

Blockchain Worldwide Database



Second generation Internet

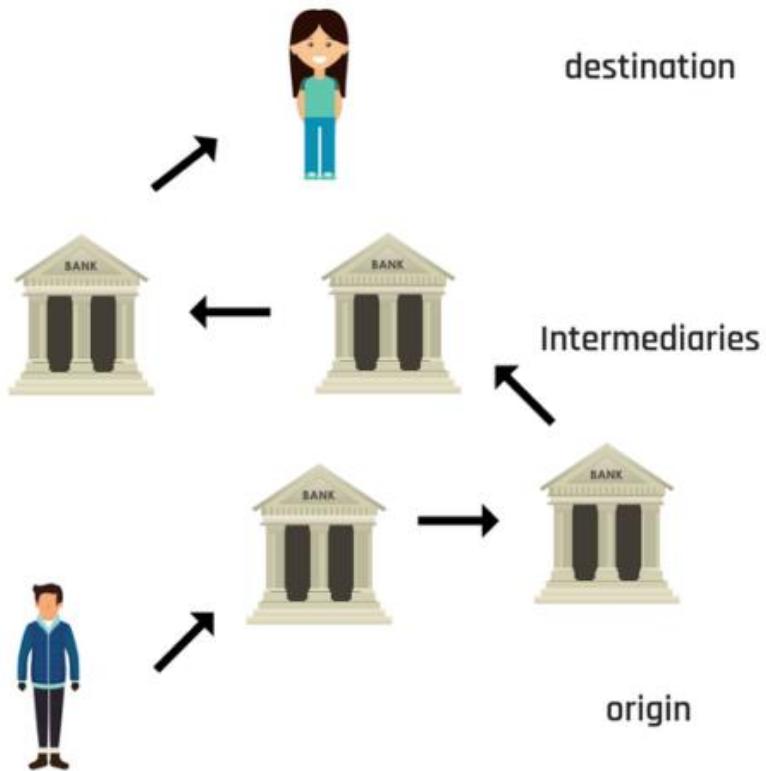
› Internet democratizes information

› Blockchain will democratize value creation

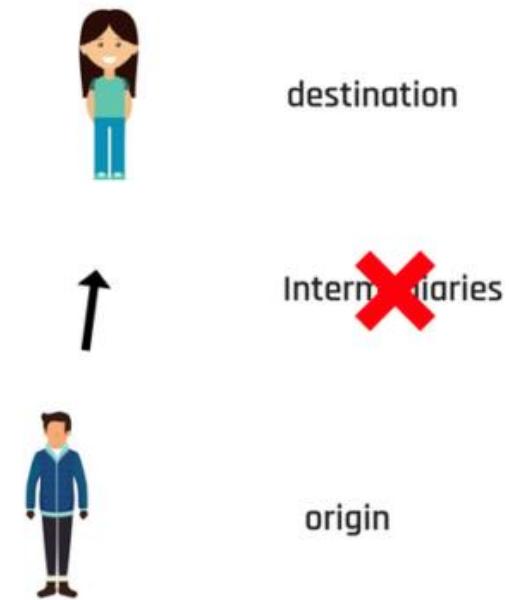


Peer-to-peer transfer

Traditional transfer

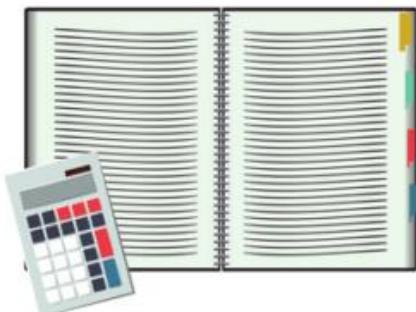


Blockchain-based transfer



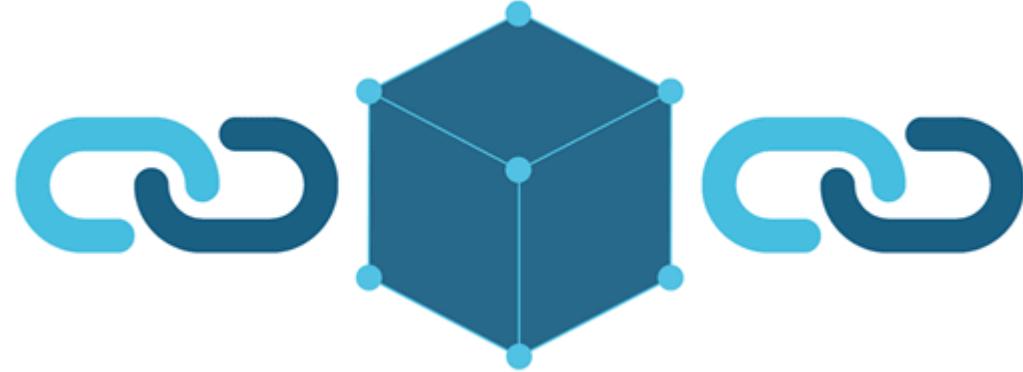
Blockchain – The idea behind

To visualize the idea of blockchain:



Imagine an accounting ledger... but distributed across a network

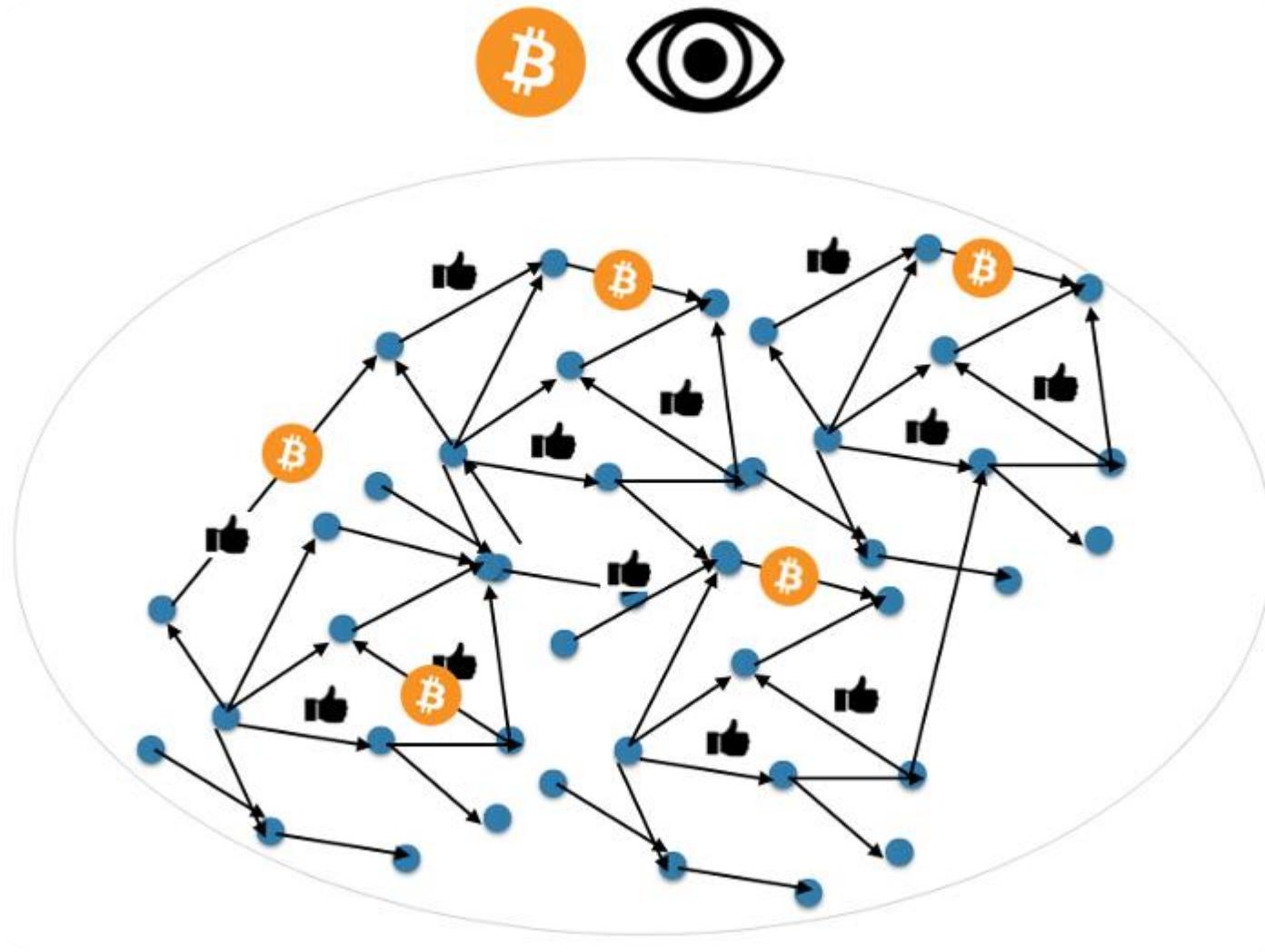
Blockchain



- **Decentralized**
- **Persistent:**
- **Immutable:**
- **Public (auditable)**



The “Central Bank of Internet”



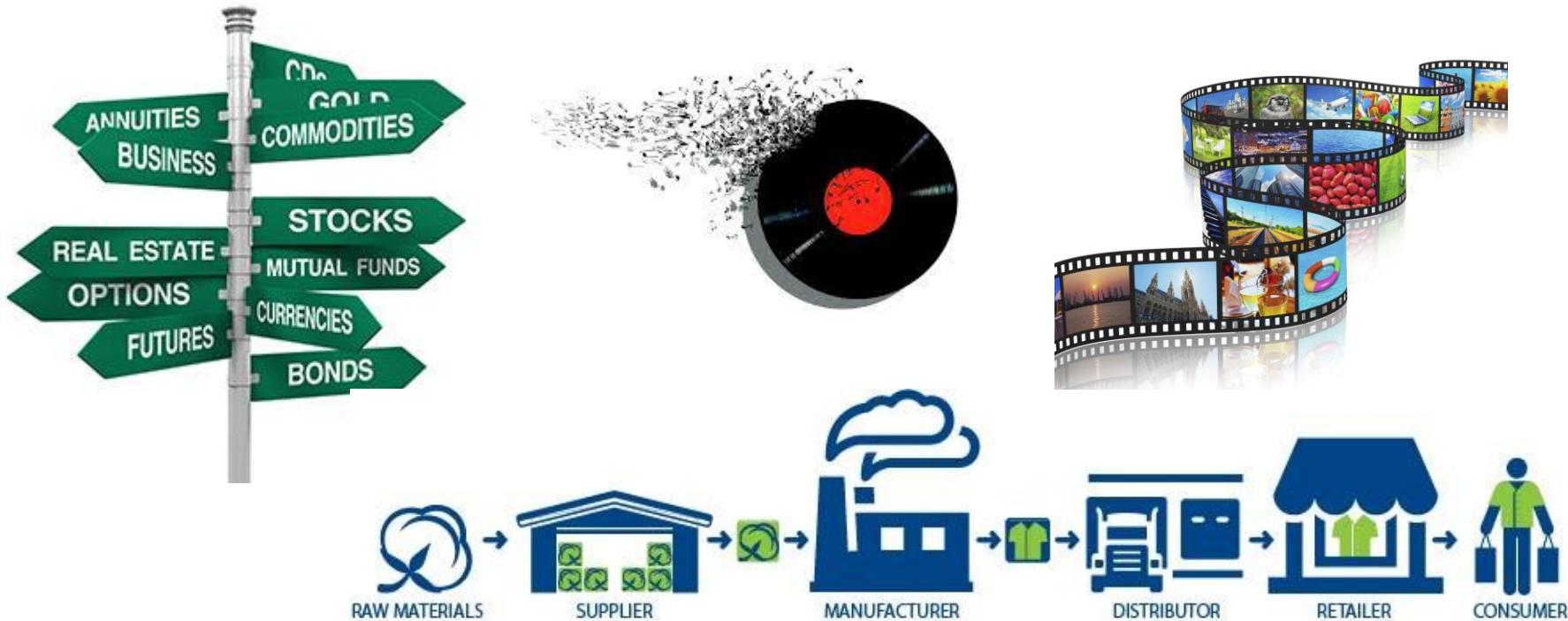
Mining

- Number of bitcoins per block started in 50BTC
- Decrease 50% every 210,000 blocks (every 4 years, since 6 blocks /hour are found) - More miners more difficult
- Today every block generates 12,5BTC - Next halving 2020
- Total 21,000,000 in 2140



Blockchain technology

**Peer-to-peer transactions without an intermediary
to establish trust”**



Tokenization

Is the process of replacing sensitive data with **unique identification** symbols that retain all the essential information about the data without compromising its security.



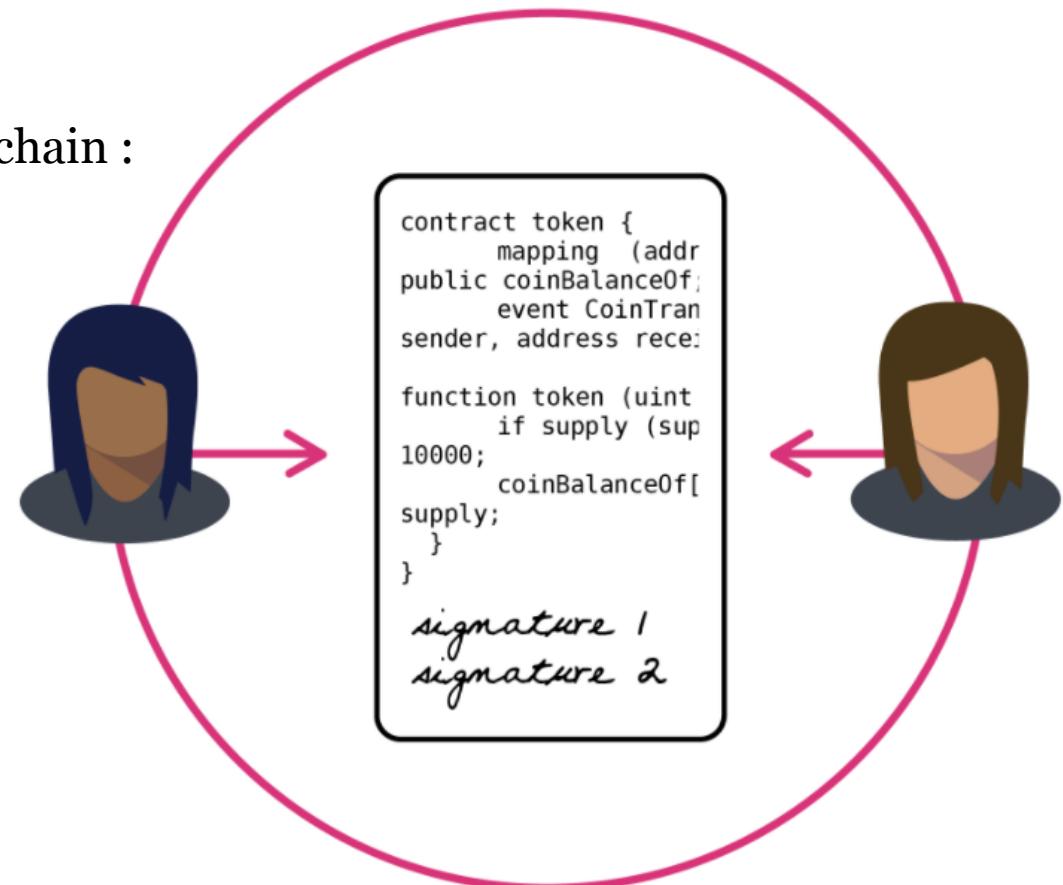
The revolution → Smart Contracts

SMART CONTRACT = Computer software coded and introduced into the SHARED DATABASE

A little program stored in the Blockchain :

Everybody has:

- The same code
- The same data
- The same result



Supply chain - use of smart contracts

Logged as the Importer Bank

Demonstration: View, Edit, and ... × +

linux05.watson.ibm.com/openchain/

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Search

Logged in as ImportBank ([Sign out](#))

My Contracts: Browse, Edit, and Monitor

New Contract

Product: PartsDelivery

Vendor: SupplyCorp

Price: 1000000

Bank: ExportBank

Approvals: Trucker
PortAuthority
CustomsAuthority

Conditions:

Publish

Contracts Deployed By Me

| Contract Name | Contract Type | Signatories | Status | Update |
|---------------|---------------|--|-------------------------------|--------|
| PartsDelivery | LC_3 | Trucker PortAuthority CustomsAuthority | Pending Pending Pending | |

Contracts Pending My Signature

| Contract Name | Contract Type | Signed By | Register Signature |
|---------------|---------------|-----------|--------------------|
| | | | |

My Bank Accounts

Update All

| Bank Name | Account Balance |
|-----------|-----------------|
| | |

Supply chain - use of smart contracts

Logged as the Port Authority

My Contracts: Browse, Edit, and Monitor

Logged in as Trucker ([Sign out](#))

| Contracts Deployed By Me | | | | |
|--------------------------|---------------|-------------|--------|----------------------------|
| Contract Name | Contract Type | Signatories | Status | Update |
| | | | | Update All |

| Signatories | Status |
|------------------|---------|
| Trucker | Pending |
| PortAuthority | Pending |
| CustomsAuthority | Pending |

| Contracts Pending My Signature | | | |
|--------------------------------|---------------|-----------|--------------------|
| Contract Name | Contract Type | Signed By | Register Signature |
| PartsDelivery | LC_3 | | |

| Contract Type | Signed By |
|---------------|-----------|
| | |

New Contract [Publish](#)

Product:

Vendor:

Price:

Bank:

Approvals:

Conditions:

My Bank Accounts [Update All](#)

| Bank Name | Account Balance |
|-----------|-----------------|
| | |

Number of blocks added to chain: 3

[Create a new contract \('Trucker', 'PartsDelivery'\)](#)

Supply chain - use of smart contracts

Logged as the Supply corporation

Demonstration: View, Edit, and ... × +

linux05.watson.ibm.com/openchain/ Search

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Logged in as SupplyCorp ([Sign out](#))

My Contracts: Browse, Edit, and Monitor

New Contract Publish

Product:

Vendor:

Price:

Bank:

Approvals:

Conditions:

Contracts Deployed By Me Update All

| Contract Name | Contract Type | Signatories | Status | Update |
|---------------|---------------|-------------|--------|--------|
|---------------|---------------|-------------|--------|--------|

Contracts Pending My Signature Update All

| Contract Name | Contract Type | Signed By | Register Signature |
|---------------|---------------|-----------|--------------------|
|---------------|---------------|-----------|--------------------|

My Bank Accounts Update All

| Bank Name | Account Balance |
|------------|-----------------|
| ExportBank | 2000000 |

Number of blocks added to chain: 6

Search

Logged in as ImportBank ([Sign out](#))

Update All

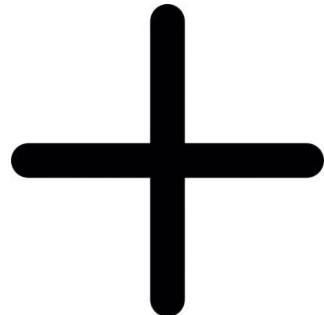
| Signatories | Status | Update |
|------------------|--------|--------|
| Trucker | Signed | |
| PortAuthority | Signed | |
| CustomsAuthority | Signed | |

Update All

| Contract Type | Signed By | Register Signature |
|---------------|-----------|--------------------|
|---------------|-----------|--------------------|

Number of blocks added to chain: 6

“Killing the middleman” + Global DB



Impact on Business

Make Blockchain real for Business



Shared Ledger
single source of truth



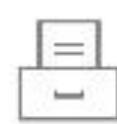
Secure
tamper proof
(extra security)



Permissioned Participants
Identity



Private
un-linkable identity



Audit-able
prove identity & ownership



Consensus
Modular protocol



Smart Contracts
business logic



Digital assets
Record depository

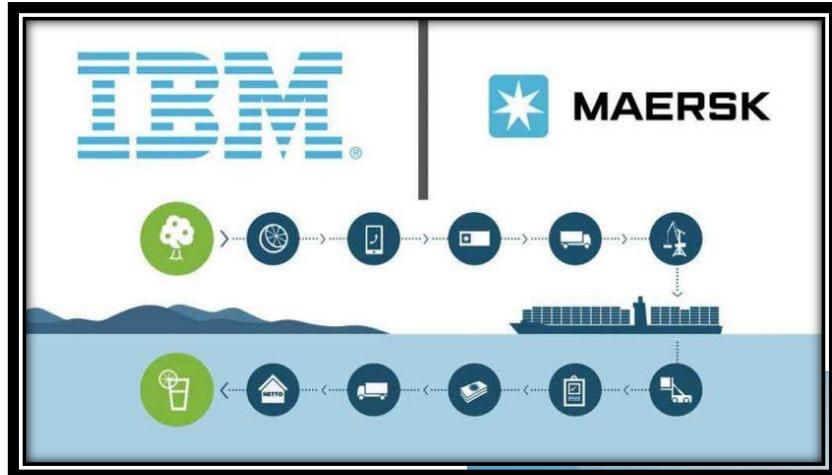


Confidential
permission control



Viable
100+ year architecture

Supply chain efficiency



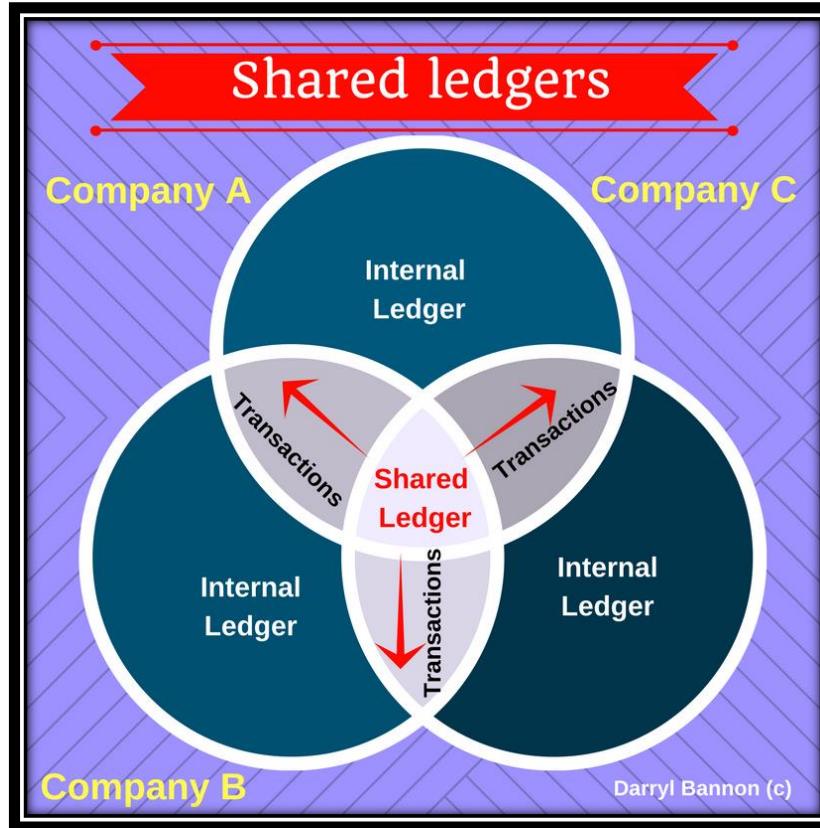
Origin and destination guaranteed



Traceability



Accounting and reporting



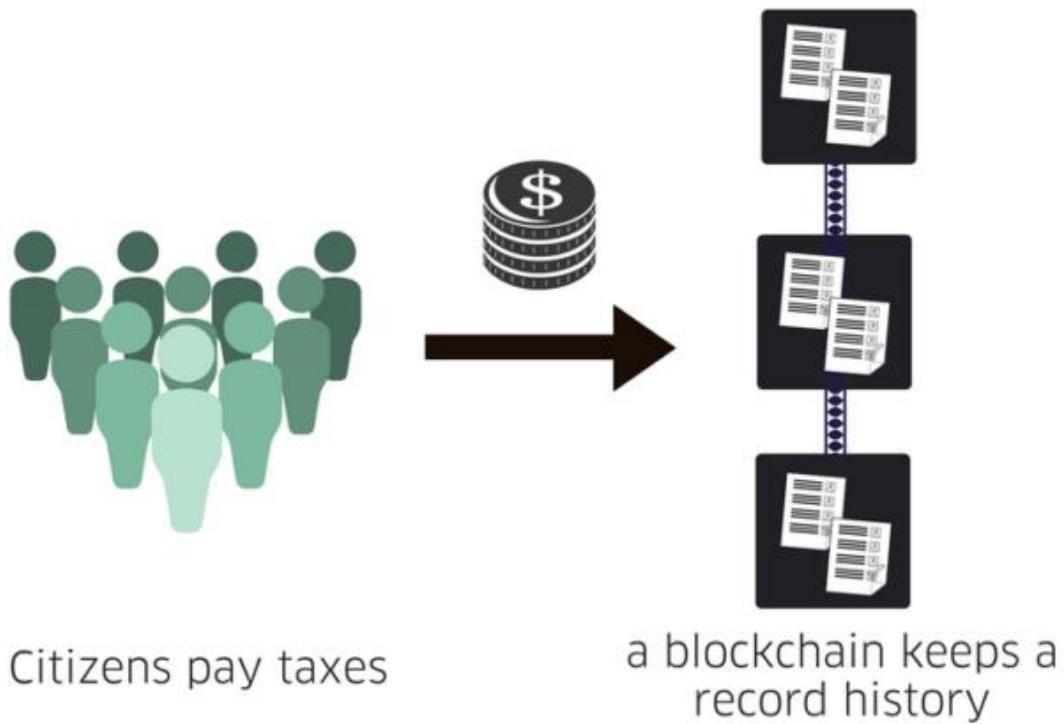
- **Internet of Things integration.** E.g. “I’m a widget machine and I belong to Bob Ltd, here’s a digital signature to prove it”.

Bullet proof accounting systems for Stronger governance



Auditing and Taxes

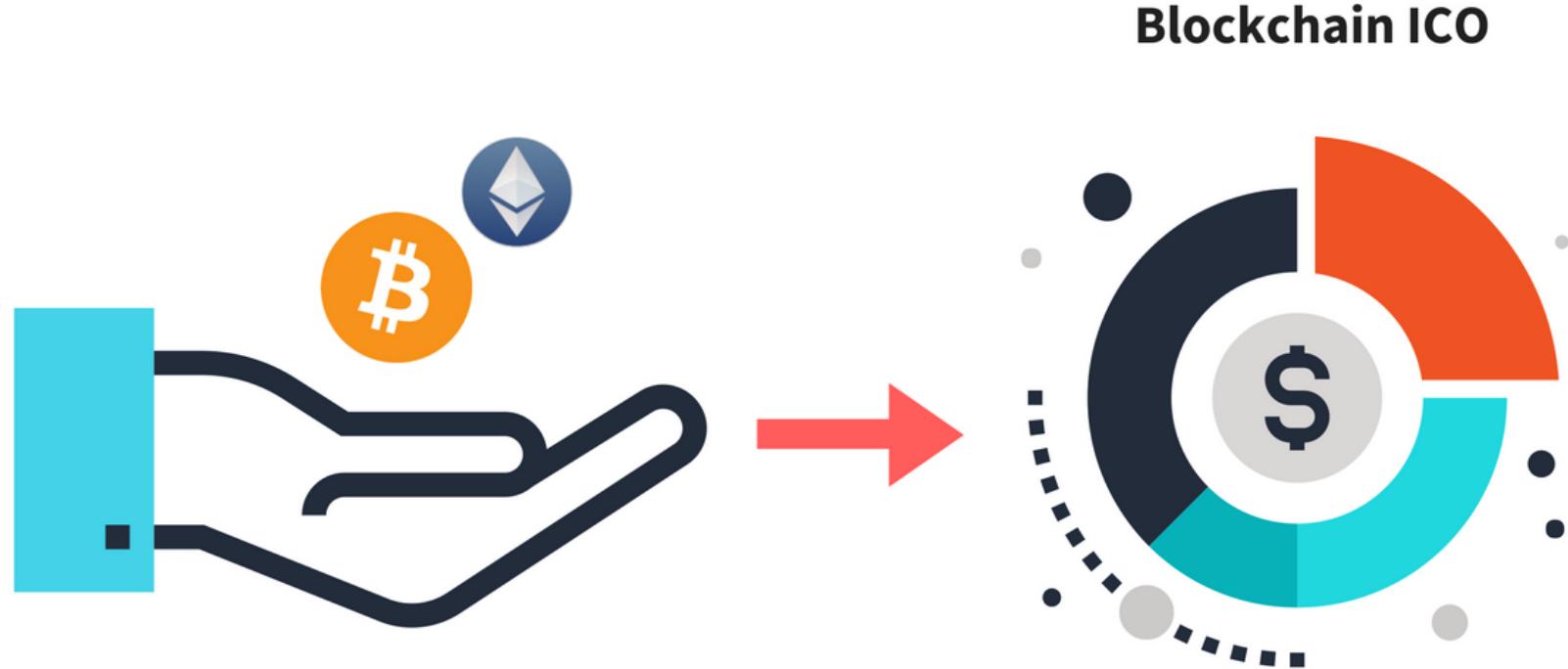
Blockchain-based Taxation



Loyalty programs



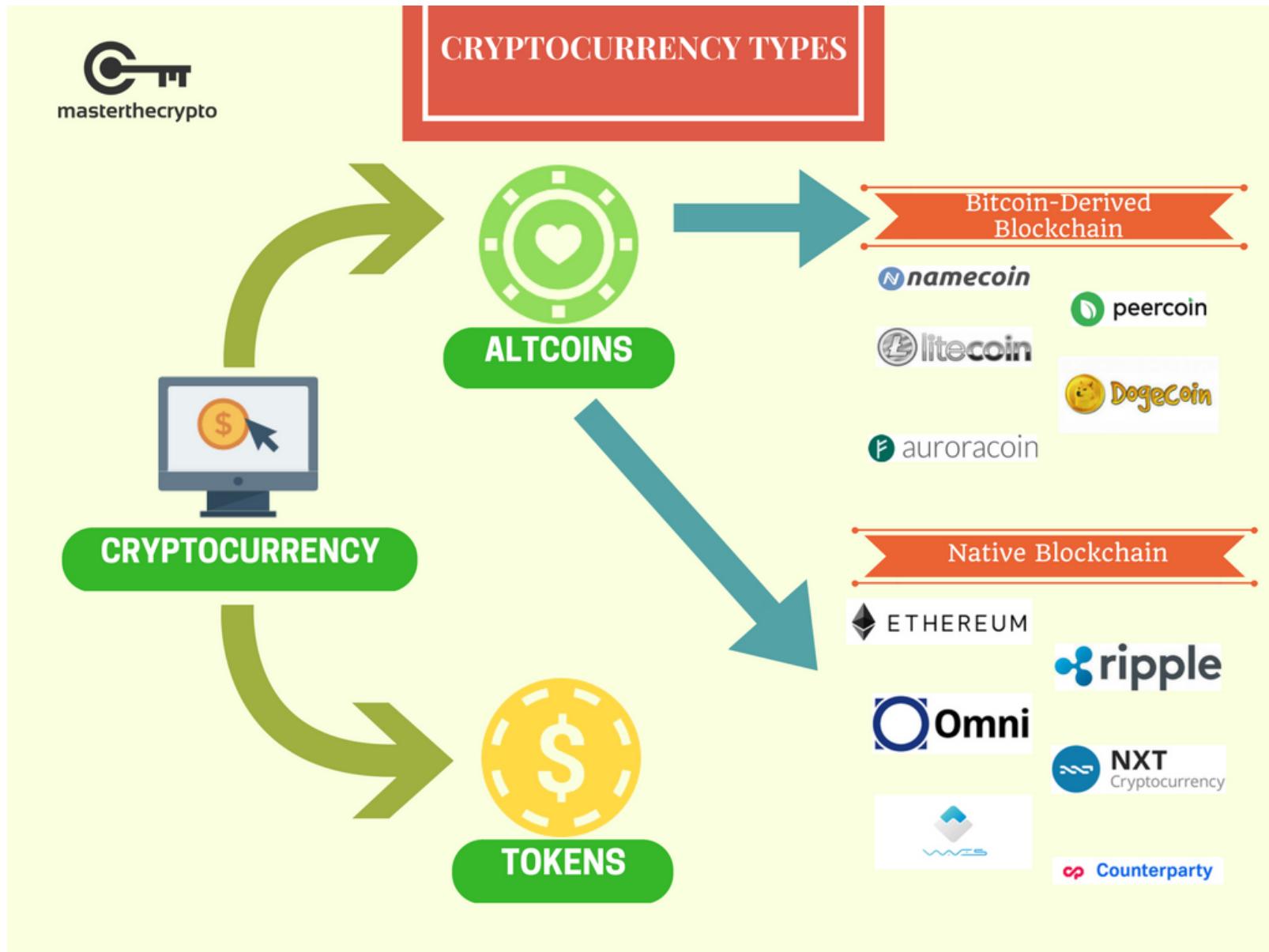
Funding - Initial Coin Offering (ICO)

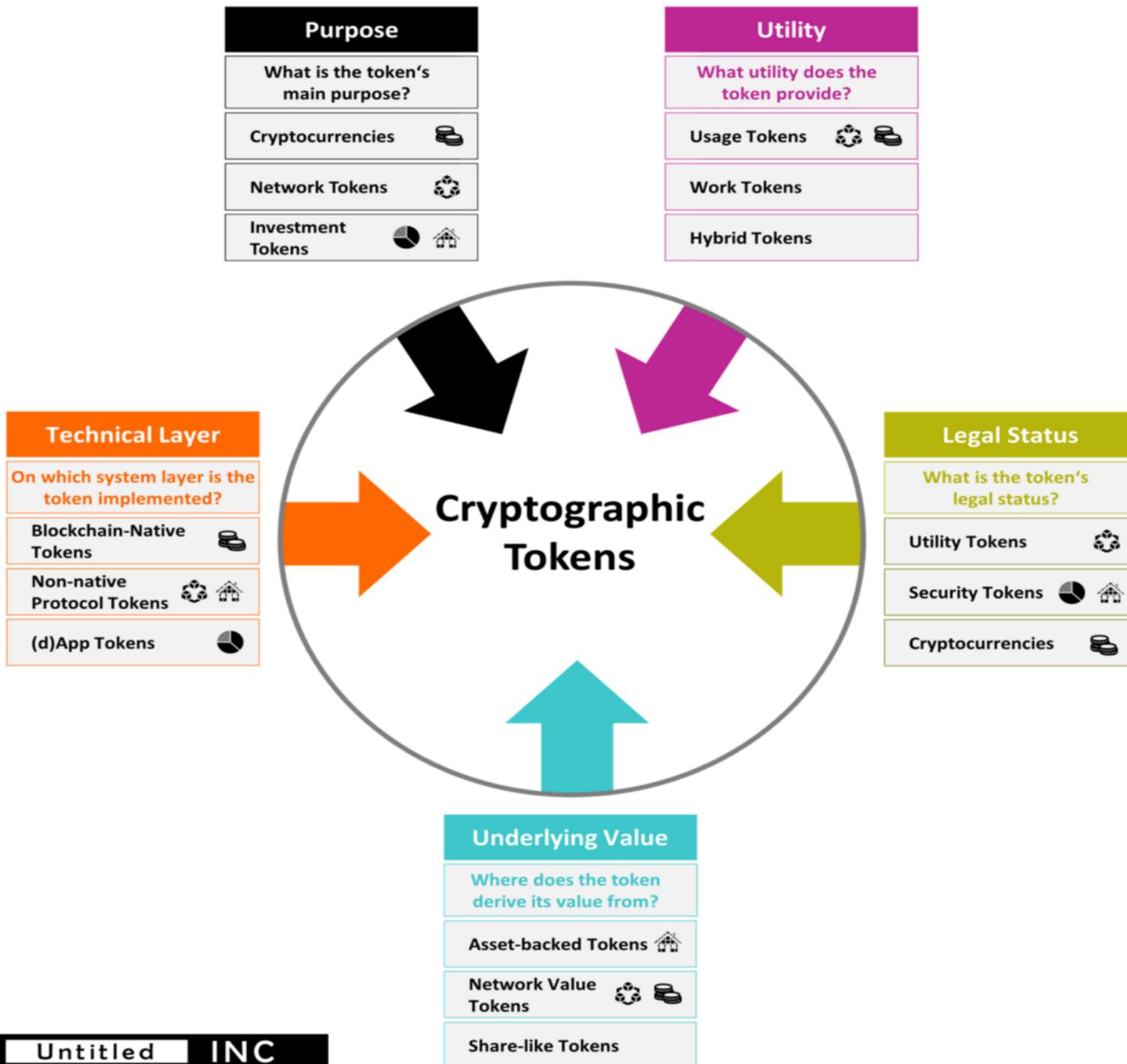


Cryptocurrencies vs Tokens



Cryptocurrencies vs Tokens





ARCHETYPES



Crypto-currency

- Used as store-of-value or means-of-payment; unit of account
- Not issued by a central authority
- Can be mineable or pre-mined



Tokenized Asset

- Gives access to assets like gold, even in a micro transaction scale
- The underlying asset needs to be held by the issuing party
- Thus introduces counterparty risk, contrary to cryptocurrency



Tokenized Platform

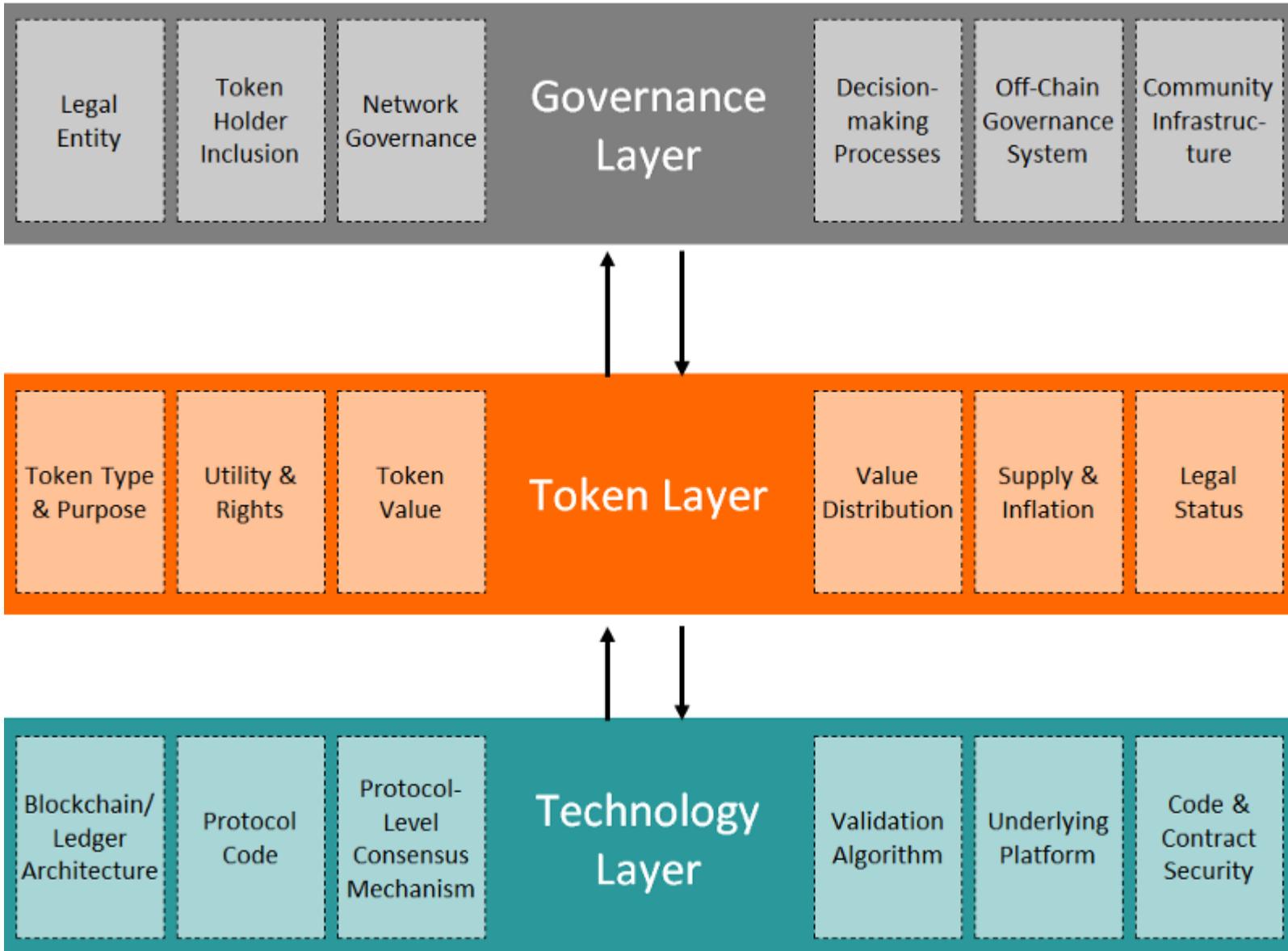
- Platform-like network, not owned & operated by a single entity
- Before users had limited roles in a platform, now roles are distributed and available to every network participant
- Value (financial/utility) flows freely through the network



Token-as-a-share

- A tokenized instrument to invest in companies (though currently on no regulated basis) that has characteristics of stock and currency (e.g. ICO replacing IPO)
- Shares on steroids: flexible, programmable via smart contract
- Currently a highly uncertain token class as regulatory frameworks are only beginning to emerge

DLT SYSTEM LAYERS



We are everyday defining the new



Initial Coin Offerings

- Utility Token Offerings (UTO)
- Equity Token Offerings (ETO)
- Debt Token Offerings (DTO)
- ...

Consideraciones de la CNMV sobre criptomonedas e ICOs - 8 Febrero 2018

Como factores para valorar si a través de una ICO debe considerarse que se están ofreciendo **valores negociables** se estiman relevantes los siguientes:

- Que los “tokens” atribuyan derechos o expectativas de participación en la potencial revalorización o rentabilidad de negocios o proyectos o, en general, que presenten u otorguen derechos equivalentes o parecidos a los propios de las acciones, obligaciones u otros instrumentos financieros incluidos en el artículo 2 del TRLMV.
- En el caso de “tokens” que den **derecho a acceder a servicios o a recibir bienes** o productos, que se ofrezcan haciendo referencia, explícita o implícitamente, a **la expectativa de obtención por el comprador o inversor de un beneficio como consecuencia de su revalorización o de alguna remuneración asociada al instrumento o mencionando su liquidez o posibilidad de negociación en mercados equivalentes o pretendidamente similares a los mercados de valores sujetos a la regulación**.

Sin perjuicio de las precisiones anteriores, la CNMV considera que buena parte de las operaciones articuladas como ICOs **deberían ser tratadas como emisiones u ofertas públicas de valores negociables.**

Como factores para valorar si a través de una ICO debe considerarse que se están ofreciendo valores negociables se estiman relevantes los siguientes:

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En el supuesto de ICOs que, con base en criterios como los que acaban de mencionarse, puedan considerarse valores negociables o instrumentos financieros, se recuerda que les serán **aplicables las normas nacionales o europeas correspondientes, fundamentalmente, las contenidas, relacionadas o derivadas de:**

- MiFID II
- Directiva de Folletos
- Directiva sobre Gestores de Fondos de Inversión Alternativos

Si la ICO NO tenga la consideración de oferta pública:

- Si van dirigidas a menos de 150 inversores,
- por establecer una inversión mínima de 100.000 euros o
- por suponer un importe total inferior a 5 millones de euros

sería de aplicación la previsión contenida en el artículo 35.3 del TRLMV:

si la colocación se efectúa empleando cualquier forma de comunicación publicitaria (promoción de la oferta a través de páginas web o redes sociales) **debe intervenir una entidad autorizada para prestar servicios de inversión** a efectos de la comercialización.

CNMV

La CNMV y el Banco de España advierten que, **hasta la fecha, ninguna emisión de “criptomoneda” ni ninguna ICO ha sido registrada**, autorizada o verificada por ningún organismo supervisor en España. Esto implica que no existen “criptomonedas” ni “tokens” emitidos en ICOs cuya adquisición o tenencia en España pueda beneficiarse de ninguna de las garantías o protecciones previstas en la normativa relativa a productos bancarios o de inversión.

Las “criptomonedas” así como los distintos actores implicados en su comercialización directa, no están regulados en la Unión Europea. Esto implica que si una persona compra o mantiene “criptomonedas” no se beneficia de las garantías y salvaguardias asociadas a los productos financieros regulados.

New financial system?

FORTUNE

This Big Cryptocurrency Acquisition Could Create a Wall Stre...



THE LEDGER • CRYPTOCURRENCY

This Big Cryptocurrency Acquisition Could Create a Wall Street-Style Financial Giant



Circle Trade, one of the world's biggest "over the counter" trading desks for cryptocurrencies.

will announce today (Feb 26, 2018) that it is buying

Poloniex, a crypto exchange

*A move that immediately makes Circle one of the largest and most influential companies in the industry. Fortune's Robert Hackett profiles a company that hopes to leverage the technology **behind Bitcoin to become the bank of the next century.***

New financial system?

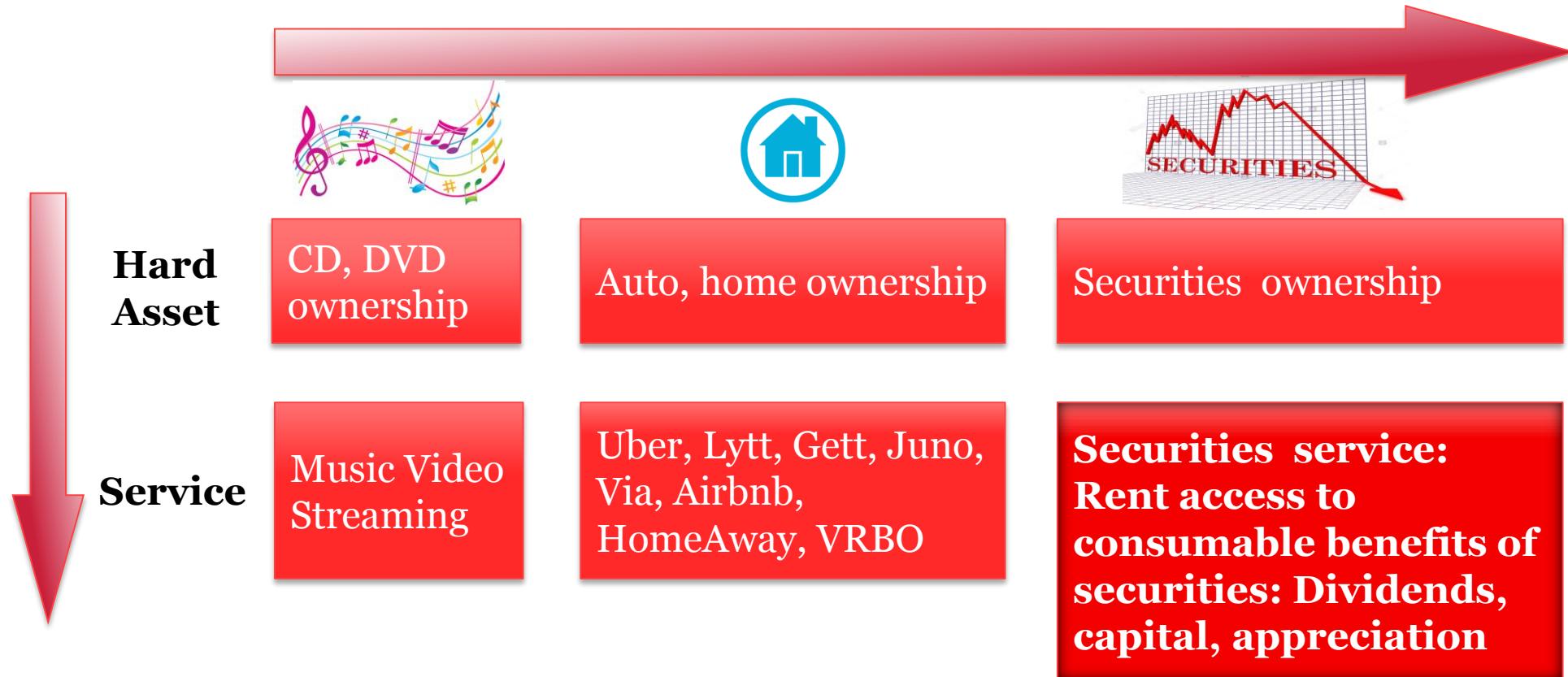
Circle Trade

The desk handles more than **\$2 billion a month in cryptocurrency transactions** with deal size from \$250,000 to \$200 million

Customers:

- Early investors whose coins have soared in value
- Coin “mining” operations
- Cryptocurrency business ventures:
 - Other exchanges
 - Hedge funds
 - Projects that have hosted “initial coin offerings”

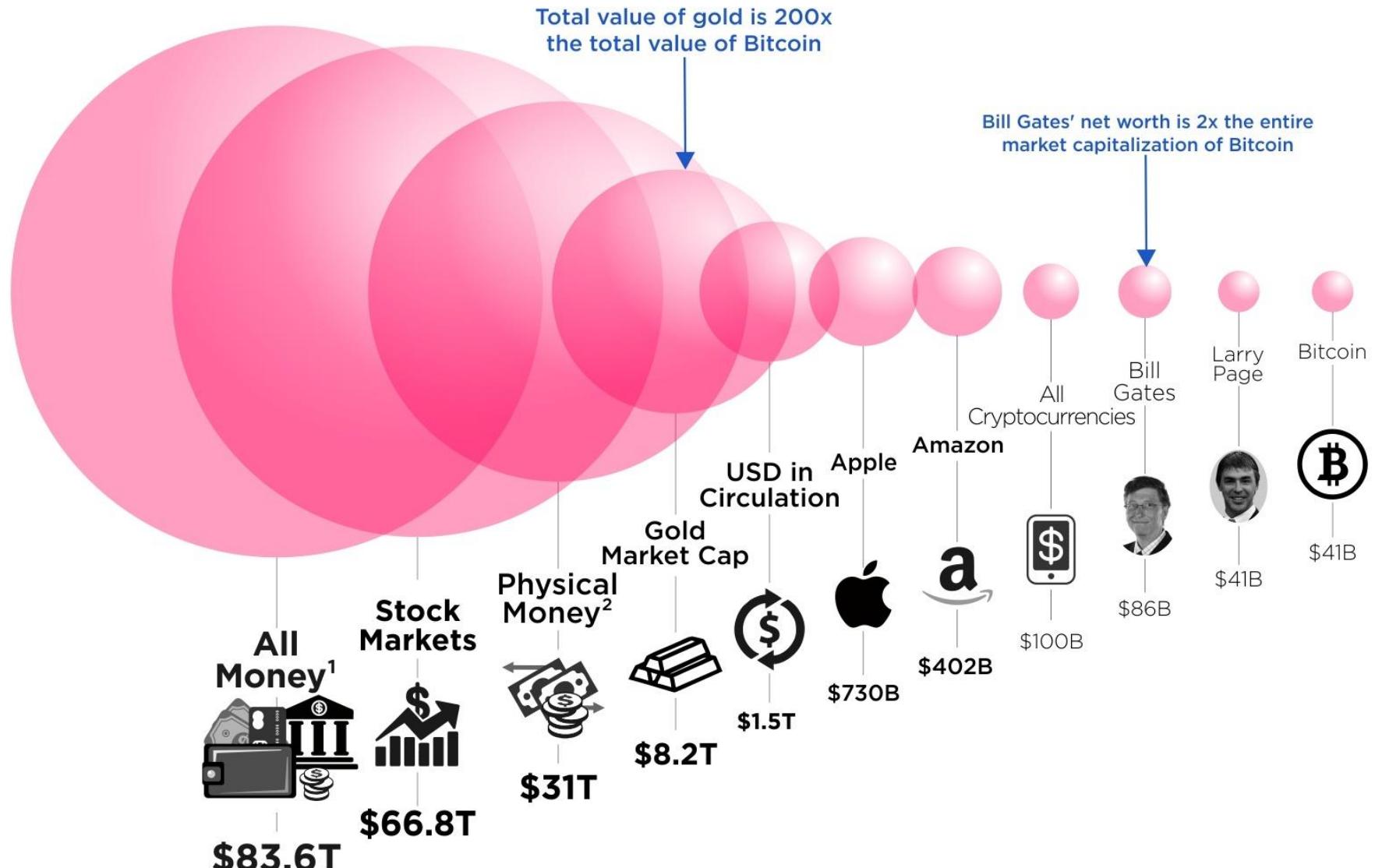
Reinventing Finance – “Assets as a Service”



- **Access to the consumable benefits of assets, no ownership required**
- **Based on trust of future availability**

Money supply

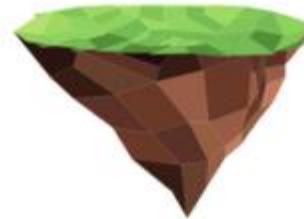
Putting the World's Money into Perspective



Tokenization of assets



=



1 digital blockchain-based
token

1 square meter of land
(10.76 square foot)



=



3 digital blockchain-based
tokens

3 square meters of land
(32.29 square foot)

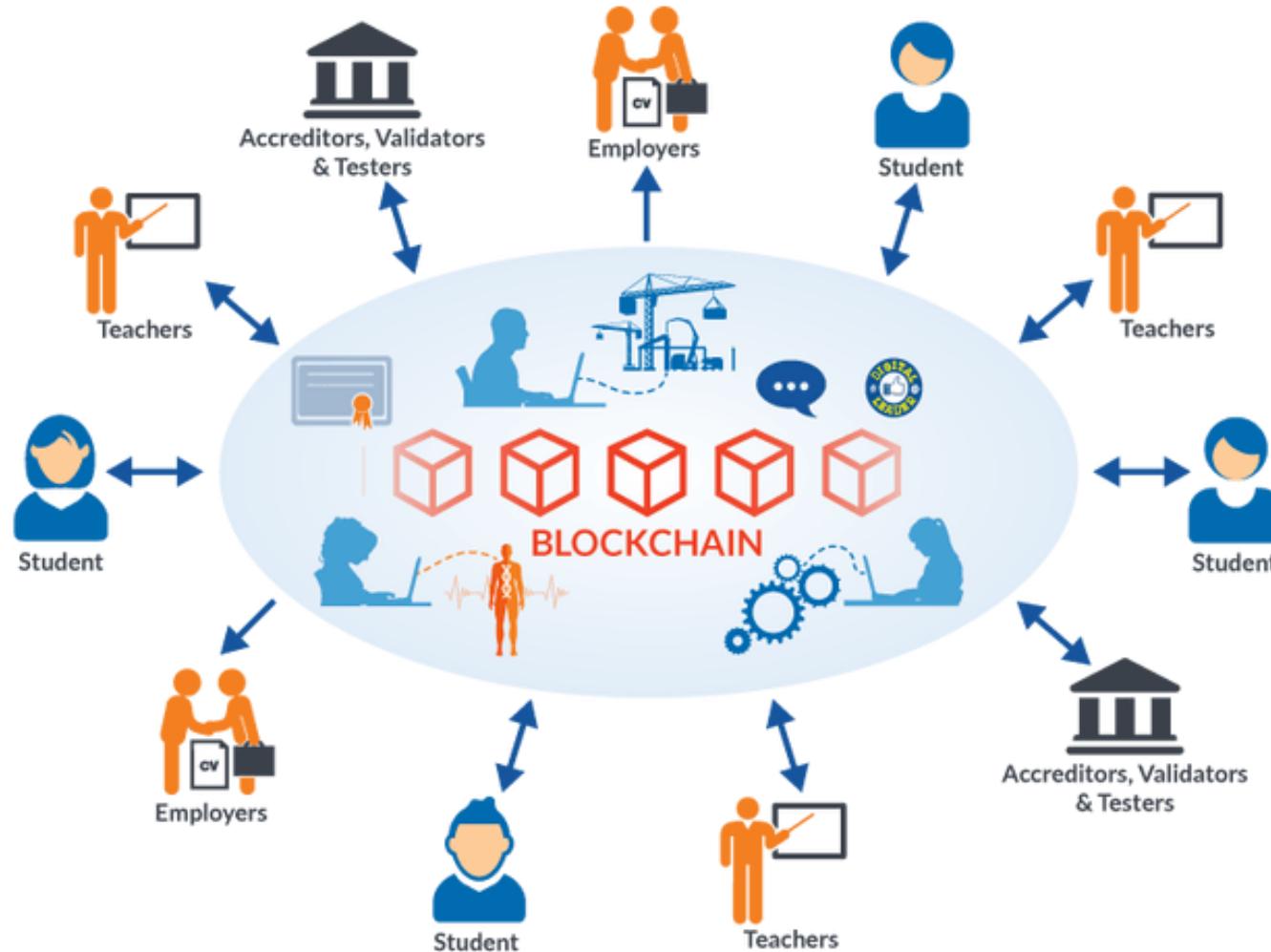
Tokenization of natural resources



Tokenization of Healthcare



Tokenization of Education



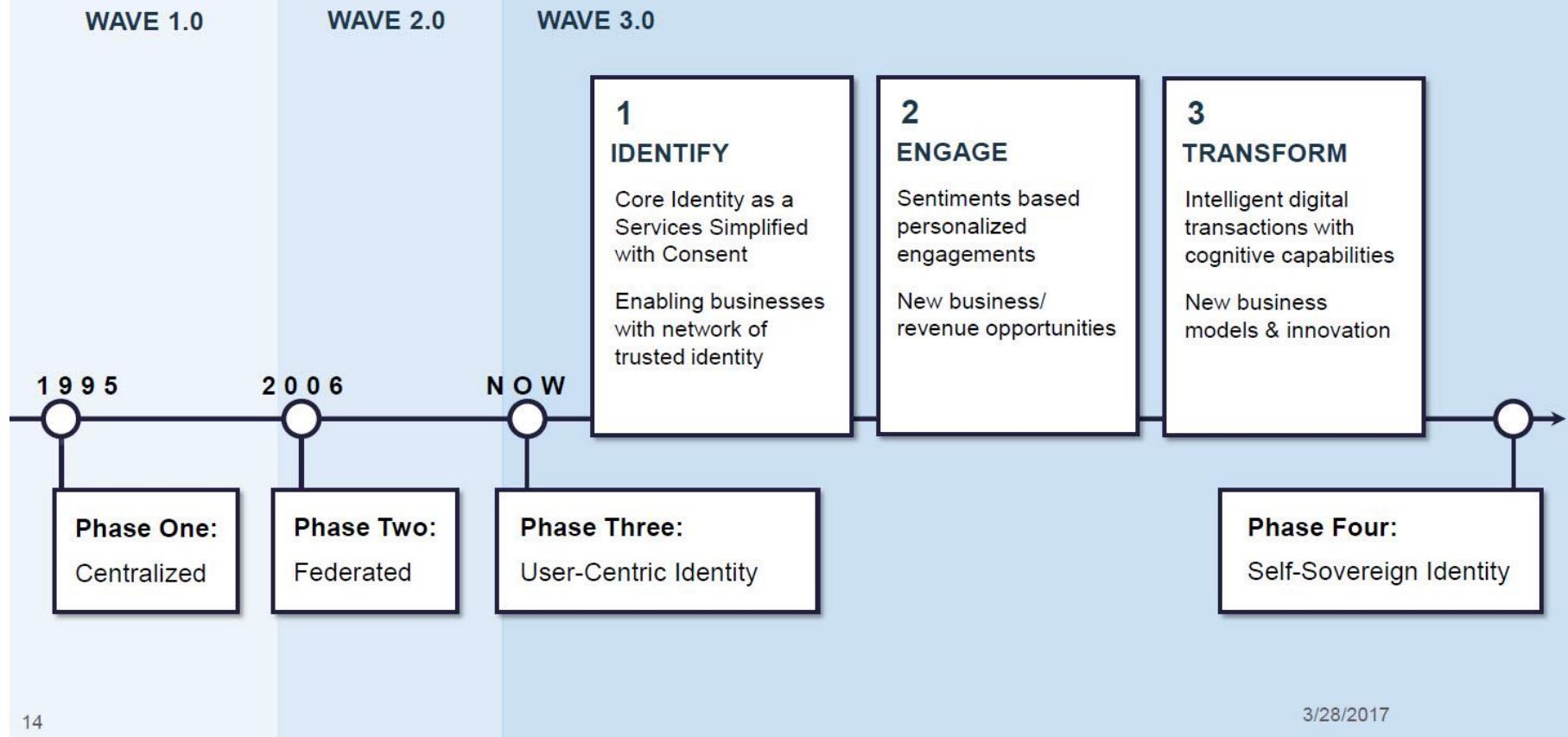
How you can be a “head-hunter”

Monetarizing your job recommendations...



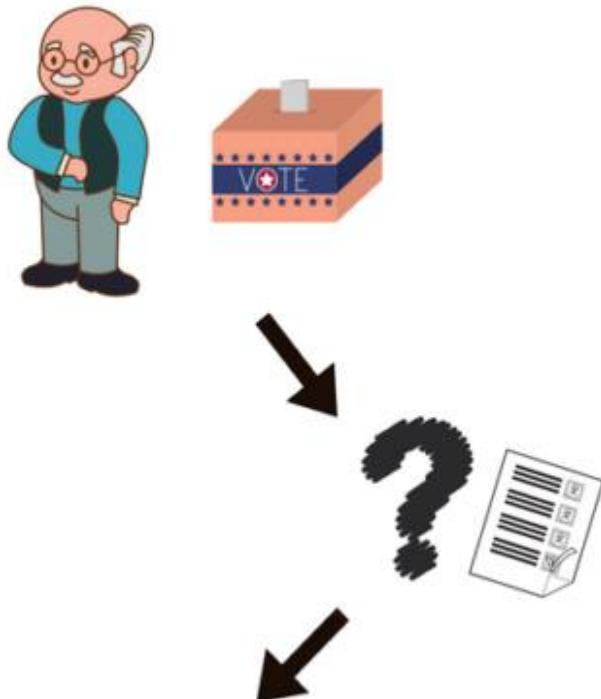
Tokenization of identity

The Journey to Self-Sovereign Identity



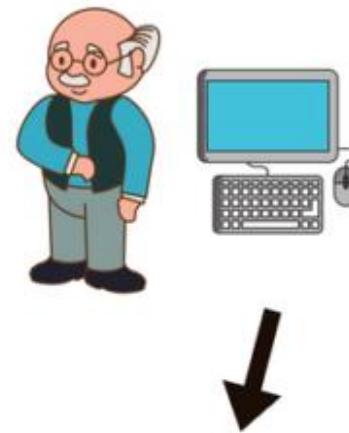
Tokenization of votes

Traditional Voting



Final Results after 24 hrs

Blockchain-based voting

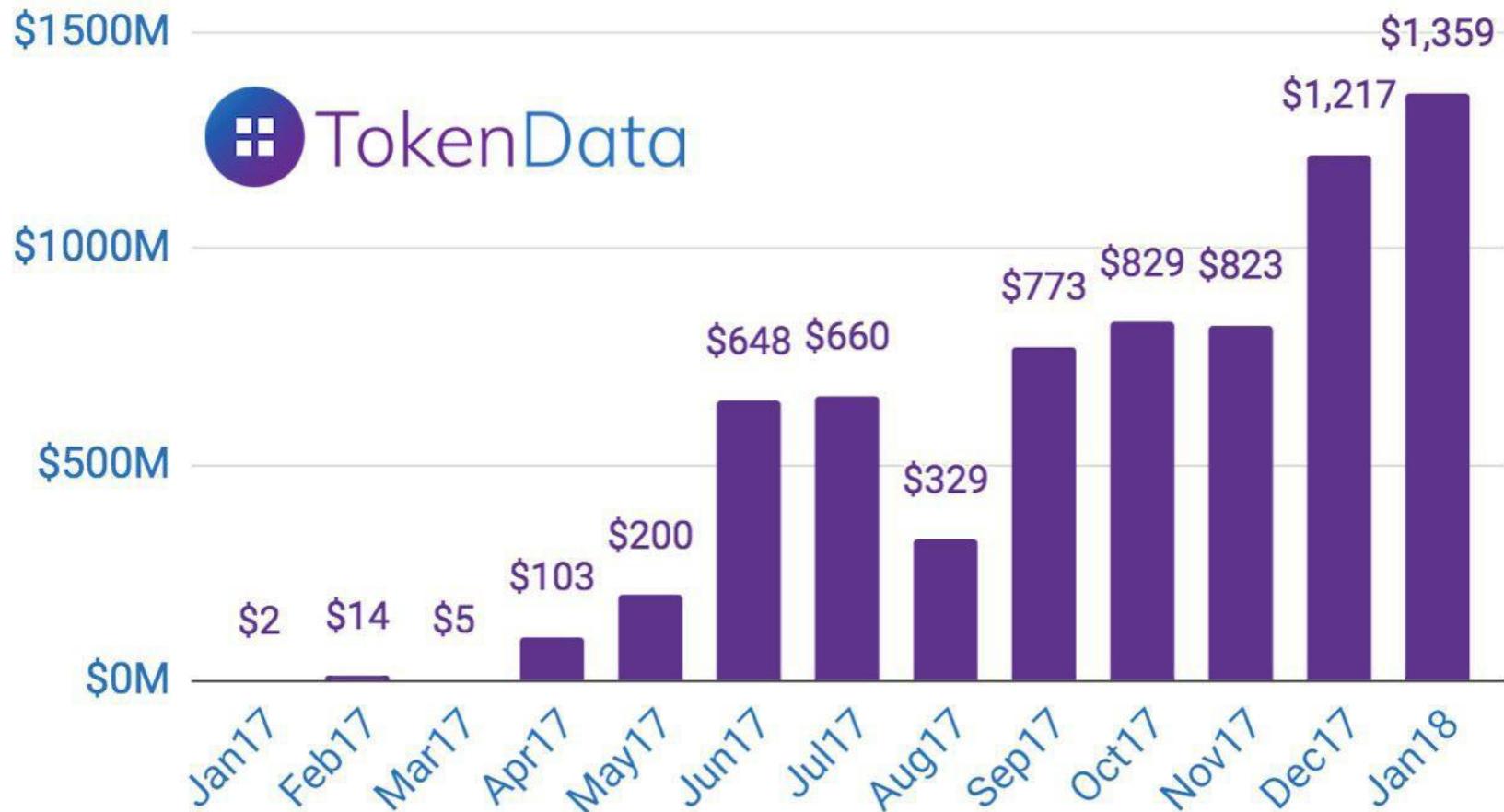


Real-Time Transparent Results

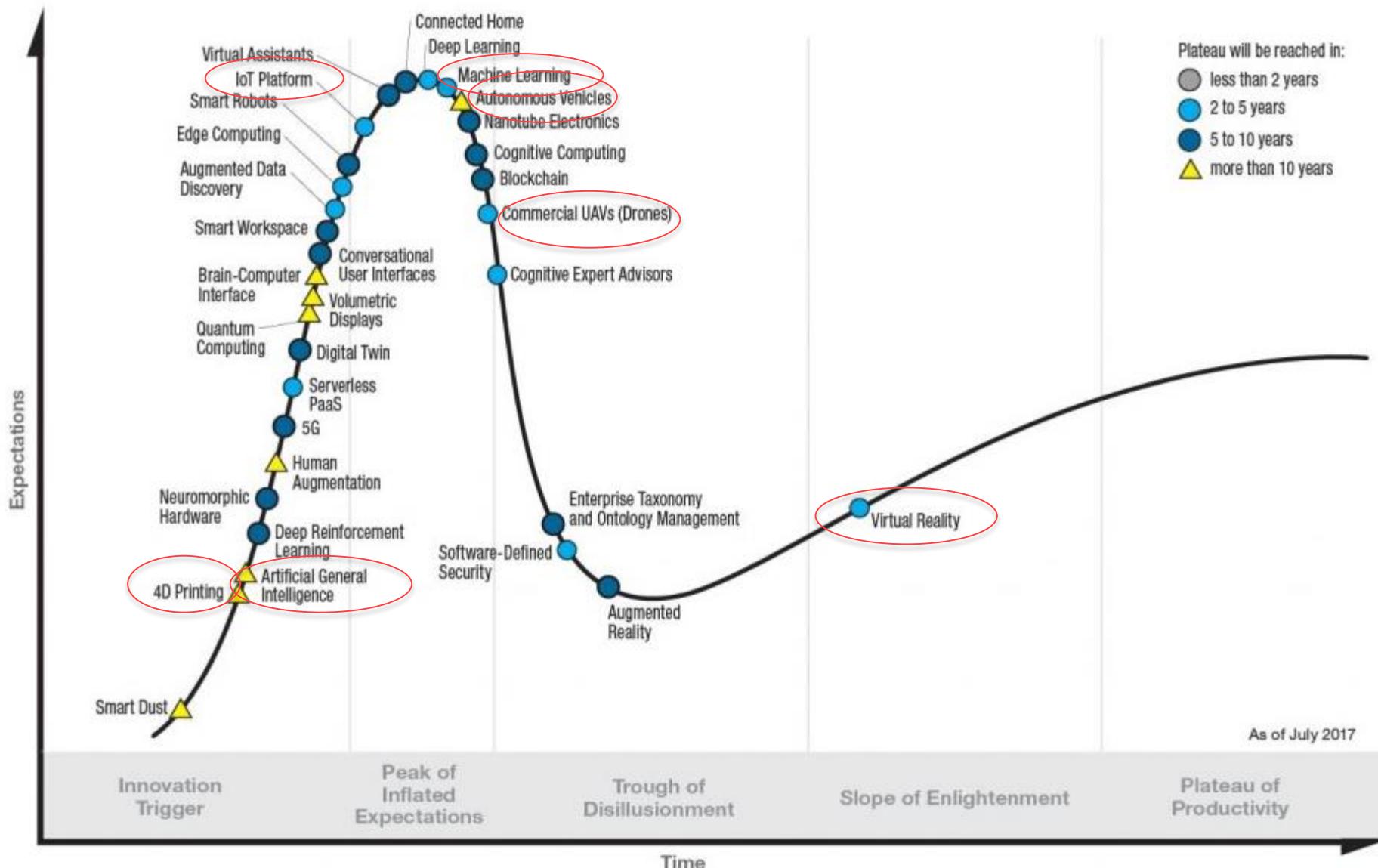
The internet is
communication
Blockchain is
governance

When? VC investments in Blockchain

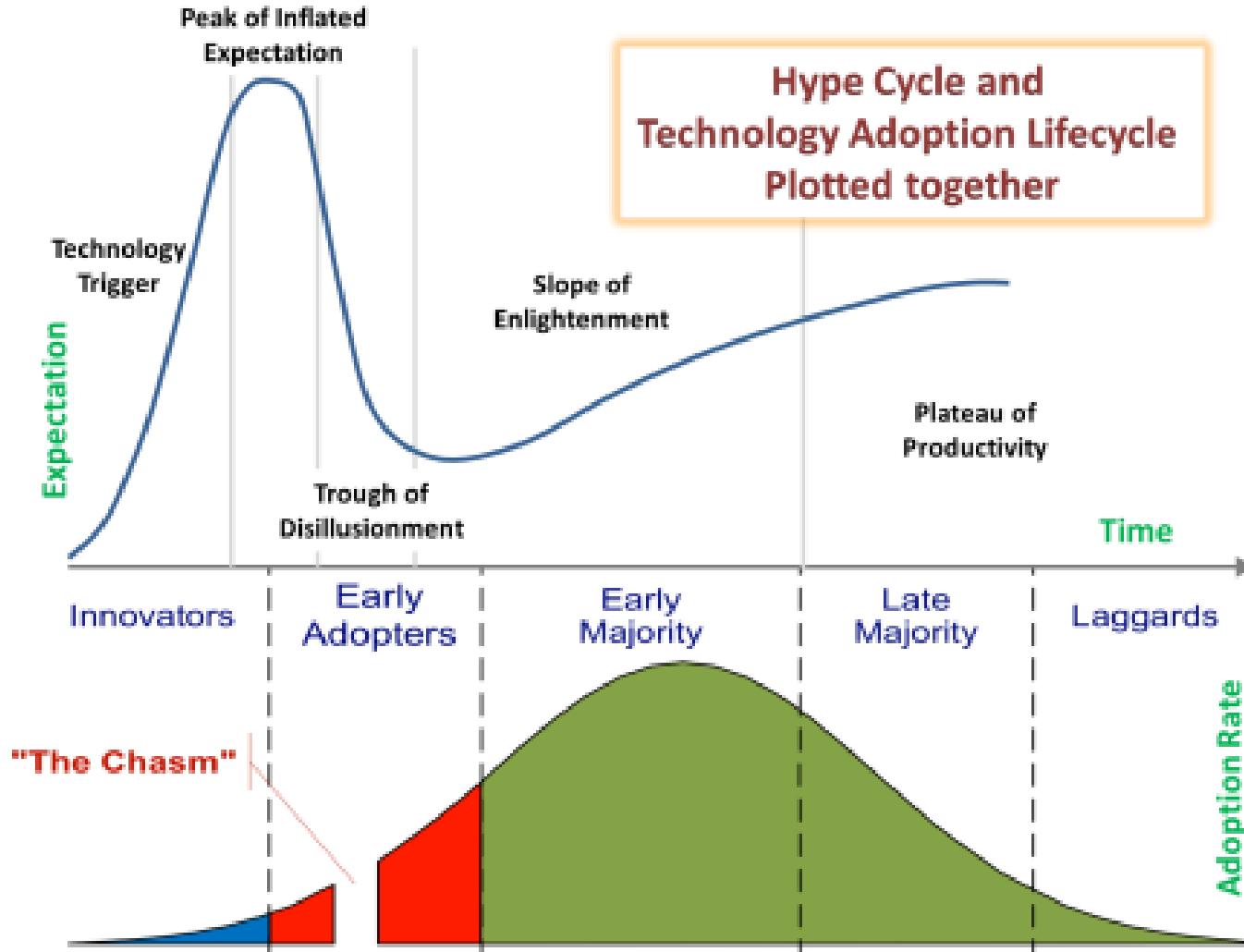
USD Raised by ICOs in 2017 - Monthly Totals (\$M)



Gartner Hype Cycle for Emerging Technologies, 2017

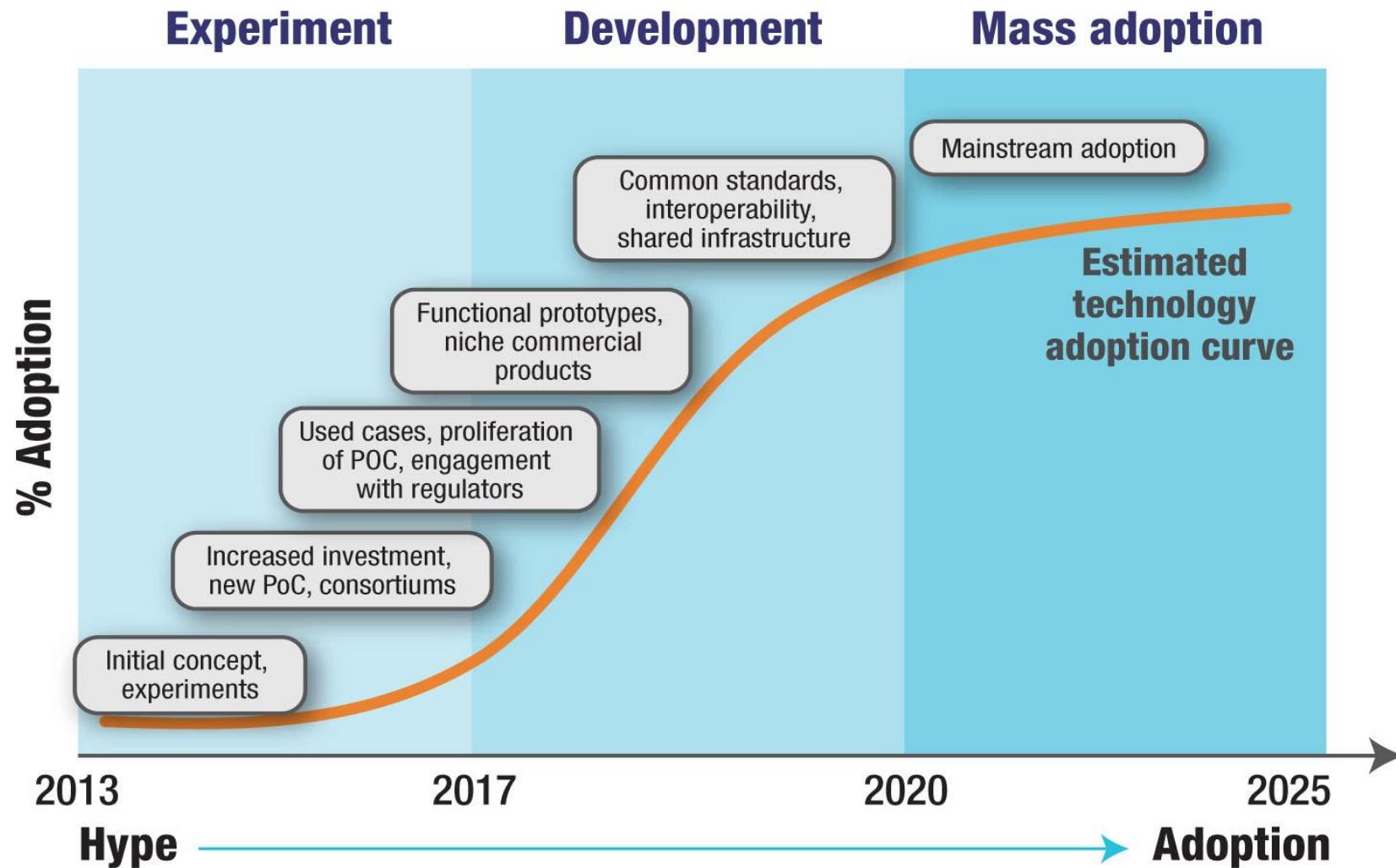


Technology Adoption Cycle



Mainstream adoption in financial services could take five to seven years

Figure 3. Estimated time frame of DLT adoption



Source: Asian Banker Research

Blockchain + IoT

In X years there may be sensors in clothes, in the car...
You will not generate the information... your actions will.

