



neuroware

**BLOCKCHAIN INFRASTRUCTURE PROVIDERS**

**WHAT ARE BLOCKCHAINS...?**

**THE DAWN OF THE DISTRIBUTED LEDGER**

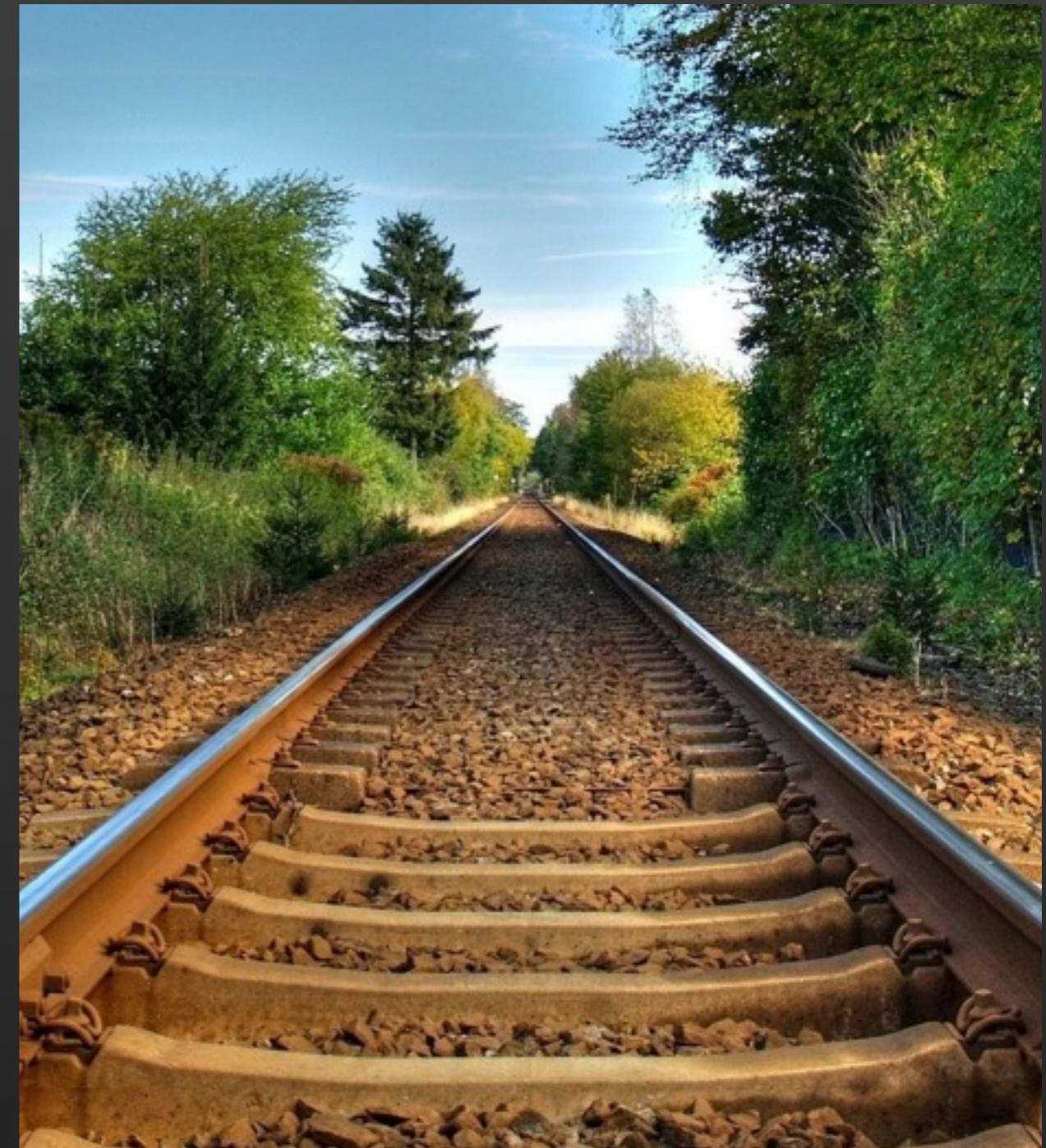
# BITCOIN

digital asset

vs

# BLOCKCHAINS

distributed ledger



# BREAKING IT ALL DOWN

- 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
- When you are able to transfer a native asset on a ledger - magic happens:
- **THE TRANSFER AND SETTLEMENT OCCUR AS A SINGLE EVENT**



# BLOCKCHAINS - THE FASTEST GROWING TECH OF OUR LIFETIME

In 2016 alone, over 100 banks and leading financial institutions started working on blockchain projects - with the eco-system receiving over US\$1 billion in funding



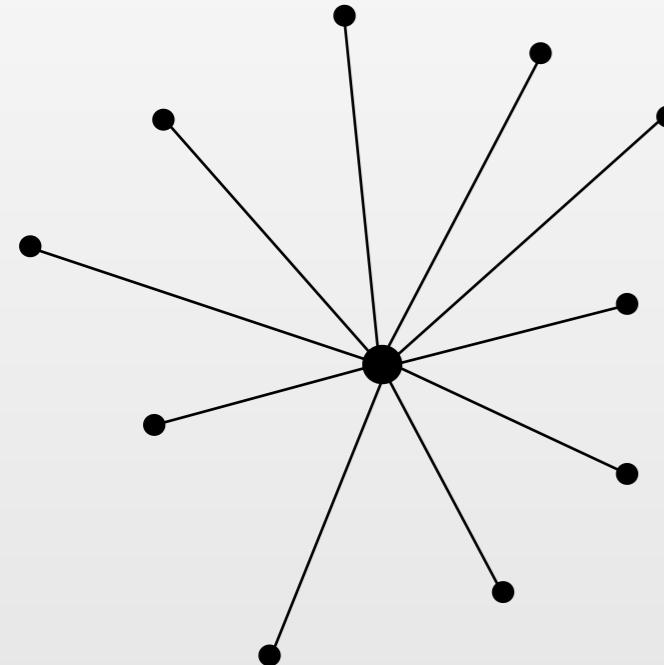
# WHY THE FUSS...? WHAT DO PUBLIC BLOCKCHAINS DO...?

- 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

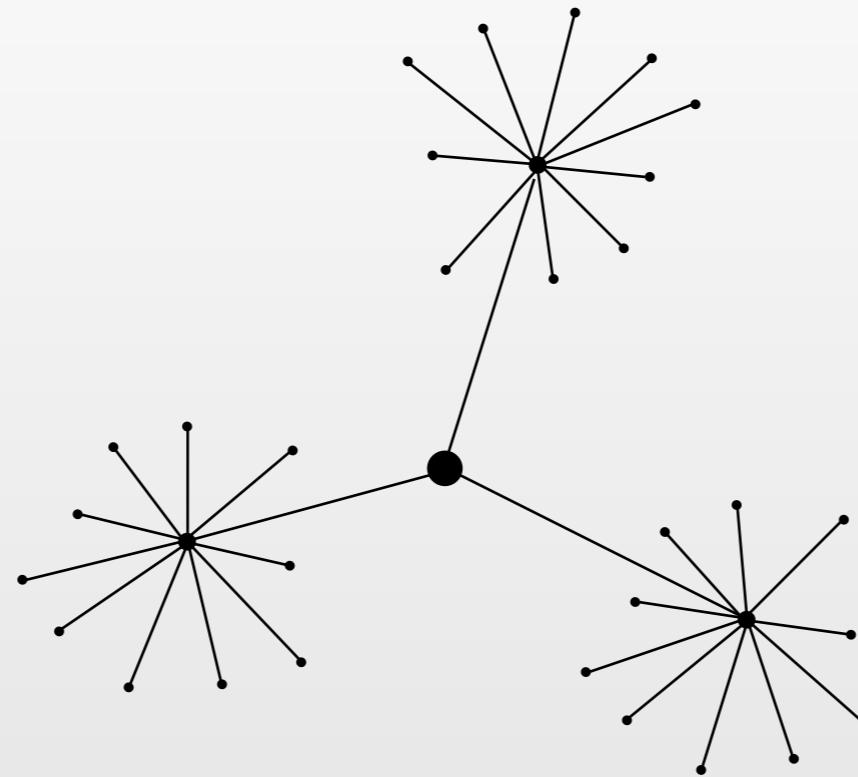


“While FinTech Disrupts Banks,  
the Blockchains Disrupt FinTech”

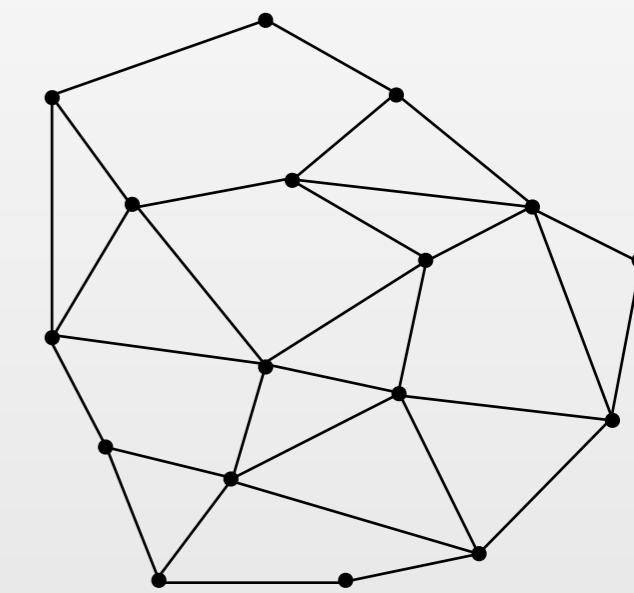
# COMPARED TO WHAT...? TRUTH CAN ONLY BE STORED ONE WAY



CENTRALIZATION  
**DATABASES**



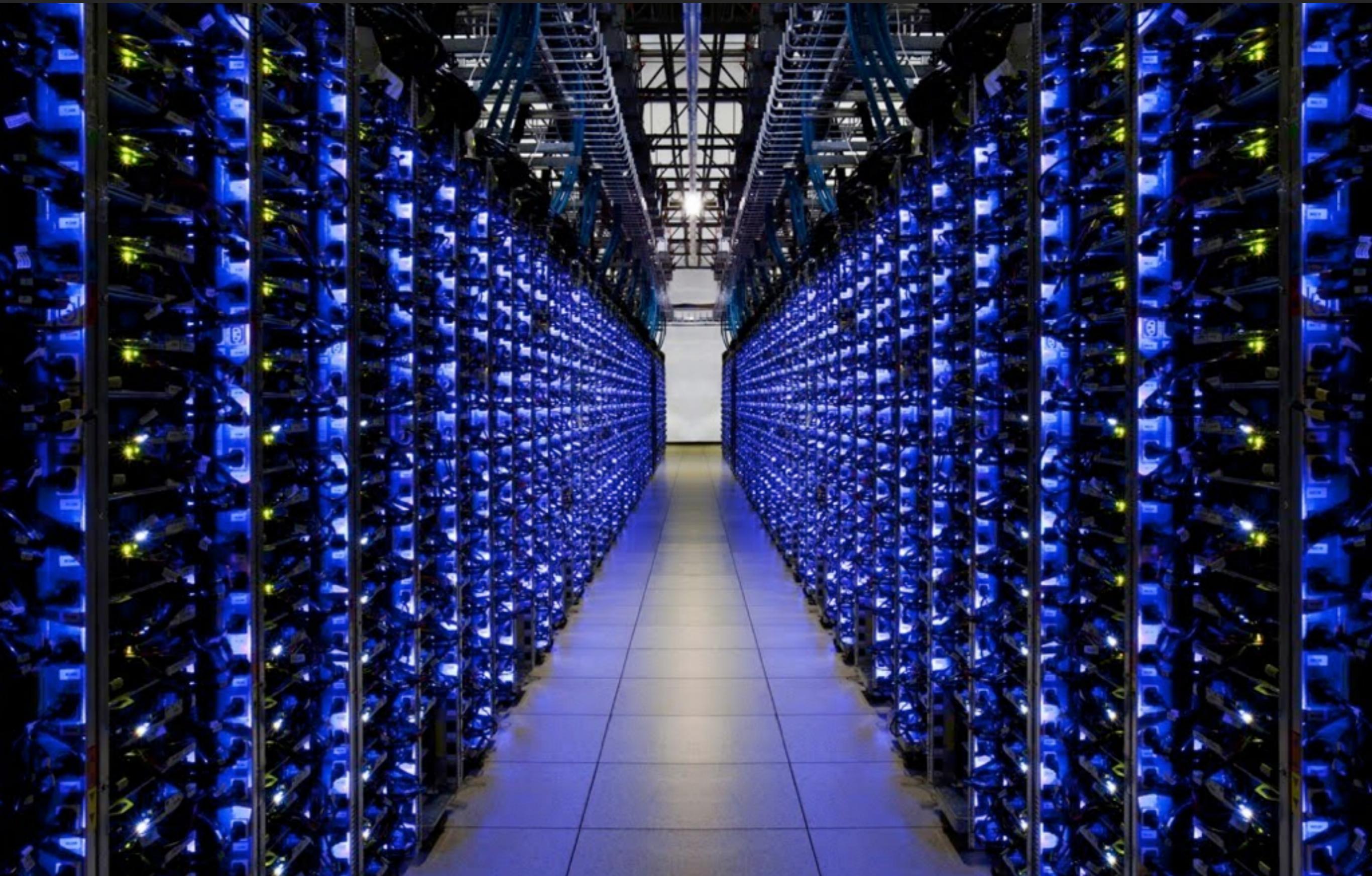
DECENTRALIZATION  
**THE CLOUD**



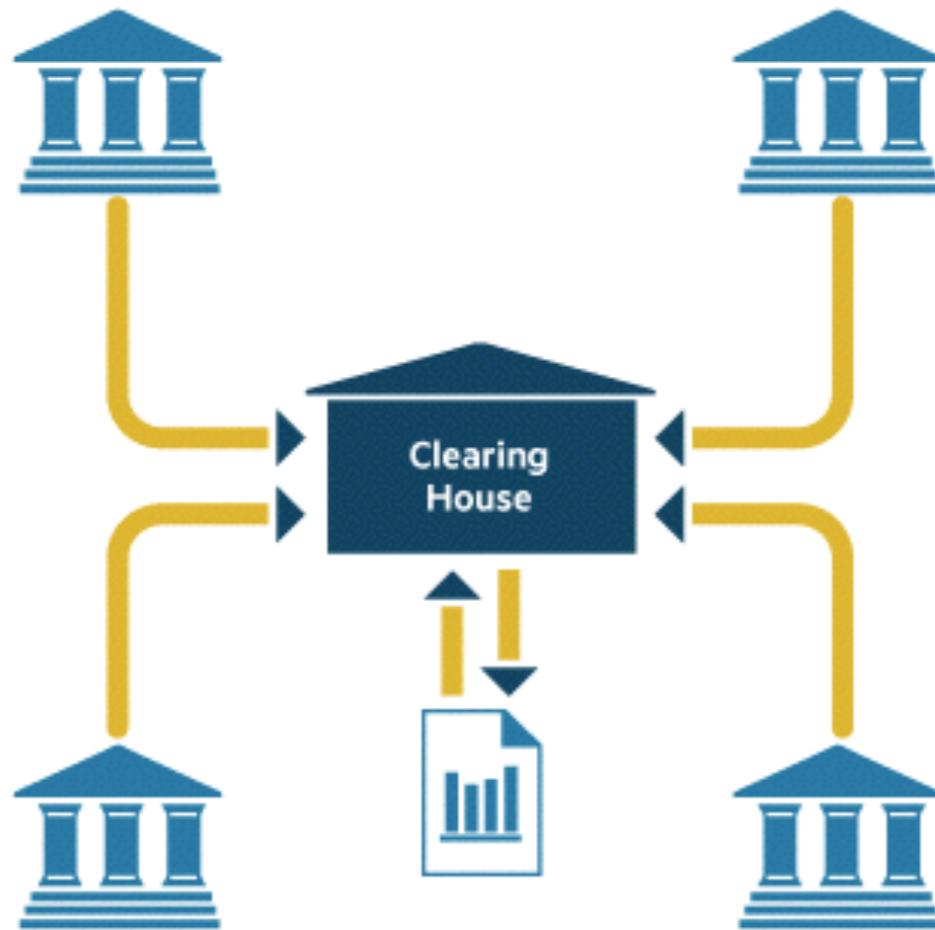
DISTRIBUTION  
**BLOCKCHAINS**



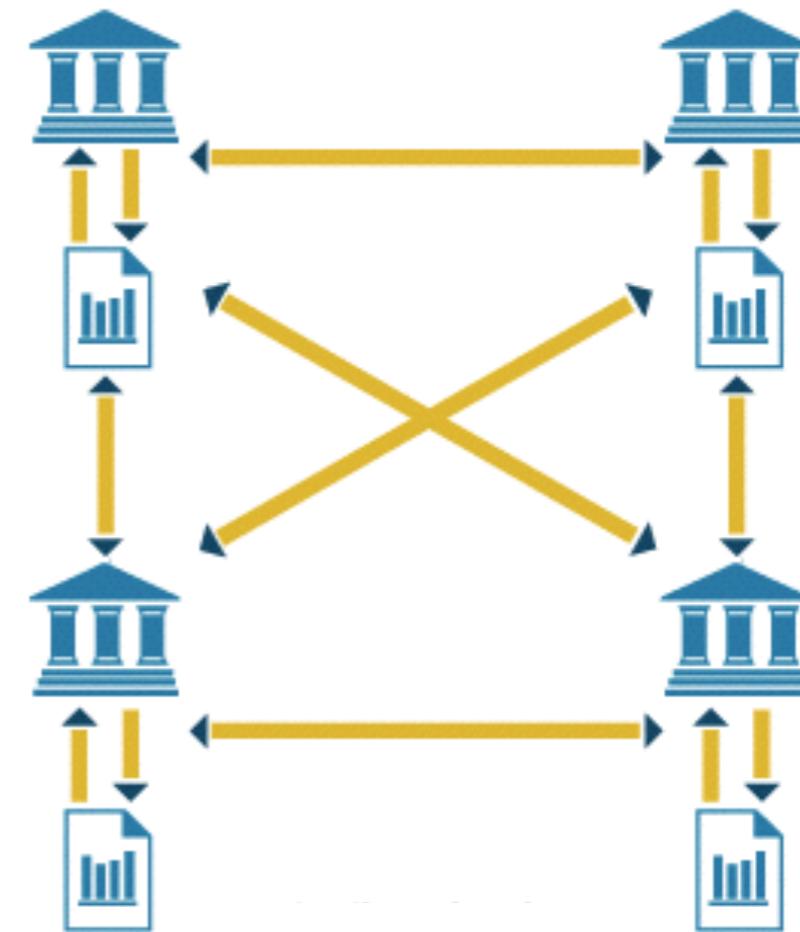
# LIQUID NITROGEN FARM (ONE OF TEN THOUSAND BTC NODES)



# CAN CENTRAL SYSTEMS COMPETE...?



**THE OLD WAY**



**THE NEW WAY**

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

# USE-CASES NEUROWARE PARTNERS ARE EXPLORING

## 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

## LOYALTY

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

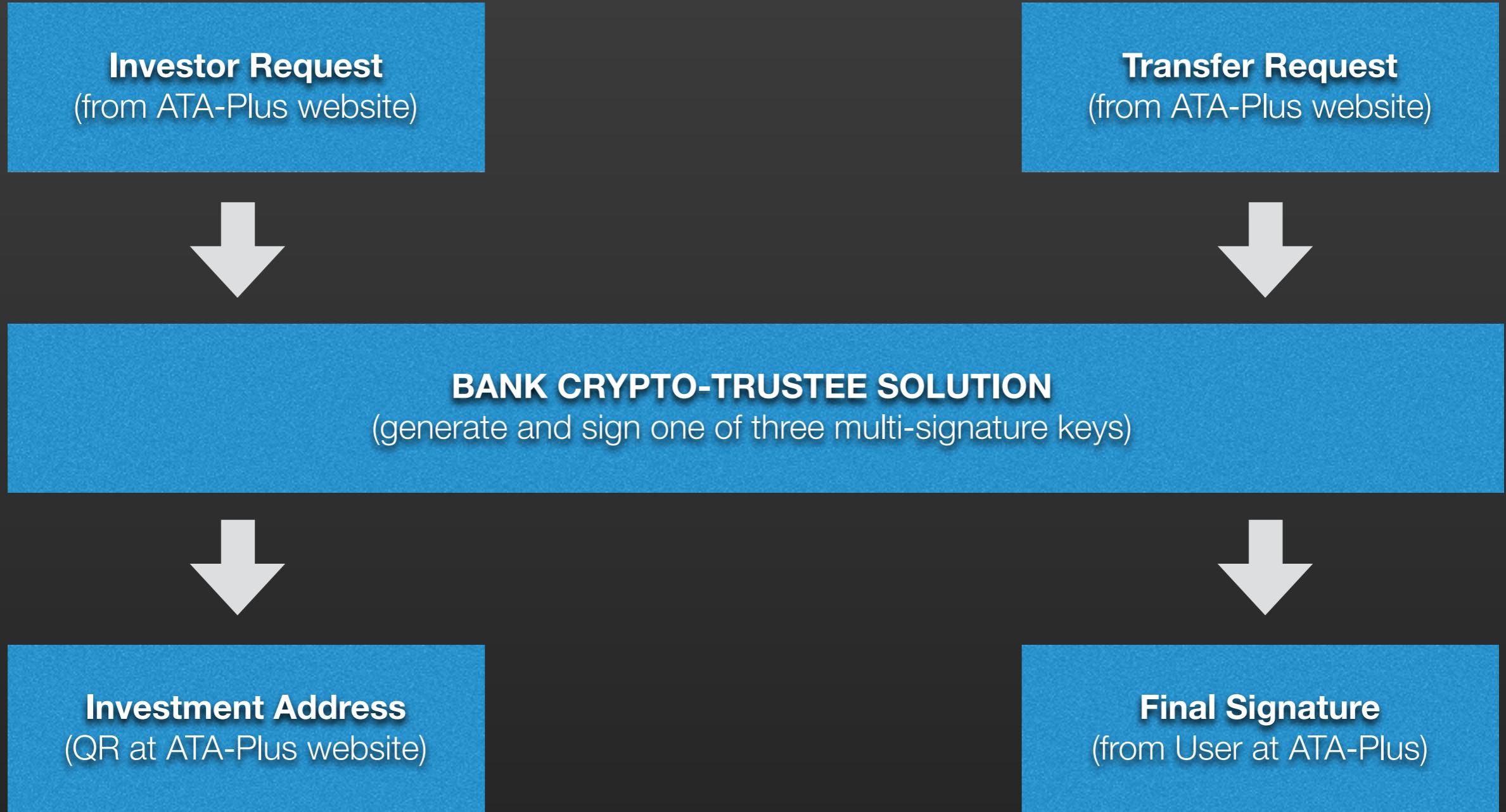
**CRYPTO TRUSTEE SERVICES**

**REVENUE SHARING - JOINT VENTURE**

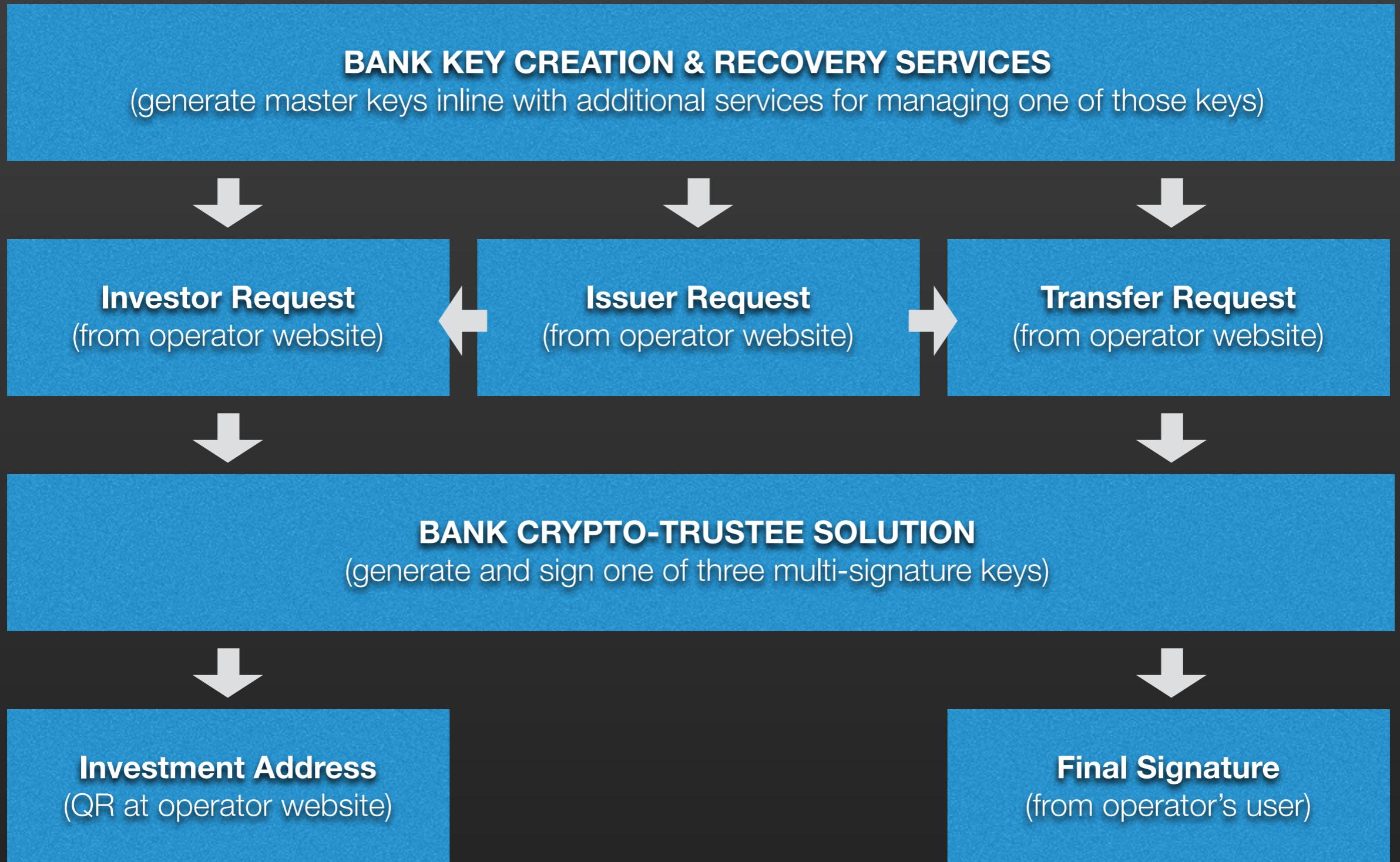
# THREE PHASED APPROACH TO CRYPTO ESCROW SERVICES

- **PHASE 1 - Standalone solution hosted by R1**
  - R1 to provide working private alpha test specifically for ATA-Plus only
  - Bank to announce Neuroware partnership and link to teaser site
- **PHASE 2 - Migrate standalone solution to bank environment**
  - R1 to provide secure on-bank-site crypto-currency wallets
  - Bank to provide revenue share agreement & open beta to BCE members
- **PHASE 3 - Integrate solution with existing bank systems**
  - R1 to handover solution and all intellectual rights to bank
  - Bank to open services to general public

# SIMPLE STANDALONE SOLUTION SUITABLE FOR PHASE ONE



# IT GET'S MORE COMPLEX WHEN WE START ON PHASE TWO



# THREE YEAR - PROJECTED REVENUES

The projected revenue is ultimately dependent upon the scope of the services. This will change over time as we start with a single operator, and then progress to multiple operators before becoming a public service

	<b>YEAR ONE</b>	<b>YEAR TWO</b>	<b>YEAR THREE</b>
ATA-Plus Only	RM 80,000	RM 160,000	RM 320,000
Licensed Operators	RM 800,000	RM 1,600,000	RM 3,200,000
Global Public Service	RM 8,000,000	RM 16,000,000	RM 32,000,000
Total Revenue	<b>RM 8.8 Million</b>	<b>RM 17.8 Million</b>	<b>RM 35.5 Million</b>
R1 Revenue	<b>RM 2,460,000</b>	<b>RM 4,920,000</b>	<b>RM 9,840,000</b>
Bank Revenue	<b>RM 6,420,000</b>	<b>RM 12,840,000</b>	<b>RM 25,680,000</b>

**LOYALTY REWARDS AS A PLATFORM**

**OUR MOST POPULAR REQUEST**

# REASONS FOR USING BLOCKCHAINS FOR LOYALTY REWARDS

- Provides the opportunity to radically reduce infrastructure costs by outsourcing the hosting and APIs to merchants and (or) partners
- Empower merchants to create their own digital currencies automatically pegged and transferred through a global reserve that you control
- Introduce multi-signature arbitration at local and (or) global levels
- Allow for developers, consumers and merchants to communicate directly
- **Provide an immutable and verifiable record of every event ever...**

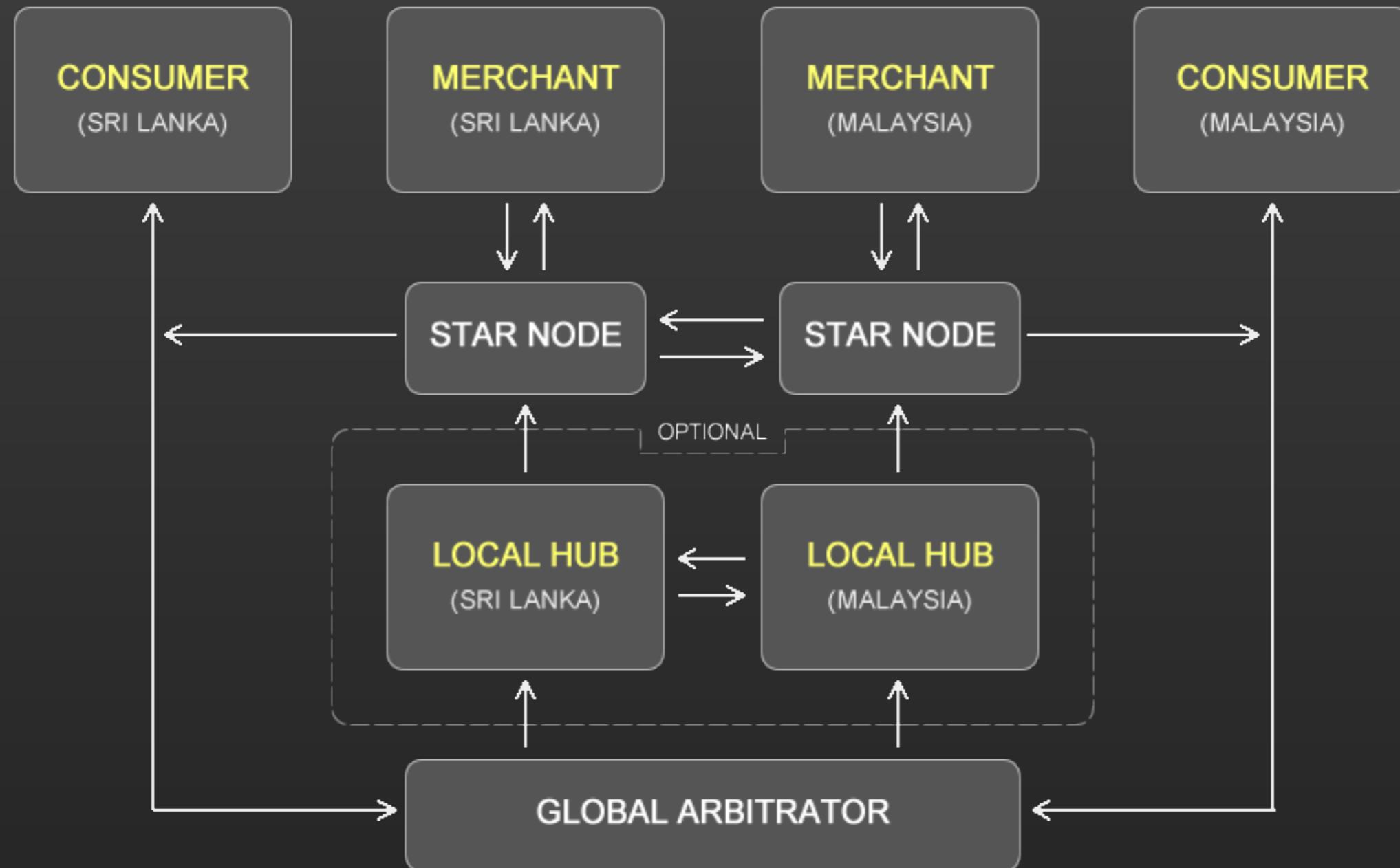


# USE CASE 01 - CONSUMER CONVERTS AIR MILES TO AIR TIME

- Assuming that the airline and operator are both utilizing the same blockchain platform, any approved partner can enable transfer / conversion
- Exchange can also be conducted seamlessly between different countries
- Consumer opens the app and initiates a request via any global node
- The global node identifies the appropriate star node and required actions
- Partners communicate between themselves & settle directly with consumer
- Arbitration is only required under the specified circumstances of the request



# USING THE BLOCKCHAINS TO OUTSOURCE INFRASTRUCTURE

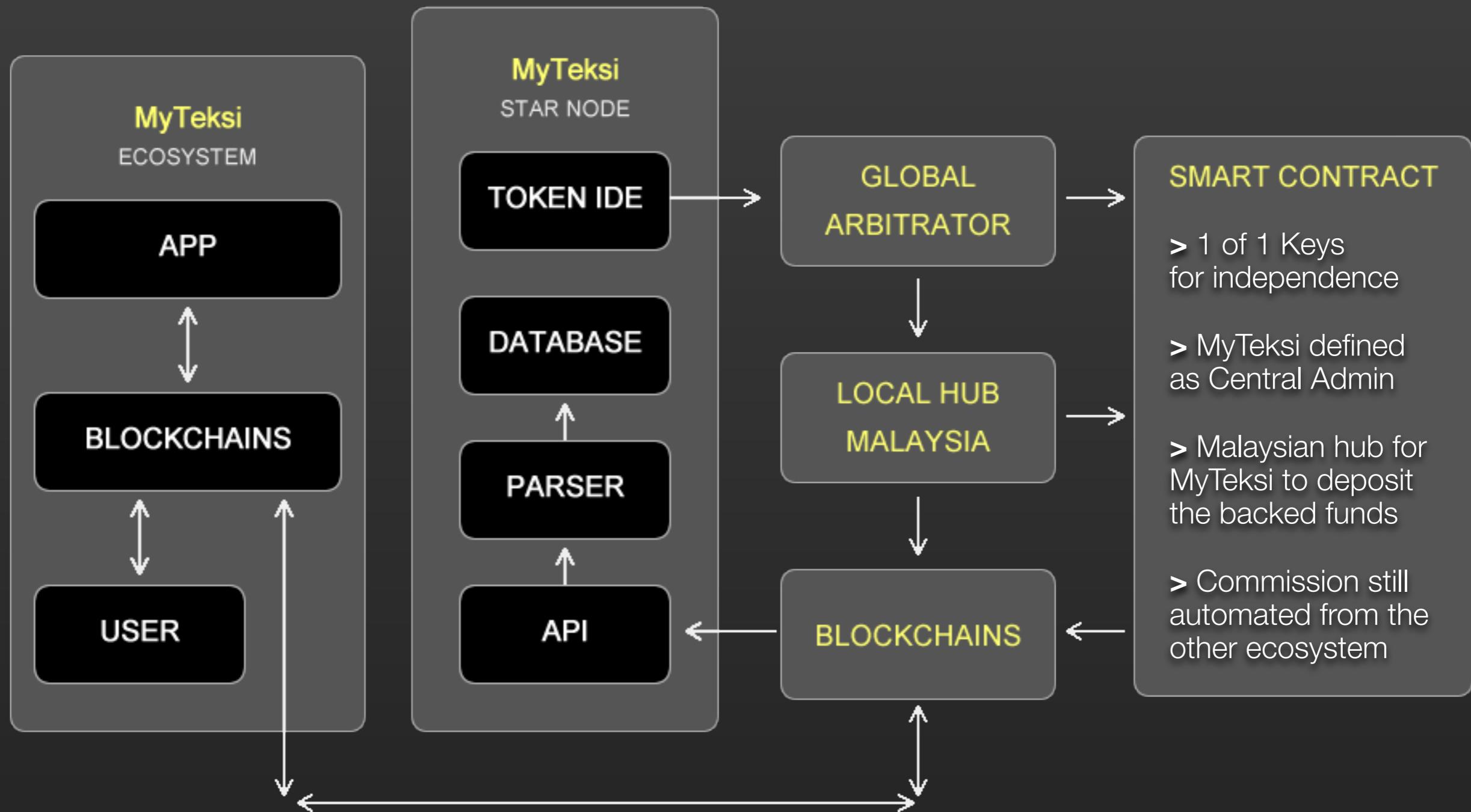


## USE CASE 02 - MERCHANT CREATES NEW TOKENS

- MyTeksi decide they want to offer their own **land-mile** loyalty points, so they sign-up as partners on the Star Platform and **create new tokens**
- As land-miles are pegged to star-points & star-points are pegged to Ether, MyTeksi deposit the required Ether to back requested supply of land-miles
- In order to fulfill the required amount of Ether, any crypto-currency can be used, as can any other tokens created within the star platform network
- Within an hour of the request, MyTeksi have everything they need in order to start issuing their own users with land-miles - whether they remain usable within just the MyTeksi app, or available for exchange directly between themselves is optional - commission for exchange is automated



# DO IT YOURSELF DIGITAL CURRENCIES

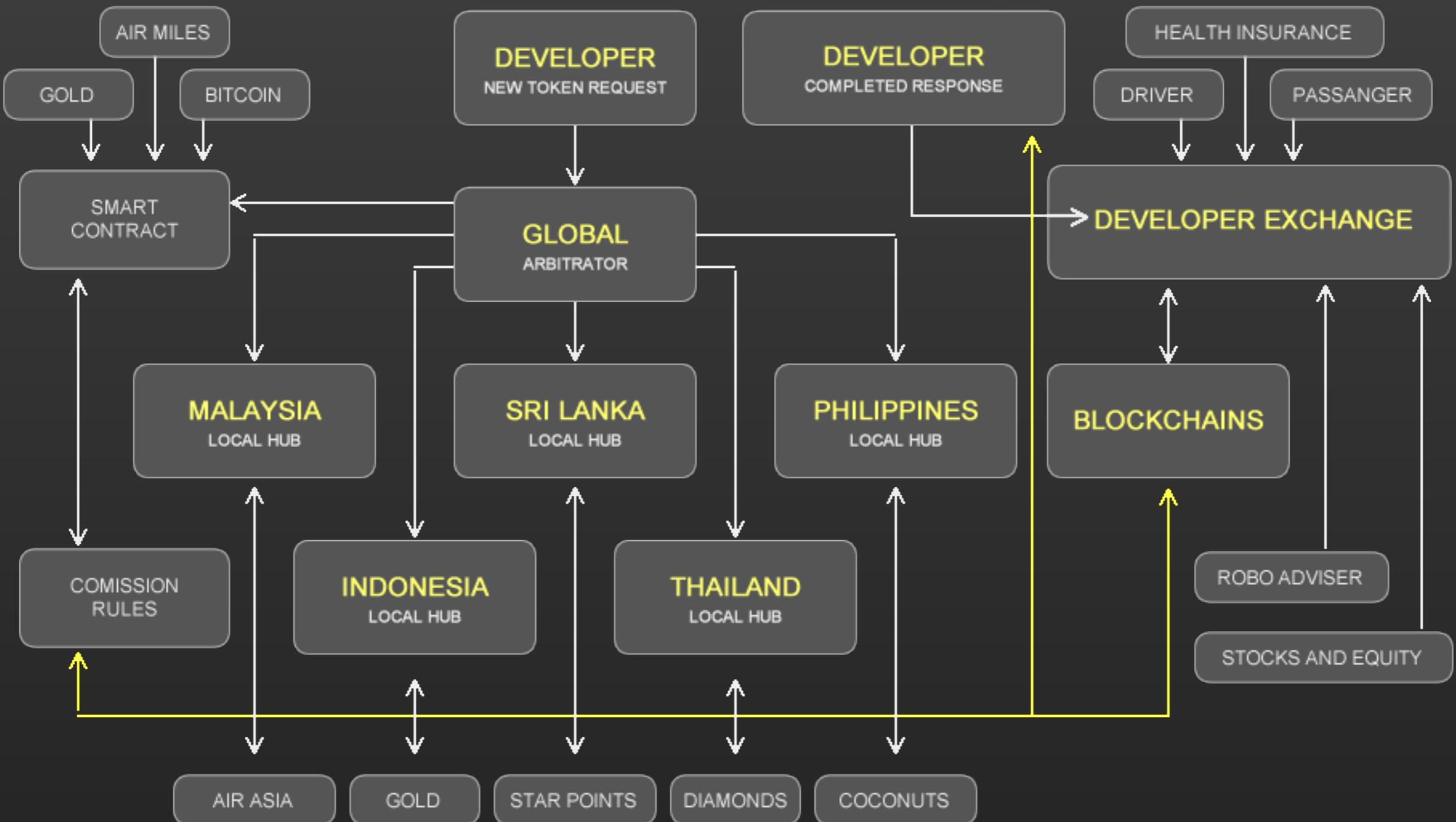


# USE CASE 03 - DEVELOPER BUILDS HIS OWN VERSION OF UBER

- Over the course of a weekend hackathon, a developer decides to build his own version of Uber, but in this version, consumers directly pay the drivers
- Consumers can also pay from a choice of over 2,000 supported currencies, from US and Sri Lankan Dollars to Bitcoin and Dogecoin or Gold or AirMiles
- Each driver and passenger can opt-in and out of insurance per trip
- The app can automatically suggest discounts in exchange for currencies in which it can benefit from global arbitrage and automatically invests and exchanges the different deposits it has - **drastically increasing** the drivers revenues the longer the driver is able to keep their deposits in the system



# HOW TO KICKSTART YOUR OWN ECONOMY IN A WEEKEND



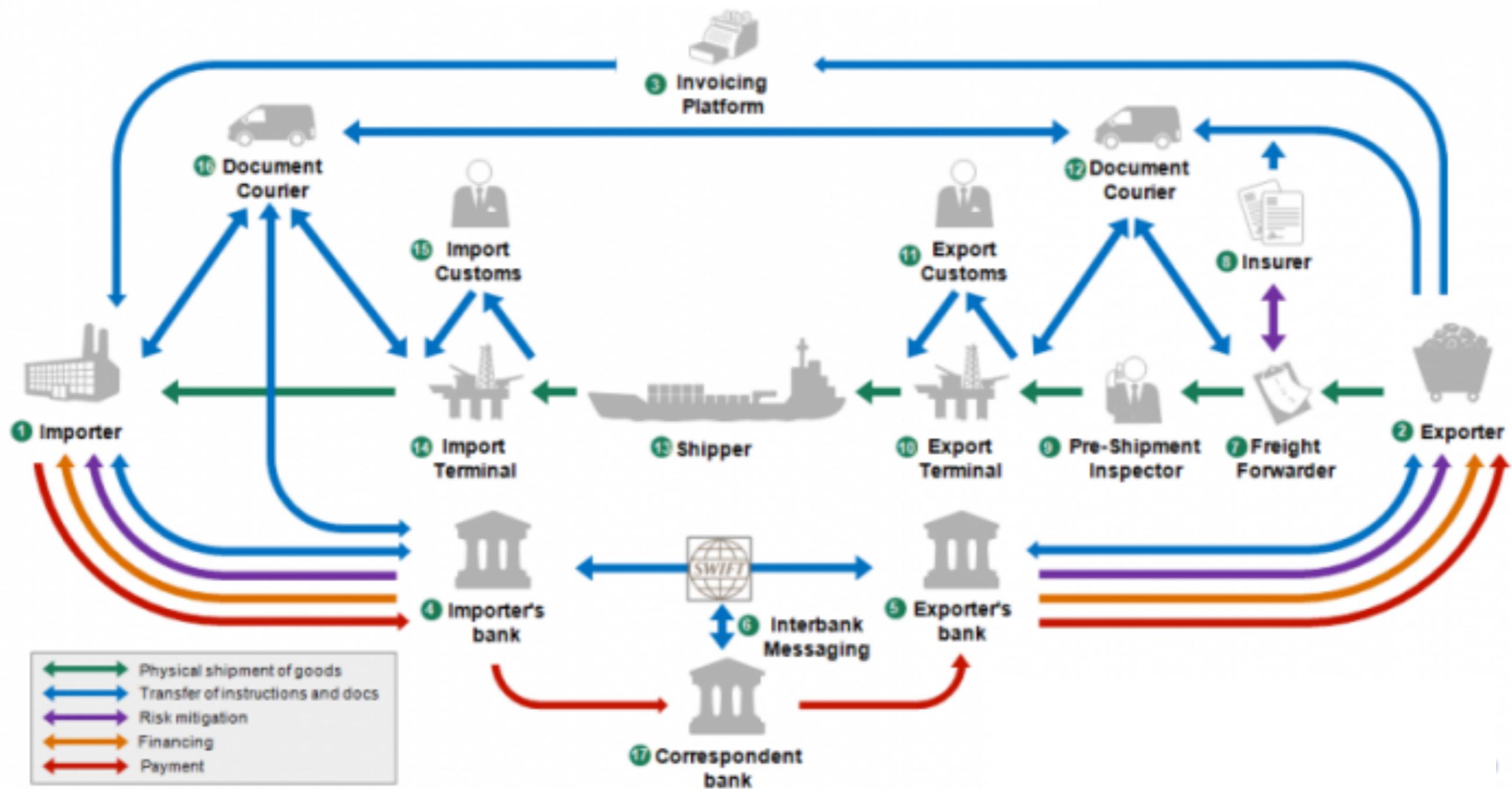
**THE ELEPHANT IN THE ROOM**

**SUPPLY CHAINS & TRADE FINANCE**

# SUPPLY CHAINS ARE NOT JUST ABOUT TRADE FINANCE

- Lending, letters of credit, factoring, export credit and insurance have created new trade finance products earning banks US\$50+ Billion a year
- These bank-backed products are used by 80 to 90% of all global trade
- Every US\$1 Million in goods has a trade-financing cost of US\$50,000
- **Beyond the financials there is also the product delivery experience**
- The history and authenticity of each and every ingredient or raw material
- The verified processes involved in creating and transporting products

# TRADITIONAL SUPPLY CHAINS ARE COMPLICATED

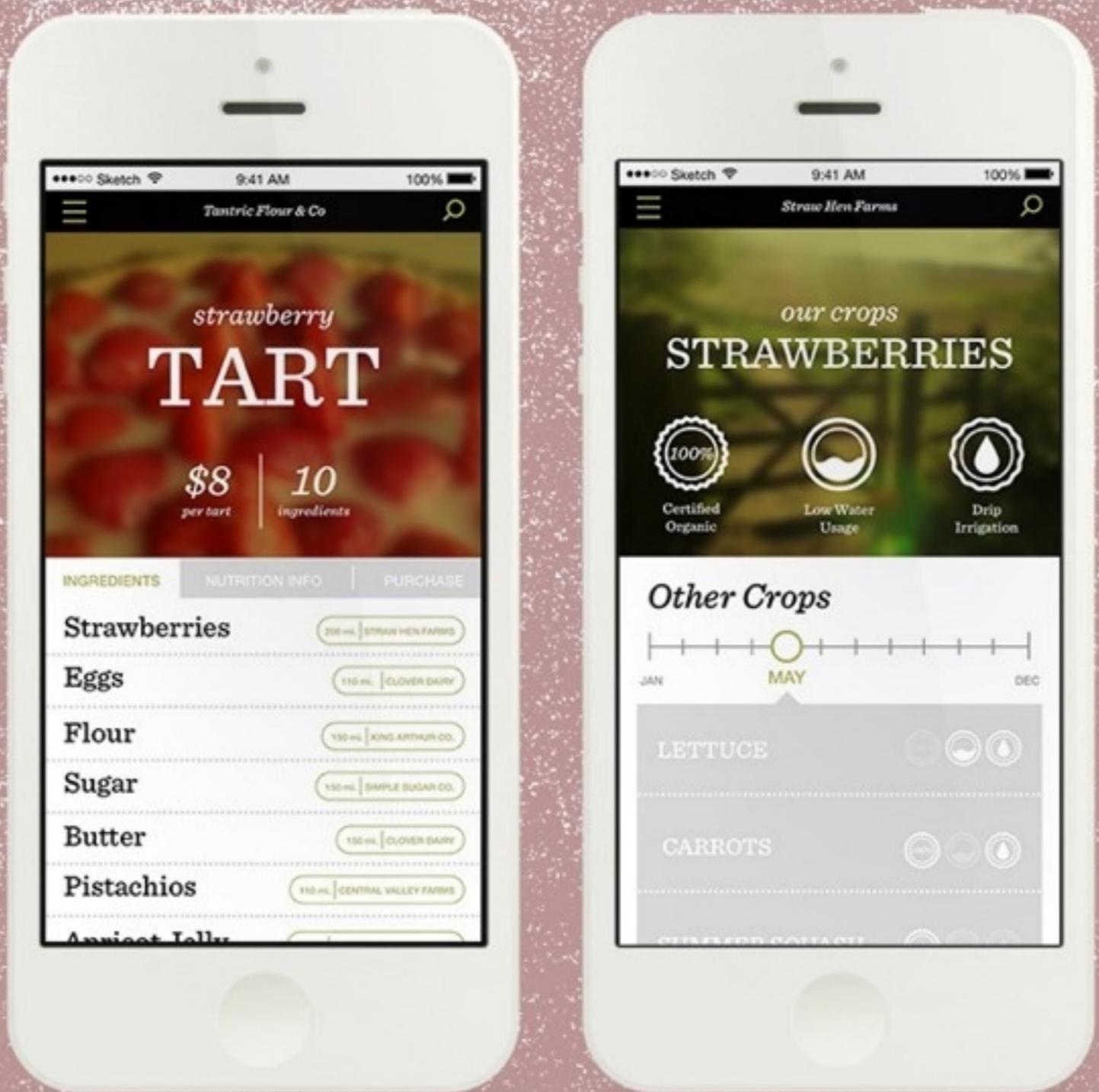


# COMMON PROBLEMS WITH THE MAJORITY OF SUPPLY CHAINS

- Multiple entities maintaining multiple copies of the truth within easily compromised closed silos requiring painfully slow & expensive reconciliation
- Time consuming requirements for setting-up third-party financial trustees and physical escrow accounting processes between each transaction
- Lack of automation between checkpoints, processes and sensory inputs
- Excessive use and reliance upon physical paper-trails and certification
- **ALL OF THESE PROBLEMS EXIST DUE TO A LACK OF TRUST**  
( if only there was a way they could all use the same source of truth )

# PUBLIC RECORDS OF EACH INGREDIENT'S HISTORY

YOU CAN SEE  
WHAT WENT  
INTO EACH ITEM  
THE BAKERY  
SELLS.



YOU CAN SEE  
WHAT CROPS  
THE FARM  
GROWS AND  
HOW THEY  
GROW THEM.

# ABILITY TO BUY LOCAL PRODUCE DIRECTLY FROM SUPPLIERS

NAME A PRICE THAT  
YOU'D LIKE TO PAY  
FOR STRAWBERRIES.



ONCE YOU SUBMIT, YOU  
CREATE A SMART  
CONTRACT WITH THE  
FARM WHICH WILL  
DELIVER STRAWBERRIES IF  
THE PRICE DROPS BELOW  
YOUR LIMIT.

# ENSURE THE INTEGRITY OF DELIVERY VIA CONNECTED SENSORS

YOU CAN SEE THE ENTIRE JOURNEY OF THE FISH FROM BOAT TO MARKET.



INTERNET CONNECTED EQUIPMENT NOTES THE ORIGIN, ROUTE, AND TEMPERATURE OF THE FISH.

# INTERCONNECTED LOYALTY REWARDS AND COMMUNITIES

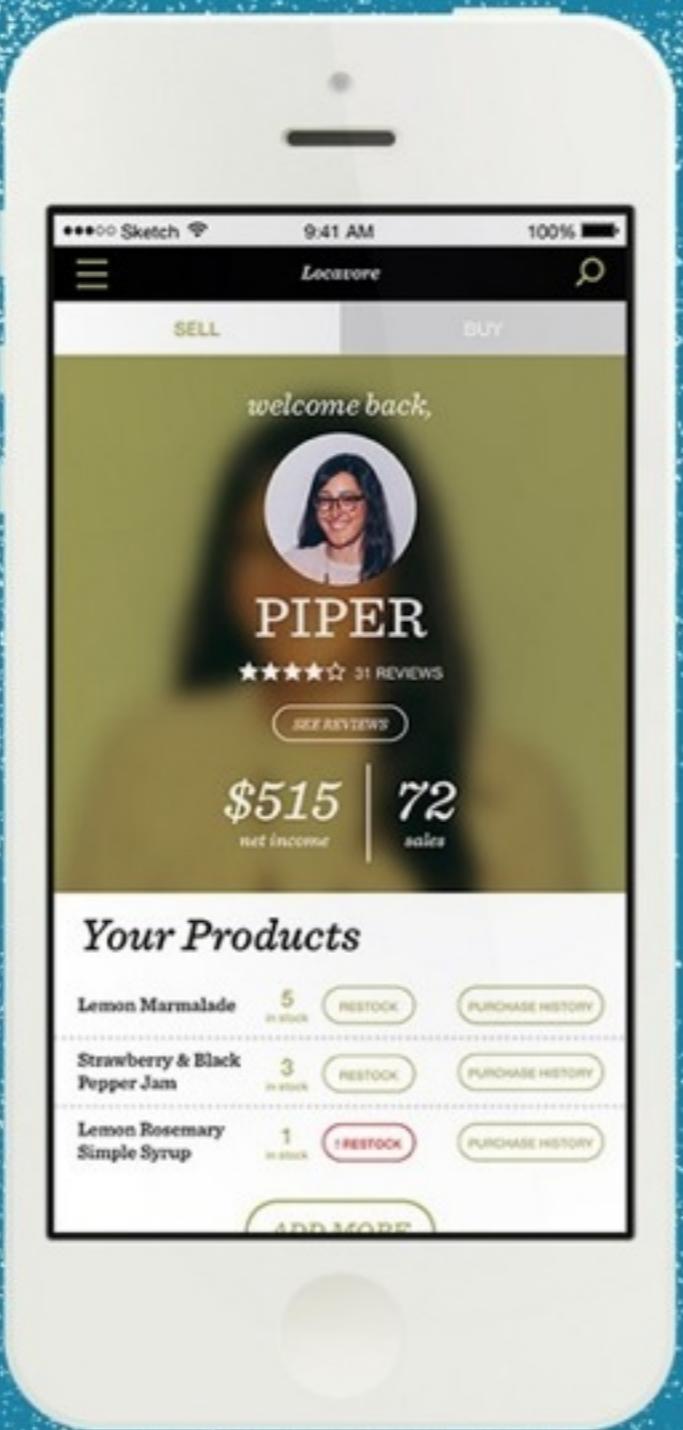
A WINE YOU'LL LOVE  
IS RECOMMENDED  
BASED ON  
YOUR REVIEWS OF  
WINES YOU'VE BOUGHT  
BEFORE.



YOU CAN SUBSCRIBE TO  
THE WINERY AND PICK UP  
BOTTLES AT ANY  
RETAIL STORE.

# NEW MARKETING & SUPPORT CHANNELS FOR ENGAGED USERS

YOU OPEN YOUR  
PROFILE PAGE AND SEE  
ALL OF YOUR  
PRODUCTS AND SALES.



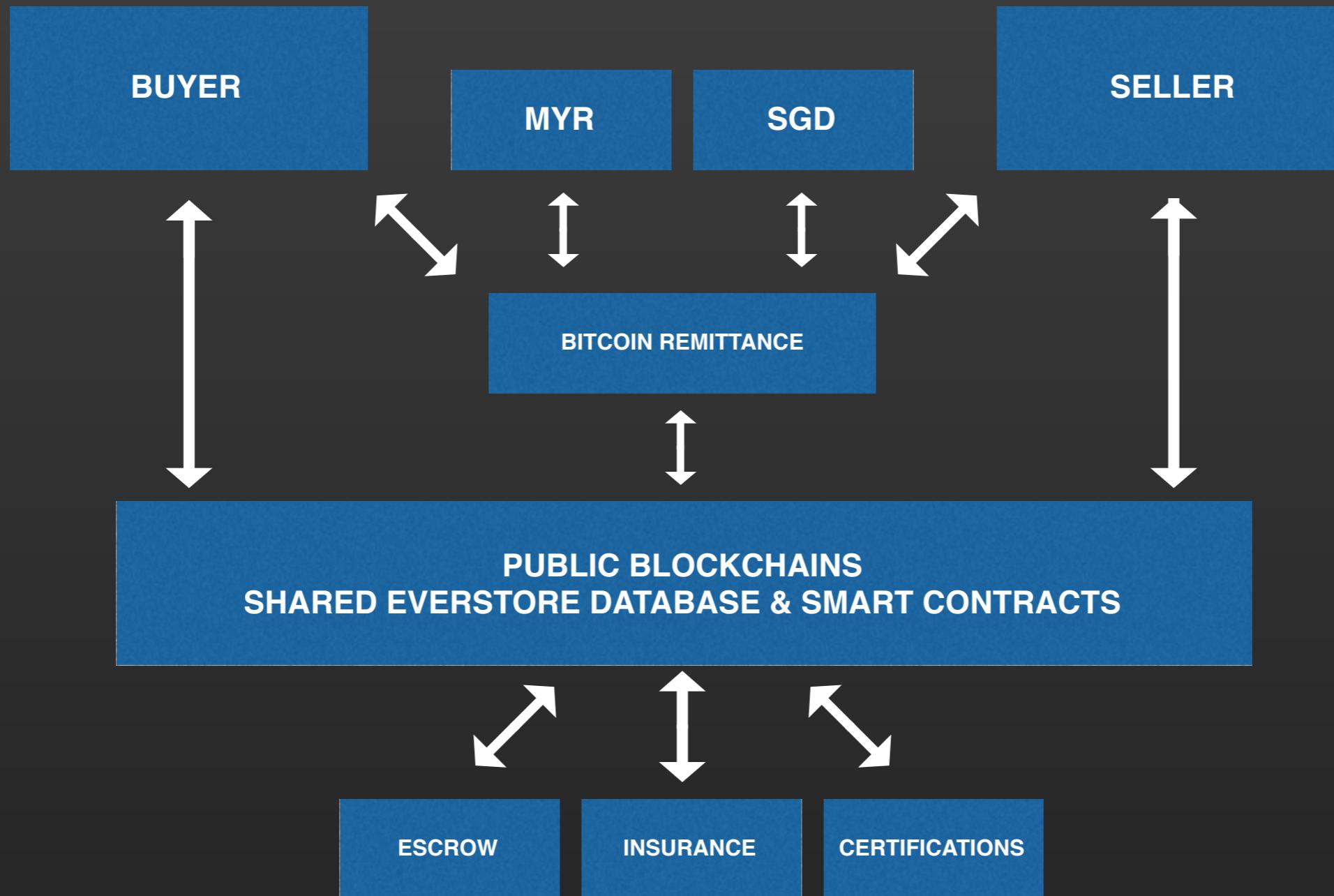
# THE IMPORTANCE OF KNOWING THE TRUTH

YOU SELECT THE  
PEANUT ALLERGY  
FILTER.



SCANNING A PRODUCT  
BARCODE REVEALS  
WHETHER IT OR ANY  
INGREDIENT HAS EVER  
CONTACTED PEANUTS.

# SIMPLIFYING SUPPLY CHAINS WITH BLOCKCHAINS



# BENEFITS OF BLOCKCHAIN-BASED SUPPLY CHAINS

- Can be used and integrated with both banked or unbanked partners
- Provides a shared and highly secure single source of truth for all partners
- Enables for the instant transfer of digital currencies and digitized assets
- An open platform for future innovation that is free from the censorship

**CONSORTIUMS AS A SERVICE**

**THE BLOCKCHAIN EMBASSY**

# BEHIND THE SCENES

- Neuroware have been providing paid training and workshop to leading organizations, institutions and government agencies in Malaysia for 2 years
- Bank Negara and Securities Commission are providing a lot of support
- New private initiatives are now in place with at least eight banks with immense pressure on those banks to start blockchain trials in 2016
- R1 DOT MY is one company bidding for the **TRADE FINANCE** project
- We have been able to do this through the introduction of BCE.asia



# INTRODUCING THE BLOCKCHAIN EMBASSY OF 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

# THE FOUNDING MEMBERS

Malaysian BlockChain Ambassadors



Banking Ambassador

CapitalBay

Invoicing Ambassador

MahWengKwai  
& Associates

Legal Ambassador



FinTech Ambassador

1337  
VENTURES

Community Ambassador

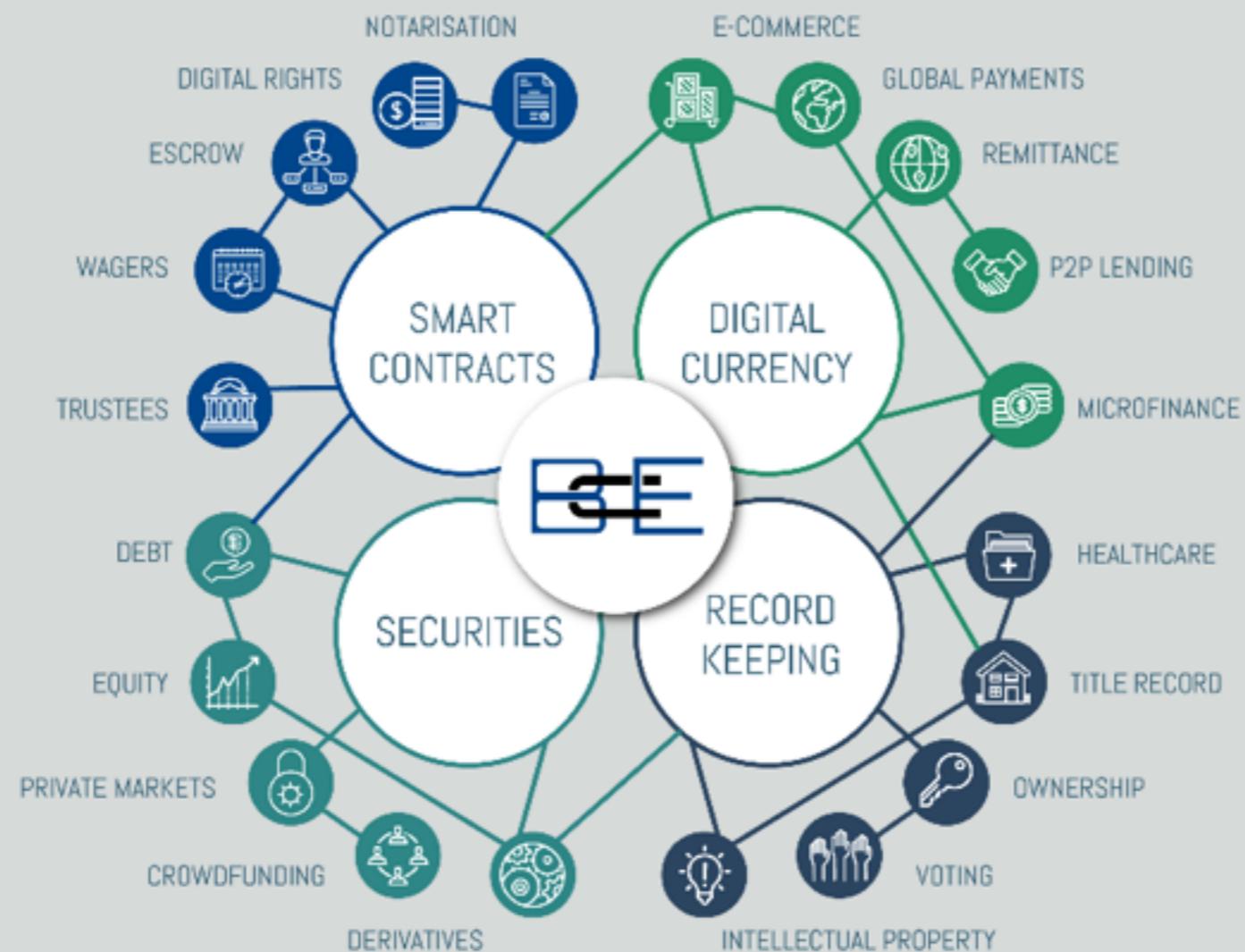
R<sup>①</sup>

Technology Ambassador

# USE CASES & PARTNERS IN DISCUSSIONS & NEGOTIATIONS

## Potential Blockchain Use-Cases

Learn more from our [blog post below](#):



**INTRODUCING NEUROWARE - AN R1 DOT MY BRAND**

**BLOCKCHAIN INFRASTRUCTURE PROVIDERS**

# NEUROWARE ARE FIRST MSC STATUS BLOCKCHAIN COMPANY



## Mark Smalley - CEO

Living in Malaysia for the past 19 Years

Building Web Applications for 15 Years

Spent 10 Years Building Tech Communities

Developing Blockchains Apps for 5 Years

## Ruben Tan - CTO

Building Web Applications for 10 Years

Active Community Evangelist & Presenter

Early Developer at MyTeksi and OnApp

Studying Distributed Consensus for 5 Years

## EARLY FUNDING CAME FROM INTERNATIONAL INVESTORS



Neuroware was the first Malaysian based team to attend the illustrious 500 Startups accelerator in Silicon Valley, where we received our initial pre-seed investment of RM400K



CoinSilium are the world's first blockchain investment company to IPO on a stock market (with COIN as their ticker), investing RM250K into an extension of our pre-seed round

# WE HAVE A TRUSTED TEAM OF VESTED-ADVISORS



**Colin Charles**  
MariaDB Founder



**Adam Giles**  
Ex Standard Chartered



**Hanson Toh**  
Axiata / Ex Google



**David Barton Grimley**  
Sapient Nitro



**Johnny Mayo**  
Forbes 30 Under 30



**Wu Han Ngeow**  
Maxis

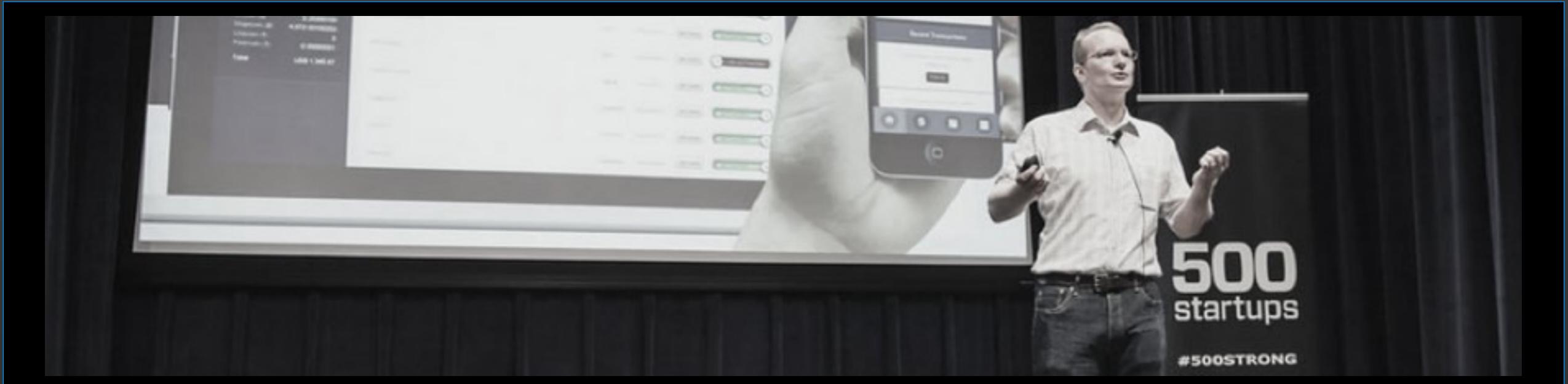


**Gabey Goh**  
Campaign Asia-Pacific



**Gareth Davies**  
Mindvalley

# WE ARE 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

 **blockauth**

DECENTRALIZED ID &  
AUTHENTICATION

 **dnkey**

KEY LOGISTICS &  
BROADCASTING

**NEUROWARE'S AGNOSTIC PROTOCOLS**

# CORTEX - THE WORLD'S FIRST BLOCKCHAIN OPERATING SYSTEM

 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	Neuroware

**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.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](#)

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SLIDE # 47

# FUNCTIONALITY AND COSTS OF CORTEX

- Domain-Name Management (used for public-key revocation services)
- User Control (register and authorize identities directly from any blockchain)
- Immutable Data (store unlimited structured data upon multiple blockchains)
- Private API (web-accessible programmable access to any blockchain)
- Block Explorer (graphical interface for analyzing blockchain transactions)
- Wallets (extendable multi-currency functionality with custom token creation)
  
- Current costs for on-premise Cortex are US\$200,000 for first 12 months
- US\$40,000 per annum from year two onwards for upgrades & support
- Typical consultation costs of US\$500 per day for Cortex users

# EASILY CUSTOMISED THROUGH MODULAR THEMES AND PLUGINS

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)

Month	RM Invested (Millions)
January	~0.4
March	~0.35

sort by Most Recent search investments

f2583c4bbbc1d7f70fe776ef8de24e3e9131884de2be5ed3365fe72e53fa2177 EDIT DELETE SCHEMA

Key	Value
Index: Investment ID [ auto ]	bf28617205e695439c0dd2285a76d7c1

ADD NEW RECORD

74c87dfa57a94dc86666209cd87a01b6 Date of Investment

“For ECF to flourish, there must be a deep depository of trust and transparency that is frictionless & inclusive. Neuroware’s tech enables us to provide all that and more!”

ataplus

Kyri - Co-Founder & Director of Licensed ECF Platform

powered by neuroware

# PROBLEMS FACED BY ECF OPERATORS AND OUR SOLUTIONS

- Difficult to truly include as many retail investors as possible due to 50 limit
- Difficult to attract international investors due to current market sentiment
- Difficult to actually work in real-time due to offline financial trustee services and daily batch-based CSV transactions with other financial institutions
- Having worked with ATA-Plus now for several months, we've been able to:
  - Utilize the blockchains to store public data related to our campaign
  - Utilize the blockchains to provide an optional digital form of equity
  - Utilize the blockchains to develop an ECF loyalty reward platform
  - **World's 1st** fully licensed ECF campaign to accept Bitcoin

# WHO ELSE IS STORING DATA ON THE BLOCKCHAINS...?

Although they are arguably very different due to their lack of data types (beyond 32 byte limited MD5 hashes - known as data anchoring), Factom and Tierion are our main competitors, but they are only servicing the US & European markets. No Asian competitors.

	FUNDING	DATA TYPES	DATA SOURCE	BLOCKCHAINS
FACTOM	US\$ 5M +	1	1	1
TIERION	US\$ 1M +	1	1	1
NEUROWARE	US\$200K	20*	3*	10*

\* These are merely out-of-the-box support - since everything is either modular in nature or based upon protocols, they all have unlimited scopes

# EDUCATION IS THE MOST IMPORTANT COMPONENT

“Having finally seen Cortex in action, I can safely say these guys have something truly special on their hands, my only disagreement is that they should be based in Singapore!”

“Neuroware have been our ‘go to’ guys with respect to blockchains and critical in raising the understanding of distributed ledgers for our senior leadership teams and partners”

“Neuroware have consistently been our key consultants with regards to blockchain technology. Their participation provided us with use cases that weren’t first obvious”



Anson Zeal - CEO  
Bitcoin Remittance Company



Amran Hassan  
Head of Innovation



Max Tiong  
Head of FinTech

# NOW RAISING RM2 MILLION AT A RM12 MILLION VALUATION

In order to reach annually recurring revenues of over RM70 million within 3 years, our financial projections account for obtaining 4 clients within the first 3 months and then growing at 10% month over month.

P&Ls do **NOT** include the MOU with bank or consortium as a service

	YEAR ONE	YEAR TWO	YEAR THREE
ANNUAL COSTS	RM 1,032,000	RM 1,548,000	RM 2,268,000
ANNUAL REVENUE	RM 5,903,104	RM 19,175,637	RM 59,199,966
ANNUAL P&L	RM 4,871,104	RM 17,627,637	RM 56,931,966
Nett Profits	<b>RM 4.8 Million</b>	<b>RM 22.4 Million</b>	<b>RM 79.4 Million</b>



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**BUILDING THE FUTURE TOGETHER**

[bit.ly/investinneuroware](https://bit.ly/investinneuroware)