

BLOCKCHAINS AND ENERGY

PRESENTED BY



neuroware

THE BENEFITS OF **BLOCKCHAIN** BASED ENERGY NETWORKS

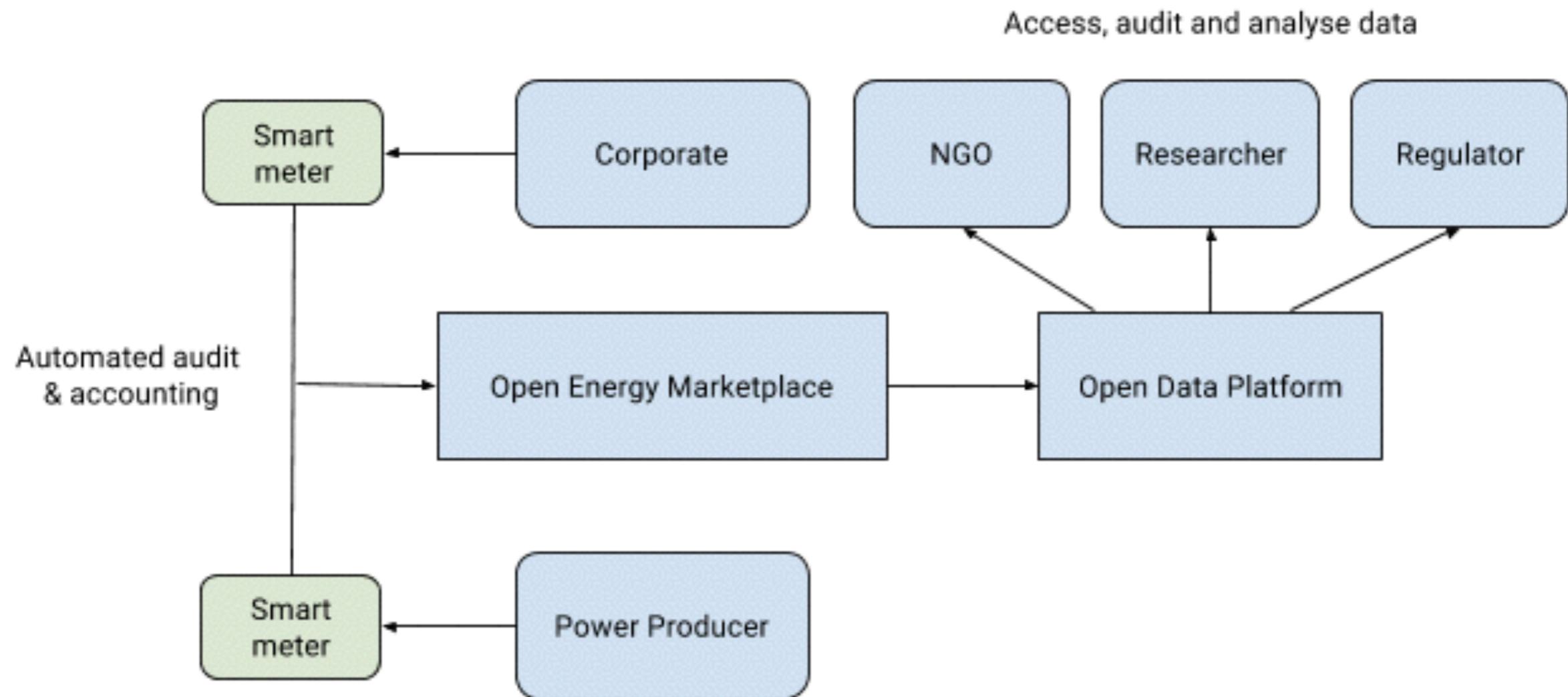
Improving the quality of life for everyone whilst saving costs:

- **SMART METERS** - moving beyond insecure connected cloud devices
- **SMART GRIDS** - store, trade and track energy distribution and transactions
- **SMART CITIES** - introduce new automated services and business models

Improving your business whilst introducing new revenue streams:

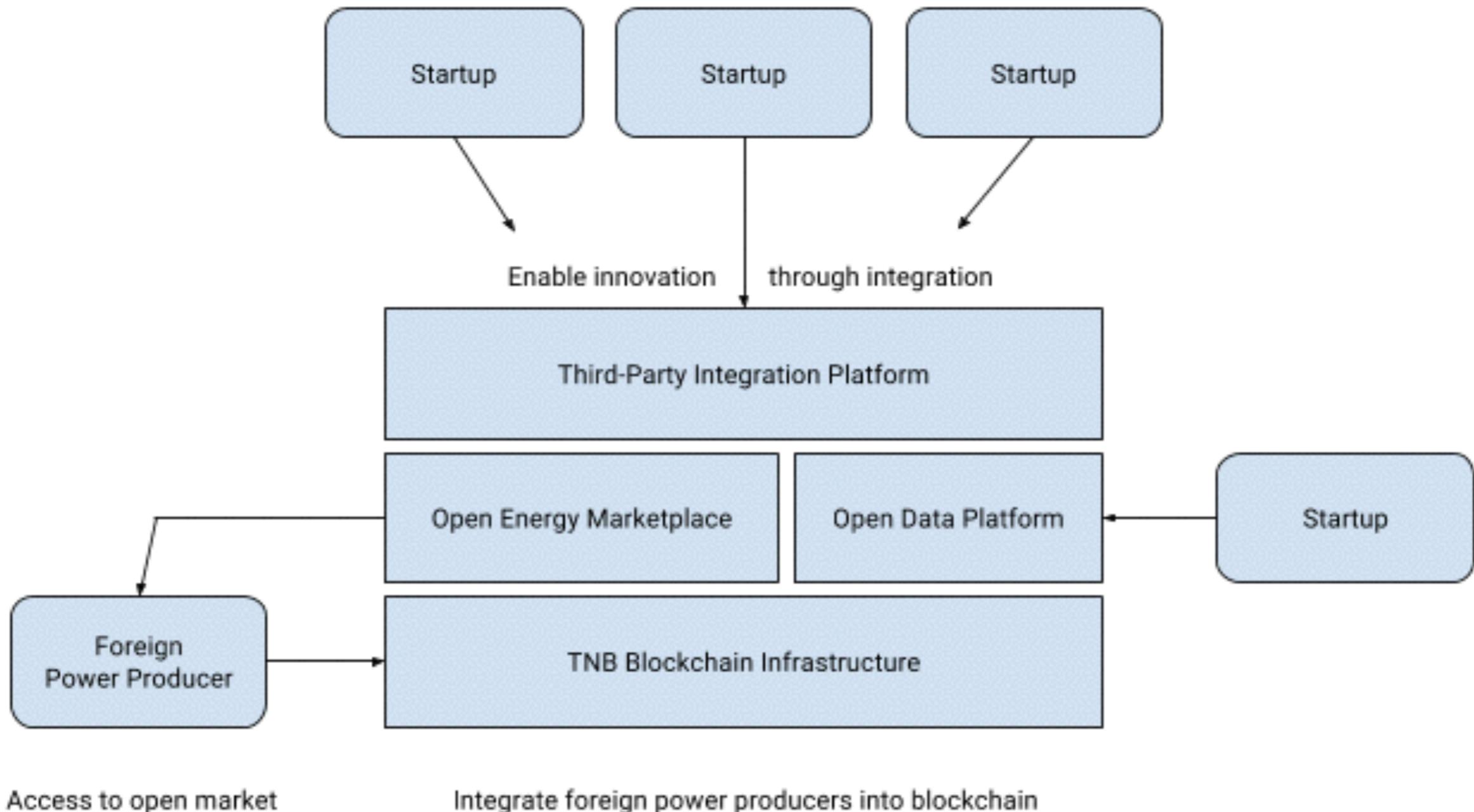
- **SMARTER RELATIONSHIPS** - securely share data between trusted parties
- **SMARTER COMPLIANCE** - automate regulation with coded contracts
- **SMARTER DECISIONS** - network analytics with tamper proof audit trails

INTRODUCING THE SMART ENERGY MARKET



Regardless of whether the smart meters are integrated with the platform, the blockchains provide a neutral environment where data can be openly verified

THE FOUNDATION FOR A **GLOBAL ENERGY MARKETPLACE**



WHY BLOCKCHAINS ? - THE PROBLEMS BEING SOLVED

- **TRUST** - difficult to trust recorded data when data can easily be changed
- **COSTS** - cloud based infrastructure & technical support can be expensive
- **COLLABORATION** - blockchains provide a neutral standardized platform
- **INNOVATION** - true innovation is difficult to achieve with legacy systems



“While Fintech Disrupts Banks,
the Blockchains Disrupt Fintech”

BREAKING THINGS DOWN INTO THREE **SMALLER** STEPS

- **STEP 1** - Deploy a Blockchain Prototype for a Global Energy Marketplace
 - - Distributed Content Management & Contact Resource Systems
 - - Transferable Digital Energy Units Governed by Smart Contracts

- **STEP 2** - Develop an Analytics Platform as Marketplace Proof of Concept
 - - Ensure that the marketplace prototype can support third-parties
 - - Guarantee accountability whilst improving social responsibility

- **STEP 3** - Integrate with Smart Meters & other Demos for Internet-of-Things
 - - Develop Digital Identities, e-Signing and Authorization Processes
 - - Deploy Tools & Resources for new 3rd Party Integration Services

**FROM STONES TO
BLOCKCHAINS
WHY, HOW AND WHEN ?**

IT ALL STARTS HERE WITH THE RAI STONES OF YAP



SHOPPING WAS NOT EASY



SO THEY CREATED THE WORLD'S FIRST PUBLIC LEDGER



UPDATES REQUIRED GROUP CONSENSUS - STILL USED TODAY

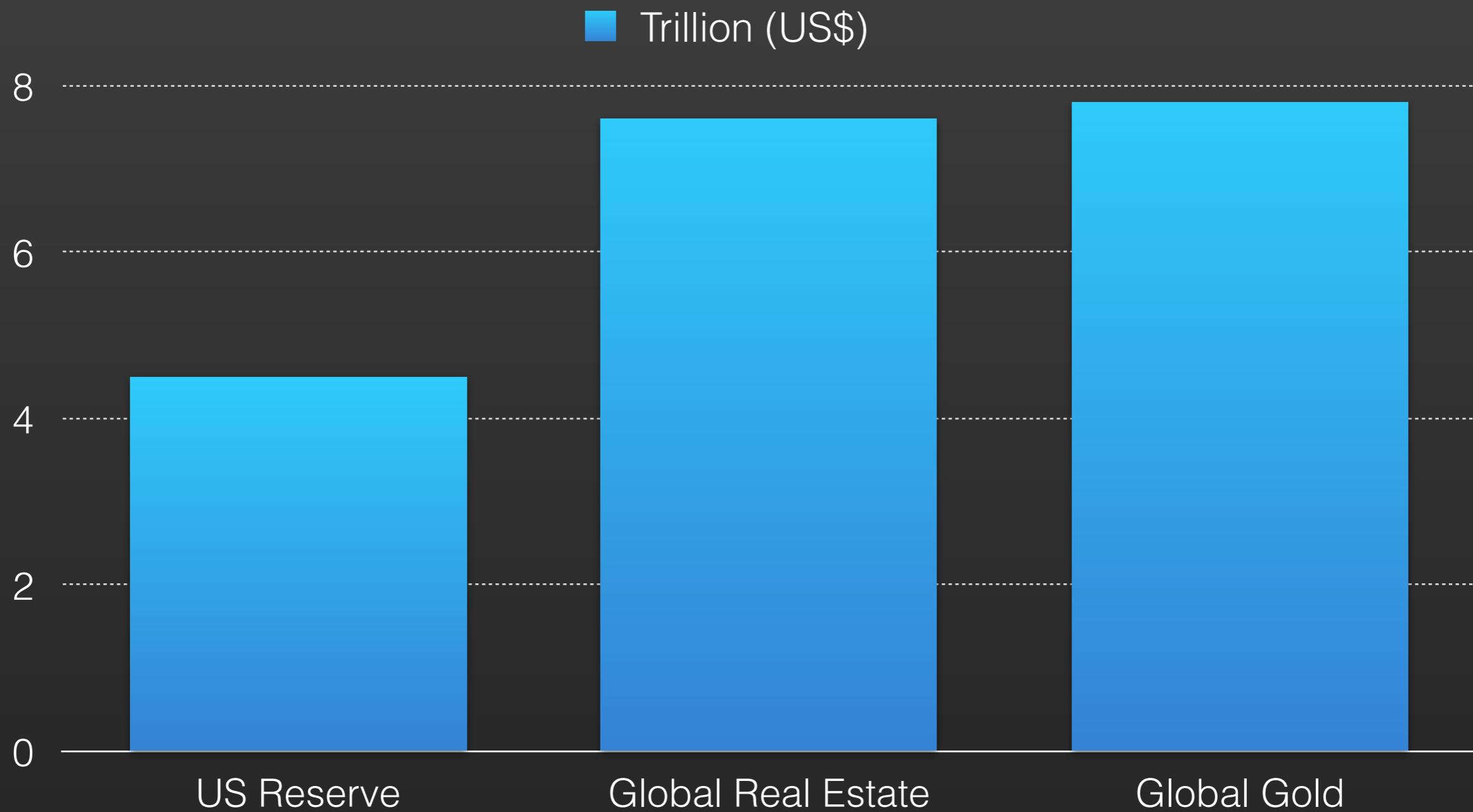


- Size wasn't everything
- The history of each stone determined it's individual value
- Conducting transactions quite literally involved a song & dance
- This required the majority of people from the village to be present

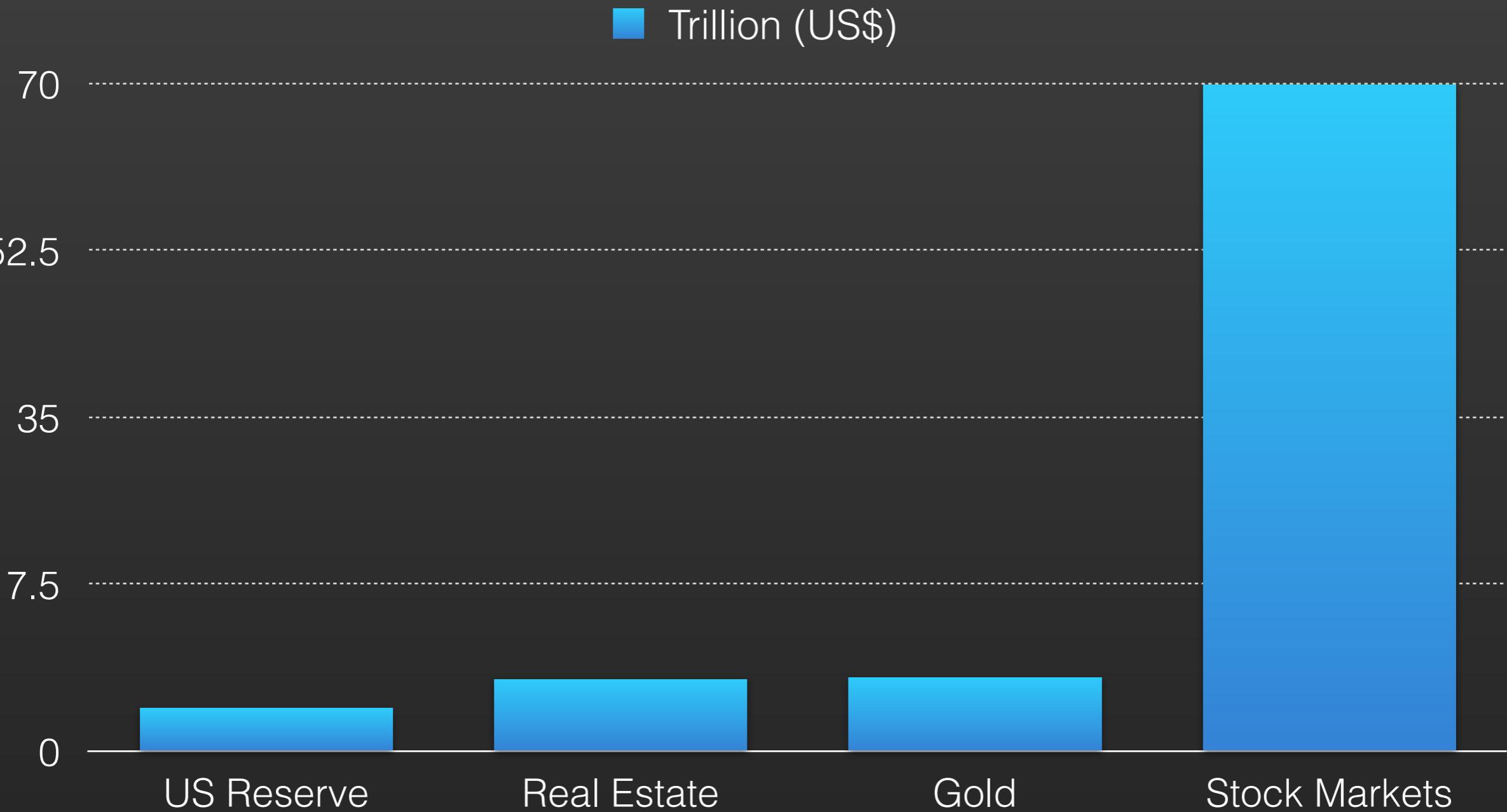
IT COULD NOT SCALE SO THEY EVENTUALLY SWITCHED TO US\$



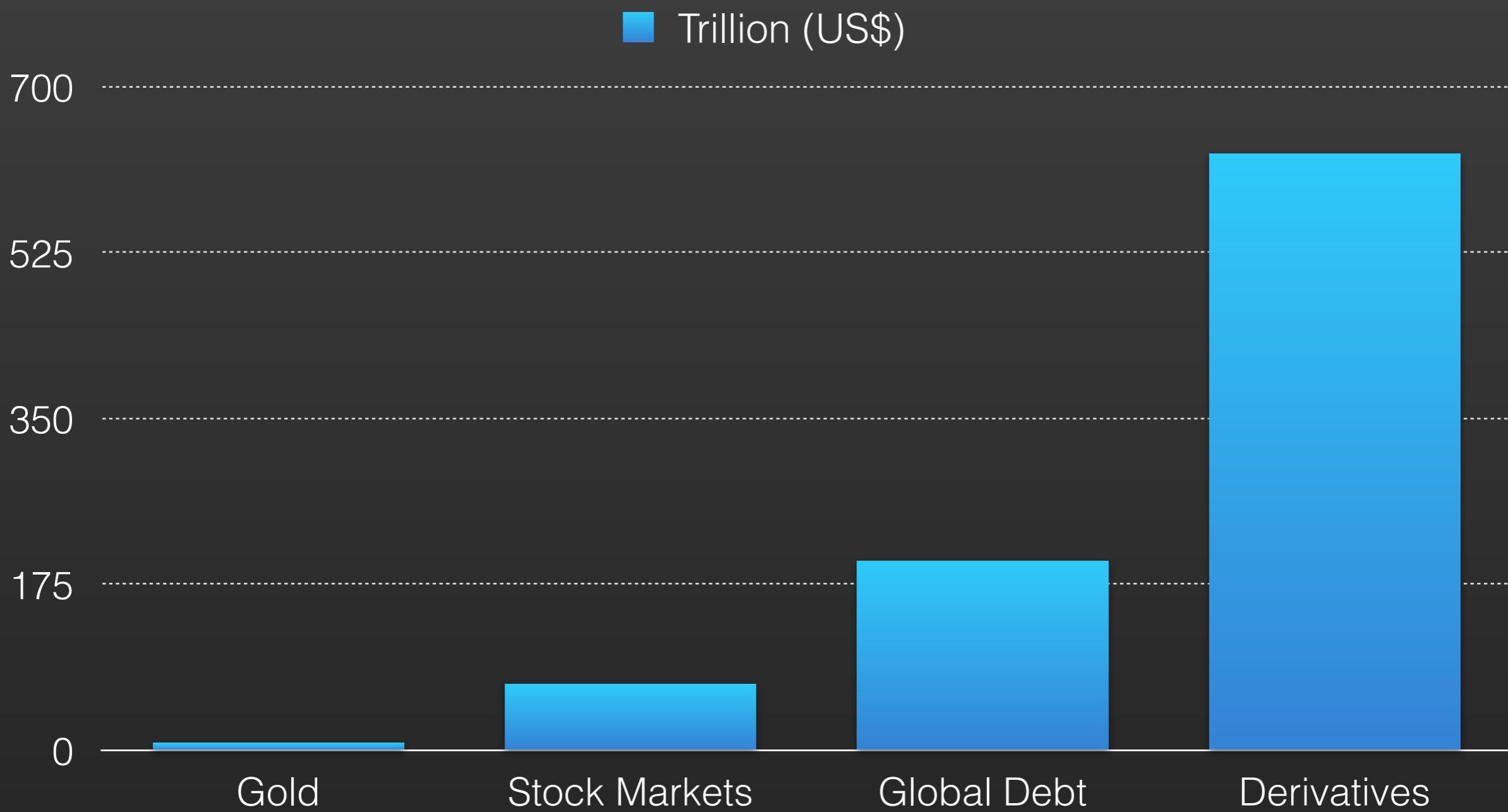
WHEN WE THINK OF THE US DOLLAR WE THINK OF **REAL** ASSETS



WALL STREET BROUGHT DIGITAL ASSETS & CENTRAL LEDGERS



WITH CENTRAL SYSTEMS CAME THE RE-CREATION OF DEBT



WHICH LED TO THE FINANCIAL BAILOUT OF 2008 - AND BITCOIN

World War 2
US\$3 Trillion



2008 Bailout
US\$8.5 Trillion

All other US
Wars Ever

This really annoyed
Satoshi Nakamoto

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)

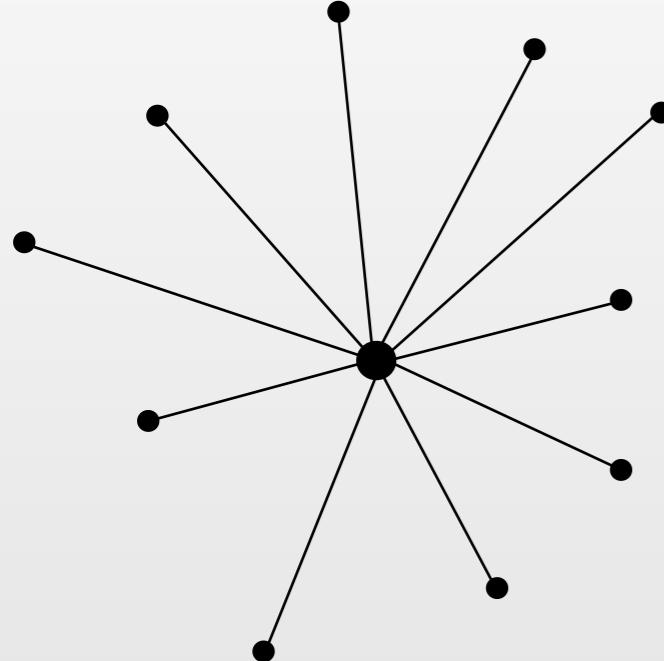
VS

PRIVATE CHAINS

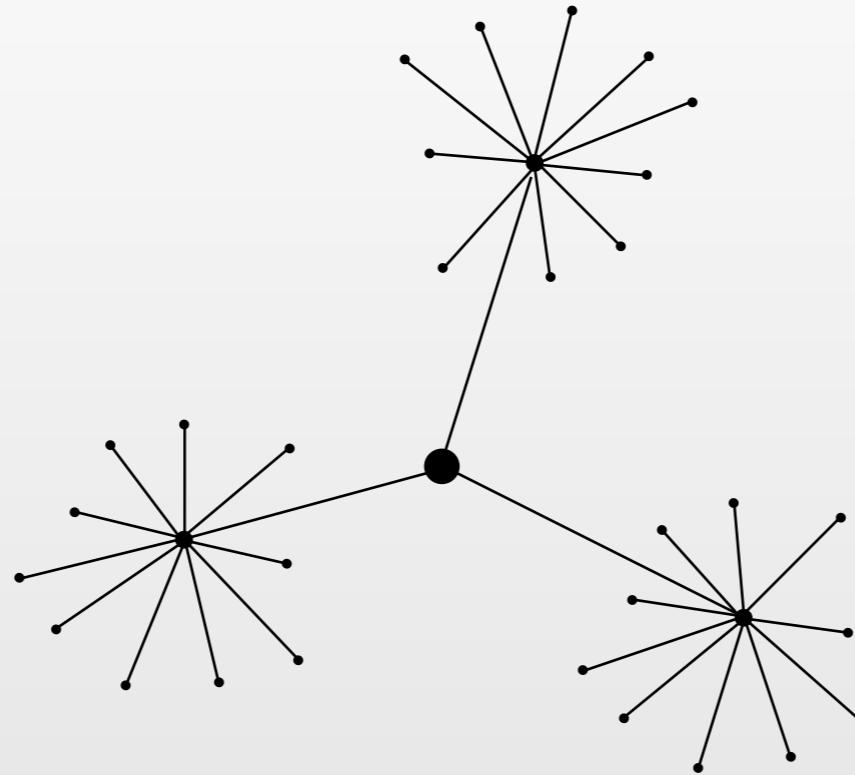
(very similar to traditional databases)



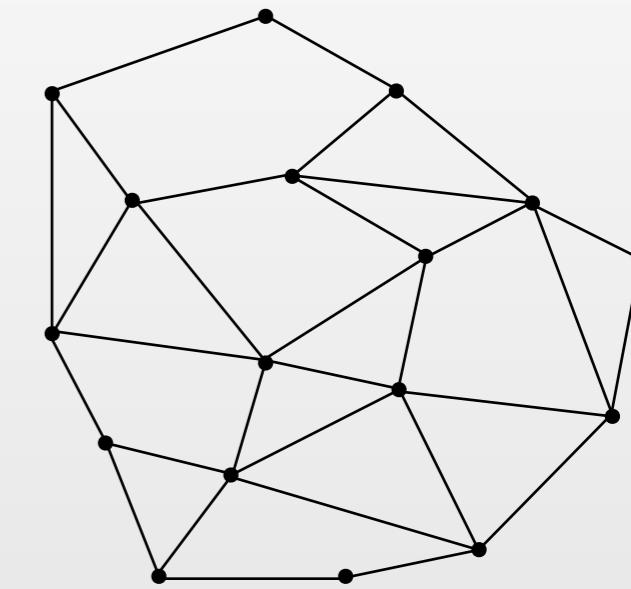
BLOCKCHAINS ARE MERELY AN EVOLUTION OF NETWORK TYPES



CENTRALIZATION
DATABASES



DECENTRALIZATION
THE CLOUD



DISTRIBUTION
BLOCKCHAINS



INSTITUTIONS 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!



FIRST BLOCKCHAIN ENERGY SUMMIT - 15 ENERGY STARTUPS



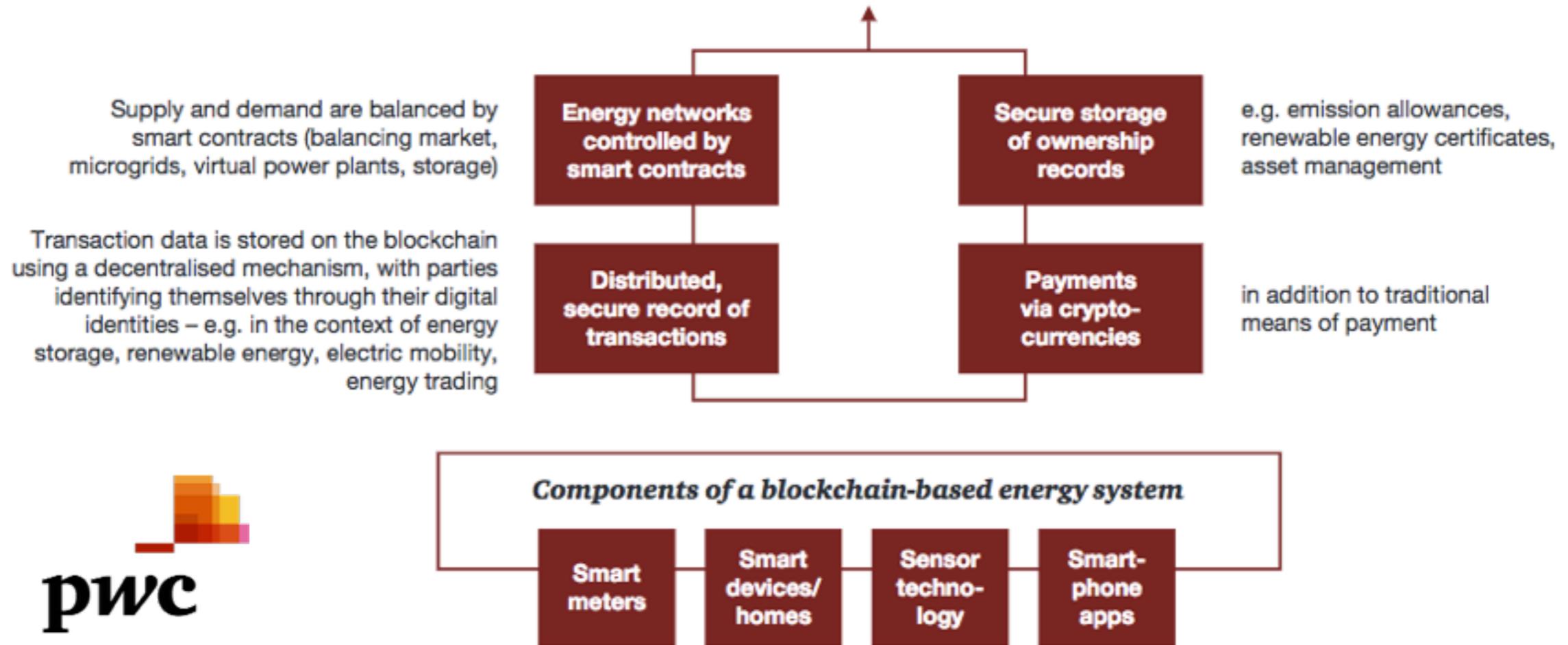
**GLOBAL SUMMIT
ON BLOCKCHAIN TECHNOLOGY
IN THE ENERGY SECTOR**

14 – 15 February 2017

Vienna, Austria

PIONEERING BLOCKCHAIN BASED ENERGY SYSTEMS

<https://www.pwc.com/gx/en/industries/assets/pwc-blockchain-opportunity-for-energy-producers-and-consumers.pdf>



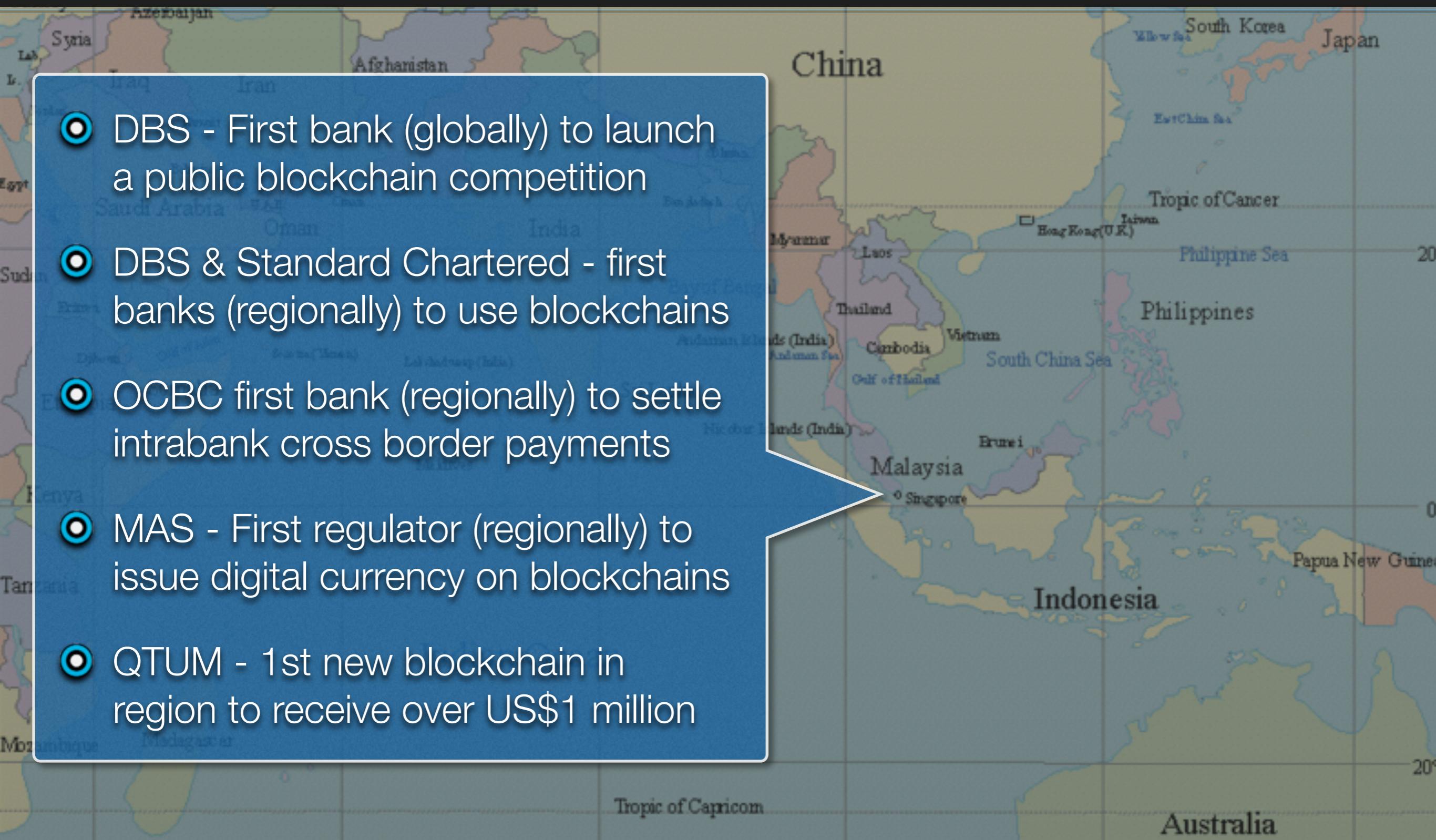
- **LO3 Energy** - Building blockchain based tool for energy micro-grids
- **Electron** - Blockchain based systems designed for the energy sector
- **Scanergy** - An open platform for prosumers to freely trade energy

BRINGING IT HOME

BLOCKCHAINS IN 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

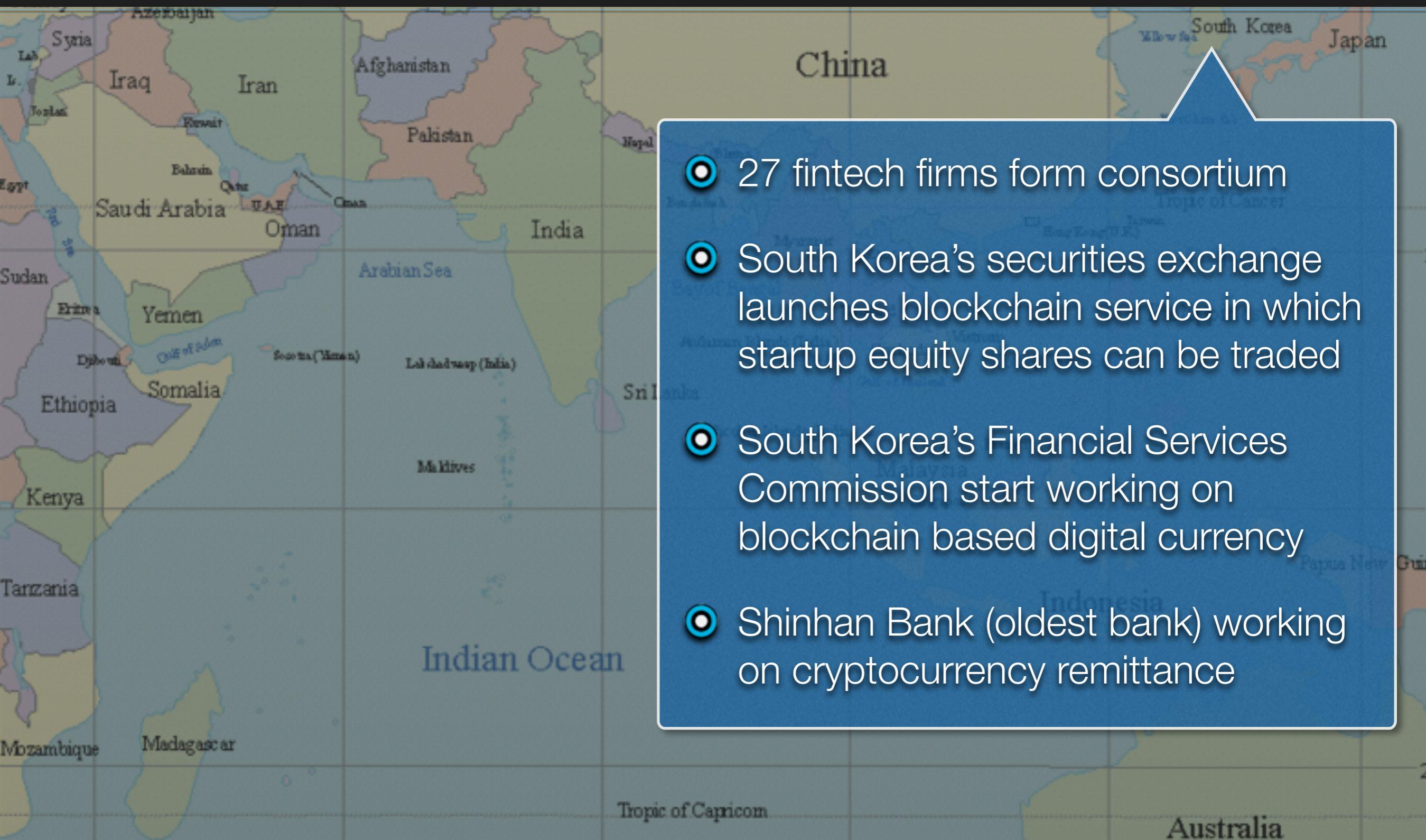


CHINA

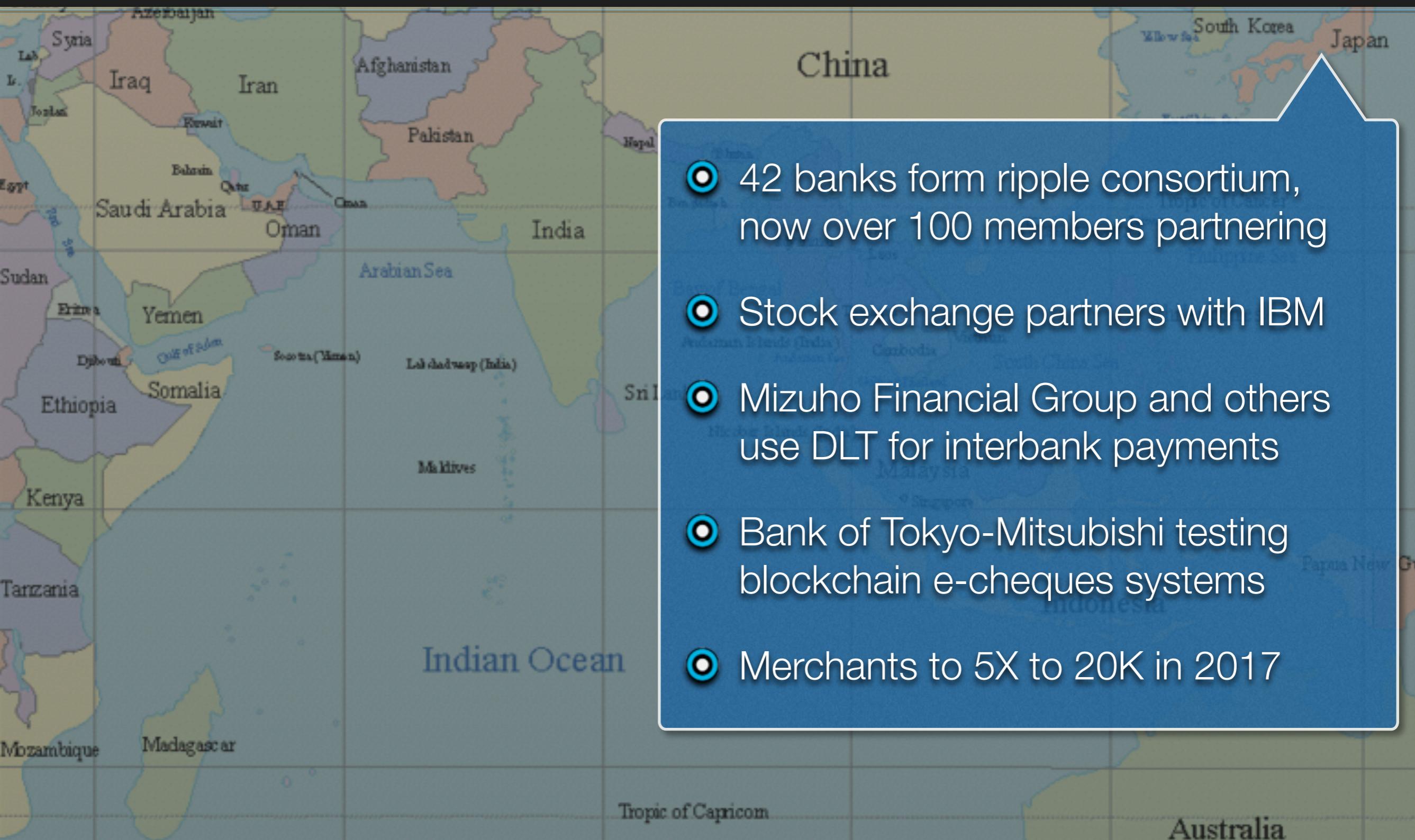


- Over 60% of Bitcoins mined in China
- 10 banks hiring 30 blockchain developers at a 50% salary premium
- Postal Savings Bank of China sent 100 asset TXs on its own Blockchain
- Central Bank completes digital currency trials using blockchains
- US\$1.44 billion fund for blockchains

KOREA



JAPAN



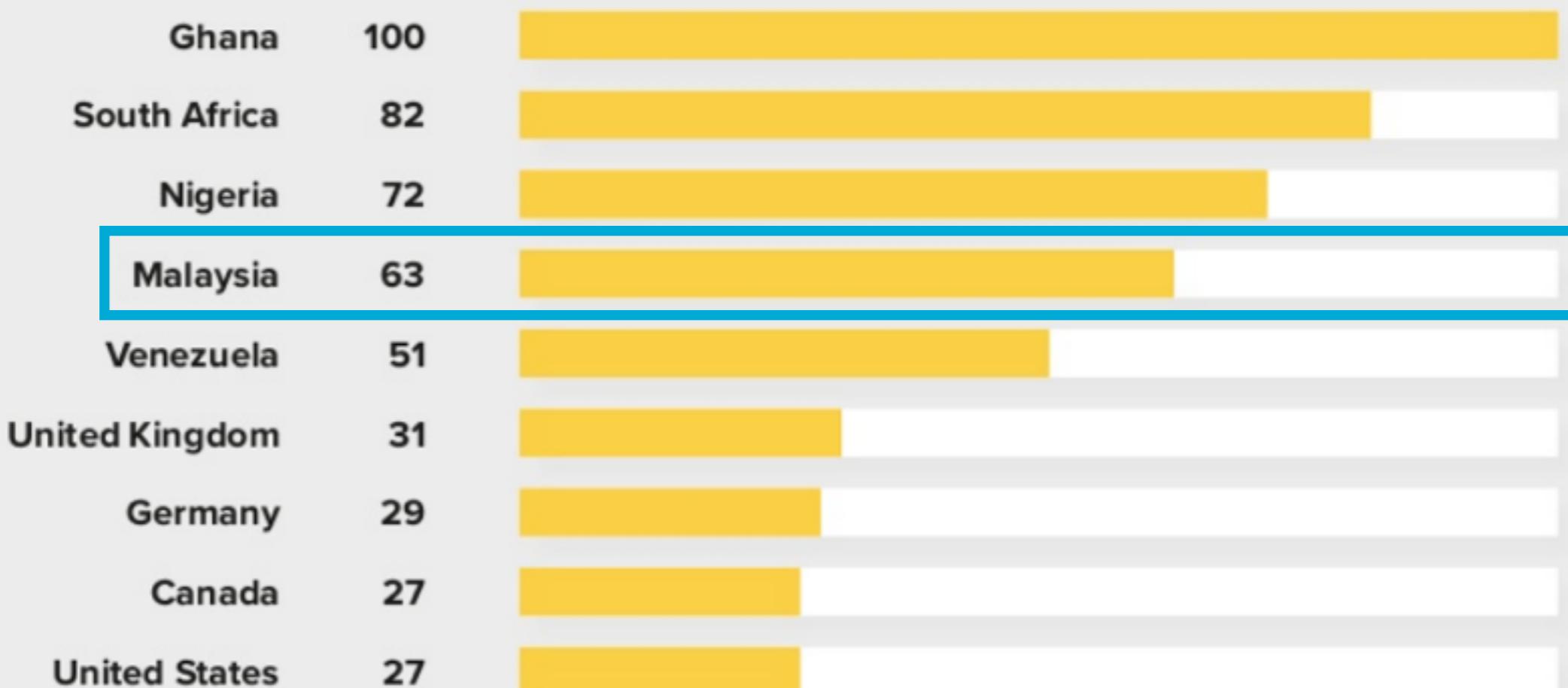
- 42 banks form ripple consortium, now over 100 members partnering
- Stock exchange partners with IBM
- Mizuho Financial Group and others use DLT for interbank payments
- Bank of Tokyo-Mitsubishi testing blockchain e-cheques systems
- Merchants to 5X to 20K in 2017

**WHAT ABOUT
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
chain
of
things

IoT Ambassador

ataplus

FinTech Ambassador

iTrainAsia

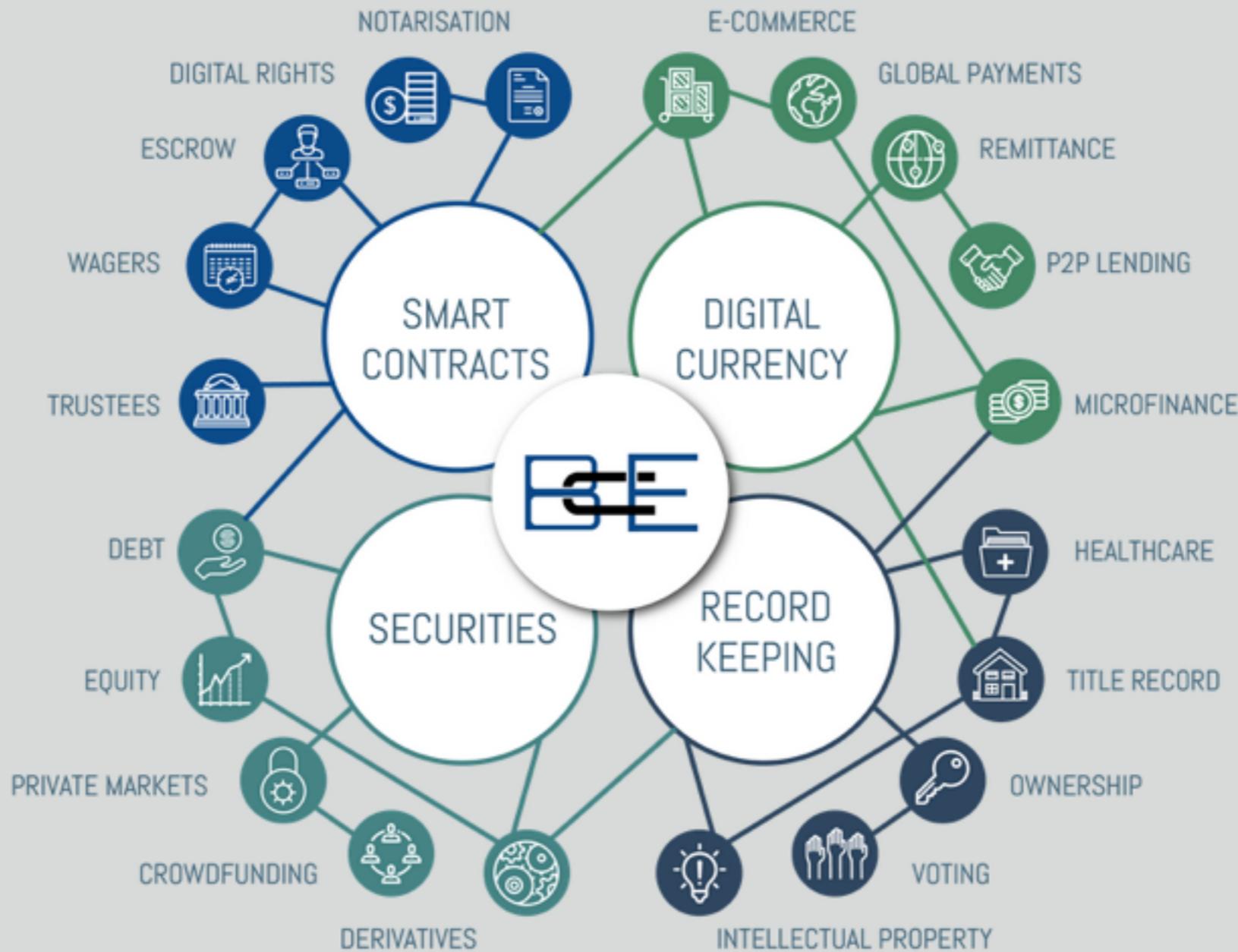
Education Ambassador

R^①

Technology Ambassador

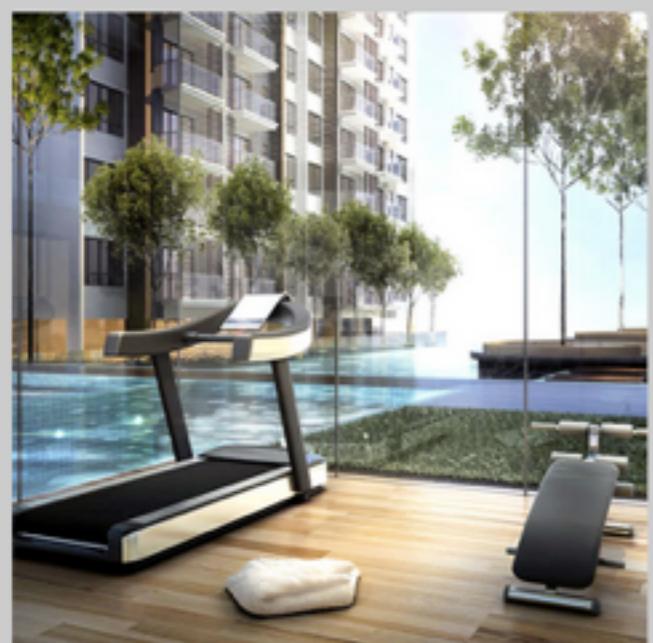
BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS

(now drawing attention from international banks seeking partnerships)



LOTS OF INTERESTED PARTNERS SEEKING TO JOIN THE EMBASSY

(so they can securely collaborate in new ways with other industry leaders)



Aspen Vision City Seeks Blockchain Partnerships for Smart Meters & Energy Consumption

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

COMMITTS

DATASTORES

ISSUERS

COMPANIES

INVESTORS

INVESTMENTS

SECTORS

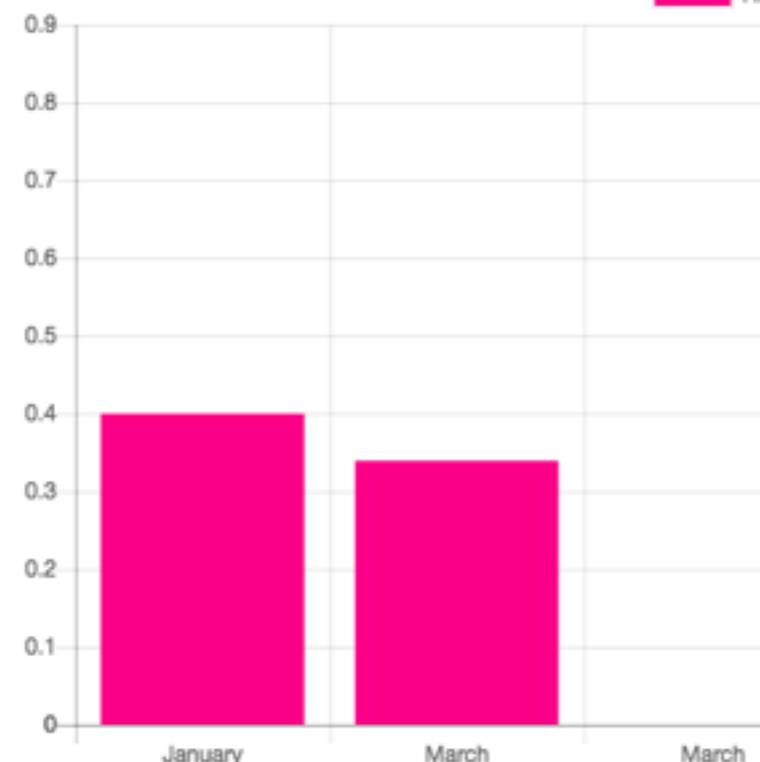
ADD NEW

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]

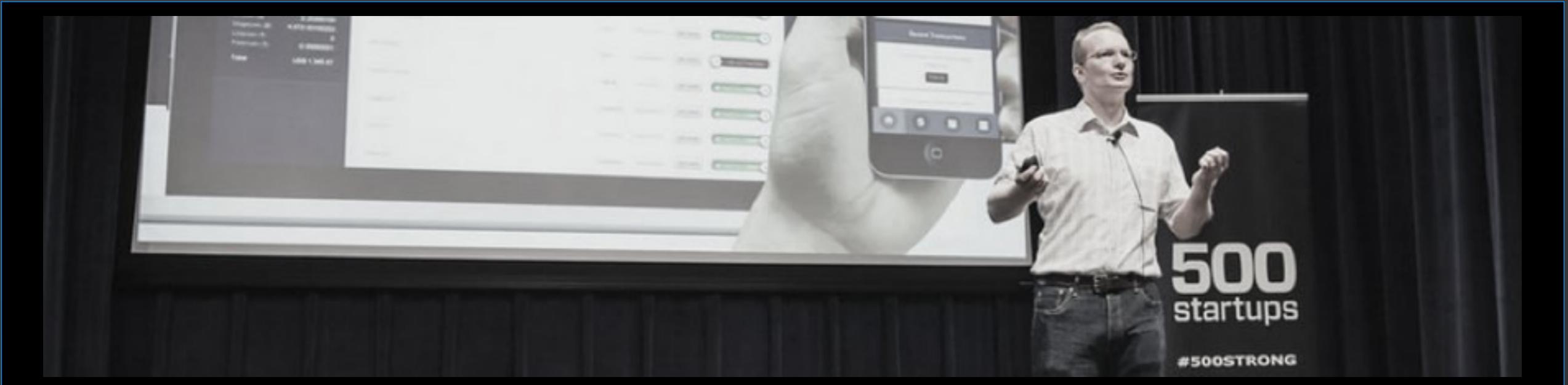
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powered by neuoware



Kyri - Co-Founder & Director
of Licensed ECF Platform

WHY CHOOSE NEUROWARE TO EXPLORE BLOCKCHAINS ?



- **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

WHO FOUNDED THE FIRST BLOCKCHAIN MSC COMPANY ?



Mark Smalley - CEO

Living in Malaysia for the past 20 Years

Building Web Applications for 15 Years

Spent 10 Consulting with Government

Developing on Blockchains for 5 Years

Ruben Tan - CTO

Building Web Applications for 10 Years

Community Builder & Event Presenter

Early Developer at MyTeksi and OnApp

Studying Distributed Systems for 5 Years

WE'VE SPENT TWO YEARS DEVELOPING OUR BASE PROTOCOLS

CORTEX

EVERSTORE

DISTRIBUTED
STRUCTURED DATA



DECENTRALIZED ID &
AUTHENTICATION



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

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>