# CRYPTOCURRENCIES & BLOCKCHAIN



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raconteur reports

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# Building trust in a crypto world

Cryptocurrencies have been catapulted into public awareness, but the volatility and controversies surrounding them have created a distrust that must be overcome

BEN ROSSI

Crypto360/Shutterstock

There is no doubt the huge hype and widespread awareness around cryptocurrencies have contributed to the drastic volatility in their value. Awareness doesn't always equate to understanding and notoriety can easily have negative connotations. In the case of this burgeoning market, trust is the currency to achieving its ultimate potential.

The same attributes that have driven the rise of cryptocurrencies, most notably that they aren't backed by governments or central banks, but rather by mathematical proofs, have also created public scepticism.

The promise to bypass the centralised economic system and enable peer-to-peer payments has yet to be achieved. The massive price swings make it impossible to use cryptocurrencies as genuine forms of value exchange, while the limited scalability and excessive costs of mining have held back the ability to complete time-sensitive transactions with the scale of regular payment systems, such as Visa and Mastercard.

Exchanges and tokens have fallen victims to a myriad of hacks and some still associate cryptocurrencies with the dark-web activities that defined their early existence, specifically to buy and sell drugs online anonymously. The infamous online black market Silk Road was shut down by federal agents in 2013.

"People are still afraid of cryptocurrencies," says Pavel Matveev, founder and chief executive at Wirex, a hybrid personal finance platform trying to bridge the gap between the fiat and cryptocurrency worlds by merging blockchain technology and traditional finance. "Most people believe it's crime or ransom money, so it takes effort to change this perception."

Controversies surrounding initial coin offerings (ICOs), where businesses raise funding for projects or startup companies by selling cryptocurrency coins to investors, have caused further damage to public perception. Despite an abundance of scams and the failure of most projects, ICOs attracted a record $12 billion in the first half of 2018. But a study by Statis Group found more than 80 per cent of ICOs in 2017 were scams.

"ICO scams started booming about a year-and-a-half ago," says Mr Matveev. "All you needed was a ten-page white paper to raise billions of dollars. Most ICO companies are after quick money rather than building their business in the first place. They're robbing people of their money and then disappearing. Very few ICOs are worthwhile."

This abundance of fraudulent activity, bad players and failed ICOs have damaged the industry's credibility. The cryptocurrencies space, especially the Altcoin market, is highly manipulated. Yet it still has enormous potential and progress is being made.

Cryptocurrency use-cases are still predominantly limited to speculative trading and investments. There simply aren't enough applications and real use-cases solving everyday life problems. However, blockchain has already proven it can be applied in different areas and the number of blockchain-crypto projects at the proof-of-concept stage is growing. More production-ready products will have a positive impact on public perception.

Along with this, growth in the number of enterprise exchanges and institutional investors exploring the market is ever so gradually making cryptocurrency trading more professional and less volatile. To accelerate this and gain the trust that cryptocurrencies require to thrive, more regulation is crucial.

"Once regulation is in place, we will see more big players, including banks and other financial institutions, enter the market, which will bring more trust to the industry in general," says Mr Matveev. "Japan, for example, has already established clear rules around cryptocurrency trading and taxation. As a result, banks are doing crypto business and the country has become one of the leading markets for crypto trading.

"Cryptocurrencies will also be regulated in Canada very soon and the US Securities and Exchange Commission is planning to regulate ICOs, so once we have clear rules then security and fraud issues will start to be eliminated. I believe we will see crypto regulations in the main markets within the next two years. Regulations will protect customers and investors, and eliminate the bad players within the industry."

The ability and the willingness of the regulatory agencies to implement a full-scale and fair discussion on the diffusion of cryptocurrencies is vital to increasing public trust. Retail users don't necessarily have all the knowledge and instruments to defend themselves from fraudulent behaviours and market manipulation.

The introduction of an exchange-traded fund (ETF) tracking the cryptocurrency market would allow institutional investors to enter the market without a direct exposure on the single currencies or without even knowing the underlying protocols and features.

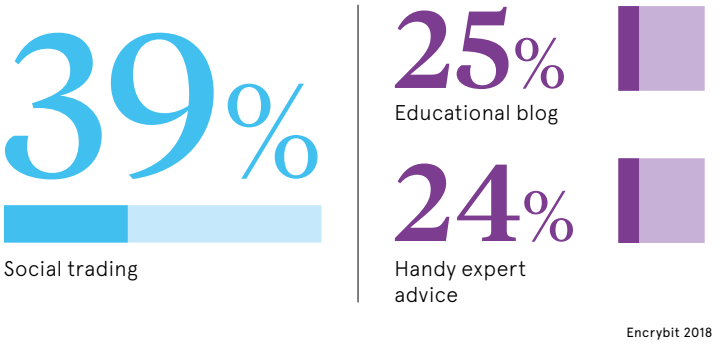
According to Daniele Bianchi, assistant professor of finance at Warwick Business School, that would open the market to a much higher money flow and increase price informativeness, as well as reduce volatility and investors' asymmetric information.

However, without proper regulation, ETFs can't be effectively and securely introduced on a global scale. Regulatory approval and monitoring are key aspects to increasing the use and trust of cryptocurrencies, especially as an investment vehicle.

"It is difficult for professional investors and market participants to differentiate between what can and can't be trusted, let alone for the public and regular businesses," says Mr Bianchi. "There is a growing ecosystem of auditors, ratings agencies and experts that can, and certainly will, help the public to understand more and more the cryptocurrency universe. Nevertheless, this ecosystem is still massively underdeveloped and to a large extent not fully regulated."

Regulation and positive use-cases will create a more stable market, and increase public awareness and acceptance of the real value of cryptocurrencies. However, it will take time for perceptions to move on from the events and volatility that have caused most people to stay away from this market. Only when coverage moves from the issues and scams of cryptocurrencies to more critical appraisal of the widespread benefits they can provide will they truly gain the trust of the public.

**Top features that will reduce crypto trading difficulties for new entrants**




Encrybit 2018

# Don’t give up on cryptos and avoid bad habits with tech

The recent cryptocurrency bubble shows how wildly irrational behaviour continues to rule financial markets. But technology is emerging that can help traders avoid such illogical activity and the type of heavy losses it has caused for so many crypto traders

Between July and December last year, cryptos such as bitcoin experienced an extreme boom-and-bust cycle as traders were gripped by a speculative frenzy. Positive news hinting at the acceptance of these digital currencies into mainstream usage attracted buyers chasing a fast buck. These traders overinflated prices through greed and overconfidence, then sent them crashing down again as panic selling took over.

We then saw more cognitive errors in the crypto market this year as some traders who had bought at a high price held their losses for too long in the hope of recovery. Instead, crypto prices, which had already fallen more than 50 per cent from their peak, levelled out for a few months, only to fall a further 40 per cent in the two weeks to November 24.

The November falls probably occurred because these traders finally accepted their losses and sold out to limit further damage.

Such behavioural problems are well understood thanks to academics such as Daniel Kahneman, Robert Shiller and Richard Thaler. Their work has identified that humans make 95 per cent of their decisions using mental shortcuts, or rules of thumb, based on anecdotes and stereotypes, rather than disciplined strategies. This leads to a wide range of irrational behaviours and, in the financial world, market mispricing.

David Jones, chief market strategist at trading platform Capital.com, says the crypto boom attracted many new entrants to trading, but many of them will have learnt a harsh lesson about market psychology.

**1st**
**world’s first AI-enabled trading platform**

**29**
**crypto pairs available for trading**

**50%**
**tighter crypto spreads compared with the industry average**

“People saw easy money,” he says. “But easy money doesn’t last forever. We’ve seen it many times before, for example, in the dot-com bubble of the 1990s.”

However, Mr Jones says traders interested in cryptos should not abandon the asset class; if there is volatility, there will still be opportunities.

“You can profit from market falls, by selling short, as well as from rises,” he says. “So traders need to be aware of market sentiment creating sudden moves in either direction. Much sentiment is news led. News flow about cryptos and therefore volatility was low in the six months to October, making it less attractive for traders because these markets were not experiencing the kind of movement they had previously.

“But with volatility returning in November, it becomes attractive again for those looking to profit from shorter-term swings.”

Despite the latest crash, some economists still believe cryptos will play a key role in future economies. The latest, Dr Saifedean Ammous, associate professor of economics at the Lebanese American University, reportedly predicted in November that cryptocurrencies will enable a return to a golden era of capitalism. Others are less positive; for example, Warren Buffet, chief executive of Berkshire Hathaway, has said the idea that there is intrinsic value in cryptos is a joke.

Mr Jones highlights that bitcoin lost 56 per cent of its value in 2014, but went on to add 2,400 per cent in the year to December 12, 2017. So traders should not rule out another resurgence.

But anticipating the timing of any rebound is about monitoring news flow and sentiment, not underlying value.

He says: “Traditional markets such as shares or commodities are hard enough to value; this is a much more ethereal market. You can use market charts to see the direction of trends and overall sentiment. But don’t get psychologically tied to a fixed value.

“The latest sell-off could end up being a sign that the worst is over and we can anticipate some recovery. When the last of the speculators sells out, often the only way to go is up.

“As the market rose last year, we saw bitcoin spend some time around $3,000, which it has returned to at the time of writing, so it might build a base from here. I’m basing that purely on the sentiment of market participants last year.

“Others think it will sink further. But whether you feel the market will rise or fall, the key to successful trading is maintaining discipline, sticking to your plan and avoiding bad habits.”

Technology can help here, says Mr Jones. Capital.com provides the only platform that uses artificial intelligence to look for patterns that could indicate behavioural mistakes among individual traders. For example, it can identify when you might be chasing losses if they become much bigger than your profits, then nudge you towards techniques such as stop loss orders to manage risk.

Or it can spot overconfidence if you are trading too much or too frequently following some wins, then remind you to maintain a disciplined strategy.

“People typically come to cryptocurrencies with more biases because they think they can make lots of money and it may be their first experience of trading,” says Mr Jones. “There’s a big opportunity for this technology to identify when they are starting to bend their own rules and nudge them back on track.”

> **Capital.com provides the only platform that uses artificial intelligence to look for patterns that could indicate behavioural mistakes among individual traders**

Capital.com offers crypto trading through contracts for difference (CFDs), a derivative between a trader and their broker, under which one party agrees to pay the difference in value between the opening and closing position. CFDs are an option for those who wish to trade a cryptocurrency, but do not want to buy the currency itself, which requires a digital wallet.

“There have been several stories about hackers accessing digital wallets recently,” says Mr Jones. “With a CFD, you don’t need a digital wallet, just a trading account. It also enables you to enter and exit markets in seconds. Capital.com is a 24/7 platform. It has 29 crypto trading pairs available and offers ‘two times’ leverage. It is regulated by the Financial Conduct Authority, there is zero commission and it has the tightest spreads on bitcoin and other cryptos.”

The platform also allows trades in fractions of digital coins, as low as 1 per cent of a bitcoin, for example. So at current prices, you would only need around $30 to trade bitcoin, not $3,000, says Mr Jones.

Most importantly, with pioneering artificial intelligence keeping you on track constantly, it can help you stay well ahead of less disciplined traders, he concludes.

**David Jones**
Chief market strategist
Capital.com

**CFDs are complex instruments and come with a high risk of losing money rapidly due to leverage. 78 per cent of retail investor accounts lose money when trading CFDs with this provider. You should consider whether you understand how CFDs work and whether you can afford to take the high risk of losing your money.**

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DEMOCRATISING FINANCE

# Offering coins and tokens to new investors

## Methods of raising capital based on cryptocurrencies are developing fast, enabling smaller investors to get involved

Unsplash/Ramon Kagie

OLIVER PICKUP

J.R. Willett, a Seattle-based software engineer, is regarded as the founding father of initial coin offerings (ICOs). In 2013, he raised the first ICO, for Mastercoin now known as Omni, a protocol layer on the top of bitcoin and an ecosystem "worth over $2 billion", he boasts on his LinkedIn profile.

Mr Willett's innovative concept was to launch the ICO "by selling the tokens of the new protocol layer to new investors, raising $500,000 in bitcoins, which within a few months appreciated to over $4 million". The idea proved incredibly popular in the crypto world, especially after the Ethereum project's ICO, in the summer of 2014, sold 11.9 million ether tokens to raise $16 million.

It didn't take long for startups away from the crypto community to utilise ICOs, realising that it was a more straightforward way to raise funds compared with more traditional methods, such as initial public offerings (IPOs) and through venture capital (VC). Indeed, in May 2017 alone, ICOs raised around $250 million, according to analyst Coinschedule, and in June funding hit more than $550 million, making it the first month that it surpassed angel and seed VC funding.

The crypto bull run that began in late-2017 propelled interest in ICOs, though some opportunists took advantage of the lack of regulation, which led Chinese authorities to impose a ban that September. In the whole of 2017, some 875 ICOs raised $6.2 billion, with a record $1.7 billion reached in December, ICOdata calculates.

Although that overall figure was surpassed by June this year, with $1.5 billion amassed in January alone, the numbers towards the end of the year – $167 million in September and $145 million in October – indicate what On Yavin, founder and chief executive of influential crypto data organisation Cointelligence, calls "a sentiment shift away from ICOs".

"ICOs are still a relatively new field, but the combination of too many high-profile scams and projects not living up to their promises has left investors wary, and that has hampered mainstream acceptance," he says. "I think ICOs are here to stay, though. We will see them evolve and be adjusted, but they will not disappear."

> **I wouldn't say it's as democratic as the crowdfunding model, but it does still allow the general public to get in on the ground floor with a modest investment**

Mr Yavin says ICOs democratise fundraising for startups "to a certain degree" and continues: "ICOs are a great way to raise funds compared to other options and the best part about it is non-accredited investors can join in the investments.

"It's a lot easier for a company to launch an ICO than an IPO. The cost of making an ICO in the early days was a lot more affordable than making an IPO, though it is now a much more expensive proposition. With hundreds of ICOs happening at once, to stand out you might spend as much as $500,000 on marketing and legal costs can be up to $300,000.

"I wouldn't say it's as democratic as the crowdfunding model that we're seeing used more in creative fields and by small businesses, but it does still allow the general public to get in on the ground floor with a modest investment."

Lars Lien, chief executive of betting startup Luckbox, raised more than $7 million through an ICO in April. "ICOs are a desirable option for startups," he says. "They provide a relatively frictionless method of raising money from a much broader church of sources, allowing contributors who might not traditionally have been able to become involved. Aside from raising funds, the increased diversity of people interested and involved with your project can be of significant benefit to startups."

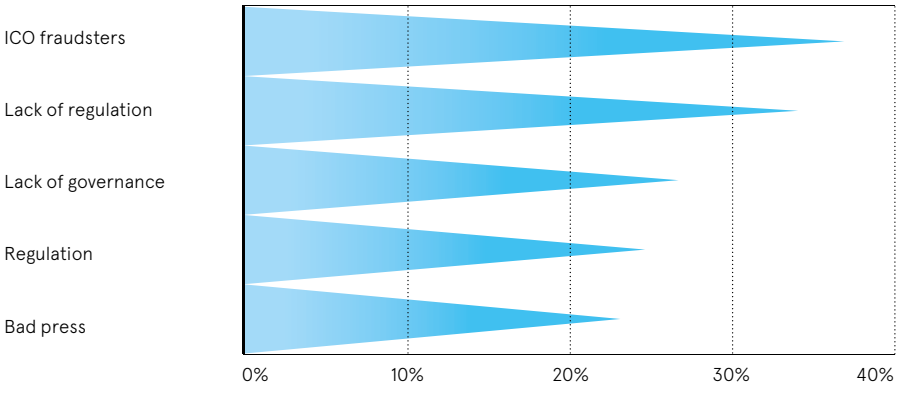
Kevin Murcko, chief executive of cryptocurrency exchange CoinMetro, agrees that tighter regulation is required for the ICO market to thrive. "During the boom, we saw bad actors, overpriced assets and fraud," he says. "But regulators will ensure that things won't be returning there ever again.

"ICOs of the future will be on a diet. There's no more easy money, no more get-rich-quick schemes. Investors are much more sceptical. Money will still flow into ICOs in years to come, but the bar has been irrevocably raised."

In a final warning to those thinking of launching an ICO, Mr Murcko adds: "If your company isn't helping to solve a tangible, real-world problem, I wouldn't expect a penny." ◆

### Top five challenges for ICOs

Survey of cryptocurrency professionals, institutional investors and venture capitalists

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Insight

### Security token offerings

Jon Walsh, an associate partner of consultancy firm Blockchain Rookies, believes that the next big fundraising vehicle in the crypto world will be security token offerings (STOs). "What we see now is the growth of the STO, which both the Financial Conduct Authority and the US Securities and Exchange Commission are starting to regulate. However, this may impact the ability of the general public, as opposed to accredited investors, being involved," he says.

Mark Hamilton, chief executive of Irish startup Solo Energy, plans to raise funds via an STO. "Our STO involves offering tokenised equity to investors," he explains. "Similar to a traditional IPO [initial public offering], it provides asset-backed security to investors. Startups must consider that STOs are more complex than ICOs [initial coin offerings] due to securities regulations and that is a good thing.

"We believe STOs combine the best attributes of traditional security offerings, namely investor protection, with the increased efficiency, speed and future liquidity of blockchain-based tokenisation."

Andy Tian, chief executive and co-founder of Asia Innovations Group, is equally optimistic. "To protect investors, it's best if the industry and regulators grow the industry together, and STOs will create an internet with more reliable options for investors and more fundraising options for visionary technology companies," he says.

ranglizzz/Shutterstock

Commercial feature


# Asset tokenisation set to transform financial markets

Asset tokenisation, powered by blockchain technology, is set to disrupt financial markets through automation and digitisation. It could open up trillions of dollars of assets and capital previously locked down due to inefficiencies and high barriers of the capital markets

**Harish Gupta**
Co-founder and chief executive
Polybird Exchange

Various central banks and governments around the world have now either released or are seriously considering releasing fiat-backed digital currencies. Noting the value of requiring no banking infrastructure to manage and settle ledgers, the potential to build a more transparent economy is increasingly attracting attention globally.

From Canada to Australia, banks worldwide have also been issuing billions of dollars of bonds on blockchain. According to research by Polybird Exchange, the value of these bonds exceeded $10 billion in 2018 and most received a positive response from investors.

Asset tokenisation is now emerging as a major concept for disrupting capital markets. Tokenisation is the creation of natively digital representations of traditional and emerging assets that are issued, traded and managed on a blockchain. It's the second most notable use case of blockchain technology after cryptocurrencies.

Tokenised assets, digital versions of traditional assets, could fit well within existing regulatory frameworks, which may mitigate some uncertainty surrounding newer crypto-assets. Tokenisation of traditional assets may also help increase liquidity, codify rules and regulations, and increase transparency throughout the asset life cycle.

Tokenisation enables complete digitisation of assets, such that assets can be transferred without the need for third parties or multiple ledgers. This enables better transparency and real-time execution of many operational tasks.

When assets are tokenised, the real assets are represented via a digital version of ownership known as tokens or coins, which are highly programmable. Multiple capital market functions can be automated or simply eliminated when codified.

Asset tokenisation is gaining in popularity around the world as a growing number of governments, financial institutions and other organisations tokenise assets such as equities, commodities, bonds, currencies and real estate.

The most notable example so far has been the tokenisation of currencies or the so-called foreign exchange stablecoins, specifically US dollars. Companies such as Tether, Gemini and Circle have released coins backed by US dollars, which have multiple uses in the digital-only world and have already achieved multibillion-dollar market capitalisations.

"There's a lot of excitement and promise in the asset-tokenisation space," says Harish Gupta, co-founder and chief executive of Polybird Exchange, a global platform that enables issuance or trading of global tokenised assets. "Tokenisation of assets and securities is a revolutionary concept for capital markets and, with the exponential growth rate we're seeing, over the next three years, the value of tokenised assets could exceed $1 trillion."

Tokenisation will lead to capital markets that are more efficient and involve faster, cheaper and easier issuances, settlements and back-office processes, in addition to a more efficient and less counterparty-risk trading ecosystem.

The impact of this could open up trillions of dollars of assets locked up in illiquidity, expensive processes and higher barriers to entry in the traditional capital markets. A considerably larger capital and investor base are likely to leverage these opportunities now there are platforms, such as Polybird Exchange, that enable them to do so.

Polybird Exchange provides a marketplace for global tokenised assets. As an end-to-end global exchange platform that facilitates buying and selling of these tokenised assets, it enables the issuance of digital tokens to raise equity and debt capital, and then enables trading of those tokens. Tokenisers can also list existing tokenised assets on the platform such as equities, bonds, commodities, currencies and commercial real estate.

"Since the process disrupts the entire life cycle, it is important to be an end-to-end platform and not just a trading platform," says Mr Gupta. "Tokenisation of assets and securities is a megatrend, and Polybird will emerge as a leading platform in this space that will lead to more digitised and automated capital markets."

**For more information please visit http://polybird.io**

pb POLYBIRD

INNOVATION

# Cryptos do have other uses with blockchain

Cryptocurrencies are widely regarded as trading assets, but along with blockchain they offer groundbreaking uses in sectors such as personal finance, housing and energy. Here are five innovative examples

BURHAN WAZIR

## 01 Low-cost money transfers

For many customers, the cost of bank-to-bank money transfers is usually governed by a number of factors, including expensive transaction fees, uncompetitive exchange rates and the limits of geography. According to a recent World Bank study, the average cost of a single bank transaction for private clients can be up to 5.5 per cent of the transfer amount. International money transfers can also take up to five working days. While the nature of money transfers has remained unchanged, companies such as Ripple, which sells a cryptocurrency called XRP, are taking advantage of using digital tokens to speed up the process while reducing costs. Ripple, which is based in California, has created a $300-million fund that will pay companies to use XRP for transferring money across international borders. The company recently announced the launch of another programme, known as Xspring, which will pay developers to code software with a focus on using XRP. Earlier this year, several leading money transfer companies, including Western Union and MoneyGram, announced they are working on pilot programmes using XRP. Cryptocurrencies have also provided traditional money transfer companies with an opportunity to diversify their incomes. Earlier this summer, UK-based TransferGo began to offer cryptocurrency trading to its customers in the form of buying and selling five major cryptocurrencies, including bitcoin, ethereum and litecoin. Founded in 2012, TransferGo says it currently has more than 600,000 registered users. The company is partnered with 30 banks.

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roibu/Shutterstock

## Combating electoral fraud

02

Digital currencies such as bitcoin and litecoin may have changed our perception of money, but their impact has been far reaching in other, less obvious, areas such as non-profit organisations trying to preserve and increase voter participation in democracies. A new startup called Sovereign, launched by a group called Democracy Earth, uses blockchain to give users more flexibility in how they cast their votes. The practice is described as a kind of "liquid democracy", which allows voters to express their opinions on any particular issue and then delegate their vote to someone they think is better placed to decide on their behalf. In turn, other participants can also pass their votes across the chain. Sovereign uses existing blockchain platforms such as Ethereum and produces a finite number of tokens it calls "votes". These are then assigned to registered users who can vote as part of organisations on a network of, for example, political parties or companies run as co-operatives. Voters use an app to see votes in their accounts and debate issues with each other before deciding which way to vote. A single vote takes one tap and more votes can also be assigned to a single issue. A possible drawback of the technology is that all transactions on the blockchain can be viewed by other users. Sovereign says, however, that some blockchain providers have found ways to ensure anonymity. Sovereign will become widely available to the public at the end of 2018 and was successfully trialled in an unofficial digital referendum in Colombia last year.


StockMediaSeller/Shutterstock

## Green energy trading

A major advantage of decentralised database technologies is evidenced in Brooklyn, New York, where a promising project has seen dozens of homeowners collaborate to install solar panels as part of a standalone network. The Brooklyn Microgrid is run by technology startup LO3 Energy, and enables residents and businesses to become self-sufficient for their energy, while giving them access to a trading platform where they can sell excess electricity to other buyers in the group. Brooklyn Microgrid has around 50 participants, but its modest beginnings are part of a larger idea to create a countrywide peer-to-peer energy trading system using blockchain technology. Organisers hope the grid will enable users to bypass utilities companies, which would benefit the environment, and build a secure supply chain that could function even in extreme conditions such as in the hurricane season. Across the world, companies like LO3 Energy are building new blockchain networks that maximise decentralised energy systems and work with existing grids or, in the case of remote locations and emerging economies, avoid the need for them. In Australia last year, Power Ledger announced the launch of a blockchain-powered electricity trading market for a housing community in Perth. In Bangladesh, where an estimated 65 million people currently lack access to power, ME SOLshare has been using rooftop solar systems to build a trading network. Consumers can sell their excess power, which is purchased by homes and businesses in small amounts using a mobile phone.

03

## Helping the homeless

04

One of the most socially conscious uses of blockchain technology can be seen in how cities are trying to ease services for homeless populations. Using $5 million from a grant awarded by the Mayor's Challenge programme and sponsored by Bloomberg Philanthropies, Austin in Texas is currently piloting a new blockchain platform to consolidate and verify the identity and other vital records of each homeless person. Austin is currently home to some 2,000 homeless people with several thousand more residents in various stages of access to unreliable housing. Administrators hope the city will be able to replace paper records such as social security cards, which can be lost or damaged, with electronic encrypted records. The MyPass programme will enable social services workers in the field to use a mobile device to verify the identity and circumstances of a person without having to bring the individual into an office for processing. MyPass will also improve the ability of government and private homeless service providers to offer more integrated and comprehensive help. The blockchain-powered records will verify identities and store records of previously received aid, as well as details of physical and mental care.


Ev/Unsplash

## Tackling food security

05

Another area where blockchain technology is playing a crucial role is in limiting food waste. A recent report by the Boston Consulting Group warned that the response to food waste was often inadequate and the amount of food thrown away or lost each year will rise by a third to 2.1 billion tonnes by 2030. The United Nations Food and Agriculture Organization estimates that some 815 million people suffered from chronic undernourishment in 2016. To alleviate the problem, IBM launched a blockchain-based food traceability platform with retailers, wholesalers and suppliers. The IBM Food Trust platform helps companies track the path of food products through the entire supply chain and across borders. It verifies products that have been digitally certified as organic or fair trade, and gives growers the ability to upload and manage their product information. The cloud platform is available to anyone in the food supply chain and has been adopted by the French retail giant Carrefour, which operates 12,000 stores in 33 countries. Other large adopters include multinational companies such as Nestlé, Tyson Foods and Unilever. The platform may be of particular value to the food industry in identifying and locating products that are subject to recalls, a process that is usually expensive and time consuming. Pricing for the platform begins at $100 a month and is tiered for small, medium and large businesses. ◆


Gary Perkin/Shutterstock

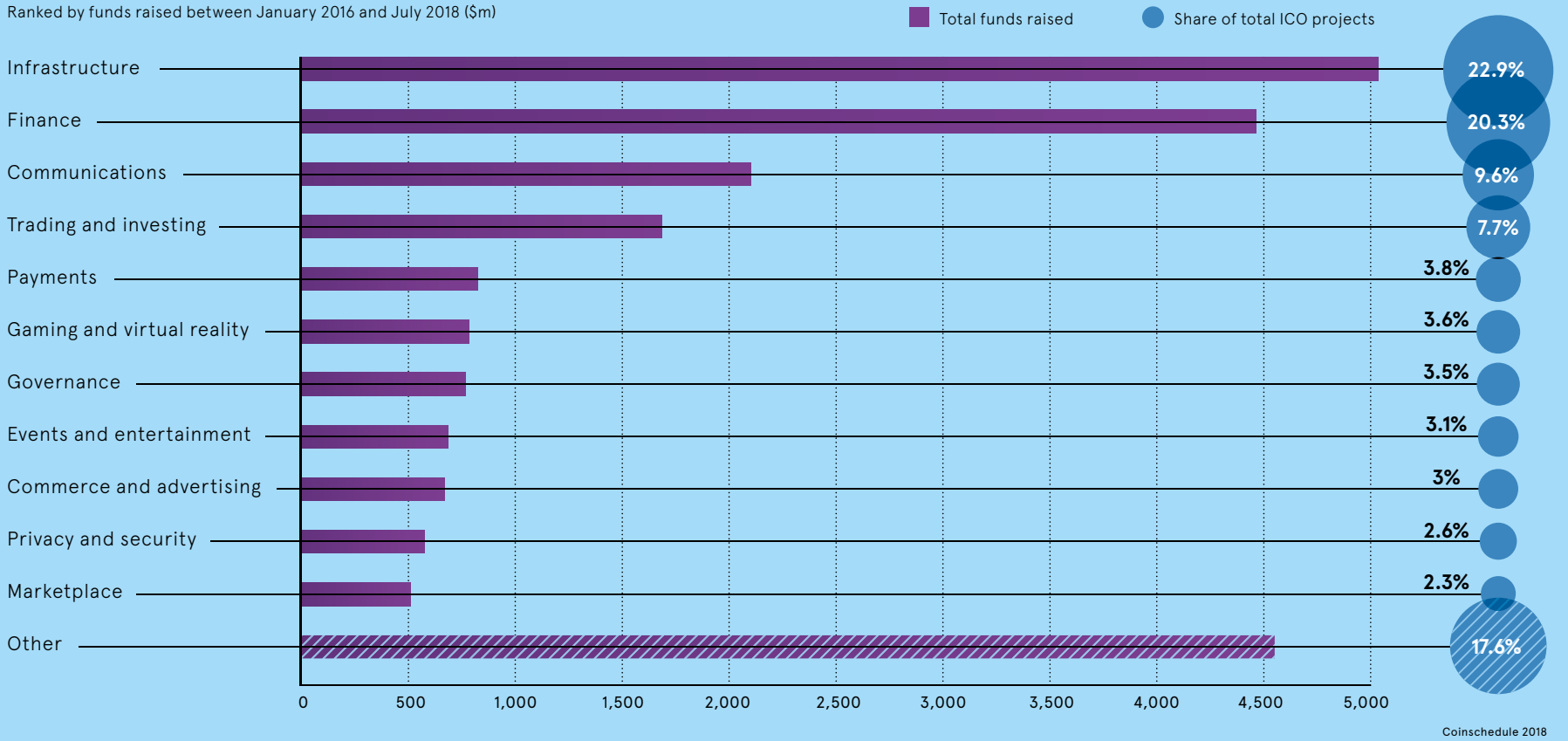
# CRYPTO CAPITAL

Initial coin offerings (ICOs) give startups a way to raise funding outside traditional means, where new cryptocurrencies or tokens are pre-sold to investors interested in the project. However, as issuers don't have to submit regulated filings, funding trends remain difficult to track and the most commonly used platforms mostly disagree on the numbers.

This infographic uses data from Coinschedule, which has a team of researchers who manually compile data for ICOs that manage to raise at least their minimum funding threshold. "Our approach is to try and be as impartial as possible and report funding amounts as reported by the projects themselves," says chief executive Alex Buelau. "This involves checking the official project announcements, data on the blockchain and sometimes direct contact with each project"

## Top ICO projects by industry

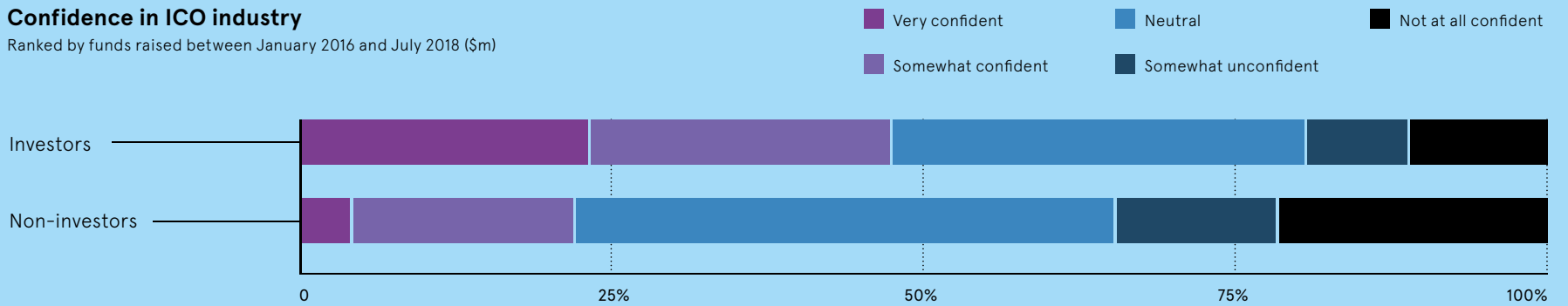
Ranked by funds raised between January 2016 and July 2018 ($m)




Coinschedule 2018

## Confidence in ICO industry

Ranked by funds raised between January 2016 and July 2018 ($m)

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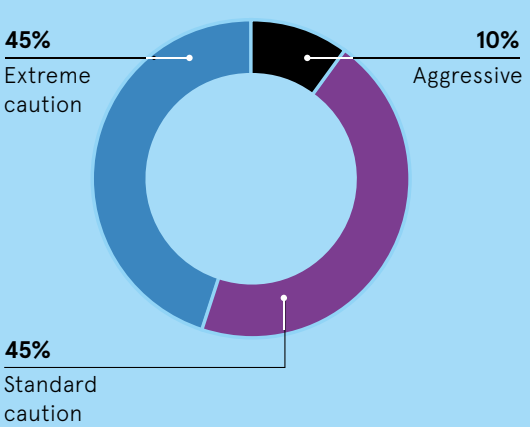
## Investor appetite in the market

ICO investors were asked how they approach investment in the ICO market

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## $20bn

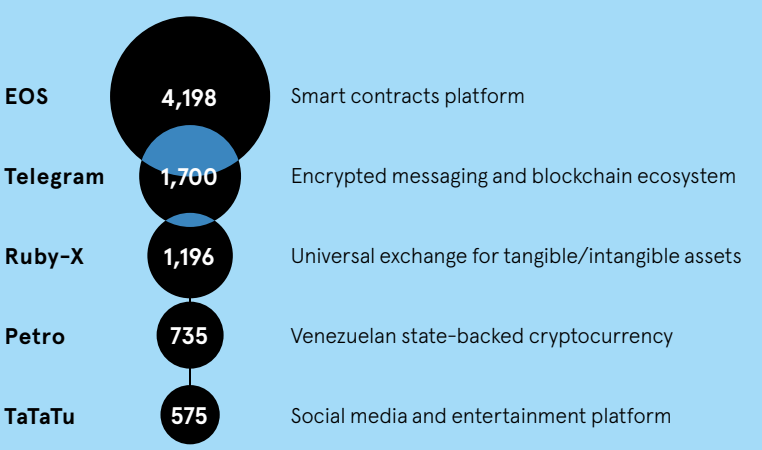
raised through ICOs between January and October 2018, up from $6.6 billion in the whole of 2017 and $0.1 billion in 2016

## 931

ICO projects were launched between January and October 2018, up from 456 in the whole of 2017 and 52 in 2016

Coinschedule 2018

## Largest ICOs of 2018

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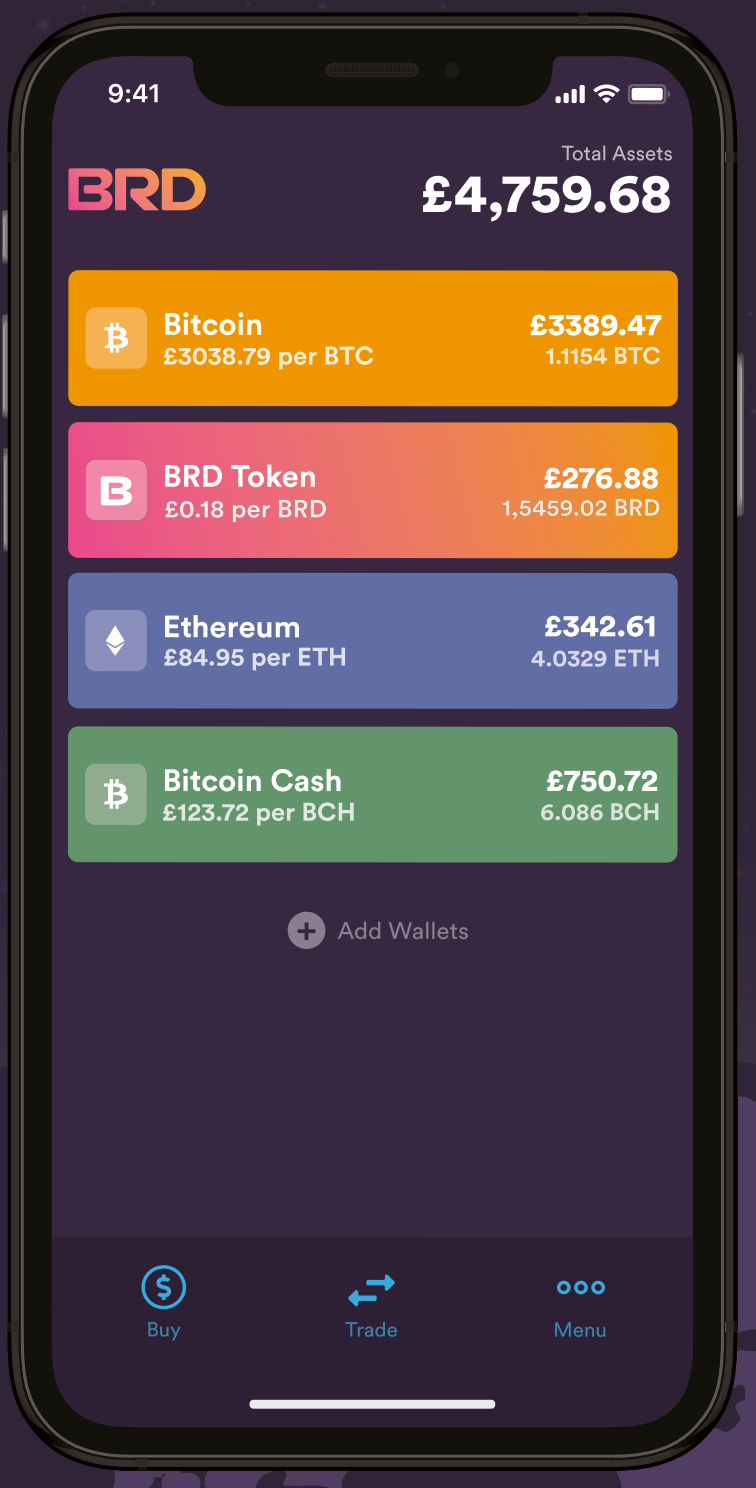
# The oldest and most trusted mobile wallet now has the lowest crypto fees in the UK.

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BLOCKCHAIN

# Smart contracts and blockchain are here

As more businesses plan to invest in blockchain, this distributed ledger looks increasingly like the link that will transform supply chains

JOE McGRATH

Blockchain, the buzzword in the boardroom, is fast becoming one of the most significant considerations for major spend by businesses across sectors.

Deloitte's *2018 Global Blockchain Survey* of 1,000 executives spanning seven countries and nine different industries confirmed blockchain as a priority when it comes to budget planning, with 40 per cent confirming their organisation will invest upwards of $5 million in the technology over the next 12 months.

The survey also showed more than 75 per cent believe that without blockchain their business could lose competitive advantage, but in spite of this concern 33 per cent said they remained uncertain on the return on investment in the technology.

According to the report: "The only real mistake we believe organisations can make regarding blockchain right now is to do nothing. Even without a completely solid business case to implement, we believe that organisations should at the very least keep an eye on blockchain so they can take advantage of opportunities when they present themselves."

While the future appears promising for the adoption and implementation of blockchain, with so-called smart contracts among businesses in various sectors worldwide, to date it has been slow.

Eric France, partner at law firm Mills & Reeve, says: "This technology is in its infancy and the applications for it are still being defined, but the unique properties of distributed ledgers are already proving to be highly useful.

"The key innovation of blockchain technology is that distributed ledgers keep all copies of the ledger identical, in real time, for every member of the network. This provides a new way of allowing people to enter into contracts with each other, where the history of their agreements is logged in a way that can be verified, but not altered.

"While the record of the contracts is logged, information that the parties wish to keep private can be securely encrypted. The system is safely distributed across many computers with no single point of failure, protecting against the threat of a cyber-breach."

The use of smart contracts – a direct, digital relationship between interested parties – has grown in line with blockchain, in spite of the term being discussed initially back in 1995 by computer scientist and cryptographer Nick Szabo.

By enabling businesses to communicate directly, removing any reliance on a middle man or third party, a smart contract stores a business's terms of agreement, and can then verify and execute those agreed terms.

Saswata Basu, founder of 0chain, explains: "Smart contracts let you programmatically make a transaction based on an event. This removes the human element of communication, interactions and errors associated with such."

> **A smart contract stores a business's terms of agreement, and can then verify and execute those agreed terms**

Mr France says that by offering clients a superior experience, smart contracts have the "potential to give companies a competitive advantage".

He adds: "Smart contracts stand to dramatically enhance supply chains, increasing automation and speed, reducing the need for agents and other middle men, limiting human error, avoiding manual record keeping, and building up certainty and trust between parties."

Deloitte's research into blockchain demonstrates that successful implementation has largely been among more digital-based businesses, with traditional organisations lagging in the adoption of the technology.

For established businesses, a significant concern is how blockchain would fit into an existing paradigm and, ultimately, what the overall benefit would be. This differs significantly from the digital organisations that have been built with blockchain already in existence.

In spite of this, there have been some interesting success stories surrounding smart contracts which, according to Mr France, have predominantly been within the insurance industry.

He highlights one of AXA's products as a great example of how this particular sector is well placed to benefit from technological advances in this area.

"AXA's product 'fizzy', for example, uses distributed-ledger technology to offer direct, automatic immediate compensation to policyholders whose flights are delayed by more than two hours," Mr France says. "The fizzy product works by recording the purchase of flight delay insurance on the Ethererum blockchain platform. The smart contract is then connected to global air traffic databases, so as soon as a delay of more than two hours is observed, compensation is triggered automatically."

Mr Basu also cites IBM, Microsoft, Oracle, AWS and CitiGroup as great examples of businesses that have started to implement blockchain solutions, adding: "The most notable implementation is Walmart with its supply chain and logistics."

He explains: "Blockchain and smart contracts reduce transaction and escrow times and associated costs by eliminating the need for human interaction. It also enables higher transparency and trust that is better than a traditional trusted entity or individual."

For Walmart, the use of blockchain technology was borne out of a bad batch of lettuce resulting in the sickness of a large number of its customers. Having conducted a two-year pilot, the supermarket chain announced in September the rollout of the technology enabling them to track every lettuce.

By 2019, the organisation will require the majority of its farmers to provide detailed information about their produce to a database. For any future sickness outbreaks, the business would be able to identify and dispose of just the affected batches, rather than clearing entire shelves of fresh produce.

According to reports by *The New York Times*, the same system, which was developed by IBM, is also being used by Dole, Wegmans and Unilever to track produce as it moves through the supply chain.

> **Smart contracts let you programmatically make a transaction based on an event. This removes the human element of communication, interactions and errors**

Mr Basu says: "Supply chains have working capital and SLA [service level agreement] inefficiencies that can be streamlined. If goods shipped and received today are recorded on the blockchain, then SLA enforcement and payment can be done faster and cheaper."

Blockchain and smart contracts, although successful for some organisations across a range of sectors, are yet to be widely adopted. Deloitte's research demonstrates that while early adopters believe in blockchain's potential to disrupt and revolutionise their industries, the problem lies in the limited number of active case studies demonstrating the wider benefits.

But in an increasingly digital world, with advances in emerging technologies such as automation and the cloud, businesses will find it hard to ignore blockchain. As Deloitte's research concludes: "We see the potential for blockchain to help organisations create and realise new value for businesses beyond anything we can imagine with existing technologies." ◆

Insight

## New approach for cross-border transactions

As businesses look for faster, secure ways to conduct trade across international borders and to increase sales with relevant, informed business connections, new platforms are starting to emerge.

TraDove is one such organisation. The company started life as a social networking site for businesses. Since then, it has earned recognition among investors for its potential to accelerate cross-border payments and target advertising.

"We started as a business social network, to bring the buyers, sellers and decision-makers under the same umbrella," explains TraDove founder and chief executive Kent Yan. "Traditionally, you'd use the telephone to make cold calls. It could take you weeks. We shortened the cycle."

The company recently raised $10 million from investors. TraDove's platform enables businesses to establish a verified profile, by authenticating users to ensure that they are who they claim to be. It overlays this with endorsements from other businesses.

Once business transactions become more frequent, the platform can even grade a company with a credit rating, based on the number of transactions and the number of partners with which the business has interacted.

TraDove uses blockchain technology for cross-border payments, so the traditional letter-of-credit approach from banks could soon face a new challenger. "With blockchain, you are replacing the letter of credit in a low-cost way. Once you have reached an agreement, you use the infrastructure to make the payment," says Mr Yan.



Q&A

# Institutional investors eye up long-awaited crypto entrance

As chief technology officer of a UK asset manager, **Dmitry Tokarev** saw the barriers to pursuing cryptocurrencies for clients so he launched Copper to offer a unique custody application that enables institutional investors to embrace this lucrative market for the first time

**Q What has held institutional investors back from entering the cryptocurrencies space?**

**A** It's the same barriers that prevented the asset management firm I worked for from launching a cryptocurrency fund late last year. We couldn't find any custody or execution venues that did what we needed to be able to enter this space. Traditional investors and investment managers need things like audit trails, reporting capabilities, multiple logins and multiple trading accounts, as well as integration with traditional portfolio management systems. These features were lacking in the existing custody venues.

**Q What are the key flaws in traditional custody venues?**

**A** If I have $100-million-worth of gold in my office, I don't want it there. I want it somewhere safer and that's where custodians come in. It's no different in the crypto market. However, the downside to custody is I need to trust someone else to look after that $100 million for me. The other problem with traditional custody venues, and it's quite a big one, is if you are an investment manager deploying your capital across many exchanges to generate returns on your strategy, as soon as your funds leave a custodian's wallet, you're essentially in self-custody mode because you have access to those exchanges. That prevents large institutional investors from giving the funds to the investment manager.

**Q How does the solution you've built with Copper overcome these issues?**

**A** The way we structure our custody application is quite different. We kept the good things about custody and we left the bad things behind. We use mathematics and cryptography to make it so the client no longer has access to the funds at any point in time, but when they want to have it, they have it. By allowing investment managers to deploy their capital across many exchanges without having complete access to them, institutional investors can be satisfied they have enough tools to generate returns, but don't have access to the funds outside a specified number of venues. We're effectively a bespoke prime brokerage in the cryptocurrency space.

> **Our architecture is created in such a manner where, even if we get hacked, nothing will happen to client funds**

**Q How is your application more secure than technologies traditionally used by custodians?**

**A** With self-custody, funds are stored on a USB stick or a Trezor so you basically have them in your back pocket. That doesn't sit well with investors and asset managers because they don't want access to such amounts of money and there are obvious security issues. Traditional custody venues, on the other hand, have typically adopted hardware security modules where they keep the private keys centrally and investors have to rely on their custodian to have good enough processes for that not to be compromised. However, more often than not, security threats stem from internal dangers such as rogue employees. That means any person with access to the server could comprise the private keys. We address security differently. By using cryptography to split private keys offline, we never put those keys together on our or our clients' servers. This means our architecture is created in such a manner where, even if we get hacked, nothing will happen to client funds.

**Q By enabling institutional investors to pursue cryptocurrencies for clients, what impact will this have on the market?**

**A** We'll see a more mature market and a move towards security tokens and blockchain agnostic solutions, such as Copper. Currently the whole industry is in a build-out phase for service providers and layer-one protocols. Right now, in people's minds, there is bitcoin and 2,000 bitcoin alternatives. A more mature market will see a consolidation of available assets, with a focus on those that can generate actual returns for investors. With the correct infrastructure and governance in place, we will also see less volatility, and hopefully a spill-over to traditional finance, potentially resolving the redundancy of settlement-over-days processes and creating greater market efficiency.

**For more information please visit copper.co**

copper.co

REGULATION

# Addressing the crypto conundrum

Anonymity and confidentiality may be attractive in the crypto world powered by blockchain, but they can pose problems when policing money laundering


Freya Ingrid Morales/Bloomberg via Getty Images

The alleged Danske Bank money-laundering scandal, involving €200 billion of "suspicious transfers", highlights the need for greater transparency

NICK ISMAIL

After skyrocketing for a couple of years, the cryptocurrency bubble has come crashing down to Earth. At its peak, in January this year, the market valuation of cryptocurrencies or tokens stood at more than $800 billion. Over the last five months it has dropped to below $185 billion, which represents a dramatic 75 per cent drop.

Lack of regulation and compliance laws have almost certainly contributed to the recent dip in the crypto market and is why investors are apprehensive, to say the least.

"One of the biggest challenges to widespread adoption of cryptocurrencies is the lack of regulation and good governance structures within the sector," says Thomas Coughlin, chief executive of Kinesis Money. "There is increasing scepticism from governments and investors alike when it comes to digital currency, casting a shadow of 'otherness' on the crypto world."

In particular, regulation surrounding anti-money laundering (AML) and know your customer (KYC) are hurdles to overcome.

These are key areas of the traditional financial markets that combat the issue of anonymity and enable the ability to identify specific sources of funding.

AML and KYC have been part of a regulatory process led by FATF, the international organisation that fights money laundering and financing of terrorism.

They have issued many recommendations, but the main one concerning cryptocurrency is if you can identify the source of the funding, then you can track back where "dirty" money has come from.

Many financial institutions, including banks and service providers such as lawyers and accountants, have therefore adopted procedures such as KYC to avoid AML. But this is harder to do in the crypto space due to the challenge of anonymity, although it is not impossible.

To understand the challenges around this, you have to understand how blockchain, the technology behind cryptocurrency, works. The idea of blockchain is synonymous with anonymity, which to some has cast it in a somewhat shady light.

Blockchain is a distributed ledger that records day-to-day transactions, without the need of a middleman.

"That's the beauty of blockchain – what it does for the protection of information and data," says Roy Keidar, special counsel at Yigal Arnon & Co, the Israeli law firm. "It's a verification mechanism that can approve any kind of transaction."

The anonymous nature of tokens, therefore, means that even if regulators did adopt a broader view of legislation, difficulties would remain; enforcing crypto market manipulation sanctions, for example. Connecting the dots between transactions and proving a connection is also a complicated task.

Currently, there are a lack of tools and standards in the crypto space, unlike in traditional markets. Identifiable information is not immediately accessible on the blockchain. But, it is possible to track down the source of the code, from the original wallet the token came from.

So the question arises, how do I know who owns the wallet? Following financial institutions, cryptocurrency exchanges have started to embrace AML regulations and the KYC rule.

Now, before you can open a digital wallet, you have to identify yourself, via name and proof of address.

> **Combining self-regulation with more established practices of trust and accountability could be enough to reinvigorate the cryptocurrency boom**

These verification procedures are a step in the right direction.

However, crucially, several tokens are more anonymous than others. These provide more safety and privacy for some, but are a significant compliance concern.

In the last few months, relevant bodies have been looking at ways to stop transactions using these tokens that prioritise anonymity.

This is a particular challenge, though, as regulators move painstakingly slowly, especially in such a complex environment.

Self-regulation may hold the answer. This practice is becoming more common, where cryptocurrency exchanges, the equivalent of the Stock Exchange, are banning overly anonymous virtual currencies.

In June, for example, Coincheck confirmed it removed Monero (XMR), Zcash (ZEC), Dash and Augur's Reputation (REP) coin from trading on its exchange to maintain accordance with Japan's Financial Services Agency's new policy, which aims at banning tokens that offer significant anonymity.

At this point, it is important to note that domestic regulation will not be sufficient. There needs to be a global approach to the cryptocurrency conundrum.

"Self-regulation will make a big difference in adhering to AML and KYC. I anticipate that in the next year or so, we'll see a lot more self-regulation because it is going to take a while for regulators to combine forces and make a global move," says Mr Keidar.

"That's the best way to make sure the industry is more transparent, and abides by international rules and domestic laws."

Mr Coughlin agrees. "A self-regulatory group with top exchanges can be formed to add a new layer of security and accountability to the crypto markets," he says. "This group can be a kind of gatekeeper of sorts, holding all cryptocurrencies to a certain standard, from their ICO [initial coin offering] period through to their launch and exchange.

"Before implementing these standards across the market, however, members need to ensure complete transparency and accountability within their own digital currencies, and be prepared to accept there will be penalties and sanctions for non-compliance."

Currently, because of regulation and compliance challenges, some investors may be sitting on the fence, waiting for greater clarity of crypto regulation and protection.

Combining self-regulation with more established practices of trust and accountability could be enough to reinvigorate the cryptocurrency boom.

As more of these regulations and compliance standards emerge, specifically around AML and KYC, this should help catalyse traditional investment in the market. ◆

**Benefits of blockchain-enabled know-your-customer (KYC) processes**


KPMG 2018

# Meet the company making blockchain a reality in co-working

Technology is driving change in how we work, but working infrastructure doesn't always keep up with changing needs

For the self-employed and small startups, there are two unmet needs in particular: finding somewhere to work and a supportive community of peers.

Primalbase, an Amsterdam startup that has just opened a 1,500-square-metre office space near London's Silicon Roundabout, is using new technology to provide answers to both these needs at once.

On the surface, it's a managed office provider offering the trifecta of desks, wifi and coffee in a modern workspace. At the same time, it is deliberately building an incubator environment where its clients are encouraged to interact with each other for inspiration and practical support.

To this end, Primalbase is using one of the most cutting-edge and controversial digital technologies – blockchain – to create a market in its hot desks.

"We started Primalbase to give innovative people a real home; somewhere they can collaborate, communicate and create together," says Ralph Manheim, chief executive of Primalbase. "This isn't an impersonal co-working space; it's a real community where you can meet people on your wavelength."

That wavelength is one which is receptive to blockchain and other emerging technology. "Among other things, we wanted to explore what blockchain could do and we thought the world of co-working was a very good fit," says Mr Manheim. "We see blockchain as a vital part of the future of work, but only if it's practical, accessible, and provides obvious advantages to us and our community. We think we have that here with our new Lease Market."

Blockchain is one of the few genuinely new technologies of the 21st century, and as such has spawned as much hope and hype as genuinely useful products. In particular, as the underlying enabler of bitcoin and other cybercurrencies, it has acquired the patina of a technology out of control, enabling all sorts of activity at the edge of, and sometimes beyond, legal limits.

But blockchain isn't bitcoin, any more than accountancy is offshore banking. Blockchain can be thought of as a distributed ledger, a way of keeping a database of things and their owners that can't be illicitly altered, but needs no central authority.

Everyone who wants to trade things on the ledger can have a copy of that ledger and make deals between themselves that are replicated in everyone's copy. The underlying mathematics and engineering of the software involved ensures the validity of the transactions and guarantees ownership.

This can seem pretty abstract. But the things in a blockchain can be anything digital, in Primalbase's case, tokens signifying rights to use office space. Anyone who buys a token can also put it on Primalbase's Lease Market to let anyone else rent it for a set time.

"This gives everyone a huge amount of flexibility at a competitive price," says Mr Manheim. "You can buy a day or more in the office for whatever the token owners are offering it at and get the use of very modern offices without the headache of deposits or filling out forms. There are also a lot of administration and technical advantages that quickly mount up, and avoiding them makes running our business smarter and more efficient."

The company started in 2017 in Amsterdam. It built its blockchain-based Lease Market around Ethereum, a second-generation blockchain, which supports its own cryptocurrency, but is also designed to handle a much broader range of automated, secure token-based services.

Primalbase raised $7.5 million by issuing 1,000 tokens, which it used to open its first offices.

"People can lease private offices from us in the traditional way and that's about half our community," says Mr Manheim. "The other half, our token holders, have the right to use a hot desk in any of our locations at will. When they're working elsewhere, travelling or even on holiday, they can make some additional income by selling those days on our Lease Market."

While the company's more mobile clients are out of the office, anyone can buy that time. In practice, this means logging on to the website, booking time by paying a token holder, then turning up at the workspace with photo ID. Token holders set their own price and can see other offers to stay competitive.

Primalbase's business model goes beyond tokens and leases. It looks to its permanent clientele to provide the ground base of community buzz to attract the more nomadic workforce. Its positioning in tech hubs clearly signposts its desire for high-tech entrepreneurial types, notably developers, researchers and leaders interested in artificial intelligence, big data, cybersecurity and the like.

Another leg of the company's strategy is hosting events, workshops and training for its community, in conjunction with tech event and workshop company Binary District. These include the Genesis Conferences, a series of summits for blockchain developers and companies.

"We're constantly developing how we do business," says Mr Manheim. "One of the things we hope to achieve is to help make blockchain more normal and more user friendly for both businesses and consumers."

The company is planning to build beyond its current Amsterdam, Berlin and London bases to New York, Singapore and further, and says its expansion plans are in part driven by the suggestions of its community.

"It's an adventure," says Mr Manheim. "Everyone knows some of the best and most innovative ideas start out as being uncertain and unnerving. We're sure, though, that we're building a way of working that gives everyone the best chance of succeeding in that future through flexibility, community and innovation."

01


02


03

**Primalbase offices**
**01** Amsterdam
**02** Berlin
**03** London

## How it works

Primalbase works via a token-based membership system. Purchasing a token via Waves Platform enables members to use hot desks at its offices across Europe for as long as they like. Holders can then sell their tokens at any time or they can use Primalbase's Lease Market. This lets others lease a token for a time in exchange for a payment. One of the first blockchain-based booking and leasing systems of its kind, it lets token holders make an additional income when they're not using the office and enables non-members to use the workspaces on an ad hoc basis.

## Current office workspaces

**Amsterdam**
1,200m² co-working area
50 hot desks
11 private offices
1 meeting room

**Berlin**
700m² co-working area
40 hot desks
9 private offices
1 meeting room

**London**
1,500m² co-working area
60 hot desks
17 private offices
2 meeting rooms

There are also upcoming offices in Singapore and New York

**"We see blockchain as a vital part of the future of work, but only if it's practical, accessible, and provides obvious advantages to us and our community. We think we have that here with our new Lease Market**

UNITED STATES


Unsplash/Wellington Rodrigues

# Frontier for US crypto pioneers

Developments in America may lead the way for organisations elsewhere considering whether to adopt cryptocurrencies in business as well as national and local government

ADAM STONE

When the price of bitcoin rocketed up from under $1,000 to almost $20,000 in late-2017, regulators in the state of Texas became nervous.

"Whenever new markets for investments develop or new types of products get hyped in the headlines, white-collar criminals and scam artists will capitalise on that," says Joe Rotunda, director of enforcement for the Texas State Securities Board. "We wanted to see if bad actors were trying to leverage the hype to defraud investors."

In a 30-day sweep, Mr Rotunda's office opened 32 investigations into shady offerings of cryptocurrency securities. Now the office has more than 100 cases.

If the rise of a new kind of money has opened a temporary window for crooks, it has also created a range of new opportunities for state and local government. Across the United States, municipal authorities and state agencies have taken steps to both embrace and manage the cryptocurrency phenomenon.

Governments have scrambled to create new rules and regulations around the emerging digital-money platforms. Some have encouraged adoption, others have tried to set limits around crypto funds.

Ohio recently became the first US state to declare it would accept tax payments using digital currency. "We're doing this to provide Ohioans more options and ease in paying their taxes," treasurer Josh Mandel said in announcing the move. He noted that real-time tracking on blockchain would make it harder for bad actors to interfere with tax payments made via cryptocurrency.

Experts say it makes sense for governments to explore the use of cryptocurrency for taxes, as well as for welfare benefits and other financial interactions between the state and its citizens.

"As a form of programmable money, it creates a digital identity that is both convenient and secure, and that can be used to pay for goods and services without having to give up confidential information," says Joel Telpner, a member of the faculty at the Blockchain Research Institute.

Some jurisdictions have taken this a step further and are looking at issuing their own digital currencies as a way to raise funds for municipal projects.

The city of Berkeley in California, for example, is developing a pilot project through which it plans to issue its own cryptocurrency for investors to purchase municipal bonds to fund social efforts including affordable housing and homeless shelters.

"The $3.7-trillion muni market lacks transparency, involves a slew of fee-collecting middle men and excludes small investors," council member Ben Bartlett said proposing the scheme. "By combining civic crowdfunding with municipal 'microbonds', we can democratise public financing in Berkeley and create tangible benefits for our community."

In Lafayette parish, Louisiana, mayor-president Joel Robideaux is following a similar path. He has proposed launching a government cryptocurrency as an alternative means of funding public infrastructure.

> **Some jurisdictions are looking at issuing their own digital currencies as a way to raise funds for municipal projects**

More than just a potential funding source, cryptocurrency represents a booming business. Some state and local governments are trying to paint themselves in a crypto-friendly light in the hopes of attracting up-and-coming crypto-based enterprises.

Wyoming, for instance, is aggressively courting crypto businesses, passing blockchain-friendly legislation with the backing of a local advocacy group, the Wyoming Blockchain Coalition.

Blockchain can "cut costs, streamline administrative processes and spur entirely new businesses in Wyoming", said executive director David A. Pope, announcing the formation of the coalition. The group has pushed for laws, which make it easy to conduct business on blockchain, to build an environment that is friendly to business uses of cryptocurrencies.

Even as some US states move to embrace the new digital money, however, others are tackling a range of perceived perils associated with the rise of cryptocurrencies.

Some point to the sheer technical complexity of cryptocurrency as a possible red flag for state and local government.

"Once you are running your own financial platform, there are security issues, there is potential interference from hackers and then you need to have software that aligns with other systems globally," says Shone Anstey, executive chairman of analytics intelligence firm Blockchain Intelligence Group. "Can a city government run an entire bank from a server in the basement? It's hard to do what Visa does."

Some governments are already confronting unexpected negative fallout from the rise of crypto. In New York State, for instance, multiple jurisdictions have banded together to put limits on crypto-mining, the practice of earning digital money by validating online transactions.

Mining draws a huge amount of electricity, so much so that the New York State Public Service Commission decided recently to allow utilities to charge a higher rate to crypto-mining companies to keep local utility rates from skyrocketing.

The New York Municipal Power Agency (NYMPA), an association of 36 municipal power authorities, sought the change. Mining activities "were increasing costs for all NYMPA members and their ratepayers while providing no corresponding benefit to the community", the group says.

Florida, meanwhile, is looking to head off potential complications by hiring a state crypto chief, a move industry observers say other states should also consider.

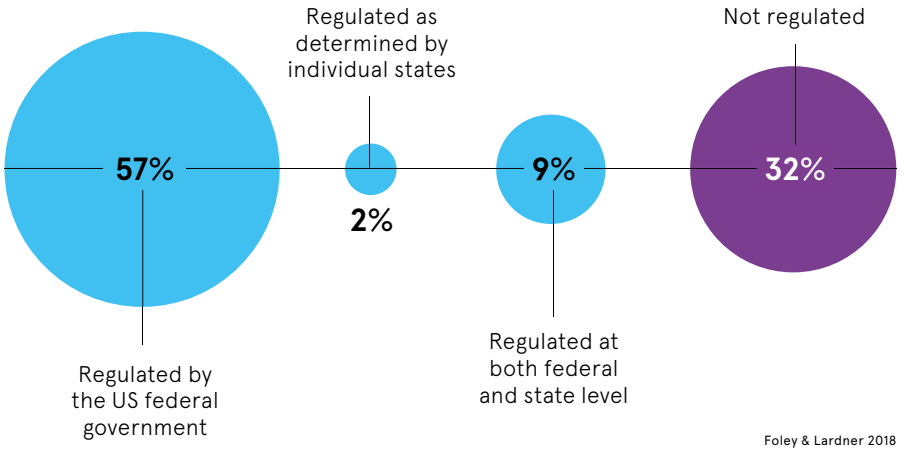
"This is a super complex industry," says Aaron Lasher, board member of bitcoin wallet provider BRD. "To actually understand it at a fundamental level, you need expertise in economics, in monetary theory, and you also have to be a software engineer to understand how all the cryptography and the validation works."

Despite such complications, and even in the face of initial widespread fraud, Texas enforcement official Mr Rotunda predicts states will find a way to make crypto work in the long term.

"The public is really interested in this and we have an obligation to protect those investors," he concludes. "As the legitimate markets develop, things will tend to settle down." ◆

## Investor opinion on US regulation

Investors, traders and business executives were asked how cryptocurrencies should be regulated in the United States

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