

# MODERN MONEY

## BITCOIN, BLOCKCHAINS & THE DIGITAL ECONOMY

PRESENTED BY



neuroware

# SARAWAKIAN AT HEART - BRITISH BY DEFAULT



**Mark Smalley**

Founder & CEO

Living in Malaysia for 20 Years

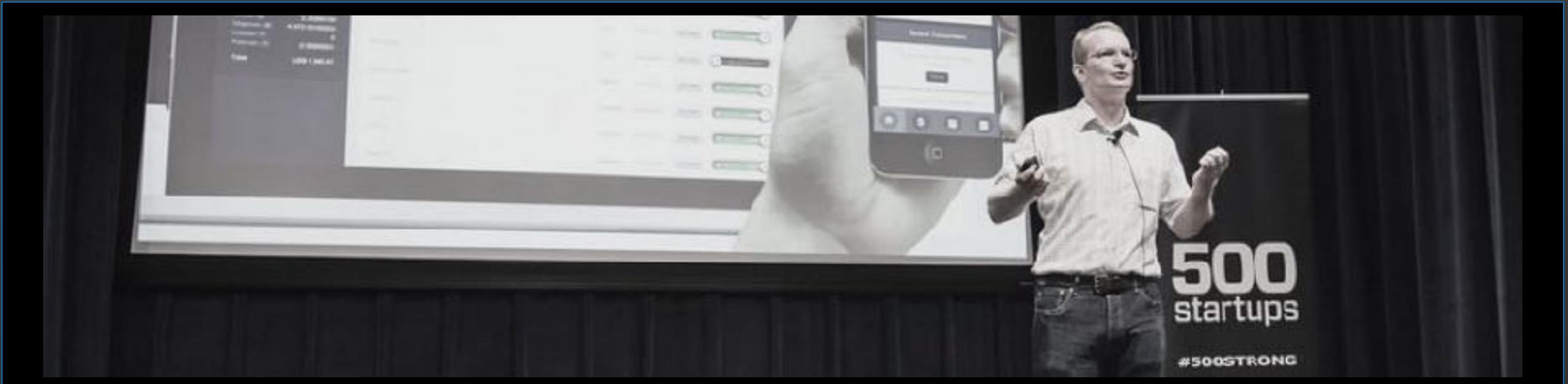
Building Web Applications for 15 Years

Building Tech Communities for 10 Years

Building Blockchain Apps for 5 Years

Working with Banks & Regulators for 3 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

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

CORTEX

dashboard add domain add user add database add api key help credits : 11.0000000 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: Neuroware

RECENT ACTIVITY

MORE

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

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

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

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

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

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

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

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

**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\$**



# NOTHING LASTS FOREVER



- Average lifespan of individual currencies is 27 years
- Every 30 or 40 years the reigning monetary system fails
- Over 3,800 fiat currencies worldwide have failed
- 15 of which happened in just the past 25 years

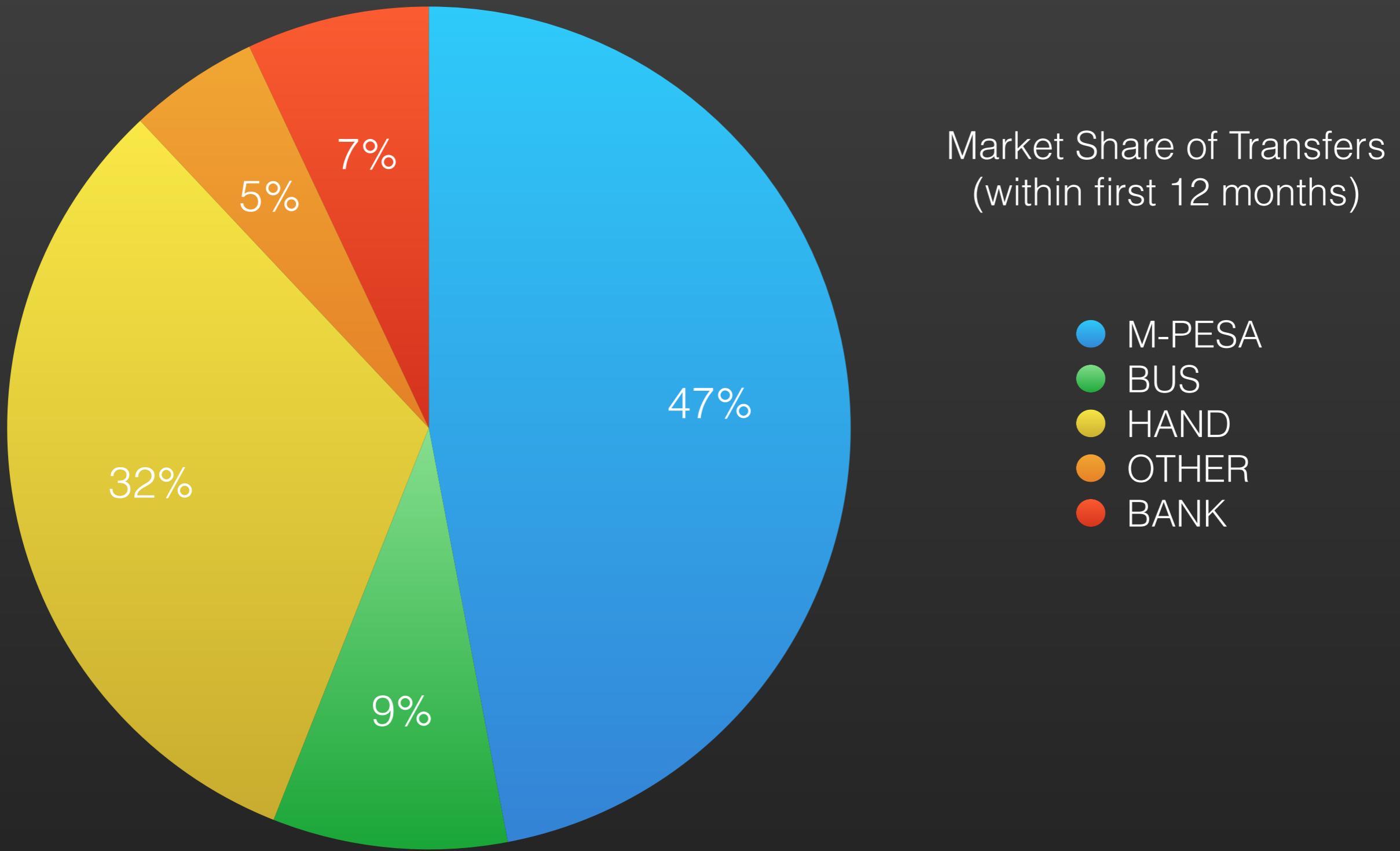
# THE RECENT FAILURE OF FIAT

| COUNTRY  | YEAR        | PROBLEM  |
|----------|-------------|--|
| Angola   | 1991-1999   | 1 New Kwanza = 1,000,000,000                                 |
| Belarus  | 1994-2002   | 50,000 = 100,000,000 2000 Rublei                             |
| Bosnia   | 1993        | Massive hyperinflation                                       |
| Ecuador  | 2000        | Pegged to USD after 70-80% drop in its dollar                |
| Georgia  | 1995        | 1 new lari = 1,000,000 laris                                 |
| Krajina  | 1993        | Country folded became part of Croatia                        |
| Mexico   | 1993-1994   | Defaulted in 1982   1 Nuevo Peso = 1,000 Old Pesos           |
| Poland   | 1990-1993   | 1 new Zloty = 10,000 old Zlotych                             |
| Romania  | 2000-2005   | 1 new Leu = 10,000 old Lei                                   |
| Russia   | 1992-1994   | 100 Rubels = 1 US\$ in 1991   30,000 Rubels = 1 US\$ in 1999 |
| Turkey   | 1990-2005   | 1 New Turkish Lira = 1,000,000 Old Lira                      |
| Ukraine  | 1993-1995   | 1 Hryvnya = 100,000 Karbovantsivi                            |
| Zimbabwe | 1999 – 2010 | Ongoing mess   |

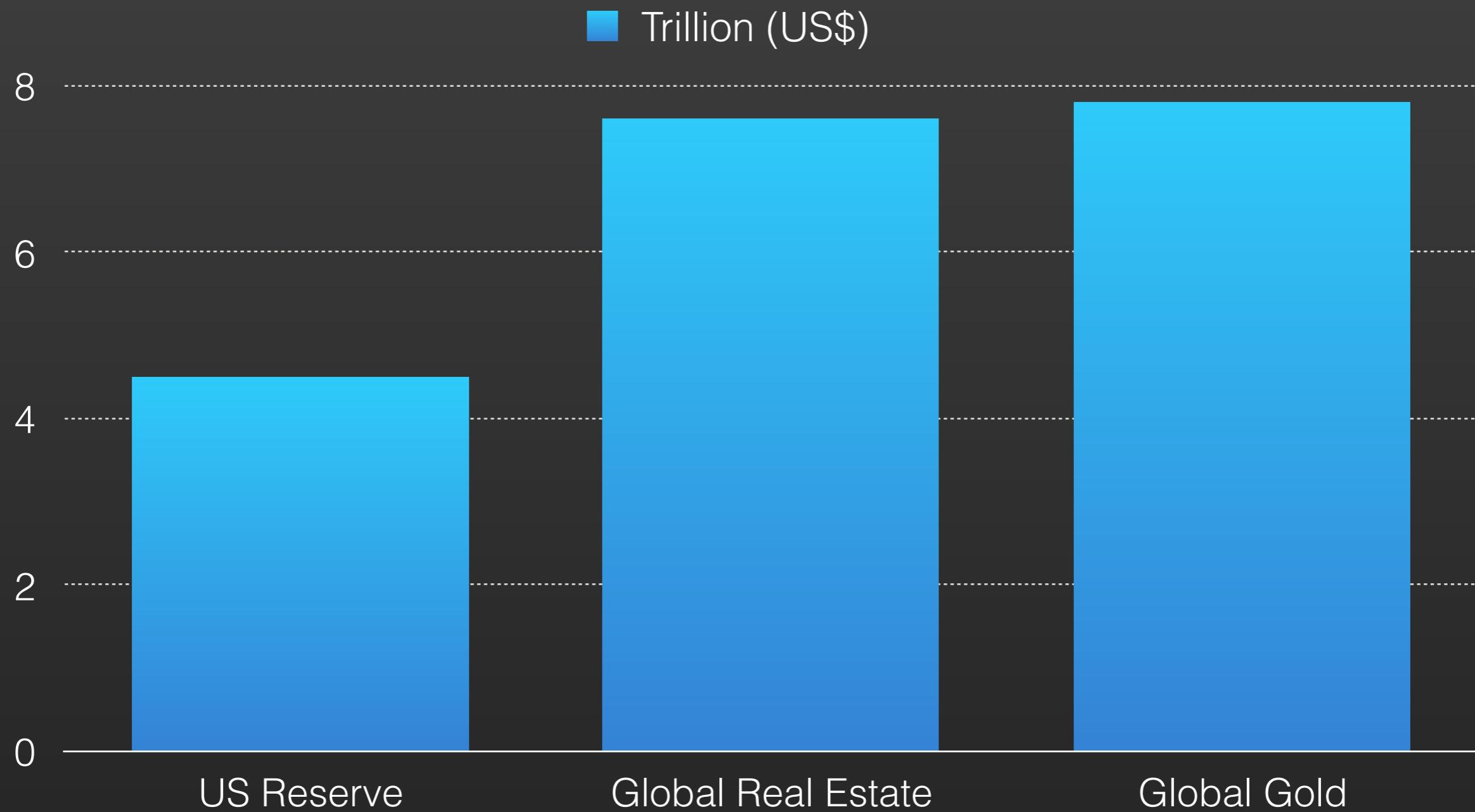
# WHAT HAPPENS WHEN THE BANKS FAIL TO INNOVATE ...?



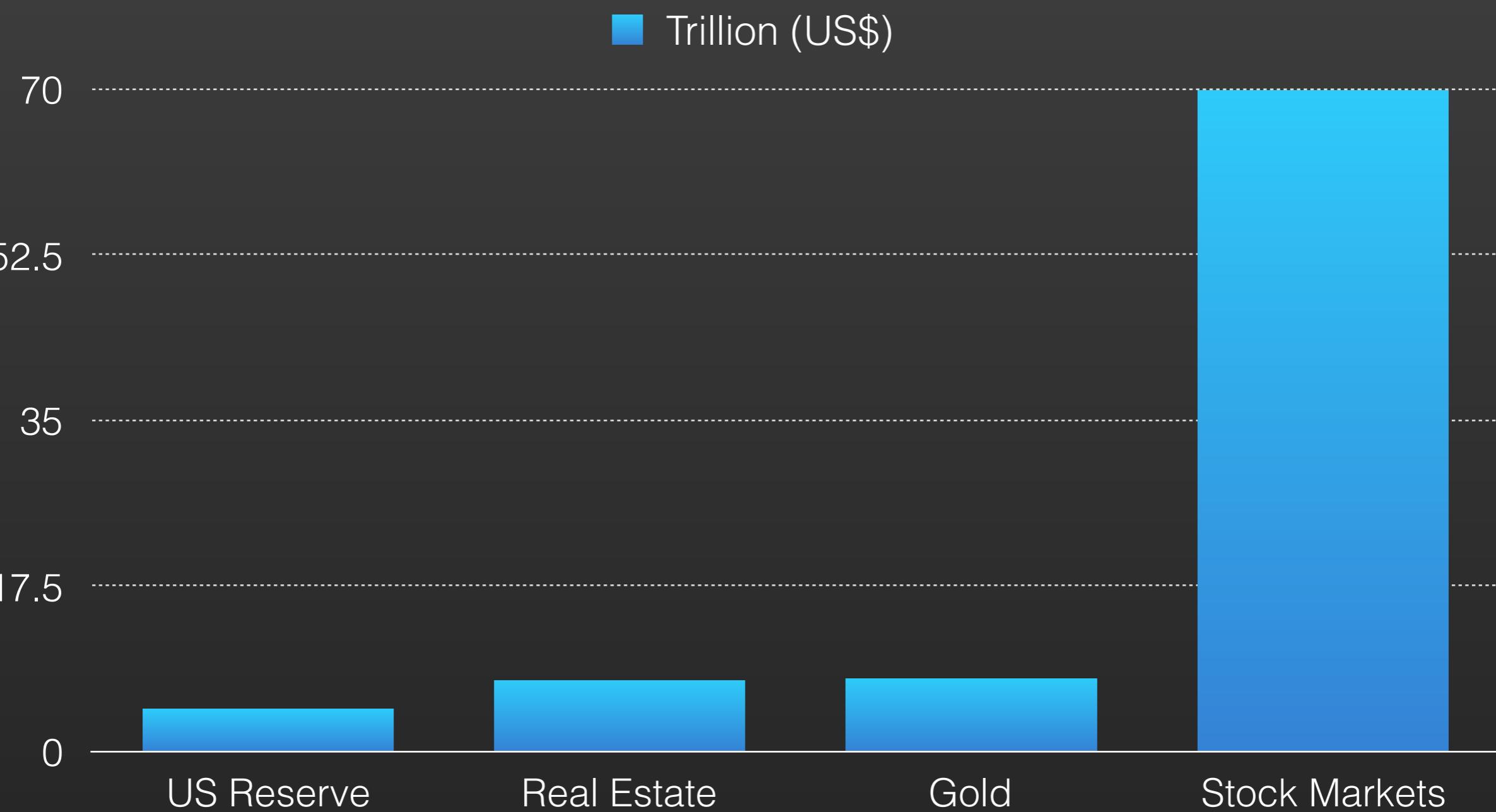
# WITHIN FIRST 12 MONTHS - 17 MILLION SUBSCRIBERS BY 2011



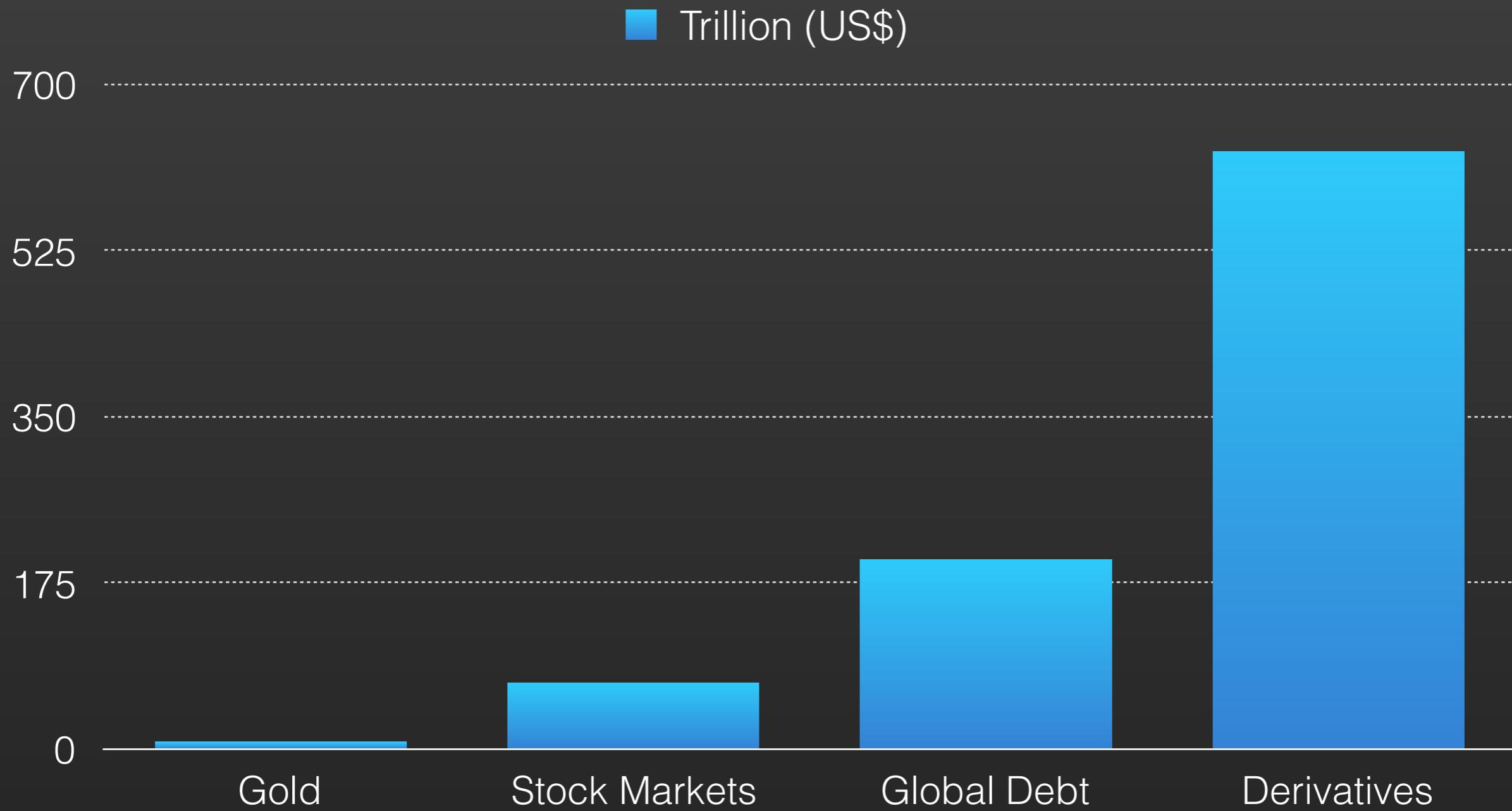
# WHEN WE THINK OF THE US DOLLAR WE THINK OF **REAL MONEY**



# 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

World War 2  
US\$3 Trillion

2008 Bailout  
US\$8.5 Trillion

This really annoyed  
**Satoshi Nakamoto**

**A TIP-TOE INTO BITCOIN**

**MAGIC INTERNET MONEY**

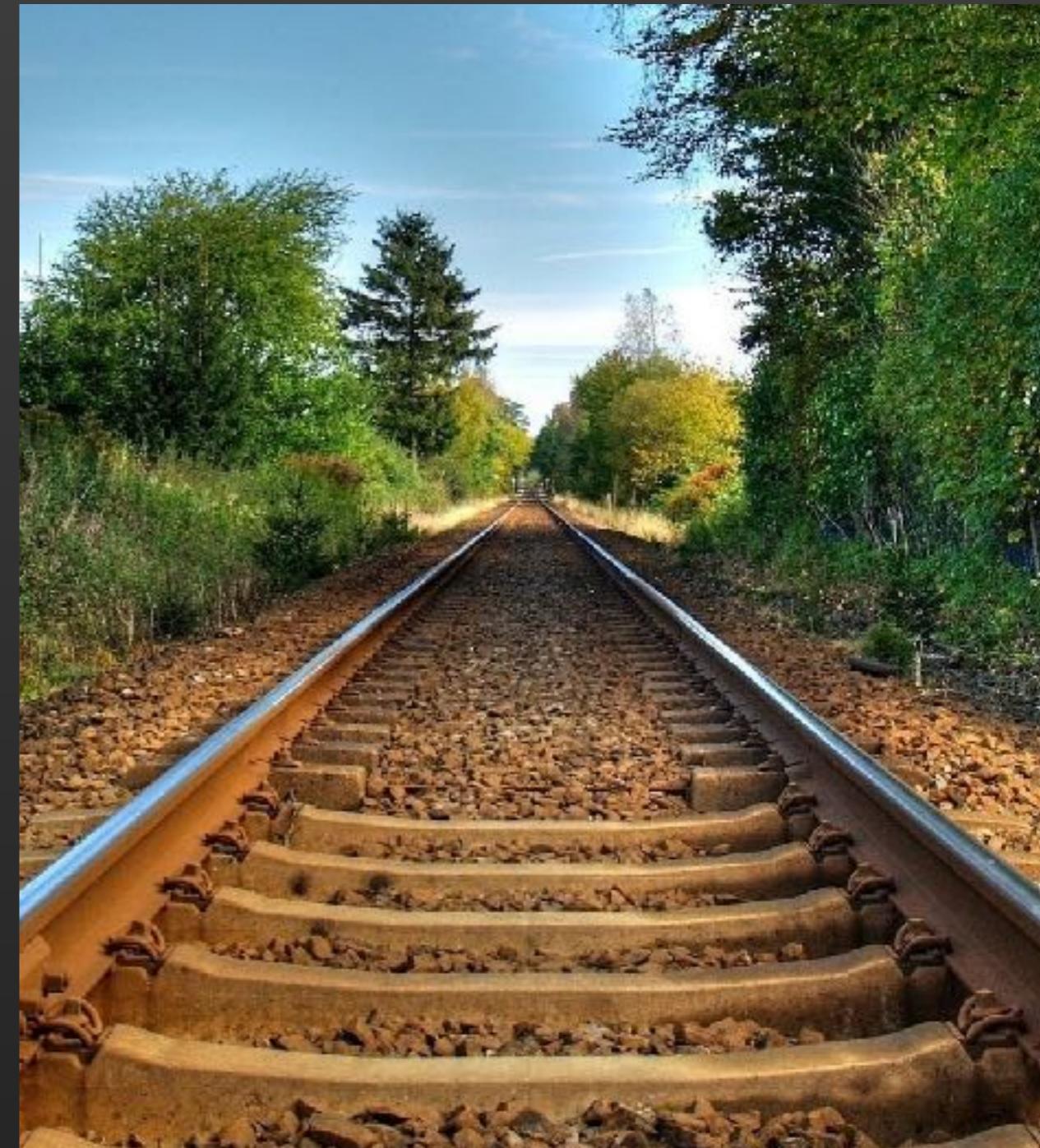
# BITCOIN

( the first application / popular digital asset )

vs

# BLOCKCHAINS

( the underlying tech / shared public ledger )



# PUBLIC BLOCKCHAINS

( battle tested, secure and able to go anywhere )

vs

# DISTRIBUTED LEDGERS

( missing blocks is also missing the point )



# PUBLIC NETWORKS

( built from the ground-up to be secure )

vs

# PRIVATE NETWORKS

( 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
- RM50 per coin in 2013 (when we bought) - now over RM5,000 per coin
- The Bitcoin network is currently processing over 250,000 daily transactions
- The network's market capitalization is currently around US\$15 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

# SUNNAH MONEY AND CRYPTO-CURRENCY SUCH AS BITCOIN

## Bank Negara

Bitcoin is not legal tender in Malaysia and must be used at investors own risk

— This is the same as gold, diamonds US\$ and plutonium

**Sunnah Money** is money with **intrinsic value** that isn't debt-based and is also inflation proof - referred to as **Real Money** it has the following properties:

- Is there an abundance within the market place?
- Is it recognized and accepted by merchants?
- Is it divisible?
- Does it have a self life?
- Was it created by Allah?

**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

### Exchanges



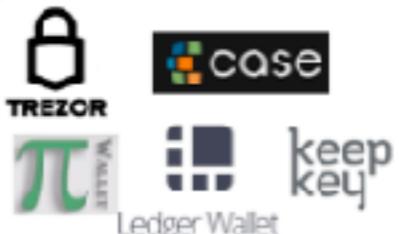
### Brokerage



### Soft Wallets



### Hard Wallets



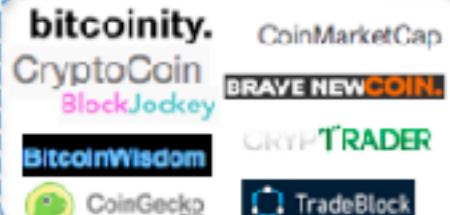
### Investments



### Merchants



### Financial Data



### Supply Chain



### Compliance



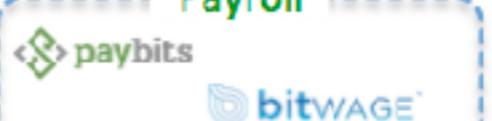
### Payments



### ATMs



### Payroll



### Capital Markets



### Trading



### Money Services



### Banks



### Services



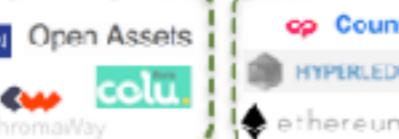
### Software Development



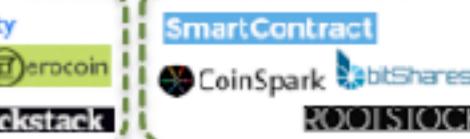
### General APIs



### Special APIs



### Smart Contracts



## MIDDLEWARE & SERVICES

### Public



### Special



## INFRASTRUCTURE & BASE PROTOCOLS

## 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 reports 65% of top banks will have blockchain trials by 2020**

# 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



# NOW OVER 35 BLOCKCHAIN CONSORTIUMS WORLDWIDE

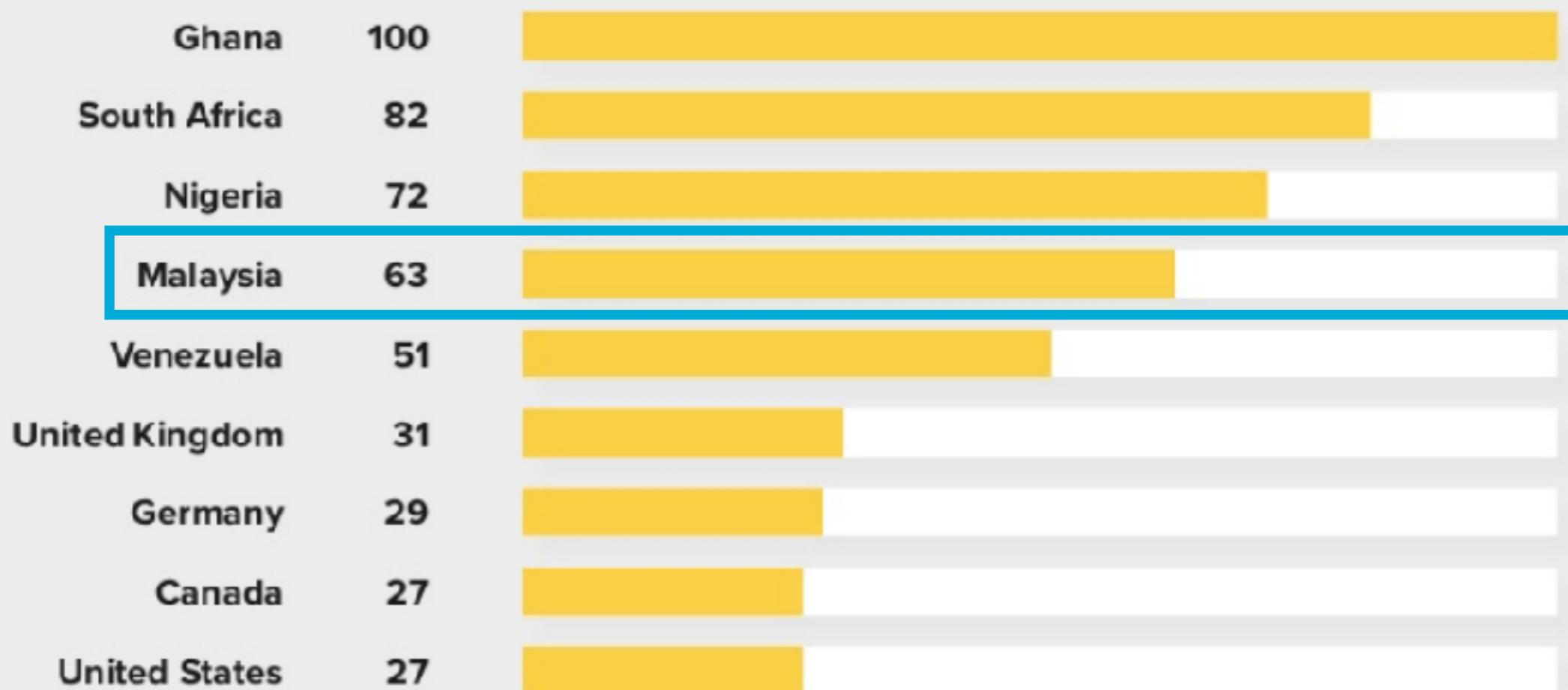


# **BLOCKCHAINS IN MALAYSIA**

# 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



Investor Ambassador

MahWengKwai  
& Associates

Legal Ambassador



Banking Ambassador

CapitalBay

Investing Ambassador

REDmoney

Media Ambassador



IoT Ambassador



FinTech Ambassador



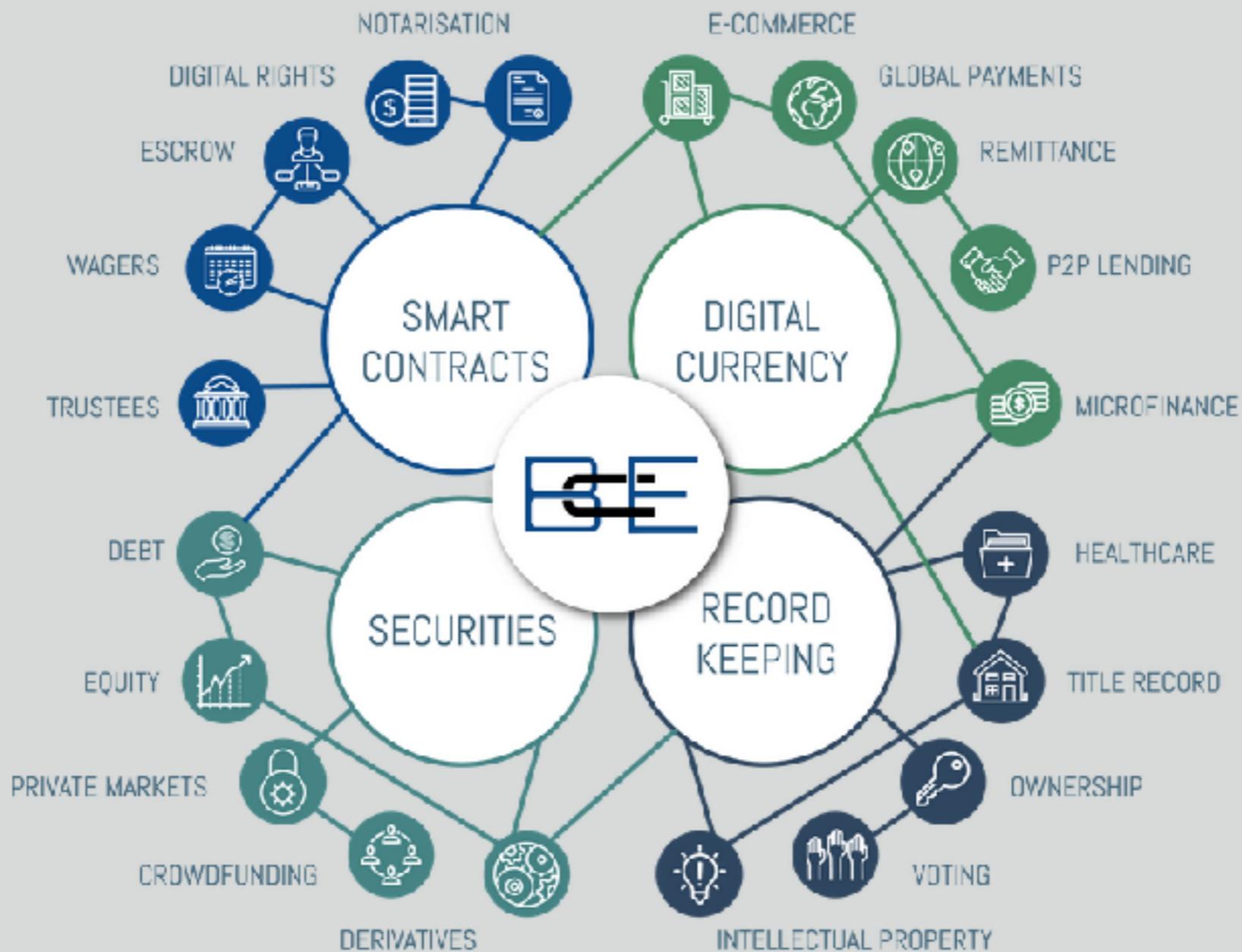
Education Ambassador



Technology Ambassador

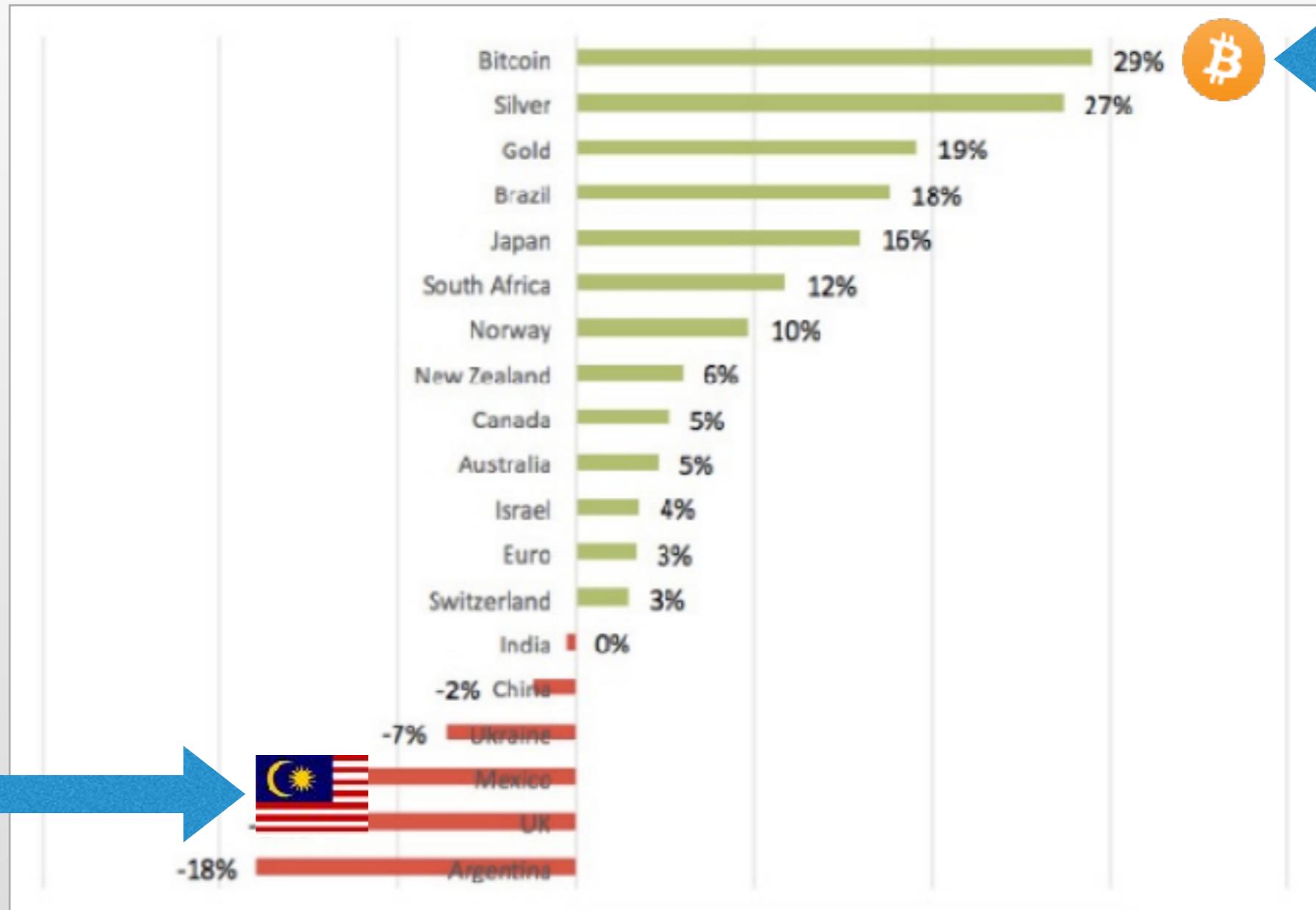
# BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS

( now drawing attention from international banks seeking partnerships )



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

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



# COINGECKO - TRAKING THE TOP 500 CRYPTO-CURRENCIES



| # - BTC ▾ |  | All Hashing Algorithms ▾ |       | Total ⚡                  | MktCap ⚡  | Liquidity ⚡ | Developer ⚡  | Community ⚡                               | Public Interest ⚡             | Last 7 Days                                  |   |
|-----------|--|--------------------------|-------|--------------------------|-----------|-------------|--|---|-------------------------------|--|---|
| Rank      | Coin ⚡   | %                        | +     | %                        | ★         | ↑           | %  | ↑   | %                             | ↗  |   |
| 1         | <b>Bitcoin ↗</b><br>BTC SHA-256 (420 PH/s)<br>↓ \$239,401,389.53<br>↑ \$1.00000000 | 96                       | ▼ 0.5 | \$16,246,112<br>+ 2.540% | 116109.00 | 98          | 11974<br>↑ 7789<br>↓ 1364<br>↑ 3372<br>↓ 2808<br>↓ 610 | 94<br>↑ 7789<br>↓ 501<br>↑ 2.23<br>↓ 132  | 210604<br>↑ 29627<br>↓ 169012 | 87<br>↓ 9,001,000<br>↑ 10539<br>↓ 1.00000000 | <br><a href="#">Buy</a> <a href="#">Sell</a>   |
| 2         | <b>Ethereum ↘</b><br>ETH Ethash (N/A)<br>↓ \$0.04631585                            | 85                       | ▼ 0.4 | \$4,161,003<br>+ 1.004%  | 76444.15  | 93          | 3373<br>↑ 1173<br>↓ 463<br>↑ 1284<br>↓ 1775<br>↓ 65    | 72<br>↑ 184<br>↓ 2.28<br>↓ 29.0           | 32579<br>↑ 30308<br>↓ 61075   | 56<br>↓ 392,000<br>↑ 24497<br>↓ 0.04631585   | <br><a href="#">Buy</a> <a href="#">Sell</a> |
| 3         | <b>Litecoin ↗</b><br>LTC Scrypt (2.74 TH/s)<br>↓ \$51,213,835.37<br>↑ \$0.00825351 | 75                       | ▲ 2   | \$816,383<br>+ 0.009%    | 82212.63  | 85          | 1199<br>↑ 988<br>↓ 249<br>↑ 148<br>↓ 144<br>↓ 10       | 62<br>↑ 59<br>↓ 1.17<br>↓ 24.5<br>↓ 23327 | 22437<br>↑ 42749<br>↓ 23327   | 42<br>↓ 403,000<br>↑ 174781<br>↓ 0.00825351  | <br><a href="#">Buy</a> <a href="#">Sell</a> |
| 4         | <b>Ripple ↗</b><br>XRP XRP (N/A)<br>↓ \$0.0002014                                  | 74                       | ▲ 3   | \$763,055<br>+ 37.27%    | 70280.88  | 87          | 1259<br>↑ 357<br>↓ 251<br>↑ 247<br>↓ 199<br>↓ 38       | 49<br>↑ 20<br>↓ 1<br>↓ 12.3               | 2281<br>↑ 4339<br>↓ 23406     | 54<br>↓ 122,000<br>↑ 63256<br>↓ 0.0002014    | <br><a href="#">Buy</a> <a href="#">Sell</a> |
| 5         | <b>Dash ↘</b><br>DASH X11 (3.49 TH/s)<br>↓ \$298,800,534.83<br>↑ \$0.0659738       | 71                       | ▲ 0.5 | \$473,613<br>+ 0.421%    | 78847.81  | 82          | 410<br>↑ 228<br>↓ 119<br>↑ 208<br>↓ 150<br>↓ 23        | 53<br>↓ 31<br>↓ 1<br>↓ 14.8               | 4220<br>↑ 13764<br>↓ 15935    | 47<br>↓ 265,000<br>↑ 46914<br>↓ 0.0659738    | <br><a href="#">Buy</a> <a href="#">Sell</a> |
| 6         | <b>Monero ↗</b><br>XMR Cryptonight (N/A)   | 70                       | ▼ 0.2 | \$265,592<br>+ 1.46%     | 4801.59   | 85          | 514<br>↑ 307<br>↓ 143<br>↓ 1214<br>↓ 59<br>↓ 0.8       | 54<br>↓ 52<br>↓ 0.8                       | 2793<br>↑ 3022<br>↓ 3022      | 44<br>↓ 318,000<br>↑ 318,000<br>↓ 0.00000000 | <br><a href="#">Buy</a> <a href="#">Sell</a> |

# 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](#)



(L-R) Naysan Munusamy, Damien Santer and Fazil Fuad

# ETHERSCAN FOUNDED BY A MALAYSIAN - FUNDED BY DCG

Etherscan  
The Ethereum Block Explorer

HOME BLOCKCHAIN ACCOUNT TOKEN CHART MISC

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

|               |   |   |
|---------------|---|---|
| Block 3104622 | Mined By Ethpool_2<br>>15 secs ago            | 3 txns IN 12 secs<br>Block Reward 5.00015 Ether |
| Block 3104621 | Mined By Ethermine<br>>27 secs ago            | 5 txns IN 13 secs<br>Block Reward 5.00409 Ether |
| Block 3104620 | Mined By 0x9633B149e9f6c26...<br>>40 secs ago | 4 txns IN 4 secs<br>Block Reward 5.00187 Ether  |
| Block 3104619 | Mined By DwarfPool1<br>>44 secs ago           | 0 txns IN 20 secs<br>Block Reward 5 Ether       |

Transactions

|   |               |
|---|---------------|
| TX# 0X8C82912A90EB24422A0DD89...<br>From 0xea674fdde714fc9... To 0xd017d353b01285...<br>Amount 1.0045803417014828 Ether   | > 15 secs ago |
| TX# 0X30803DA432AD0EC50B674EB...<br>From 0xf34a702291e2578... To 0x6fc82a5fe25a6cd...<br>Amount 0.09972424738776962 Ether | > 15 secs ago |
| TX# 0X9F3AEC03CD8978780C11C59...<br>From 0x2e07179281a34b... To 0x44e9bfd5eb0051...<br>Amount 1.508181 Ether              | > 15 secs ago |
| TX# 0X69420B51113744361D7EF7D...<br>From 0xea674fdde714fc9... To 0xb2db64a2574811...<br>Amount 1.0055965029717969 Ether   | > 27 secs ago |

# CORTEX IN PRODUCTION WITH 1 OF 6 LICENSED ECF OPERATORS

ataplus

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

Credits: 264.0000000 FLUSH LOGOUT

COMMITTS

DATASTORES

ISSUERS

COMPANIES

INVESTORS

INVESTMENTS

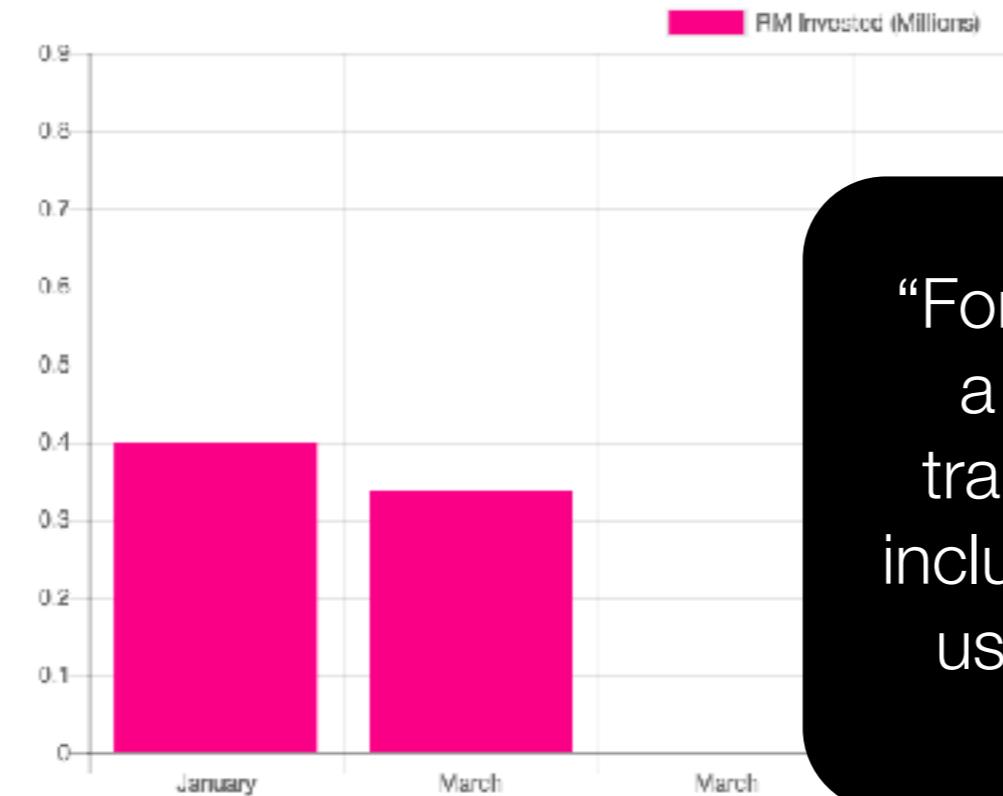
SECTORS

ADD NEW

SCHEMA

DOCUMENTATION

6 Months Sitewide Total Investments



“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

# ALTHOUGH WE HAVE BEEN WORKING WITH FINTECH PLAYERS

## REGULATORS WE HAVE TRAINED



BANK NEGARA MALAYSIA  
CENTRAL BANK OF MALAYSIA



Suruhanjaya Sekuriti  
Securities Commission  
Malaysia

## INSTITUTIONS INVESTED IN US

**500** startups

coinsilium

## INSTITUTIONS WE HAVE DONE BUSINESS WITH

DBS

ataplus

axiata

Maybank

# FINTECH IS NOT THE ONLY INDUSTRY WE ARE DEALING WITH

## BANKING

From AML & KYC cost reductions to reward schemes & reaching the unbanked or general key-signing

## HEALTHCARE

Complete and immutable family histories of every related diagnosis and condition available from one key

## ACCOUNTING

Creation of programmable processes and automated auditing trails that increase transparency and efficiency

## LEGAL

Cryptographically secure document notarization, copyright protection, and dispute settlement

## GOVERNANCE

Increase the accountability of public officials and offer total transparency in voting and elections

## LOGISTICS

Tracking of shipping cycles and provenance systems that autonomously verify actions

## GAMING

Share digital assets between an entire network of games, or use the blockchains to create immutable persistent open-worlds

## ASSETS

Track possession of your property in the digital economy by creating, managing, storing, or sharing multiple asset classes

## INSURANCE

Integrated insurance and medical services can be intelligently designed to quickly and contractually settle claims with cryptographically

## 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**

**YOU CAN NOW VIEW THIS SLIDES ONLINE:**

<http://neuroware.io/idecs.pdf>

# THANK YOU

NOW IS THE TIME TO QUESTION THINGS

LEARN MORE ABOUT



neuroware

<http://neuroware.io>