

# 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

# WHY CHOOSE NEUROWARE TO EXPLORE NEW TECHNOLOGIES ?



**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**

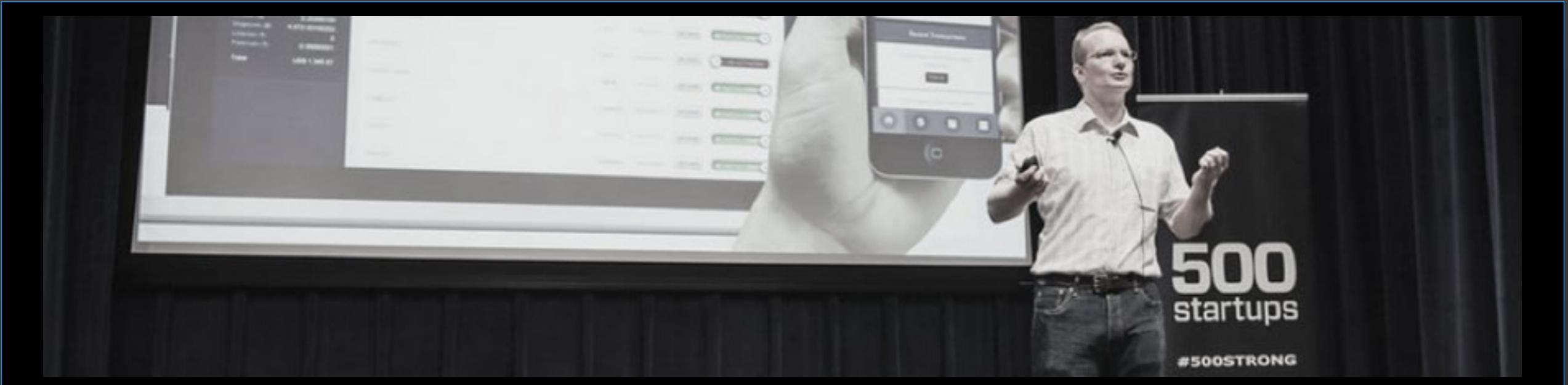
Building Web Applications for 10 Years

Community Builder & Event Presenter

Early Developer at MyTeksi and OnApp

Studying Distributed Systems for 5 Years

# 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



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

**YEAH, BUT**  
**WHAT'S A BLOCKCHAIN ?**

# 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**

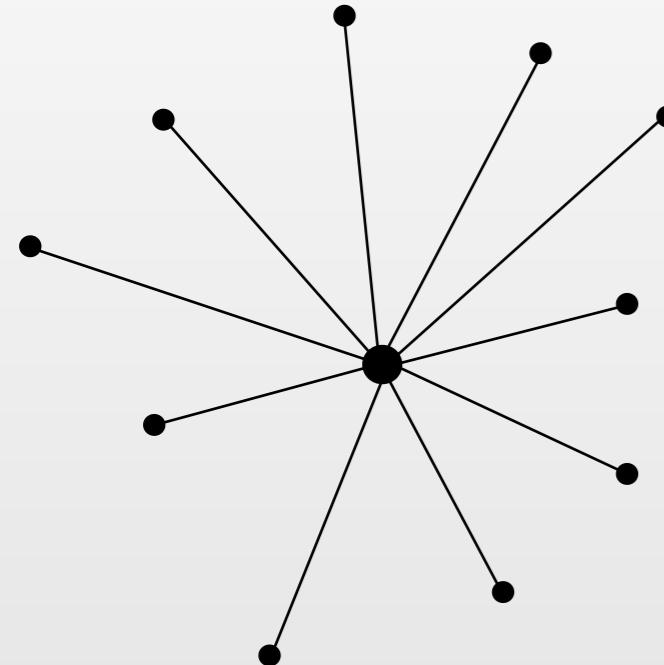
# WHAT ARE THE BENEFITS OF DISTRIBUTED **PUBLIC** LEDGERS?

- 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

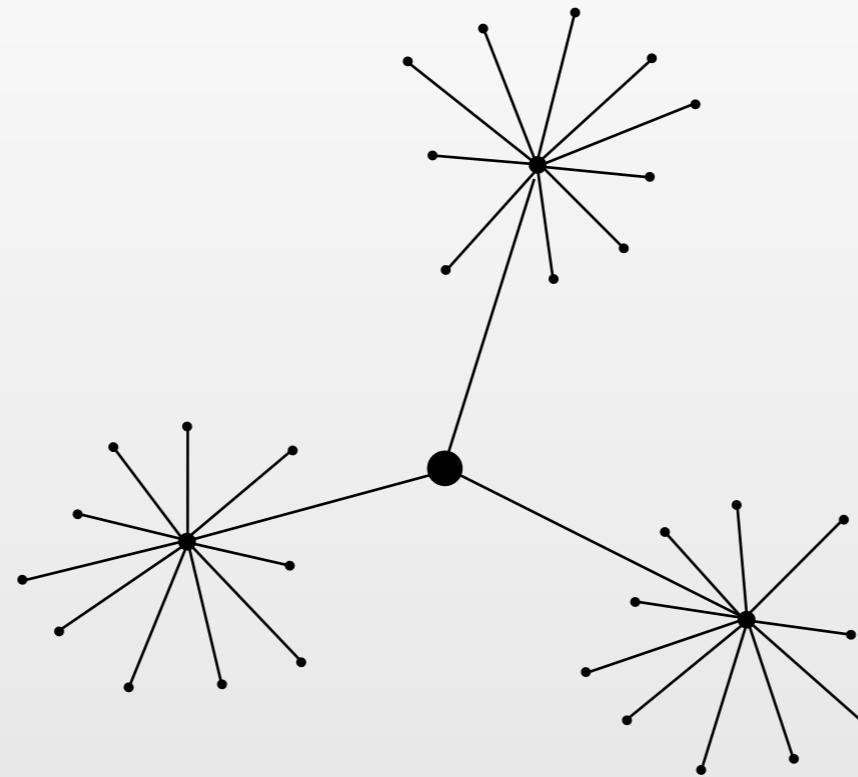


“While Fintech Disrupts Banks,  
the Blockchains Disrupt Fintech”

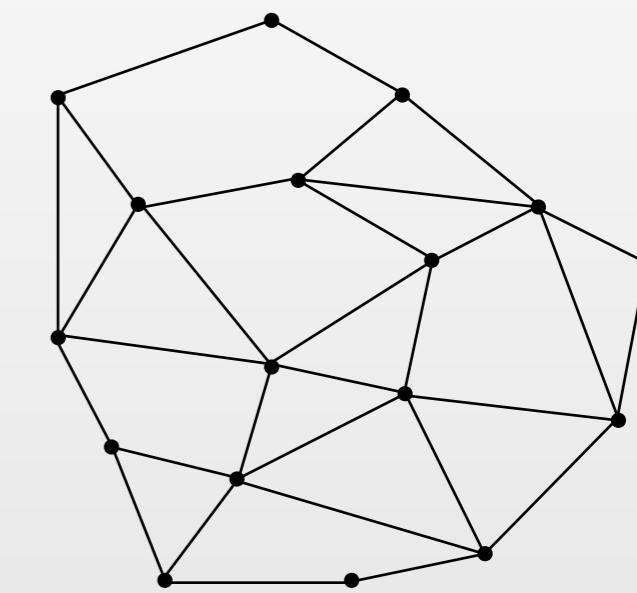
# COMPARED TO WHAT...? **TRUTH** CAN ONLY BE STORED ONE WAY



CENTRALIZATION  
**DATABASES**



DECENTRALIZATION  
**THE CLOUD**



DISTRIBUTION  
**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!



# WORLD'S FIRST BLOCKCHAIN ENERGY SUMMIT



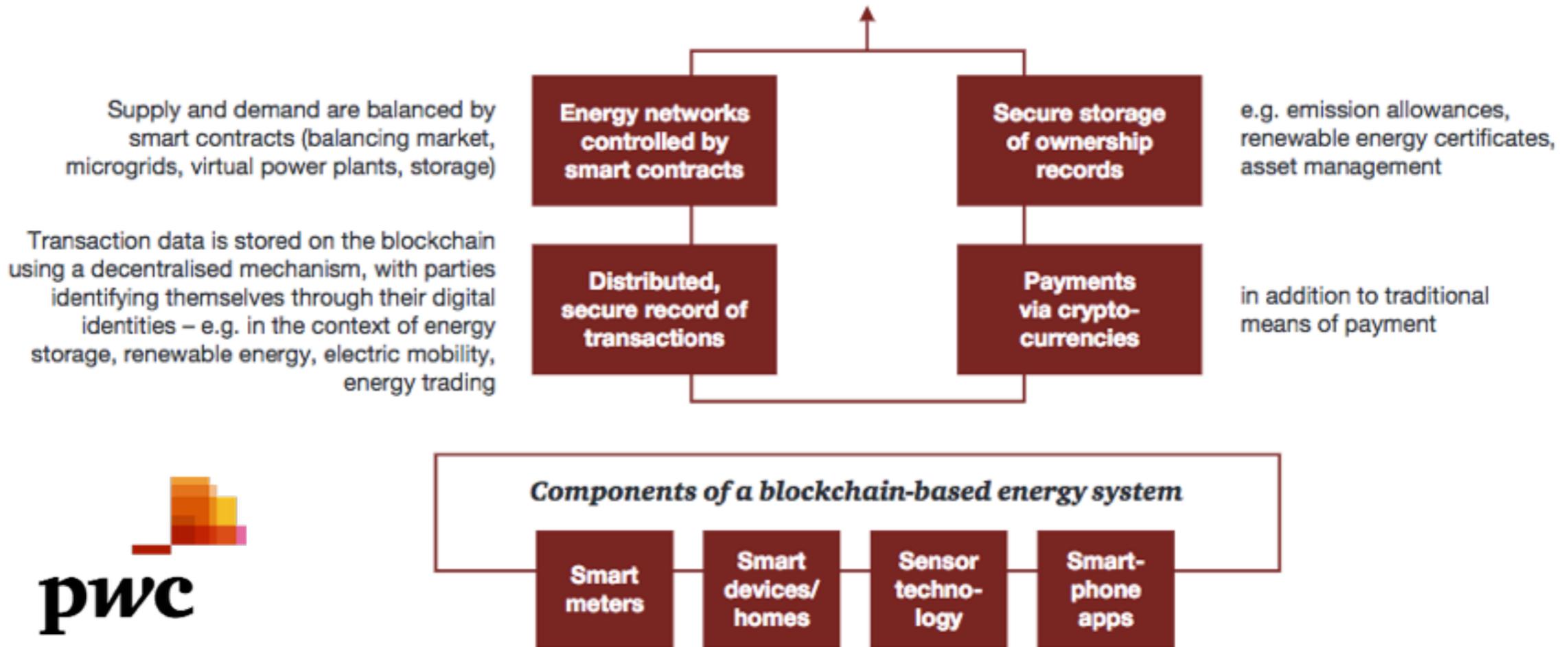
**GLOBAL SUMMIT  
ON BLOCKCHAIN TECHNOLOGY  
IN THE ENERGY SECTOR**

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>



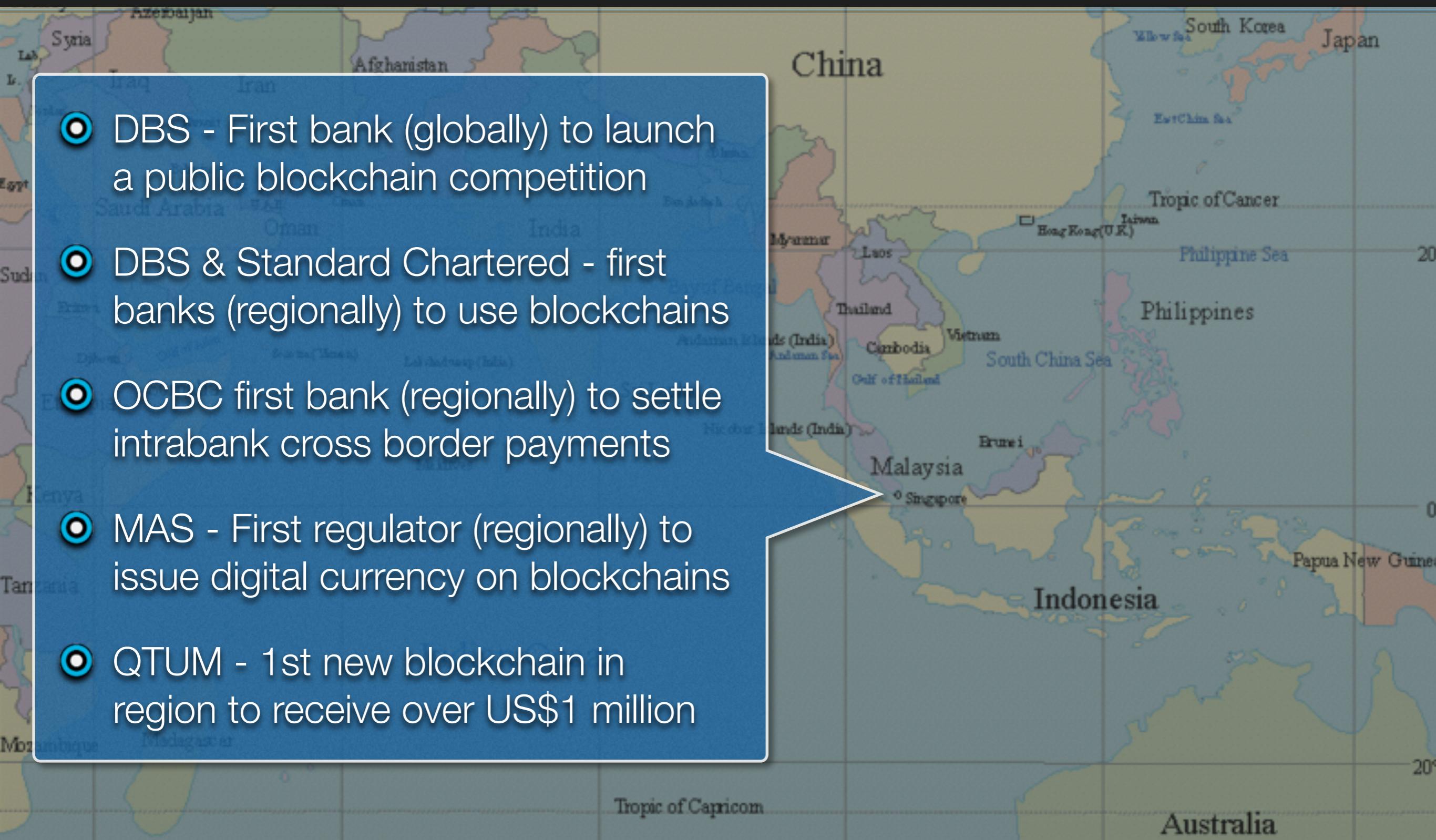
- **LO3 Energy** - Building blockchain based tool for energy micro-grids
- **Electron** - Blockchain based systems designed for the energy sector
- **Scanergy** - An open platform for prosumers to freely trade energy

**BRINGING IT HOME**

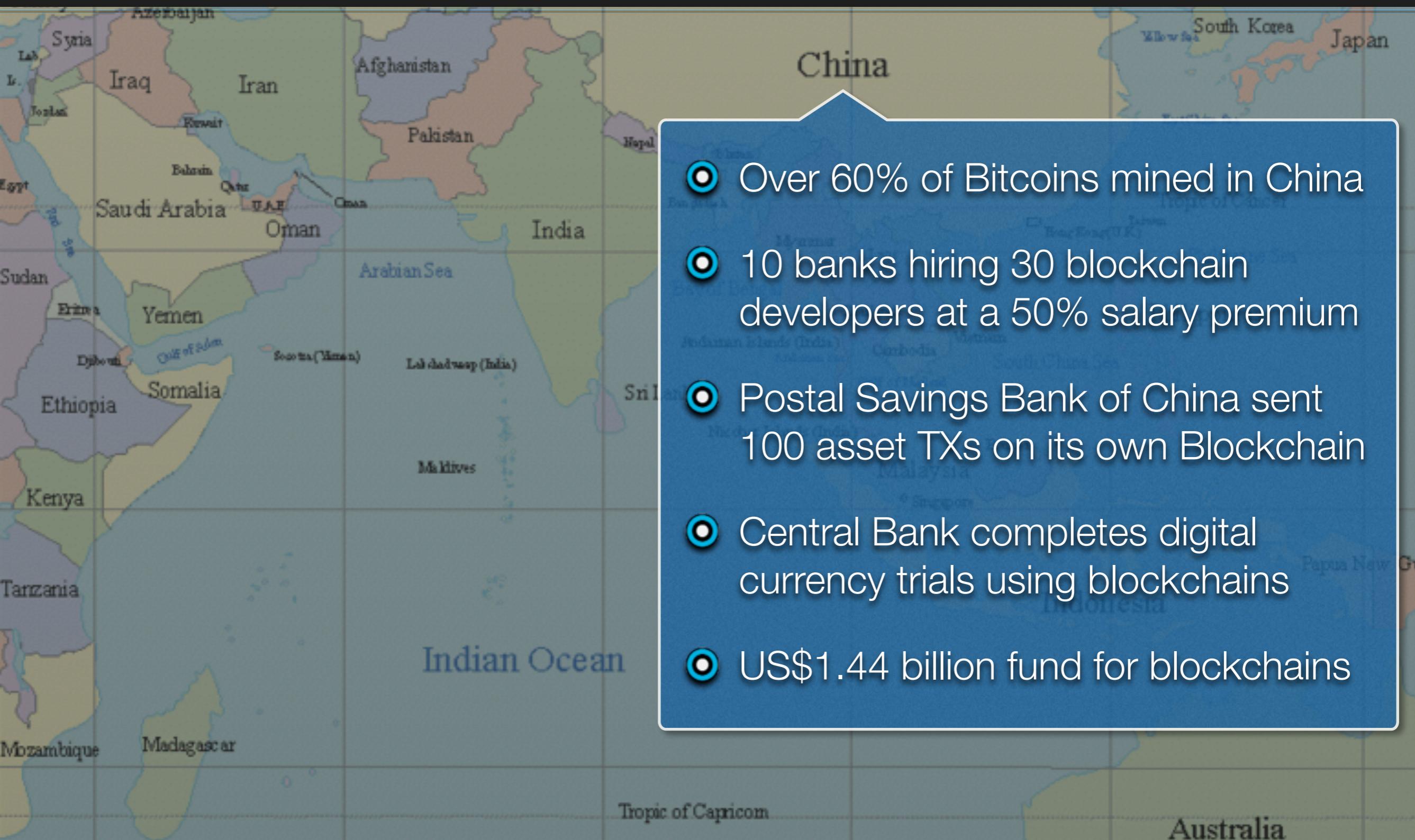
**BLOCKCHAINS IN ASIA**

# SINGAPORE

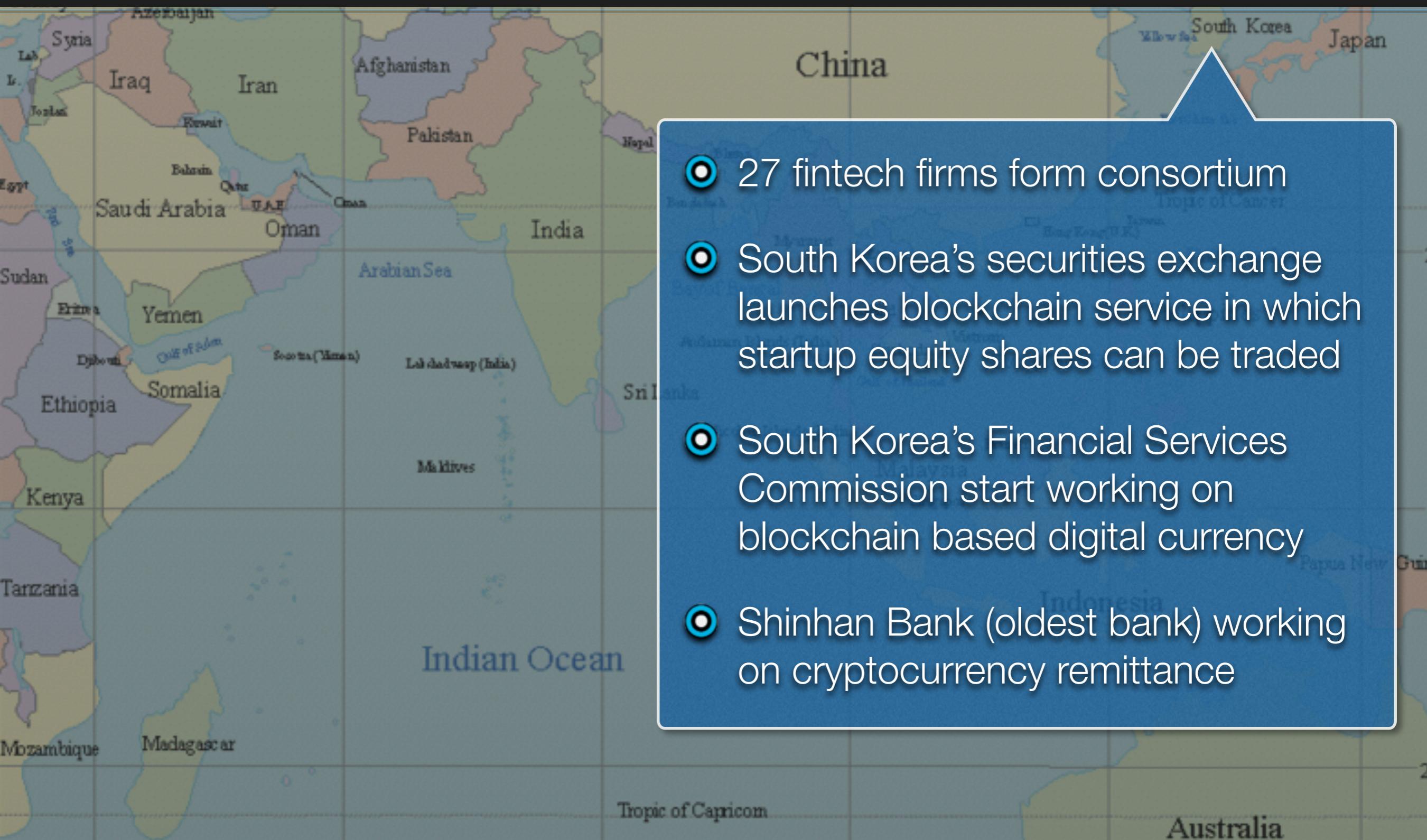
- DBS - First bank (globally) to launch a public blockchain competition
- DBS & Standard Chartered - first banks (regionally) to use blockchains
- OCBC first bank (regionally) to settle intrabank cross border payments
- MAS - First regulator (regionally) to issue digital currency on blockchains
- QTUM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



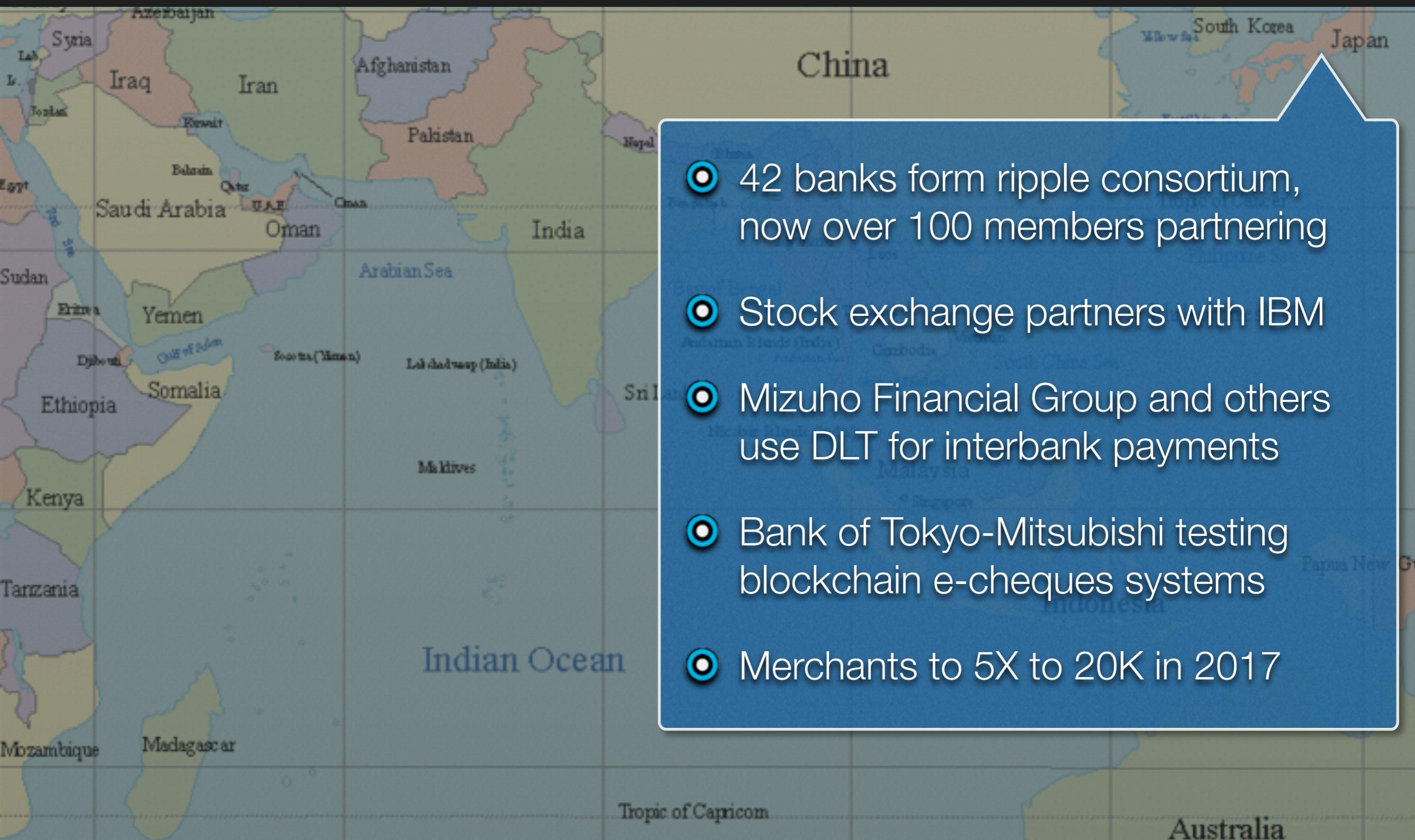
# CHINA



# KOREA



# JAPAN



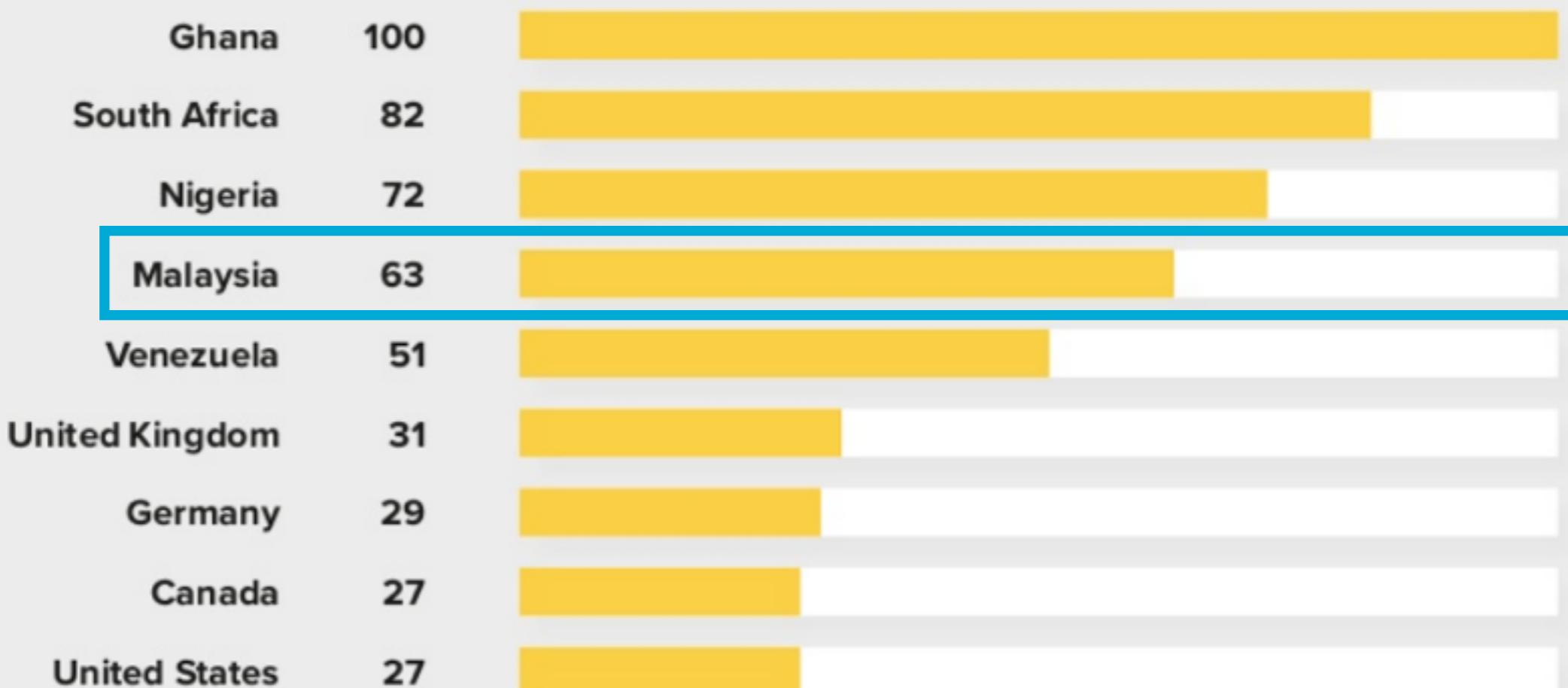
- 42 banks form ripple consortium, now over 100 members partnering
- Stock exchange partners with IBM
- Mizuho Financial Group and others use DLT for interbank payments
- Bank of Tokyo-Mitsubishi testing blockchain e-cheques systems
- Merchants to 5X to 20K in 2017

**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  
chain  
of  
things

IoT Ambassador

ataplus

FinTech Ambassador

iTrainAsia

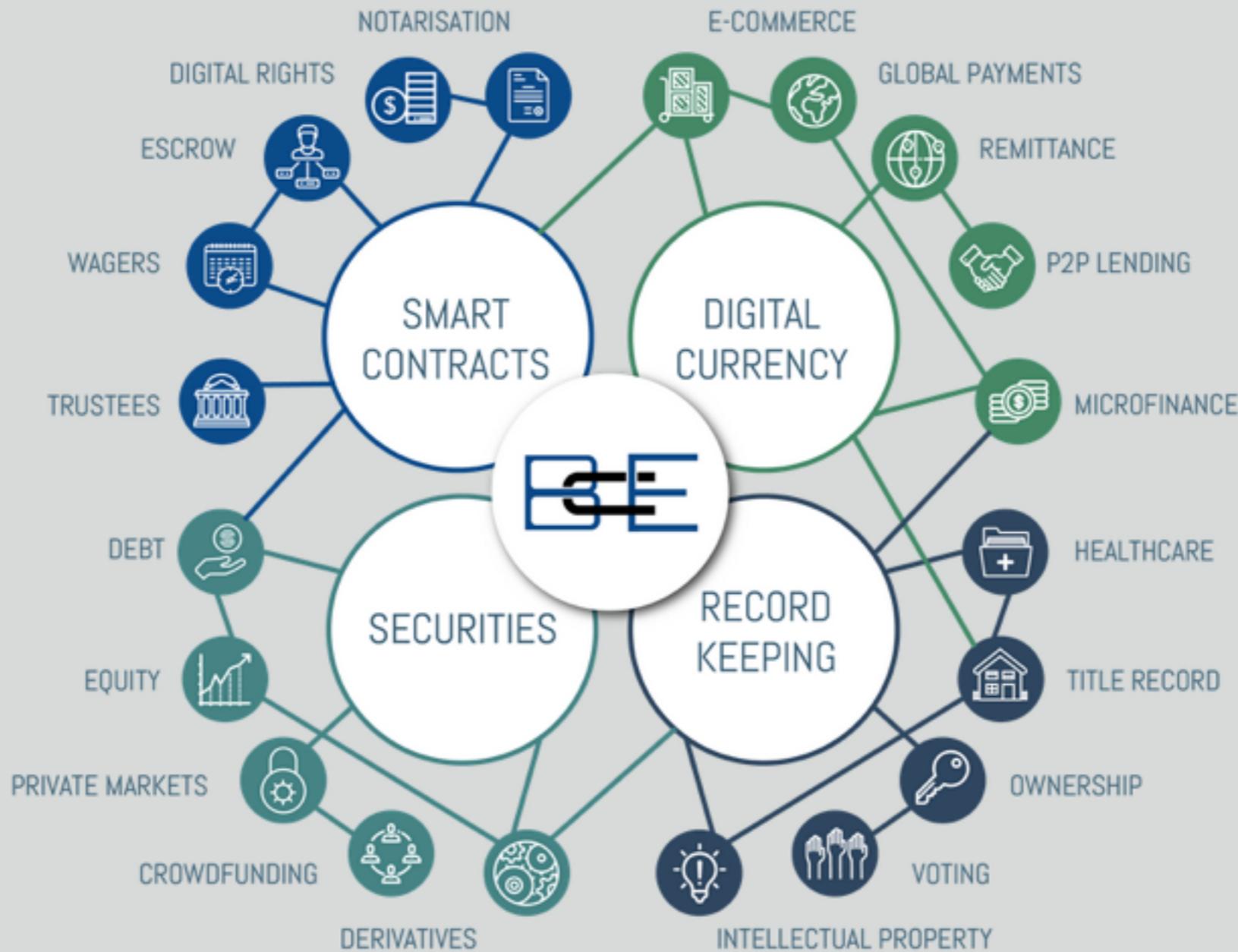
Education Ambassador

R<sup>①</sup>

Technology Ambassador

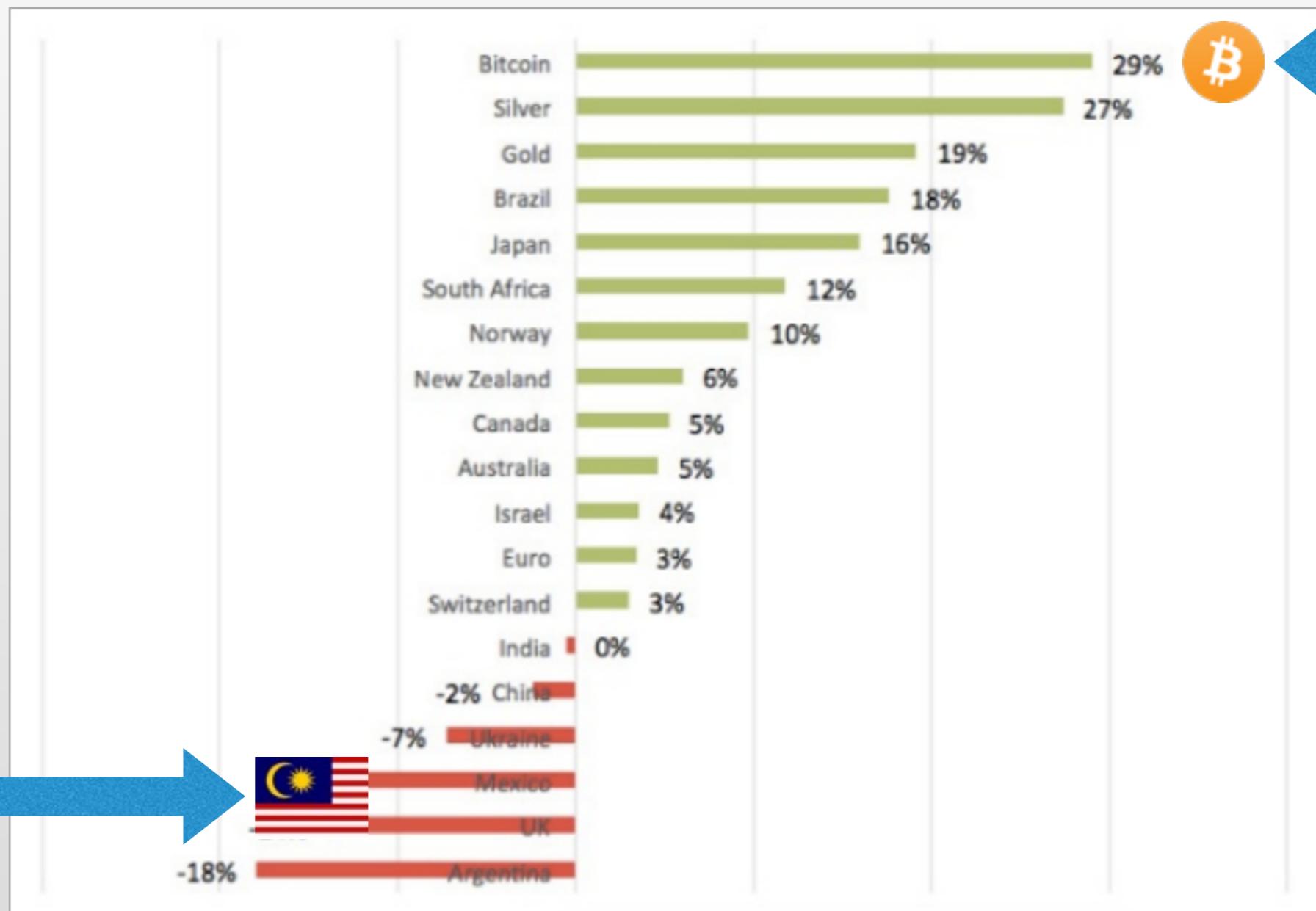
# BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS

( now drawing attention from international banks seeking partnerships )



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

also from the [coindesk.com](https://coindesk.com) most recent quarterly report - but not the MY part



# 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

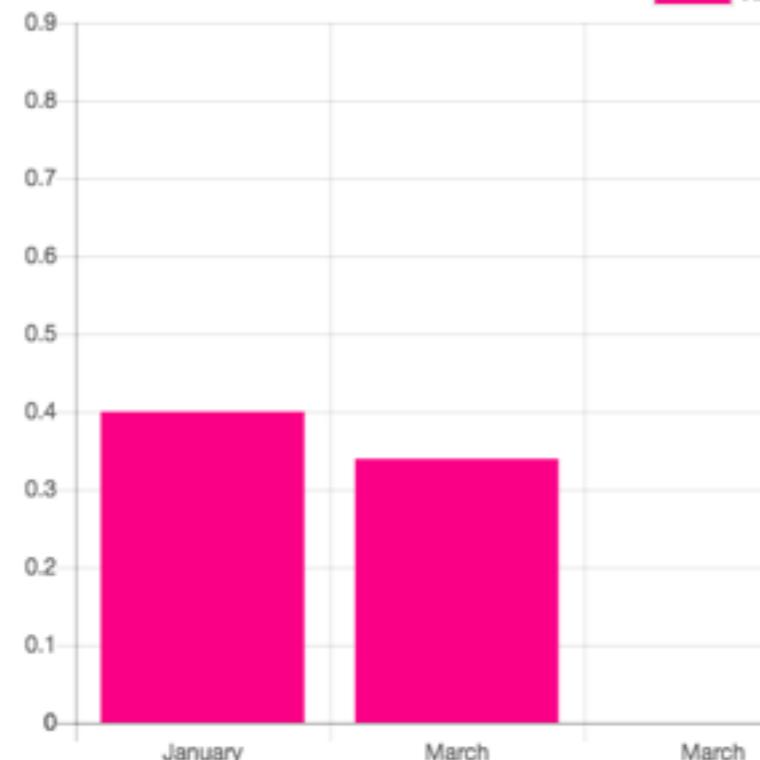
ADD NEW

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

## 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>