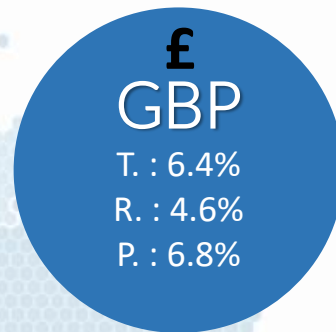


New Programmable Money and the Decline of the USD as the Reserve Currency

David LEE Kuo Chuen
VP, Economic Society of Singapore
Singapore University of Social Sciences
Fulbright Scholar (2015)
22 Sep 2020

USD share in Global Financial Markets

Dominance of USD currency as at Year 2019 - 2020



Impossible to sell the US Treasury without:

1. Appreciating the **currency of the creditor**
2. Affecting the **valuation of the Reserve**
3. Creating a **loss in trust** in the Payment System

Can we have a new payment system
that is separated from the USD
currency?
Meantime, Japan experiments with
Cryptocurrency a Legal Payment System



“We have **Gold**
because we cannot
trust the
governments”

- President Herbert Hoover
(His statement made to Franklin D. Roosevelt
in 1933)

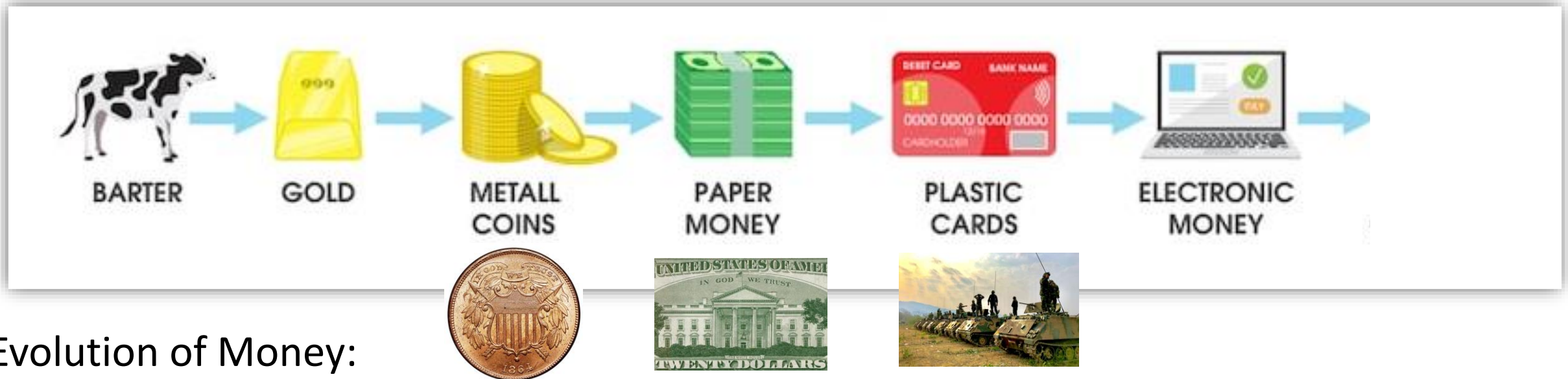


Currency is all about trust,
and that trust costs a lot!



In G We Trust...

God (since 1864) ... *Gold-USD* (1944 – 1973) ... *Government* (1973 –)...

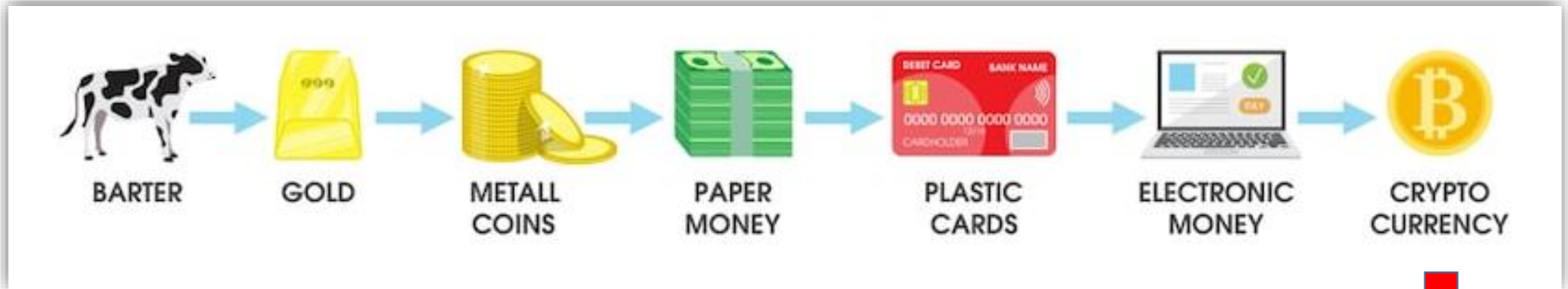


Evolution of Money:

- Change Catalyst = **Technology**
- 1990-1999: eCash, centralised cryptocurrency, founded by David Chaum
- 1996-2009: eGold, centralised gold-backed currency, founded by Oncologist Douglas Jackson
- **No one and nothing are allowed to replace the USD** as a medium of exchange, a store of value, and a unit of account.

In G We Trust...

Will a Software End the Fractional Reserve QE System?



Evolution of Money:

- Change Catalyst = **Technology**
- 1990-1999: eCash, centralised cryptocurrency
- 2001-2009: eGold, centralised gold-backed currency

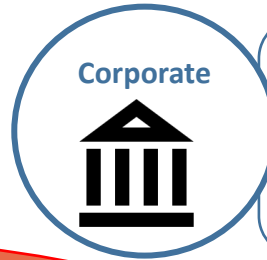
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New Technology
No Legal Entity
No Known Person Behind Just
a Software Programme
How to close it down?

In C We Trust... Moving from G to C

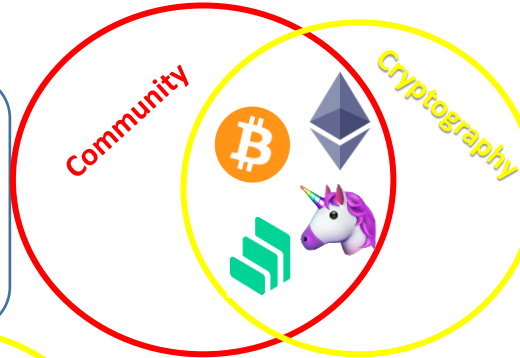
Corporate ... Cryptography ... Community ...



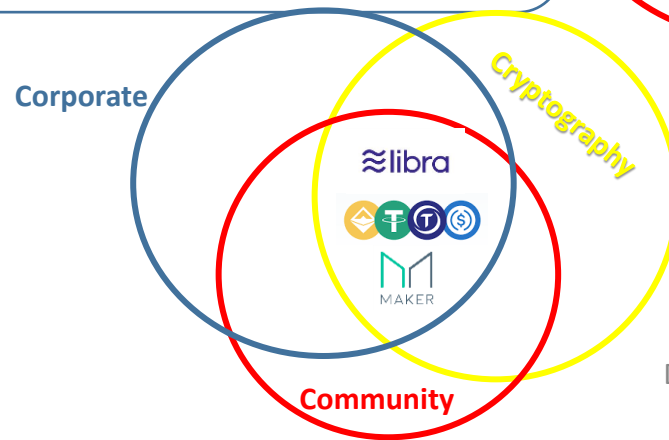
(High Cost) Trusted 3rd Party:
Corporates & Licensed Financial Institutions

From a Digital (centralized) Economy
to a Token Decentralized Economy

(Low Cost) Trust the Cryptography and Community: Bitcoin, Ethereum (**Everyone is a bank, Everyone is an Exchange, P2P Payments**)



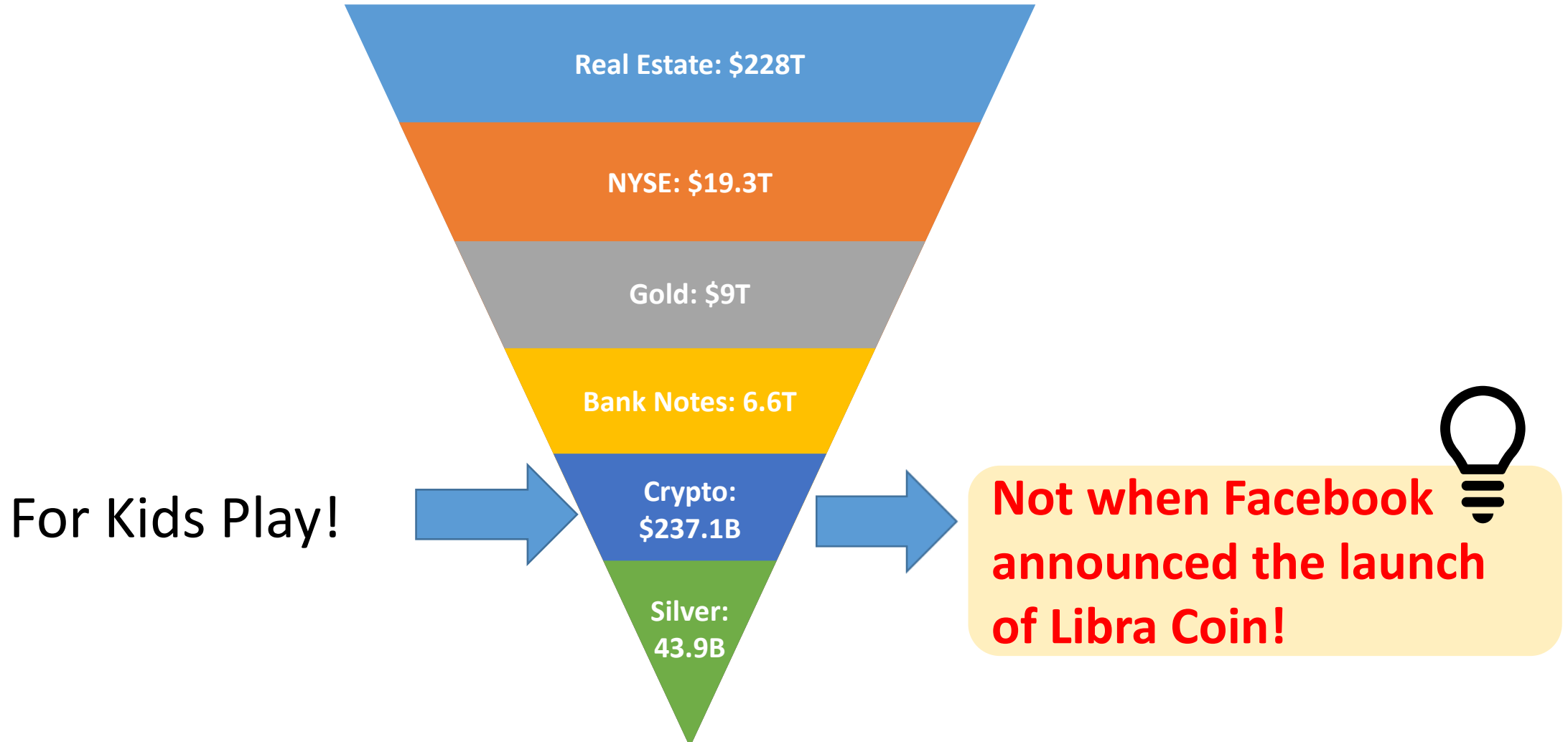
Trust the Community and Cryptography (Smart Contracts):
DeFi: Compound, UniSwap, Sushiswap etc.



Trust the Corporate, Community and Cryptography:
Stable Coins, MakerDao, Tether, Libra

Market Capitalization

Key Assets



David LEE

Sources: Statistica, Cointelegraph, Business Insider, HSBC, World Silver Survey

*Libra:
Governments
Have to Act
Before Losing
Sovereignty!*

David LEE

- CBDC (Central Bank Digital Currency)
- In China (**Fear** of Competitive Payment System **Libra**)
 - DCEP (Digital **Currency**/Electronic **Payment**)
 - BSN (Blockchain-based Service Network)
- Challenge from Decentralised Finance (DeFi)
- **Ultimate**: Decentralised Barter System

CBDC: Characteristics & Features

- To allow **offline transactions** of eMoney similar to physical cash
- To allow for **more general value transfer via eWallet without a bank**, or any link to financial institutions or cards for eMoney.
- To ensure efficiency and security of the payment system **without going through a clearinghouse** or real-time gross settlement system while retaining monetary sovereignty.
- To ensure a **more accurate representation of economic activities** currently excluded from the calculation of national accounts statistics.
- To **ward off the challenge of non-fiat eMoney** replacing fiat money, thus weakening the fiscal policy sovereignty, which includes tax collection.
- To **reduce the cost** of reliance on physical notes and coins.
- To **maintain privacy protection** and yet have **the ability to manage anonymity** to prevent money laundering, terrorist financing, tax evasion and criminal activities.
- To **allow for digital or smart contracts** to be implemented.
- To **stimulate growth in the underserved**, under-recorded, and under-represented sectors.

CBDC: Benefits

- Traceability and Immutability
- **Lower Cost of Trust** - Smart Contract
- Tokenization
- Fractionalization
- Non-Fungibility
- Multi-Tier Registration System
- Data Privacy Protection
- **Take Back the control – Strengthen Sovereignty, away from SWIFT Payment System!**



It Was not a Trade War but a Different Kind of War!

DCEP as New Money or New Payment System?

DCEP

- Digital currency issued by the People's Bank of China that can **facilitate offline payments**
- The **first** Central Bank Digital Currency issue
- Increase circulation of the RMB and its **international reach**

Architecture

- DCEP is built with Bitcoin **UTXO Technology**
- **Separate currency issuance from payment**
- Cryptography **prevents counterfeiting** or double spending
- **Data Centre** to monitor abuse

Potential Adoption

- **Various countries** such as Philippines, Thailand, Japan, Canada etc... **entered the race**
- **Collaboration** with Singapore (Project Ubin), Hong Kong (LionRock)

Significance of DCEP

- Issued only by governments and central banks; **replaces conventional money**
- **Two-Tier** allows for Public Private Partnership and Smart Contracts
- Potential for **Decentralised Barter Trades** with Cross Chained Interoperability

BLOCKCHAIN-BASED SERVICE NETWORK

Every Blockchain is a Node!



What is BSN?

BSN aims to become a **standardized Blockchain** hosting platform for SMEs and individuals across 100 cities



Significance of the BSN

An **open-source protocol** to build public nationalized Blockchain infrastructure vital for a Digital Economy



Features of BSN

Featuring live integration of six public chain. Developers can build **Decentralised Applications**



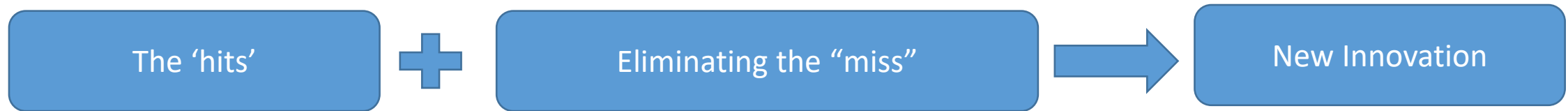
Major Partners

AWS and Google are the major partners from the US. First pilot test will be in Hangzhou with **8 foreign cities**



**Private BC + Public BC + IoT + AI
= New Interoperable Global
Payment System**

How About Adding DeFi?



Cryptocurrency

Mobile First
(App based services + QR Code)

Fractional Ownerships

Big Data & ML

~~Privacy Invasion~~ Private Cryptoassets

~~Security & Single point of failure~~
Decentralized Network (Peer to Peer)

~~Volatility~~ Wrapped Crypto

~~Rent Seeking~~ Equitable Distribution of Wealth

~~Exclusive~~ Inclusive

DeFi?

What is DeFi?

- Decentralized finance, or DeFi (also called open finance):
 - a blanket term for financial services like borrowing, lending, and trading,
 - built using decentralized infrastructure, such as public blockchains and smart contracts.

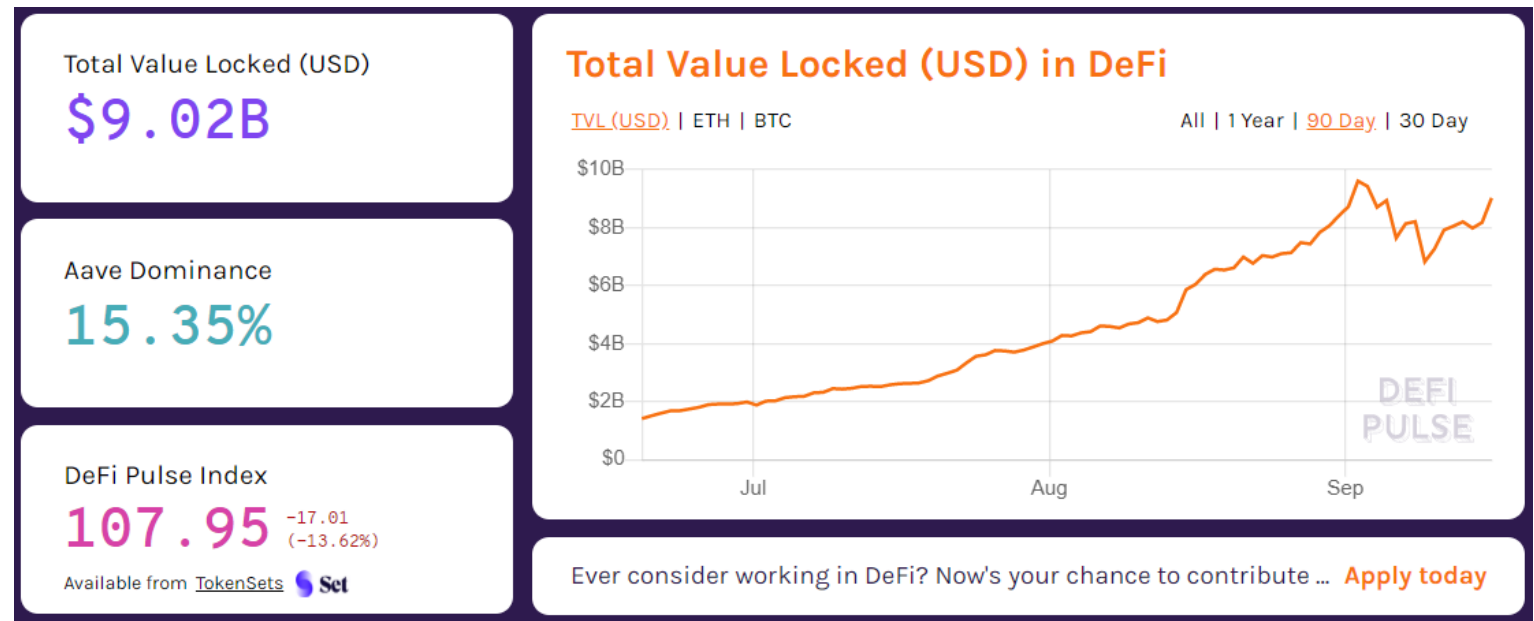



Diagram: DeFi Market Cap overview as at 16 September 2020

Source: defipulse.com

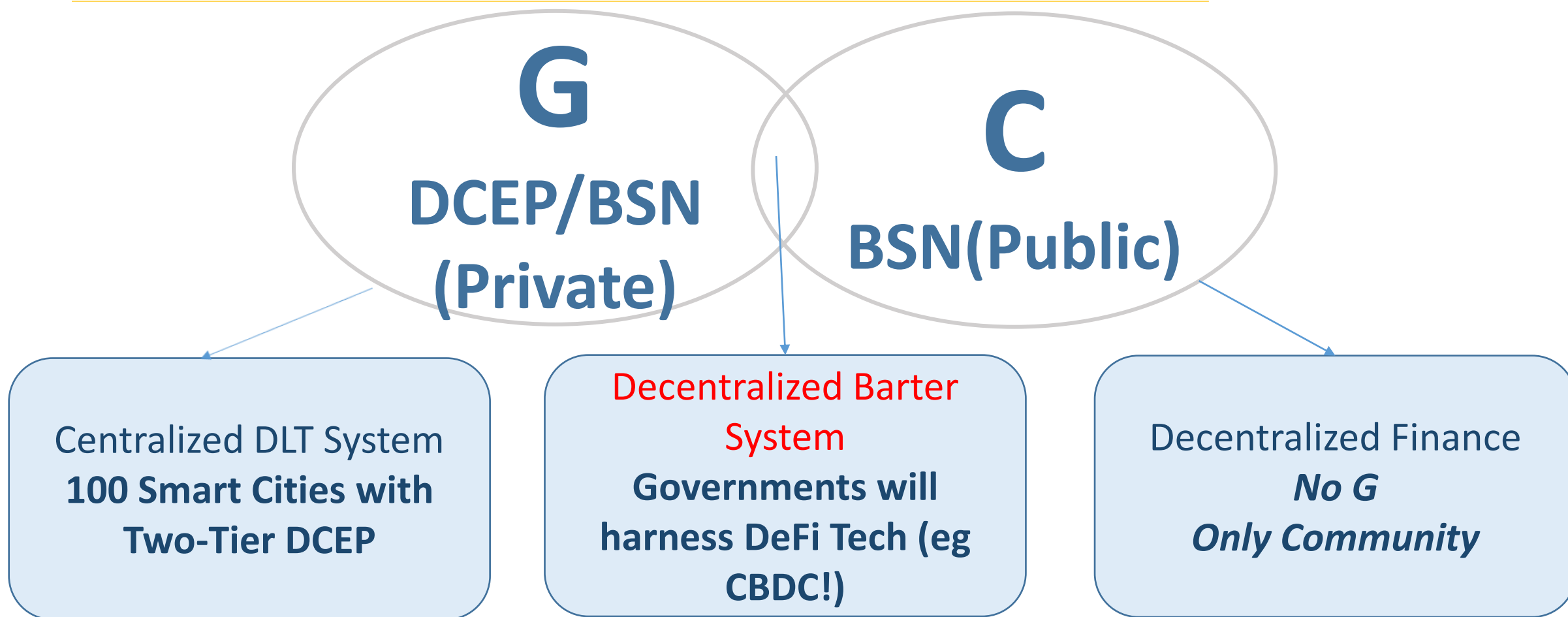
David LEE



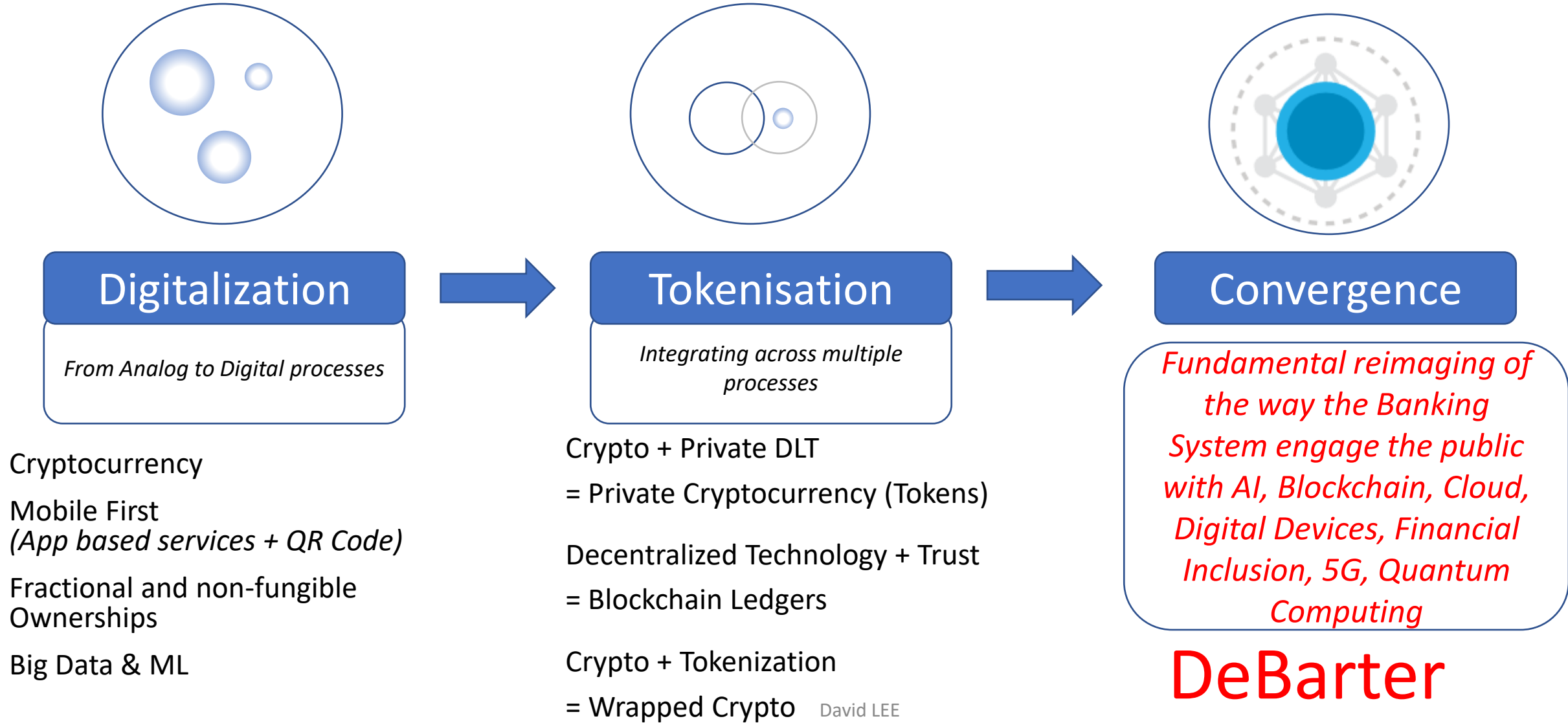
What is Really De-Fi to Governments? Liquidity Provider (~~Lender~~) of the Last Resort!

- 1. Government Supplies eCurrency or token currency
- 2. Suppliers provide goods and services
- 3. Buyers purchase autonomously
- As long as (1) and (2) provide the liquidity
 - **We bypass price discovery**: price autonomously adjusts according to SS and DD
 - **We bypass market makers**: sellers trade with the liquidity pool, and not sellers
 - **Everything of value in this world is just a token swap!**
- An era of traceability, transparent and frictionless trading!
- **There is a lot less need for a reserve currency!**
- **Central Bank refocuses on providing secured public digital infrastructure by issuing currency! - PBoC**

In Both C & G We Trust...



In Unison (Social + Tech Convergence): Only A Revolution Can De-throne



ALTERNATIVE CURRENCIES: Who Are Challenging?

5

Even the Allies are Breaking Rank!

Cryptocurrencies

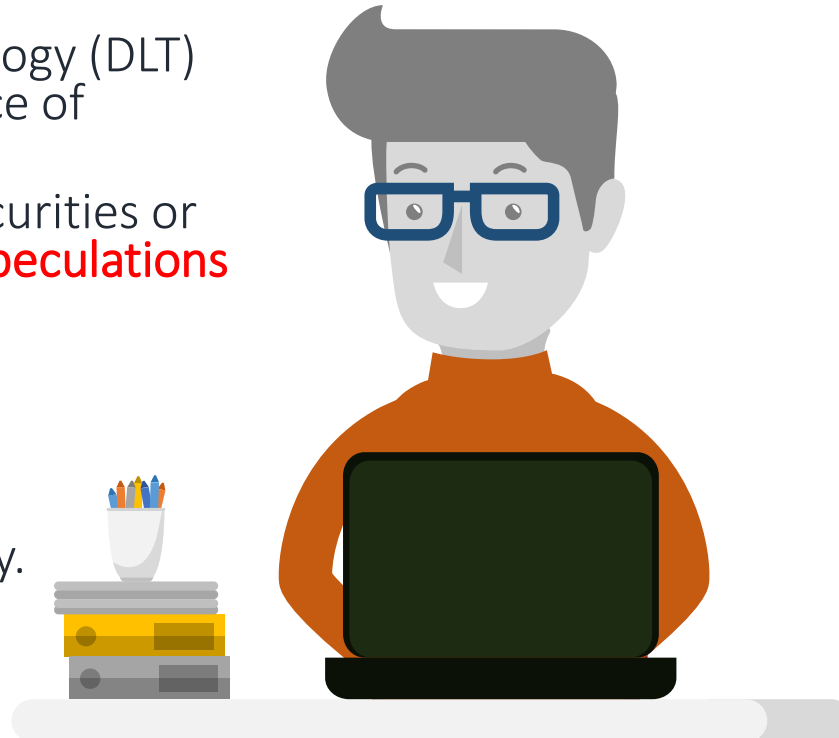
- Distributed Ledger Technology (DLT)
Decentralised trust, absence of governmental regulation
- Not tagged to values of securities or currencies, **vulnerable to speculations**

Stable Coins

- DLT and cryptocurrencies
- Tagged to securities or currencies. Lower volatility.
- **'Trusted' forms of coins**
- E.g. **Libra by Facebook**

Central Bank Digital Currencies

- CBDC: Central Bank Digital Currency
- **Separating Currency from Payment** – DC/EP by PBoC
- High regulation imposed



INSTEX and Full Reserve

- **Instrument In Support Of Trade Exchanges (INSTEX)** bypasses sanctions
- **EU backed** special purpose vehicle
- Successful transaction of medication from EU to **Iran**
- Fractional Reserve System transforming to a **Full Reserved Trade Weighted System** (SDR, Banco)



Distributed Ledger Technology and Crypto Governance to the Rescue

The **Real Driving Force** in a QE Infinity World with an Impending Crisis – Governments Need

- Singularity: **Convergence** of ... and Social Objectives
- Solidarity
 - The order ... to ensure that there are **no** ... **manipulating relationships** between ... and peoples as each in the ecosystem is ... actually dependent but with independent choice.
- Subsidiarity
 - Every task of society or system should **be assigned to the smallest possible group that can perform it**. Only if the smaller group is unable to resolve the problem itself should a group at a higher level assume responsibility.
- Universal Destination of Goods – Driven by Technology
 - Every person has the right to **what is vitally necessary and this must not be withheld** from him.

A G-Zero World: What Happens Next?

Short Term

- **System Maturity:** Peak has been reached, Fractional Reserve System is already moving to full reserve system (negative interest rates)
- **Change in Investment Strategy:** The end of Warren Buffett investment style (US-centric, non-tech, high margin, oil and gas-based, top of the pyramid)?

Mid Term

- **Achieving True Financial Inclusion** : Fintech engineering will drive financial inclusion products for the Universal Destination of Goods and Services with Solidarity and Subsidiarity
- **Change in Investment**
- **Achieving Unison:** Approaching singularity of sustainability and inclusion

Long Term

- **Co-existence of CBDC and DeBarter** : The revival of what Keynes was advocating Banco and the full reserve system.
- **The era of Token Swaps with Stable Coins** such as Libra and e-Fiat co existing without the need of a global reserve currency.
- **Token Currency/P2P Payment (TCPP)**

Chinese social and tokenisation barter initiatives
will change the entire global landscape to one
without the need of a reserve currency.



References and Acknowledgement

- Slides are prepared by:
 - Aneesha Reihana, *BCMGuru.io*
 - Liu Yee Heng, *National University of Singapore*
- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3608752
- <https://medium.com/programmable-government-and-value-of-everything/programmable-government-and-value-of-everything-economy-1659196c9ea5>
- <https://www.legalanalytics.law.cuhk.edu.hk/post/cryptocurrencies-stable-coins-and-the-growing-pressure-for-new-monetary-policies>
- <https://rcpolitics.org/four-principles-personhood-common-good-solidarity-subsidiarity/>