Corporate Crypto Strategy: *What Smart Companies are Doing.*

ANJE — NEXO Summit

November 28th, 2025

The ambitious agenda for today.

- **1. An introduction to blockchain and crypto.**
  - 1.1. Bitcoin and the workings of a blockchain.
  - 1.2. The rise of smart contracts and Web3.

- **2. An overview of crypto in Portugal and beyond.**
  - 2.1. About Portugal's status in the crypto world.
  - 2.2. About Portugal's emerging crypto ecosystem.

- **3. The new crypto regulations impacting Europe.**
  - 3.1. Some context about crypto regulation in the EU and beyond.
  - 3.2. An overview of crypto regulation in the EU and its impacts.

- **4. The state of the art in institutional adoption of cryptoassets.**
  - 4.1. The first two waves of institutional blockchain and crypto adoption.
  - 4.2. What smart companies are doing with crypto in this third wave.

- **5. Additional corporate crypto strategy considerations.**
  - 5.1. Some notes for future corporate crypto experiments.
  - 5.2. What smart companies should be doing with crypto.

0. Who we are and what is Instituto New Economy?

Instituto New Economy is here to keep Portugal crypto friendly.

Our objectives

Establish Portugal as a leading crypto and blockchain hub.

Develop a cryptoasset-friendly tax and regulatory environment in Portugal.

Instituto New Economy was founded and is backed by leaders in the crypto and national academic and political scenes

To better engage with the government, we have partnered with key advocacy groups to create FACE, the "Portuguese crypto federation".

APBC, founded in 2017.

APBC
Associação Portuguesa de Blockchain e Criptomoedas

Associações portuguesas unem-se e criam Federação das Asso...
A Aliança Portuguesa de Blockchain, a Associação Portuguesa de Blockchain e Criptomoedas (APBC) e o Instituto New Economy uniram-se
https://expresso.pt/economia/2022-09-08-Associacoes-portuguesas...

Associações portuguesas de cripto unem esforços e criam Fede...
A Aliança Portuguesa de Blockchain, a Associação Portuguesa de Blockchain e Criptomoedas (APBC) e o Instituto New Economy anunciaram
https://www.forbespt.com/associacoes-portuguesas-de-cripto-unem-...

www.jornaldenegocios.pt
https://www.jornaldenegocios.pt/mercados/criptoativos/detalhe/setor-cripto-portugues-cria-federacao-para-ganhar-...

Setor de ativos digitais cria federação de criptoeconomia
A Aliança Portuguesa de Blockchain (APB), a Associação Portuguesa de Blockchain e Criptomoedas (APBC) e o Instituto New Economy (INE)
https://www.dinheirovivo.pt/economia/setor-de-ativos-digitais-cria-fe...

FACE, established in 2022

FACE
Federação Portuguesa das Associações da Cripto Economia

Instituto New Economy, founded in 2021.

instituto new.economy

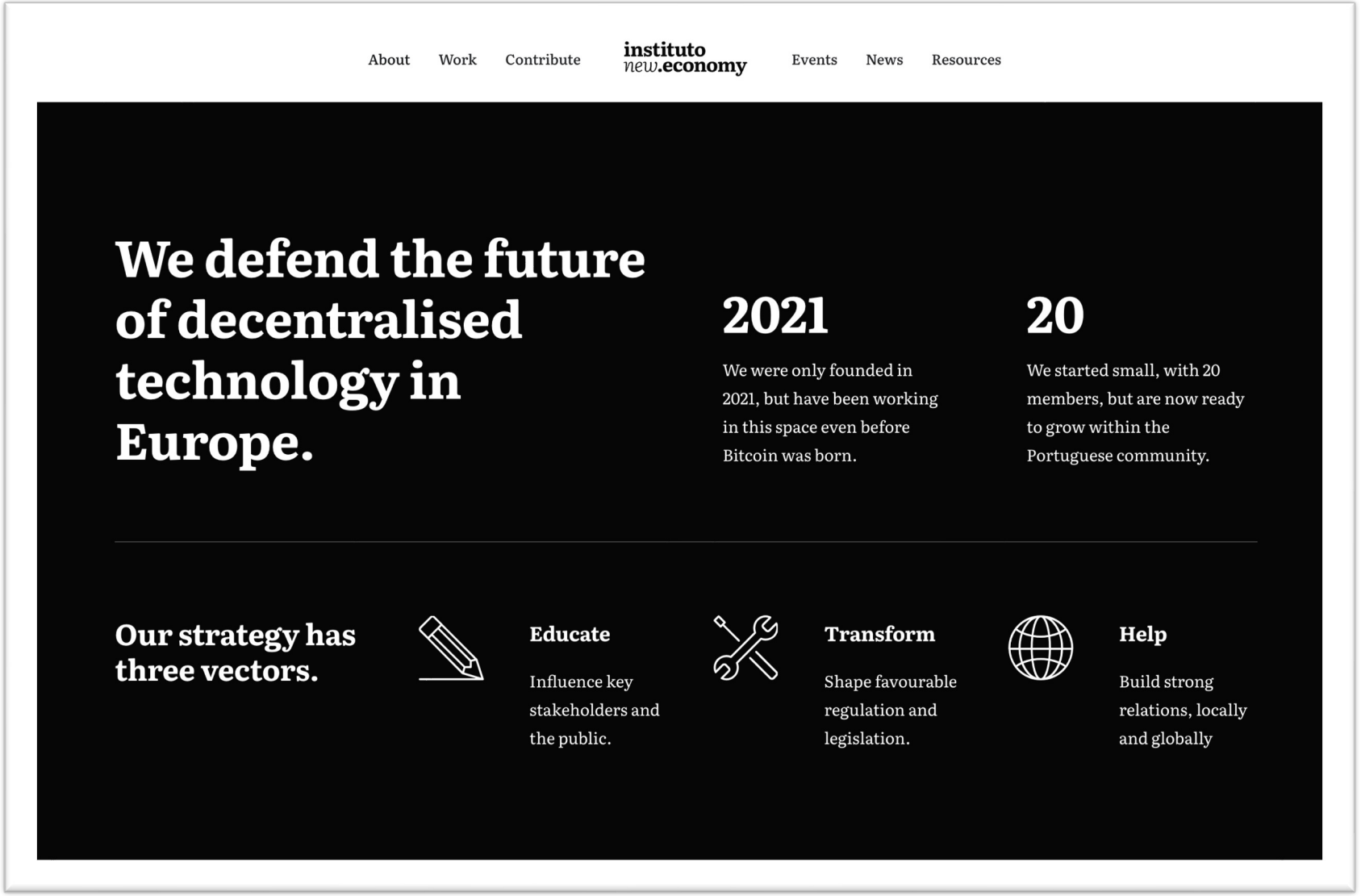
Associações portuguesas de cripto criam Federação das Associ...
A Aliança Portuguesa de Blockchain, a Associação Portuguesa de Blockchain e Criptomoedas (APBC) e o Instituto New Economy anunciaram
https://executivedigest.sapo.pt/associacoes-portuguesas-de-cripto-c...

FACE: Defender a Economia Cripto em Portugal é prioridade da ...
As notícias de localização em Portugal de empresas e profissionais ligados à economia cripto sucedem-se e os números partilhados pela Chainalysis
https://tek.sapo.pt/artigos/face-defender-a-economia-cripto-em-port...

Já há uma federação de cripto economia em Portugal
As três entidades, que são as principais associações nacionais deste segmento, pretendem assim, "a promoção da estabilidade nacional no
https://24.sapo.pt/atualidade/artigos/ja-ha-uma-federacao-de-cripto-...

Associações portuguesas unem-se e criam Federação das Asso...
A Aliança Portuguesa de Blockchain, a Associação Portuguesa de Blockchain e Criptomoedas (APBC) e o Instituto New Economy uniram-se
https://www.dnoticias.pt/2022/9/8/327074-associacoes-portuguesas-...

Learn more about our work and become a member through our website.



neweconomy.institute

Pelo desenvolvimento da cripto economia em Portugal.

Nascida da colaboração emergente entre as várias associações deste sector, a FACE tem como objectivo a promoção e desenvolvimento da cripto economia em Portugal, quer através de apoio na ação legislativa, quer através do esclarecimento e formação sobre a cripto economia e a tecnologia blockchain no seu todo.

Vivemos um momento crucial e de crescente ímpeto regulatório do sector, em particular em Portugal sob liderança da Europa. É por isso importante garantir que quaisquer políticas públicas sejam ponderadas de forma a elevar o impacto económico e potencial transformador que esta tecnologia já está a ter no nosso país.

fac3.pt

1. An introduction to blockchain and crypto.

1.1. Bitcoin and the workings of a blockchain.

Bitcoin's whitepaper was published on October 31st, 2008, and its open-source blockchain was released on January 3rd, 2009.

Bitcoin P2P e-cash paper

Satoshi Nakamoto satoshi at vistomail.com
Fri Oct 31 14:10:00 EDT 2008

- Previous message: Fw: SHA-3 lounge
- **Messages sorted by:** [date] [thread] [subject] [author]

I've been working on a new electronic cash system that's fully peer-to-peer, with no trusted third party.

The paper is available at:
http://www.bitcoin.org/bitcoin.pdf

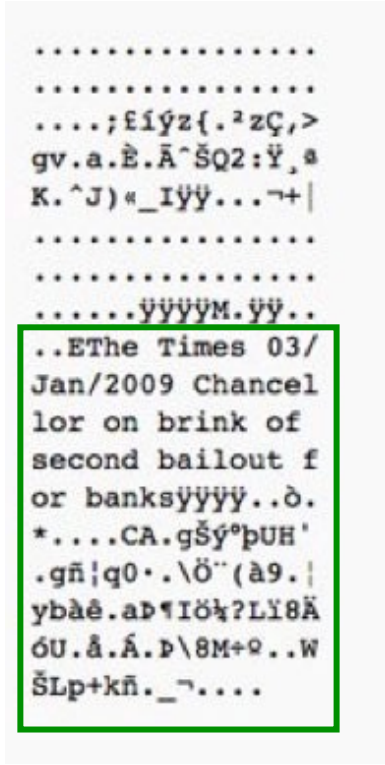
The main properties:
Double-spending is prevented with a peer-to-peer network.
No mint or other trusted parties.
Participants can be anonymous.
New coins are made from Hashcash style proof-of-work.
The proof-of-work for new coin generation also powers the network to prevent double-spending.

Bitcoin: A Peer-to-Peer Electronic Cash System

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without the burdens of going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as honest nodes control the most CPU power on the network, they can generate the longest chain and outpace any attackers. The network itself requires minimal structure. Messages are broadcasted on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

Full paper at:
http://www.bitcoin.org/bitcoin.pdf

Satoshi Nakamoto



Its development was no coincidence – it was created in reaction to the 2007 financial crisis by Satoshi Nakamoto, a pseudonymous for the person or group who developed the project.

Source: Financial Times, Nakamoto Institute

To put it simply, Bitcoin is a computer network that enables users to exchange *bitcoin* currency without an intermediary, also known as:

peer-to-peer...

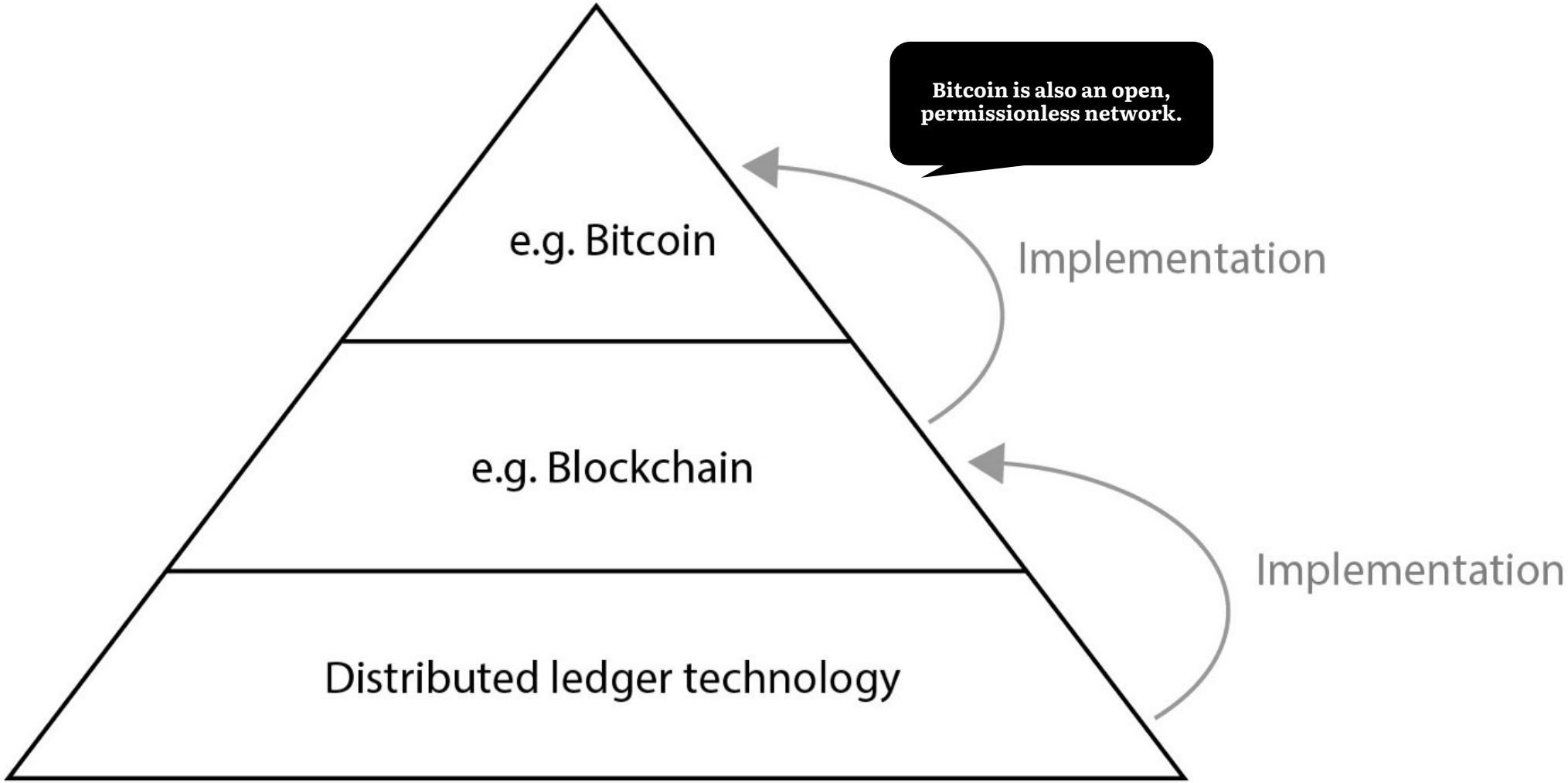
...digital cash.

Source: Chicago Fed, 2013

What's so special about this P2P digital money? And what does blockchain have to do with it?

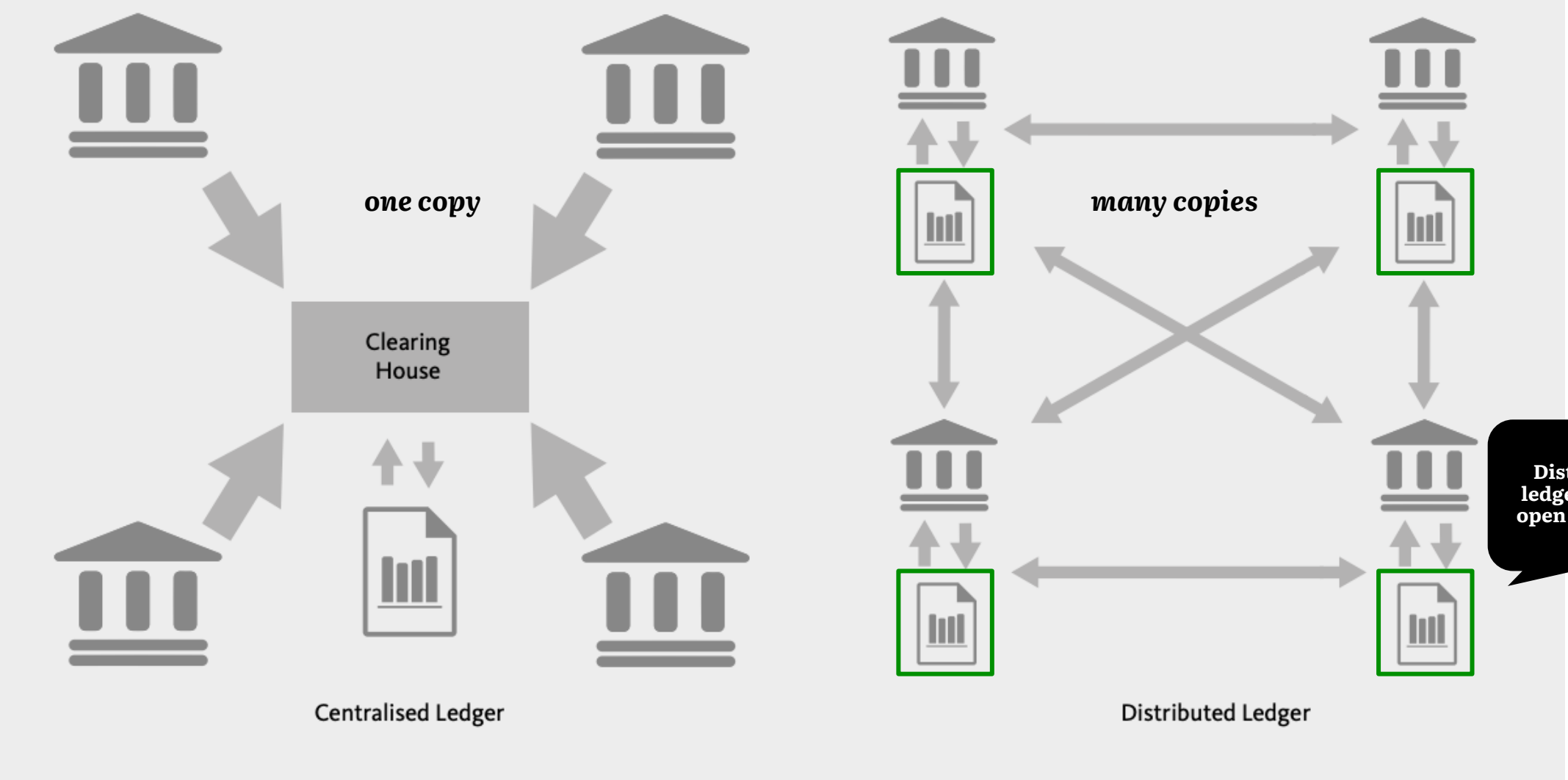
Source: Conrad Barski and Chris Wilmer

Bitcoin was the first major implementation of a blockchain, which in turn is the most popular application of distributed ledger technology.



Source: Anthony Stevens, 2018

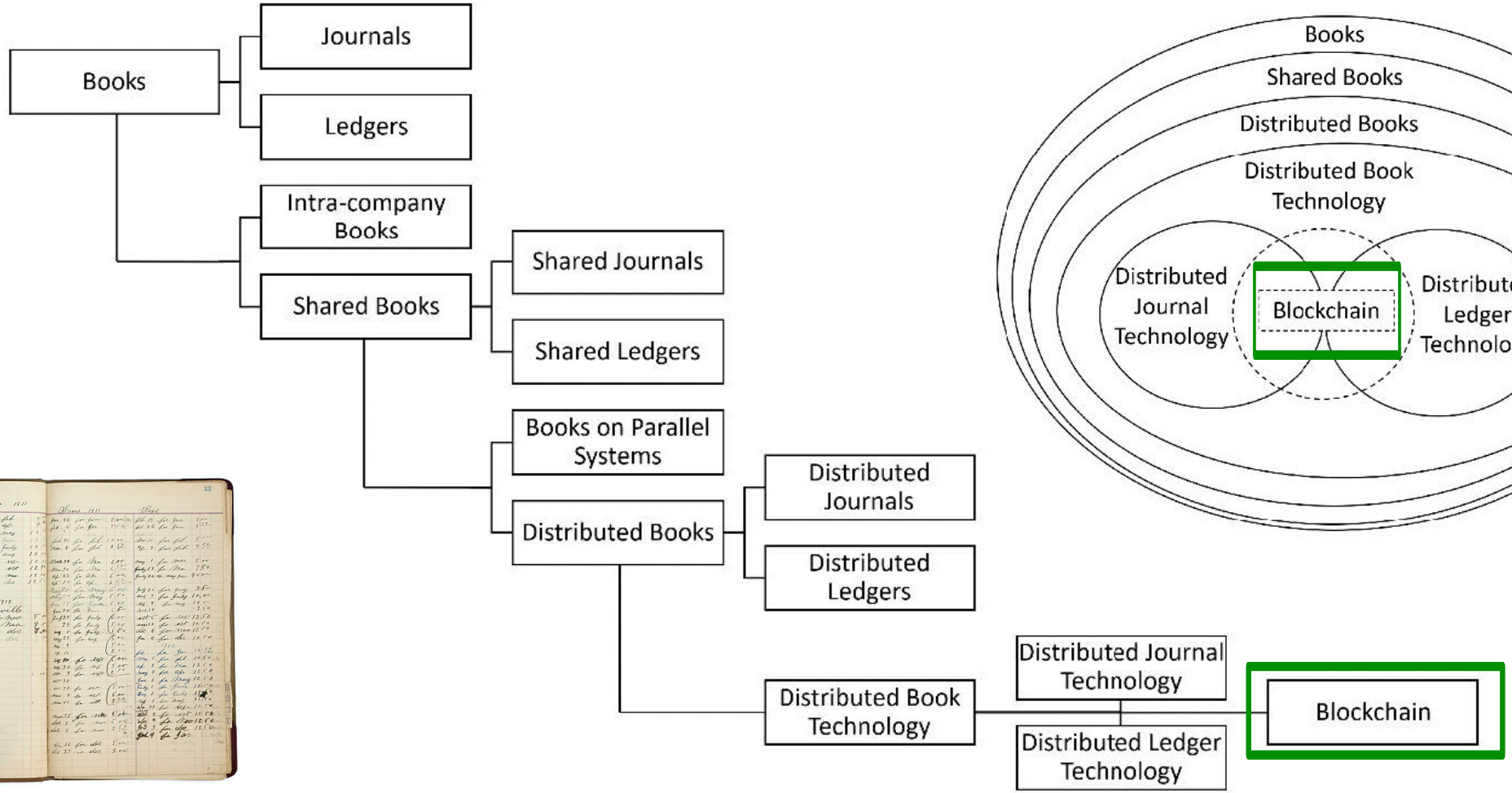
What's a distributed ledger? It's a shared database which records data transfers in a practically immutable way, without a central authority.

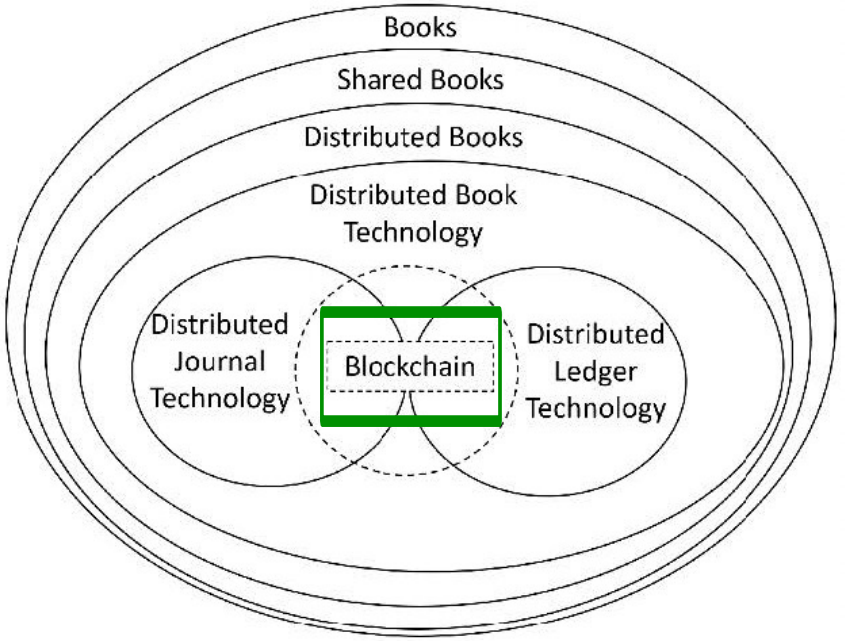


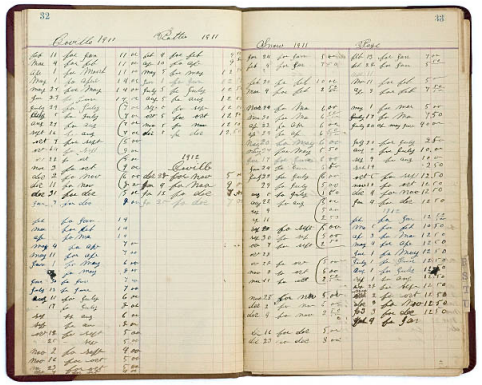
Source: Oliver Wyman, 2015

In the end, blockchain is a just a particular type of distributed ledger, and both are the latest step in the history of bookkeeping.

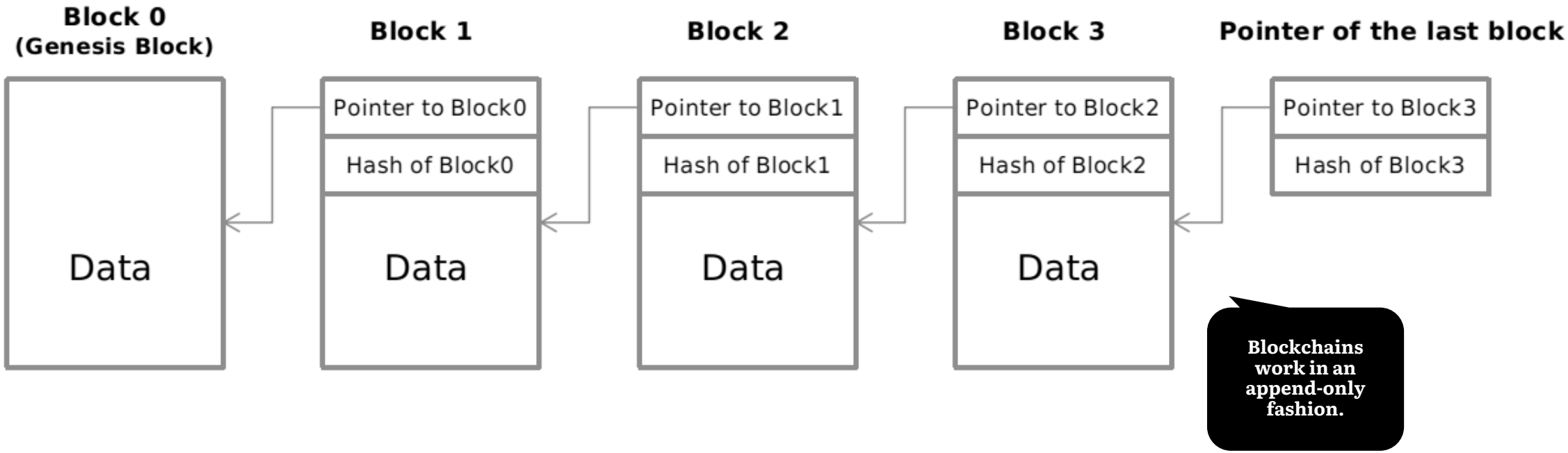
Family tree of bookkeeping technology





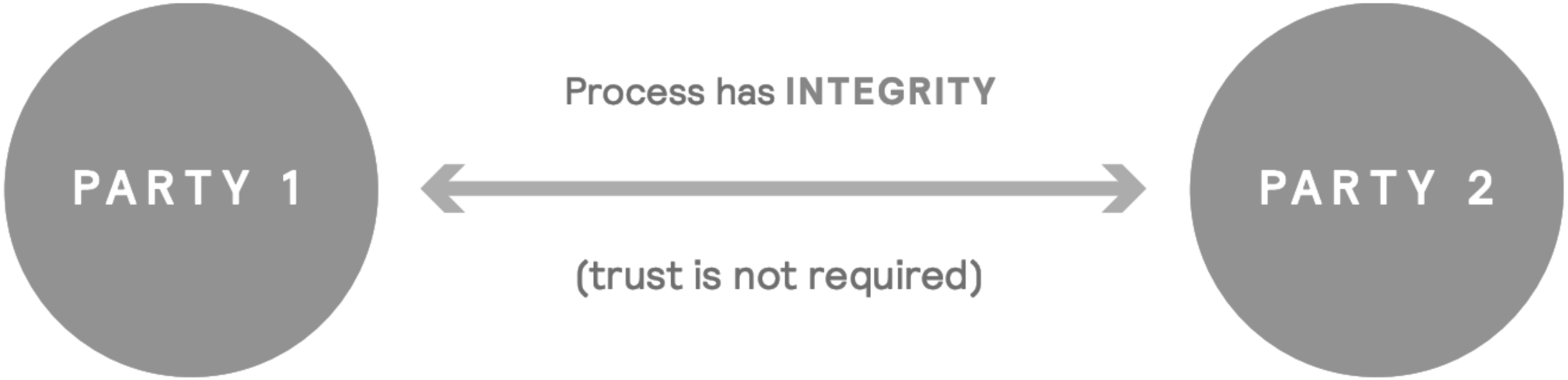


The distributed ledger of a blockchain is organised as a series of blocks containing sets of transactions, hence the apt naming.



Source: Huabing Zhao

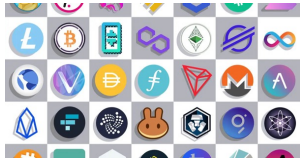
This data structure allow processes run on a blockchain to have integrity, so its users don't need to rely on a trusted third party.



Let's see how a blockchain based on the Proof-of-Work model achieves such integrity without a middleman.

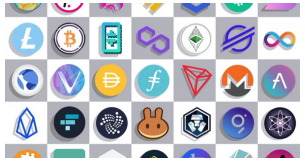
Source: Mercer

To be specific, a blockchain is a peer-to-peer computer network which follows certain rules to reach agreement over shared data.

	1. P2P network	2. Follows rules	3. Shared data
 **Blockchain**	*Some kind of computers (nodes).*	*Some consensus mechanism.*	*Some kind of transactions.*
 **Bitcoin**			
 **Others**			

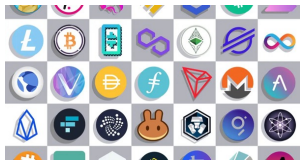
Source: Inspired by Coin Center

In the case of Bitcoin, the rules are quite simple but produce powerful incentives to securing the network and processing transactions.

	1. P2P network	2. Follows rules	3. Shared data
 **Blockchain**	***Some kind of computers (nodes).***	***Some consensus mechanism.***	***Some kind of transactions.***
 **Bitcoin**	***Miners and full nodes*** *(the computers that run the Bitcoin protocol, maintaining the blockchain and organising its transactions.)*	**1.** *You can't create bitcoins unless you successfully mine a new block.* **2.** *Every ~10m one of the mining nodes will have the chance to order transactions in a new block (mining).*	***Transactions of*** *bitcoin currency.*
 **Others**			

Source: Inspired by Coin Center

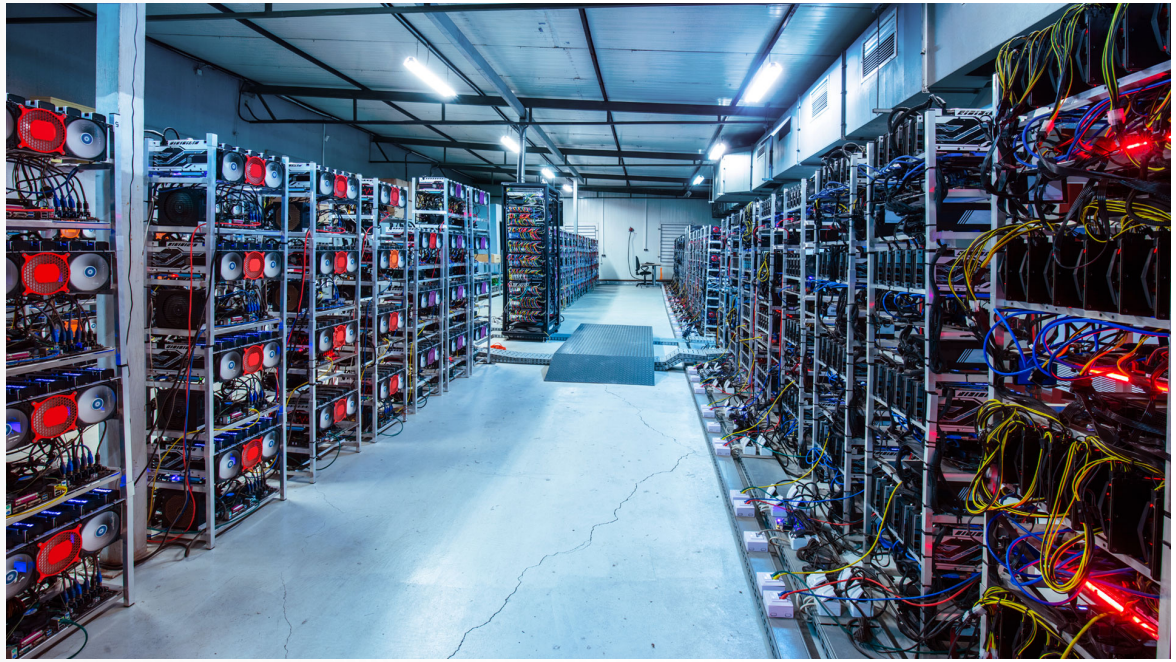
In the case of other blockchains, everything can change and there's a lot of experimentation with rules – which also increases the risks.

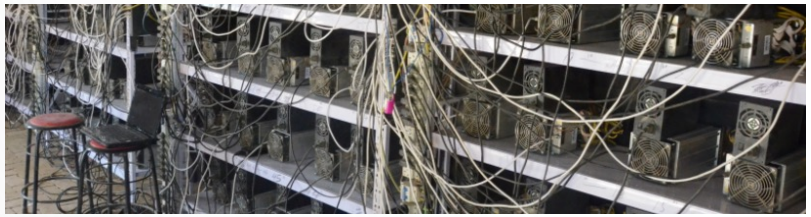
	1. P2P network	2. Follows rules	3. Shared data
 **Blockchain**	***Some kind of computers (nodes).***	***Some consensus mechanism.***	***Some kind of transactions.***
Bitcoin	***Miners and full nodes*** *(the computers that run the Bitcoin protocol, maintaining the blockchain and organising its transactions.)*	**1.** *You can't create bitcoins unless you successfully mine a new block.* **2.** *Every ~10m one of the mining nodes will have the chance to order transactions in a new block (mining).*	***Transactions of*** *bitcoin currency.*
 **Others**	**GPU or CPU?** **Full or light?**	**Open or closed?** **Public or private?**	***Transactions of*** *identity data, votes, all kinds of assets, financial settlement, health records, apps data, art…*

Source: Inspired by Coin Center

The computers of a blockchain may perform different roles, but one can distinguish two main categories: mining and non-mining nodes.

Typical mining nodes.



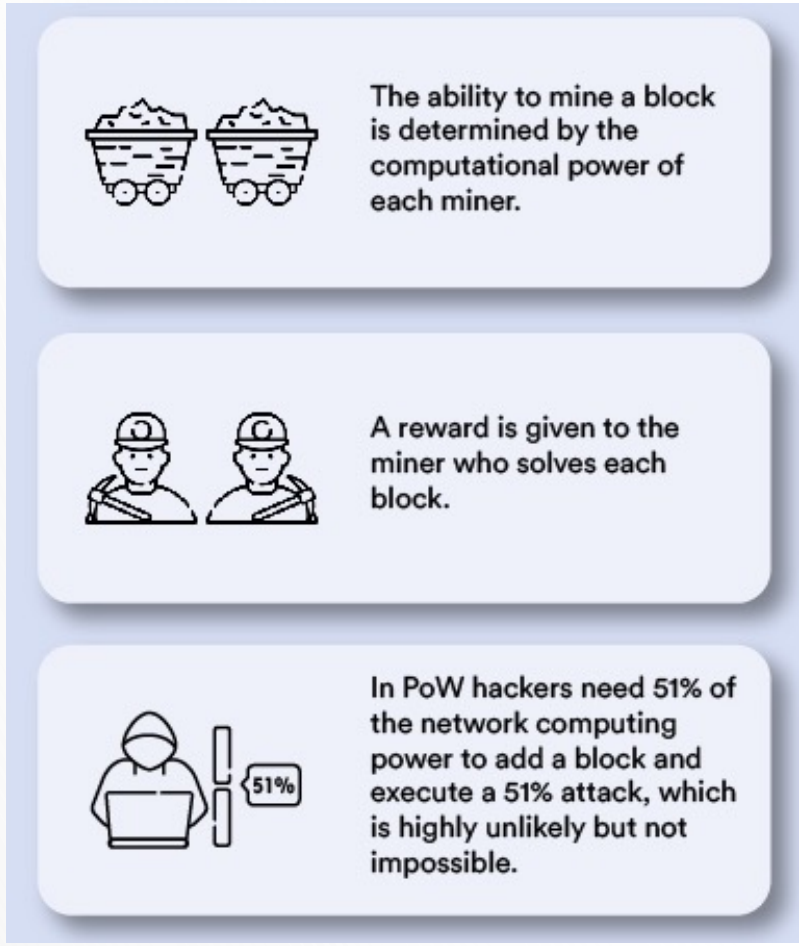


Typical non-mining nodes.

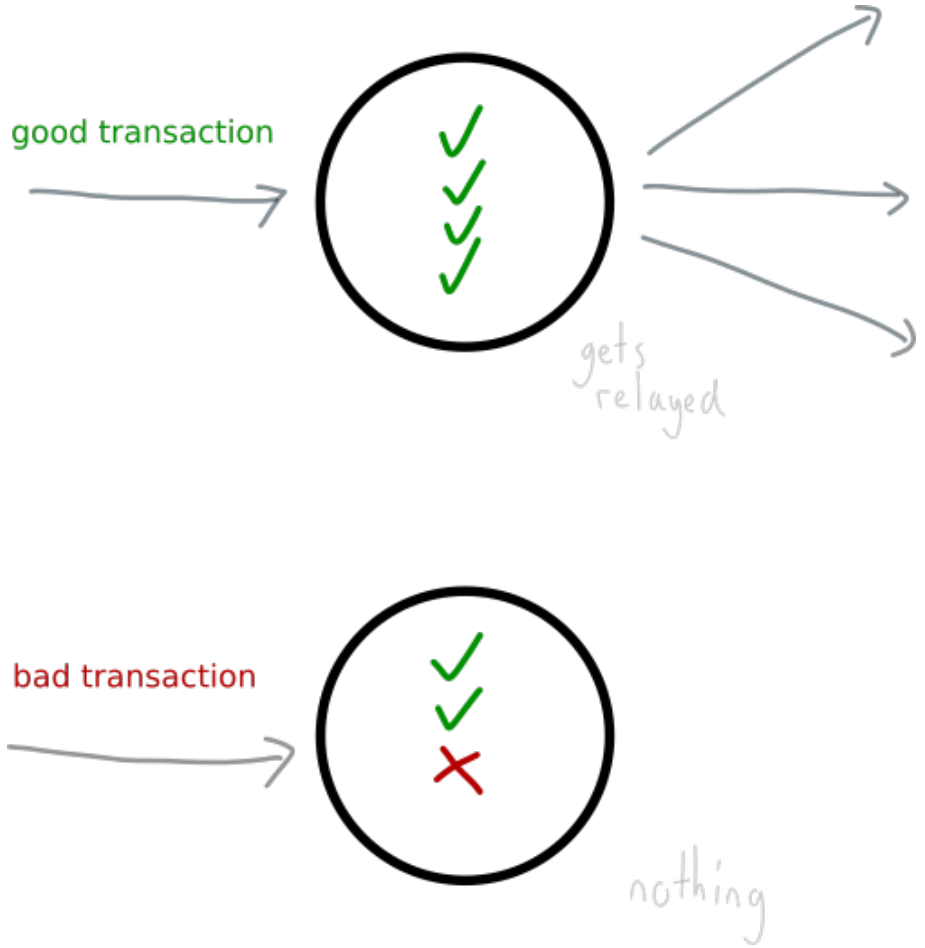
Source: Various

To put it simply, miners specialise in processing transactions and the other nodes in validating them.

Mining nodes compete to add transactions to the blockchain (and for its reward).



Non-mining nodes verify the rules, relay information and keep a copy of the blockchain.

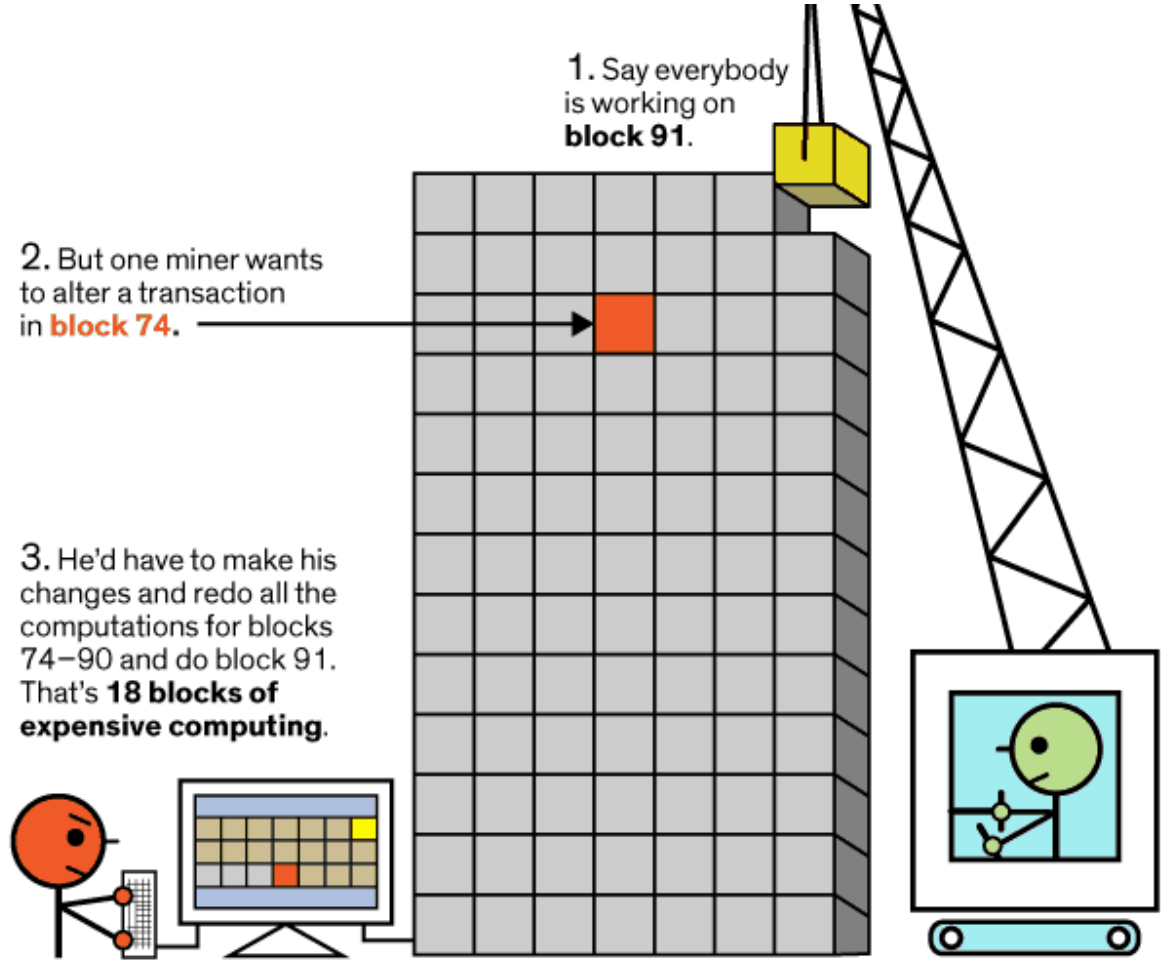


Source: The Economist; Greg Walker, 2015

Competition between miners protects the network. As all blocks are linked, a rogue miner would have to re-do all previous blocks too.

That's why Bitcoin mining requires a lot of electricity. Because the market values such a global network of decentralised money and therefore is willing to invest in its security.

Check the appendix for more on this.

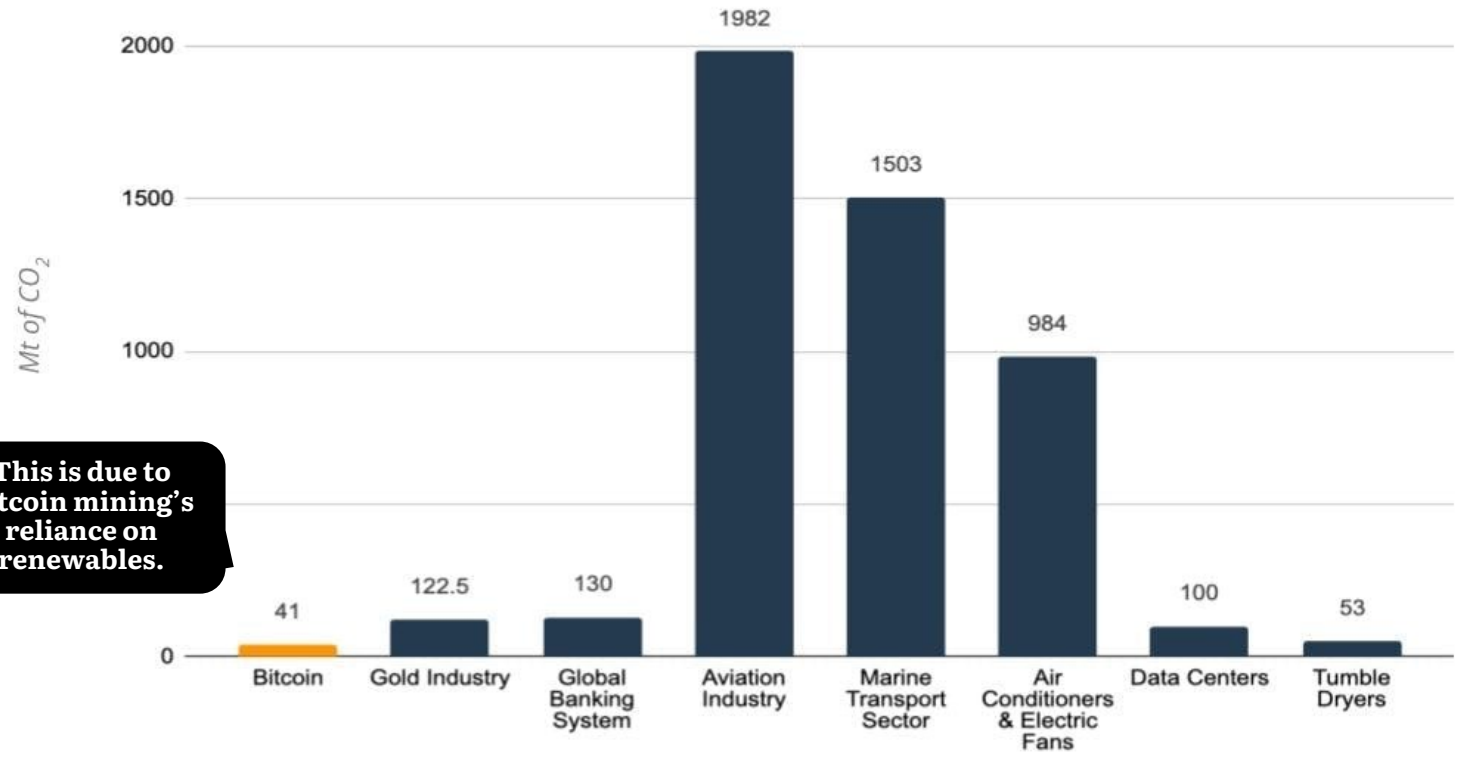


Source: ElenaBs

If we look at carbon emissions instead of electricity consumption, one sees how Bitcoin mining isn't the climate's enemy the media says it is.

Carbon Emissions of Bitcoin Compared to Other Industries

In 2021, the Bitcoin network emitted an estimated 41 metric tons of CO_2 which is lower than the global banking industry, gold industry, and every other industry shown below.



This is due to Bitcoin mining's reliance on renewables.

Data as of: Jan. 2022
Source: CoinShares

Note: Data was pulled from CoinShares' report released in Jan. 2022 which references multiple data sources from various dates.

Key Bitcoin electricity stats

162,194 TWh[i]
TOTAL ENERGY GENERATED WORLDWIDE

50,000 TWh[ii]
ENERGY LOST DUE TO INEFFICIENCIES

189 TWh[iii]
ENERGY CONSUMED BY BITCOIN MINING ON THE WORLD'S ELECTRIC GRID

GLOBAL BITCOIN MINING CONSUMES 0.1%
OF THE WORLD'S ENERGY PRODUCTION

GLOBAL BITCOIN MINING CONSUMES 0.4%
OF THE WORLD'S ENERGY WASTED

Source: CoinShares, curated by Messari

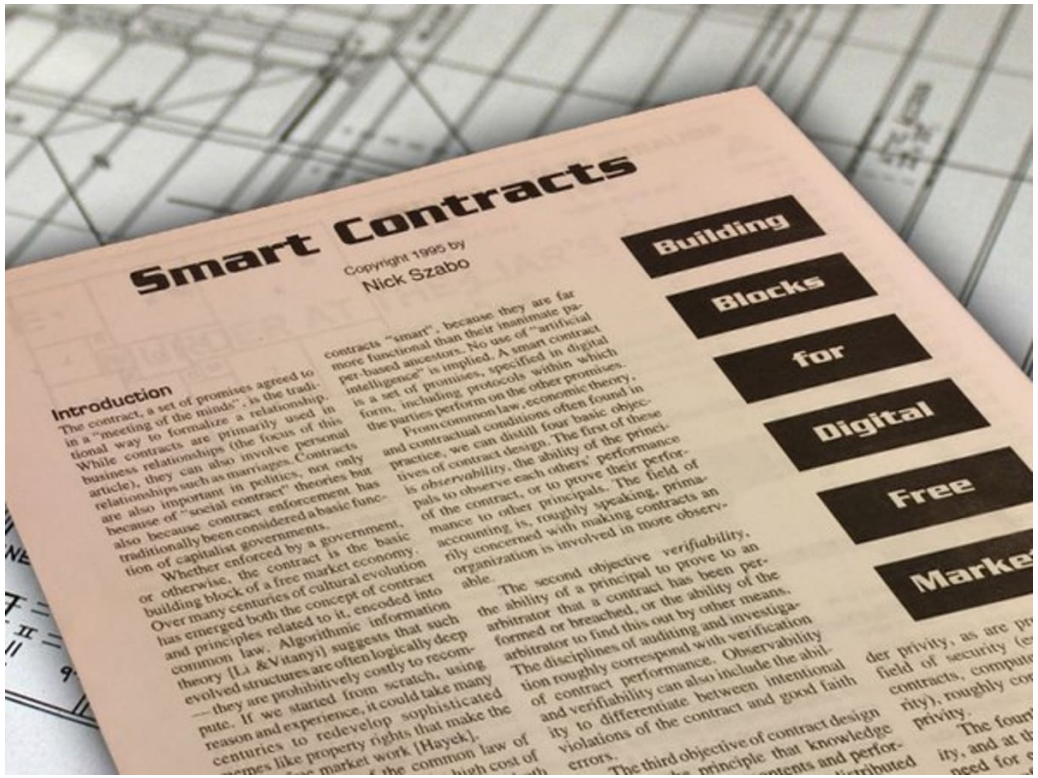
1.2. The rise of smart contracts and Web3.

Smart contracts were first described by Nick Szabo, back in 1996, as the next step in the digital transformation of the paper ones.

"New institutions, and new ways to **formalize the relationships that make up these institutions**, are now made possible by the digital revolution.

I call these new contracts "**smart**", because they are far more **functional** than their inanimate paper-based ancestors.

But no use of **artificial intelligence** is implied".



Source: Smart Contracts: Building Blocks for Digital Markets by Nick Szabo, 1996

More recently, Nick Szabo even argued “the humble vending machine is the original form of a smart contract”.

VENDING MACHINE

Analogy to a smart contract

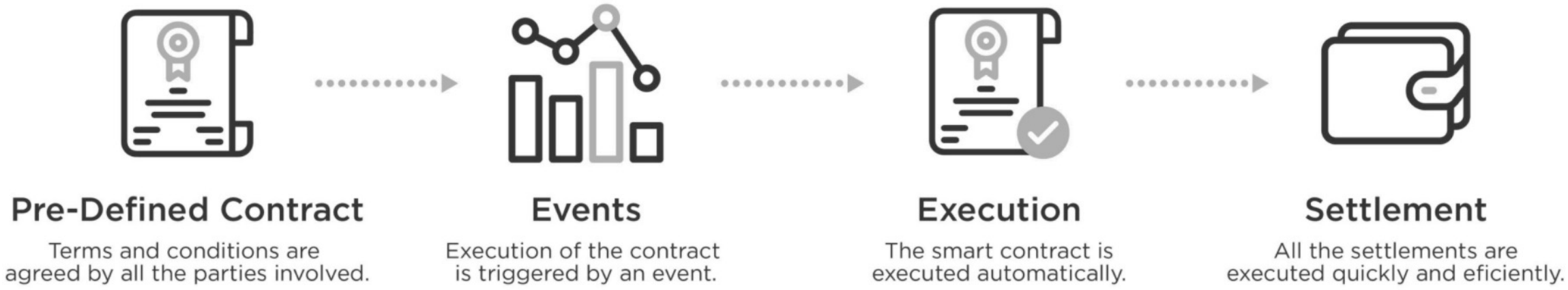
Funds go in
(Input)

Predefined actions triggered

Product
(Output)

Source: Digital Chamber Commerce, 2016

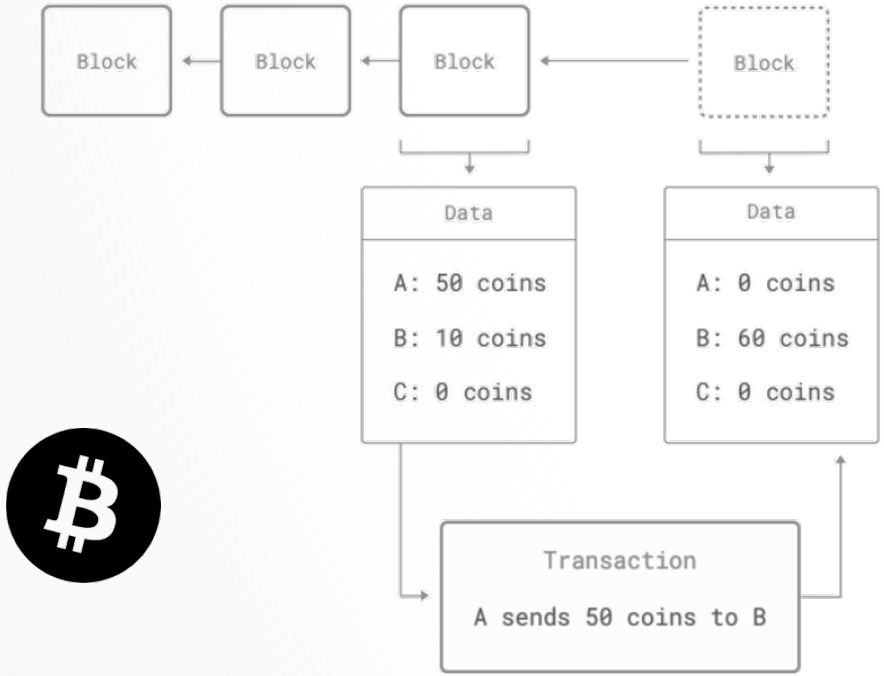
But, today, smart contracts are computer programs that run on a blockchain and are intended to automatically execute its terms.



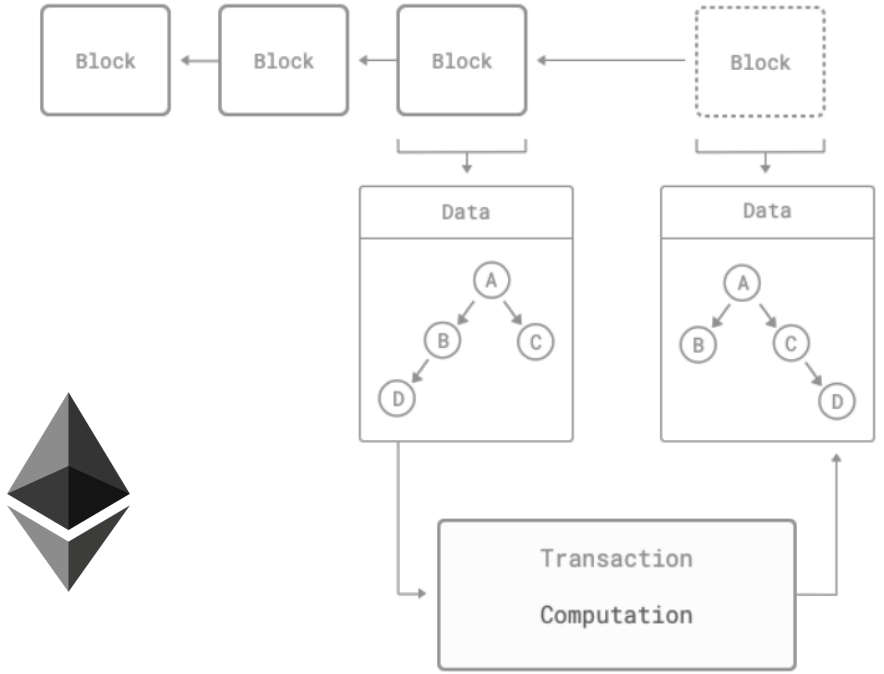
Source: DCX

In 2013, Ethereum's whitepaper laid the groundwork for the first major implementation of a blockchain for smart contracts.

While Bitcoin is focused on payments.



Ethereum is focused on code (running smart contracts).



Source: An Introduction to Ethereum and Smart Contracts, by Sebastián E. Peyrott

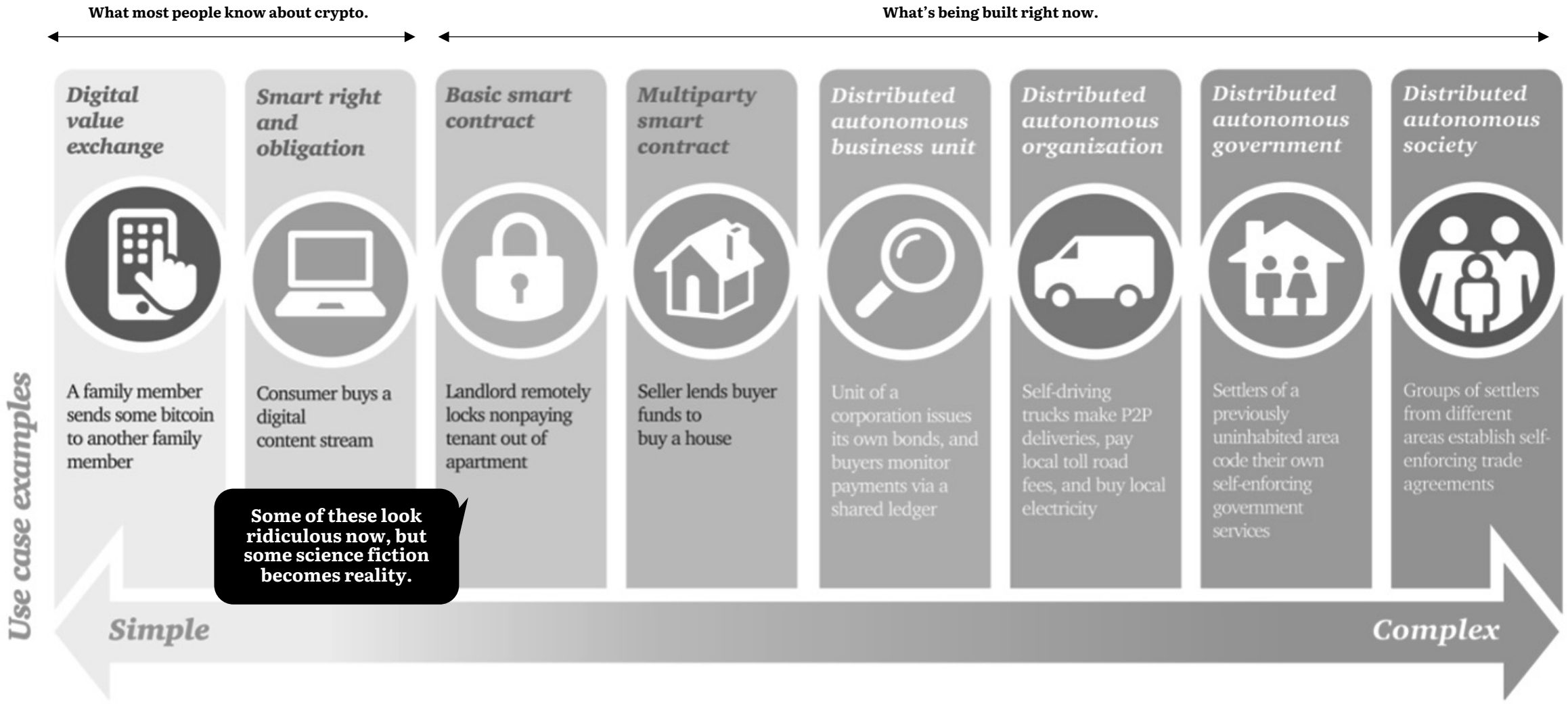
Ethereum's founder, Vitalik Buterin, believes these contracts can eventually replace modern platforms, from AirBnB & Uber to Spotify.

"Whereas most technologies **tend to automate workers on the periphery doing menial tasks**, blockchains **automate away the centre**.

Instead of putting the taxi driver out of a job, **blockchain puts Uber out of a job** and lets the taxi drivers **work with the customer directly**".

Source: The Blockchain Revolution, 2016

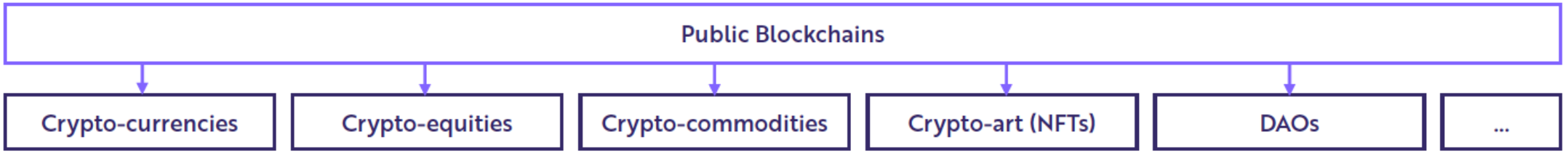
That's because smart contracts have the potential to reduce transaction costs and enhance efficiency in a myriad of use cases.



Source: PwC

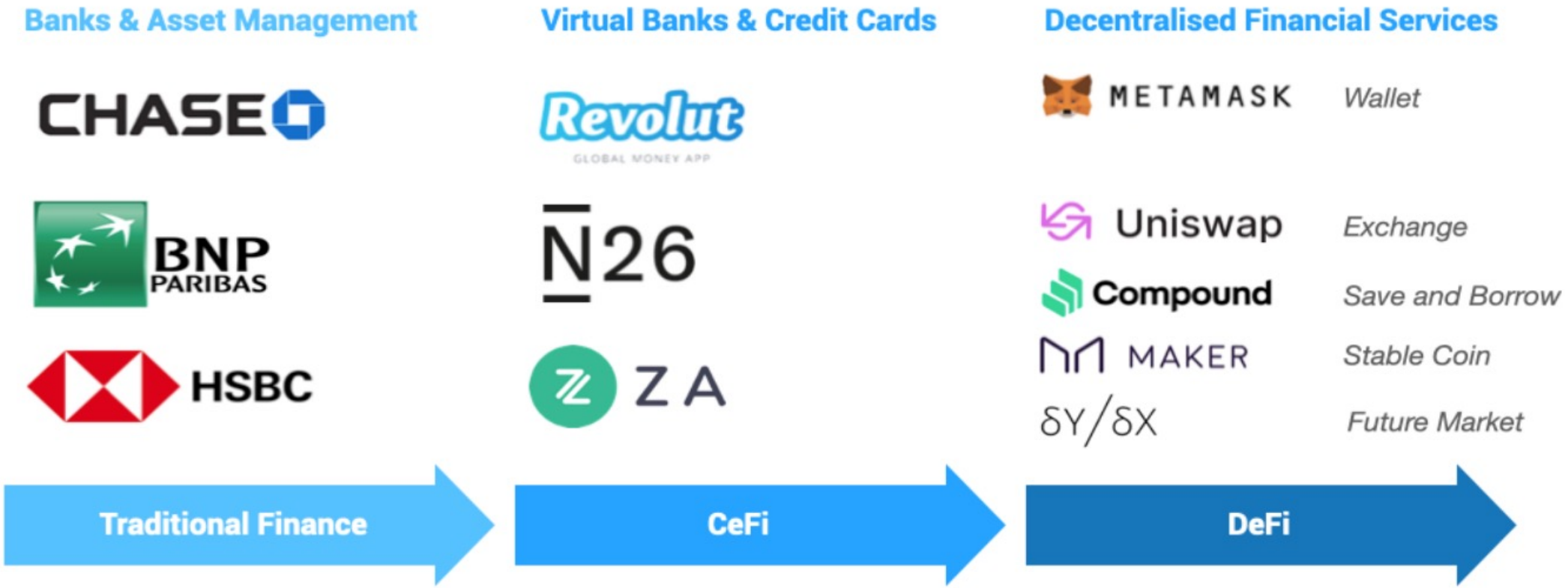
Why? Even though crypto is recognised as a distinct asset class, it also has the potential to impact all other traditional asset classes.

Similarly, cryptoassets issued on public blockchains are likely to impact ***all*** asset classes. Just as the internet turned information into packets online, public blockchains are likely to turn all assets into transactions on-chain.



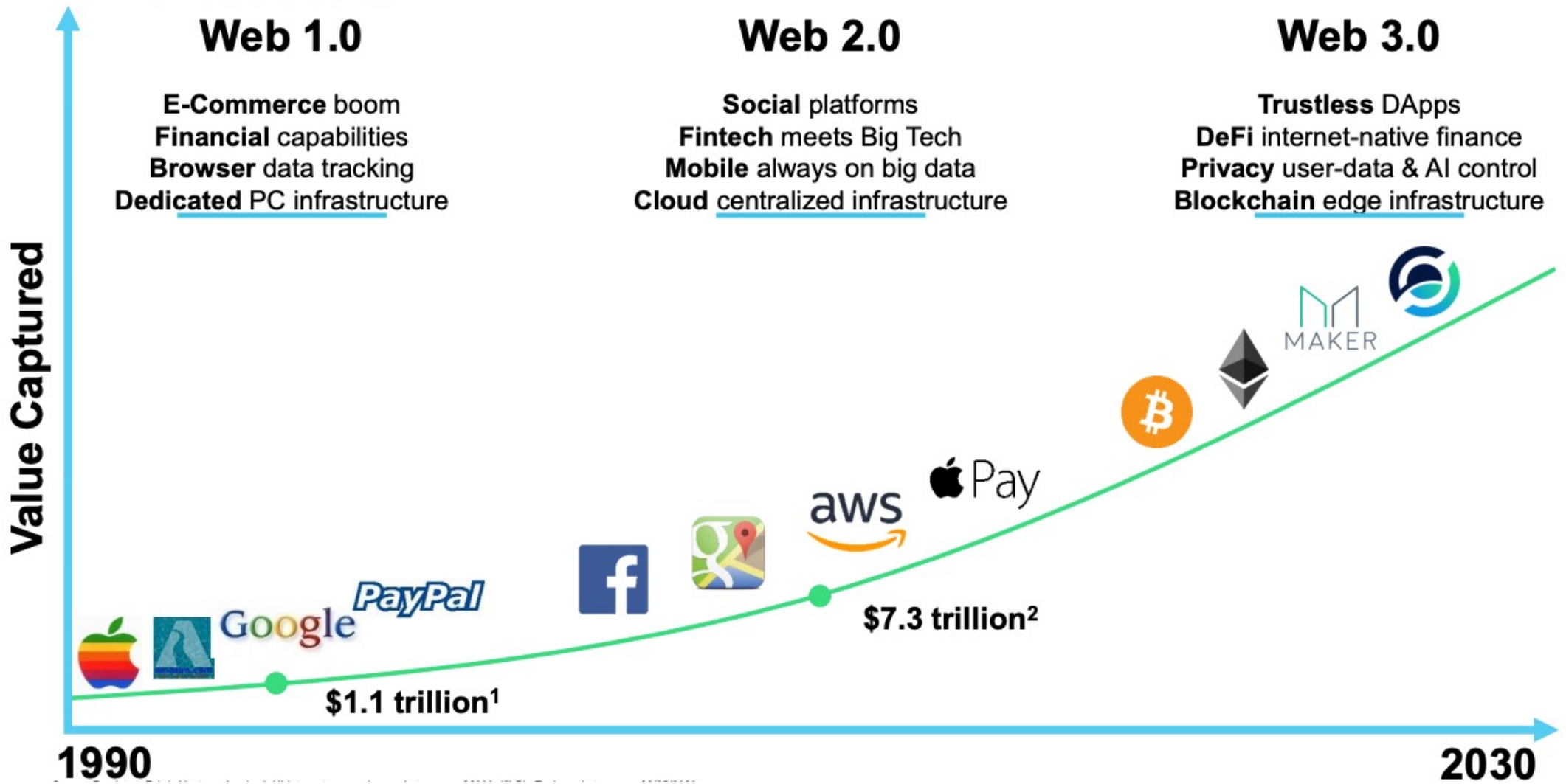
Source: Ark Investment, 2021

Take the case of Open Finance, or DeFi, which leverages the power of crypto to address some of the challenges of TradFi & FinTechs.



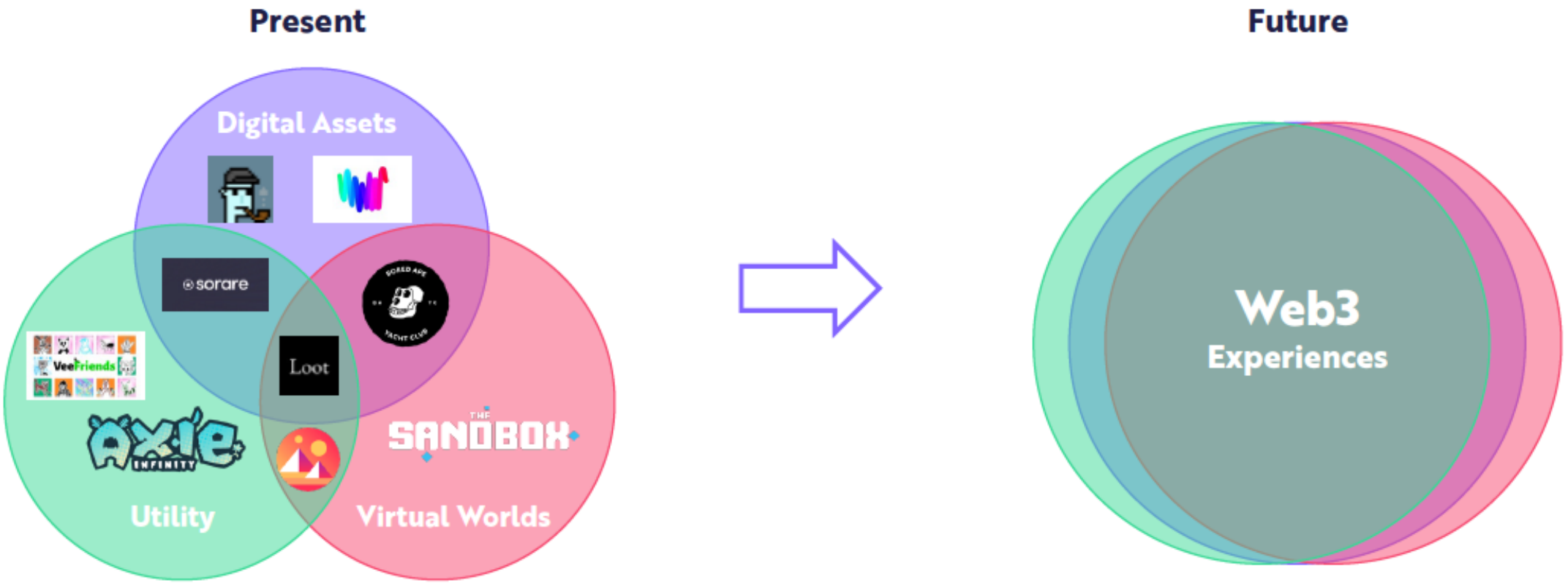
Source: Ted Late

And it was the DeFi revolution which ignited a wider technological change, now powering the next generation of the internet, or web3.



Source: Fundstrat, Fabric Ventures

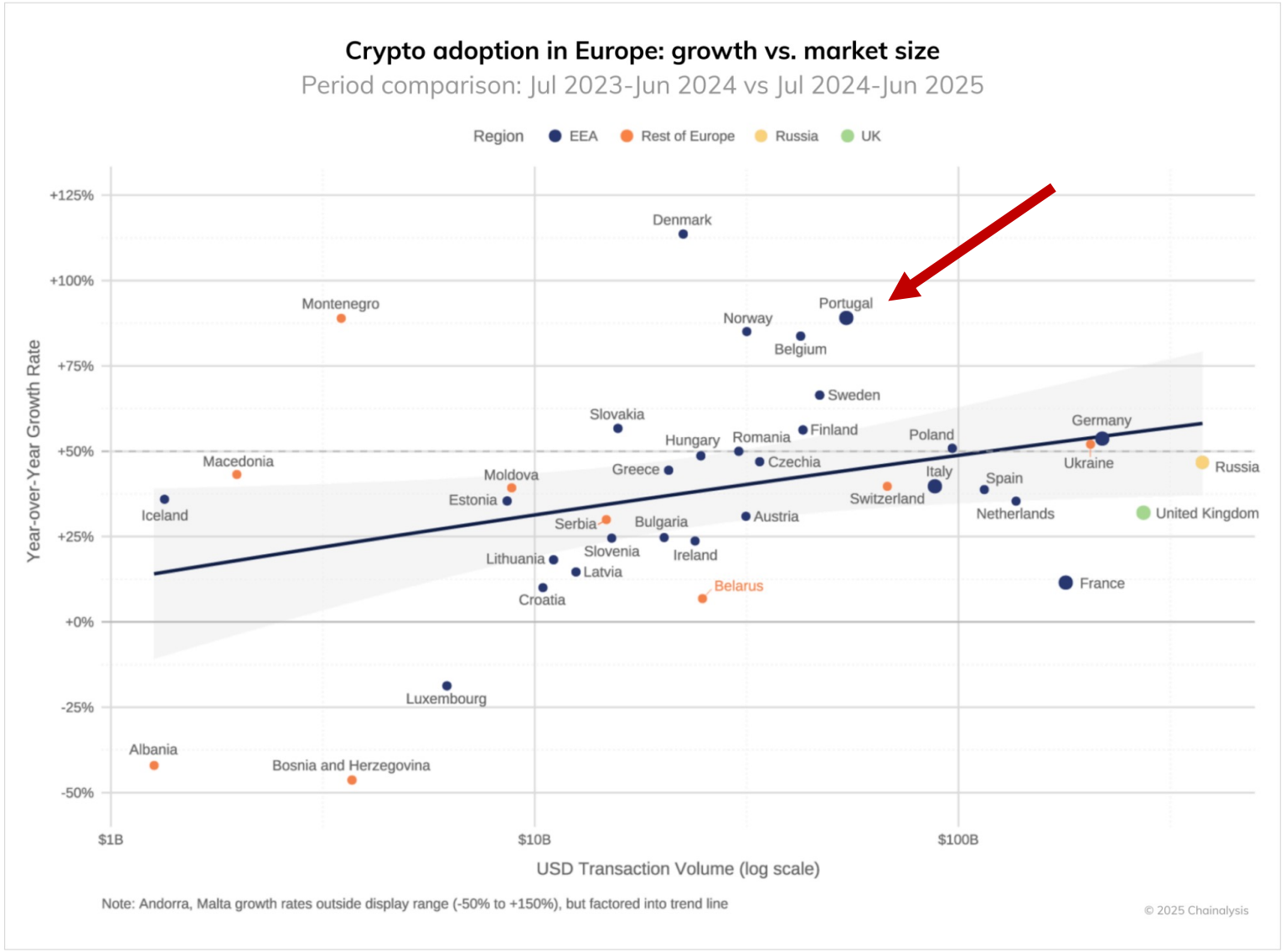
Web3 and the so-called metaverse aims to blur the lines between the types of consumption and investment we already do digitally.



2. An overview of crypto in Portugal and beyond.

2.1. About Portugal's status in the crypto world.

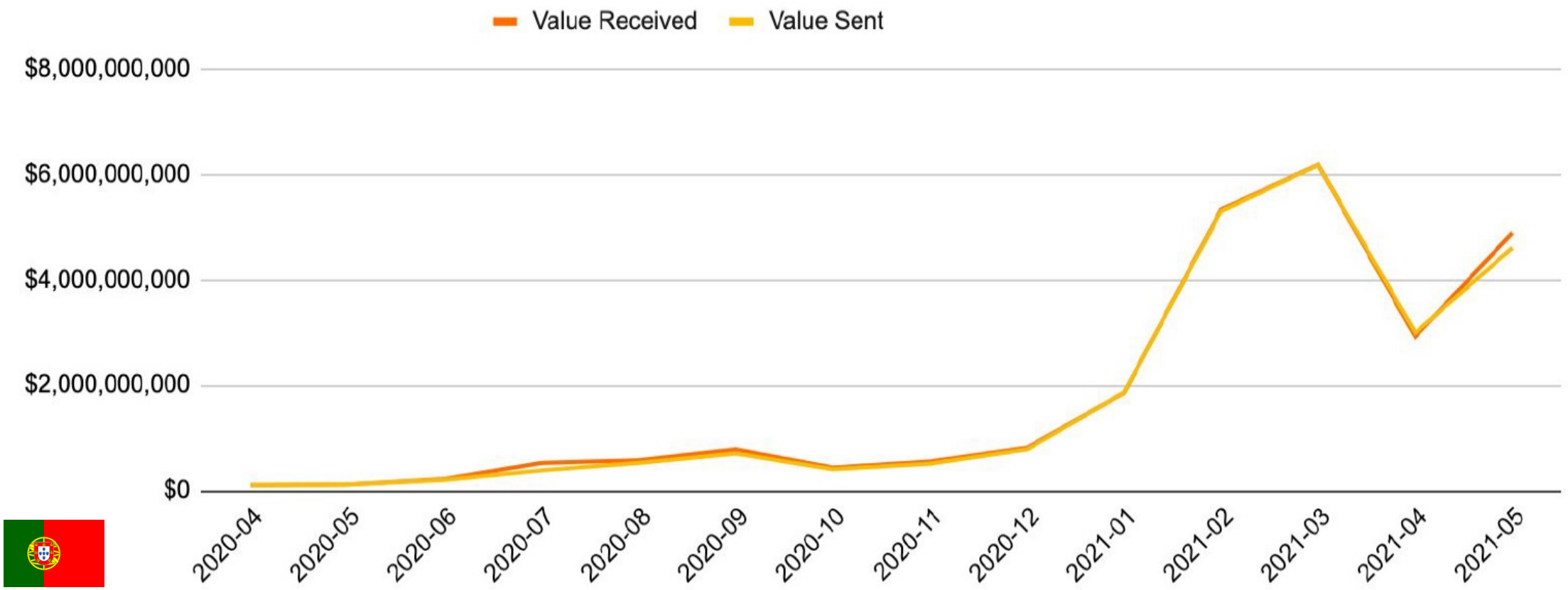
Portugal has one of the fastest growing and also one of the largest crypto economies in Europe, which itself accounts for ~22% of global crypto vol.



Source: Chainalysis, 2025 - Geography of Cryptocurrency Report

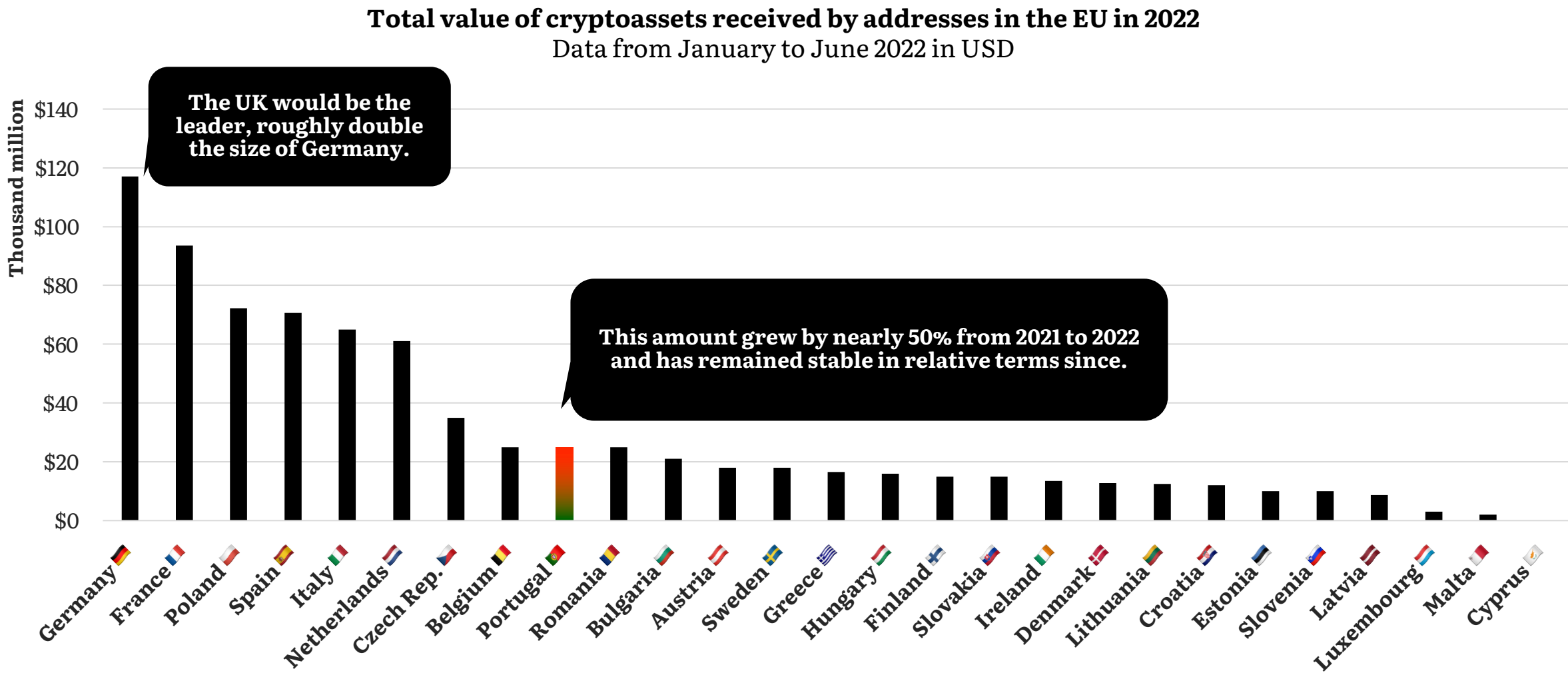
The adoption of crypto assets in Portugal started to grow in 2020 as the country onboarded a significant cohort of crypto entrepreneurs.

Monthly value of cryptoassets exchanged for addresses located in Portugal
Data from April 2020 to June 2021



Source: Chainalysis, "Portugal Crypto Stats", 2021

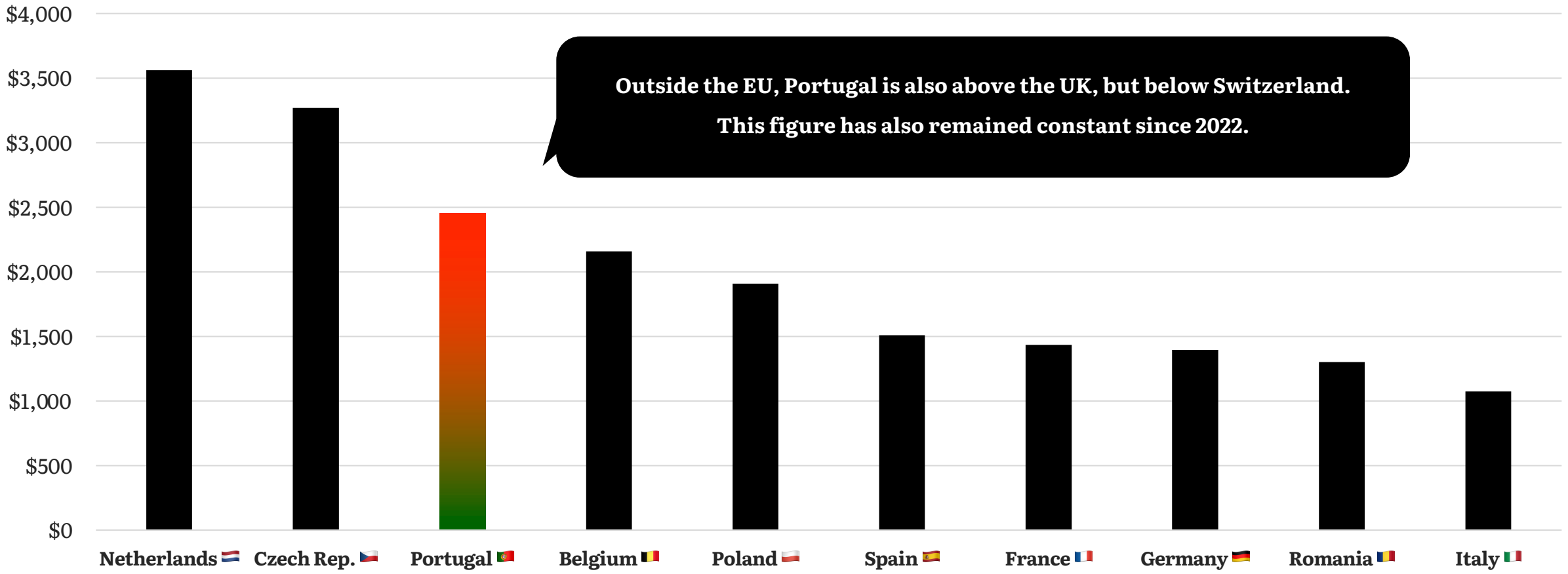
Portugal has the eighth largest crypto economy in the European Union, having consistently transacted ~ $25 to $50 billion per year since 2021.



Source: Chainalysis, 2022 – private data. Chainalysis, 2024 Western Europe Adoption

If we consider the 10 largest crypto economies in absolute terms, Portugal already occupies a prominent position: 3rd per capita.

Per capita value of cryptoassets received by EU addresses in 2022
Data from January to June 2022 in USD - among the top 10 countries by absolute

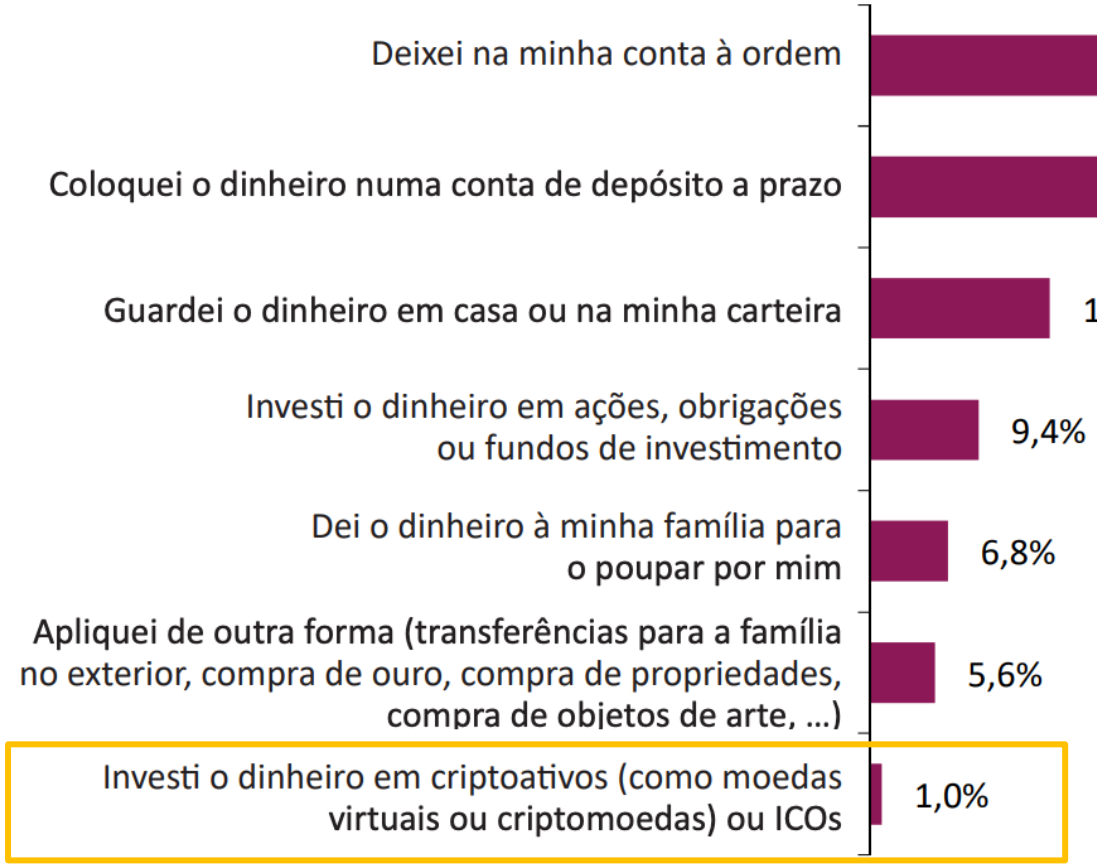


Source: Chainalysis, 2022 – private data.

2.2. About Portugal’s emerging crypto ecosystem.

2020 data suggests that the high value of the crypto economy in Portugal is due to foreign talent, since few nationals are invested.

Where did you invest your savings?
2020 data, 977 replies



In 2020, only 1% of Portuguese invested in cryptoassets, a statistic aligned with Revolut data. However, 35% already know this asset class.

This contrasts with that of the UK, where 5% owns and where 78% have heard of cryptoassets.

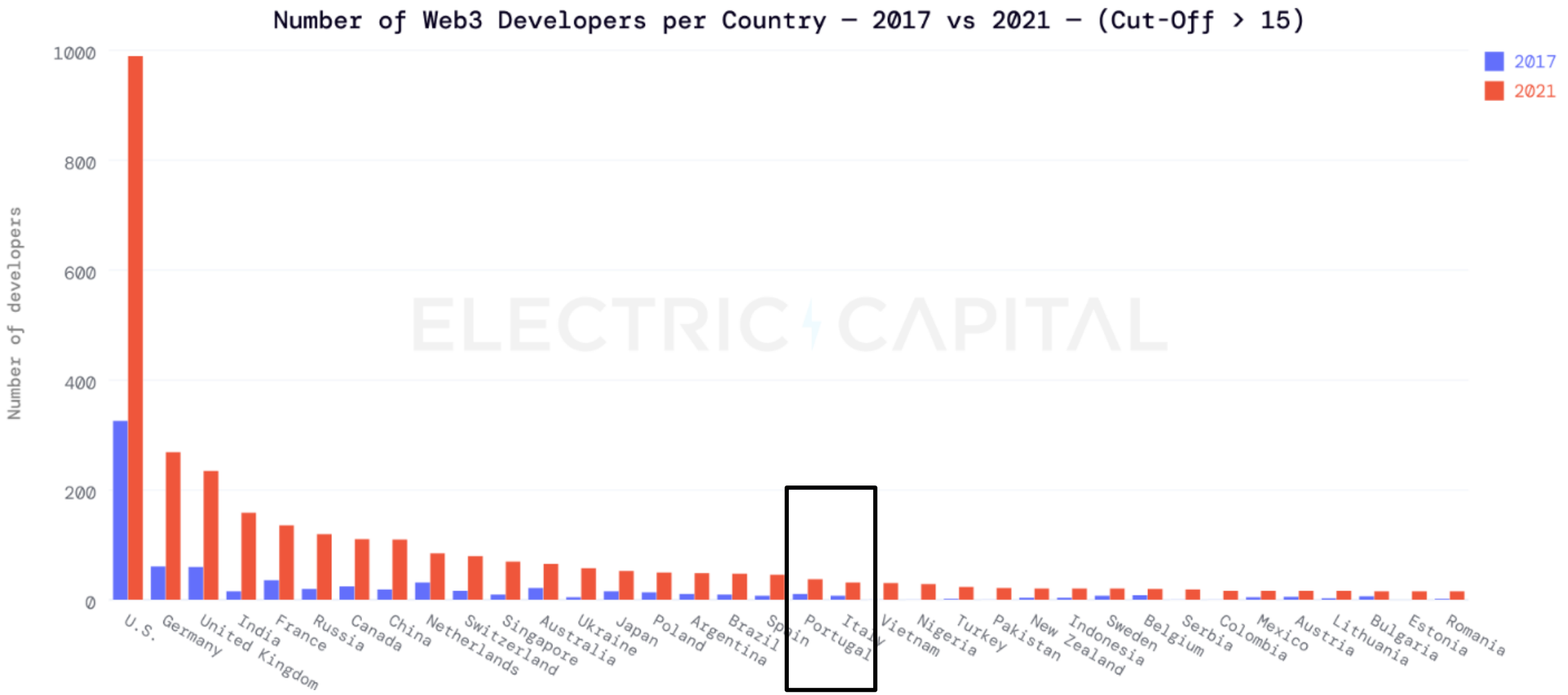
MERCADOS

Mais de 100 mil portugueses já usaram Revolut para investir em criptomoedas

O interesse na compra e venda de criptomoedas aumentou no serviço da Revolut em todo o mundo e Portugal não é exceção, com o número de clientes a usar a aplicação para este investimento a crescer 15% no primeiro trimestre.

Source: CNSF – 3º Inquérito à Literacia Financeira da População Portuguesa, 2021; FCA, 2021; JN, 2021

The very high per capita ratio of crypto devs in Portugal is also aligned with the attraction of foreign talent to our cities.



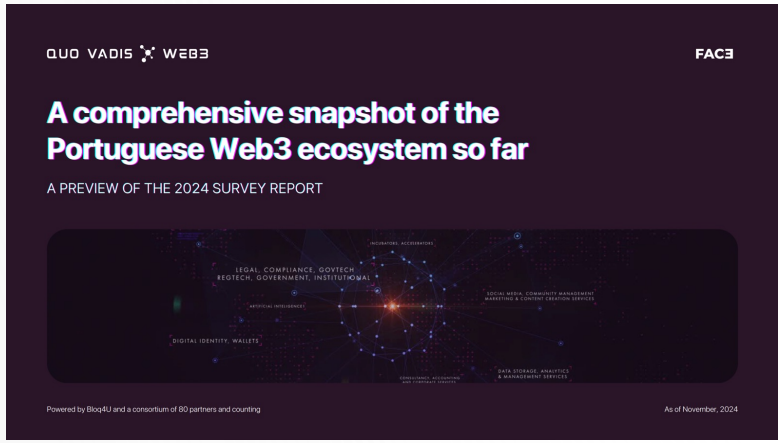
Source: Electric Capital, 2022

Last year, we supported an in-depth study of the sector, with the collaboration of 90 partners of the crypto industry in PT.

It was presented in December 2024 at the Web Summit.

We surveyed 232 full-time employees residing in PT.

Most respondents live in Lx and are 28 to 43 years old.



Survey design and response rate

ONGOING IMPROVEMENTS

The survey design was validated with the initial group of roughly 20 partners and underwent minor tweaks post-launch.

In these first months, we managed to obtain **232 valid surveys**, out of 726 people who opened the survey page, but failed to complete it, a matter we've been addressing.

In any case, given that we mostly distributed the survey during **seven events** in **Portugal's top crypto hubs**, we believe this sample is **reasonably representative** of the national scene.

Demographics summary

MILLENNIAL, MALE AND HIGHLY EDUCATED

The average age of our respondents is **36 years old**, ranging between **20 to 59 years old**, whereas **90% are male** and, also, **90%** have concluded some sort of **higher education**.

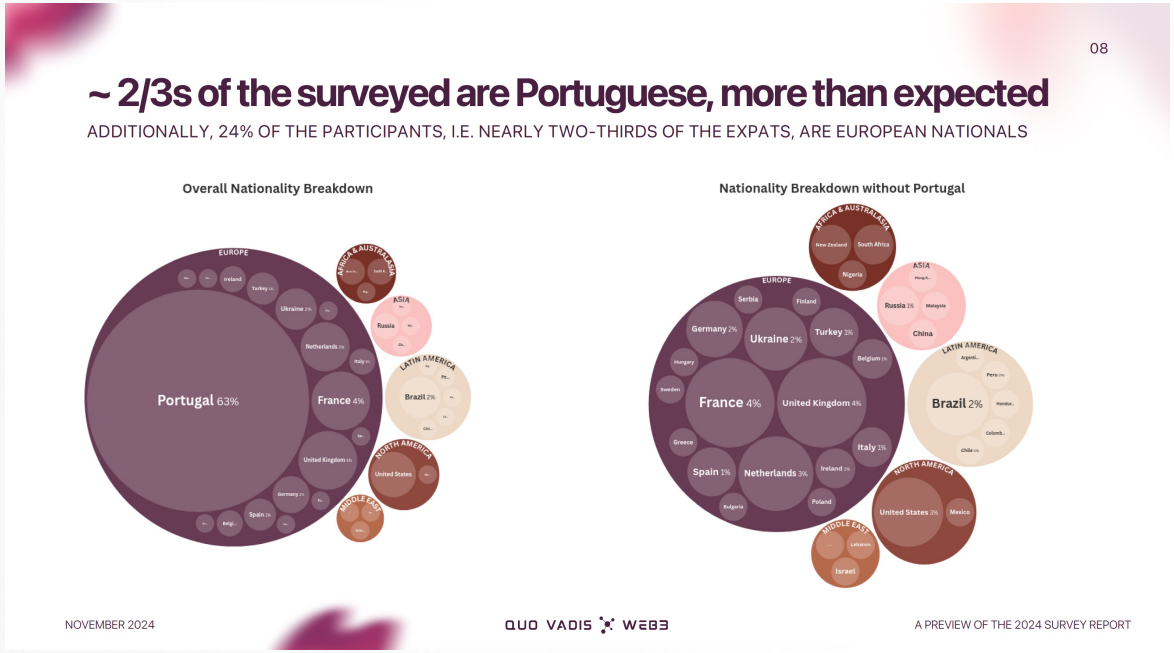
Moreover, we collected answers from **37 different nationalities,** even if **60% of the sample** represents **Portuguese citizens**.

Two thirds of the respondents live in the **Greater Lisbon** area, something that was also expected, even if i**t's clear some regions are under represented in our dat**a, e.g. Porto & Braga.

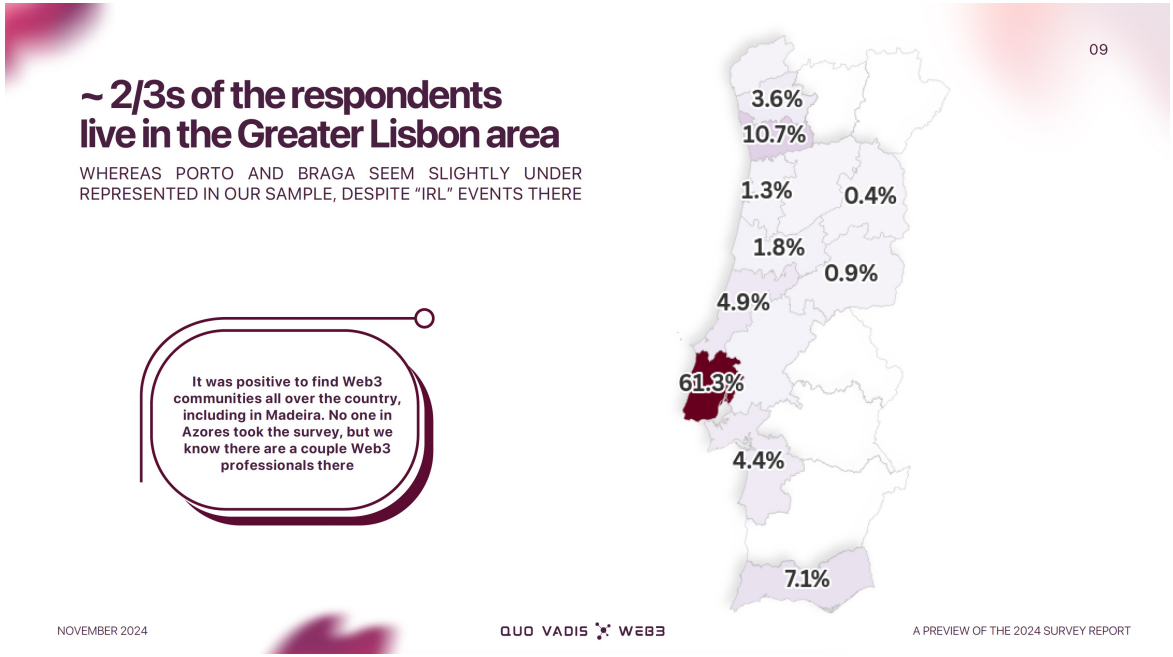
Source: Quo Vadis Web3, 2024

The study allowed us to understand that while in 2020 the ecosystem was based on a strong foreign cohort, today it is already 2/3s native.

Two-thirds of foreign industry members are European citizens.



Two-thirds of the crypto work live in the Greater Lisbon.



Source: Quo Vadis Web3, 2024

Half of the crypto startups with workers in Portugal is already incorporated here, a very positive sign of local integration.

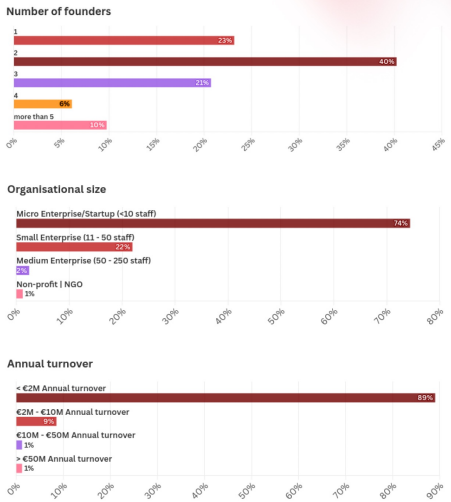
~80% of the crypto startups emerged >2020.

Our founders tend to pair up and mostly run small start-ups

HOWEVER, IT'S IMPORTANT TO NOTE THAT WE HAVE A FEW ORGS. WITH ANNUAL TURNOVER ABOVE €2M EUR

The snapshot of a web3 startup in Portugal:

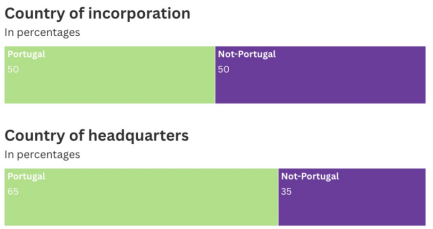
- 1 or 2 founders (over 60%)
- First received funding after 2020 (almost 80%)
- Registered (50%) and headquartered (70%) in Portugal
- Typically headquartered in Lisbon (70%)
- Often bootstrapped (40%)
- Sometimes with Angel or VC investment (20%)
- Small team (75% with less then 10)
- Small dev team (almost 60% with less than 5)
- Under €2M EUR yearly turnover (~90%)
- Spread across the various industry verticals (DeFi 10%)
- Lastly, 1 in 2 crypto startups have a Portuguese founder

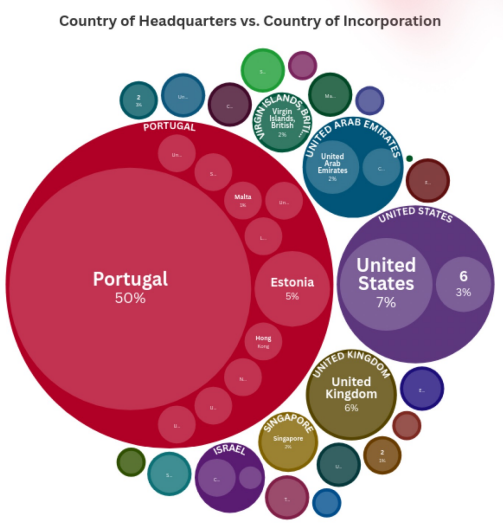


~70% of the crypto startups are in Lisbon.

Two-thirds of the startups are headquartered in Portugal

EVEN IF ONLY 50% ARE EFFECTIVELY REGISTERED HERE. AND, OUT OF THESE, 70% ARE IN THE GREATER LISBON AREA





Source: Quo Vadis Web3, 2024

All-in-all, the crypto start-up ecosystem is maturing and has some notable domestic and several foreign companies.

Note: Orgs with offices in Portugal or with a significant presence - non-exhaustive & under construction.

These companies already have a significant base in Portugal and continue to invest in the country, as shown by the latest news.

Recrutamento

Americana Uphold quer contratar 250 pessoas, mais de metade em Portugal

Ana Marcela
6 Outubro 2025

Já com 200 pessoas nos escritórios do Porto e Braga, tecnológica que atua no setor das criptomoedas quer reforçar equipa no país até 2026. 90% da engenharia da empresa está em Portugal.

Follow

Rui Neves *ruineves@negocios.pt*

SEGUIR

06 de Outubro de 2025 às 11:16

Fundada em 2014 nos Estados Unidos, a Uphold, empresa de tecnologia financeira que se diz pioneira no setor das criptomoedas em Portugal, conta com mais de 400 funcionários em todo o mundo, dos quais mais de 200 se encontram no nosso país, desde membros seniores de liderança e direção como os atuais CTO, CDO, CRO, COO de Portugal e CIO, a engenheiros, equipas de produto, operação, ciência de dados e cibersegurança.

Com escritórios no Porto e em Braga, locais onde são desenhados, desenvolvidos e entregues a maioria dos produtos e funcionalidades da plataforma a nível global, a operação portuguesa da Uphold representa cerca de 90% da engenharia, peso que deverá ser reforçado nos próximos anos com a multinacional a anunciar a duplicação da sua equipa lusa.

Associada à Porto Tech Hub, a Uphold "pretende contratar até 250 novos colaboradores até 2026, em áreas como 'backend', 'frontend', 'data science', cibersegurança, entre outras", detalha a empresa, em comunicado.

In addition to these, the Quo Vadis study indicates there are ~5,150 professionals in this industry in Portugal — equivalent to 20% of workers in startups in PT, with an average salary 3x higher than the startup sector.

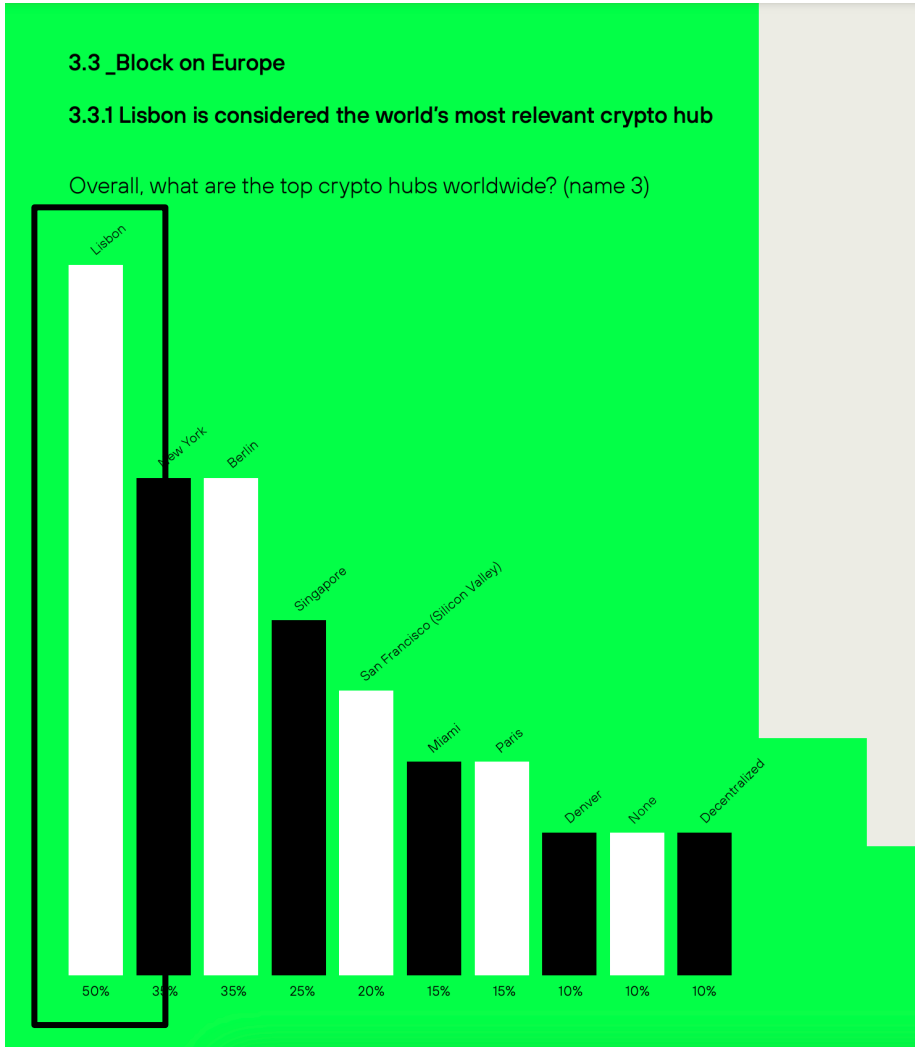
Source: Jornal de Negócios, 2025

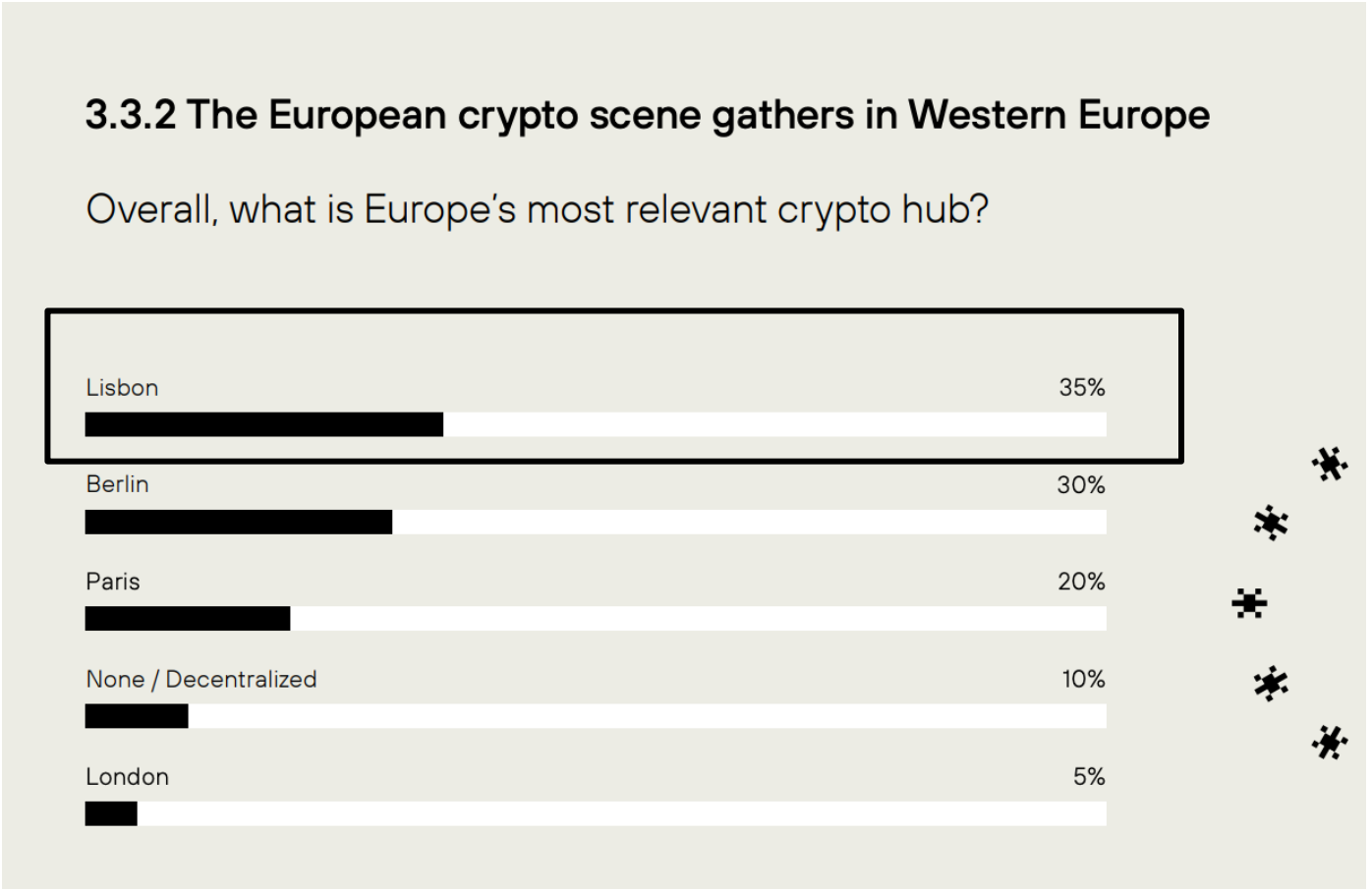
And the cryptoassets and blockchain sector (still) only represents a small subset of the fintech ecosystem in Portugal.

The FinTech landscape in Portugal
2021

Source: Portugal FinTech, 2021, top 30 companies in Portugal

All this explains why Lisbon, back in 2023, was voted the most relevant crypto hub in the world and Europe for this technology.





Source: Greenfield Capital, 2023

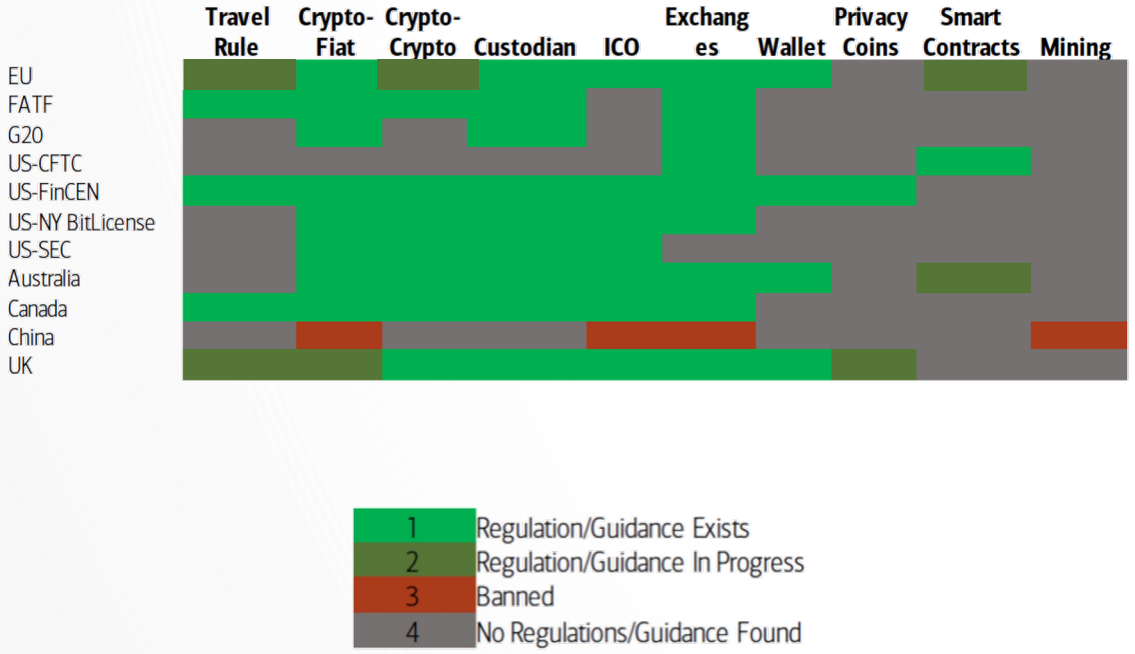
3. The new crypto regulations impacting Europe.

3.1. Some context about crypto regulation in the EU & beyond.

The world lacks a common regulatory regime for cryptoassets, and different watchdogs and regulators fail to cooperate on key policy.

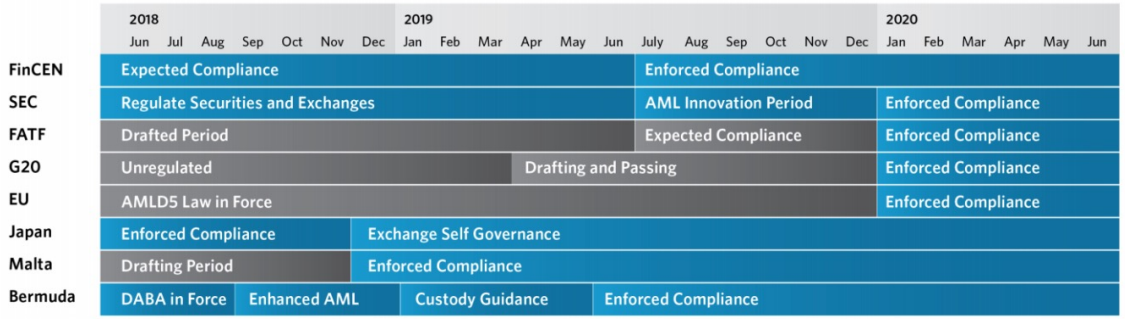
Cryptoasset regulation in major jurisdictions

As of September, 2021 – updated for the EU



Global AML regulation applicable to cryptoassets

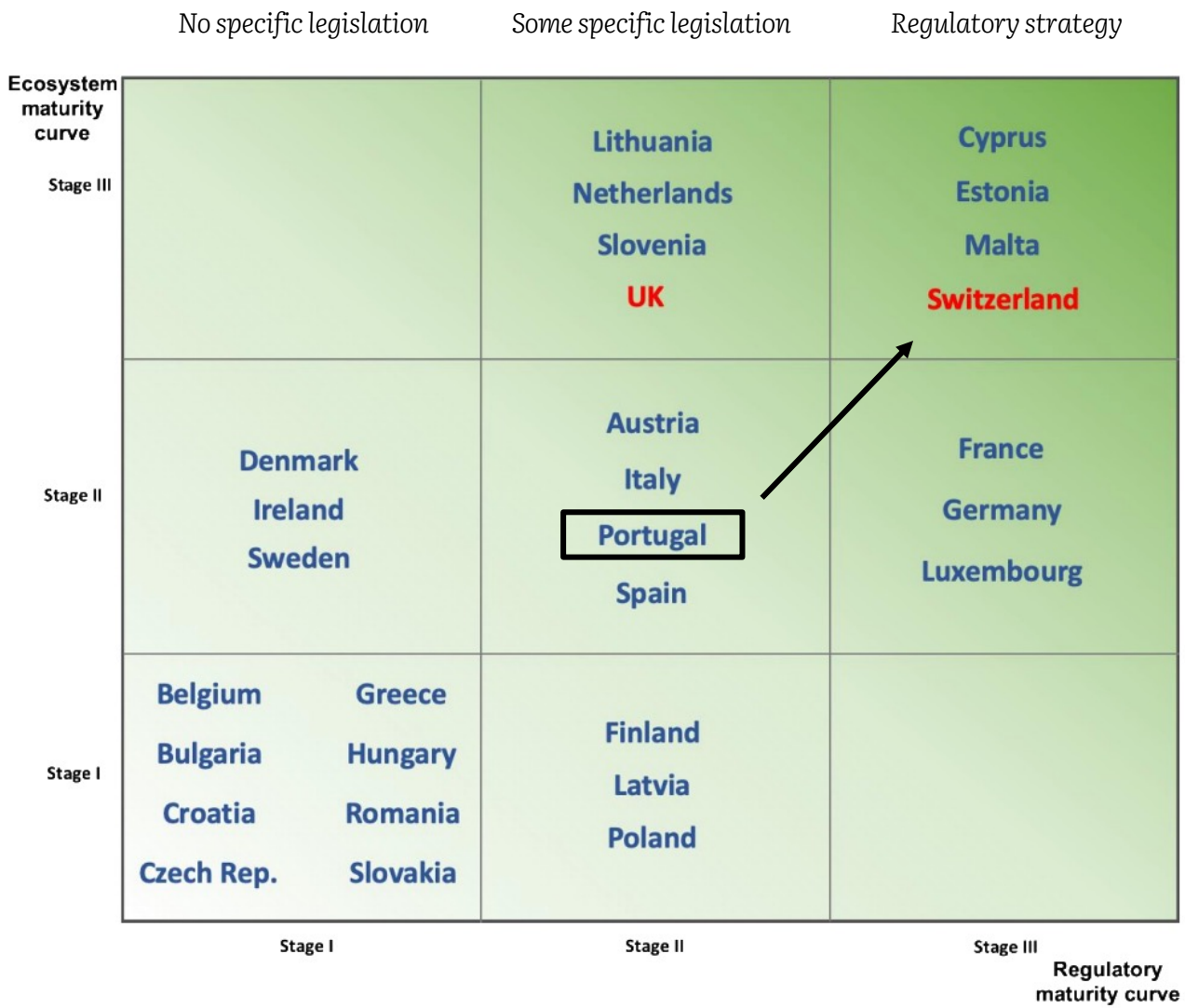
As of Q4, 2018



Europe has already finalised the AMLD6 and the new AMLR.

Source: Bank of America Global Research, 2021; Basel Governance, 2019

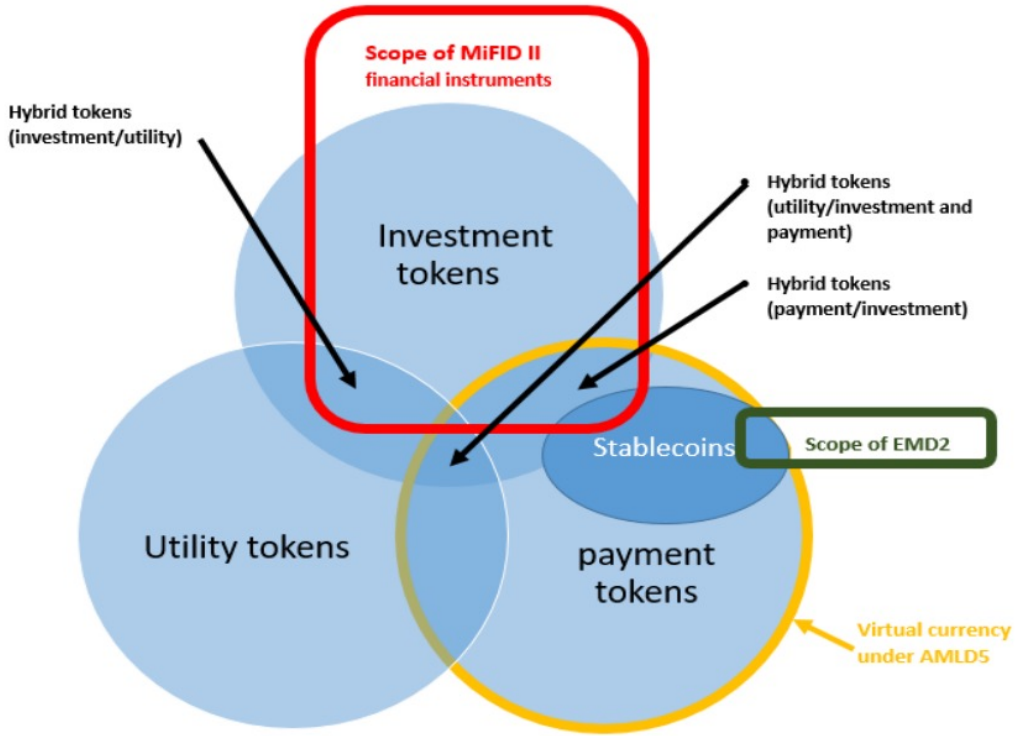
Meanwhile, European countries have various regulatory approaches to crypto, with different levels of maturity and sophistication.



Source: European Union Blockchain Observatory & Forum, 2021

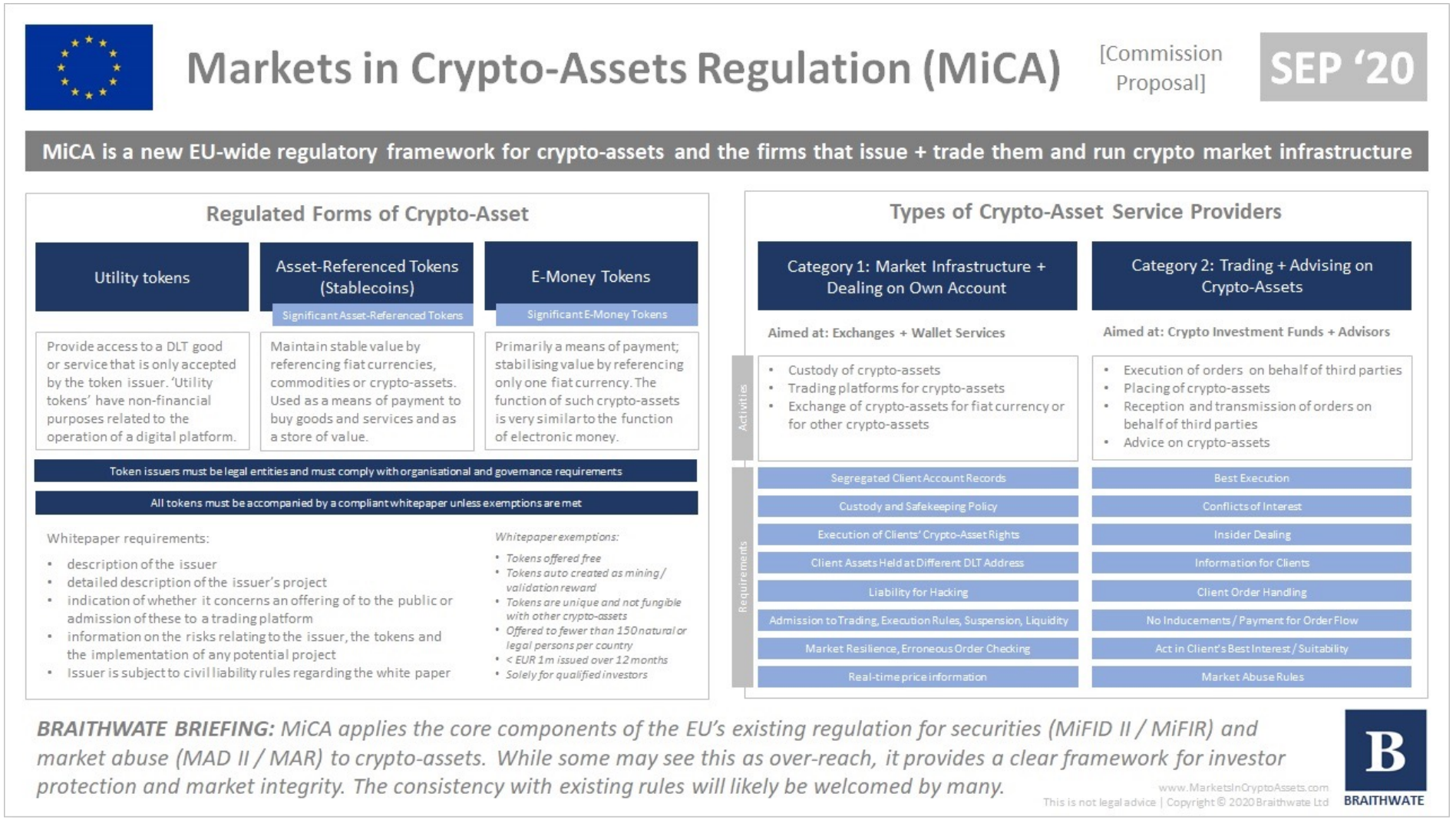
After all, in the EU many tokens already fell under some kind of regulation, be it AML/CTF or for traditional financial instruments.

EU-wide regulations applicable to cryptoassets
As of September, 2021



Source: European Commission, 2019

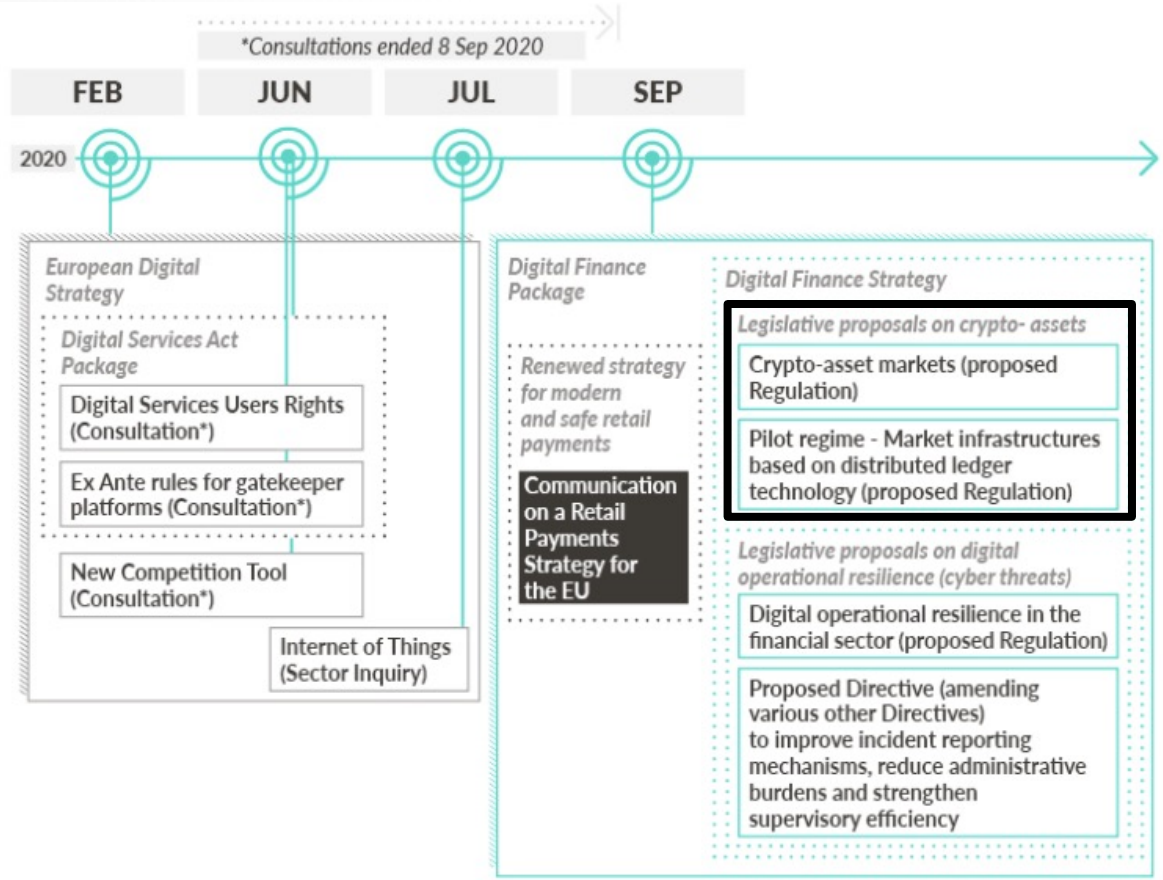
That's why the EU has tried to mitigate that problem with a common regulatory framework, MiCA, part of its digital finance package.



Source: Braithwate, 2020

This regulation proposal started as a reaction to Facebook's Libra, but grew into a wider, comprehensive regulatory framework

The MiCA license is now "passportable".



It was partly inspired in Lichtenstein's pioneering Blockchain Act (TVTG).

MiCa	TVTG
SERVICE PROVIDERS	
Issuer*	Token Issuer
Custody and administration	TT Key Depositary
Exchange (Fiat/CA; CA/CA)	TT Exchange Service Provider
Trading Platfrom CA	TT Price Service Provider
Execution of orders CA	no equivalent Service Provider
Placing of orders CA	no equivalent Service Provider
Reception and transmission of orders CA	Physical Validator
Providing advice CA	Verifying Authority
no equivalent Service Provider	TT Token Depositary
no equivalent Service Provider	Token Generator
no equivalent Service Provider	Identity Service Provider
* MiCa differentiate depending on the type of crypto-asset	
CIVIL LAW PROVISIONS AND TOKEN CLASSIFICATION	
Definition of Token ✓	Definition of Token ✓
Classification of Token ✓	Classification of Token ✗
	Power of Disosal vs Right of Disposal ✓
	Disposal over Token ✓
	Effects of disposal (transfer of represented right) ✓
	Unregistered securities (Security Token) ✓
DUE DILLIGENCE	
Due Diligence requirements ✓	Due Diligence requirements ✓

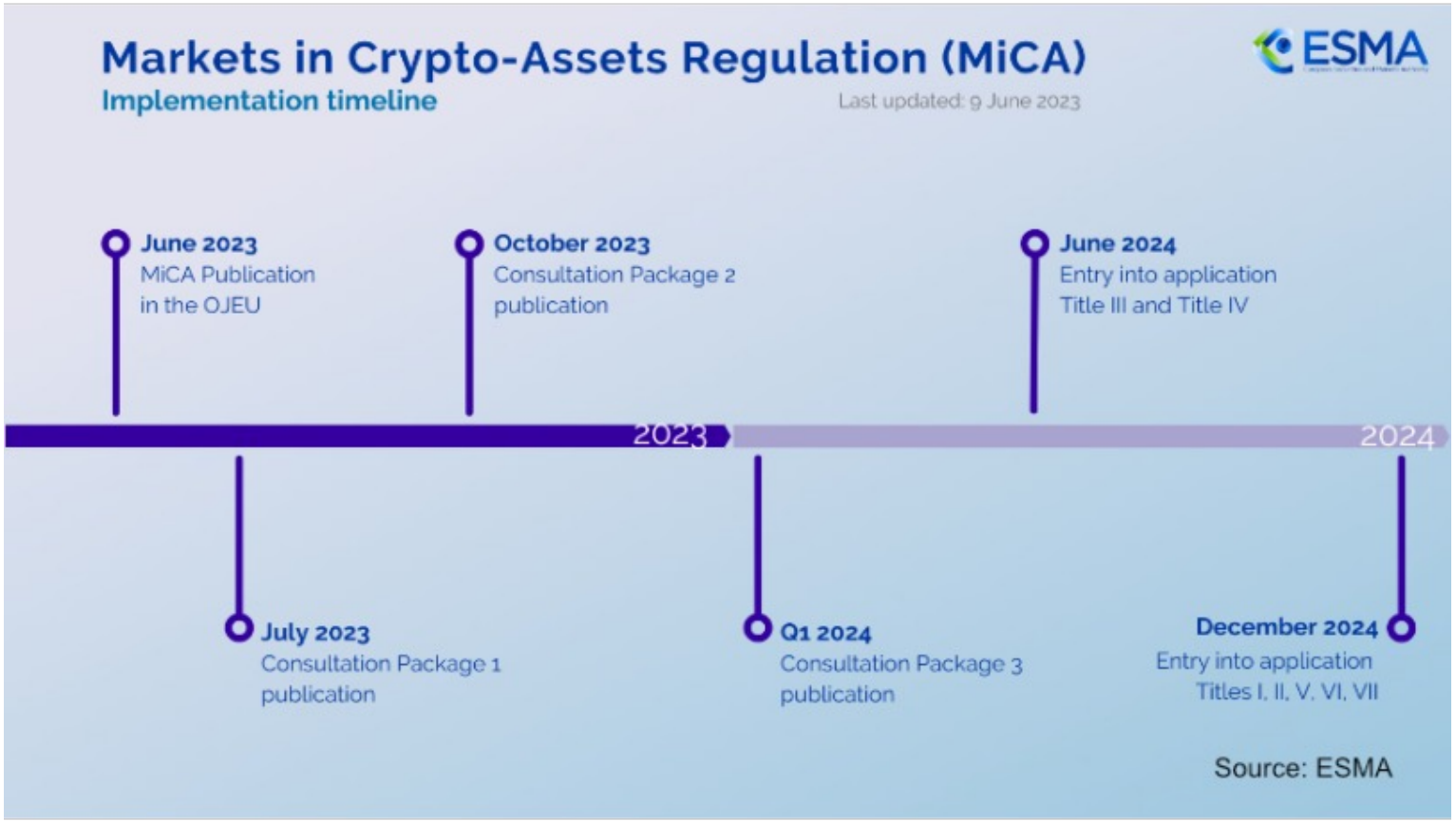
Lichtenstein started working on TVTG in 2016 and aims to become a "token economy"

Source: Thomas O'Donnell, 2020; Thomas Nägele, 2020

MiCA was voted in April 2023 and entered into force ~12 months after for stablecoins and 18 months after for CASPs and token offerings.

MiCA's timeline

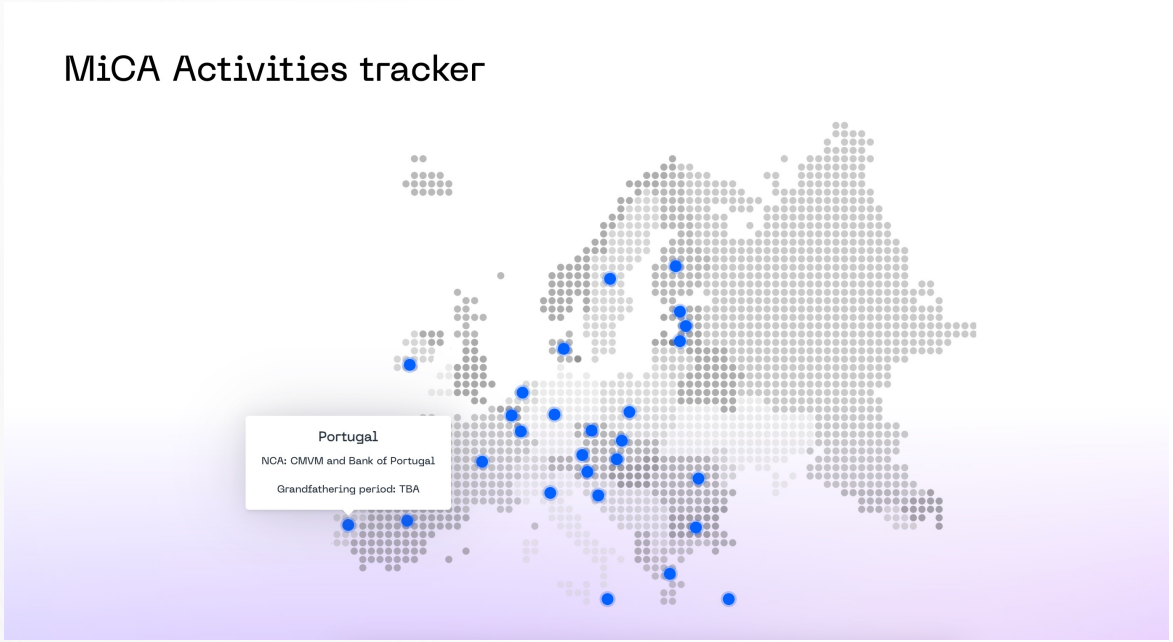
EU Regulations should be implemented by all countries within the same timeline, but that hasn't happened



Source: EY, 2022

However, the implementation of the legislation in Portugal is extremely delayed, which has caused several issues to the sector.

Portugal was very late to confirm a transition period, the "grandfathering period".



This brought extreme uncertainty to companies registered in Portugal.

ESMA
European Securities and Markets Authority

List of grandfathering periods decided by Member States under Article 143 of Regulation (EU) 2023/1114 Markets in Crypto-Assets Regulation (MiCA)*

Article 143 – Transitional measures

3. Crypto-asset service providers that provided their services in accordance with applicable law before 30 December 2024, may continue to do so until 1 July 2026 or until they are granted or refused an authorisation pursuant to Article 63, whichever is sooner.

Member States may decide not to apply the transitional regime for crypto-asset service providers provided for in the first subparagraph or to reduce its duration where they consider that their national regulatory framework applicable before 30 December 2024 is less strict than this Regulation.

By 30 June 2024, Member States shall notify to the Commission and ESMA whether they have exercised the option provided for in the second subparagraph and the duration of the transitional regime.

Member state	Grandfathering period
Belgium	TBA
Bulgaria	12 months
Czechia	18 months**
Denmark	18 months***
Germany	TBA
Estonia	18 months
Ireland	12 months
Greece	12 months
Spain	12 months
France	18 months
Croatia	18 months
Italy****	12 months
Cyprus	18 months
Latvia	6 months
Lithuania	5 months
Luxembourg	18 months
Hungary	6 months
Malta	18 months
Netherlands	6 months
Austria	12 months
Poland	6 months
Portugal	TBA
Romania	18 months
Slovenia	6 months
Slovakia	12 months
Finland	6 months
Sweden	9 months

EEA country	Grandfathering period
Iceland	18 months

Source: EUCI, 2025

4.2. An overview of crypto regulation in the EU & its impacts.

After MiCA, EU bureaucrats entered into a *regulatory bull market*, having since pushed for new legislation – some specific to crypto.

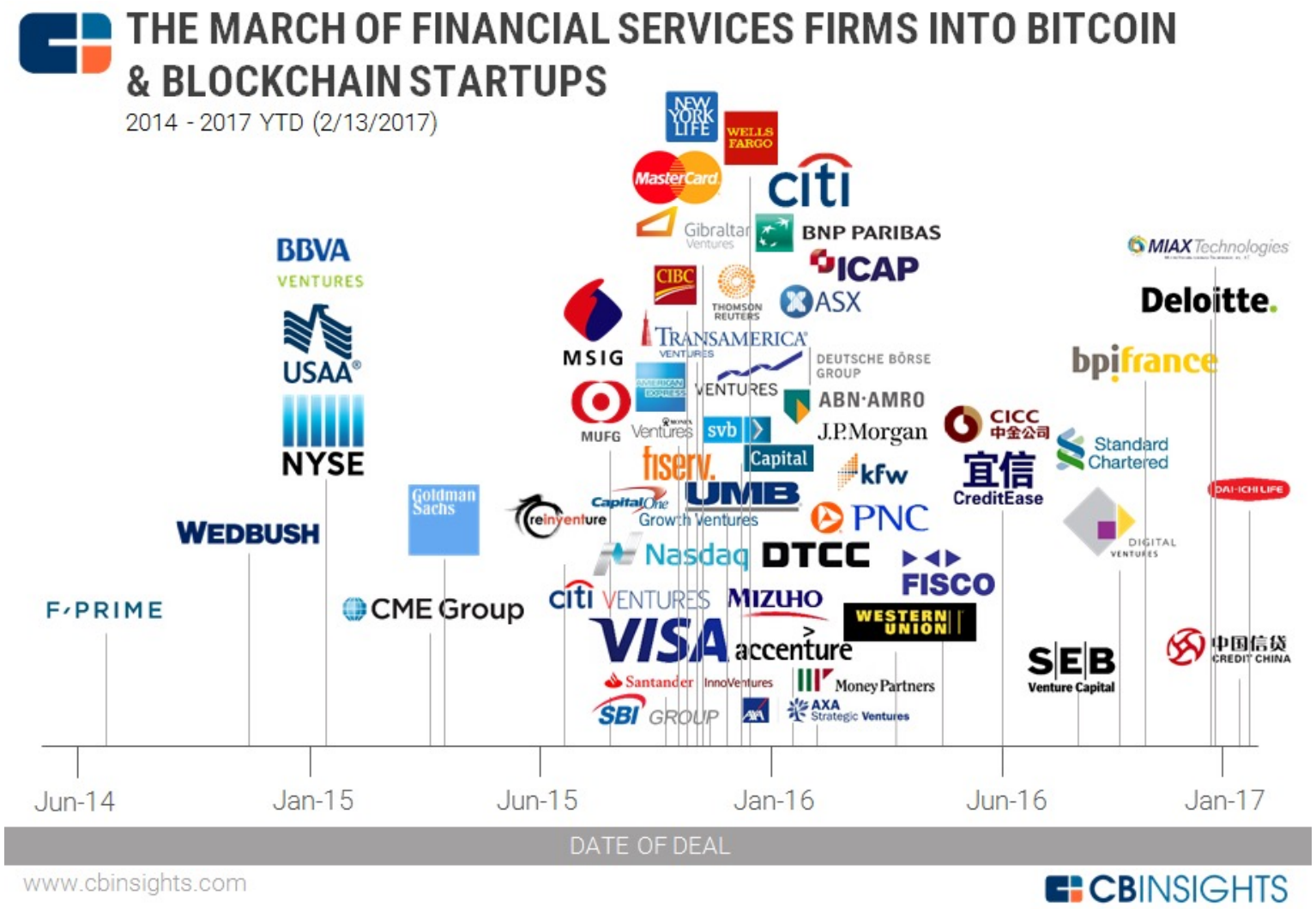
Acronym and original name.	Purpose and scope.	Expected effects.	Compliance Costs.
MiCA, Markets in Crypto Assets Regulation	Entities engaged in cryptoasset issuance, including stablecoins and services (CASPs). NFTs and DeFi mostly out of scope for now.	Clear stablecoin regulation except for payments. Strong controls for exchanges & custodians (CASPs).	High for CASPs and stablecoins. More clarity needed from Nat. Comp. Authorities.
TFR, Transfer of Funds Regulation	Implementation of FATF's travel rule. Impacts mostly exchanges & custodians (CASPs).	Share user information about crypto transfers. Screen such info for sanctions and do DD on CASPs.	High for CASPs, but not higher than what already are for the past years.
AMLR, Anti-Money Laundering Regulation	Harmonisation of EU's AML/CTF laws. Complement the TFR.	Close loopholes (e.g. crypto vs. cash payments). Establish new AML Authority and update AMLD.	High for CASPs, but not higher than what already are for the past years.
DLT Pilot Regime Regulation	Allow financial instruments to be traded on a blockchain under a sandbox (or DLT).	Up to six-years regulatory exemption from parts of MiFID, MiFIR, and CSDR for such projects.	None, although only closed blockchains can be used.
Data Act Regulation	Connected devices, IoT and "data sharing. Smart contracts used in this context.	Force IoT crypto devs to ensure smart contracts are robust, have a kill switch and respect a kind of GDPR.	If all goes well, inexistent. If our lobbying fails, it will only impact "vendors".
DORA, Digital Op. Resilience Act Regulation	Make finance more resilient. CASPs and some stablecoin issuers (ARTs).	Improve IT security of CASPs. Mitigate other operational and governance risks.	High for CASPs, but not higher than what already is given our industry's standards.
DAC8, 8th Directive on Admin. Cooperation	Cooperation between tax authorities. Implementation of OECD's crypto reporting rules.	Due-diligence and reporting of crypto transactions. Mitigate tax evasion in crypto across the EU.	Limited impact expected for CASPs unless they suffer from penalties for non-reporting.
Other ongoing initiatives	Product Liability Directive. Cyber Resilience Directive. European Blockchain Regulatory Sandbox.	Being expanded to include software products. Smart contracts devs could be liable for damages. EBSI-focused sandbox.	Will have more clarity once these mature. Free benefits for those which join the sandbox.

Source: New Economy, 2023

4. Institutional adoption of cryptoassets – state of the art.

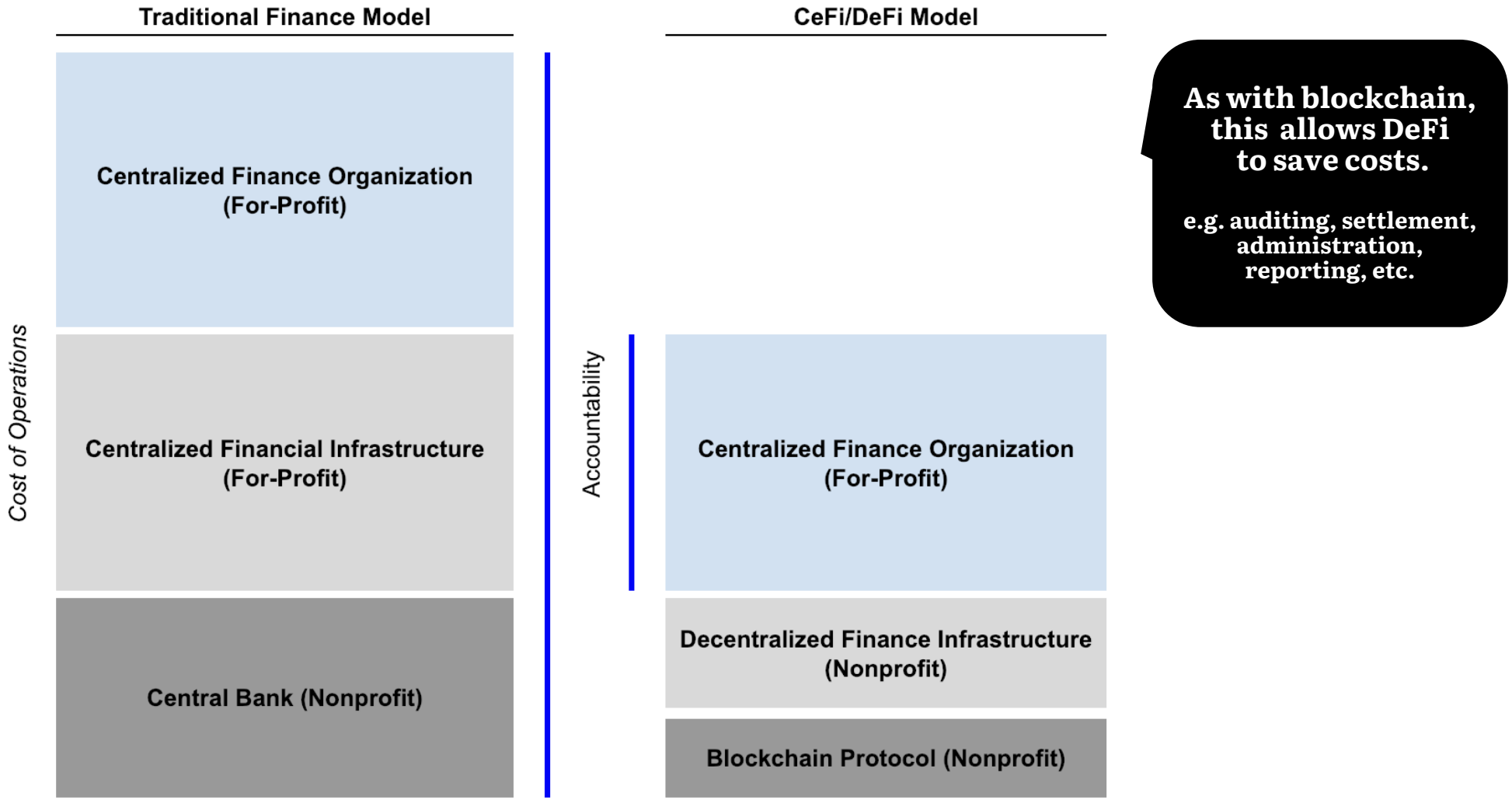
4.1. The first two waves of adoption.

Overall, traditional financial institutions started to adopt blockchain since 2015, but this was mostly innovation theatre.



Source: CB Insights

Still, it is true that main difference between TradFi and DeFi is that DeFi minimises the trust one needs to place on all intermediaries.



Source: Tanner Hoban. Note CeFi refers to FinTech or centralised blockchain apps

2021 marked an inflection point, with several institutions adopting crypto en force, from major tech companies to banks and funds.

2021 INSTITUTIONAL ADOPTION TIMELINE

January

- PayPal acquires Curv, a crypto custody firm
- Nasdaq-listed Marathon Patent Group buys $150 million worth of bitcoin as part of the company's treasury reserves
- Elon Musk adds #bitcoin to his Twitter bio

February

- Tesla begins accepting Bitcoin as payment
- Microstrategy 'Bitcoin for Corporations' Summit
- Tesla buys $11.5 billion in bitcoin
- Blackrock's Rick Rieder notes that they have started to dabble in bitcoin
- Microstrategy offers $1.05 billion million of convertible senior notes to buy more bitcoin

March

- BNY Mellon invests in crypto custody firm, Fireblocks
- Goldman Sachs restarts cryptocurrency desk
- Morgan Stanley announces access to three funds that provide bitcoin exposure for HNW clients
- Ontario Securities Commission approves Purpose Bitcoin ETF, the first Bitcoin ETF
- Square buys $170 million worth of bitcoin, representing 5% of the company's assets

April

- AXA, Swiss insurance giant, allows payment of bills in Bitcoin
- Venmo adds support for buying, selling and holding crypto
- WeWork starts accepting bitcoin as payment and will hold it on their balance sheet

May

- Goldman Sachs makes its first bitcoin derivatives trades
- Tesla announces they will no longer be accepting Bitcoin for payments due to energy usage concerns

June

- State Street announces its new digital finance division which will encompass cryptocurrency and blockchain activities
- BBVA launches Bitcoin trading and custody services in Switzerland
- Fiserv partners with NYDIG to offer bitcoin custody solutions for banks

July

- State Street partners with Lukka to provide crypto services to private-fund clients

August

- Visa and BlockFi partnerer to release the Bitcoin Rewards Credit Card to U.S. residents (excluding New York)
- Substack begins accepting bitcoin payments

September

October

- Proshares BTC futures ETF becomes first listed on the NYSE in the US
- Valkyrie bitcoin futures ETF begins trading in the US

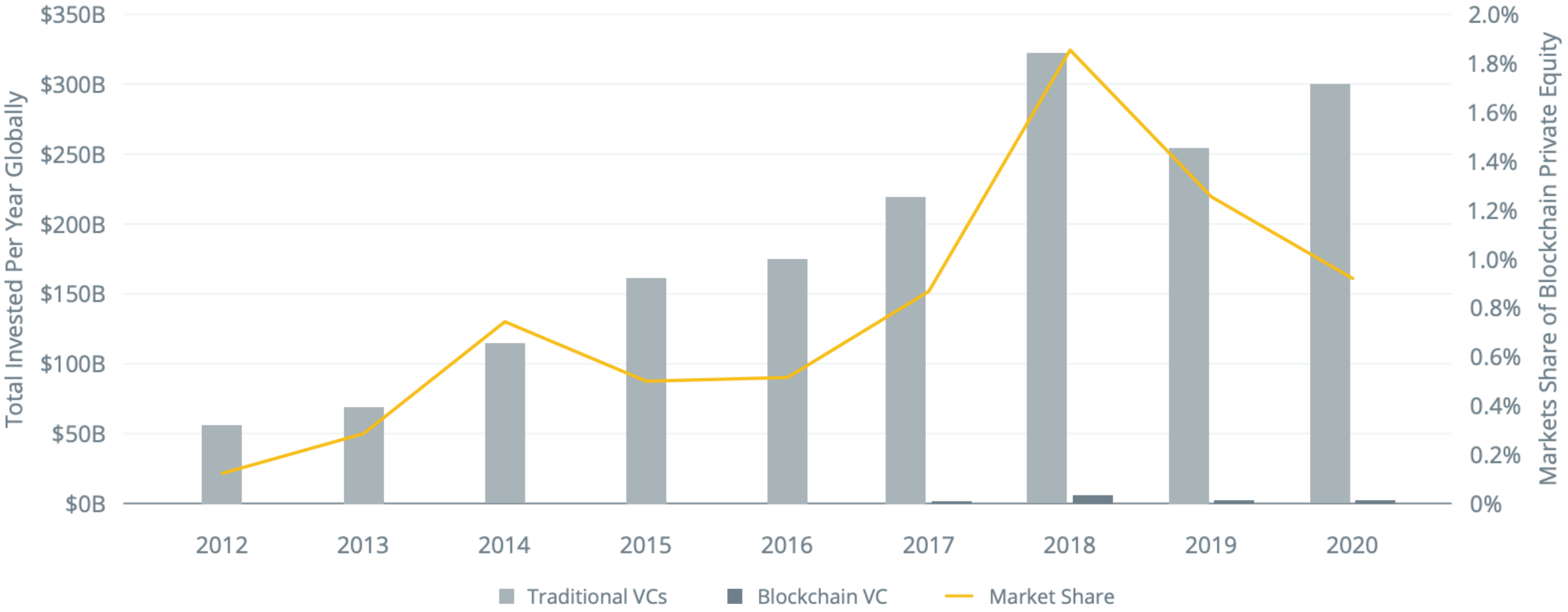
November

- VanEck bitcoin futures ETF begins trading in the US
- Citi hires a head of digital assets and commits to hiring a 100-perosn team

As of April 2022, MicroStrategy now holds 129,218 bitcoins, worth roughly $6 billion.

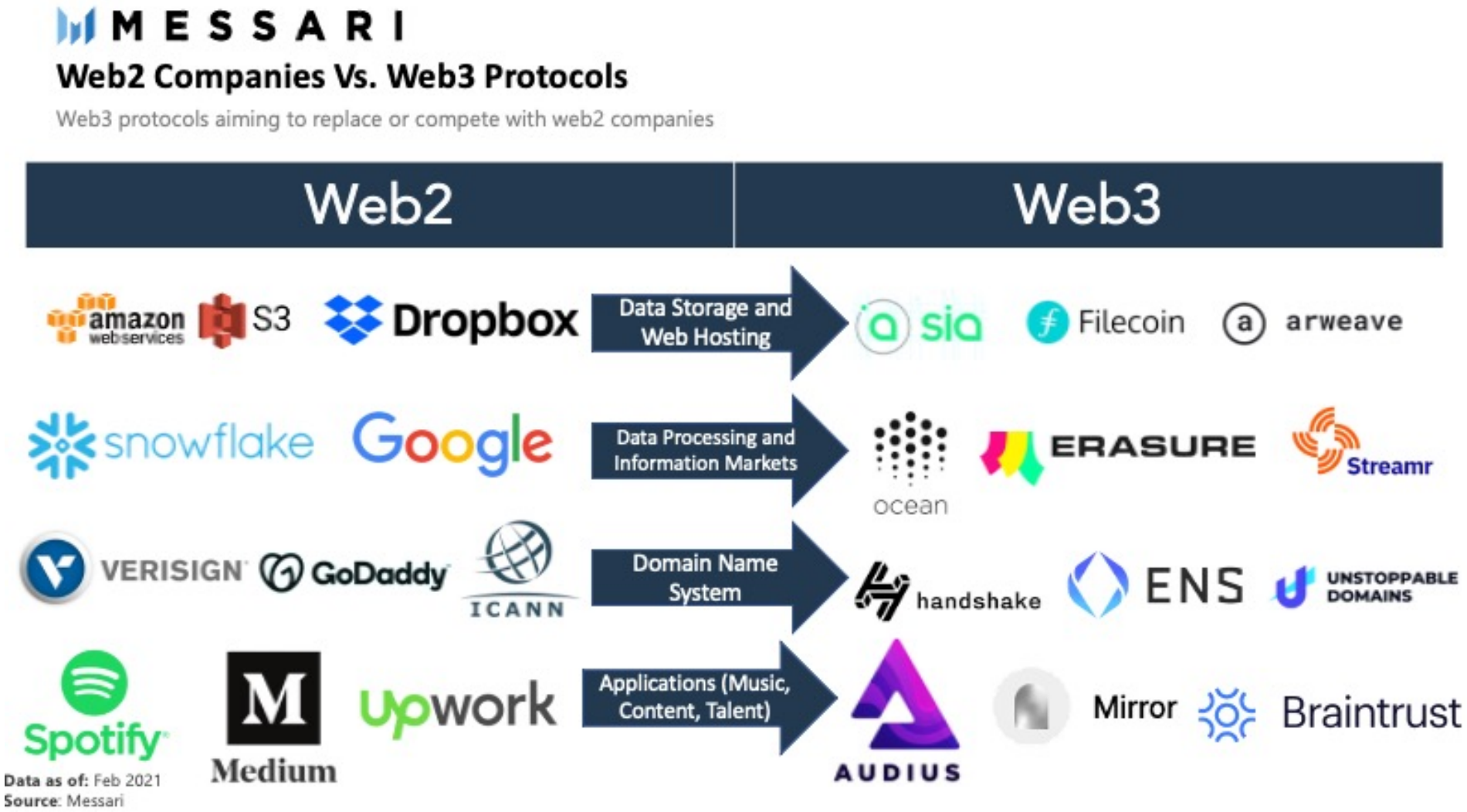
Source: The Block Research

In any case, this new economy is still largely untapped by traditional VCs, accounting for just 1% of the global VC market cap by 2020.



Source: Crunchbase News , Blockchain Capital, Cointelegraph Research

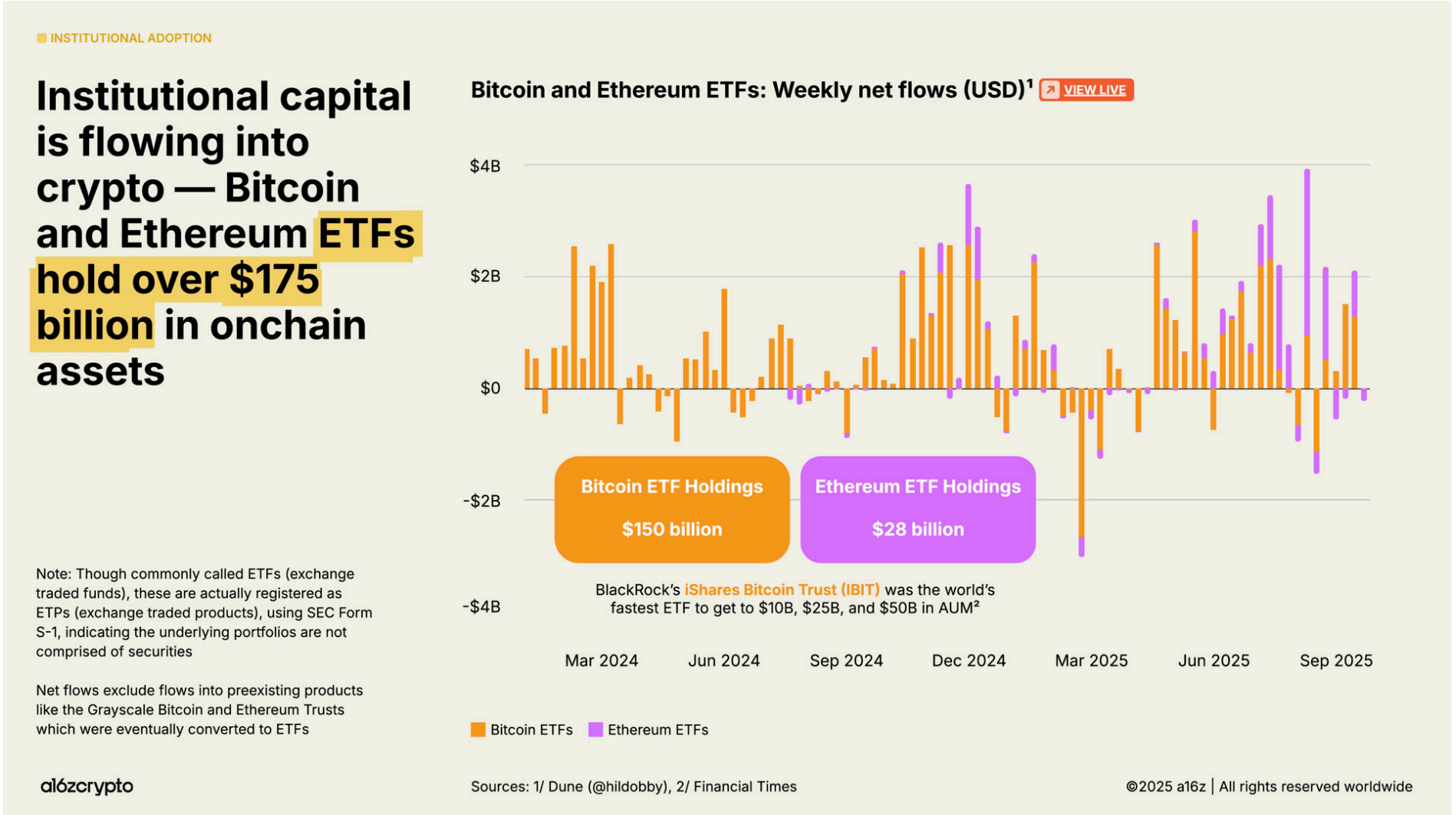
That changed slightly since 2020, with Web3 being all that US-based VCs talked about, at least before AI stole the show.



Source: a16z, Messari

4.2. What smart companies are doing in this third wave.

In January 2024, the first Bitcoin ETF was finally approved, unleashing the third wave of institutional crypto adoption.

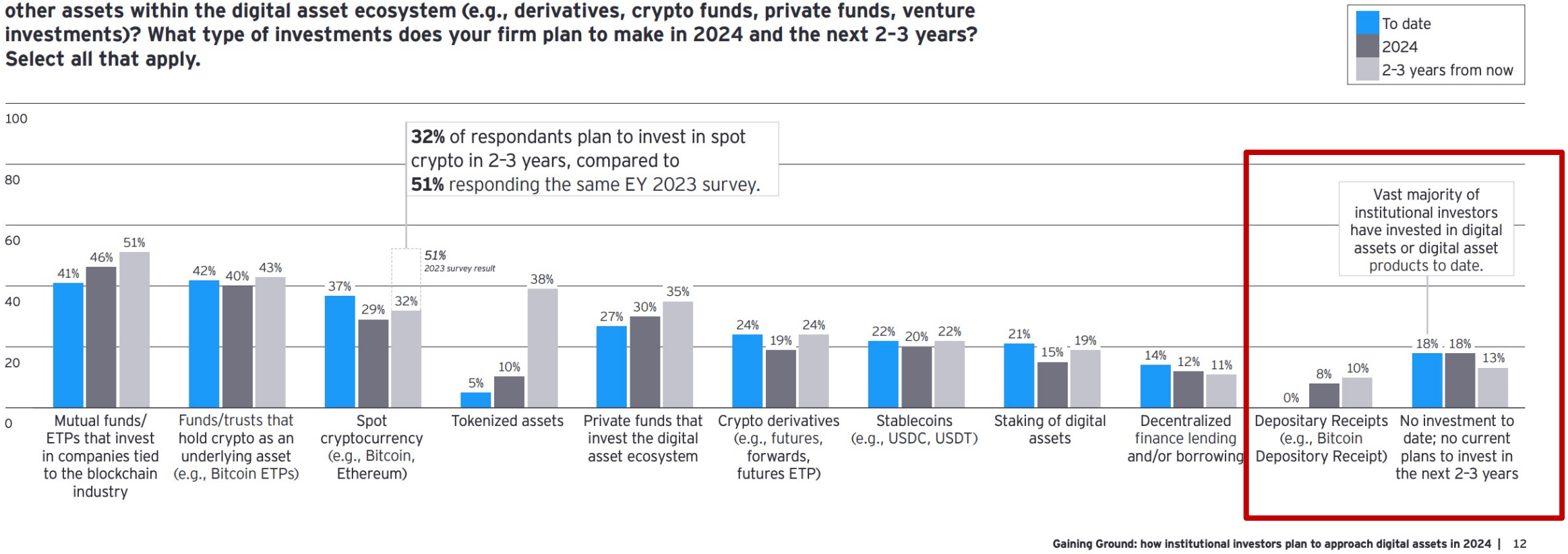


Source: a16zcrypto, 2025

By the end of 2024, ~80% of global institutional investors were already exposed to various forms of cryptoassets, including tokenized assets.

Q:

Has your firm made an investment in any cryptocurrency (e.g., Bitcoin, Ethereum) and/or invested in other assets within the digital asset ecosystem (e.g., derivatives, crypto funds, private funds, venture investments)? What type of investments does your firm plan to make in 2024 and the next 2-3 years? Select all that apply.



Gaining Ground: how institutional investors plan to approach digital assets in 2024 | 12

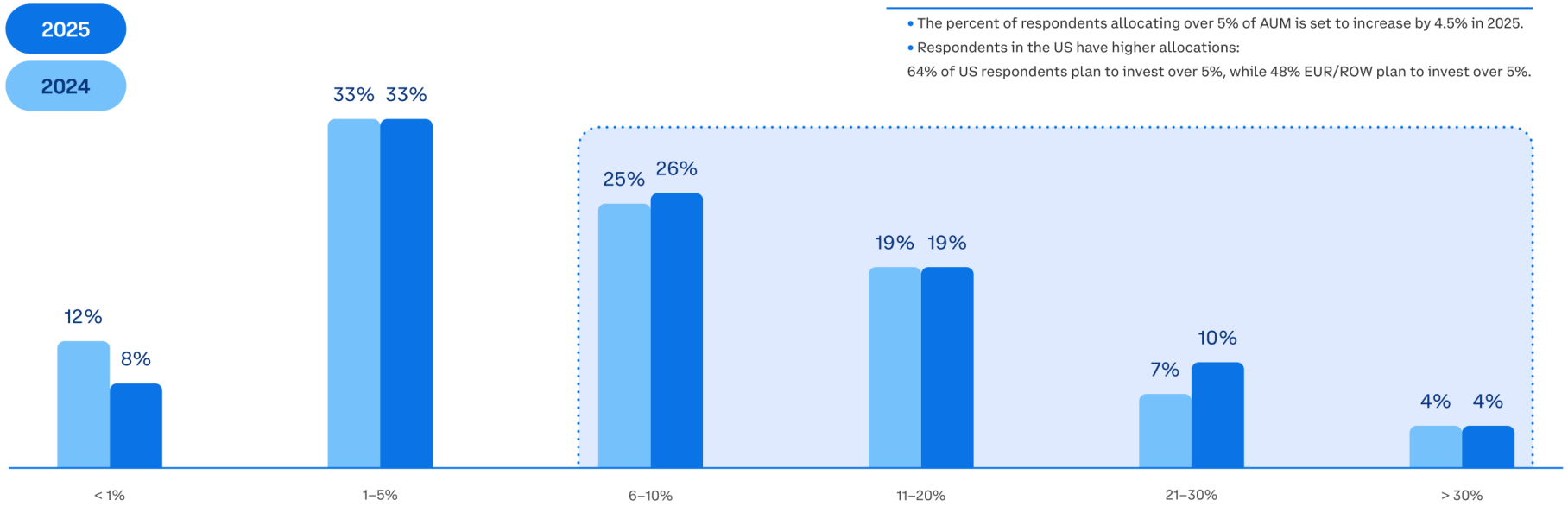
Source: EY, 2024,

While initially most of these institutions had small allocations to crypto, in 2025 these investors are planning higher allocations.

Investment use cases

In 2025, 59% of respondents plan to allocate over 5% of their AUM to cryptocurrencies

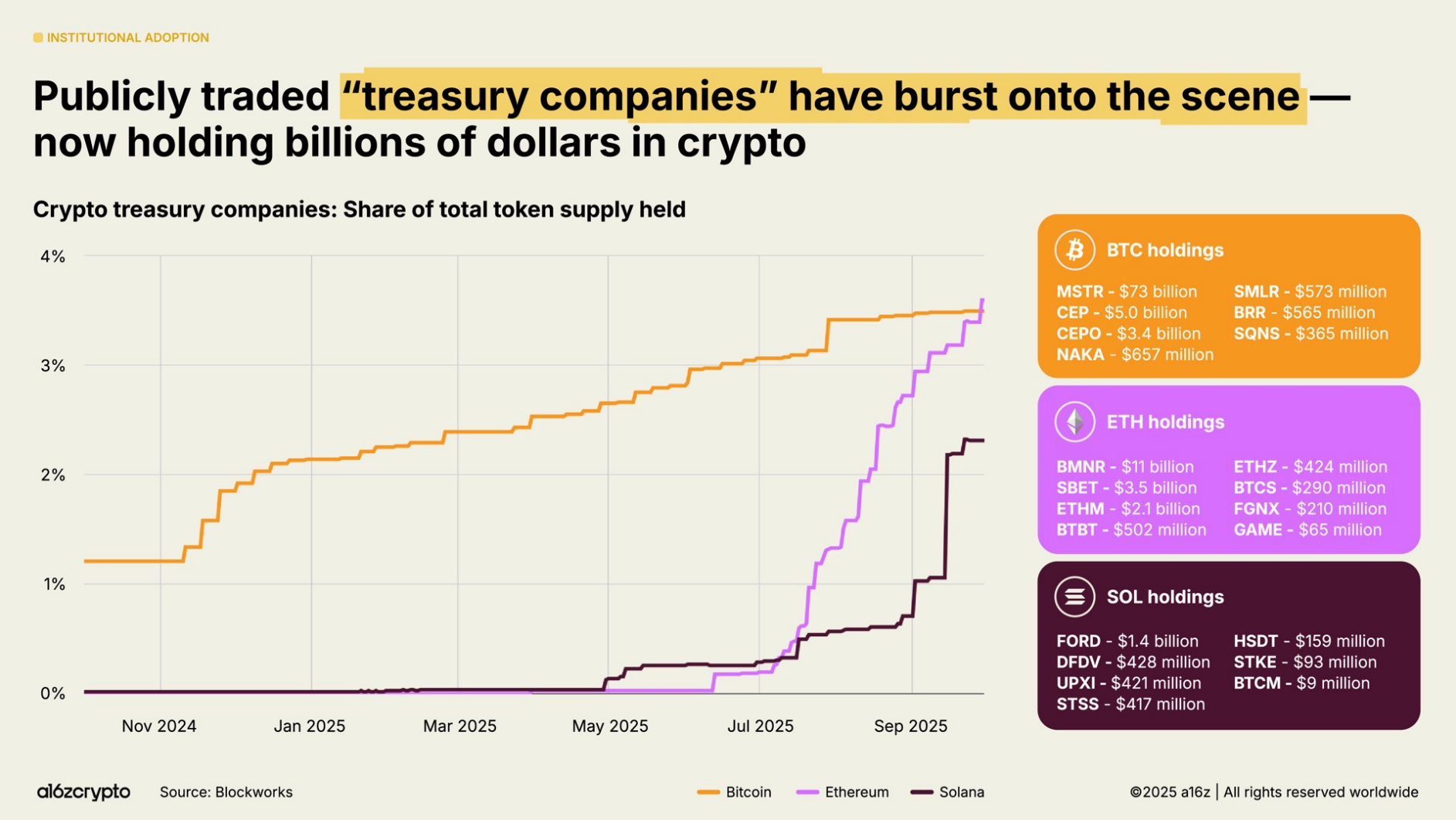
What percentage of assets under management did your firm / does your firm plan to allocate to cryptocurrencies, digital assets, or related crypto funds / products in 2024–2025? [n=345][1]



[1] Answer choice "Not sure / Cannot discuss" is excluded from this chart
Source: Coinbase & EY-Parthenon Institutional Investor Digital Assets Survey, Jan 2025

EY Parthenon coinbase

And DATs, or Digital Asset Treasury publicly traded companies, now hold ~4% of the bitcoin and ether circulating supply.

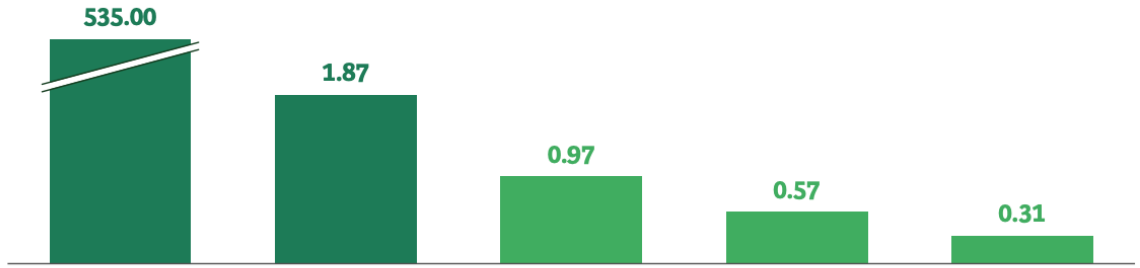


Source: a16zcrypto, 2025

Apart from pure treasury plays, which started with Microstrategy in 2021, institutions have started to chase stablecoins investments.

Exhibit 5 - Stablecoin issuers are delivering remarkable revenue per employee vs banking incumbents

Revenue per employee ($M, 2024)



	Tether	Circle	BlackRock	JPMorganChase	HSBC
Revenue ($M)	53,500	1,700	20,400	177,600	65,900
Operating Profit ($M)	13,000	160	6,400	58,500	32,300
Employees	~100	~900	~21,000	~310,000	~211,000
Founded	2014	2013	1988	1871	1865

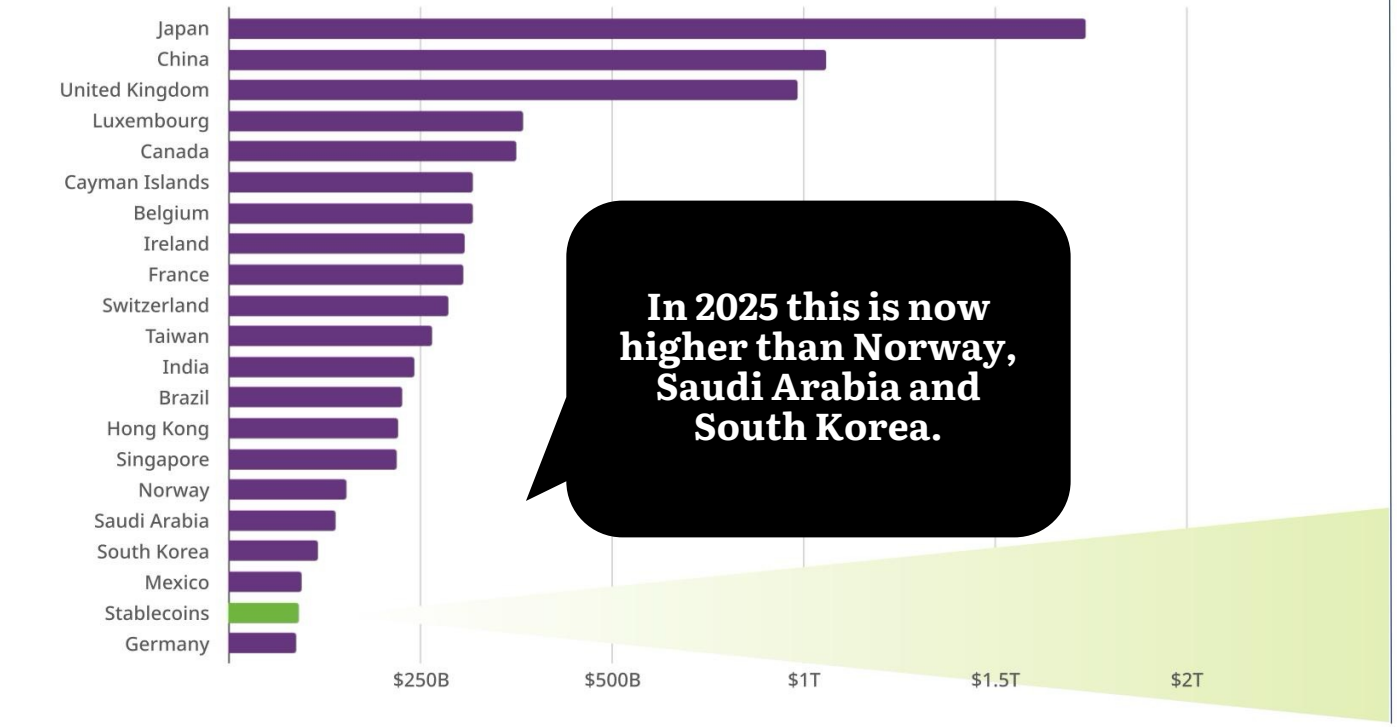
Stablecoin issuer Banking incumbents

Source: BCG, 2015

Stablecoins are all the rage right now, as they unlock real utility for users around the world. But one must be careful with all the hype.

Stablecoins are only a decade old — now they're a Top 20 and rising holder of U.S. debt

Stablecoins compared to major foreign holders of U.S. Treasury securities



Tether

$81 billion held in U.S. Treasuries

Launched in 2014

USDC

$11 billion held in U.S. Treasuries

Launched in 2018

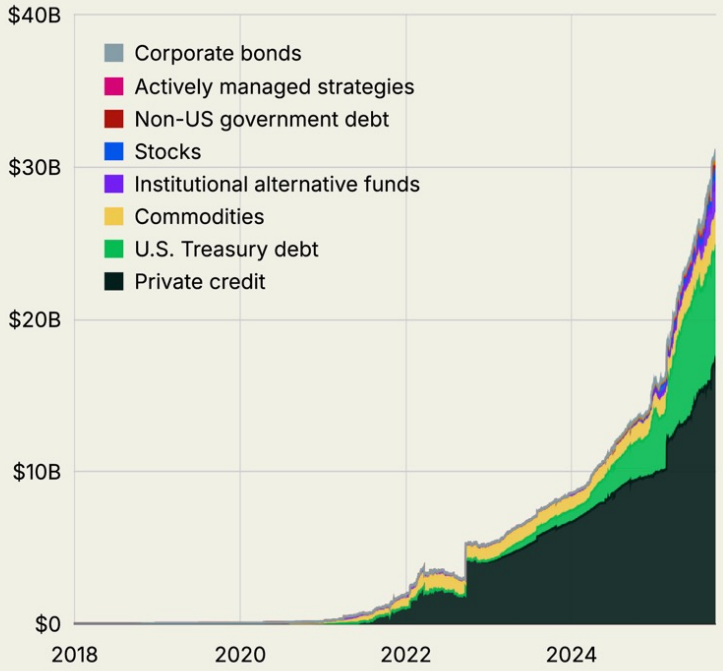
Source: a16zcrypto, 2024

Lastly, the next frontier is tokenisation of "real-world assets", with the promise of unlocking liquidity and democratising access.

APPLICATIONS

Real-world assets are bridging traditional finance and crypto, with $30 billion already onchain

Total Real-World Asset (RWA) value



Top RWA blockchains

Network	RWA Count	Total Value
Ethereum	431	$9,655.0M
ZKsync Era	41	$2,454.3M
Polygon	272	$1,139.2M
Arbitrum	110	$919.3M
Avalanche	40	$742.9M
Aptos	14	$720.1M
Solana	83	$673.2M
BNB Chain	3	$519.7M
Stellar	20	$504.5M
XRP Ledger	11	$360.8M

Top RWA issuers

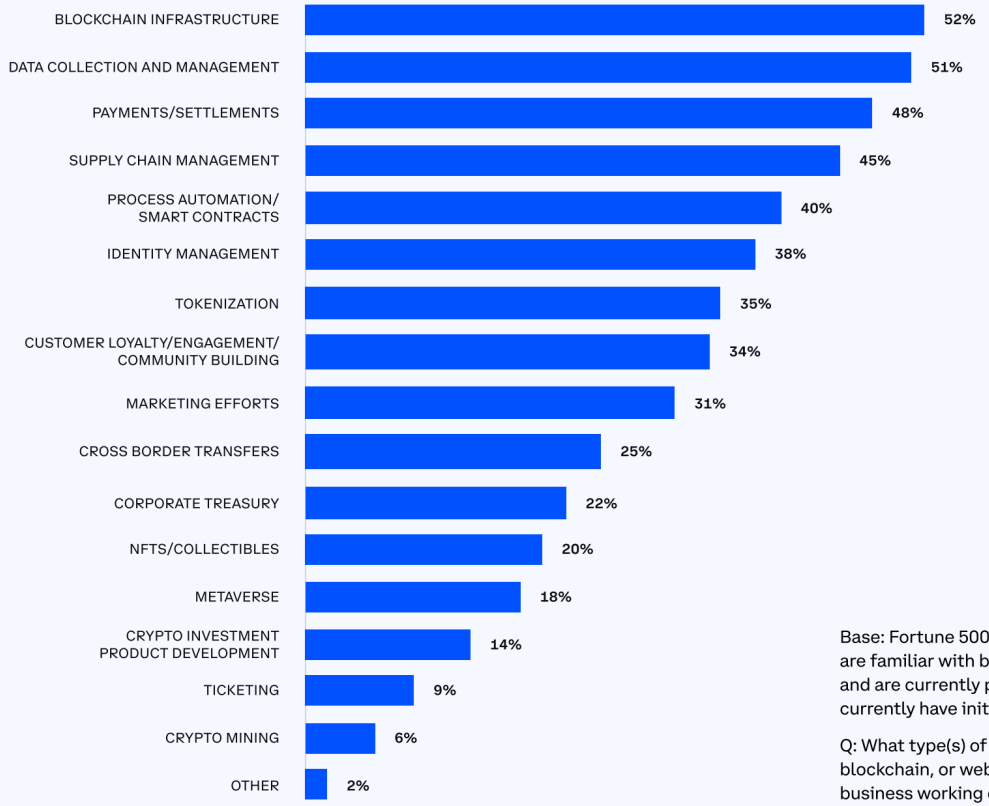
Network	Total Value
BlackRock	$2,640.3M
Anemoy	$1,135.2M
Paxos	$1,134.0M
Tether Holdings	$944.0M
Exodus	$787.1M
Ondo I	$728.7M
Franklin Templeton	$717.5M
Superstate	$705.3M
Ondo USDY	$689.5M
ChinaAMC	$663.8M

a16zcrypto Source: rwa.xyz (excludes stablecoins) as of 9/30/2025. Data may vary by source and methodology across data providers.

Source: a16zcrypto, 2024

Yet, enterprise CEOs are still experimenting with other use cases beyond the more obvious ones we've just covered.

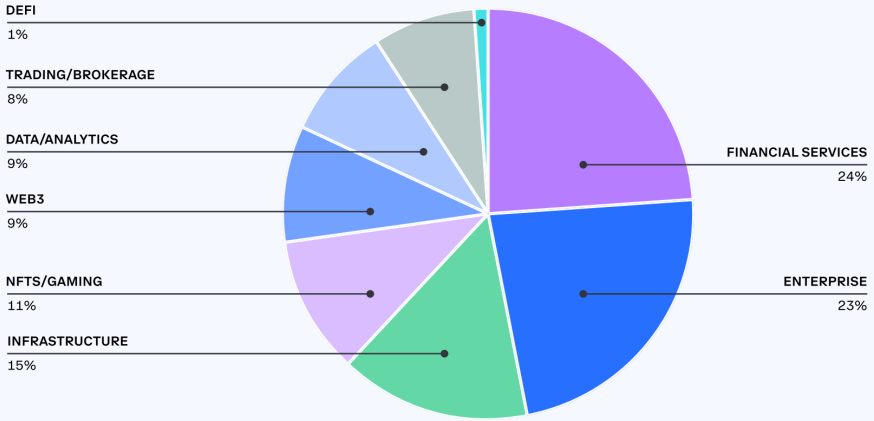
Use Cases of Current and Planned Crypto, Blockchain, and Web3 Initiatives among Fortune 500 Executives



Base: Fortune 500 executives who are familiar with blockchain or crypto and are currently planning or currently have initiatives or projects

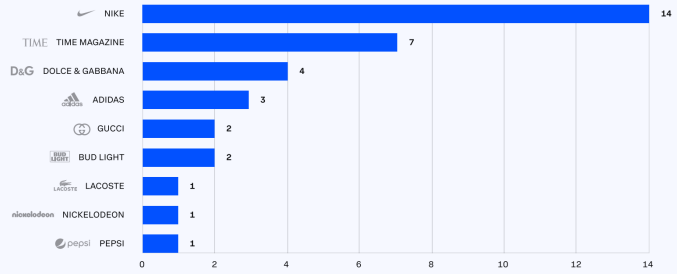
Q: What type(s) of cryptocurrency, blockchain, or web3 project(s) is your business working on or considering?

Fortune 100 Companies: Investments by Category



Source: The Block Pro Research, 2023

Total NFT Collections Released by Major Company



Source: The Block Pro Research, 2023

Source: Coinbase, 2024

5. Additional corporate crypto strategy considerations.

5.1. Some notes for future corporate crypto experiments.

Investing in most cryptoassets is very much like VC investing, as few projects have traditional cash flows. But there are metrics and data.

EVALUATING GROWTH

Application Universe:
Time stamped data, payments, distributed compute, data storage, and more

Killer App
Store of Value

Network
Miners and Full Nodes

Protocol
Bitcoin

This framework can be used with any major cryptoasset.

IMPERFECT METRICS

Application Layer

- Number of active users
- Revenue / profit per user
- On-chain transaction value and volume
- Capital raised

Store of Value (Bitcoin)

- Bitcoin price
- % of supply mined
- On-chain transaction value and volume

Network Layer

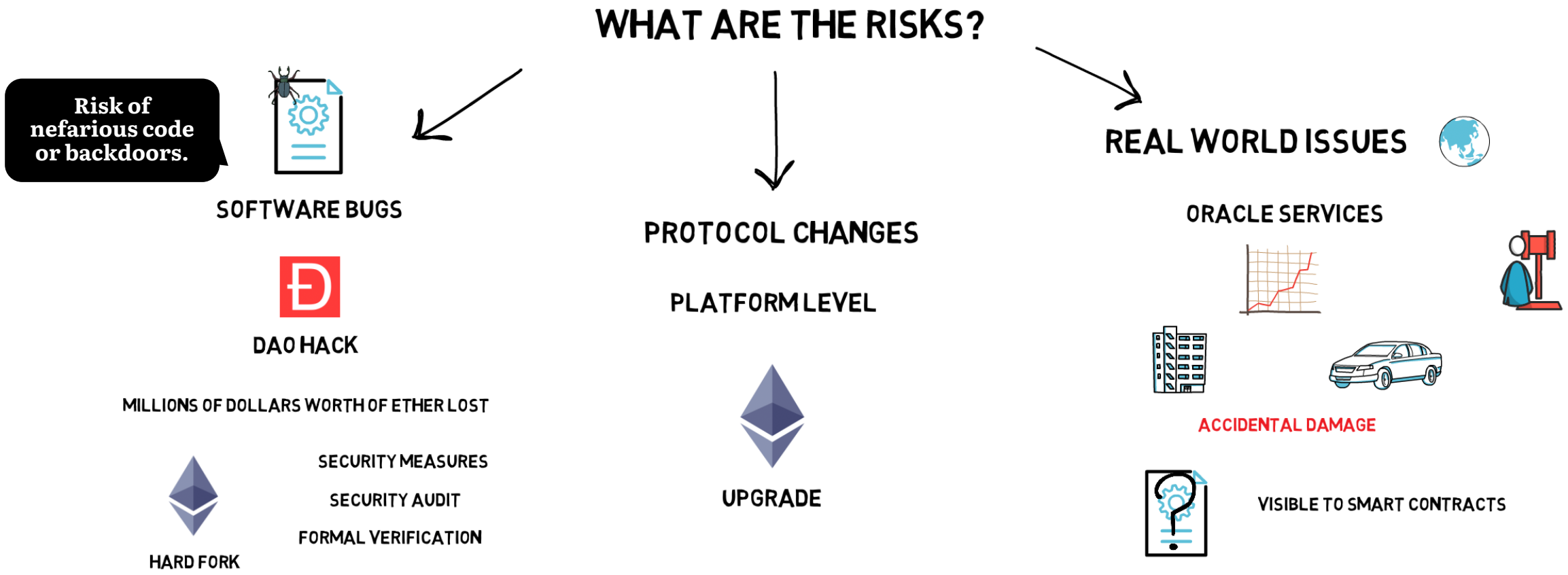
- Total hash rate
- Number of full nodes
- Miner concentration
- Mining profitability

Protocol

- Number of developers
- Number of pull requests
- Number of commits
- Number of Git participants / core devs

Source: CoinShares

Naturally, there are risks associated with using blockchain and smart contracts, which are especially prevalent at this early stage.



Source: Finematics

And note that any corporate blockchain use case should share several of these characteristics in order to warrant further study.

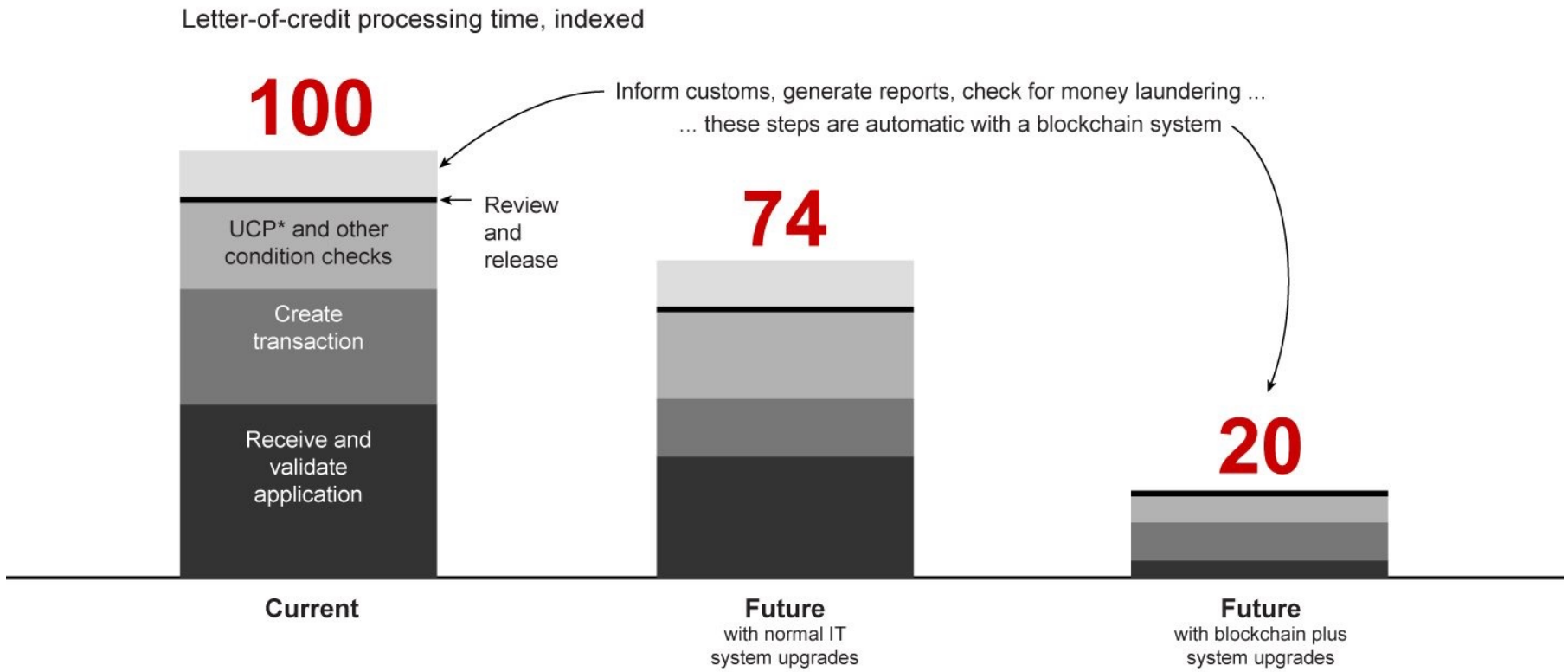
Shared repository	**A shared repository** of information is used by multiple parties
Multiple writers	**More than one entity** generates transactions that require modifications to the shared repository
Minimal trust	A level of **mistrust exists between entities** that generate transactions
Intermediaries	**One (or multiple) intermediary** or a central gatekeeper is present to enforce trust
Transaction dependencies	Interaction **or dependency between transactions** is created by different entities

Is present but there's the opportunity to remove it.

Source: World Economic Forum, Catherine Mulligan

Still, it's clear that the most mature blockchain use cases, often within the financial sector, offer massive productivity gains.

Automation through blockchain could reduce letter-of-credit processing time by 80%

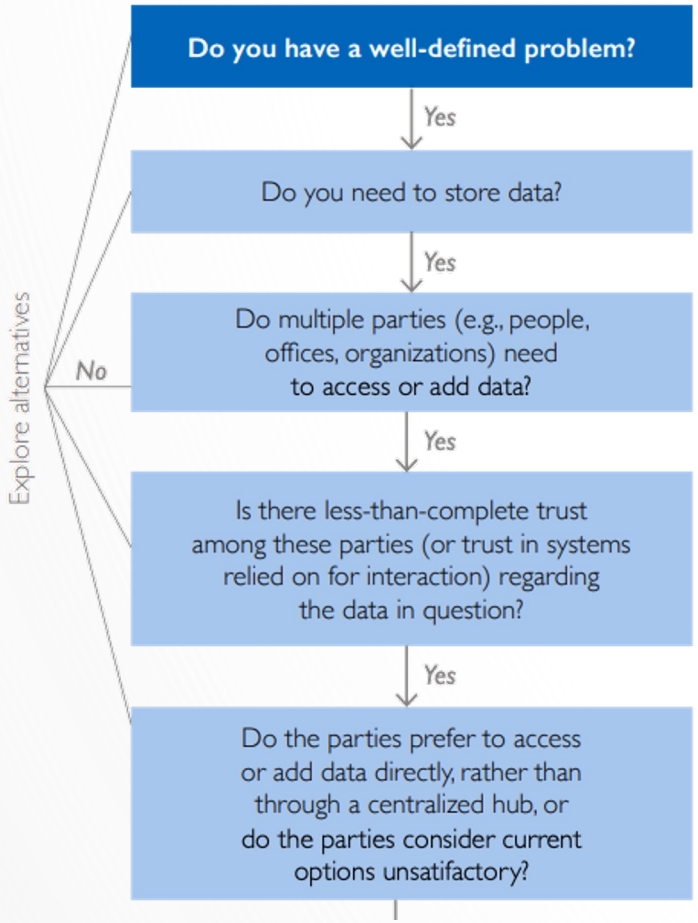


*Uniform Customs and Practice for Documentary Credits
Sources: Bain & Company; HSBC

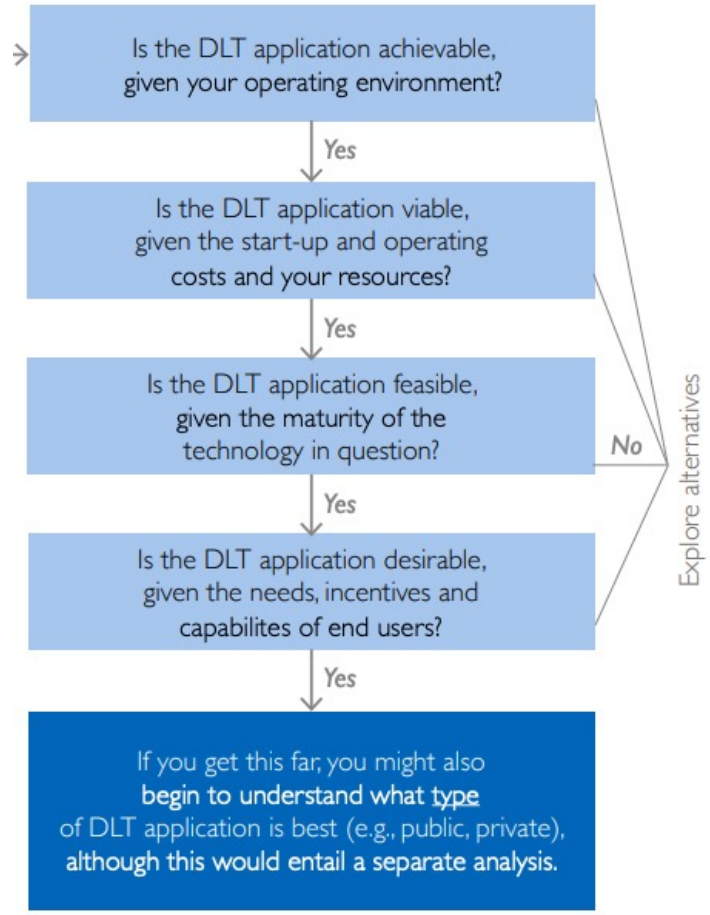
Source: Bain & Co., 2018

To sum up, it's all about assessing the relevance and appropriateness of implementing a given blockchain to solve a particular problem.

Is a blockchain relevant?

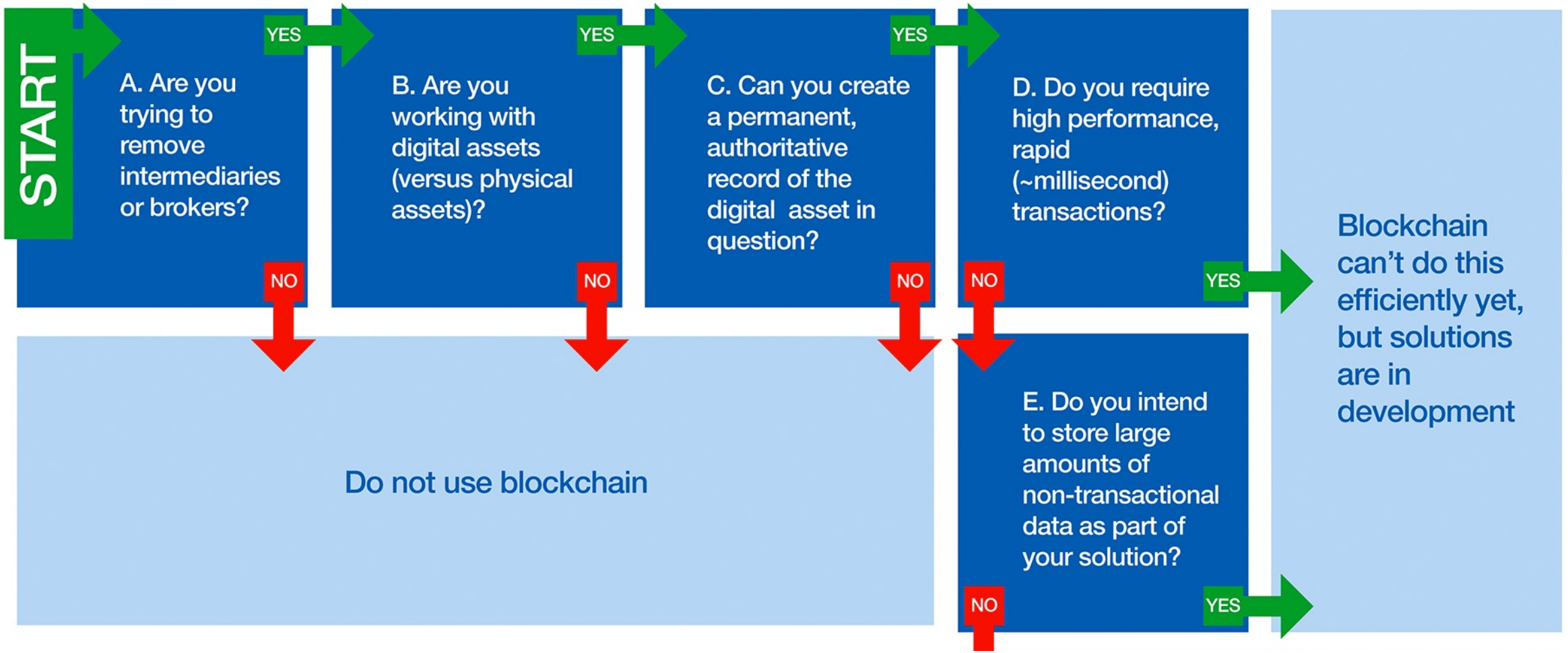


Is a blockchain suitable?



Source: Gideon Greenspan, ETH Zurich, IEEE Spectrum, IDS

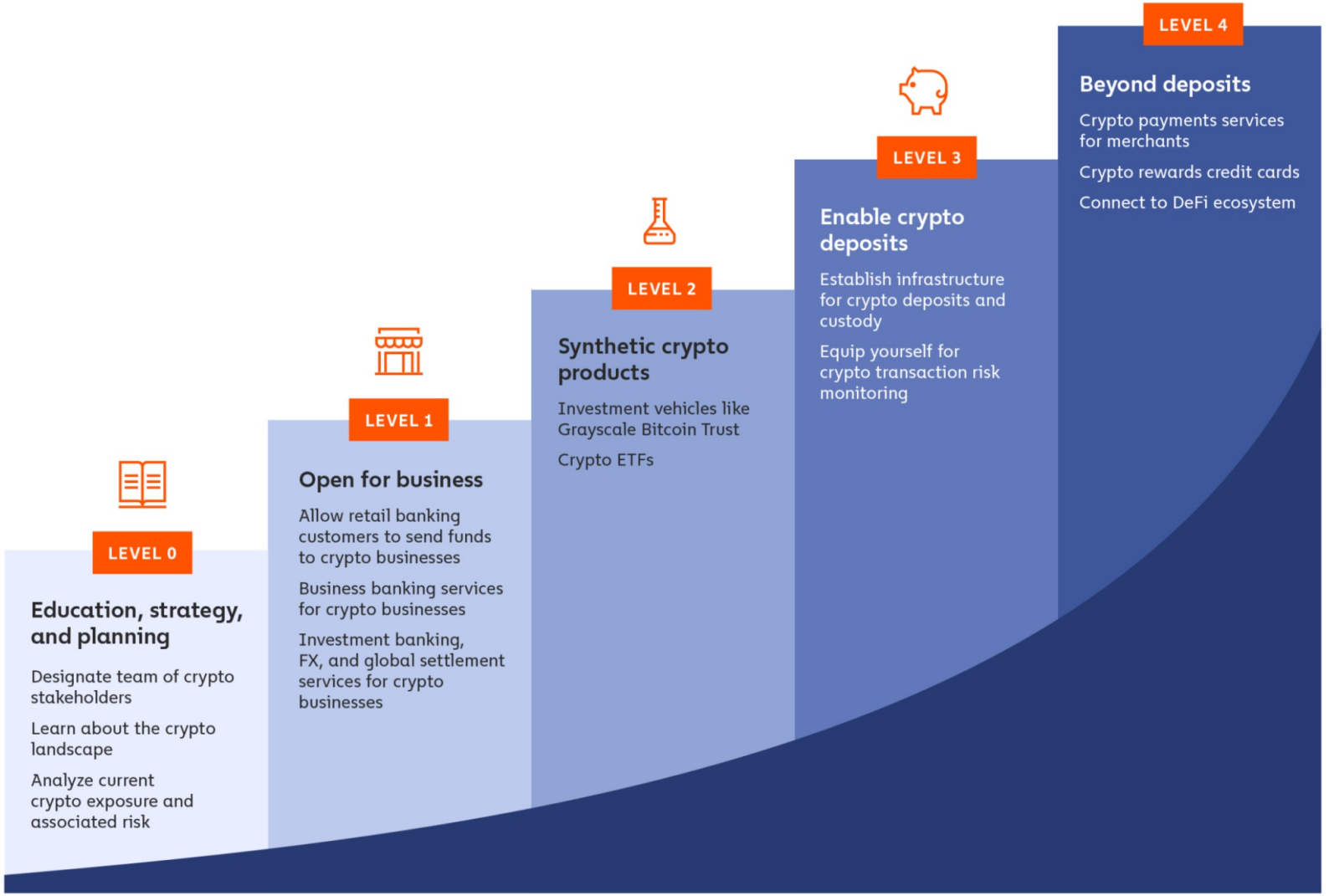
All-in-all, we can't forget that blockchains are just databases, so one must learn how to separate the hyped wheat from the chaff.



Source: World Economic Forum, Catherine Mulligan

5.2. What smart companies should be doing with crypto.

Smart companies should do what they can based on how mature is their organization and its needs regarding blockchain and crypto.



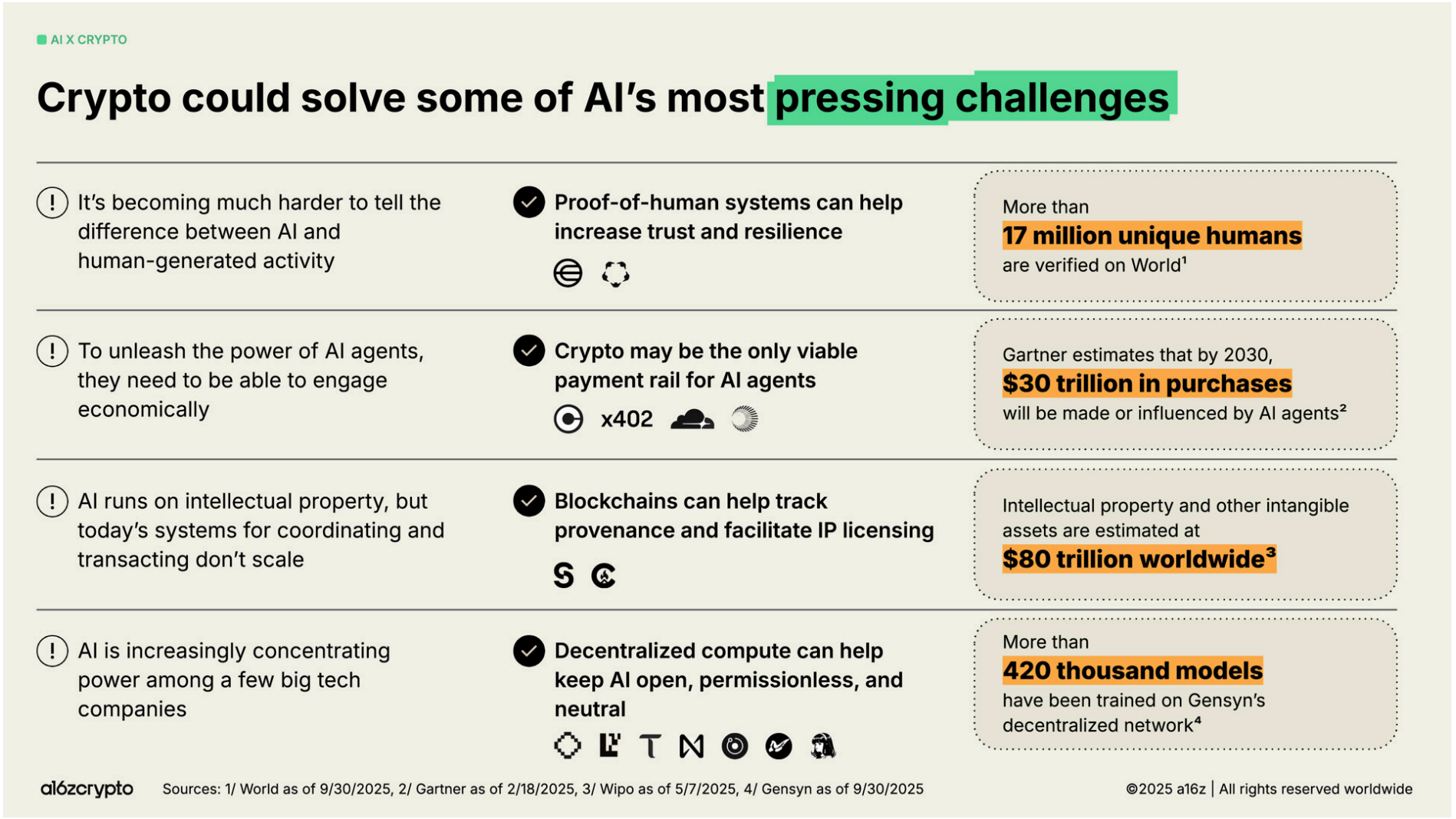
Levels 3 and 4 are only applicable to financial institutions.

But for everyone else we can think of Level 3 as enabling crypto integrations, e.g. tokenisation and web3 hooks (loyalty, token-gated content, automated financial workflows).

And Level 4 is about deeper integrations with DeFi, e.g. onchain factory and credit, and building native crypto offerings.

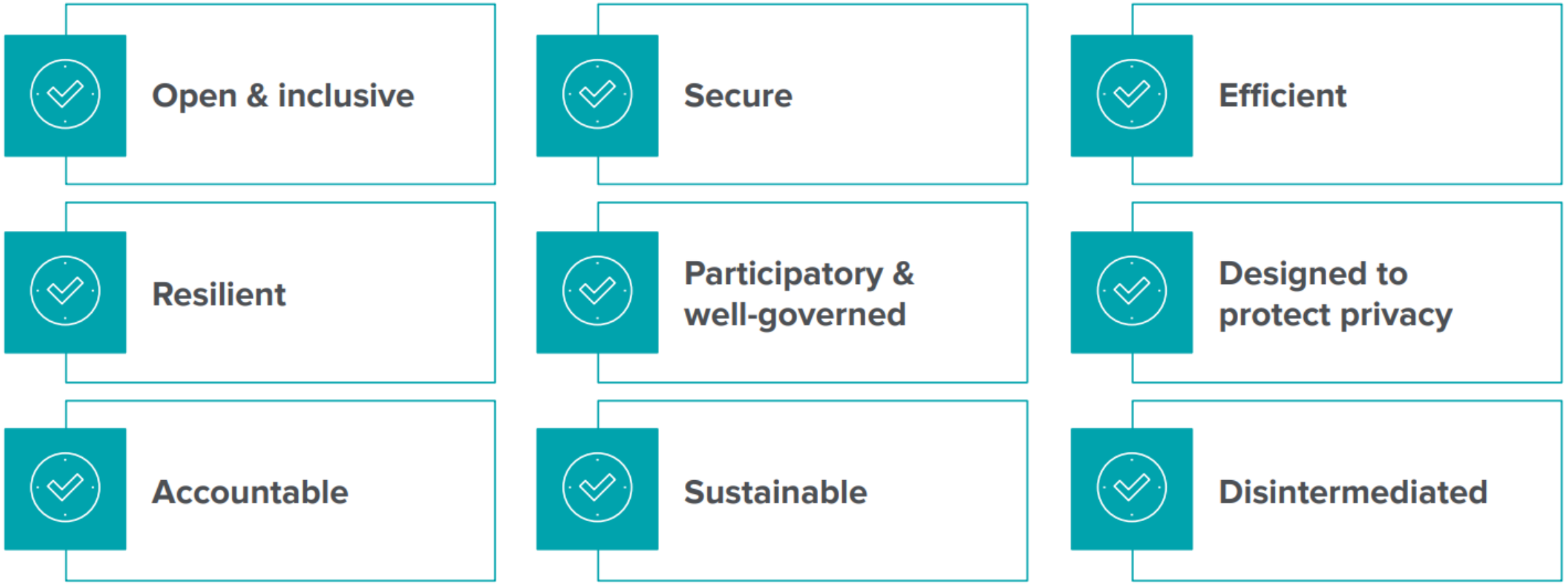
Source: Chainalysis, 2024

And as AI slop slowly erodes the world, any AI company should rely on blockchain and crypto to try to address its shortcomings.



Source: a16zcrypto, 2025

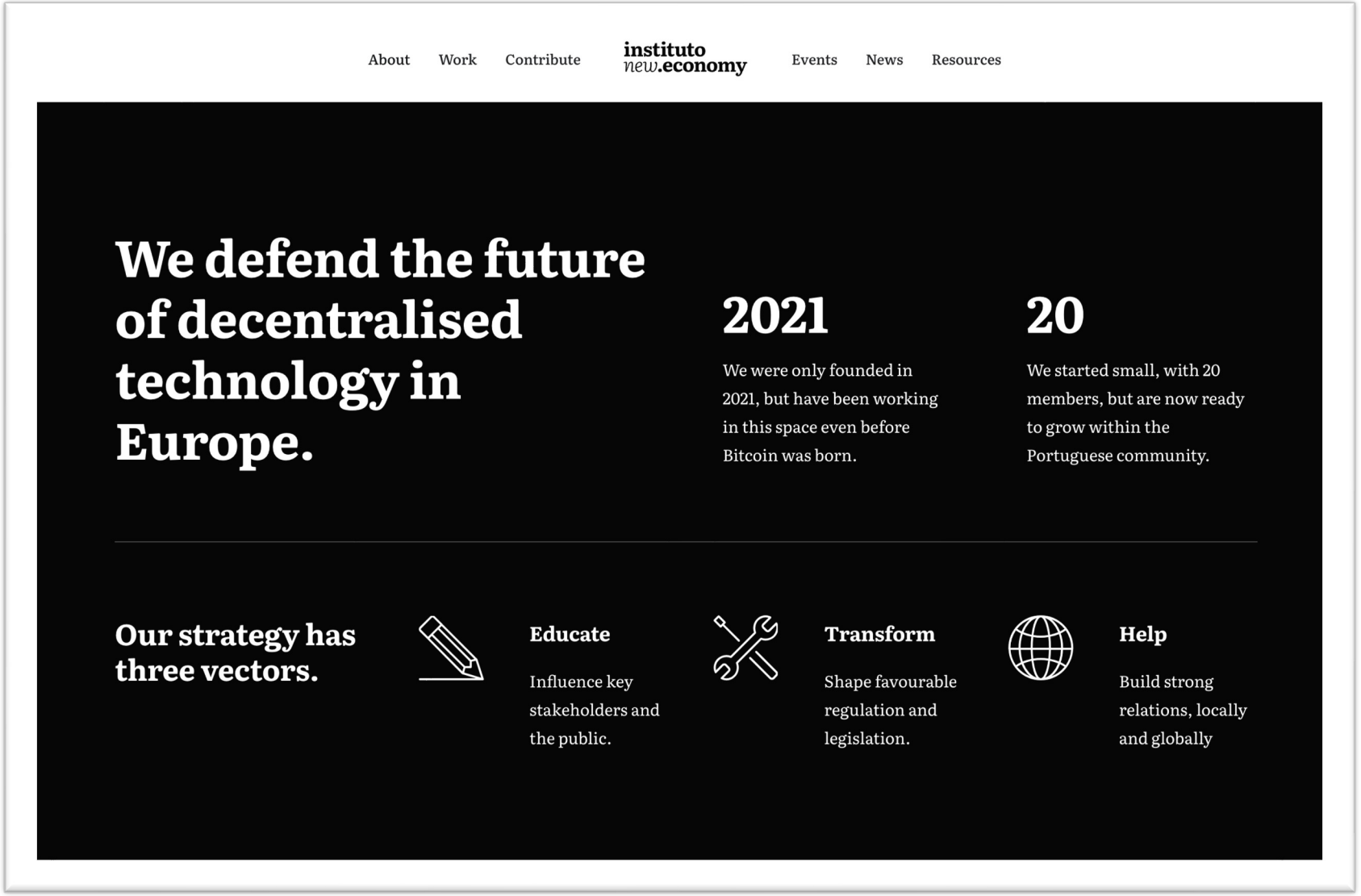
Lastly, smart companies should only want to engage with crypto if they're motivated to solve problems instead of serving monopolies.



Source: a16z

Thank you. It’s time for some final Q&A!

See you soon. Meanwhile, you can learn more about our work and become a member through our website.



neweconomy.institute

Pelo desenvolvimento da cripto economia em Portugal.

Nascida da colaboração emergente entre as várias associações deste sector, a FACE tem como objectivo a promoção e desenvolvimento da cripto economia em Portugal, quer através de apoio na ação legislativa, quer através do esclarecimento e formação sobre a cripto economia e a tecnologia blockchain no seu todo.

Vivemos um momento crucial e de crescente ímpeto regulatório do sector, em particular em Portugal sob liderança da Europa. É por isso importante garantir que quaisquer políticas públicas sejam ponderadas de forma a elevar o impacto económico e potencial transformador que esta tecnologia já está a ter no nosso país.

fac3.pt

P.S. Here’s a guide to making your first cryptic plays.

Because you won't find gems on Coinbase these days.

Educational resources.

- Security guides – link
- Legit news sources – link
- Two great podcasts – link
- a16z's crypto cannon – link
- Good overview of Bitcoin – link
- Valuation of DeFi protocols – link
- Crypto valuation frameworks – link
- Token metrics you should know – link
- Some advanced VC tips from a friend - link

Hands-on deep-dive.

- Start by using the Brave browser – link
- Consider investing on (or joining) a DAO – link
- Buy your first speculative NFTs on Solana – link
- Buy your first meme token on a Solana DEX – link
- Go deep by using these DeFi and Web3 dapps – link
- Supply liquidity to a token pool pair on a DEX – link
- See how play-to-earn games generate revenue – link
- Fall down the rabbit hole of DeFi yield farming - link
- Take a chance at potentially lucrative airdrops – link

P.S.S. Additional context in case you're even more curious.

Executive summary.

1. **An introduction to blockchain and crypto**
2. **An overview of crypto in Portugal and beyond.**
3. **The new crypto regulations impacting Europe.**
4. **The state of the art in institutional adoption of cryptoassets.**
5. **Additional corporate crypto strategy considerations.**
6. **Questions and answers and resources.**
7. **Additional context in case you're even more curious.**

- Some additional background on **blockchains** and **Bitcoin.**
- Some additional background on **transactions** and **mining**.
- Some additional background on the **different cryptoassets**.
- Some additional background on **Decentralised Finance** and **web3**.
- Some additional background on **institutional exposure** to **crypto**.

Some additional background on blockchains and Bitcoin.

Bitcoin was the first prominent implementation of a blockchain, even if the history of the this technology goes back to the early 1990s.

One can say blockchain was first ideated at an offshoot of the innovative Bell Labs.

Bellcore battles electronic fraud with 'time-stamp' for documents

Tuesday, November 20, 1990

Photo by Bob Ono

Stuart Haber, left, and partner Scott Stornetta discuss their 'time-stamp' for electronic documents, which they developed in the Bellcore Research Laboratory in Morristown

Cryptographers toyed with the concept for years until "Satoshi" put it all together.

1991 – Haber & Stornetta described a system of time-stamping digital documents

1992 – Bayer, Haber, & Stornetta incorporated Merkle (hash) trees in the design

1996 – Anderson wrote about a decentralized storage system that was unable to delete any updates to it

1998 – Scheier & Kelsey detailed a method to make computer logs unreadable and prevent them from being tampered with, using cryptography

2002 – Mazieres & Shasha proposed a proto-blockchain (file system with decentralized trust)

2005 – Szabo created a simplified blockchain

2008 – 'Satoshi' conceptualized first blockchain in his seminal paper, to serve as the public transaction ledger of the cryptocurrency Bitcoin (based on algorithms and distributed database)

2009 – Bitcoin was offered up to the open source community

Source: Star Ledger, 1990; Fortune

And what's a blockchain after all? To begin, Satoshi didn't use the word in Bitcoin's whitepaper, although block and chain occur often.

block

67 times

chain

28 times

Source: Bitcoin: A Peer-to-Peer Electronic Cash System, 2008.

However, in a 2009 email, Satoshi suggested that “block chain” was a better name for the distributed ledger that underlies Bitcoin.

Satoshi Nakamoto <satoshin@gmx.com> Mon, Apr 13, 2009 at 11:00 PM
To: Mike Hearn <mike@plan99.net>

> Mike Hearn wrote:
> > My best guess - it
> > is the length of the global chain, and the rapid advance at the start
> > is as the software downloads and verifies the preceding blocks in the
> > chain as being valid.

Right. I'm trying to think of more clear wording for that, maybe "%d network blocks" or "%d block chain".

Curiously, Hal Finney, another crypto pioneer who some believe to be Satoshi or part of the Satoshi collective, also used “block chain” in an email from 2008.

Cryptography Mailing List

Bitcoin P2P e-cash paper

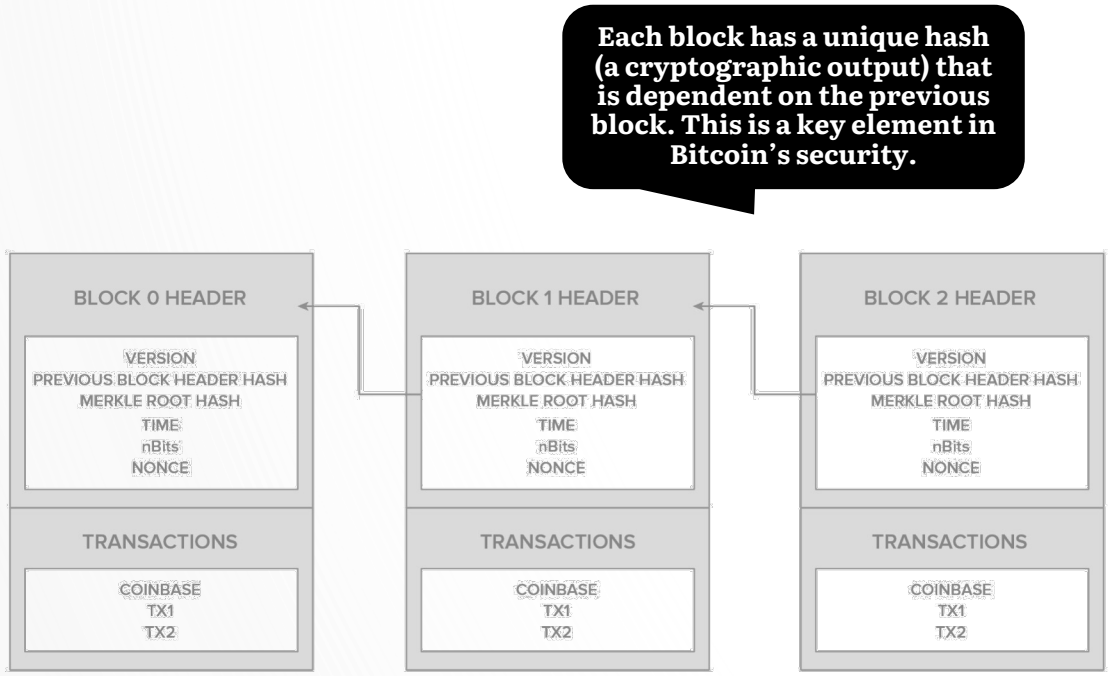
2008-11-09 01:58:48 UTC - Original Email - View in Thread

Hal Finney wrote:
> it is mentioned that if a broadcast transaction does not reach all nodes,
> it is OK, as it will get into the **block chain** before long. How does this
> happen - what if the node that creates the "next" block (the first node
> to find the hashcash collision) did not hear about the transaction,
> and then a few more blocks get added also by nodes that did not hear
> about that transaction? Do all the nodes that did hear it keep that
> transaction around, hoping to incorporate it into a block once they get
> lucky enough to be the one which finds the next collision?

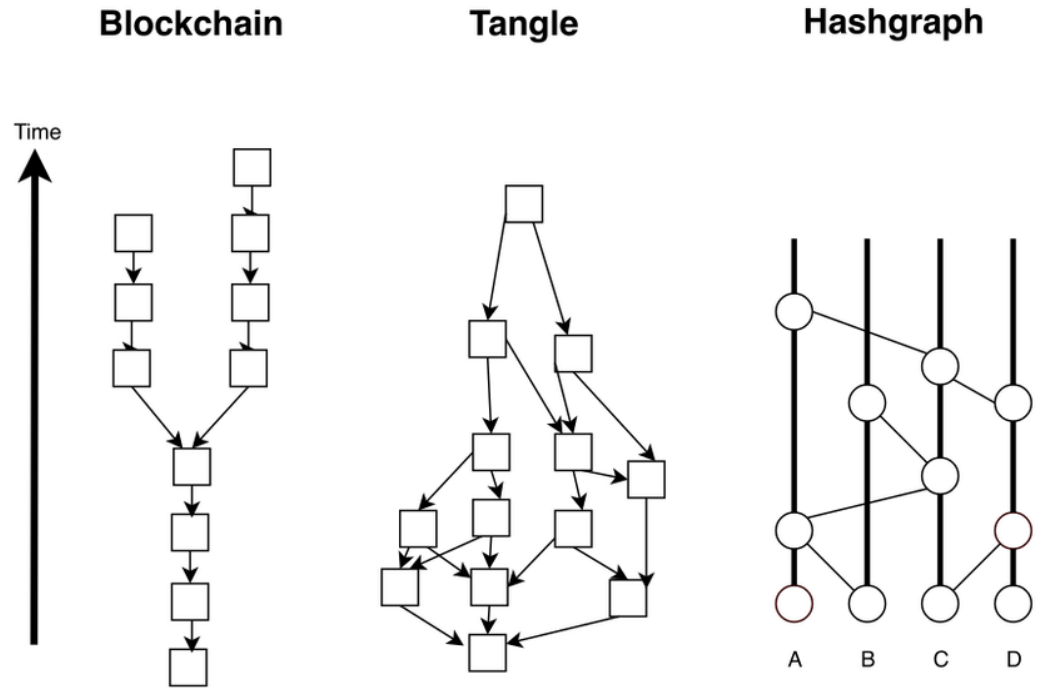
Source: Nakamoto Institute

Bitcoin's blocks are linked to each other through a cryptographic hash, but there are other non-liner distributed ledger technologies.

Bitcoin's data structure is organised in a linear sequence.



Note there are other types of distributed ledger that don't rely on hash-linked blocks.

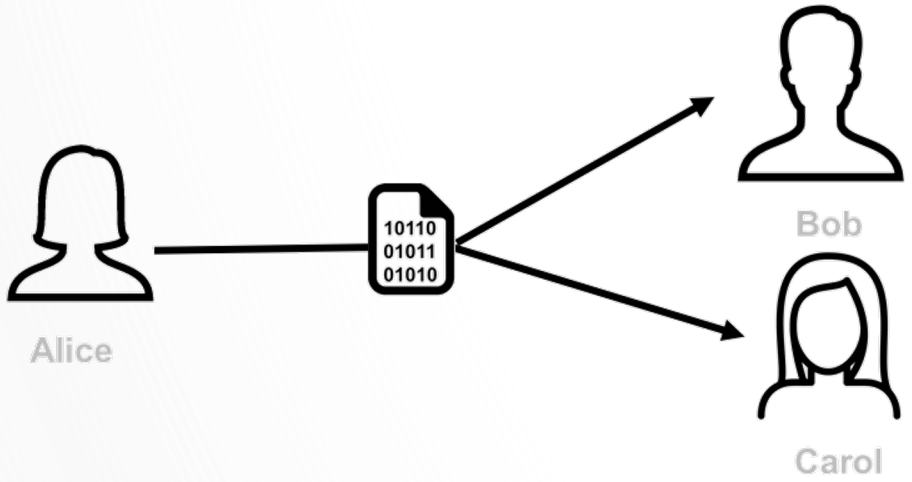


Source: Horizen; A review of DLTs, 2018

Some additional background on transactions and mining.

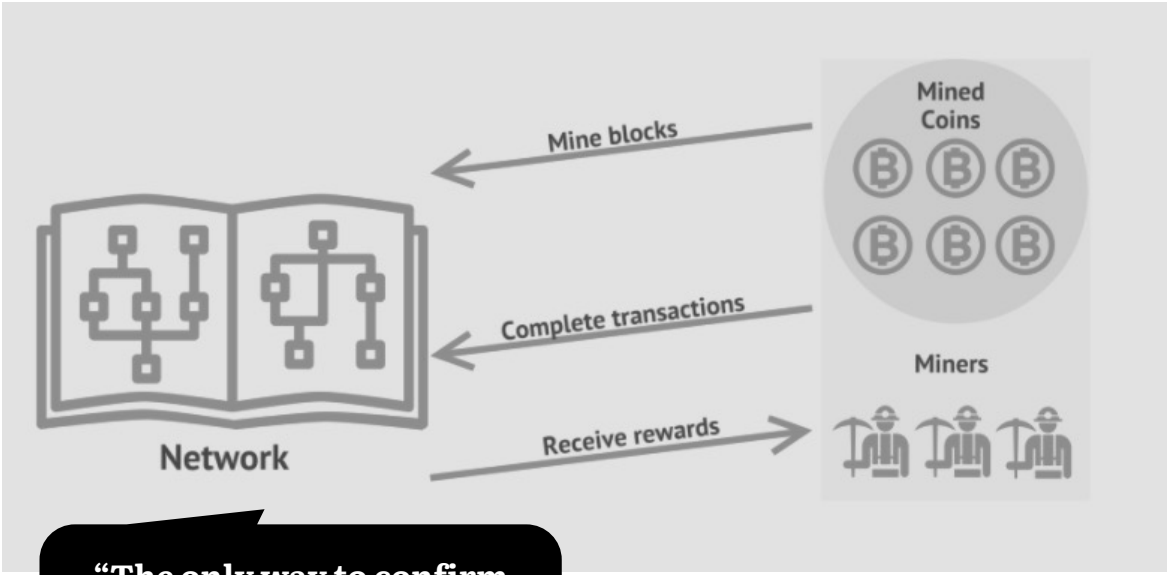
The rules (and the incentives they create) are what makes a blockchain safe(r). In Bitcoin's case, it's all about its unique Nakamoto consensus.

Previously, digital cash required an intermediary to prevent double spending.



Double-Spending Problem: If Alice sends money in digital format to Bob, Bob cannot know for sure if Alice has deleted her copy of the file and she can choose to send the same file to Carol.

Bitcoin solved it by incentivising nodes to dedicate resources to keep an accurate ledger.



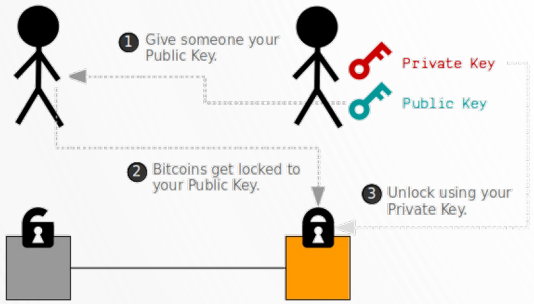
"The only way to confirm the absence of a transaction is to be aware of all transactions".

Source: Adil Moujahid; Gennaro Cuofano

The Nakamoto consensus combines four key pieces which incentivises miners to compete for its security.

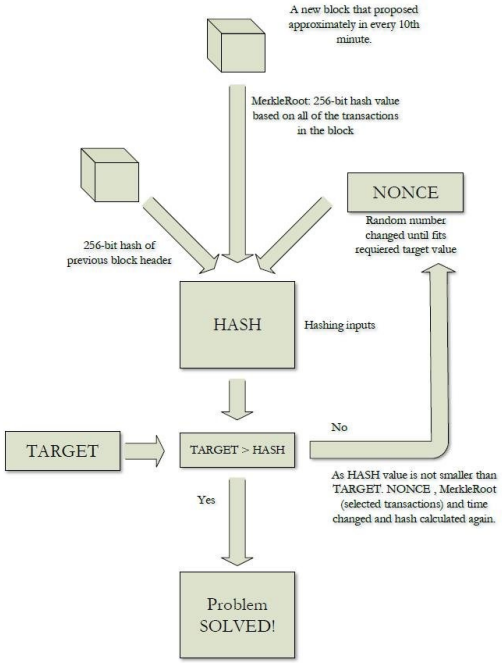
Basic validation.

- Transactions signed cryptographically.
- Users can only spend the bitcoins they have at a given time.
- Compatible hash.
- Correct block size.



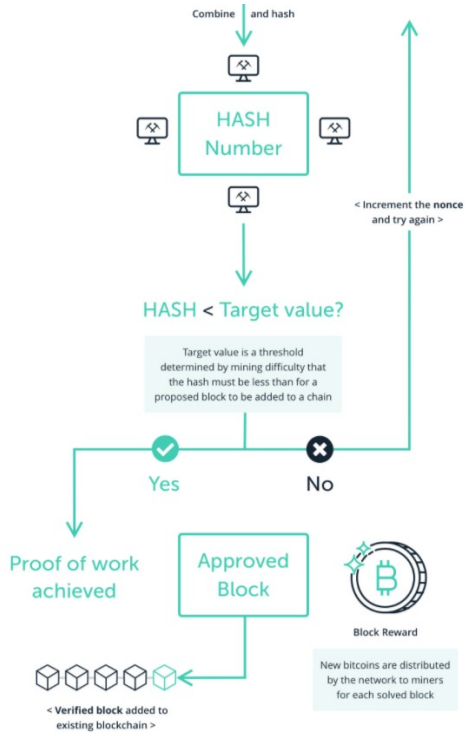
Proof-of-Work algo.

- Defines the difficulty of a hard computational problem (work) which grants the privilege of extending the chain.



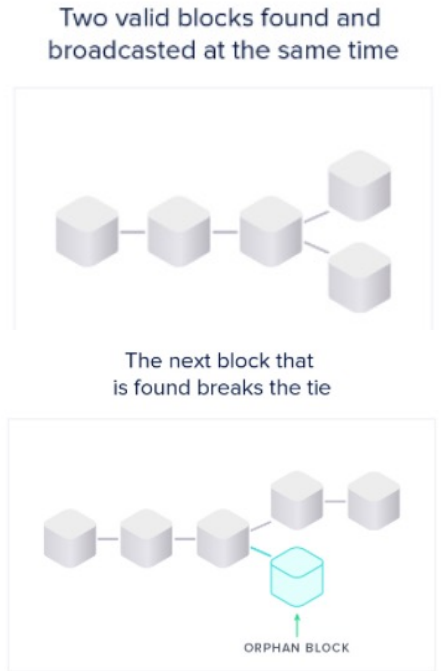
"Block selection" race.

- The fastest miner to get lucky broadcasts its solution and if verified then it wins a reward.



"Longest chain" rule.

- Nodes accept the longest chain, i.e. the one with the most computational work and so the most secure.



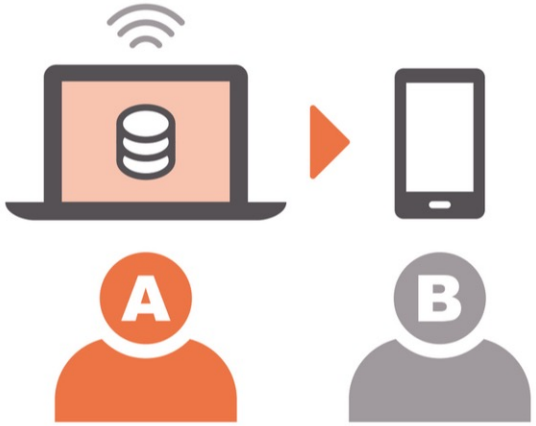
Source: Various sources

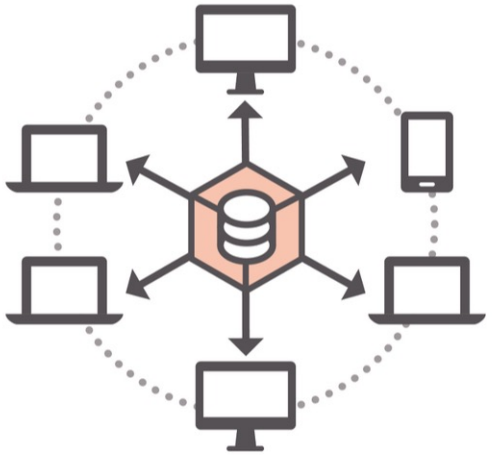
To begin, a transaction is submitted and nodes check if it was signed cryptographically and if it is only trying to spend what its user has.

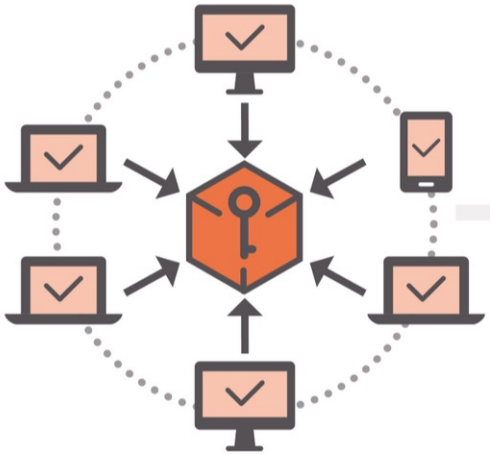
A transaction is requested

The transaction is broadcasted to a network of nodes

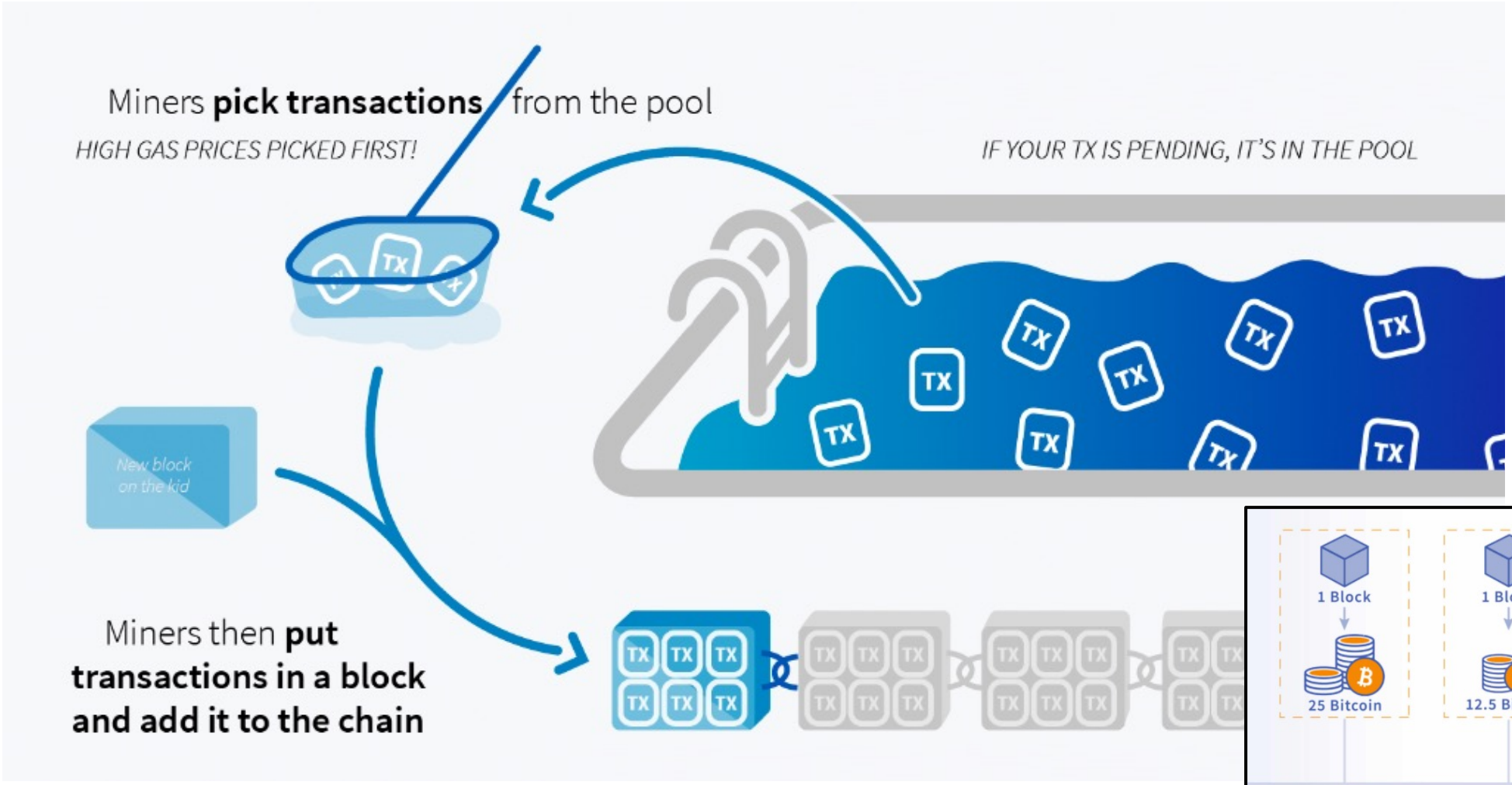
The network validates the transaction using known algorithms



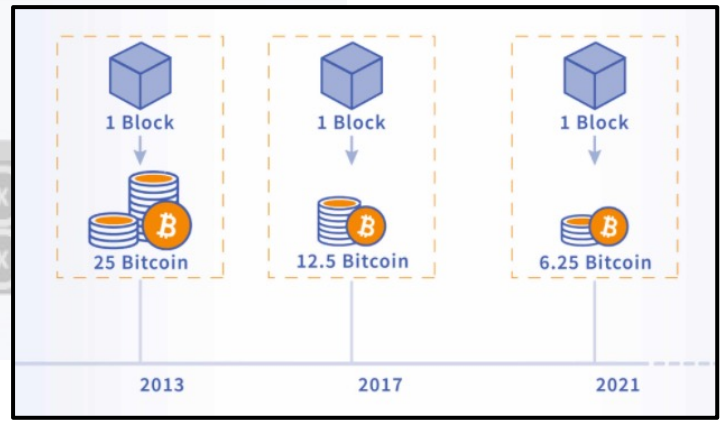




Then, miners compete to solve a mathematical problem. The first is rewarded to organise pending transactions into a new batch: a block.

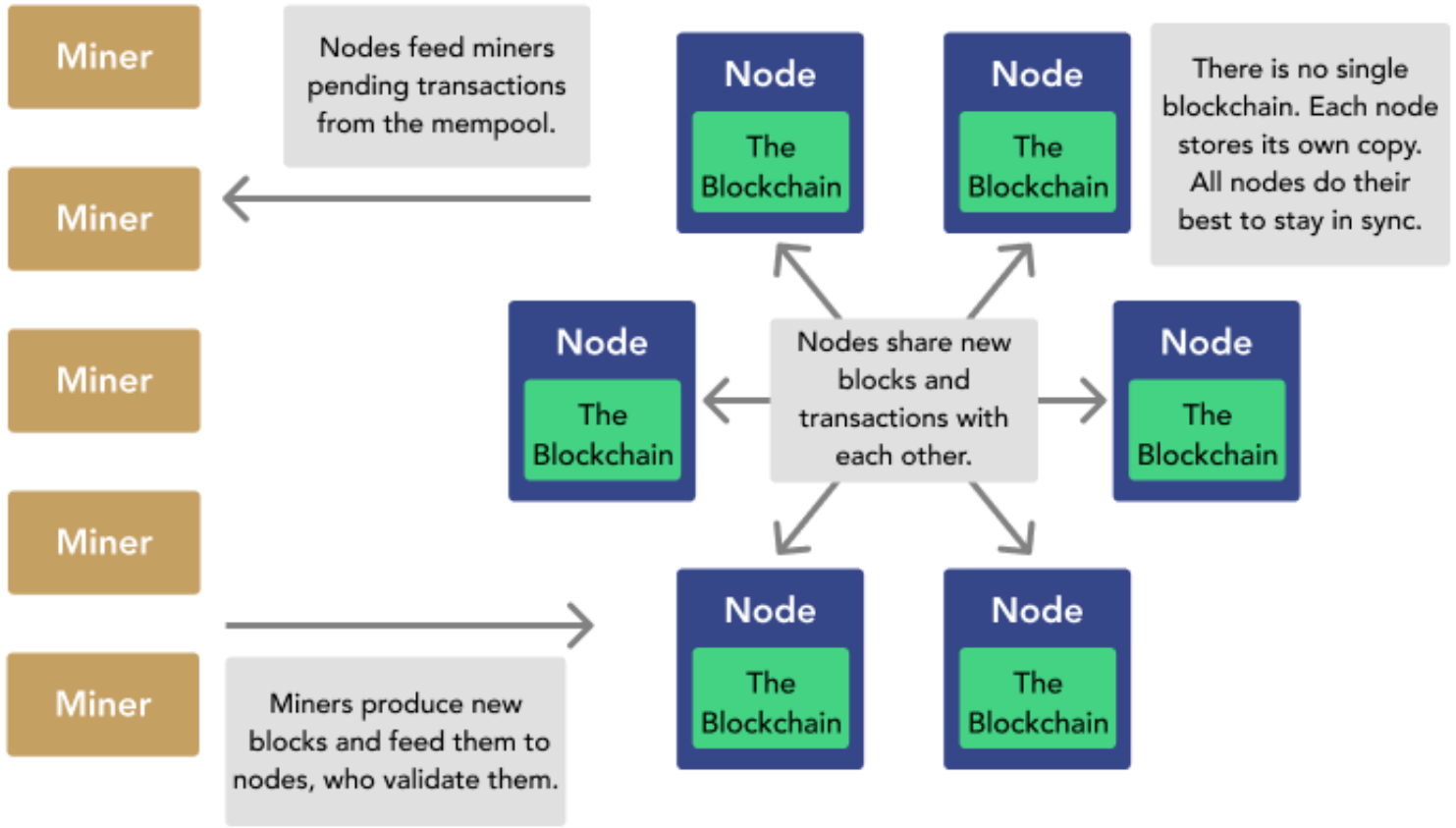


Currently, block rewards are 6.25 BTC, roughly $250k, and are handed out every ~10 min.



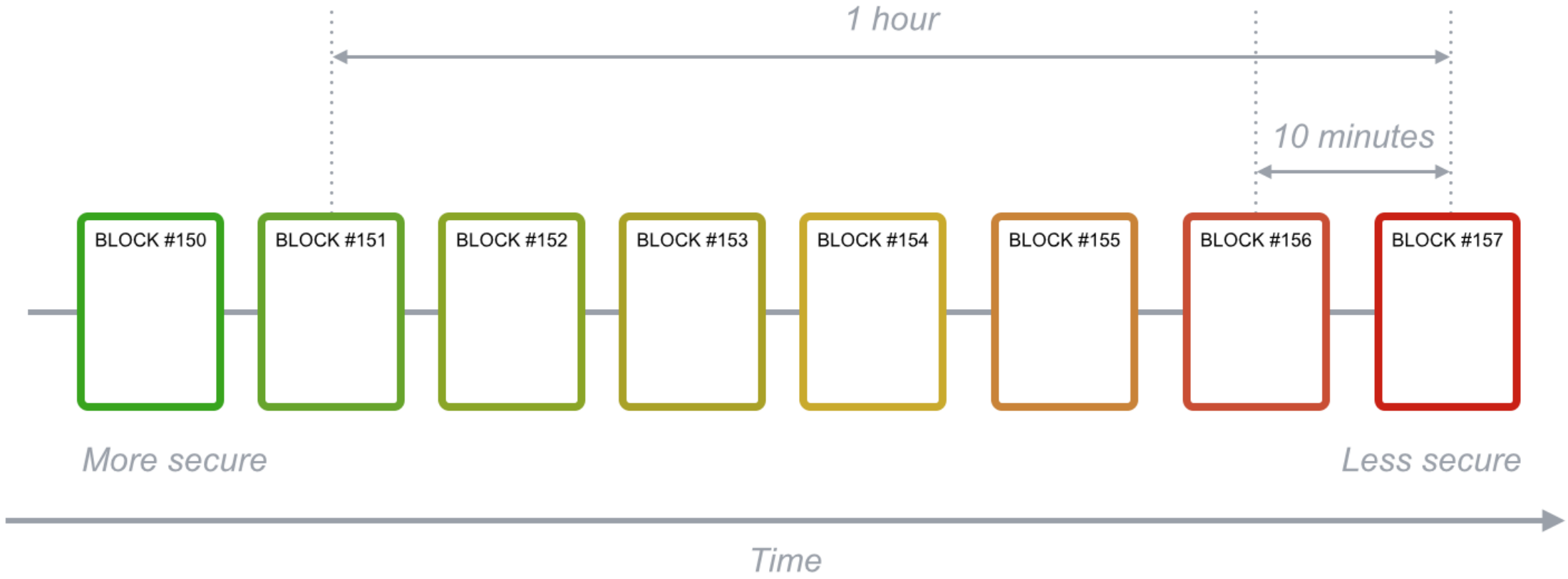
Source: MyEtherWallet

To conclude, nodes confirm again if the block is valid and relay it to other nodes, which then update their copies of the blockchain.



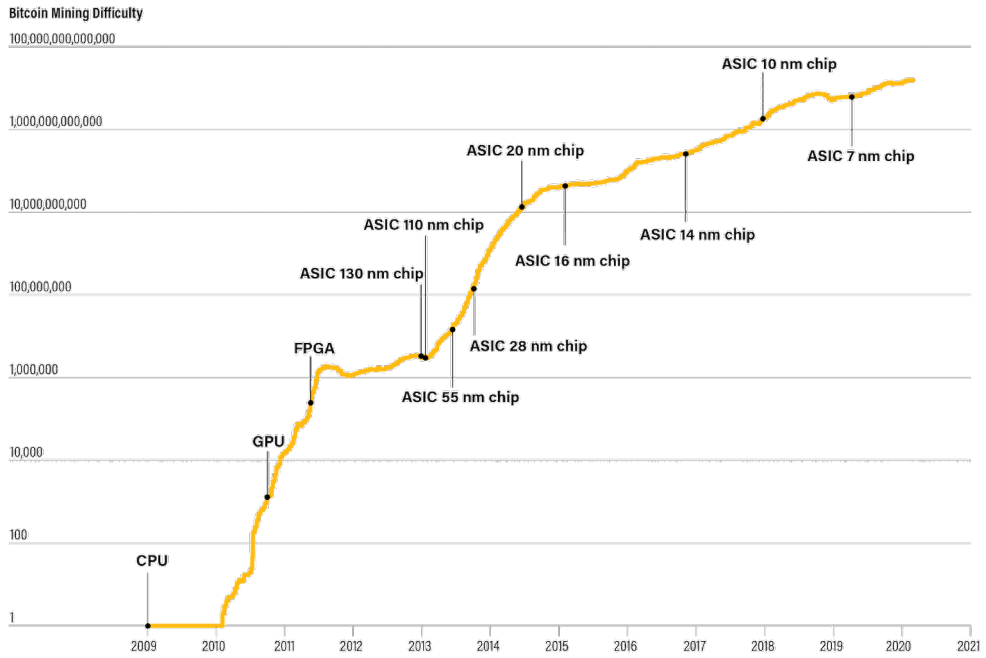
Source: River Financial

The transaction is then sent, but it is advised to wait for some more blocks to come through before a given block is “set in stone”.

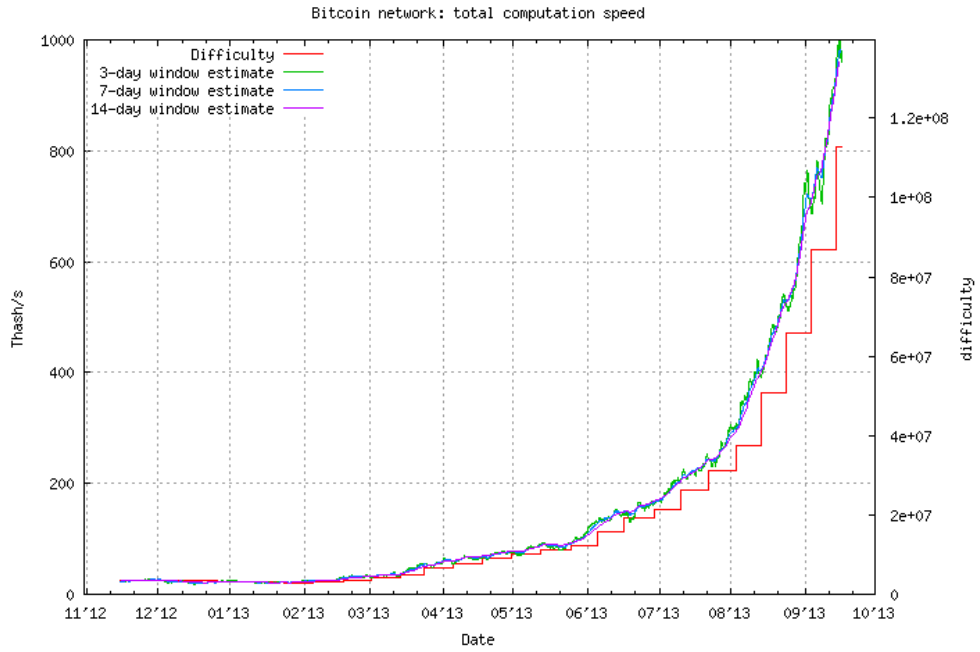


Mining's computational power costs electricity and the level of computational power required rises with the network's growth.

As miners try to get more efficient to spend less electricity, they build better chips.



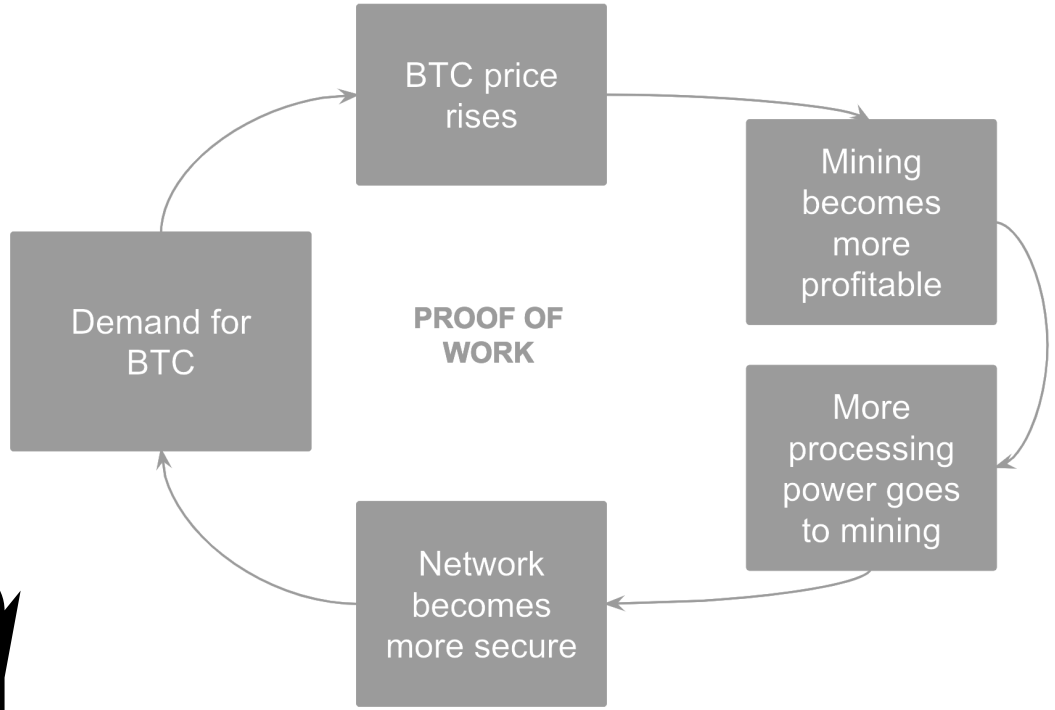
But mining gets more difficult as more miners dedicate computational power to it.



This is an equilibrium mechanism to ensure a Bitcoin block is mined every ~10 minutes.

Source: CoinDesk

Therefore, the more mining power there is the more secure the network tends to be, which attracts more users to its ecosystem.

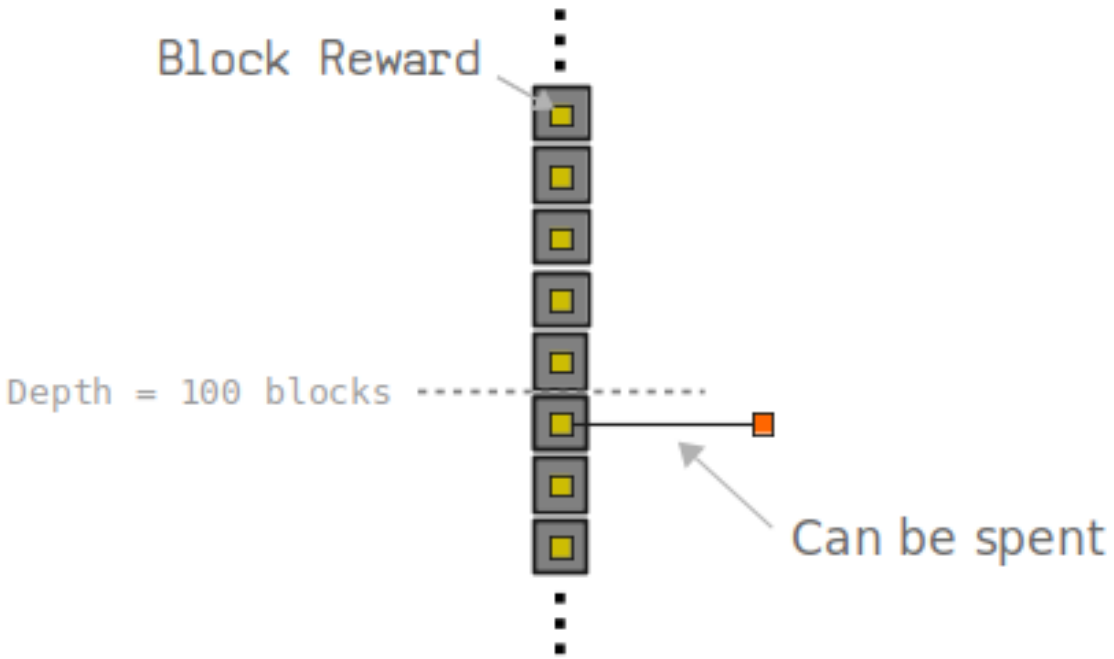


This is valid in Proof-of-Work based blockchains. There are other security models, but they fall outside the scope of this session.

Source: Donald McIntyre

The longest chain rule incentivises miners to cooperate so they can claim rewards to pay for the electricity. But it's also a major deterrent.

A block reward can only be spent after 100 blocks have been mined.



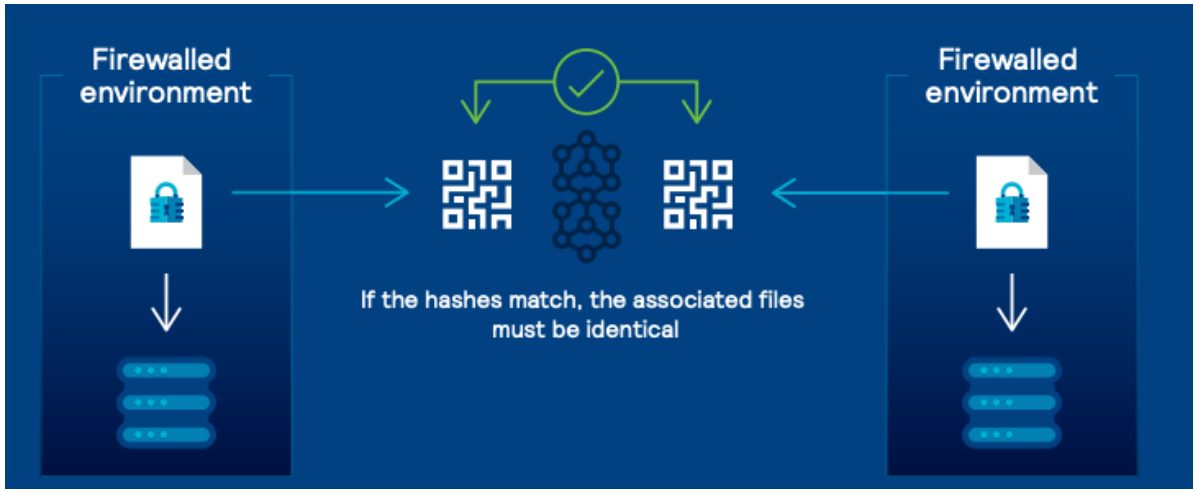
Source: Greg Walker; The Consensus Mechanism

Hashing provides a critical service to the security of a blockchain.

One way: The INPUT cannot be derived from the OUTPUT.

Repeatable: A given data input will always have exactly the same output each time it is run through a hash function. It's not random.

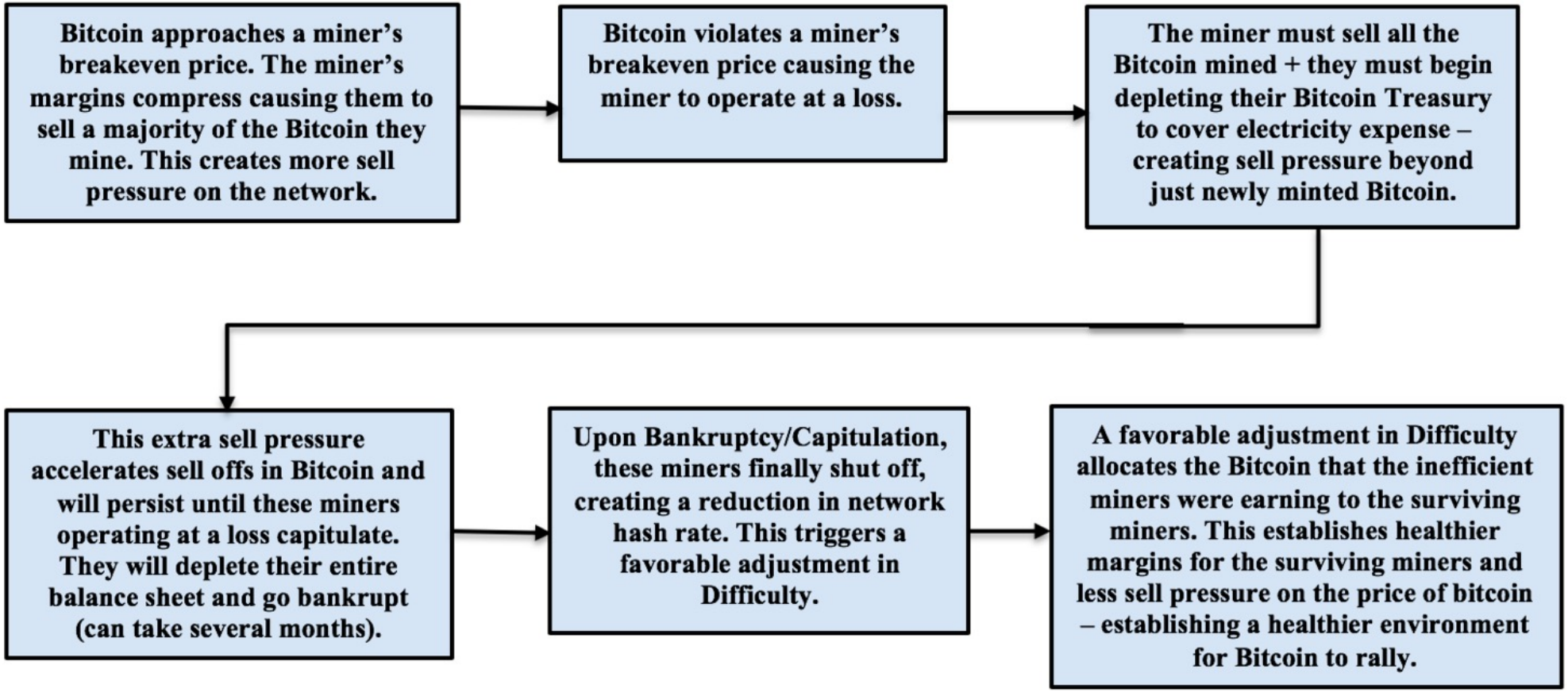
Unique: If just one bit of data in the input file is changed, the resulting hash output will be completely different.



Hashing allows verification without scooping.

Source: Mercer

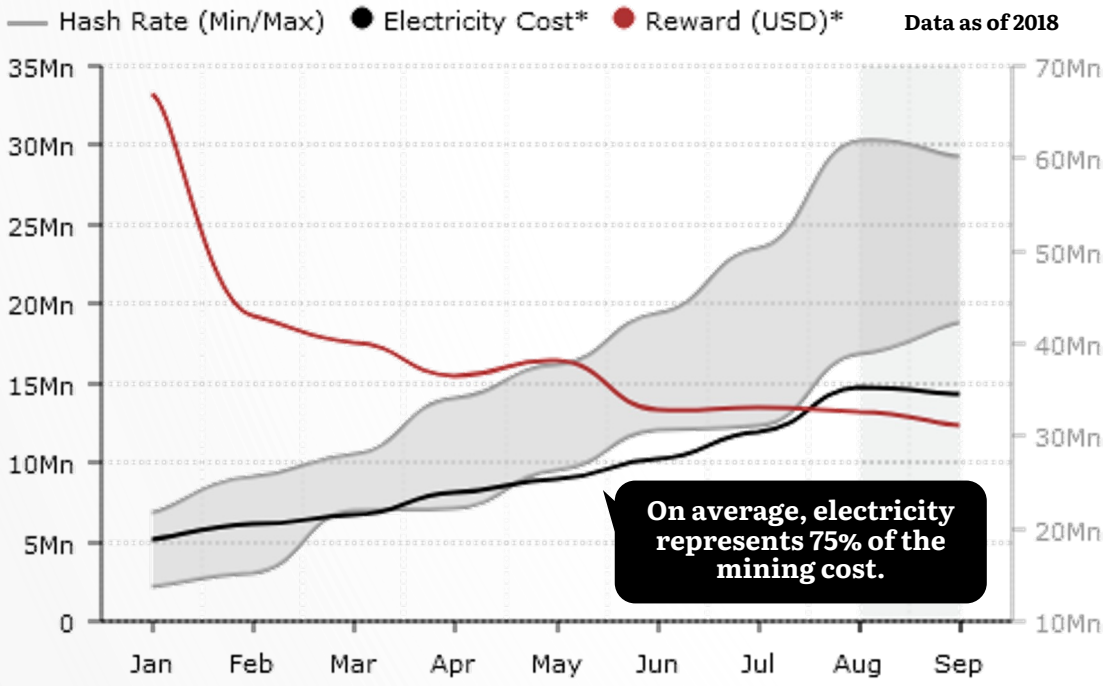
Sell pressure from unprofitable miners has a negative short-term impact on price, but ultimately supports the network in the long-term.



Source: Blockware Solutions, 2020

Conversely, if prices drop miners may lose their profits, even if the cost of production has provided some floor to BTC's price over time.

Mining rewards vary with the price, so in bear markets some miners can't break even.



Bitcoin rarely trades below its average cost of production as unprofitable miners collapse.

Source: Diar Research, 2018; Capriole Fund, 2019

Lastly, despite being often criticised for its massive electricity consumption, it's important to understand mining's true footprint.

Mining relies heavily on non-rival electricity.

162,194 TWh [i]
TOTAL ENERGY GENERATED WORLDWIDE

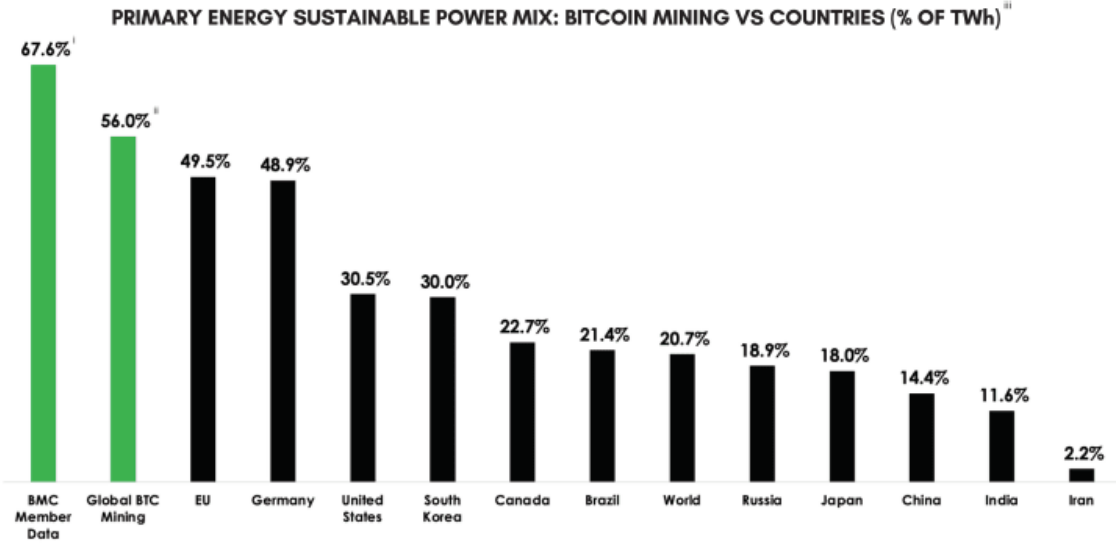
50,000 TWh [ii]
ENERGY LOST DUE TO INEFFICIENCIES

189 TWh [iii]
ENERGY CONSUMED BY BITCOIN MINING ON THE WORLD'S ELECTRIC GRID

GLOBAL BITCOIN MINING CONSUMES 0.1%
OF THE WORLD'S ENERGY PRODUCTION

GLOBAL BITCOIN MINING CONSUMES 0.4%
OF THE WORLD'S ENERGY WASTED

Mining relies heavily on renewables.



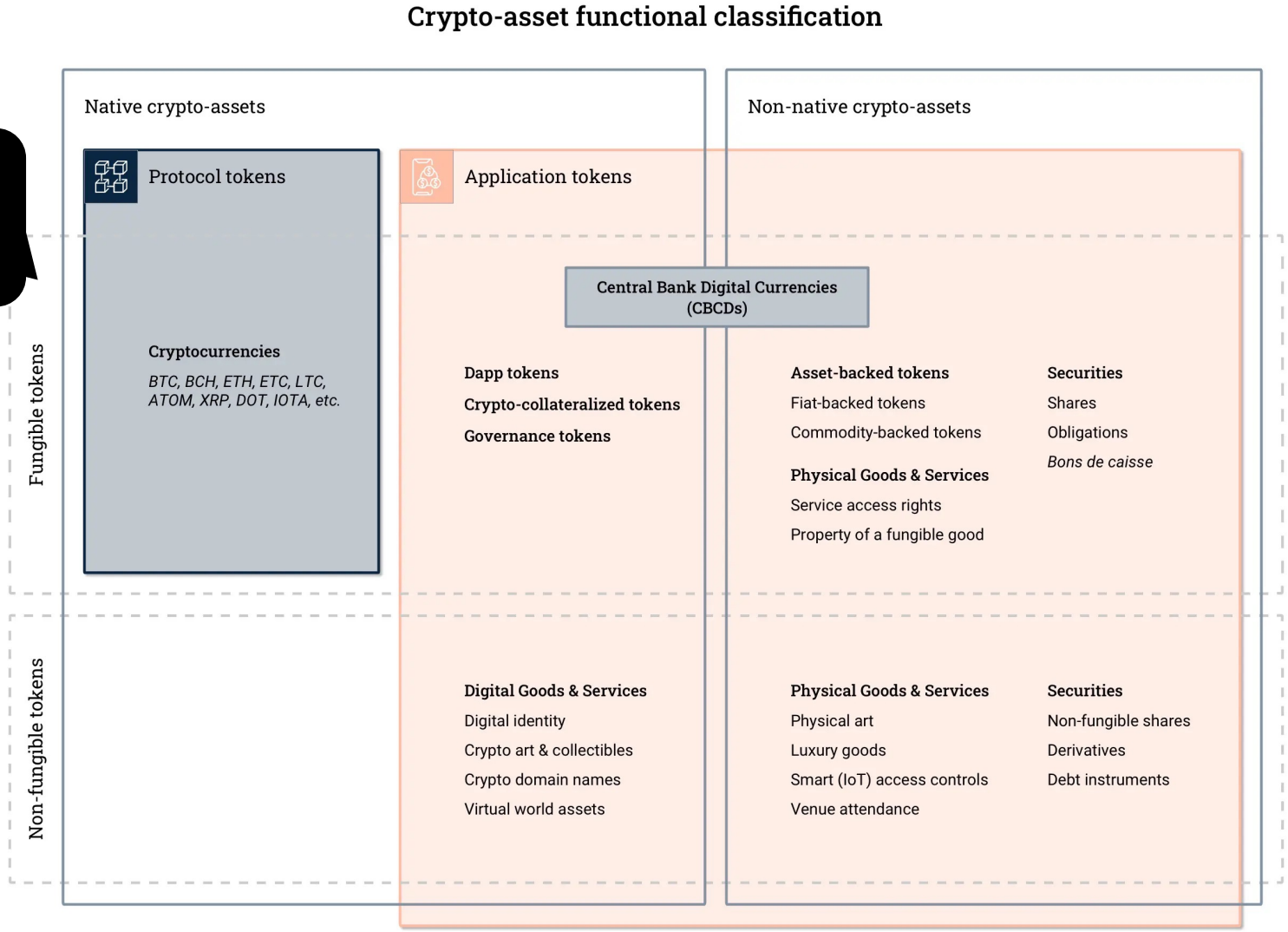
Moreover, Bitcoin consumes less than 50% of the electricity used by the top 100 bank data centres and that used by gold mining.

Source: Bitcoin Mining Council, 2021; Galaxy Digital, 2021

Some additional background on the different cryptoassets.

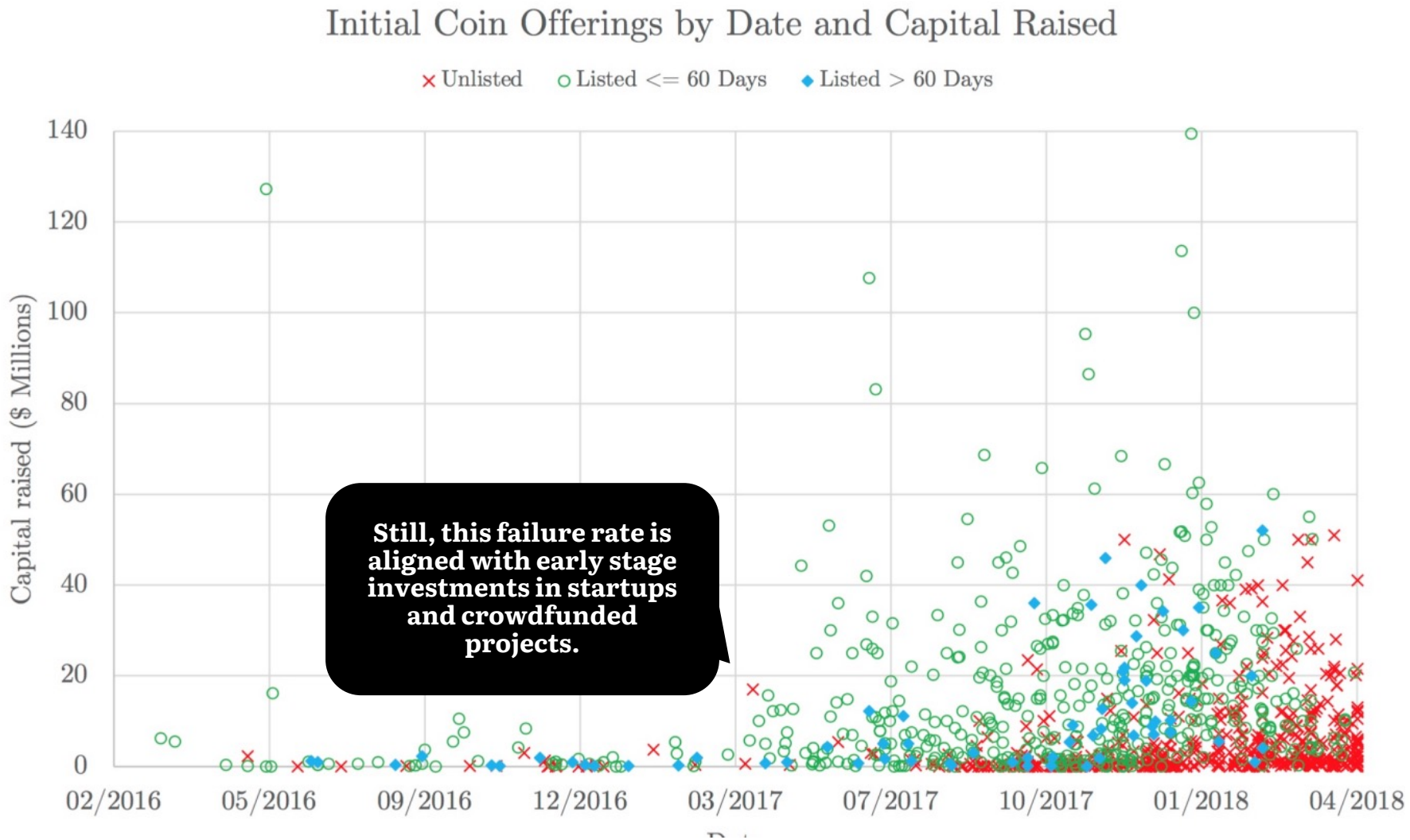
There are several different taxonomies classifying cryptoassets, but this simple framework is the most comprehensive and exhaustive.

Cryptocurrencies power protocols serving as a means of payment to those securing the network.



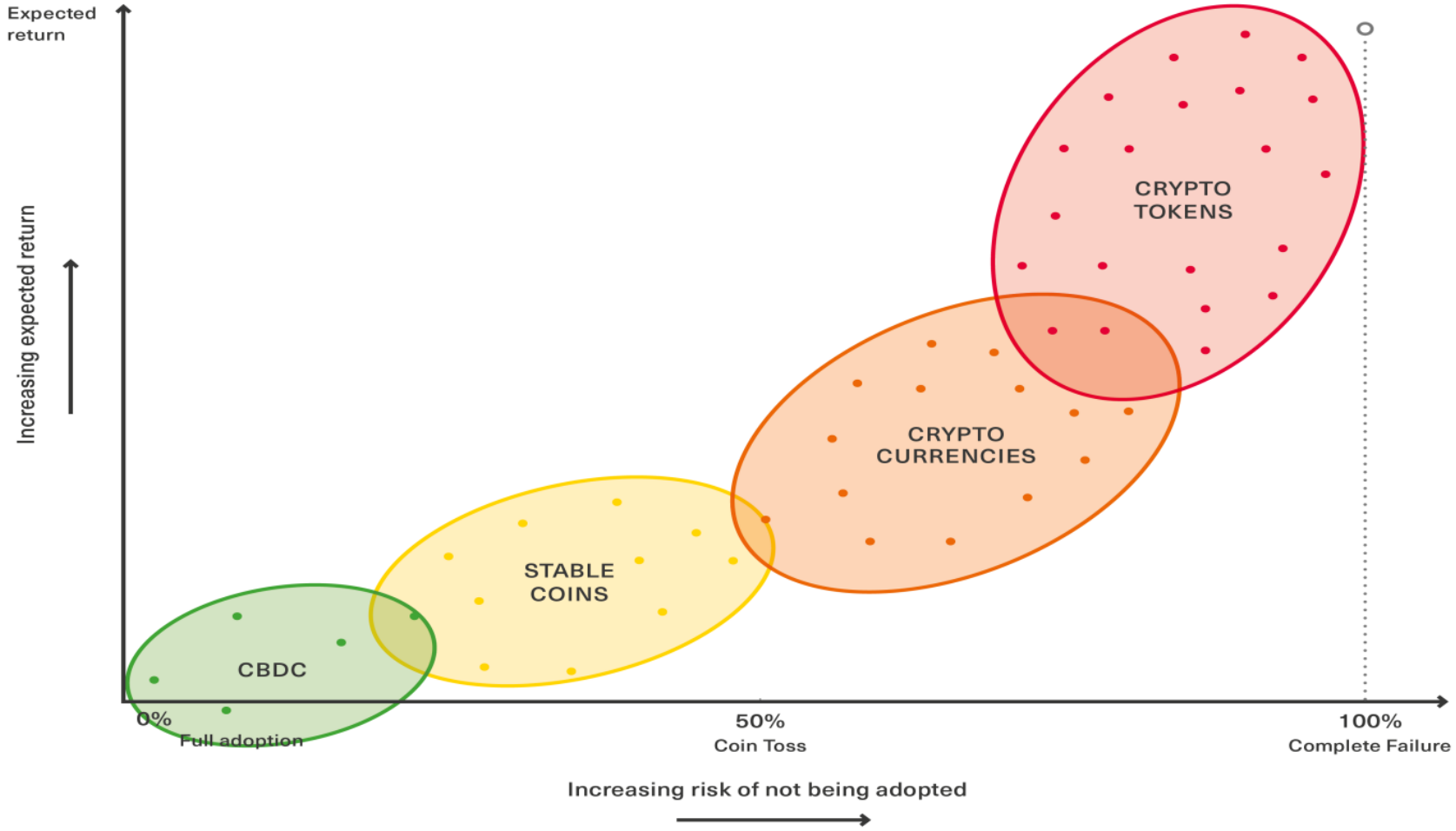
Source: ADAN, 2021

There has been an explosion of cryptoassets in recent years, but many go bust as they lose traction or are deemed scams.



Source: Benedetti and Kostovetsky, 2018

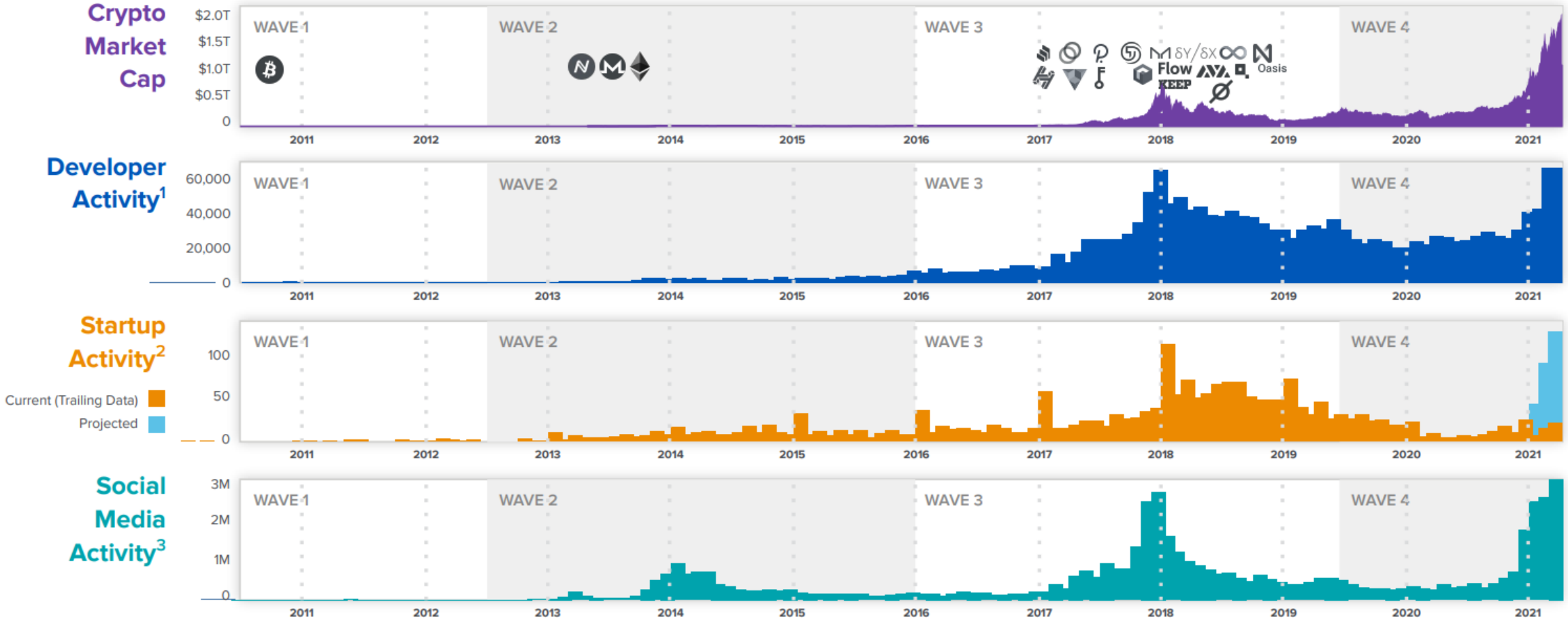
That's why those cryptoassets which power a blockchain, typically known as crypto currencies, tend to be less risky than simple tokens.



Source: Imperial College Business School

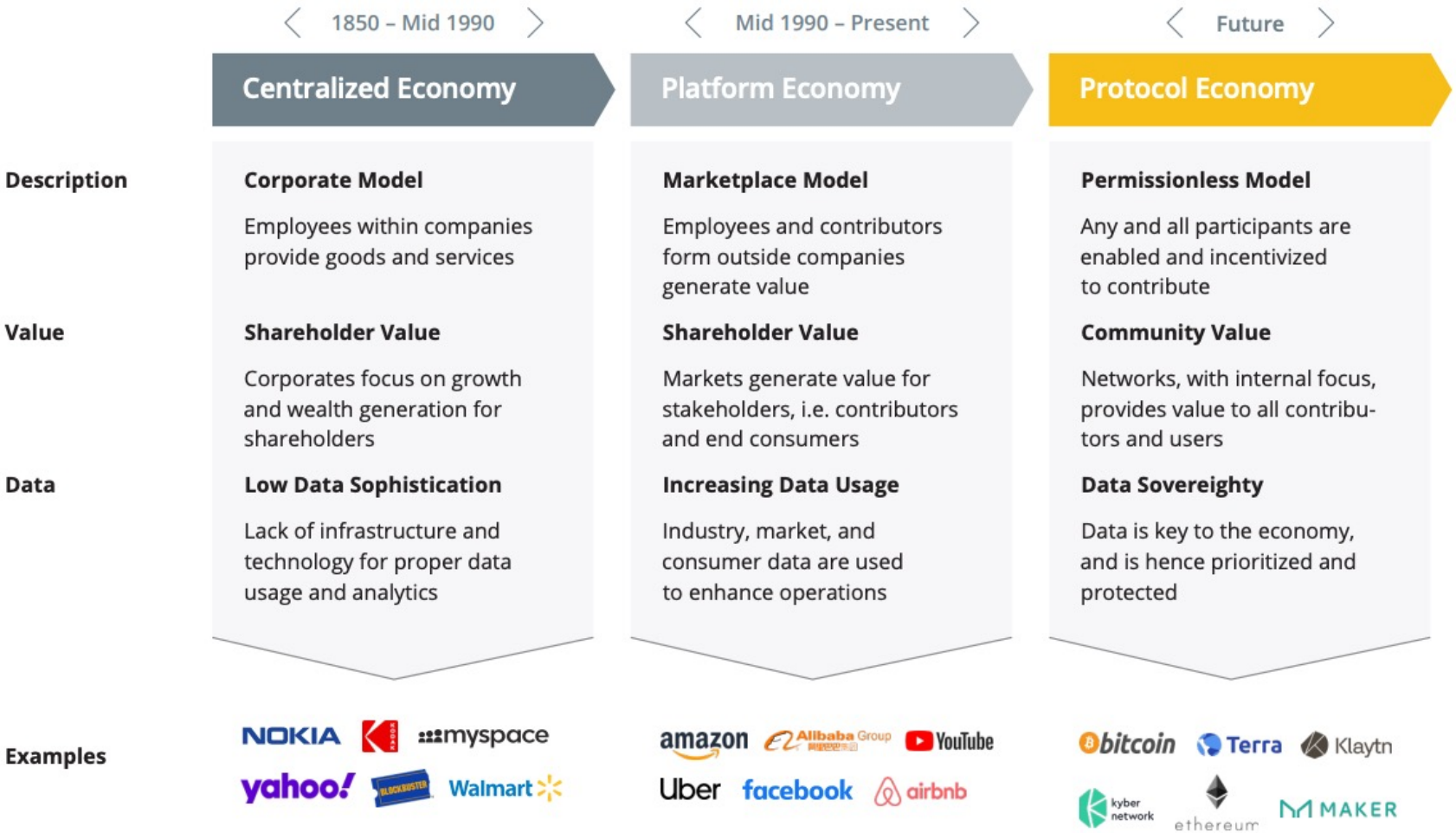
Some additional background on DeFi and web3.

Web3 is the natural transition of the initial blockchain and crypto investments, representing a more “resilient and participatory” web.



Source: a16z

This new economy changed the rules of VC as one has to invest in protocols through tokens, instead of in companies through equity.



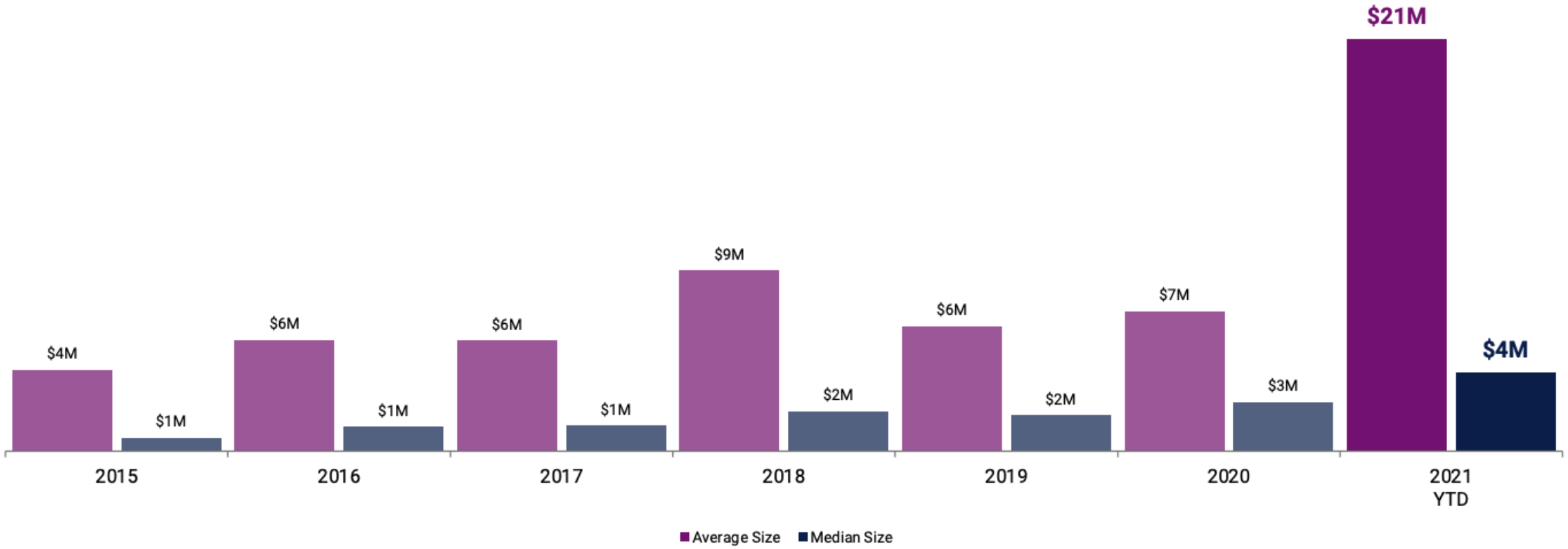
New Economy VC structure

- **Tokens**
  - Lock-periods (1.5 to 4years,) just like an IPO
  - These are seen as a call option
- **Some equity is also possible**
  - Although typically after Series A
  - In case there's protocol-market fit
- **Investment DAOs are the new trend**
  - MetaCartel Ventures is a for-profit community that invests on behalf of its token holders
  - LAO, registered in Delaware, is a member-directed and owned venture capital fund
- **Metrics**
  - Outperforming BTC and ETH is key

Source: #Hashed VC

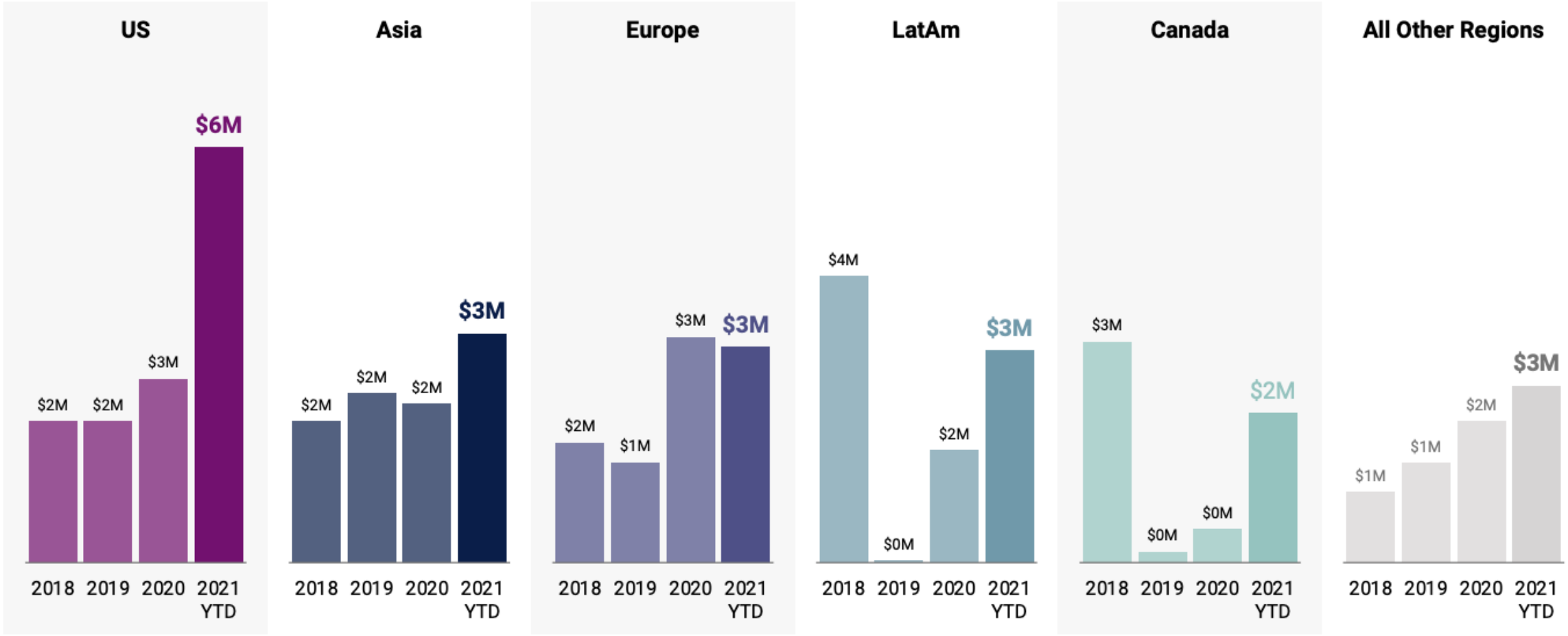
Some additional background on institutional exposure to crypto.

Globally, the average blockchain investment round has reached $21M, whereas the median round amounts to $4M.



Source: CB Insights, 2021

In Europe, that median value falls to $3M, as more deals happen on an early stage – roughly %78% of them.



Source: CB Insights, 2021

Let us know if you have any additional question.