS

LEARN MORE ABOUT



neuroware

<http://neuroware.io>