

# BLOCKCHAINS AND ENERGY

PRESENTED BY



neuroware

# THE BENEFITS OF **BLOCKCHAIN** BASED ENERGY NETWORKS

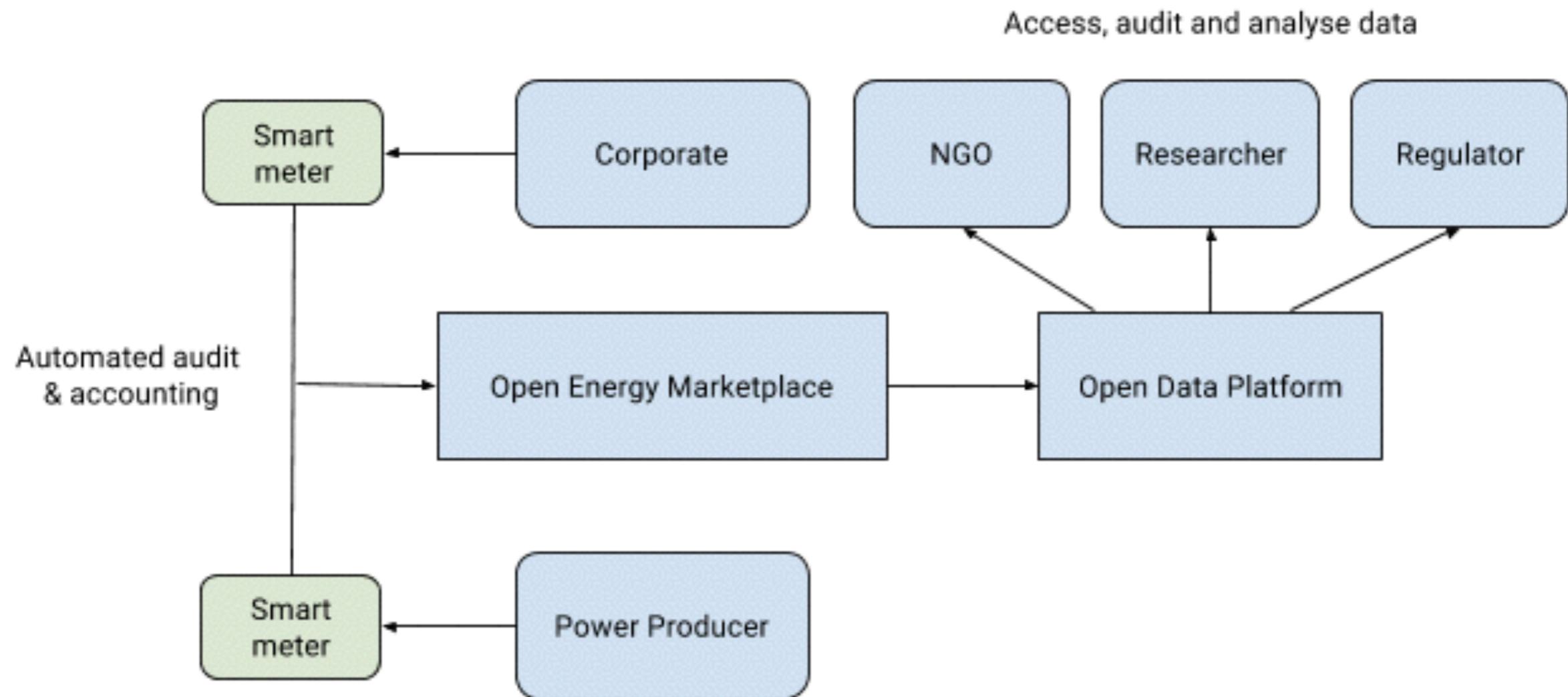
Improving the quality of life for everyone whilst saving costs:

- **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:

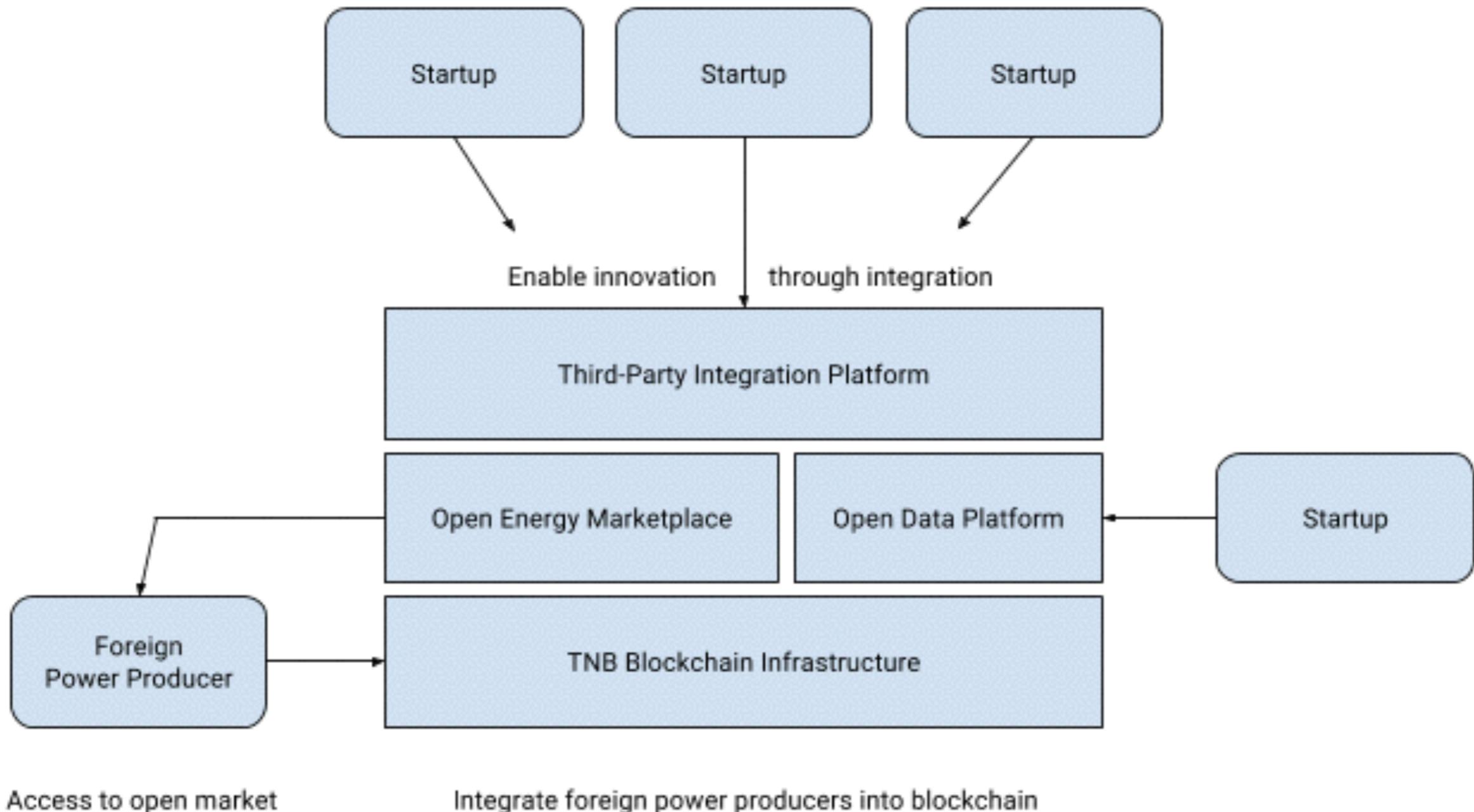
- **SMARTER RELATIONSHIPS** - securely share data between trusted parties
- **SMARTER COMPLIANCE** - automate regulation with coded contracts
- **SMARTER DECISIONS** - network analytics with tamper proof audit trails

# 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

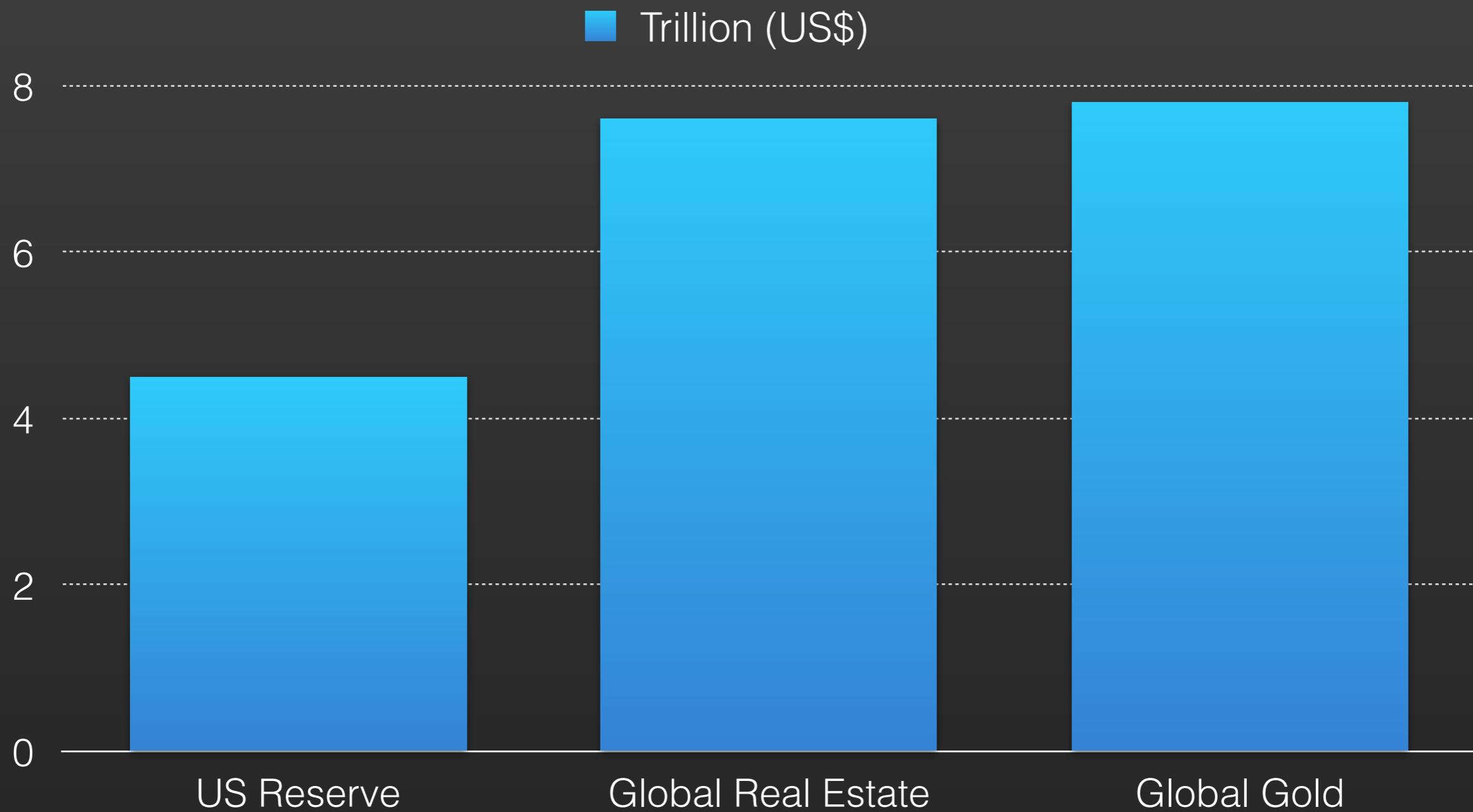


- Size wasn't everything
- The history of each stone determined it's individual value
- Conducting transactions quite literally involved a song & dance
- This required the majority of people from the village to be present

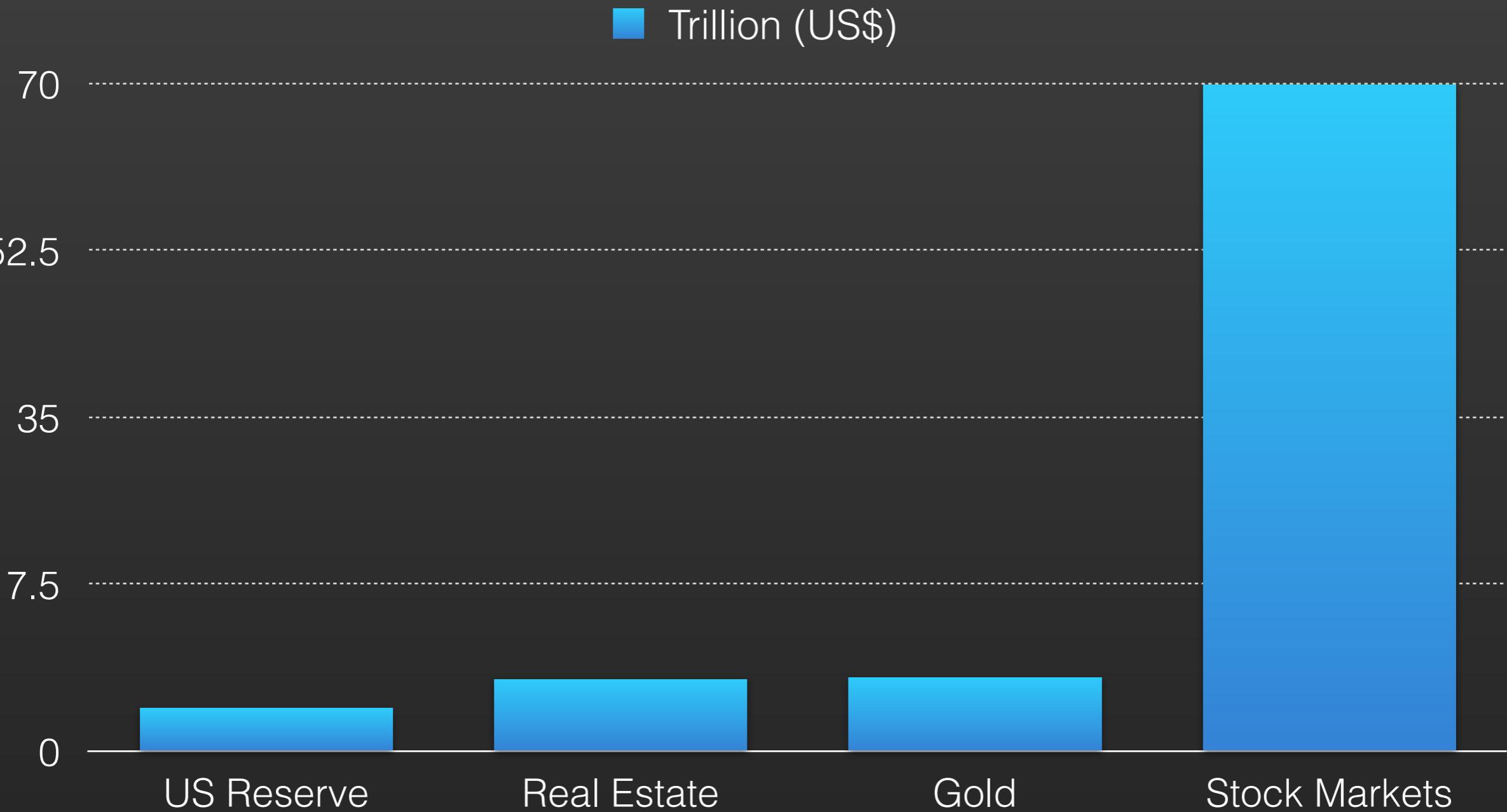
**IT COULD NOT SCALE SO THEY EVENTUALLY SWITCHED TO US\$**



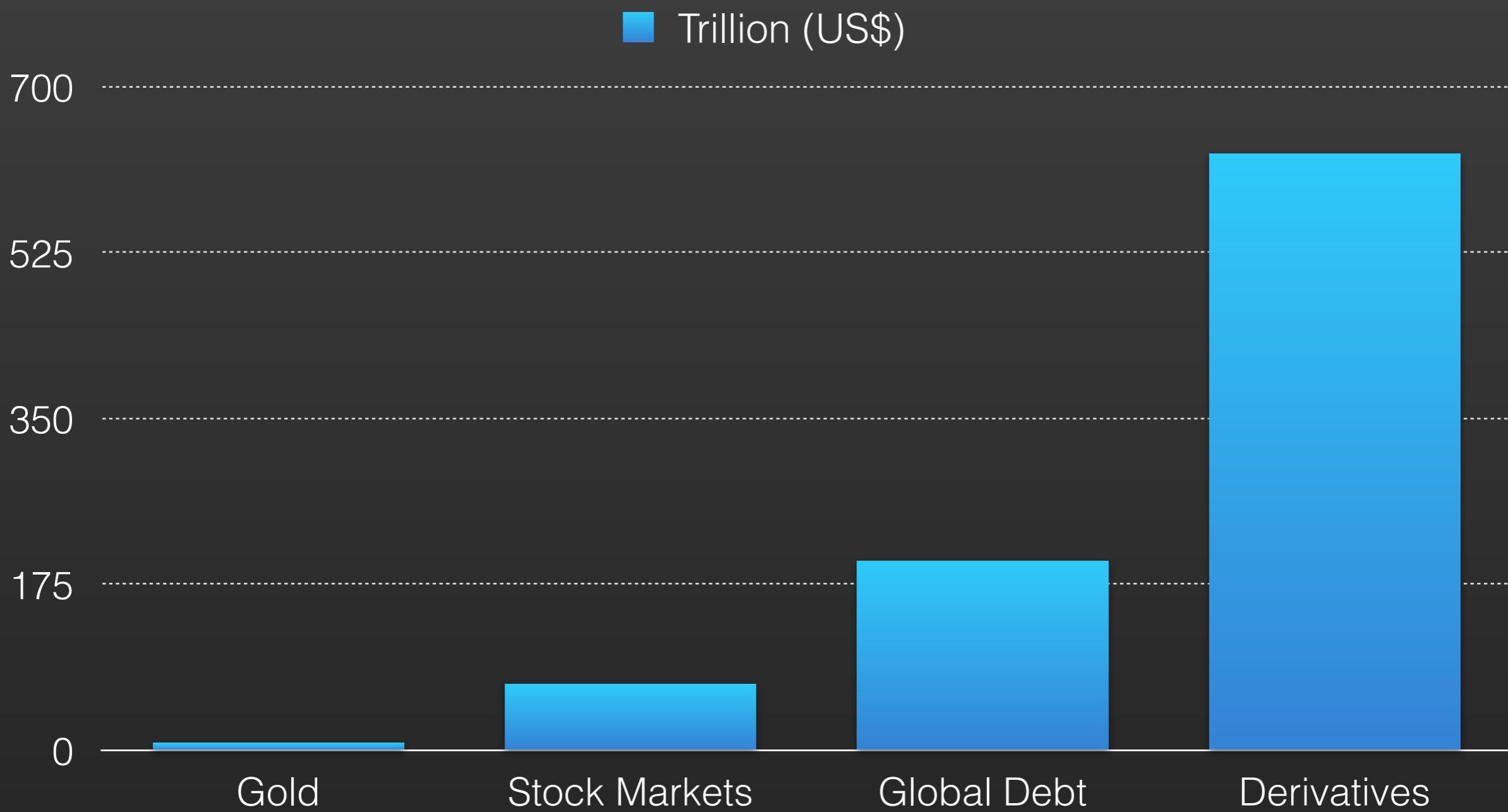
# WHEN WE THINK OF THE US DOLLAR WE THINK OF **REAL** ASSETS



# 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 )

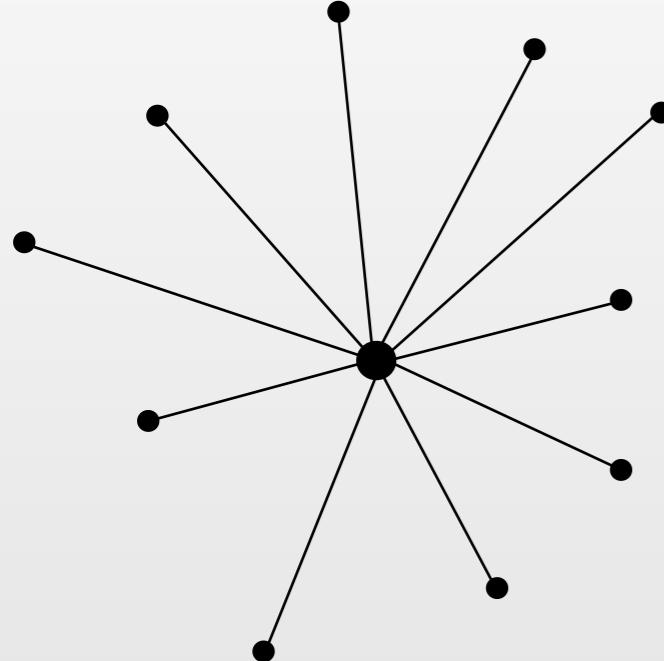
VS

# PRIVATE CHAINS

( very similar to traditional databases )



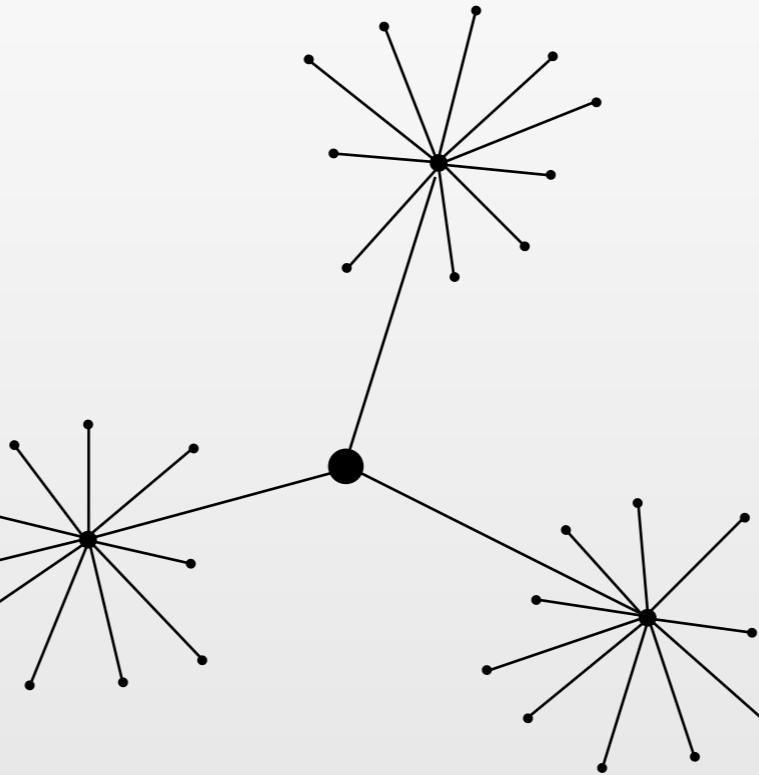
# BLOCKCHAINS ARE MERELY AN EVOLUTION OF NETWORK TYPES



CENTRALIZATION  
**DATABASES**

TECHNOLOGY

1950



DECENTRALIZATION  
**THE CLOUD**

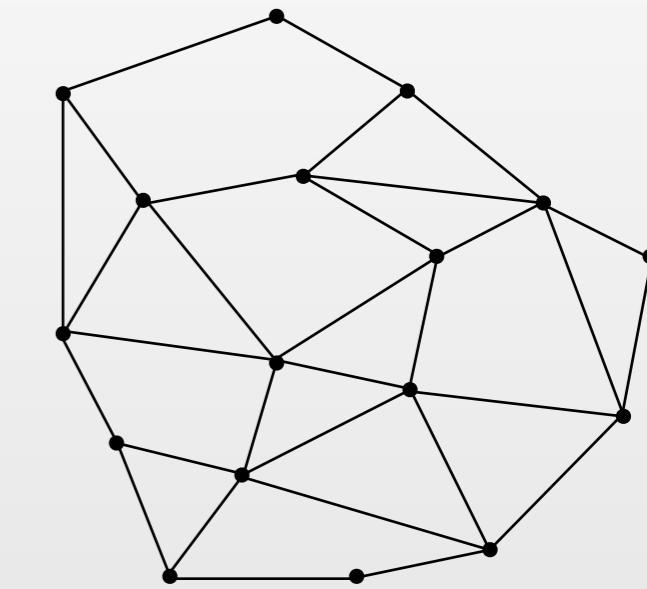
BUSINESS MODELS

2000

TECHNOLOGY

2010

BUSINESS MODELS



DISTRIBUTION  
**BLOCKCHAINS**

HILTON / TAXIS

AIR BNB / UBER

OPEN BAZZAR / LAZOOZ

# 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



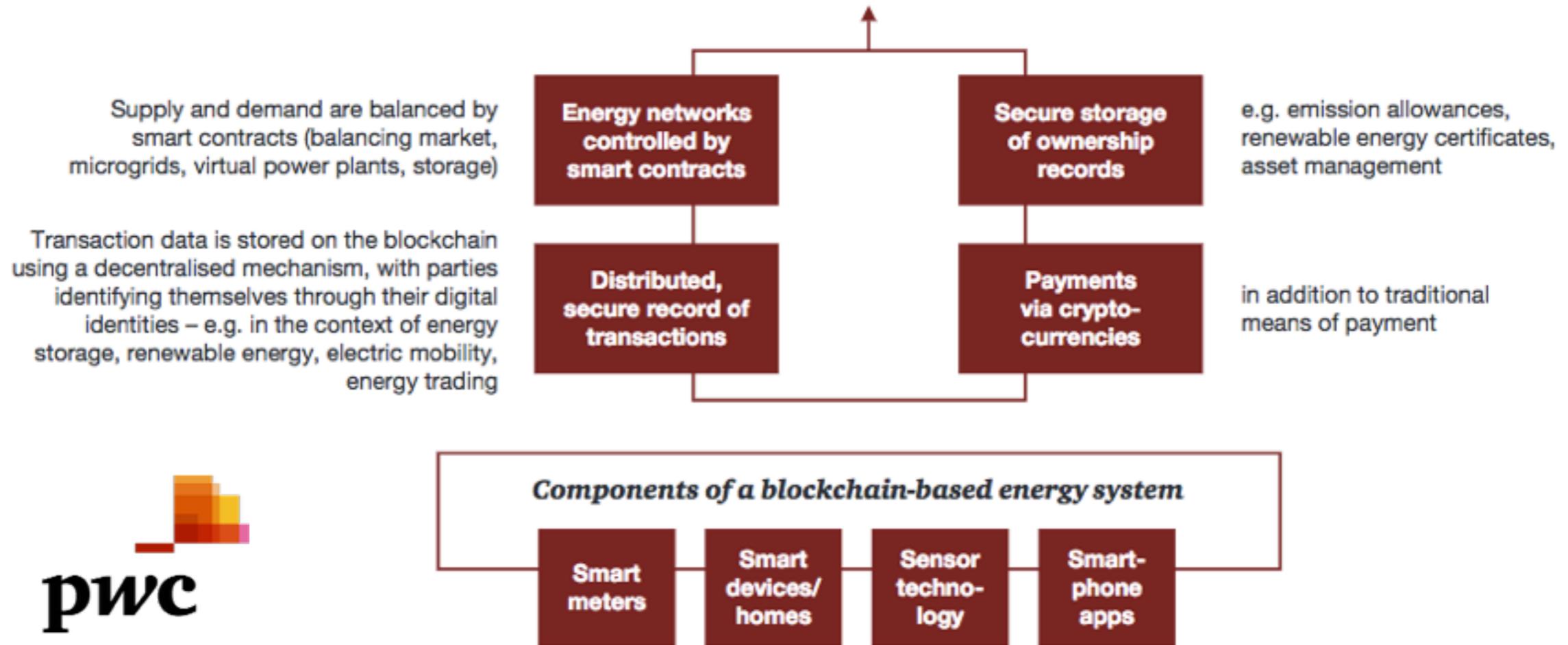
**GLOBAL SUMMIT  
ON BLOCKCHAIN TECHNOLOGY  
IN THE ENERGY SECTOR**

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>



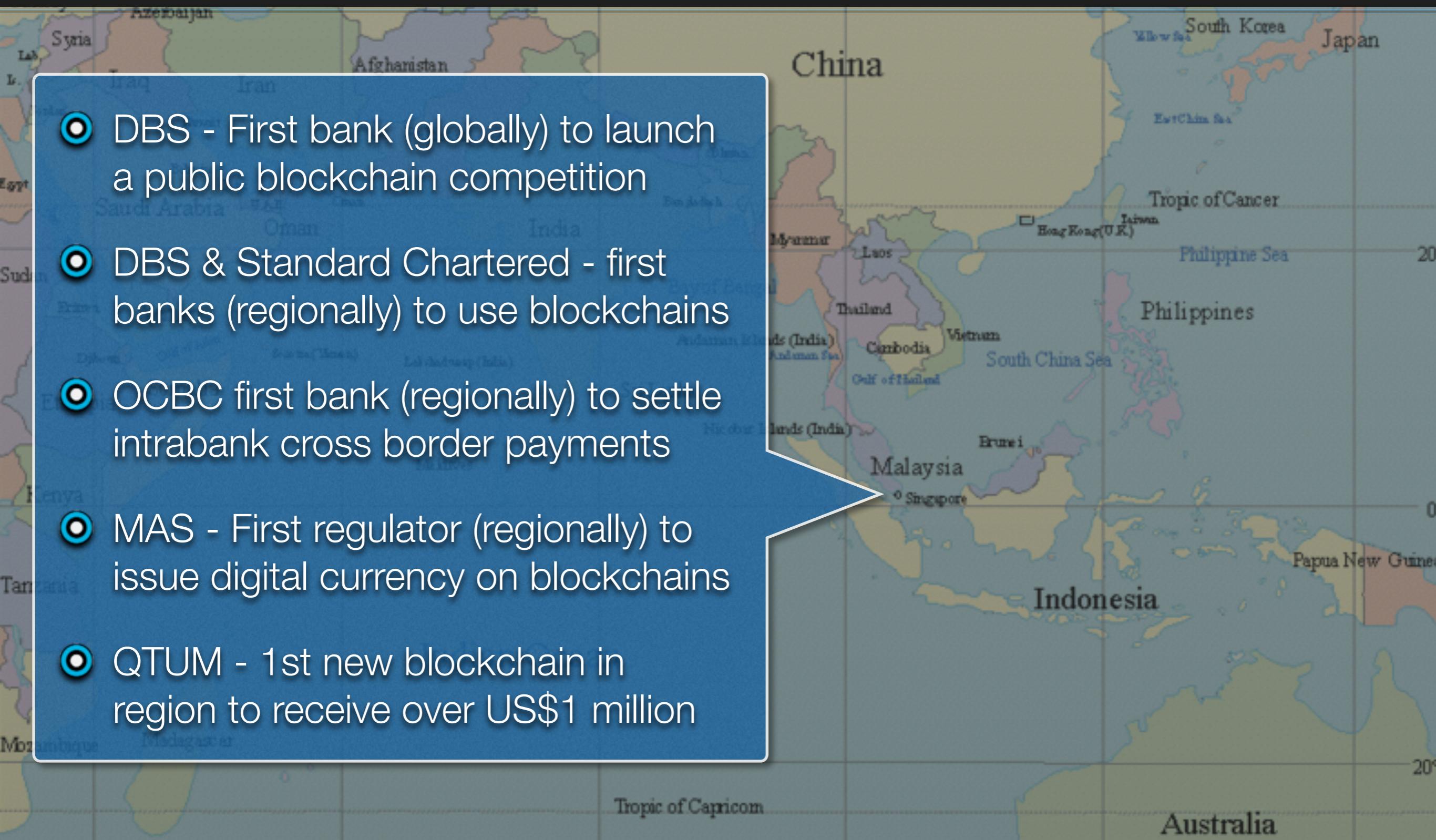
- **LO3 Energy** - Building blockchain based tool for energy micro-grids
- **Electron** - Blockchain based systems designed for the energy sector
- **Scanergy** - An open platform for prosumers to freely trade energy

**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

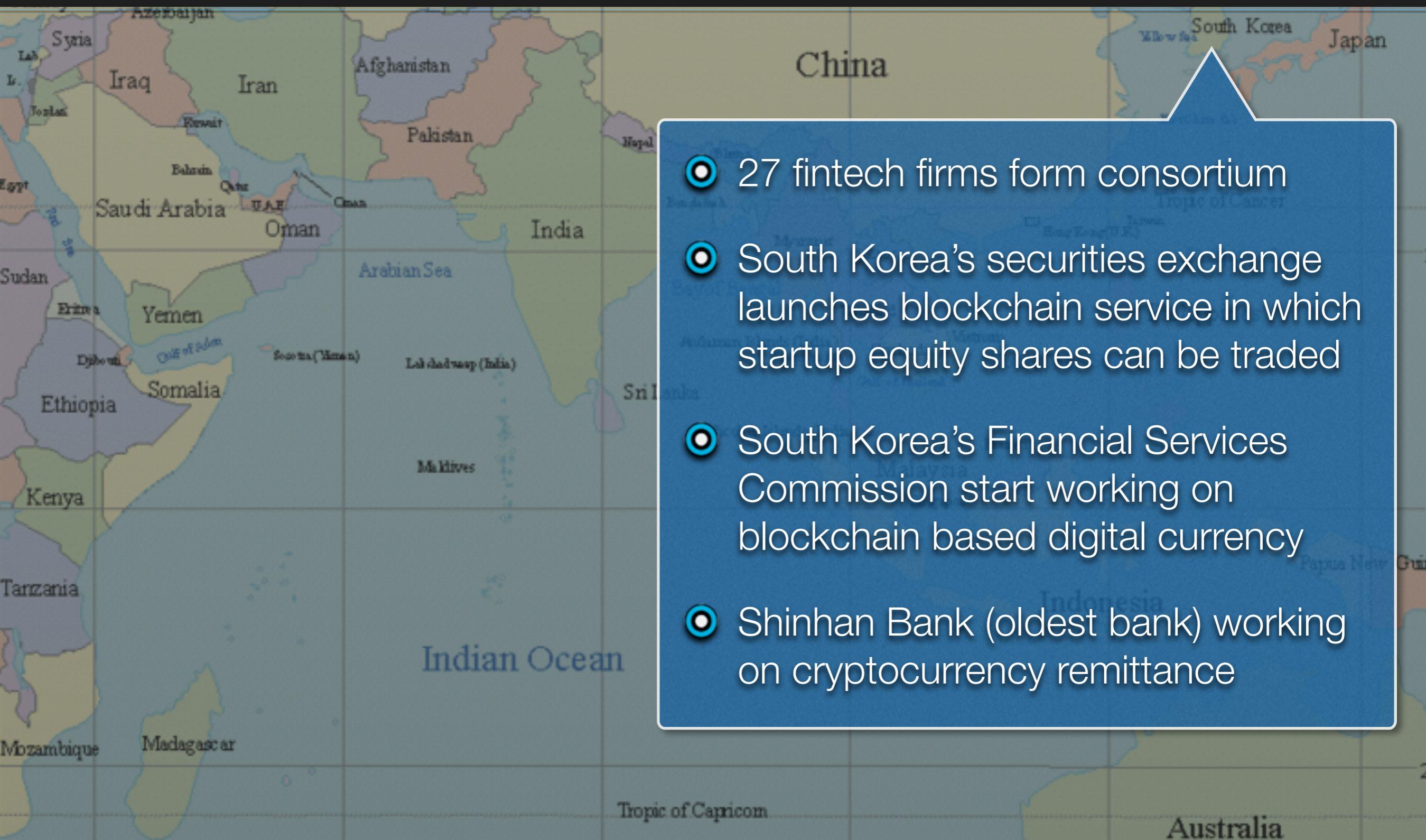


# CHINA



- 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



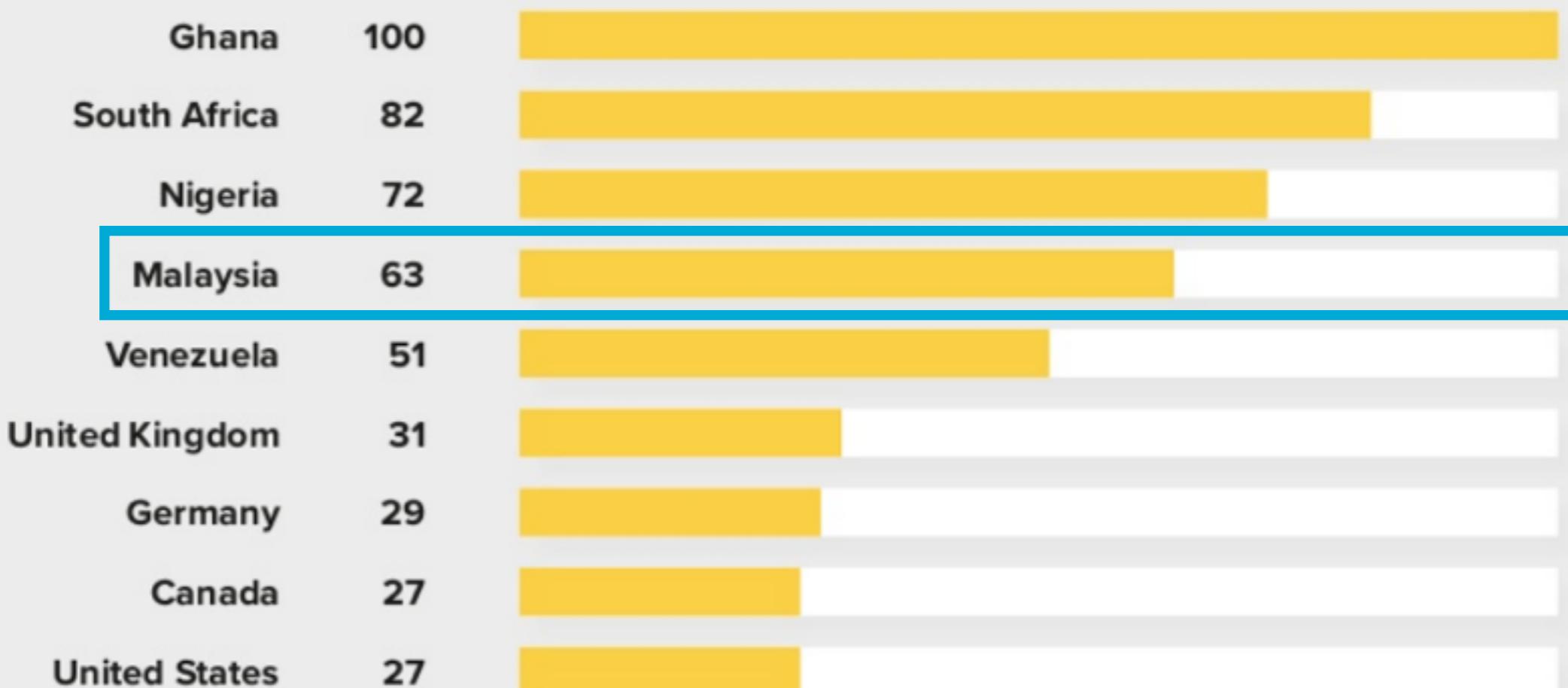
- 42 banks form ripple consortium, now over 100 members partnering
- Stock exchange partners with IBM
- Mizuho Financial Group and others use DLT for interbank payments
- Bank of Tokyo-Mitsubishi testing blockchain e-cheques systems
- Merchants to 5X to 20K in 2017

**WHAT ABOUT  
MALAYSIA ?**

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

from the [coindesk.com](https://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



FinTech Ambassador



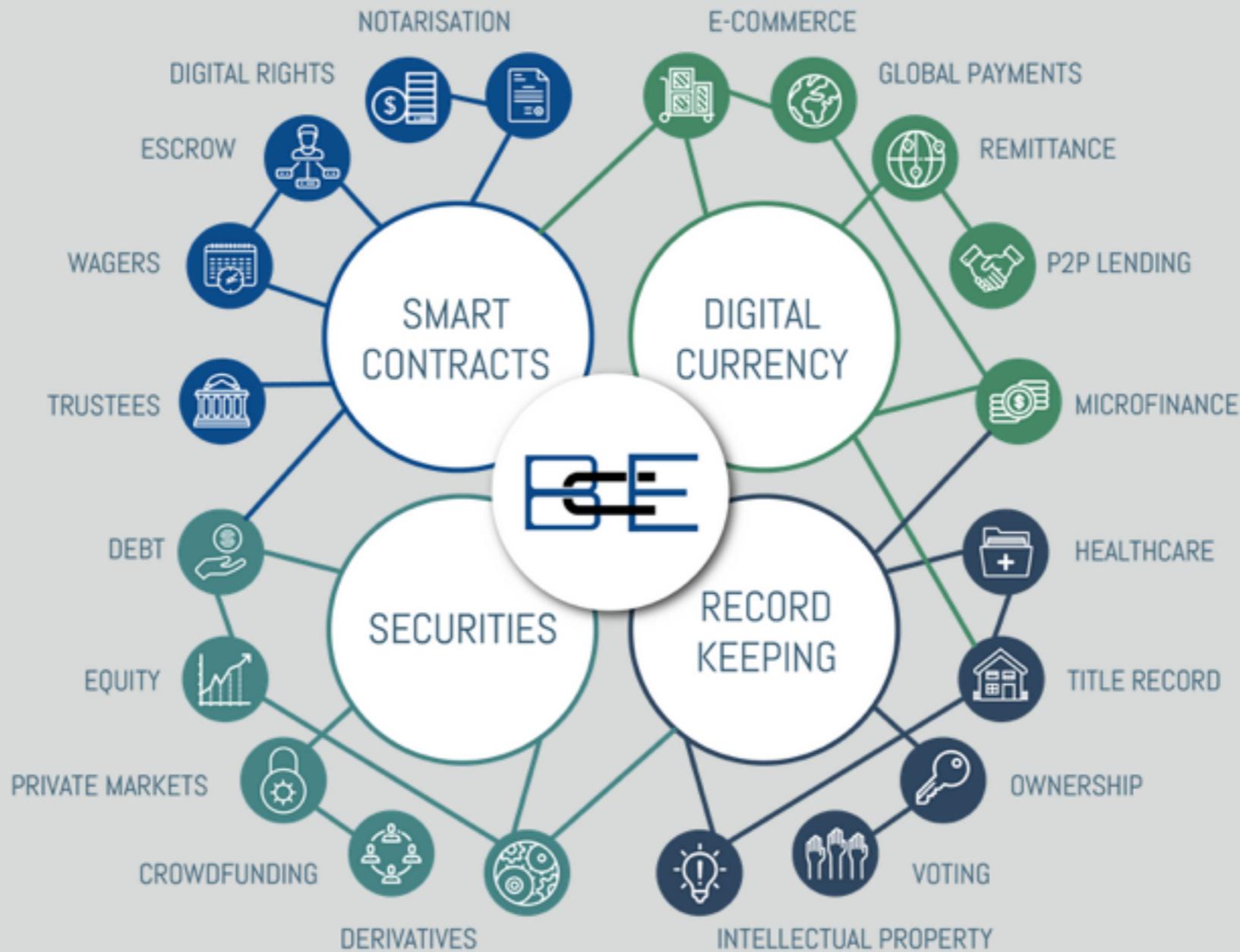
Education Ambassador



Technology Ambassador

# BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS

( now drawing attention from international banks seeking partnerships )



# 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

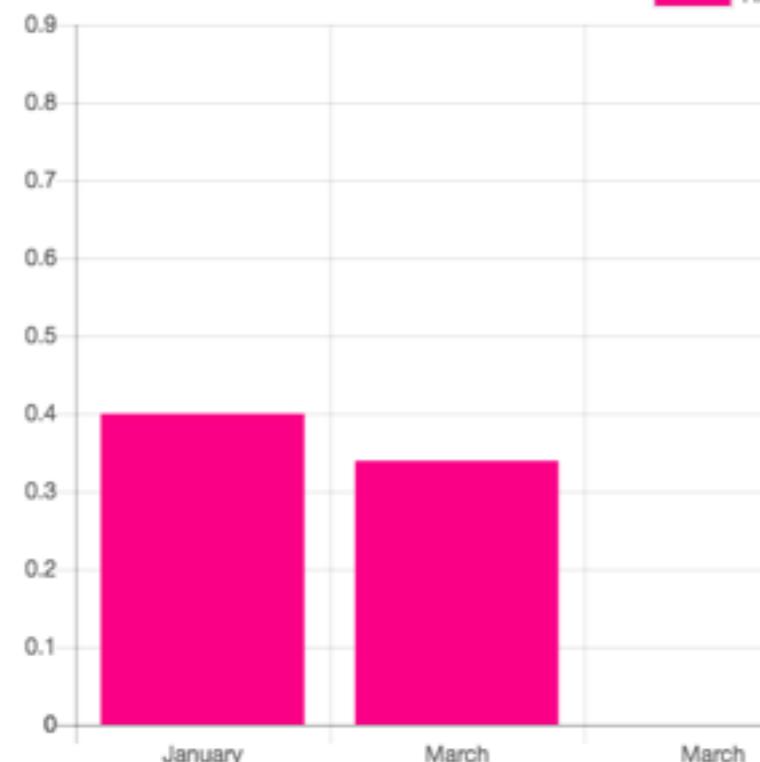
ADD NEW

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 ]

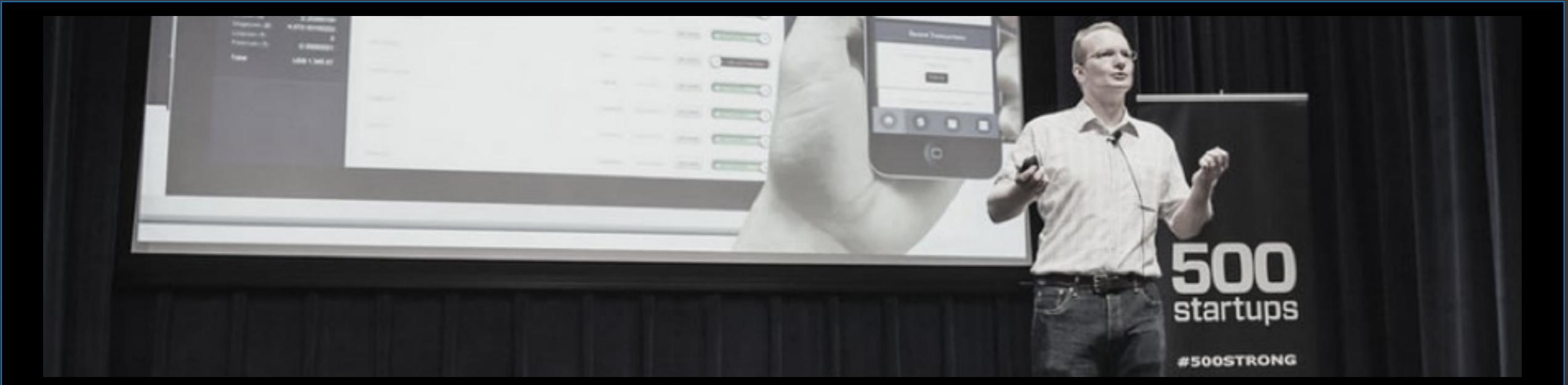
bf28617205e695439c0dd2285a76d7c1

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>