

MODERN MONEY

BITCOIN, BLOCKCHAINS & THE DIGITAL ECONOMY

PRESENTED AT **IDECS** KUCHING, 2017 BY



neuroware

SARAWAKIAN AT HEART - BRITISH BY DEFAULT



Mark Smalley

Founder & CEO

Living in Malaysia for 20 Years

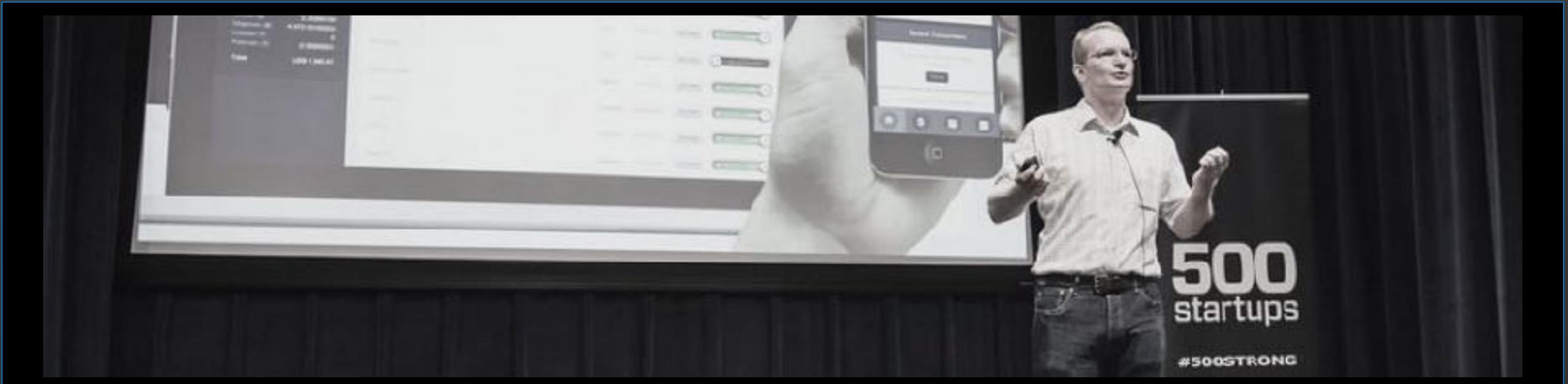
Building Web Applications for 15 Years

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

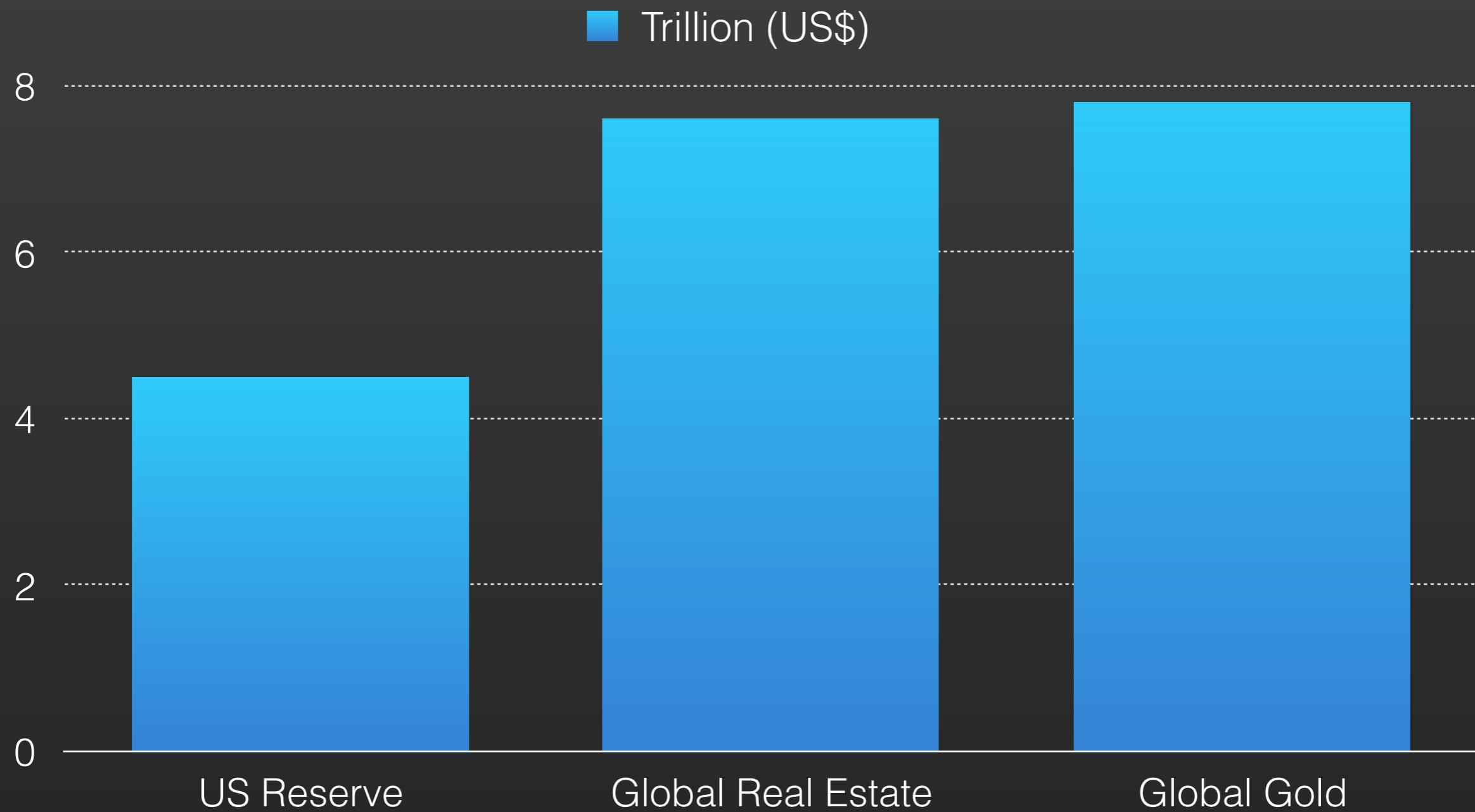


- Size wasn't everything
- The history of each stone determined it's individual value
- Conducting transactions quite literally involved a song & dance
- This required the majority of people from the village to be present

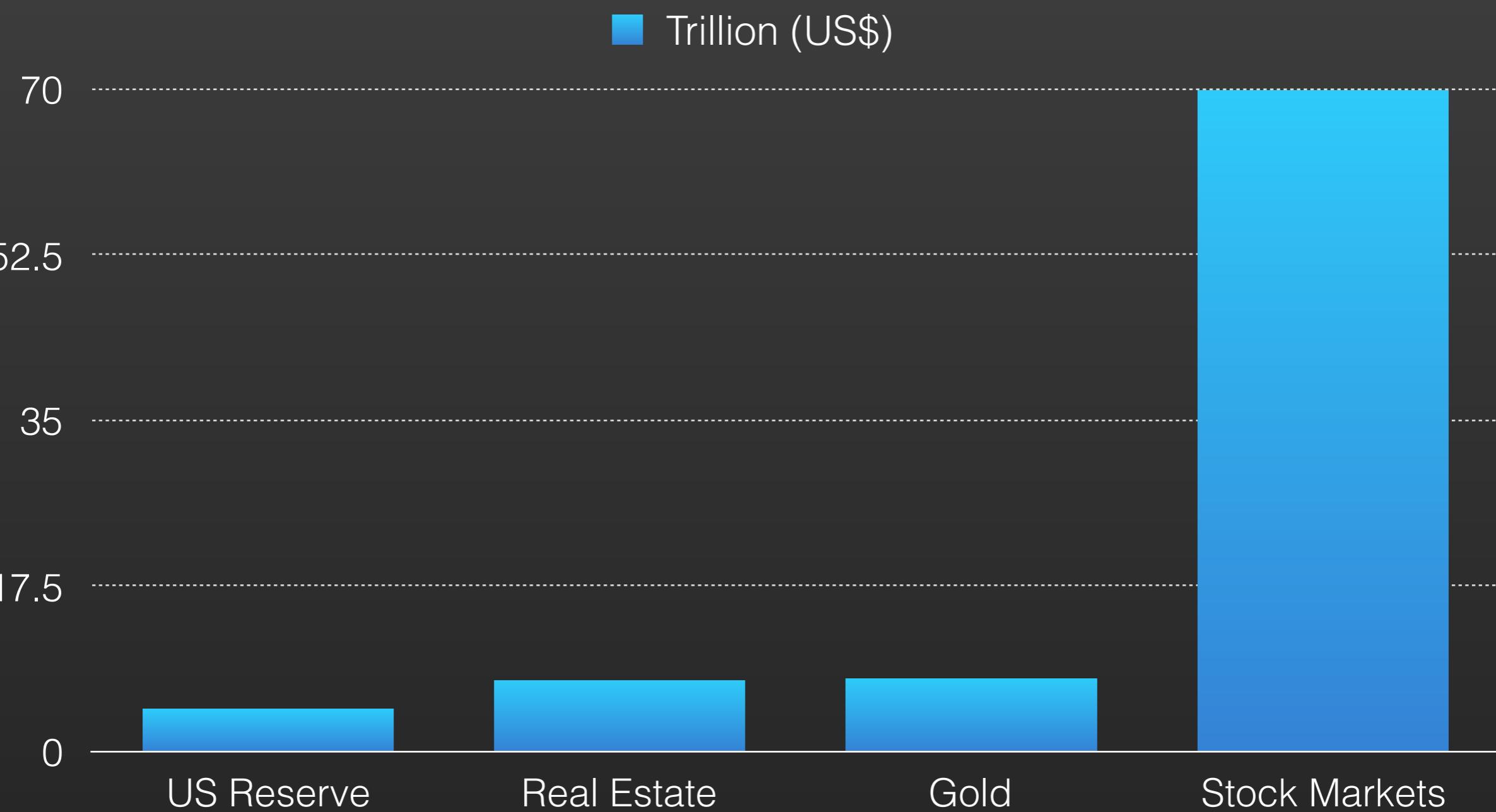
BUT IT COULD NOT SCALE - THEY EVENTUALLY SWITCHED TO US\$



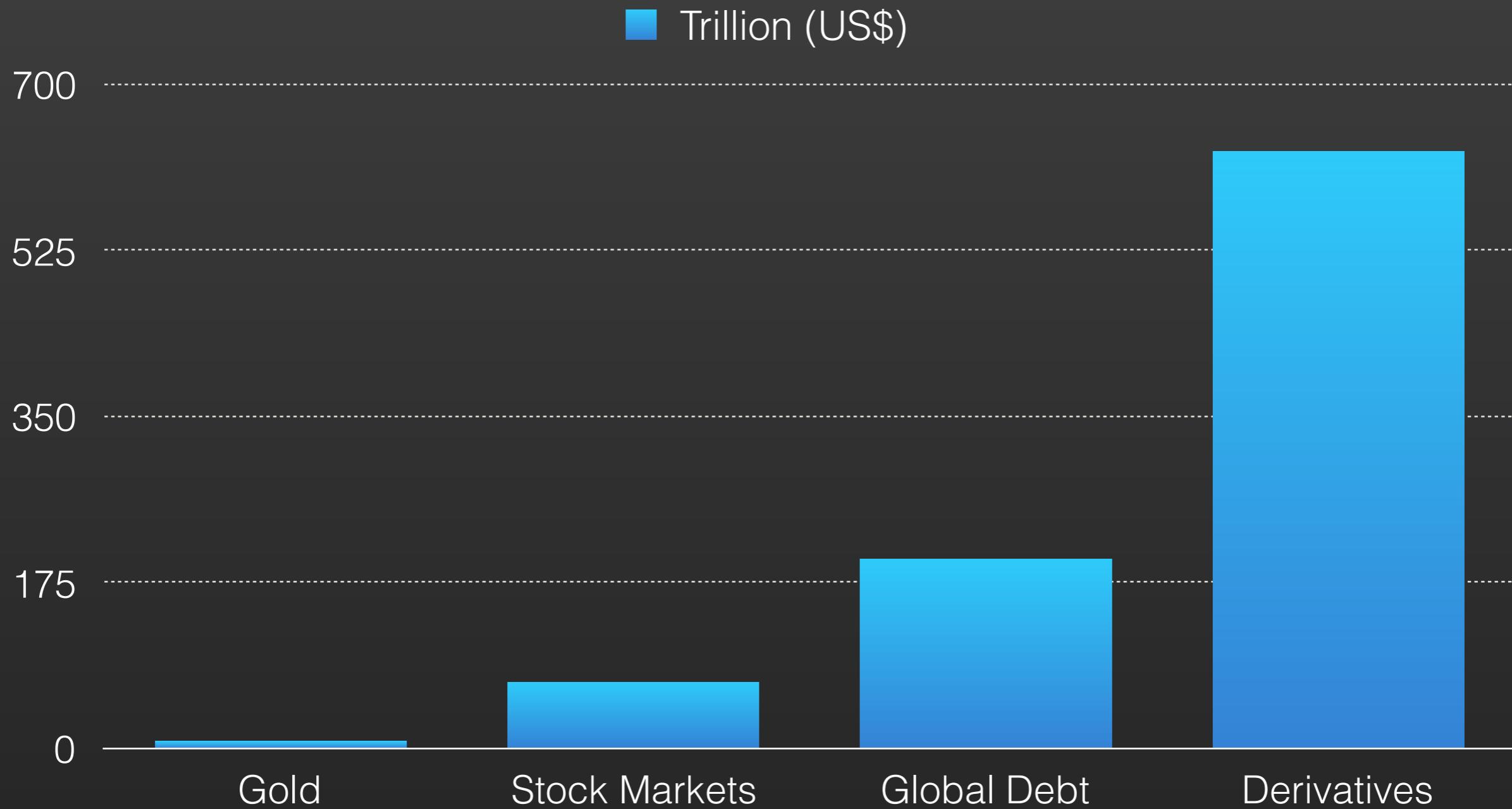
WHEN WE THINK OF THE US DOLLAR WE THINK OF **REAL MONEY**



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)



World War 2
US\$3 Trillion

2008 Bailout
US\$8.5 Trillion

All other US
Wars Ever

This really annoyed
Satoshi Nakamoto

A TIP-TOE INTO BITCOIN

MAGIC INTERNET MONEY

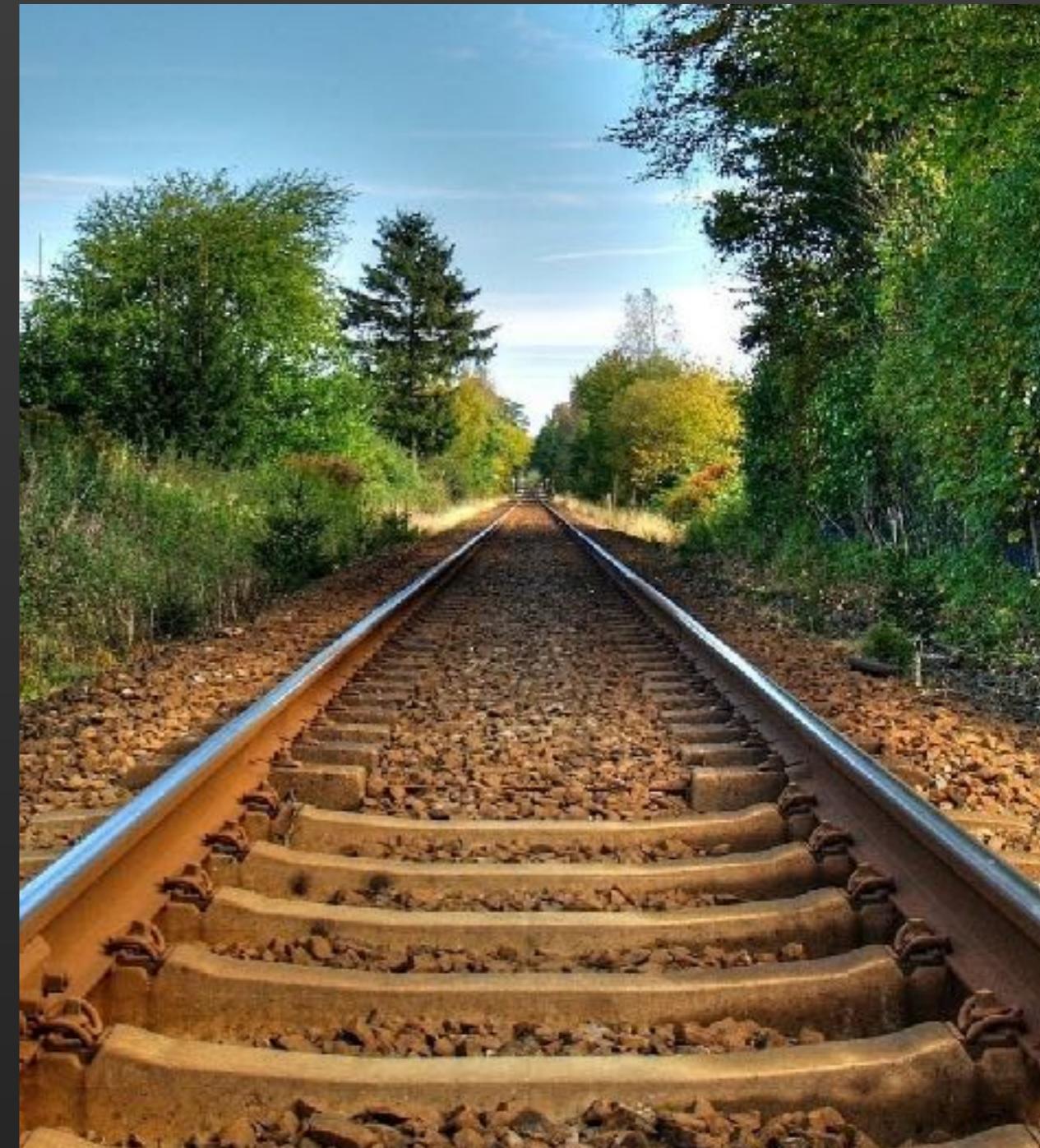
BITCOIN

(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

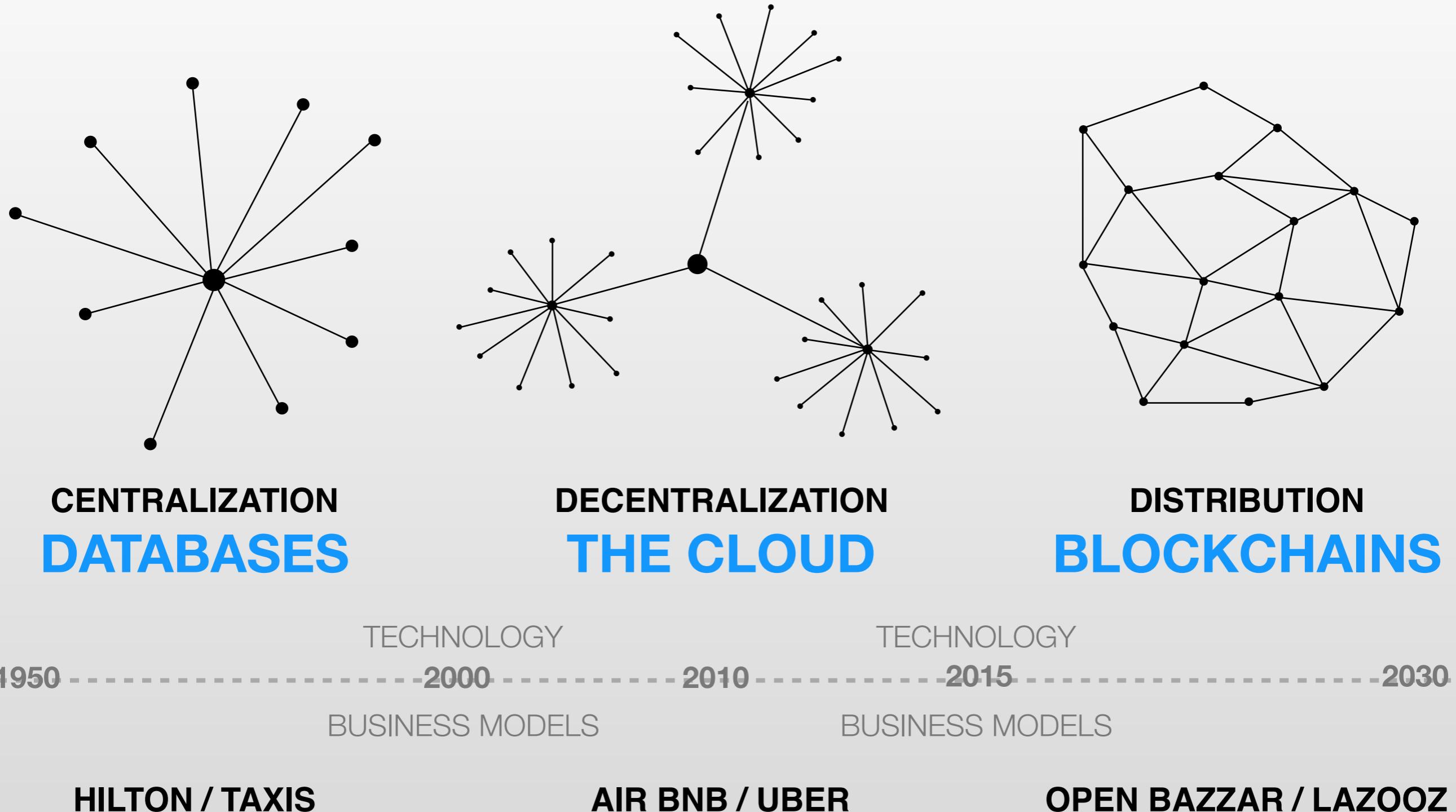
- Bitcoin blockchain released in January 2009 by Satoshi Nakamoto
- We do not know who Satoshi is, or what their religion or political views are
- However, the bailout of 2008 was cited as primary catalyst for its creation
- RM50 per coin in 2013 (when we bought) - now over RM5,000 per coin
- The Bitcoin 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

DISTRIBUTION PROVIDES ADDITIONAL CHOICES & CONFUSION



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?

THE TROUBLE WITH REPRESENTATIONS OF VALUE IS MAN



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

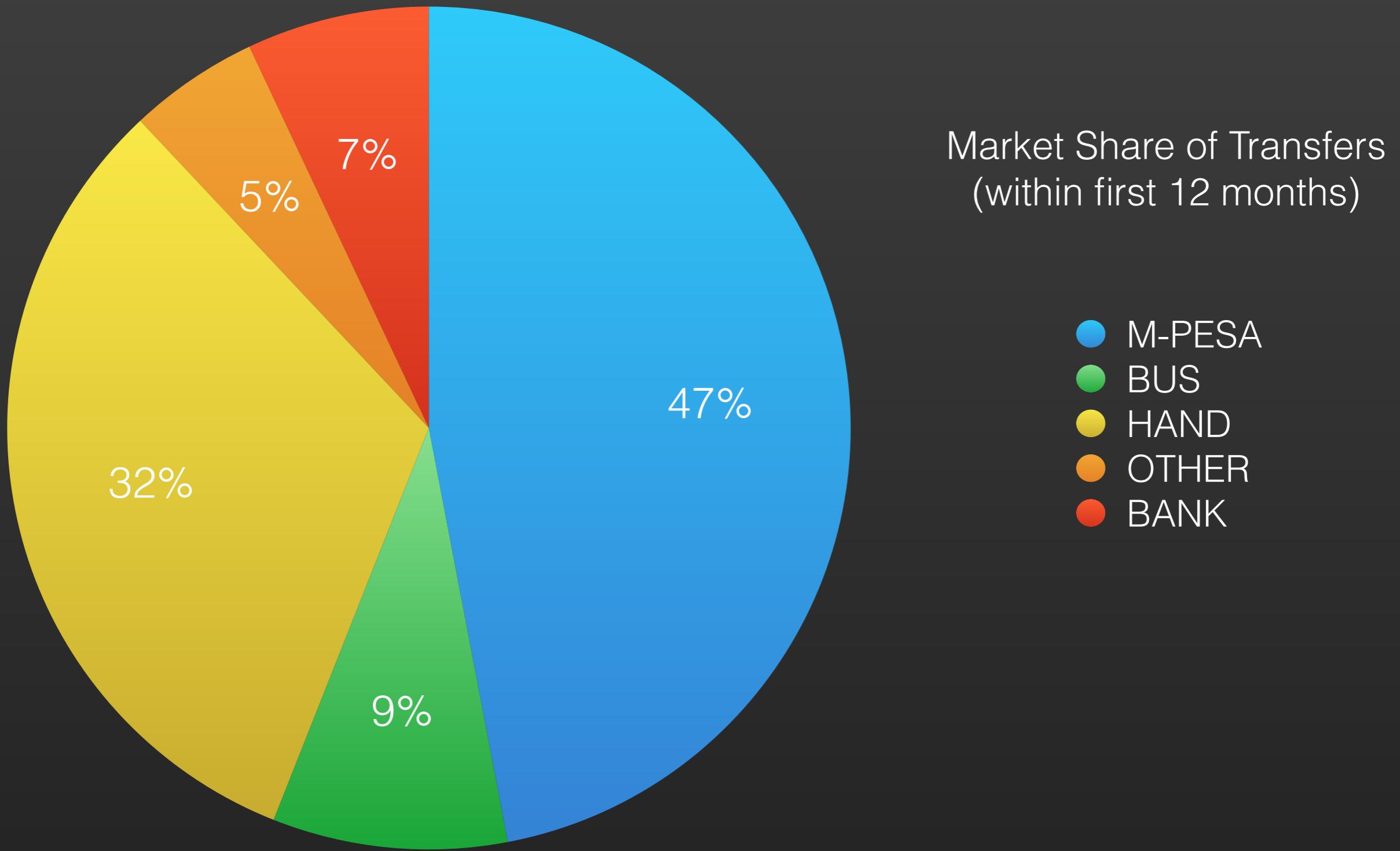
THE RECENT FAILURE OF FIAT

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



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



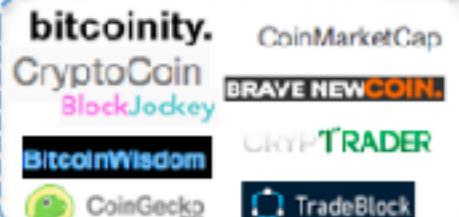
Investments



Merchants



Financial Data



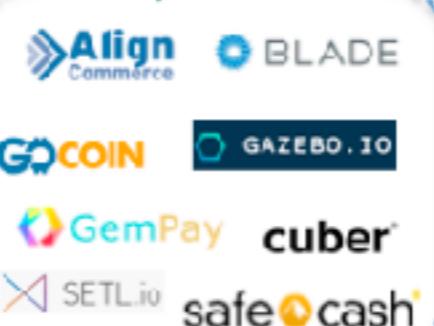
Supply Chain



Compliance



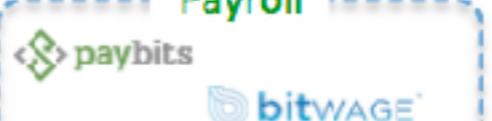
Payments



ATMs



Payroll



Capital Markets



Trading



Money Services



Banks



Services



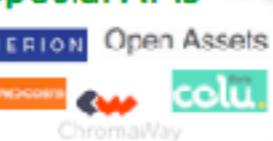
Software Development



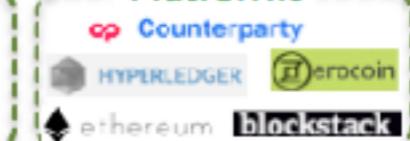
General APIs



Special APIs



Platforms



Smart Contracts



INFRASTRUCTURE & BASE PROTOCOLS

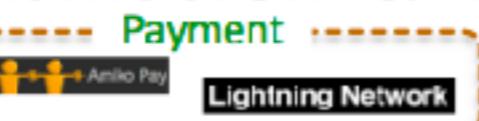
Public



Special



Payment



Miners



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

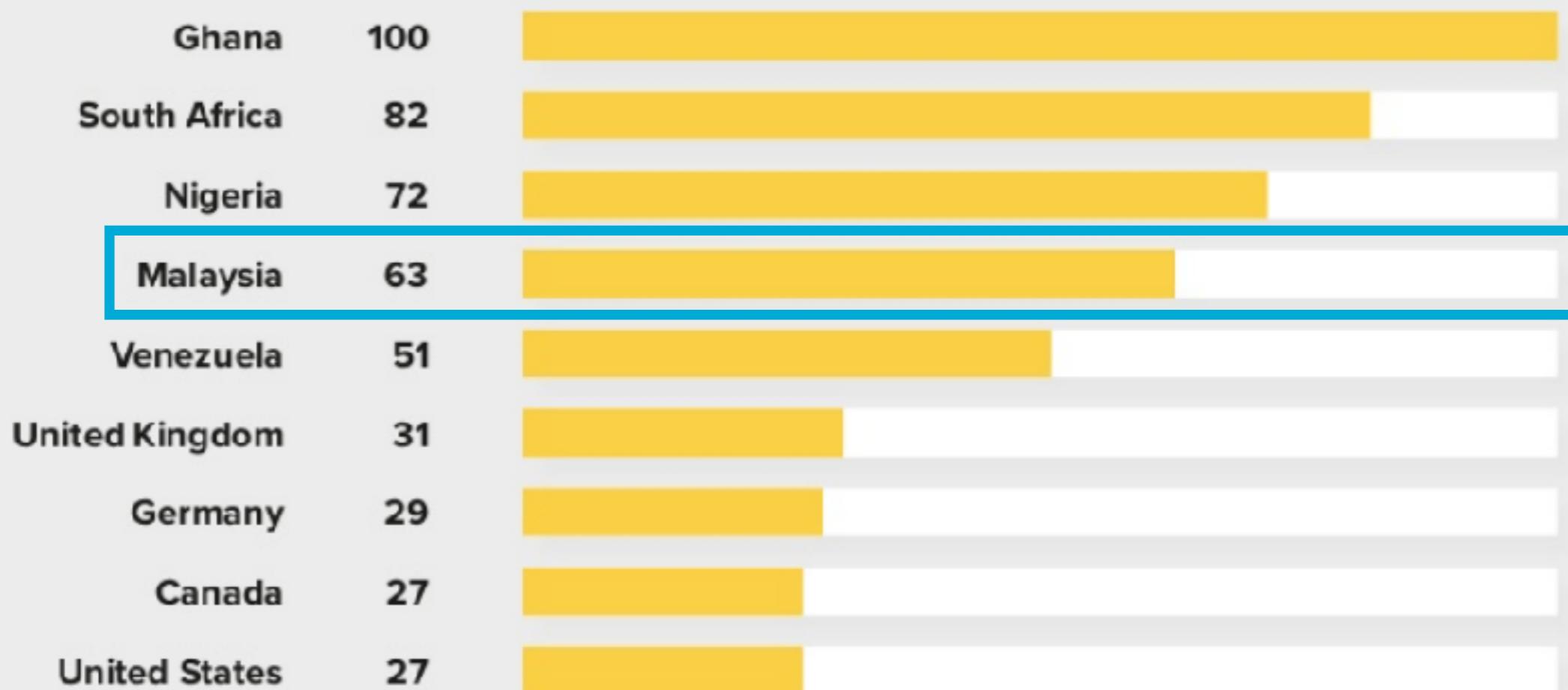


BLOCKCHAINS IN MALAYSIA

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

from the coindesk.com most recent quarterly report

MOST INCREASED INTEREST IN BITCOIN



THE BLOCKCHAIN EMBASSY OF ASIA - MADE IN MALAYSIA

<http://bce.asia>



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



Insurer Ambassador

MahWengKwai
& Associates

Legal Ambassador



Banking Ambassador

CapitalBay

Investing Ambassador

REDmoney

Media Ambassador



IoT Ambassador



FinTech Ambassador



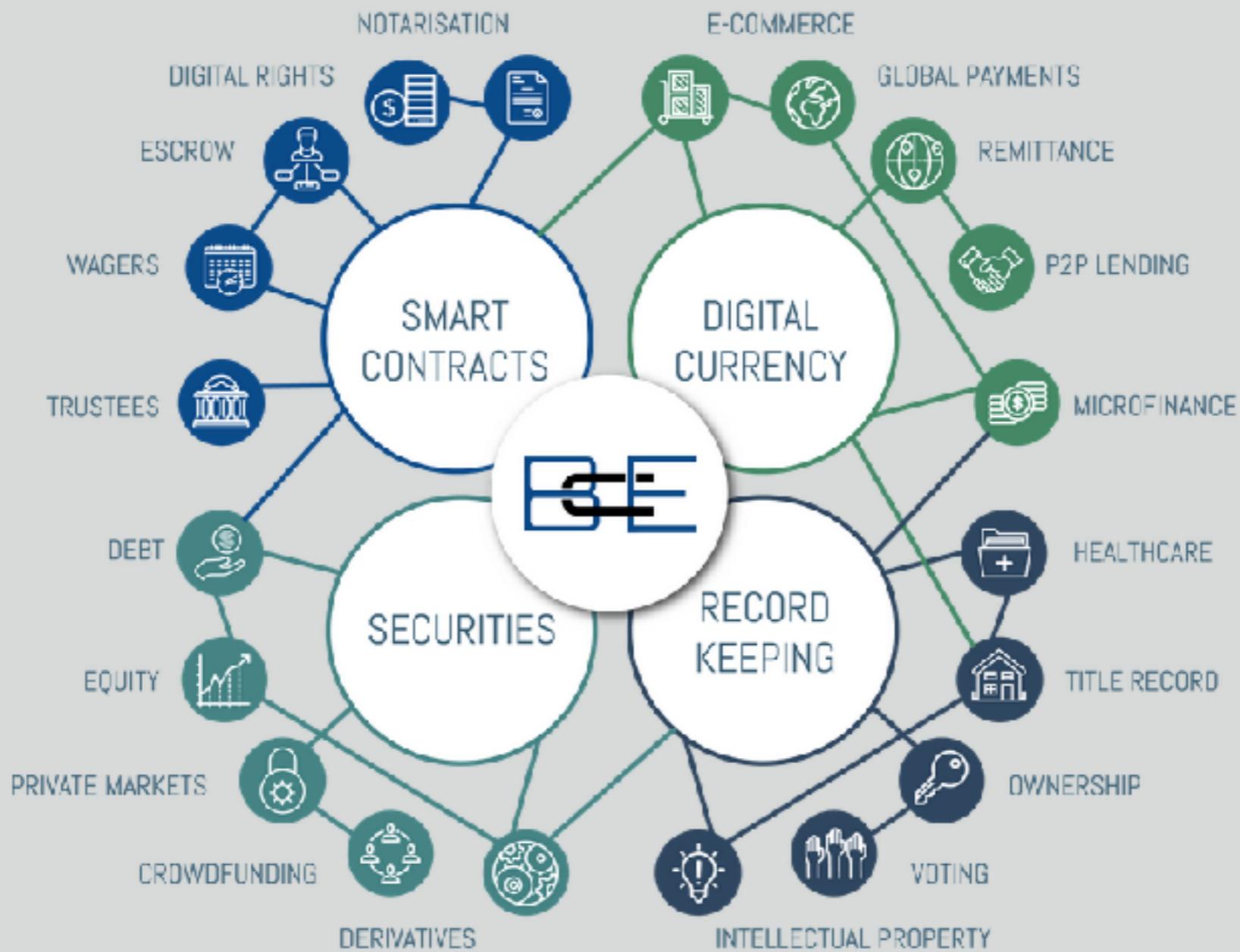
Education Ambassador



Technology Ambassador

BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS

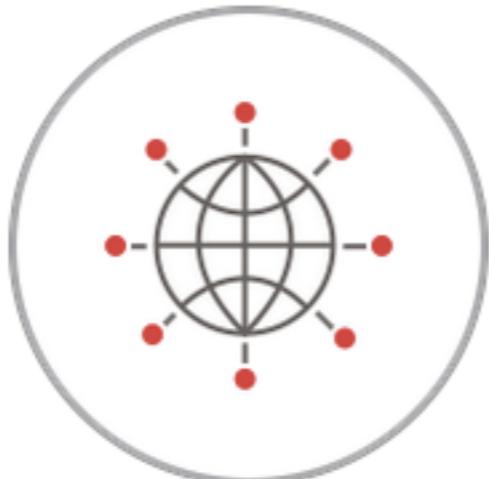
(BEYOND FINTECH LIES IoT, BIG DATA & HEALTHCARE - WHICH IS WHY WE ARE REGIONAL)



THE FOUR PILLARS OF MDEC (CURRENT AREAS OF FOCUS)



BIG DATA ANALYTICS



INTERNET OF THINGS (IOT)



E-COMMERCE

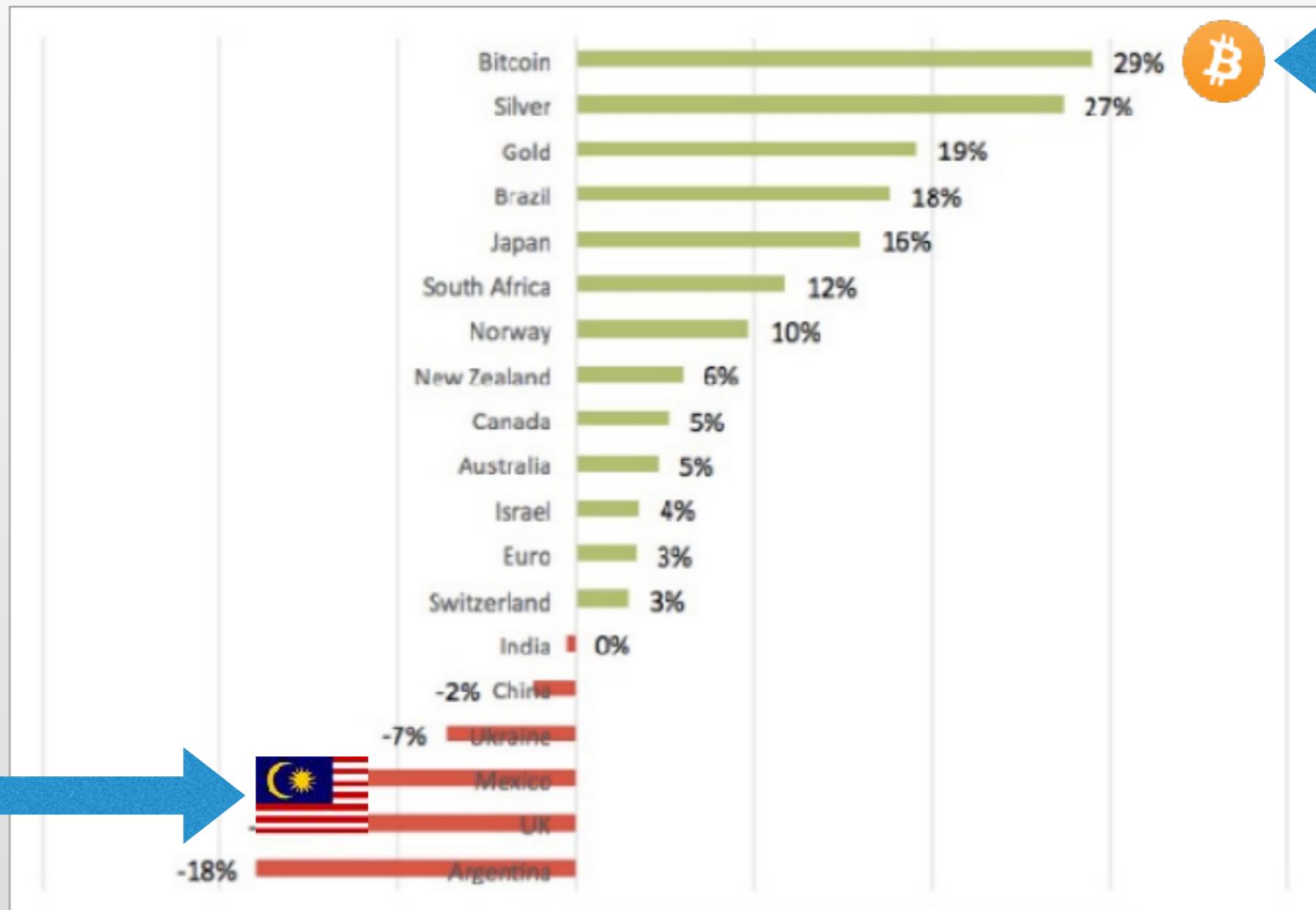


DATA CENTRE & CLOUD

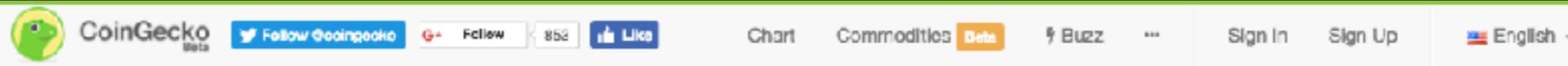
- IoT has the most use for blockchains, which can provide a communication platform that would allow machines to securely talk to and trust each other
- E-Commerce will obviously be affected significantly by digital-currencies
- BIG Data can not only utilize blockchains for authenticating data-lake transactions but will also have LOTS of new public data to be analyzed
- New forms of data-centers and cloud-based products will be required

WHERE DO WE (MALAYSIA) STAND ...?

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



COINGECKO - TRACKING THE TOP 500 CRYPTO-CURRENCIES



Search Coins

# - BTC		All Hashing Algorithms	Total	MktCap	Liquidity	Developer	Community	Public Interest	Last 7 Days			
Rank	Coin		%	Value	Value	%	★	%	Value			
1	Bitcoin	BTC SHA-256 (420 PH/s)	96 ▼ 0.5	\$16,246,112 +2.540%	116109.00	98	11974 17789 1364 3372 2808	4075 501 2.23 132 010	210604 29627 169012 10539	87 ▲ 1.001,000 10539 \$1.00000000		Buy Sell
2	Ethereum	ETH Ethash (N/A)	85 ▼ 0.4	\$4,161,003 +1.004%	76444.15	93	3373 1173 463 1284 1775	751 184 2.28 29.0 65	32579 30008 61075	56 ▲ 32.000 24497 \$0.04631585		Buy Sell
3	Litecoin	LTC Scrypt (2.74 TH/s)	75 ▲ 2	\$2,163.883 +0.009%	62212.63	85	1199 988 249 148 144	66 1.17 24.5 24.5 10	22437 259 42749 23327	42 ▲ 403,000 174781 \$0.00825351		Buy Sell
4	Ripple	XRP XRP (N/A)	74 ▲ 3	\$0.63.055 +31.21%	70280.88	87	1259 357 251 247 199	262 1.1 21 21 38	2281 20 4339 23406	54 ▲ 122,000 63256 \$0.0002014		Buy Sell
5	Dash	DASH X11 (3.49 TH/s)	71 ▲ 0.5	\$473.613 -0.421%	78847.81	82	410 228 119 208 150	1003 51 38 20 23	4220 31 1.1 14.8 0.8	47 ▲ 255,000 46914 \$0.06579709		Buy Sell
6	Monero	XMR Cryptonight (N/A)	70 ▼ 0.2	\$265.592 -1.464%	4801.59	85	514 307 143	1214 52 0.8	2793 3022 0.8	44 ▲ 318,000 318,000 \$0.06579709		Buy Sell

MONEY MATCH FIRST IN MALAYSIA TO USE RIPPLE

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



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[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

View All

Block 3104622 Mined By Ethpool_2 >15 secs ago
3 txns IN 12 secs
Block Reward 5.00015 Ether

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

Block 3104620 Mined By 0x9633B149e9f6c26... >40 secs ago
4 txns IN 4 secs
Block Reward 5.00187 Ether

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

Transactions

View All

TX# 0X8C82912A90EB24422A0DD89... > 15 secs ago
From 0xea674fddc714fc9... To 0xd017d353b01285...
Amount 1.0045803417014828 Ether

TX# 0X30803DA432AD0EC50B674EB... > 15 secs ago
From 0xf34a702291e2578... To 0x6fc82a5fe25a6cd...
Amount 0.09972424738776962 Ether

TX# 0X9F3AEC03CD8978780C11C59... > 15 secs ago
From 0x2e07179281a34b... To 0x44e9bfd5eb0051...
Amount 1.508181 Ether

TX# 0X69420B51113744361D7EF7D... > 27 secs ago
From 0xea674fddc714fc9... To 0xb2db64a2574811...
Amount 1.0055965029717969 Ether

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

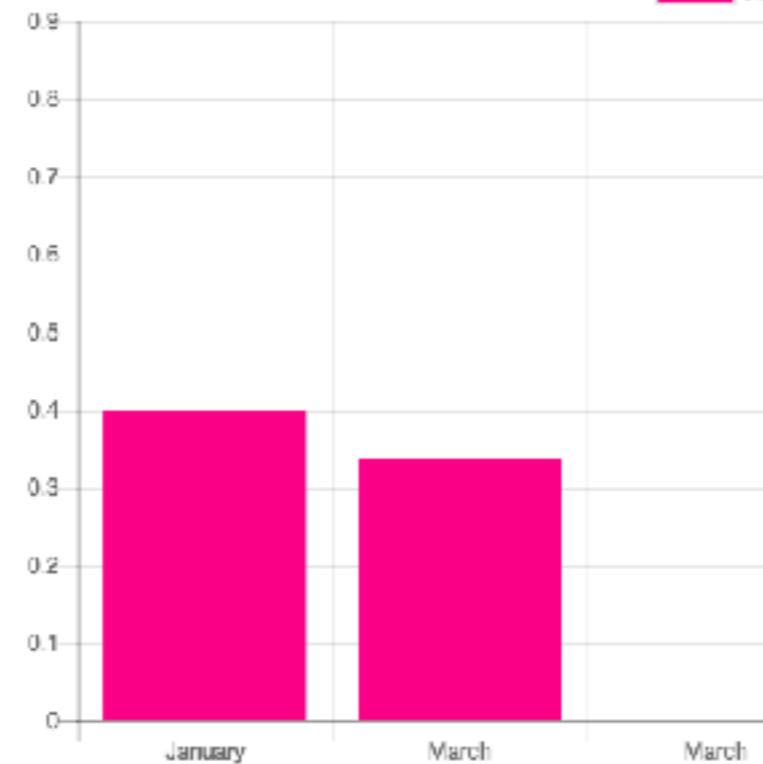
ADD NEW

SCHEMA

DOCUMENTATION

6 Months Sitewide Total Investments

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

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 THESE SLIDES ONLINE:

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

THANK YOU

NOW IS THE TIME TO QUESTION THINGS

LEARN MORE ABOUT



neuroware

<http://neuroware.io>