

Blockchains & Trains

(A GRAPHICAL INTRODUCTION TO DISTRIBUTED LEDGERS)

presented by



neuroware

DISCLAIMER - WE BOUGHT BITCOINS WHEN THEY WERE US\$10



Mark Smalley - CEO



Ruben Tan - CTO

Living in Malaysia for the past 20 Years

Building FinTech Applications for 15 Years

Building Blockchain Apps for 5 Years

Building Web Applications for 10 Years

Early Developer at MyTeksi and OnApp

Studying Distributed Consensus for 5 Years

WTF IS A DISTRIBUTED LEDGER ?

(LET'S START AT THE BEGINNING)

WELCOME TO THE ISLANDS OF YAP



SHOPPING WAS ALMOST AS CHALLENGING AS BANKING



SO THEY INVENTED THE WORLD'S FIRST PUBLIC LEDGER

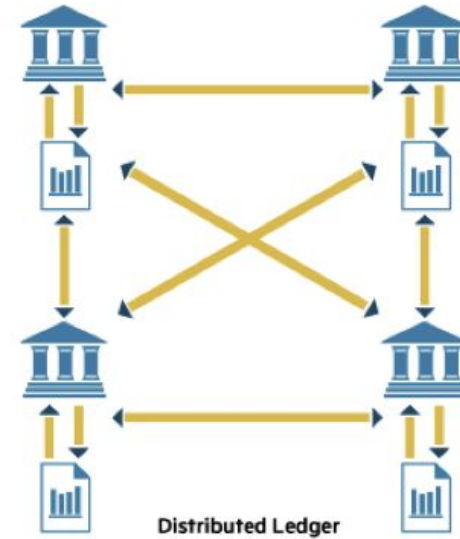
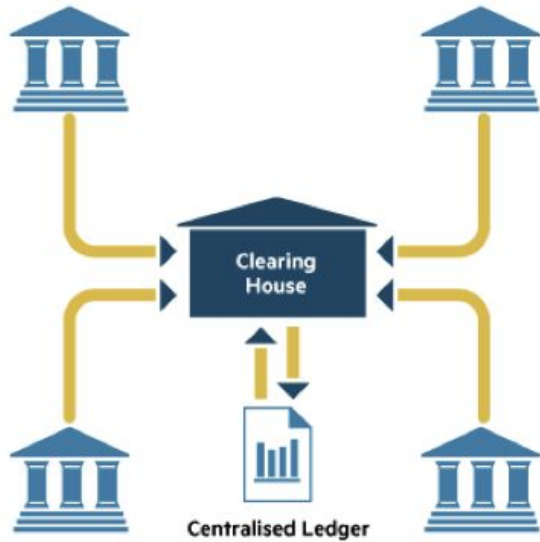


THEY USED GROUP CONSENSUS - SAME AS BITCOIN



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

SANTANDER BANK - 1st TO ADMIT US\$20B ANNUAL SAVINGS



- Reconciling Multiple Central Ledgers Vs Auto-Audited Distributed Ledgers?
- Batch Processing CSVs every 24 Hours Vs Really Real-Time Settlement?

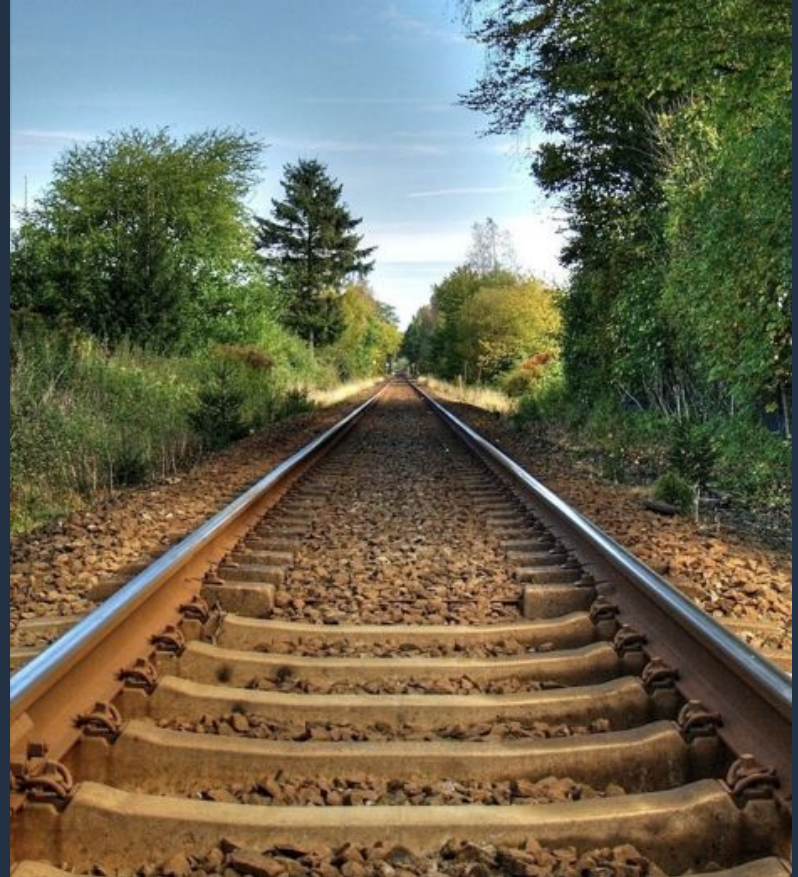
BITCOIN

(the first application / popular digital asset)

Vs

BLOCKCHAINS

(underlying tech / shared public ledger)



ETHEREUM

(open network for building anything)

Vs

PRIVATE NETWORKS

(very similar to traditional database)



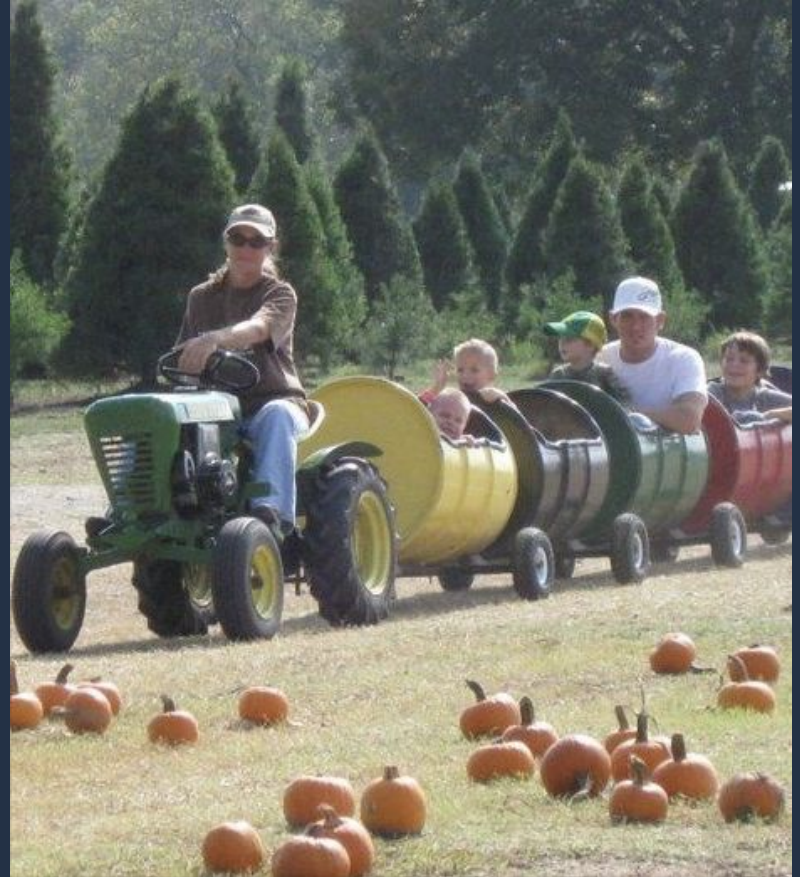
PUBLIC BLOCKCHAINS

(enables permissionless innovation)

Vs

PERMISSIONED LEDGERS

(puts new central controllers into authority)



IT'S ALL A QUESTION OF CONSENSUS - AND ENERGY ...?



COMPARING OUR 4 + (1 X 2) FAVOURITE PUBLIC BLOCKCHAINS

CoinGecko Data - June 6th, 2017	Bitcoin	Litecoin	Dogecoin	Dash	Ethereum	ETC
Coin Limit	21 Million	84 Million	UNLIMITED	22 Million	Unknown	200+ Million
Current Supply	16 Million	51 Million	100 Billion	7 Million	91 Million	91 Million
Mining Algorithm	SHA-256	Script	Script	X11	Ethash	Ethash
Hash-Rate	644 PH/s	7.2 TH/s	6 TH/s	3.6 TH/s	30 TH/s	Unknown
Average Block Time	10 Minutes	2.5 Minutes	1 Minute	2.5 Minutes	10 Seconds	10 Seconds
Launched	03 / JAN / 09	07 / OCT / 11	08 / DEC / 13	19 / JAN / 14	30 / JUL / 15	25 / OCT / 16
US\$ Price per Coin	US\$2,800+	US\$30	US\$0.0038	US\$149	US\$260	US\$17
Current Market Cap	US\$47+ B	US\$1.5+ B	US\$420+ M	US\$1+ B	US\$24+ B	US\$1.6+ B
Size of Raw Blockchain	135 GB	8 GB	21 GB	3 GB	180 GB	120 GB
Hardware Cost of 51% Attack	US\$1.6+ B	US\$240+ M	US\$200+ M	US\$450+ M	Unknown	Unknown

BITCOIN IS THE ONLY UNIVERSAL CURRENCY





neuroware

email the team anytime - founders@neuroware.io