



UNIC | Institute For
the Future

IFF at a glance

We are a cross-disciplinary educational and research institute of the University of Nicosia (UNIC), focused on technologies shaping the 4th industrial revolution:

Blockchain
Artificial Intelligence

Academic Education & Professional Training

World's first **MOOC** on cryptocurrencies

World's first full academic degree on blockchain (**MSc in Digital Currency**)

Blockchain/AI **Professional Training** Programs (online & offline)

Research & Technology Development

Fast growing **research** track record (EU research grants, direct industry funding)

Launch of first spin-off (**block.co**) commercializing credentialing technology developed at IFF

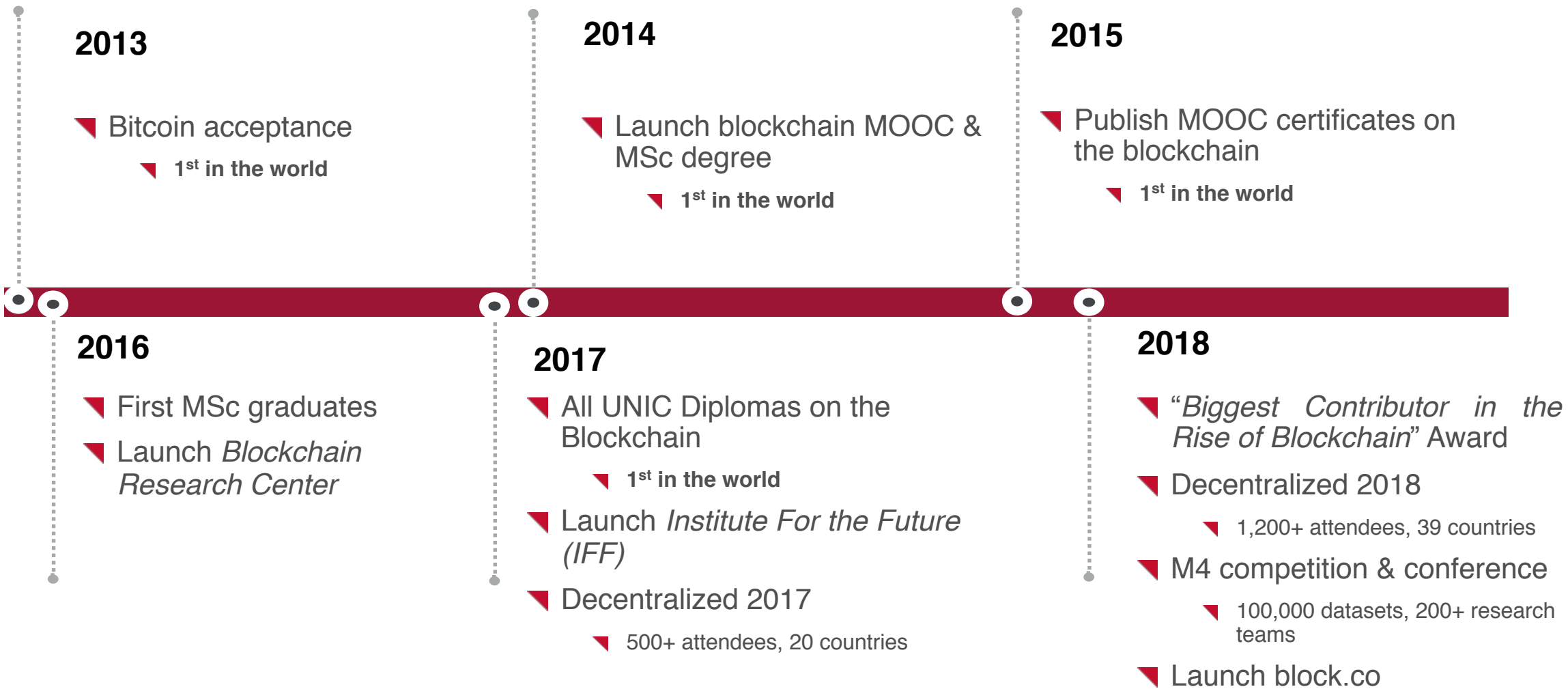
Conferences & Events

Europe's premier blockchain conference (**Decentralized**)

Global forecasting research conference (**M4**)

Self-organized local community **chapters** on blockchain

Activity timeline



Leaders in blockchain education

The Global Universities Embracing Cryptocurrency

- #1 University of Nicosia**
- #2 University of Cumbria
- #3 Simon Fraser University
- #4 MIT
- #5 New York University
- #6 Duke University
- #7 McGill University
- #8 Pompeu Fabra University
- #9 Imperial College

Source: [Coindesk, 2015](#)

Top 5 University Bitcoin Courses

- #1 University of Nicosia**
- #2 New York University
- #3 Stanford University
- #4 Princeton
- #5 Duke University

Source: [The Merkle, 2017](#)



UNIVERSITY *of* NICOSIA

How Cryptocurrencies and Blockchain Disrupt Business

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University of Nicosia

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#1: Software is eating the world

Digital innovation is transforming our economy and society

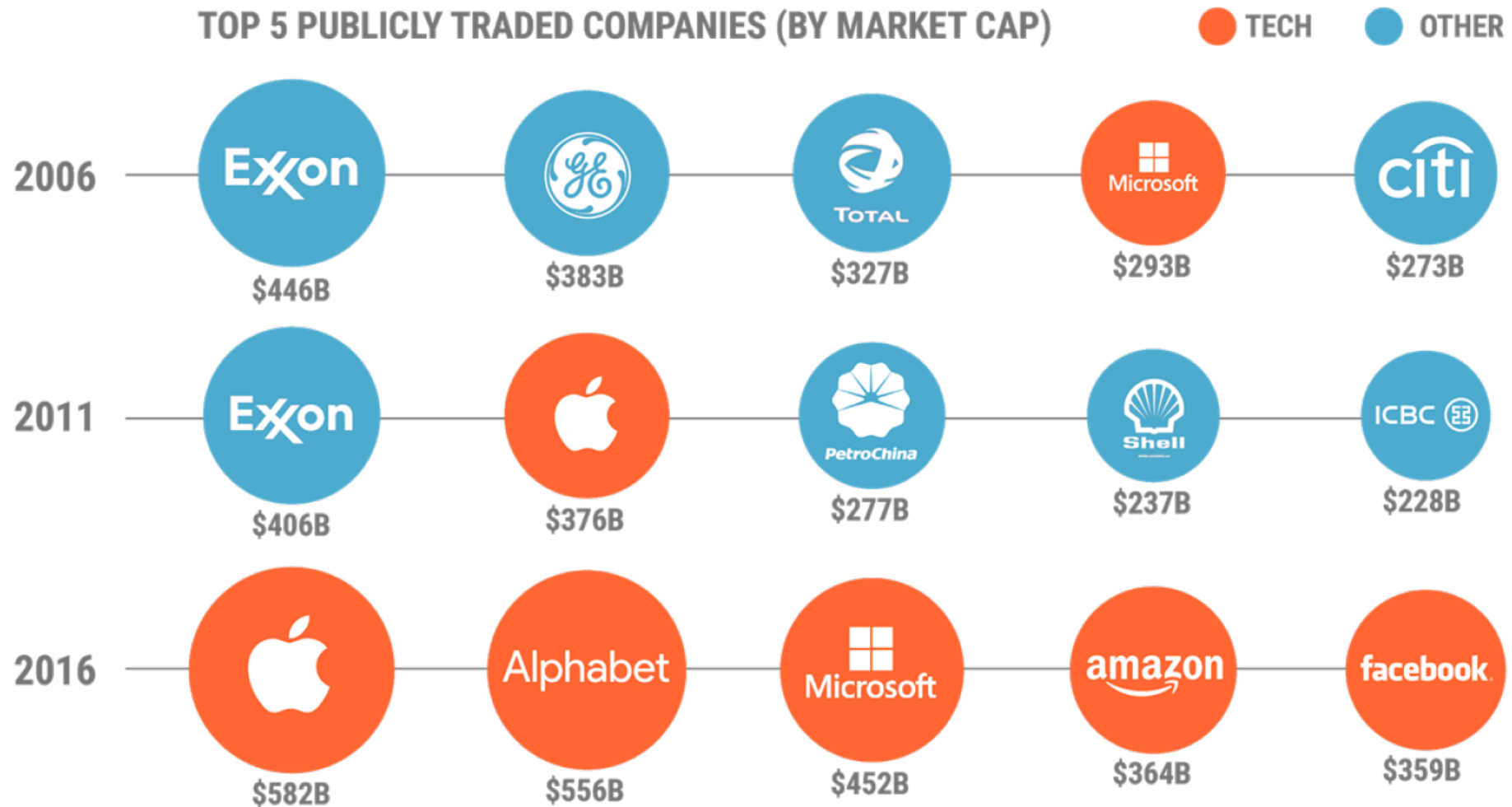
#2: Things are going to get even more interesting

4th industrial revolution

#3: Blockchain leads the way

From the *Internet of information* to the *Internet of value*

Software is eating the world



So, now everyone is a tech company 😊

“We are a technology company.”



Marianne Lake, CFO

**JPMORGAN
CHASE & CO.**

“We are a technology company.”



Lloyd Blankfein, CEO

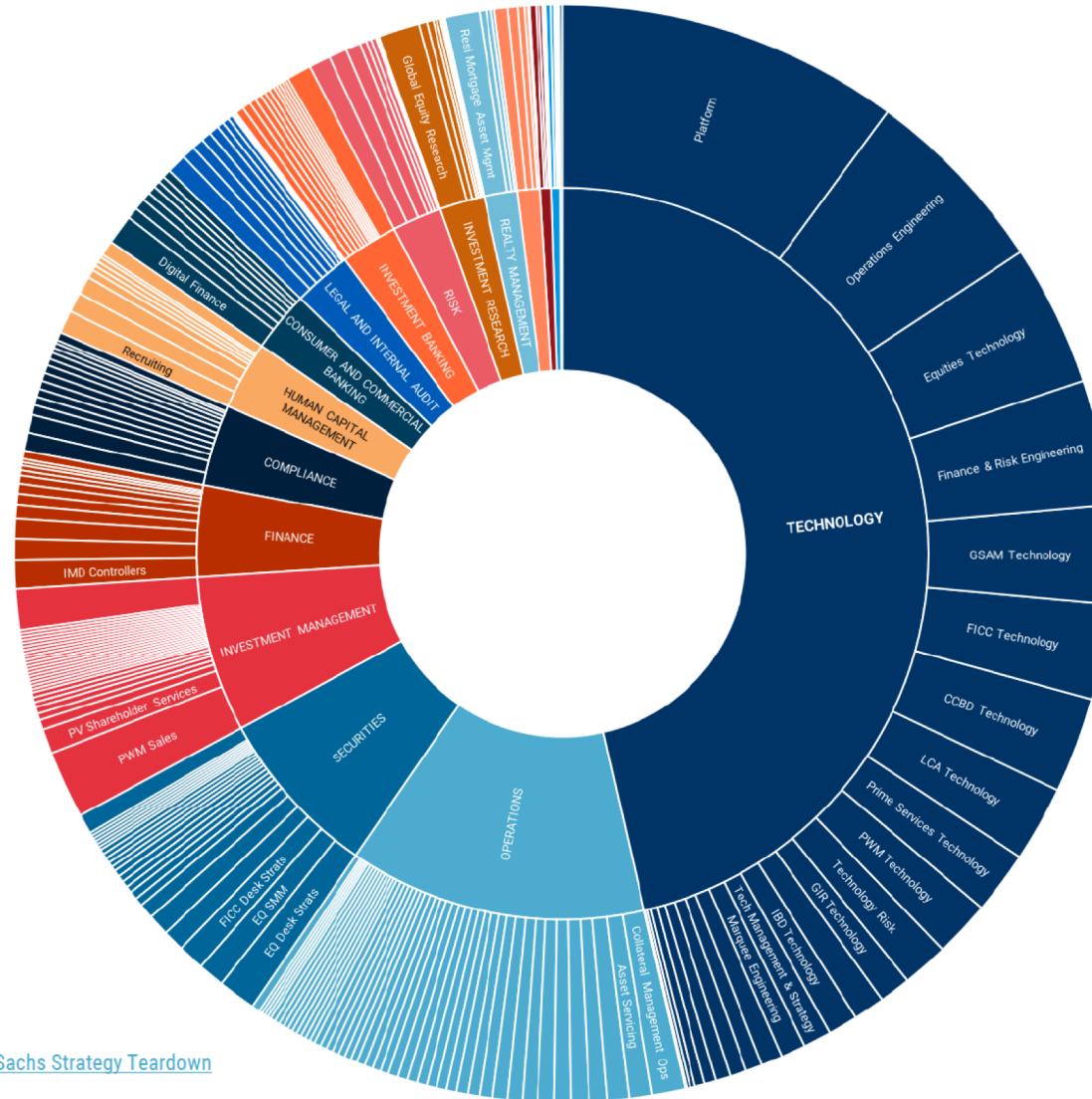
**Goldman
Sachs**

And it's true...



Open job listings

Distribution of active job listings



Source: CB Insights – [Goldman Sachs Strategy Teardown](#)

Very true...

Goldman Sachs Patent Topics (Q1'15 - Q2'16)

 Patent Portfolio Focus: Goldman Sachs

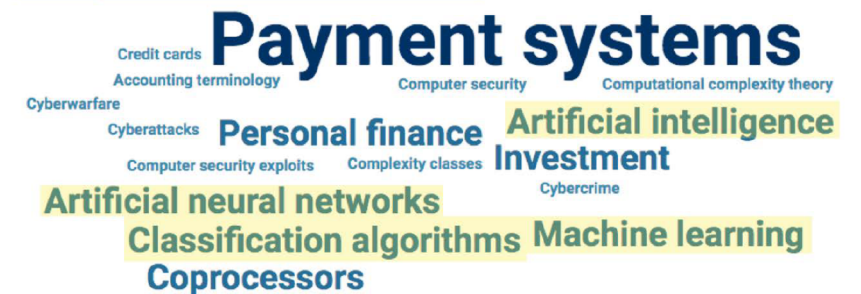


Goldman Sachs Patent Topics (Q1'17 - Q2'18)

 Patent Portfolio Focus: Goldman Sachs



Computational neuroscience



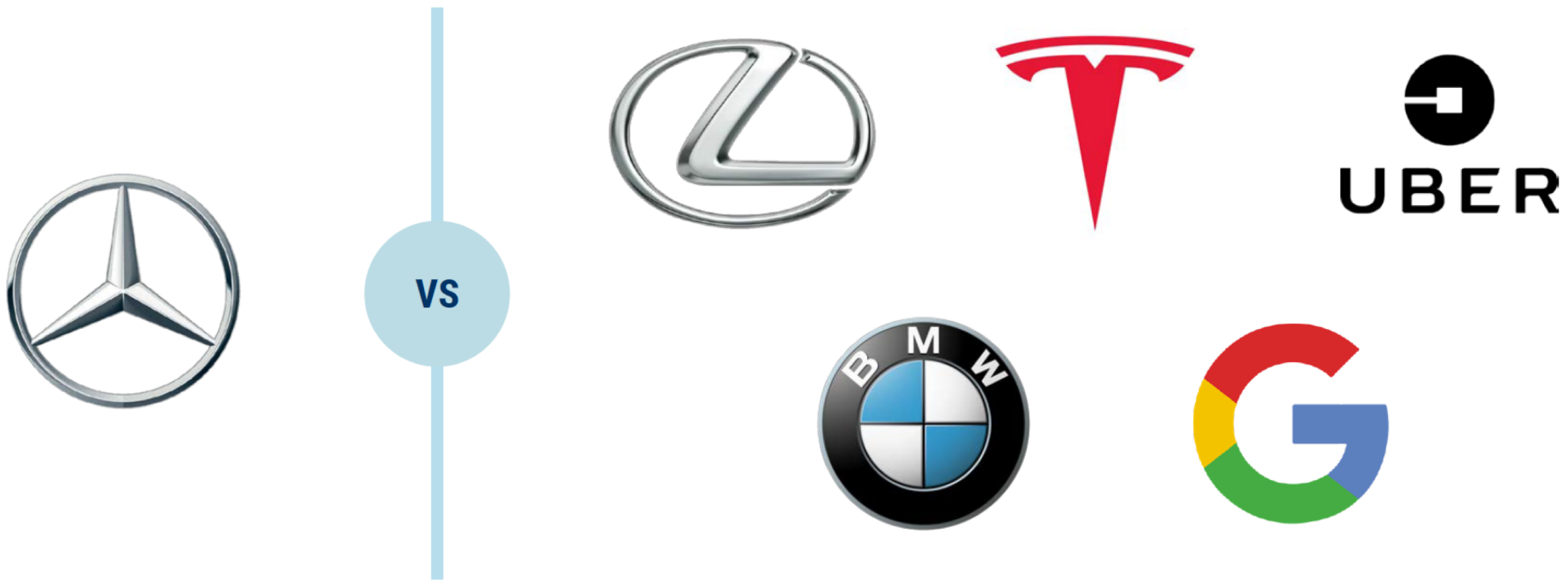
Benz competitors were BMW and Lexus



vs



Benz competitors were BMW and Lexus
Now it's Tesla, Uber, Google



Hertz vs. Avis vs. Enterprise



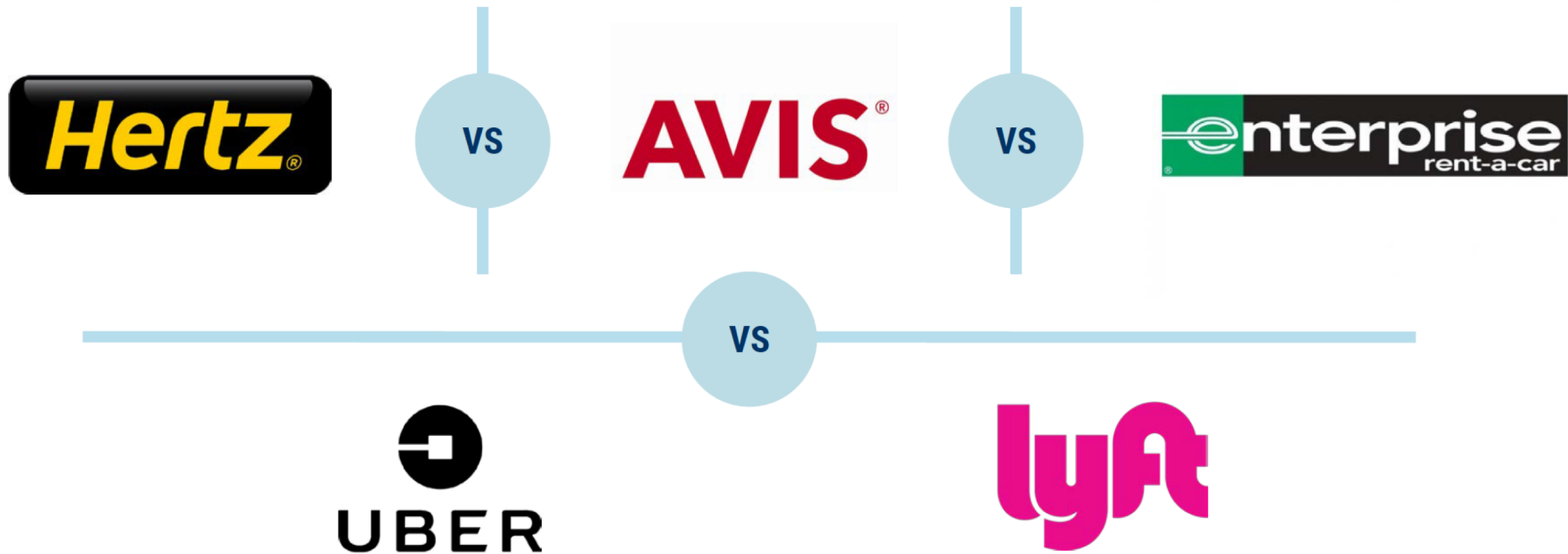
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AVIS®

vs

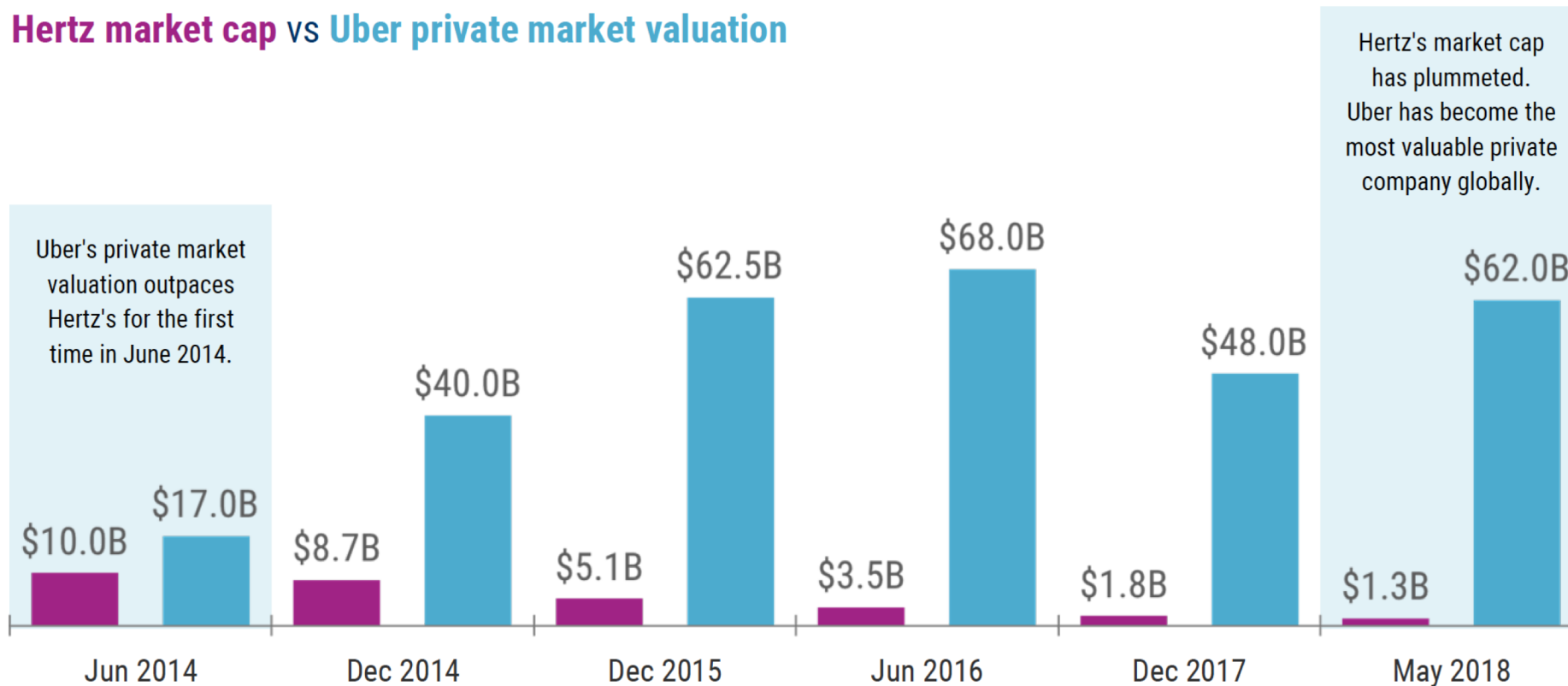
enterprise
rent-a-car

Hertz vs. Avis vs. Enterprise Now it's them plus Uber, Lyft

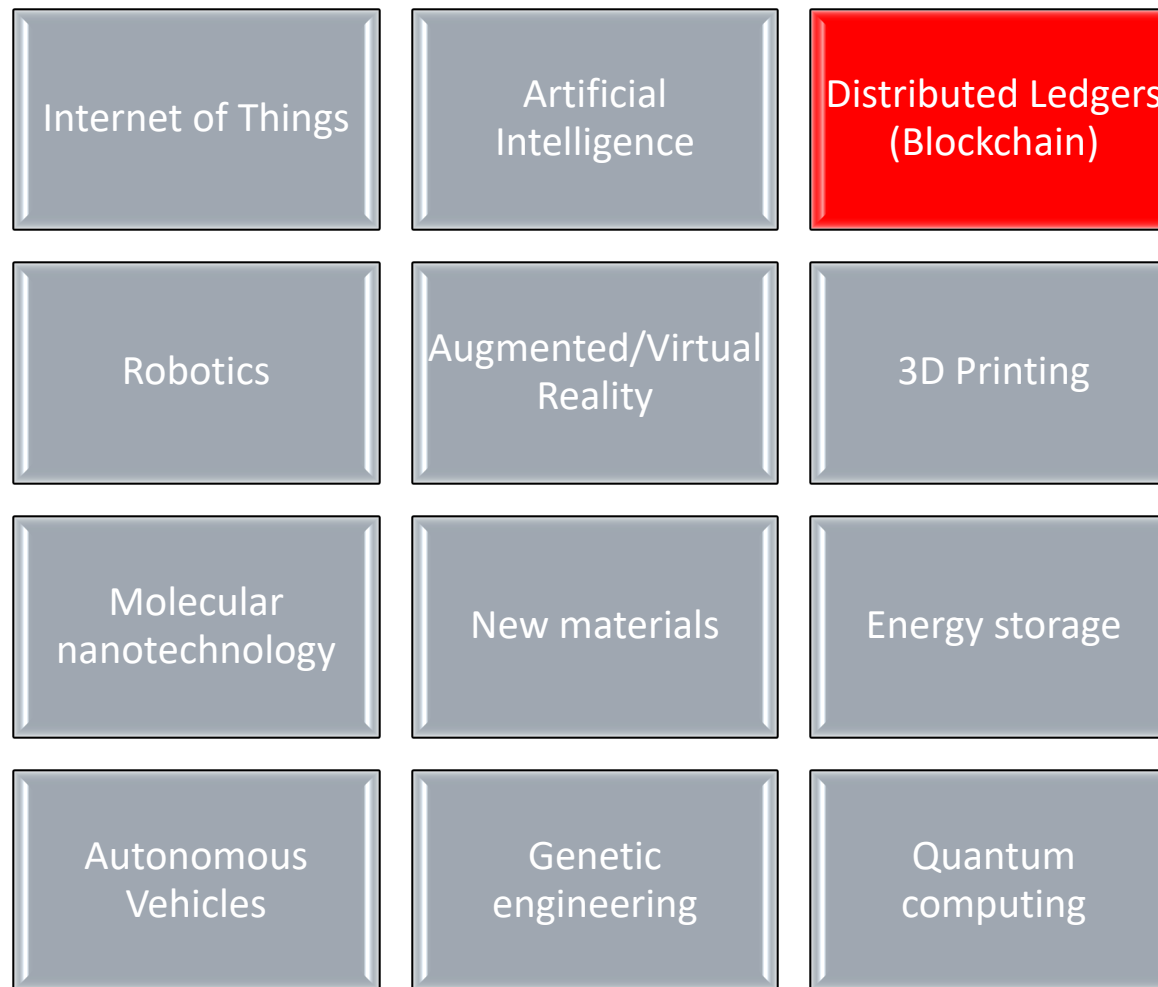


15 The effects are real

Hertz market cap vs Uber private market valuation



A brave new world: Exponential technologies



Bitcoin: A first attempt at network money

Bitcoin is a private, decentralized, digital cryptocurrency

- **Private:** Not issued by a sovereign
- **Decentralized:** No issuing party; units are issued algorithmically
- **Digital:** Fully electronic; no peg to other assets
- **Cryptocurrency:** Anti-counterfeiting through cryptography

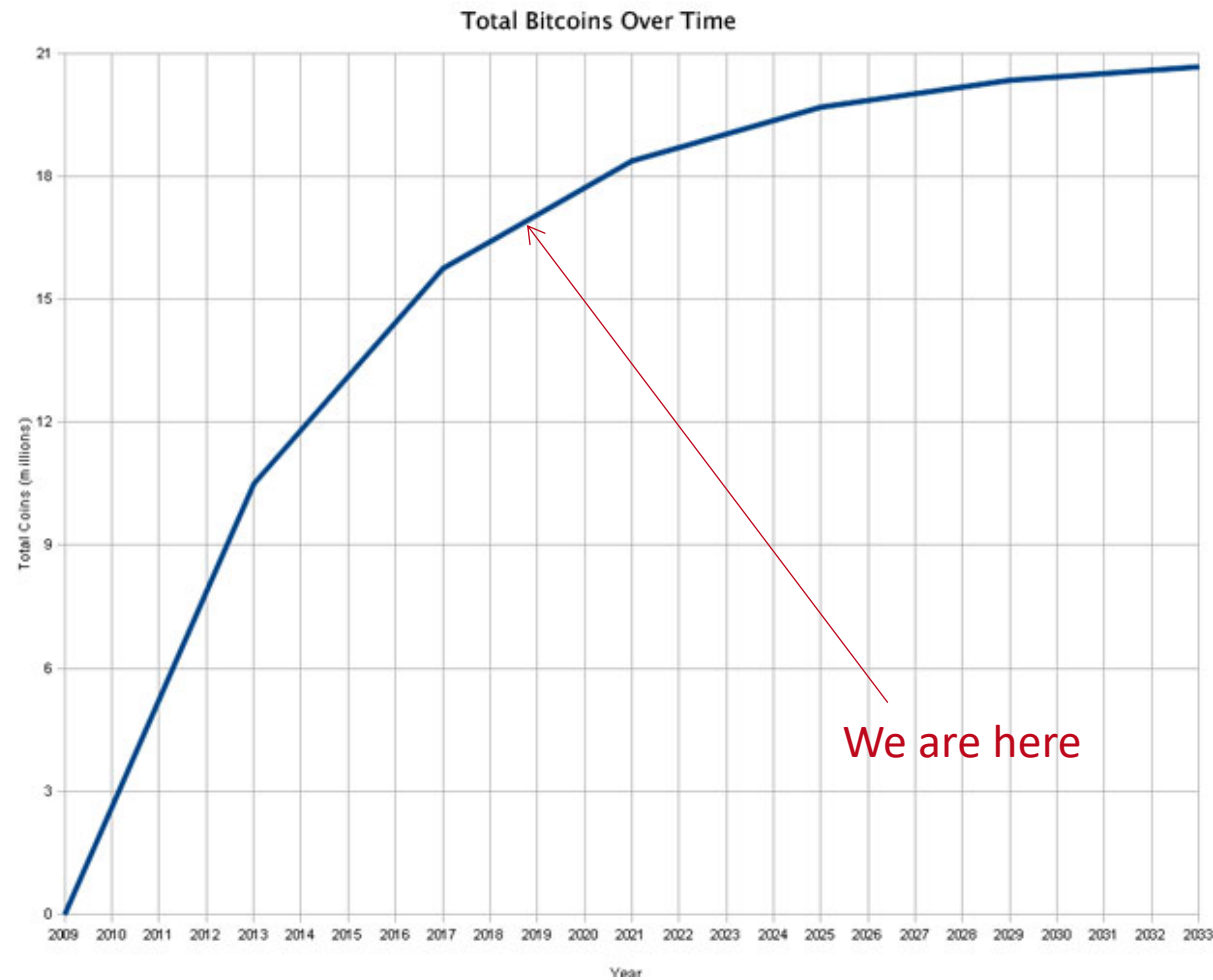


Monetary features of network money

Take Bitcoin as an example – it has at least three unique properties:











- **Fixed Supply:**
 - Money supply is regulated in the protocol
 - **Only 21 million bitcoin will ever exist.**
- **Transparent monetary policy:**
 - Available to everyone to examine and verify
 - The protocol is fully **open source**.
- **Consensus-based:**
 - Key features can't change unless a **majority of participants** in the system agree to change them.

Bitcoin production curve

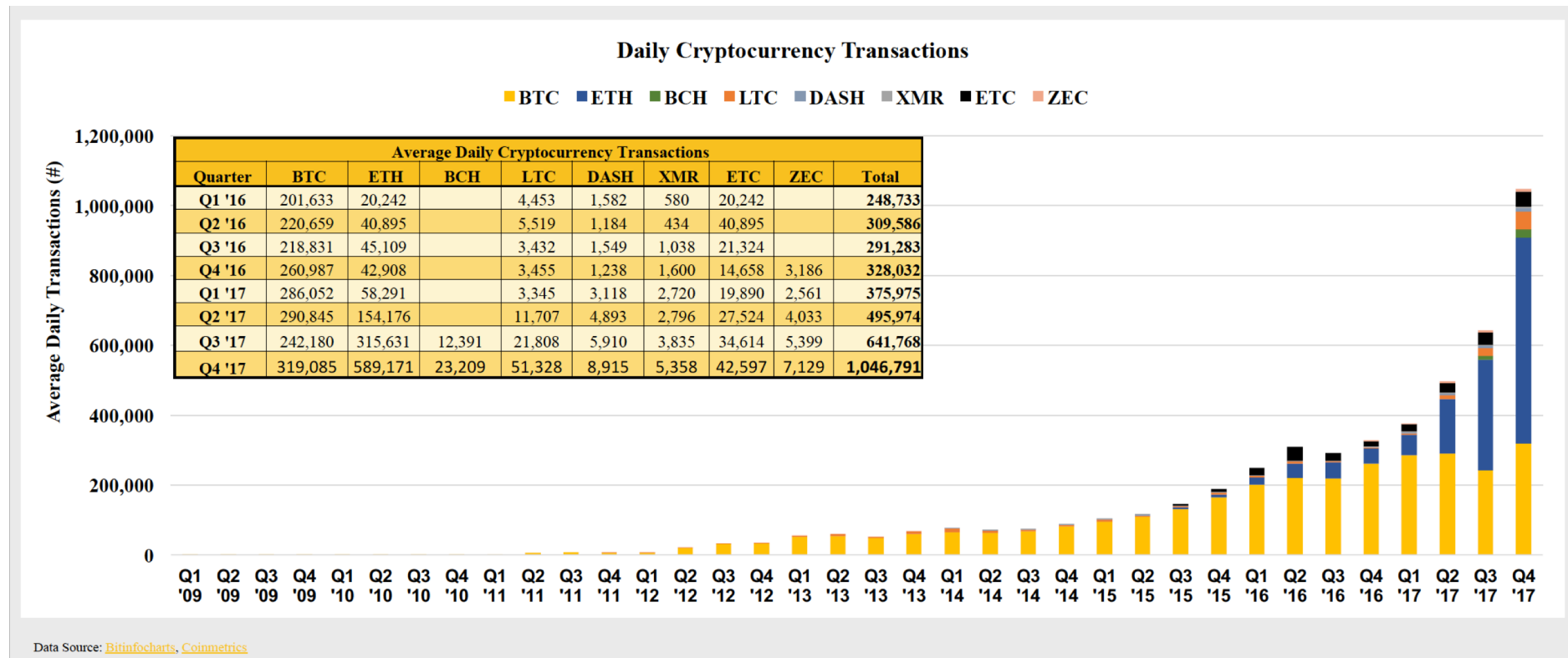


20 Bitcoin is not alone

Cryptocurrencies: 2004 • Markets: 14312 • Market Cap: \$219,904,457,871 • 24h Vol: \$14,689,641,089 • BTC Dominance: 51.6%

#	Name	Market Cap	Price	Volume (24h)	Circulating Supply
1	 Bitcoin	\$113,469,457,444	\$6,559.24	\$4,034,980,327	17,299,175 BTC
2	 Ethereum	\$23,283,463,410	\$227.59	\$1,681,143,725	102,302,326 ETH
3	 XRP	\$22,082,829,164	\$0.553858	\$1,288,637,184	39,870,907,279 XRP *
4	 Bitcoin Cash	\$9,171,974,973	\$527.77	\$481,052,623	17,378,763 BCH
5	 EOS	\$5,091,068,574	\$5.62	\$833,215,539	906,245,118 EOS *
6	 Stellar	\$4,829,778,947	\$0.257040	\$71,486,764	18,789,958,255 XLM *
7	 Litecoin	\$3,512,389,322	\$60.00	\$461,867,484	58,535,402 LTC
8	 Tether	\$2,799,167,008	\$0.997415	\$3,169,924,244	2,806,421,736 USDT *
9	 Cardano	\$2,157,763,492	\$0.083224	\$45,810,168	25,927,070,538 ADA *
10	 Monero	\$1,878,172,575	\$114.15	\$22,510,667	16,452,853 XMR

Crypto-currency acceptance: major coins



Blockchain (or DLT)



A blockchain is a ledger of transactions.

A **shared, time-stamped, append-only, immutable, cryptographically-secured** ledger of transactions.

Shared: blockchains do not make much sense unless two or more parties (or systems) are involved.

Time-stamped: transactions are stored in chronological order.

Append-only: you can only add new transactions to a blockchain.

Immutable: Once written, a transaction cannot be erased or altered.

Cryptographically-secured: advanced cryptography enables all the above

More importantly:

A blockchain allows **untrusted parties** to reach **consensus** on a shared digital history, **without a middleman**.

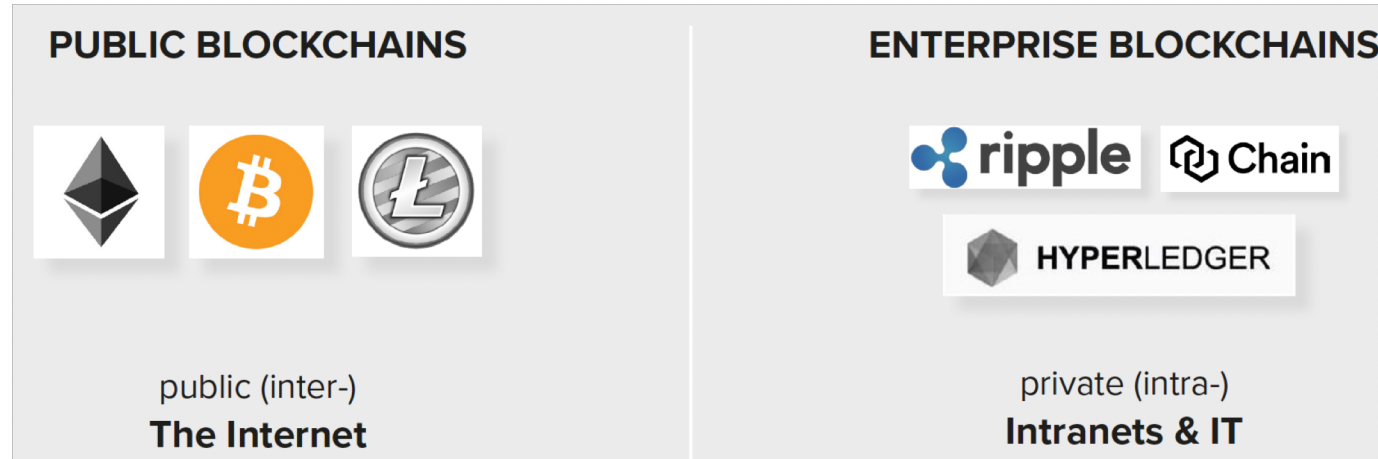
**A Second Internet, Coming Soon,
Courtesy of the Blockchain**

Not all blockchains are the same: DLT Taxonomy

Figure 1: Different ledger technologies vary in their 'degrees of centralisation'



25 Types of blockchains



ACCESS	Open read/write	Permissioned read and/or write
SPEED	Slower	Faster
SECURITY	Open computer network	Approved participants
IDENTITY	Anonymous / Pseudonymous	Known identities
ASSET	Native assets	Any asset

Why is this important?

- A **PUBLIC** blockchain as **an Internet-wide system of trust:**
 - Anyone can buy in or sell out of its ledger
 - Anywhere in the world
 - Without anyone's permission or intervention
 - At virtually no cost
 - **Without needing to know or trust one's counterparty!**

- A **PRIVATE** blockchain as **a networked system of trust:**
 - **No third party** is required to clear/settle transactions
 - **No data reconciliation** is needed between systems
 - Transactions are secure and final in almost **real time**

Future implications: money will change

The money of the future will be DIGITAL

Not digital counterparts; **natively digital (algorithmic)**

Digital money will be PROGRAMMABLE

Money will have **code** attached on it (**smart contracts**)

Programmable money will be used by MACHINES

A future of **machine-to-machine commerce**

Future implications: commerce will change

Digital currencies create new forms of money

- **Programmable** and **active** → money for machines?

Blockchains create a new Internet layer

- Internet of trust → **Dis-intermediation across industries, esp. finance**

Consequences will be vast:

- Money transacted in nano-quantities will lead to **M2M commerce**
- **Autonomous, AI-based, economic agents** will emerge (imagine self-driving cars bidding for your ride)
- Cloud-based, **autonomous corporations** will be made possible

Save the Date!

Decentralized 2019

30 Oct - 1 Nov 2019 | Athens, Greece