#CRYPTO UTOPIA

The $20 billion Cambrian explosion of tokenized digital assets, and the emerging infrastructure being built to support them

Suitable only for professional investors

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NEXT

Table of Contents

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With special thanks to:

Latham & Watkins LLP
BITA
Token Data
Coinmetrics
Dalia Research
20|30

Executive Summary (1 of 3)

- **Welcome! If you are new to Initial Coin Offerings and the Crypto economy, we suggest you read our 2017 primer, *Token Mania*: https://next.autonomous.com/download-token-mania/**

- **2017 ICOs raised over $7 billion, and 2018 YTD has followed pace at over $12 billion**
  - While the headline numbers continue to impress and outpace venture capital funding into the equities of companies in the space, the real story is more complicated
  - Two massive projects – Telegram and EOS – were responsible for nearly half of 2018 YTD funds, and highlight the direction of travel for future token offerings
  - Various smart contract platforms have emerged to both facilitate ICOs, as well as be the software platform of choice; for Ethereum, 2% of its marketcap is reinvested back into the space on a monthly basis
  - Alternate means of funding a community, such as forks and airdrops, have proliferated

- **The path from ICO to a successful large-cap liquid coin is difficult, with trends and valuation approaches still emerging**
  - Scams and fraud constitute as much as 20% of project white papers, over 50% of ICO projects have failed to raise funds or are no longer operational, and phishing and hacking have been responsible for the theft of 15% of all crypto assets by market cap
  - Such statistics make sense in the context of 65% failed Kickstarter projects, 70% failure by venture-backed startups to progress to Series A, 85% failure of DotCom tech IPOs within 10 years
  - Crypto, as an asset class, is still correlated with traditional assets and between the various large capitalization coins; Bitcoin's weakness in early 2018 has been a large sentiment driver across all assets
  - Active ICO token selection and liquid coin selection are not winning strategies over indexing

Executive Summary (2 of 3)

- **In order to capitalize on what could be a massive opportunity, over 300 crypto funds have formed to invest in tokens and currencies**
  - Funds have been mostly started in 2017 and 2018, with a variety of strategies including Venture, Trading, Quant & Artificial Intelligence, Fund of Funds, Indexes, Token Baskets, Credit and Ecosystem Funds
  - The assets held by these funds is between $7.5-10 billion, and about $2-4 billion is also exposed to crypto through traditional vehicles like ETNs, trusts and futures products
  - Assets are highly concentrated with the top 10 funds, and the operating future for the majority of funds, which hold less than $25 million, will be difficult unless they see another year of large outperformance
  - Increasing diversification, talent and capital entry into the space is a long-term positive for the ecosystem

- **The financial industry is working to build tokens into an asset class, which would place the current nascent $300 billion of market cap as part of the $10 trillion in global Alternative investments, and eventually as part of the $500 trillion representing all securities and assets**
  - The token economy is on its way to become an asset class, by evolving along the following themes:
    - (1) marrying traditional and crypto custody,
    - (2) creating larger liquidity pools via institutional exchanges,
    - (3) developing decentralized exchanges for ease of use and anti-censorship,
    - (4) tokenizing traditional securities through Security Tokens and enterprise blockchain concurrently,
    - (5) developing traditional product wrappers to lower fees, increase access, and plug into wealth management distribution
  - The current state of crypto infrastructure is still too expensive, inefficient, and subject to multiple points of economic rent-taking by powerful intermediaries

Executive Summary (3 of 3)

- **Engineering a token launch and subsequent project has accumulated all the difficulties of a public ICO process, at a similar price level**
  - Unlike private early stage technology firms, crypto projects must manage investor relations, token listing, and various late stage company issues while trying to bootstrap technology product adoption
  - A variety of third parties – from legal to corporate advisory to exchanges – have formed in the space to monetize solutions around these needs, driving the all-in price of an ICO process to $1-5 million, which is in turn passed on to investors through unreasonable valuations
  - Token engineering itself requires a detailed understanding of the relevant industry, economy and incentives, as well as token feature design (e.g., staking, burning, collectibles)
  - We provide a detailed Taxonomy of digital assets combining several attempts into a cohesive framework

- **Regulatory , Legal and Tax Considerations are key in an evolving field**
  - From a strategy perspective, global regulatory approaches follow three directions according to roles the global economy: (1) lowering barrier to entry for crypto projects, like a Crypto Delaware, (2) using regulatory policy and national technology investment as a sovereign sword, (3) relying on regulation as shield for consumer protection as first priority
  - Key legal issues include (1) securities law treatment, (2) payment services / money transmission regulations, (3) derivatives regulation, (4) fund regulation, and (5) consumer protection and general legal considerations
  - Regulators generally use a technology-neutral approach, focusing on human business activities and not developments in software; however, a distinction between the original cryptocurrencies and second-generation crypto assets is starting to emerge
  - Latham & Watkins analyzes and highlights 15 jurisdictions and their current posture on crypto assets

Growth Of The Crypto Economy

Crypto is a massive shift in digital economy: Digital goods can be scarce and users no longer have to be the product

Scarce Real Objects

- Industrial economies are organized around quantities of scarce products, whose pricing is determined by Supply & Demand
- An existence in the physical world implies a positive cost of production, which funds initial investment
- Economic activity around such goods follows, with people paying for the product itself

Free Digital Objects

- When digitized, such goods could be copied and distributed with a marginal cost of approaching $0
- While music labels tried to create costs through DRM, these efforts all collapsed
- As a result, economic activity was replaced with advertising models or freemium, turning user data into the products

Scarce Digital Objects

musicoin

The World's first smart cryptocurrency for music

- Blockchain technology allows for digital objects to become as scarce as their physical versions
- This scarcity is manufactured through decentralized network activity, governed by micro-economic design frameworks
- Scarce digital goods (music or securities) allow customers to pay for the product again, bootstrapping economic activity

Source: Autonomous NEXT
Graphics: By tiburi from www.pixabay.com and Musicoin

We are on the 4th wave of innovation within crypto themes

Bitcoin
Global macro trade

2008
Store of value
$7-100 Trillion

Enterprise Blockchain
Private consortia within industries

2014
$500 Billion of costs
in financial services alone

Decentralized Apps
Smart contracts and ICOs

2015
All digital economies
and their operations

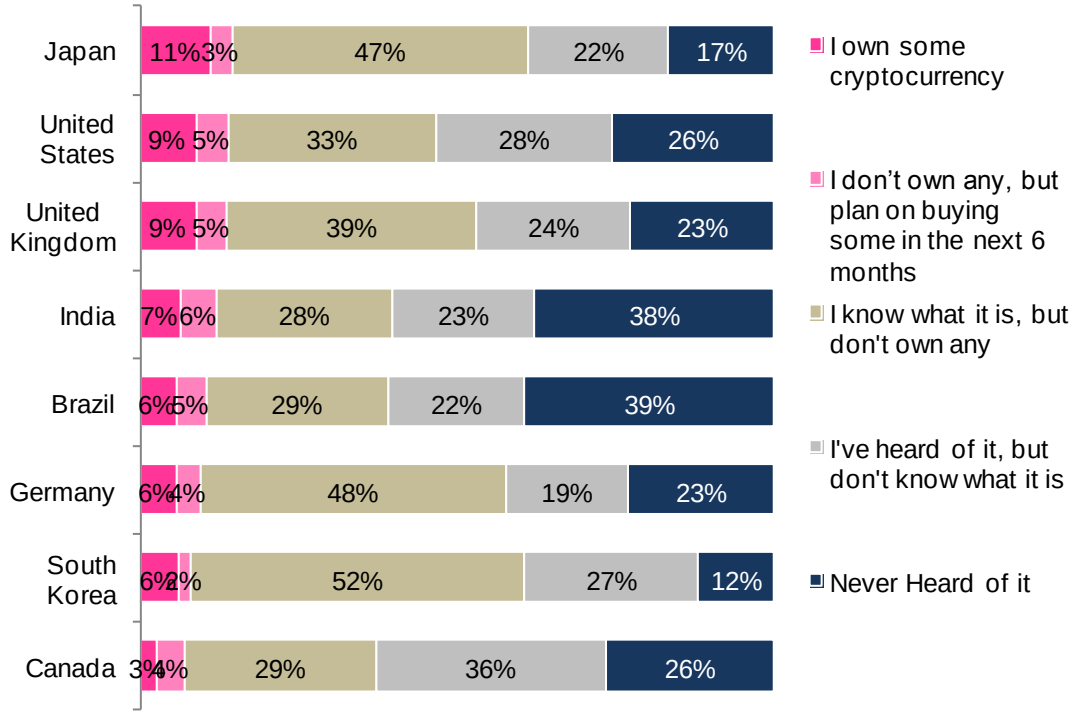
Smart Securities
Institutionalization and tokenization

2018
$500 Trillion
All asset classes

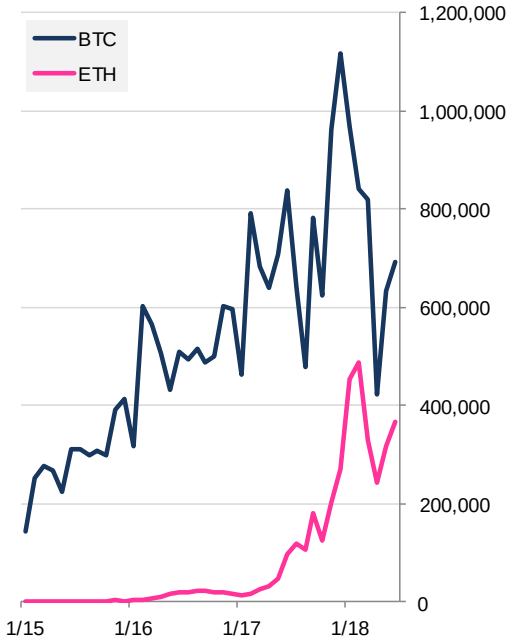
Source: Autonomous Research, Polymath

Tangible progress over 2017: crypto currency ownership at 7%, with 74% of respondents aware of the phenomenon

Engagement with Crypto Assets by Country (up to 05/18)



Daily Active Addresses

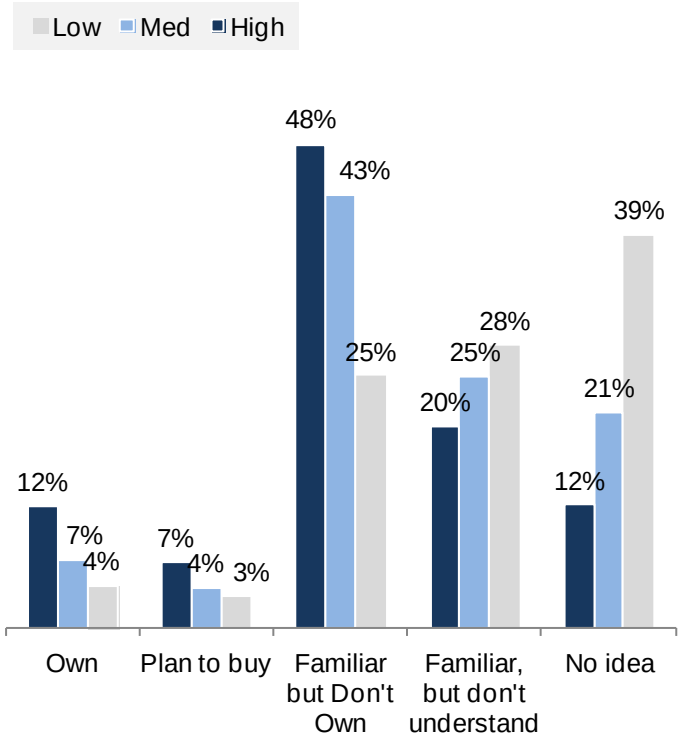


- Japan, US and the UK have the highest rate of ownership or intention to buy than any other geography surveyed, hovering around 14% of respondents
- South Korea displays a much higher awareness rate of 88%, but ownership and intention to buy are lower
- This high level of awareness is impressive, but while daily active address use has grown quickly to over 1 million between Bitcoin and Ethereum, usage still pales to Facebook's 1.5 billion daily users

Source: Autonomous NEXT, Dalia Research (n=29,000), Coinmetrics

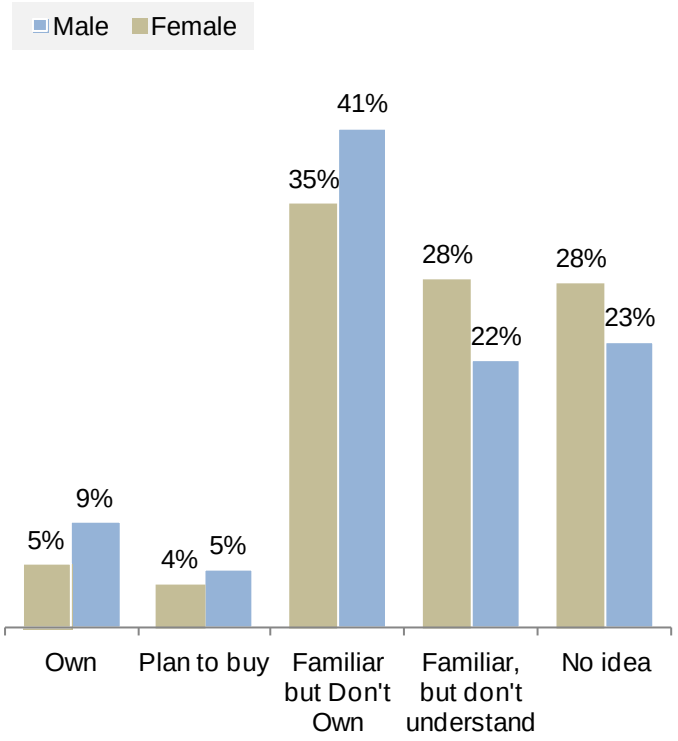
But more is possible – currently, crypto assets still skew to those more likely to be educated and male

Intention by Education Level



- Of respondents, 12% of those with high education levels own crypto vs. 4% without
- 40% of those with lower education don't know about crypto, which is an opportunity for social impact

Intention by Gender



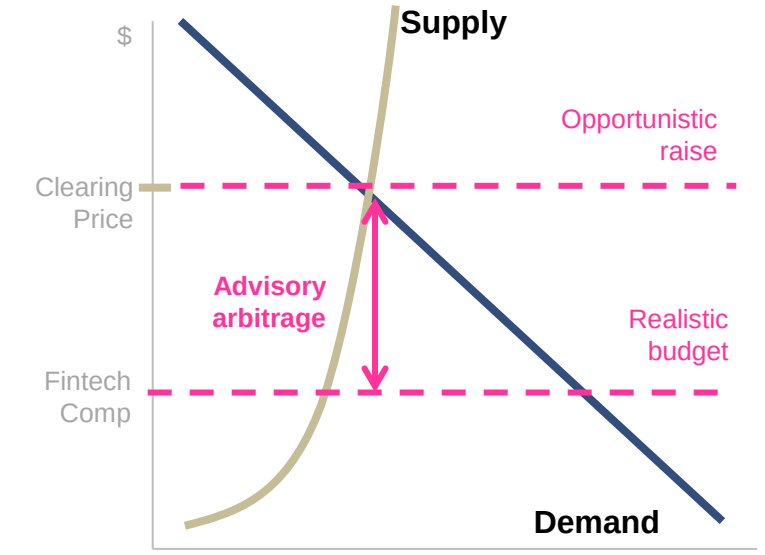
- Statistically, crypto ownership and knowledge is more common among men
- This is an opportunity to enhance women's participation and leadership in the asset

Source: Autonomous NEXT, Dalia Research (n=29,000)

Understanding last 12 months through Supply & Demand

- 2017 ICO funding was a diversification of the Bitcoin capital gain (i.e., 5-10% thereof) into new assets
- 2017 ICOs sold out rounds above traditional fintech comps within minutes due to a low supply and high demand, opportunism, and lack of governance
- As 2018 approached and crypto market caps fell, there was less “free money” to invest into ICOs, and service providers in the space started to market offerings aggressively for large fees
- In turn, when combined with ongoing fraud concerns and tightening regulatory position, investors and media became used to the noise, which they began to ignore
- Similar arbitrage spilled into public and venture markets, with public companies pretending to be associated with blockchain (e.g., Long Island Ice Tea) and corporates selling tokens used in for-profit endeavors (e.g., Kik)
- Now, regular ICOs are under pressure from regulation and fatigue, which must be resolved by regulatory clarity
- Telegram highlights the desire of traditional venture firms to catch up in the space, after many missed the Bitcoin curve, while EOS shows what happens when an ICO absorbs as much demand as possible

Token Project Macro-economy

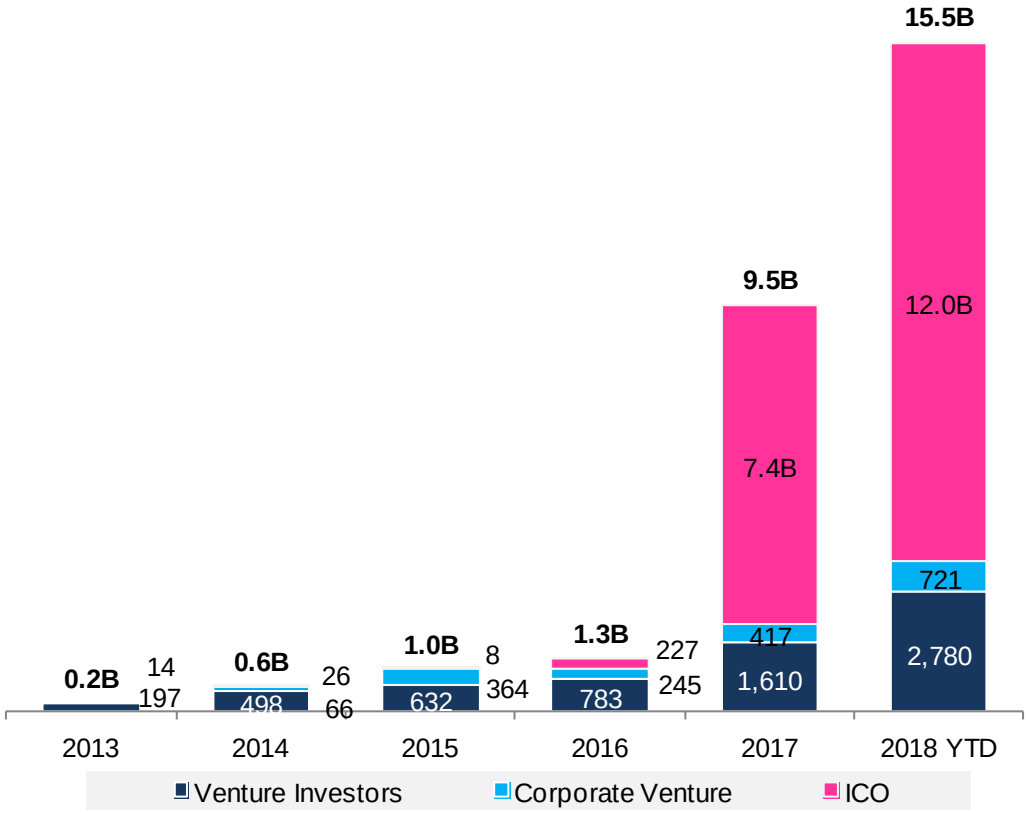


- Valuations of projects have become massive as a result: while private fintech companies are already more richly valued than public company equivalents (e.g., OnDeck vs Kabbage), Crypto equivalents are even more expensive while being earlier stage (e.g., Populous)
- Service providers are charging large fees ($500K-3MM) for what are essentially Seed stage technology projects raising massive capital

Source: Autonomous NEXT

Initial funding story is positive: 2018 YTD has seen $12B in ICO funding, vs. $7B+ for last year, but ...

Investment in Crypto-Economy ($MM, End of June 2018)



- First wave of investment from traditional venture firms in Bitcoin associated companies was between 2013 and 2016, with $400-700 million annually
- Second wave of investment from corporates into enterprise blockchain was between 2015 and 2017, with $250-400 million annually
- Third wave of public crowdfunding flowed into ICOs, with an unprecedented rise in prices for crypto currencies, with $7 billion of investment going into the space, 4x greater than equity investment in crypto companies
- Many ICOs formed to take advantage of the “goldrush” and created questions of quality and regulation for tokens

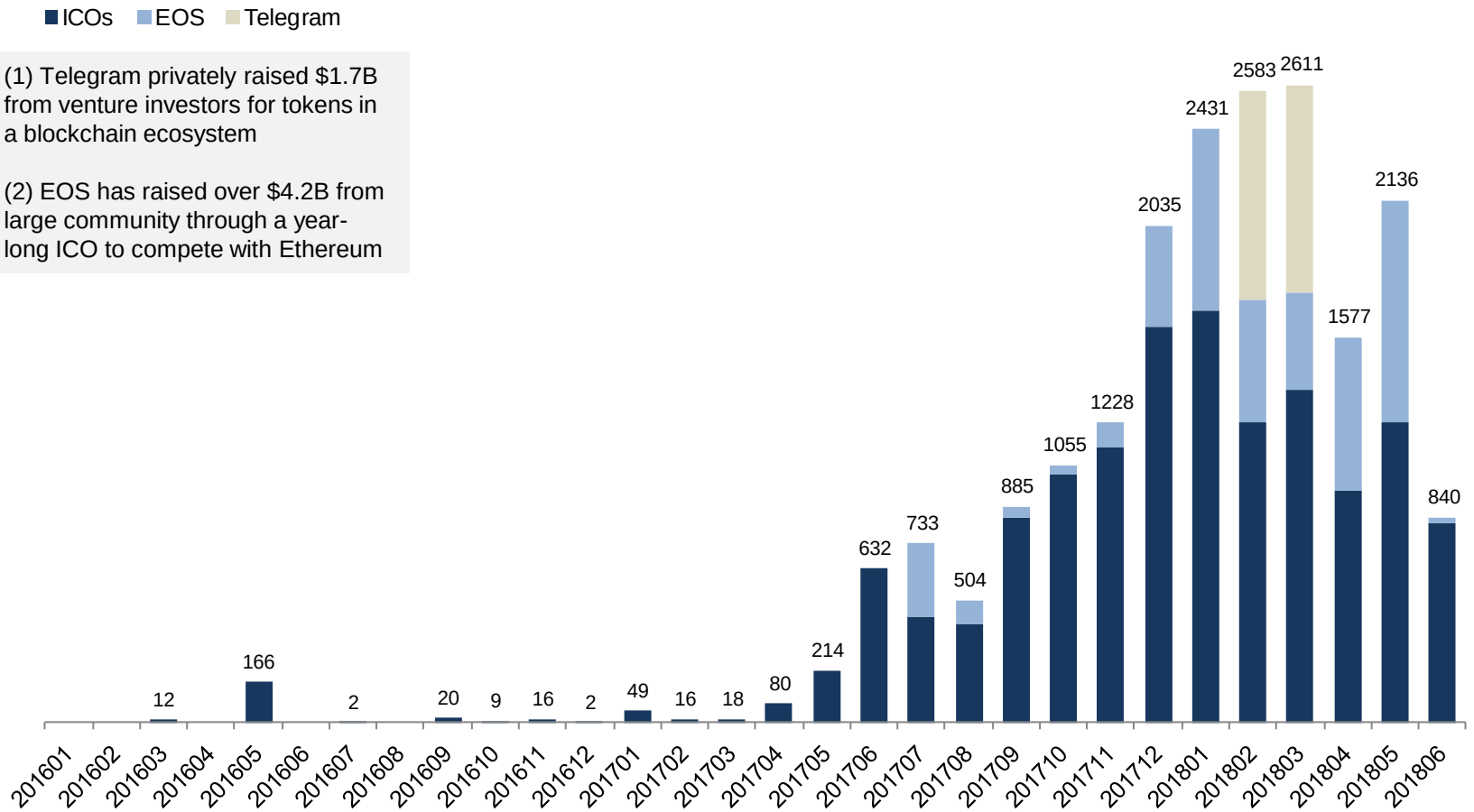
Source: Autonomous NEXT, Various for ICO, Pitchbook for VC, EOS Scan

... nearly half of that funding is EOS ($4.2B) and Telegram ($1.7B) hiding emerging weakness in the system

Monthly Investment in Crypto-Economy ($MM)

(1) Telegram privately raised $1.7B from venture investors for tokens in a blockchain ecosystem

(2) EOS has raised over $4.2B from large community through a year-long ICO to compete with Ethereum



Source: Autonomous NEXT, Various for ICO, Pitchbook for VC, EOS Scan

EOS shows the potential for rolling public crowdfunding

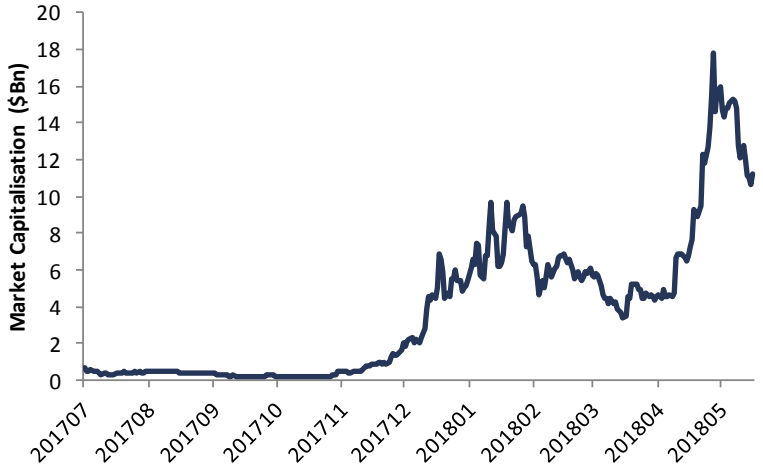
EOS

Overview

- Much like Ethereum, EOS is a smart contract enabled platform for open-source projects and consumer-facing decentralised applications
- The EOS project is developed by the block.one team, headed by Brendan Blumer as CEO, and CTO, Dan Larimer, known for creating BitShares and Steem and inventing the delegated-proof-of-stake (DPoS) consensus algorithm. The grounds for controversy lie predominantly in the promise of Larimer to deliver on the claims of the platform eliminating transaction fees and its ability to process millions of transactions per second, which mirror similar bold claims made on Steem and BitShares only to find him exit them soon after the ICO completed
- The first 5 months of 2018 have seen more activity in the contributions made to EOS on GitHub than in all 2017, yet the company still had a massive governance crisis within weeks of launch

Year	Days of ICO	Amount Raised
2017	341	$4,2 Billion

EOS Market Capitalization



- EOS release 2m tokens each day for 341 days to ensure inclusivity amongst the public demanding the token. This staggered approach has driven sustained demand for the token and thus exorbitant market capitalisation figures

Source: Autonomous NEXT, Github, Coinmarketcap

Telegram highlights the capital available in private raises

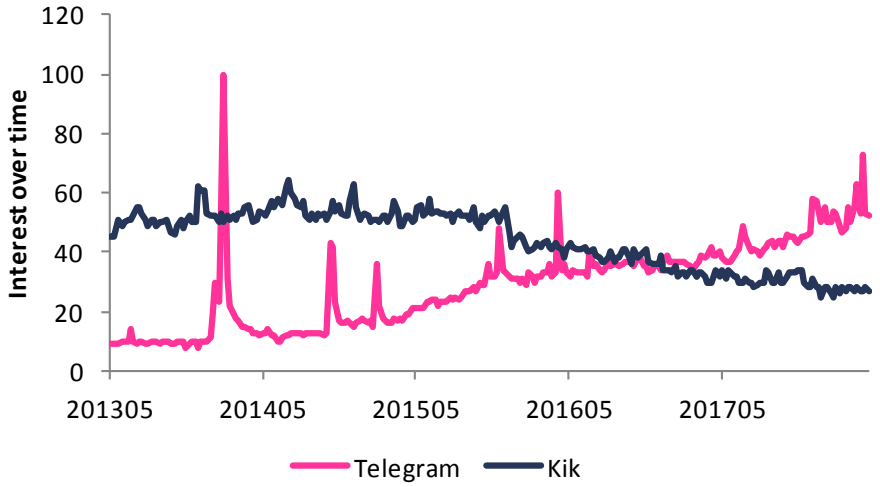
Telegram

Overview

- Telegram is a free encrypted messaging service (web and app) with no ads, much like Whatsapp. Each message thread can host up to 100,000 users making it more of an internal social network, which is favourable amongst crypto investors
- The app is one of the top global social media / chat apps, with over 200 million users, in large part where internet access is limited or closely monitored by the government. The founders originally founded Vkontakte, Russia's largest social network which was acquired by Mail.RU in 2014 for ~$3B
- The next steps are to launch the Telegram Open Network (TON), an Ethereum-like platform with apps, services, and a store for digital and physical goods. The development of which will be funded by the $1.7B Telegram raised in two separate rounds from ~175 private investors such as Sequoia Capital and Benchmark Capital

Year	Tokens Issued	Amount Raised
2017	12M GRAM	$1.7 Billion

Google Trend Analysis for Telegram vs Kik

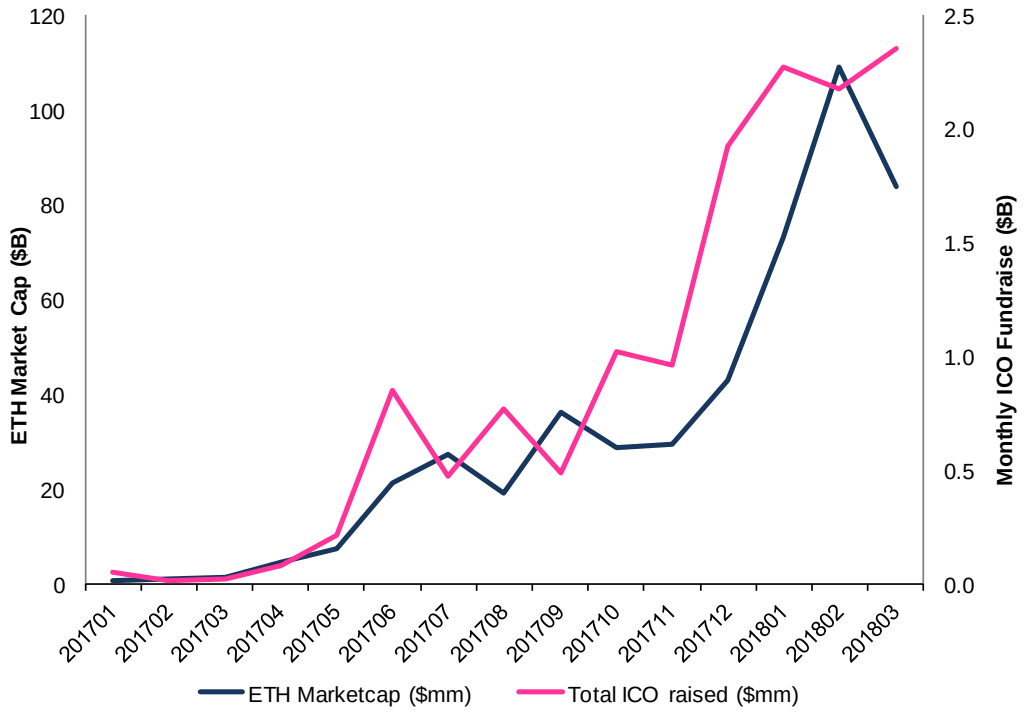


- Telegram is rapidly gaining market share over its competitors entrenching its place as a dominant player in the social networking arena

Source: Autonomous NEXT, Google Trends

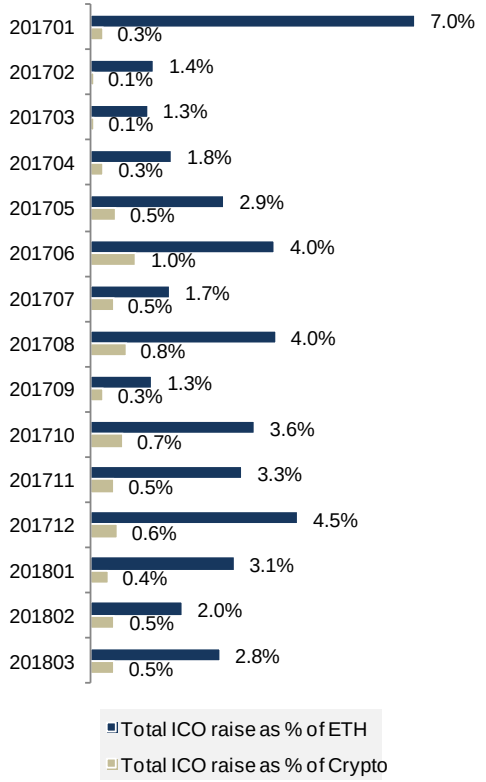
Still, ICOs have become a steady function of Ether, with a 2% reinvestment of the market cap per month

Ether Marketcap vs ICO Fundraising (Monthly)



- ICO fundraising shows strong correlation to the market cap of Ether
- Yet many variables were correlated in the selected period -- from Ether, to Bitcoin, to media coverage of the space, to Google searches
- Still, it is possible that ICOs catalyzed positive sentiment and caused the price to rise, while a higher price catalyzed more fundraising

ICO Fundraising as %



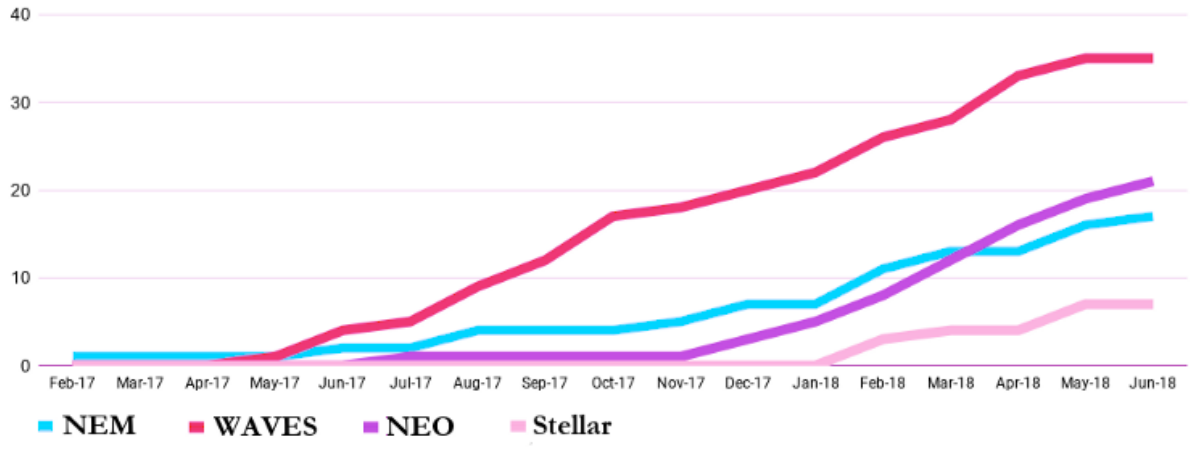
- About 2% of Ether or 0.5% of all Crypto is re-invested into ICOs, excluding Telegram and EOS

Source: Autonomous NEXT, BITA

Non-Ethereum protocols for token offerings also emerging

- While Ethereum is structurally important to the ICO phenomenon, it is seeing competition from two directions
- First, other smart contract protocols are seeing some traction in project launches, though this traction is still quite limited
- Second, protocols are starting to intersect with equity and asset crowdfunding to create a security token wave
- Further, as ICOs raise ETH and then have to sell it in order to fund operations, Ethereum's success creates selling pressure down the line

Cumulative non-Ethereum ICOs

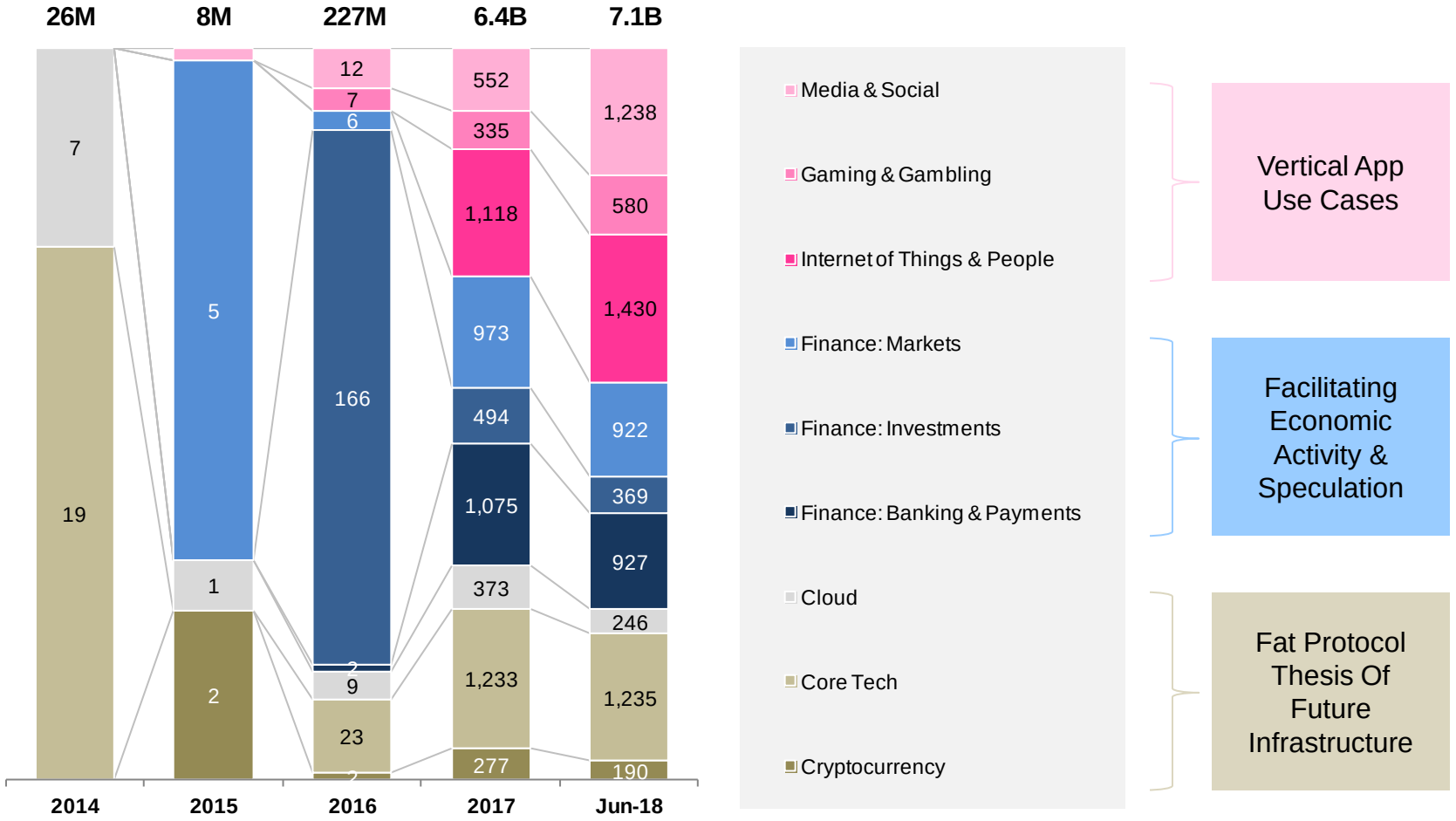


Examples of Security Token Launch Platforms

Source: Token Report, Autonomous NEXT
See section "The Asset Class Opportunity" in part discussing Security Tokens

Increasing diversification in the types of ICOs, with apps and vertical use cases supplementing fat protocols

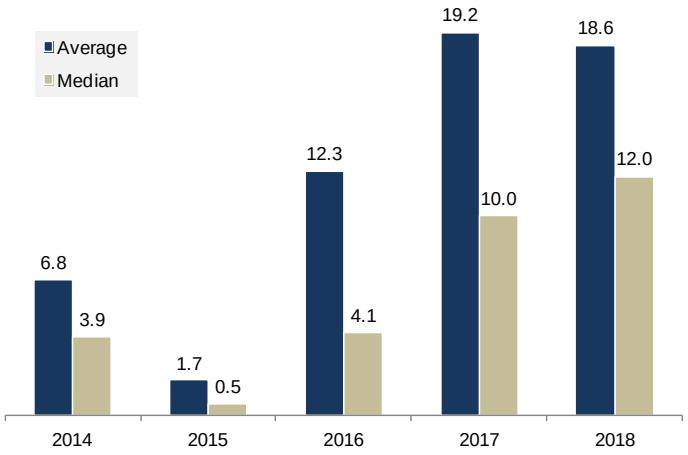
Initial Coin Offerings by Industry (USD Equivalent, $1MM+ raises, ex EOS/Telegram)



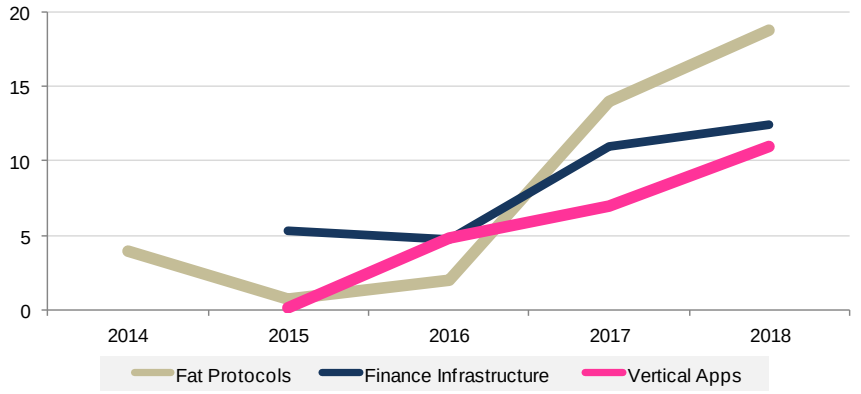
Source: Autonomous NEXT

Median ICO in our sample takes home $12MM; $19MM if infrastructure, $13MM if Finance, $10MM if App

Average vs. Median Proceeds ($MM)



Median Proceeds per Industry ($MM)

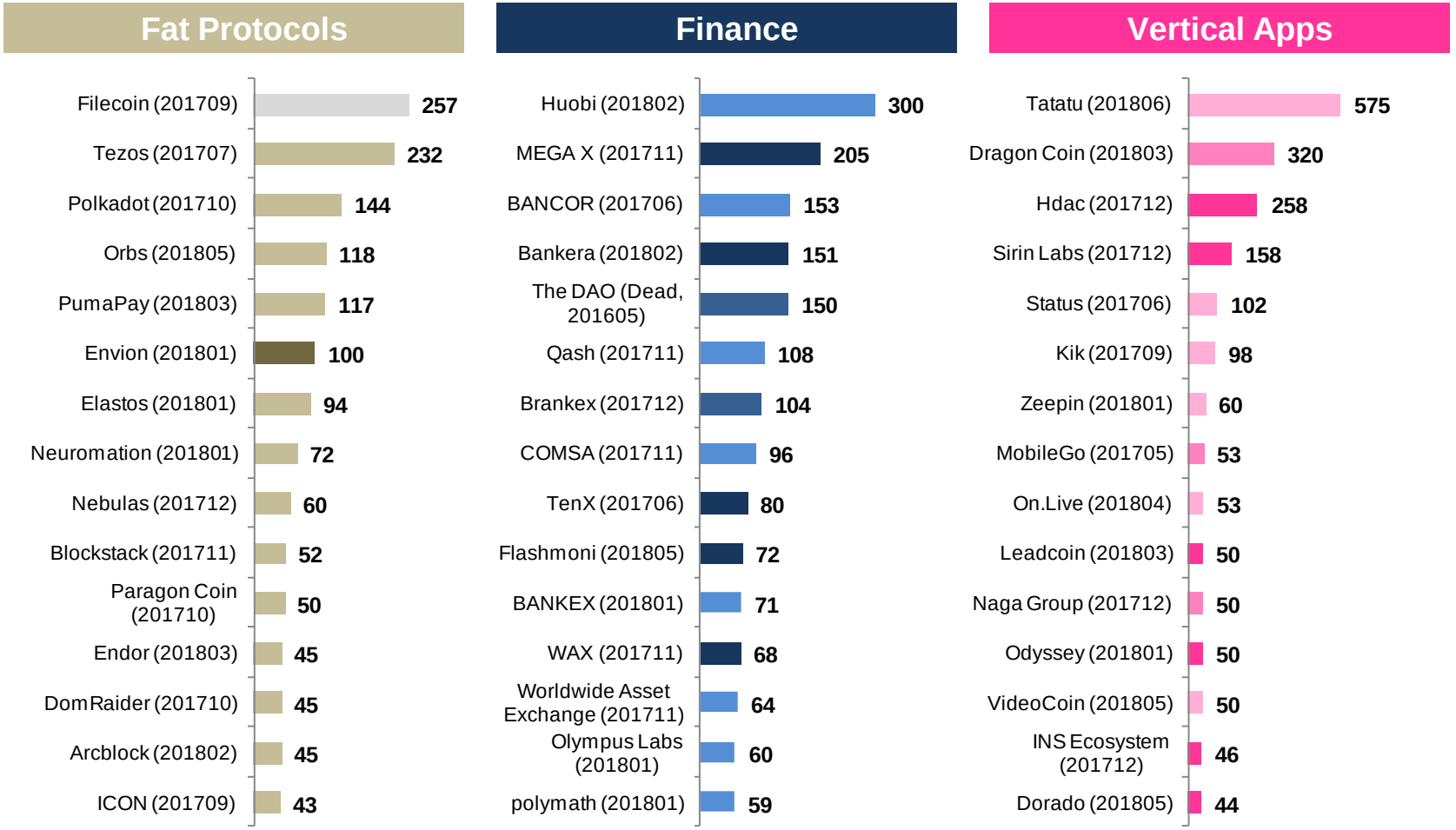


- Our tracker focuses on ICOs above $1 million in proceeds, which skews results to be larger, but we would also expect that such projects are more credible and mature
- There is a consistent gap between the average ($19 million in 2017/2018) and median ($10 to 12 million) raise, implying a winner-take-all dynamic for fundraising
- Within the project categories, the Fat Protocol offerings are still the highest funded, followed by Financial Services, and Vertical Apps in last place
- But without killer apps and consumer adoption, we suspect that none of the infrastructure will matter

Source: Autonomous NEXT

$50MM+ token offerings were launched across different categories, with the top 15 in each highlighted below

Top Initial Coin Offerings by Industry ($MM, ex EOS/Telegram)



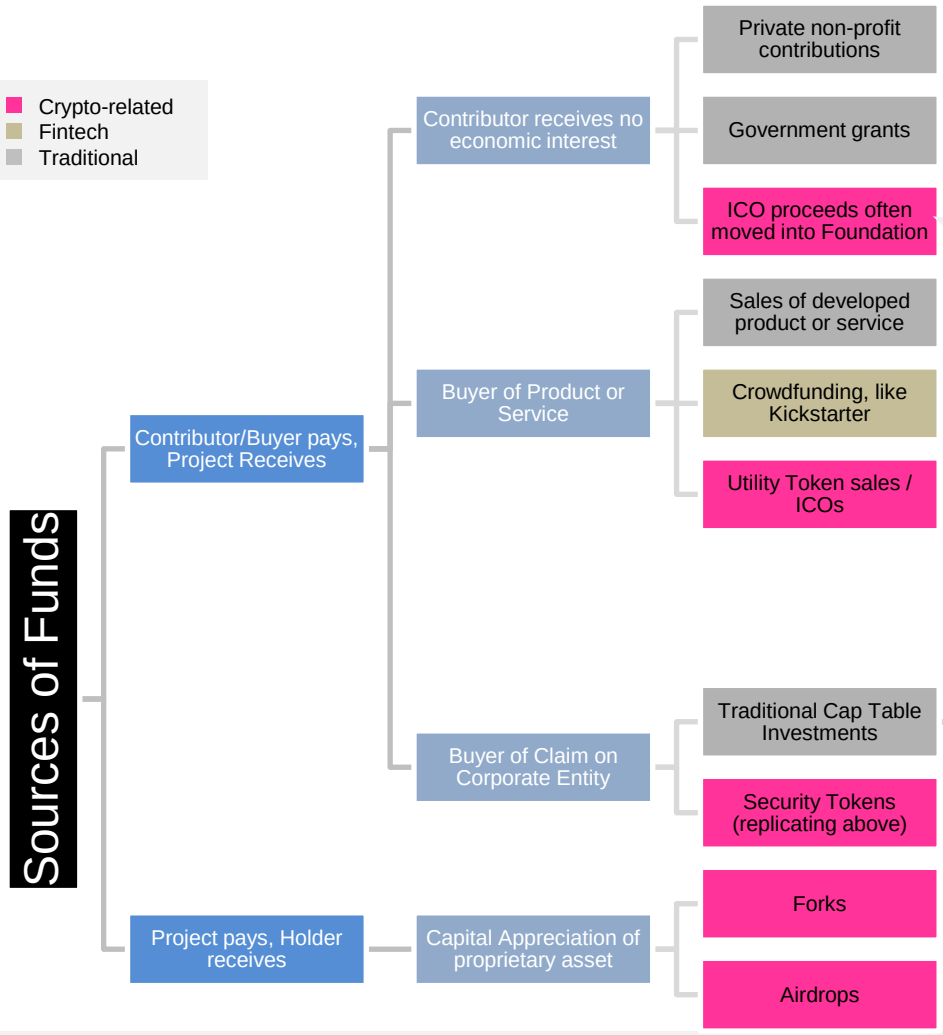
Source: Autonomous NEXT

Rich map of projects by token type and industry emerged

Core Infrastructure | **Financial Services** | **Vertical Apps**

Source: Autonomous NEXT

Since field is crowded and attention scarce, new approaches to raising money are evolving



If ICO proceeds are product sales, they are income to the issuer, on which tax is payable. If proceeds are securities, they are subject to regulatory registration. Structuring as a grant into a foundation has been a preferred method of avoiding thorny issues until regulation is settled. But this has implications for purchasers, and what they bought. E.g., Tezos.

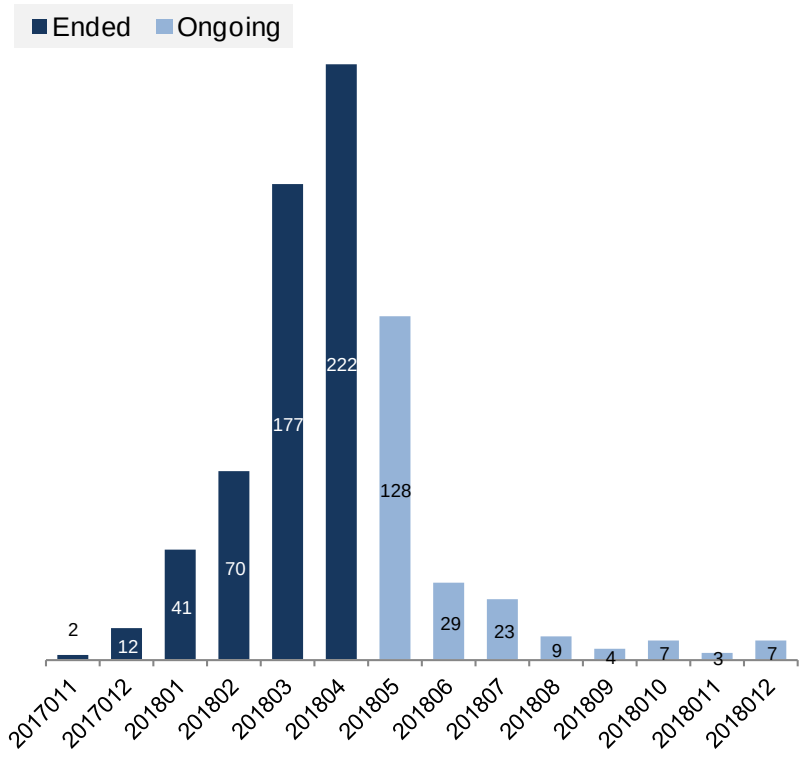
Forks and airdrops have emerged as a way to financially engineer assets for a project or bootstrap a community. In either case, new financial assets are created and gifted out to recipients (like a dividend), who are then motivated to use the system or create liquidity in the instrument. E.g., Bitcoin Cash.

Source: Autonomous NEXT
** Note: For more on token taxonomy, see section "ICO Process & Token Engineering"*

Airdrops, a way to growth-hack a community through free dividends for participants, reached 222 per month in April

- Airdrops are a way of driving project growth and adoption without asking users to pay for access, or to prefund development
- While there's nothing new about sign-up bonuses (e.g., $100 to open a bank account), this particular version of internet growth-hacking is quite different
- First, some ICOs are reserving 5-10% of their raise to distribute back out to the community, compared to 0.50% per ICO advisor. Markets see this as a legitimate incentive because many investors value protocols on a ratio of Market Value to Transactions. This means that the more transactions within a network, the higher the relative price of the token. For example, EOS surged 45% in anticipation of a planned drop.
- Second, the application of growth hacking to airdrops can tie "free" tokens to bounty tasks, like joining a Telegram group, or downloading a crypto wallet. An example of this is that people who signed up for the Ontology newsletter (project on the NEO blockchain) had received tokens which at one point were worth $10,000.

Number of airdrops (up to 04/2018)



Source: Autonomous NEXT analysis, yourefreecrypto.com data

Companies like Earn.com (formerly 21.co) connect Airdrops as Bounties for growth-hackers

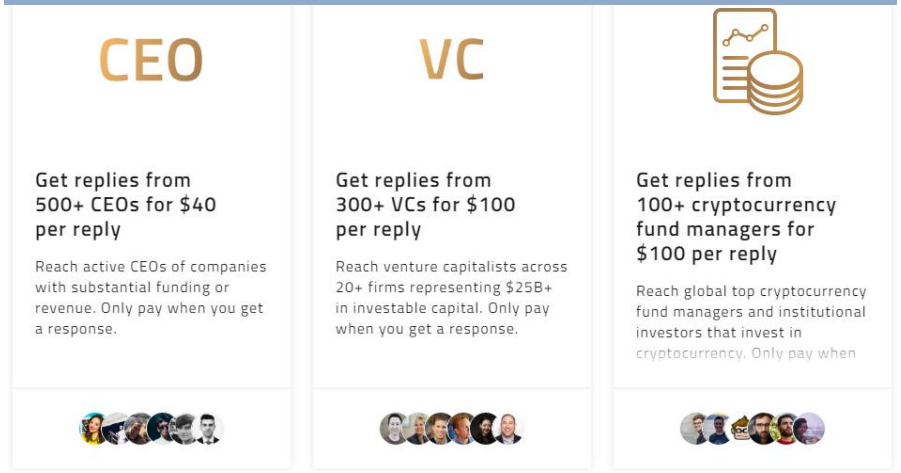
Earn

Overview

- Founded in 2013, 21.co was a machine economy play based on cryptocurrency mining; during its first year of operation it commanded 3-4% of all mining power on the Bitcoin network.
- As of 2015, Bitcoin price volatility and expensive operational costs forced 21.co to refocus on a service that rewards users financially for responding to emails and completing tasks. For just $1, tasks can include providing an Ethereum address, joining a Telegram group, following a Twitter account, and signing up for a newsletter
- Empirically, senders get 30-70% response rates within 24hrs for $1-$10 incentives, this is high compared to the typical 1.7% response rate for blind emails. As Airdrops became more relevant in early 2018, Earn became the chassis for growth hacking, and was thereafter acquired by Coinbase

Founded	Amount Raised	Coinbase Acquisition
2013	$121 Million	$120 Million

Examples of Earn.com's contact lists



- Earn.com allows anyone to reach out to 96 different lists of contacts at costs ranging from $1 to $100 per interaction
- Fun Facts: 18% of crypto-related posts originate from bounty campaigns, according to Solume, with the largest being Jon McAfee's $105,000 per tweet

Source: Autonomous NEXT, Solume/Bloomberg, Earn.com

Forks continue to be used to create new currencies and financial assets, but more for governance than experiments

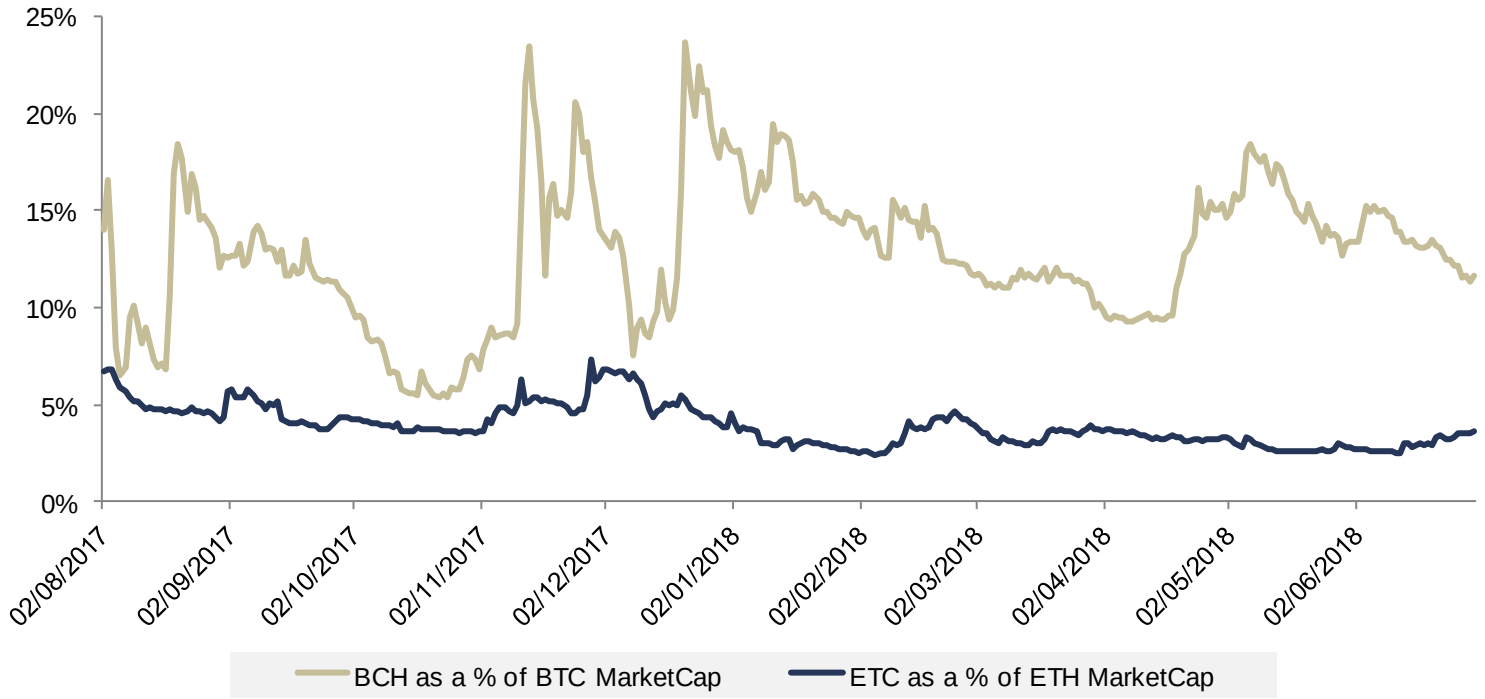
- In software development, forking code means making a copy of it to make proprietary changes separate from the original codebase
- Within crypto assets, which are open source software, each coin or token is also a political entity with an ecosystem of developers, influencers and thinkers. By the nature of communities with immature governance, disagreements about priorities can lead to philosophical splits and thereafter forks in the code, which split off to be managed by a new community. Such a fork is called a hard fork, whereas a soft fork is a patch of the code that everyone in the community adopts.
- Examples of disagreements range from how data is stored (e.g., SegWit), which has implications for mining farms, to how to deal with bankruptcies and theft (e.g., Ethereum Classic)
- However, some actors have led hard forks in order to benefit privately – by increasing personal power over codebases, changing distributions of assets, or simply confusing investors with familiar sounding labels (e.g., BitcoinDark, etc.)
- One surprising development is that the value of a forked network does not necessarily decrease as a result, as implied by Metcalfe's law or by comparison to corporate dividends; instead forked projects can prosper and evolve into valuable alternatives, similar to the unlocking of value through a corporate spin out

BTC Fork Marketcaps ($B, 05/18)

Source: Autonomous NEXT, Coinmarketcap
**Note: If unclear, the leprechaun is sarcastic since most of these coins have no use, but for potentially BCH*

The largest forks continue to hold philosophical and financial value: 3-5% for ETC and 5-20% for BCH

Largest Fork Marketcaps as % of Parent



- Powerful forks play the role of corporate take-over for an original use case. If BTC breaks – due to high fees, or any other reason – BCH will attempt to usurp its community. ETC is a hedge in case ETH is poorly governed.
- Growth hacking, from Twitter bots to Reddit trolling to advertisement, is deployed by projects against each other in order to defend primacy as the network of choice. With enough funding, this can indeed be successful; crypto developers are also often concerned about such organized attacks by sovereign states trying to ensure control over monetary policy.

Source: Autonomous NEXT, BITA (coin market data)

From ICO to Liquid Coin: A Quantitative Analysis

Introduction

- **In this section, we bracket what could be appropriate market sizes for the sector, highlight further areas of research, and do a quantitative screen of liquid coin performance to date**
  - Like early stage venture capital, token investing is a high-risk activity which must pass through several filters, from failing to raise capital, to operating failure and missing product/market fit; but tokens can also fail to list on an exchange, or fall victim to scams and hacking
  - Once liquid, price performance is exponentially volatile, though that has been narrowing since 2018

- **In thinking about token value, many investors and influencers make claims that are fundamentally divorced from reality**
  - No good fundamental valuation framework exists today for crypto assets, though work is being done along several dimensions, and we plan to explore the topic in a future analysis
  - The need for a valuation framework is driven by (1) institutional investors used to DCF and comps entering a market that is more appropriate for early stage venture, and (2) the immaturity of decentralized project models, which have no stable equilibrium around long-term instrument pricing and market outcomes

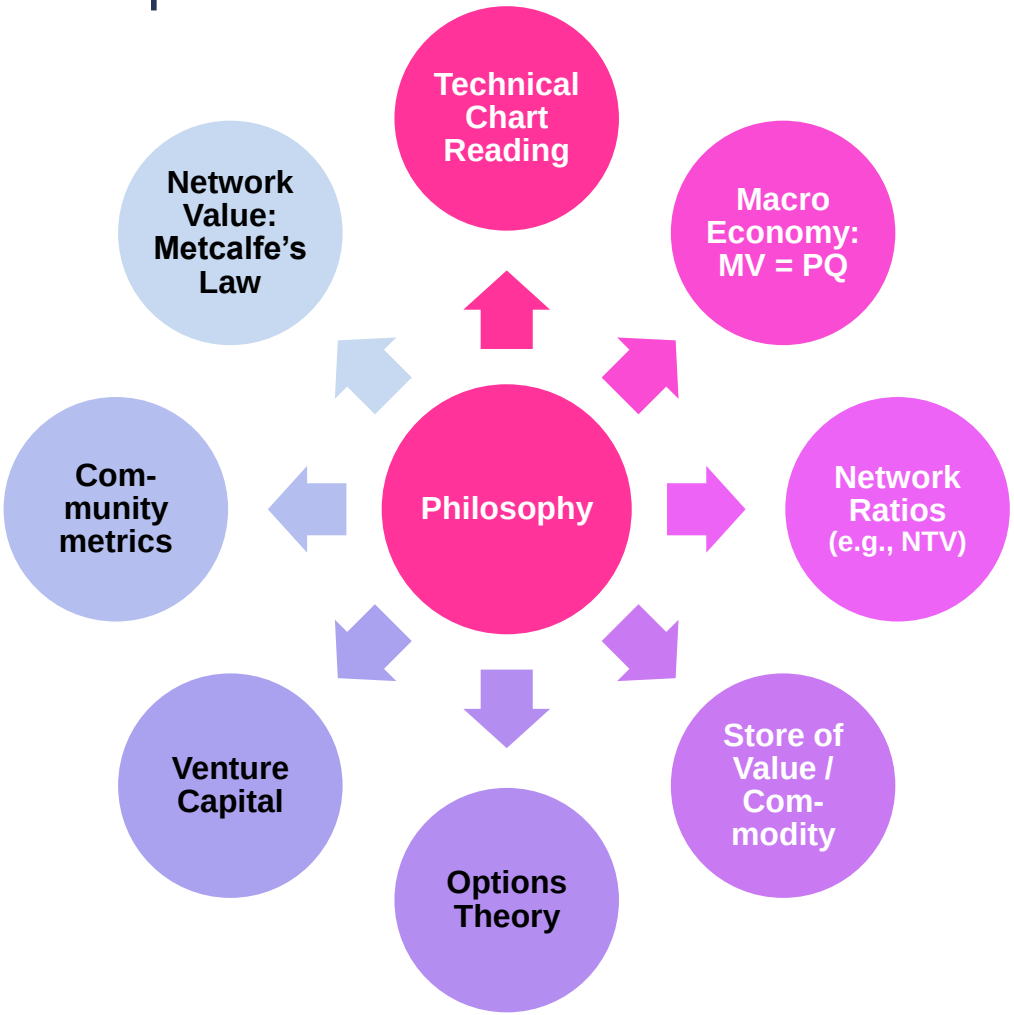
- **Unlike traditional equities, which may see 5-10 years between the first Seed stage financing and Initial Public Offerings, ICOs may come to a liquid market in less than 12 months**
  - This implies that capital markets traders, venture investors, price insensitive retail investors, and market manipulators are all participating in the same asset class at the same time
  - ICO founders are under pressure from their community, also often fractured between believers and speculators, to list the token on an exchange even prior to any meaningful technological progress
  - End of the day, many participants are speculating on abstract ideas and rough comps of revenue pools of existing companies, rather than any detailed understanding of what it takes to grow a business

Source: Autonomous NEXT

An emerging set of philosophical approaches to crypto valuation creates feedback loops

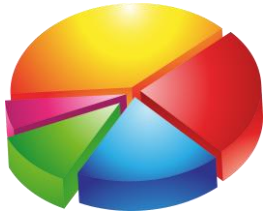
Discussion

- Tokens and coins take form anywhere between currency, commodity, security and mutualized asset, making the task of finding a common valuation framework close to impossible
- Smart people are retro-fitting frameworks and math from adjacent industries on digital assets, but we think any resemblance to market outcomes are merely reflexive, i.e., self-causing
- Real economic activity, as a percentage of transactions across the major blockchains, is still overshadowed by persistent speculation and market manipulation by increasingly sophisticated counterparties
- Until we see the transition from corporations to networks, and from profits to mutualized resources, market participants are trading on stories and sentiment
- Tokenized physical assets and Security Tokens, however, can be valued using existing valuation frameworks



Source: Autonomous NEXT, for further research on crypto valuation, contact next@autonomous.com

A guide to not making ridiculous claims, by understanding what a particular growth multiple implies in terms of size

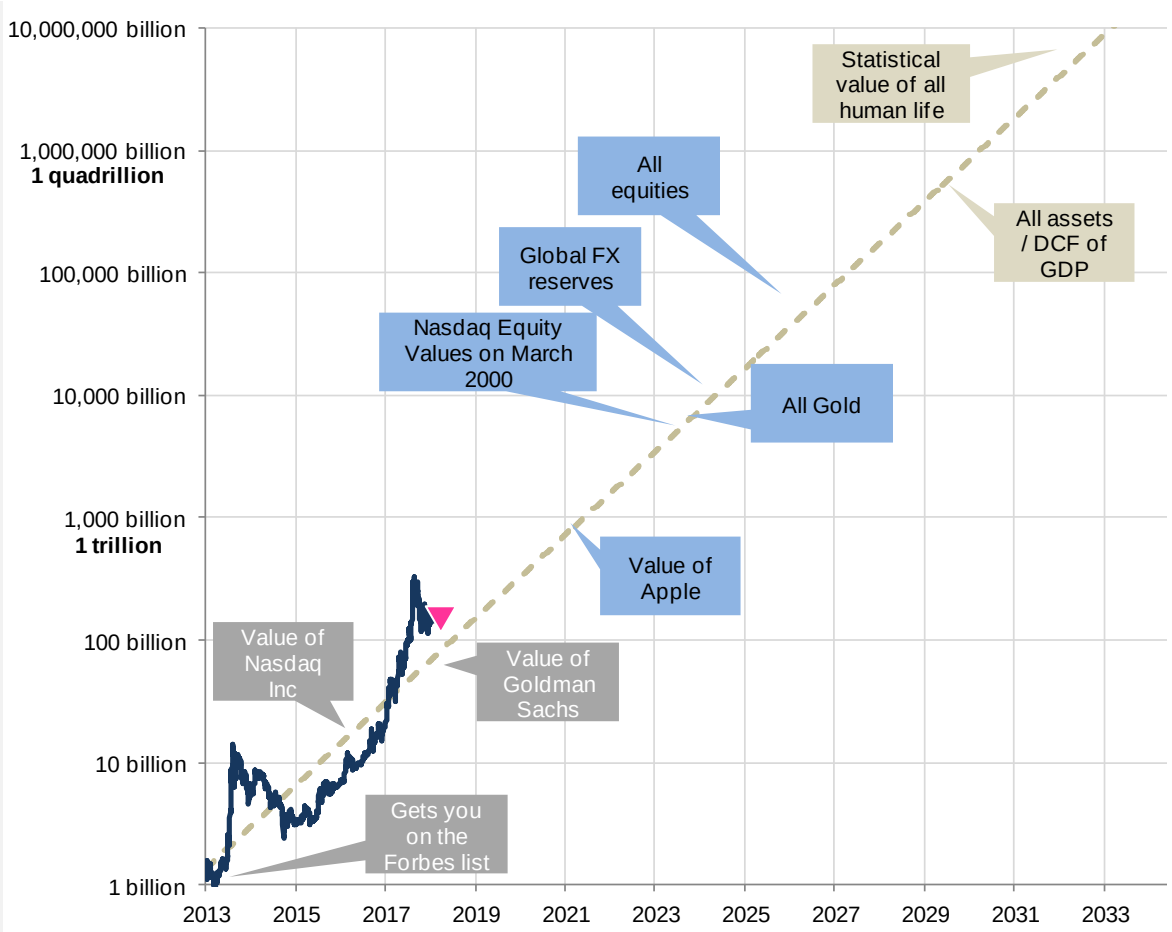
Growth Multiple	Description
 1x	Rough size of today's crypto markets is $300 billion
5x	Total US currency in circulation is $1.6 trillion
 20x	Total tech marketcaps on the Nasdaq in the DotCom bubble reached $3.2 trillion, out of $6.7 trillion total
25x	All gold ever mined at today's prices is valued at $7.6 trillion
 33x	Global foreign exchange reserves stand at $10 trillion
270x	All equities of all public companies are worth $80 trillion
 1,700x	All asset classes including alternatives and real estate come to $500 trillion, equal to the net present value of global GDP
17,000x	The statistical value of all human life on the planet, based on per country estimates, is $5 quadrillion

Source: Autonomous NEXT, Pixabay, LA Times

The optimist's case: a Crypto financial singularity by 2033

Bitcoin Marketcap on Log Axis ($B)

- An optimist could tell the story that the rise of crypto assets is akin to the economic version of Moore's law
- If crypto asset growth continues on an exponential curve, by 2021 we should see a trillion in value, and by 2025 the asset class will surpass the values of Gold and FX reserves
- By 2030, all economic activity will flow through crypto infrastructure, and by 2033 will subsume all human activity
- For reference, Ray Kurzweil places non-biological computation surpassing all human intelligence by the 2030s, with the singularity in 2045



Source: Autonomous NEXT

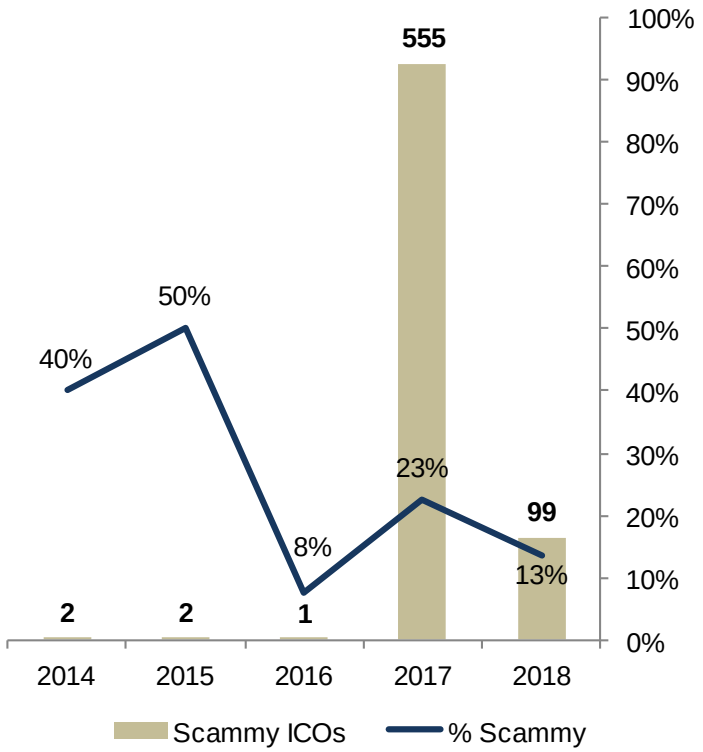
Realistically, token investing is early stage tech investing -- a high-risk activity which must pass through several filters

Outright Fraud	Failure to Raise Target Capital	Operating Failure	Instrument Performance	Cyber security
• Prior to looking at the merits of investment, filter out all scams, frauds, phishing attempts, and suspicious projects • Symptoms include false founder photos, duplicate language in white papers from other projects, and hijacked URLs	• Like many Kickstarter projects and start-ups trying to raise Angel / Seed funding, some ICOs will fail to reach their fundraising goal • This is not operating failure necessarily, but a lack of financing for an idea	• In venture, the next stage after Seed funding is Series A and growth capital, which require operating progress • Then, a company accesses the public market through an IPO or exits via M&A • Being listed on an exchange, or shutting down are relevant comps for ICOs	• If a token makes its way to an exchange, it will experience price change, which can be measured relative to ICO price, and other coins • Unlike equity returns, which display something like a Student distribution, token returns look a lot more like a lottery ticket, or an out-of the money option	• Even if the investor selects a high-performing token, there is a cyber security risk embedded in holding capital on crypto exchanges, and a phishing risk during money movement processes
• **20% of projects are scams, the WSJ reports**	• **65% of Kickstarter projects fail to raise their goal**	• **50-70% of companies fail to progress from Seed to Series A**	• **85% of DotCom tech IPOs were gone within 10 years**	• **15% of all crypto assets have been hacked**

Source: Autonomous NEXT, WSJ, Kickstarter, CB Insights, McKinsey

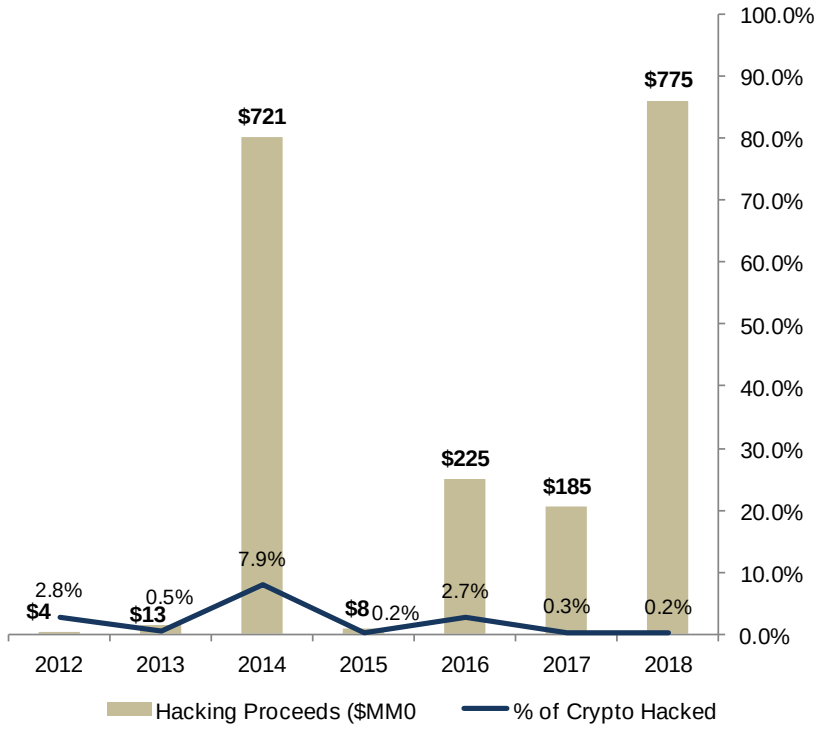
Exposure to crypto assets has annual 20% fraud rate on entry, 0.5% hacking/phishing rate at exchanges and wallets

Size of Fraud at Entry (WSJ, 05/2018)



- 20% of all ICOs are likely to be scams at whitepaper stage
- The rate seems to be decreasing in 2018

Hacking and Phishing ($MM, % of Crypto*)

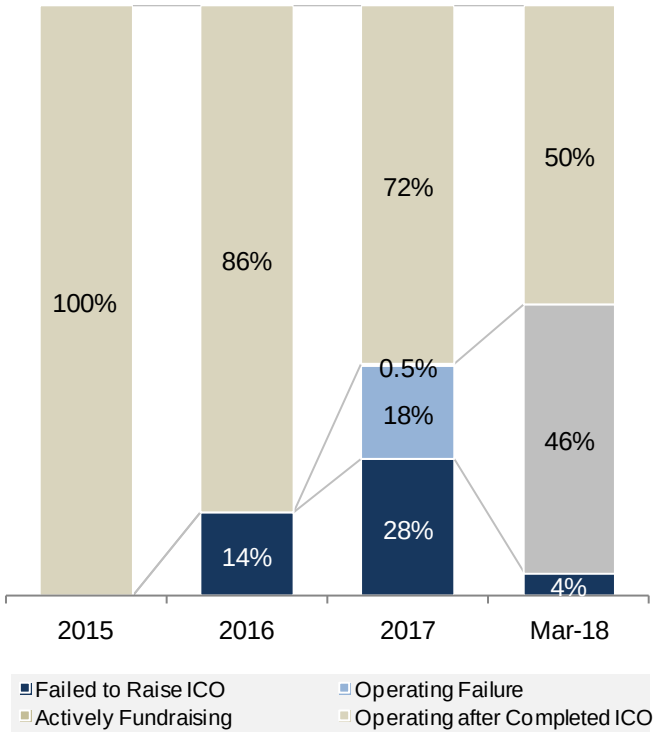


- 15% of crypto currency has been hacked or phished, representing a cumulative $2 billion in value at time of hack, potentially much more at mark to market

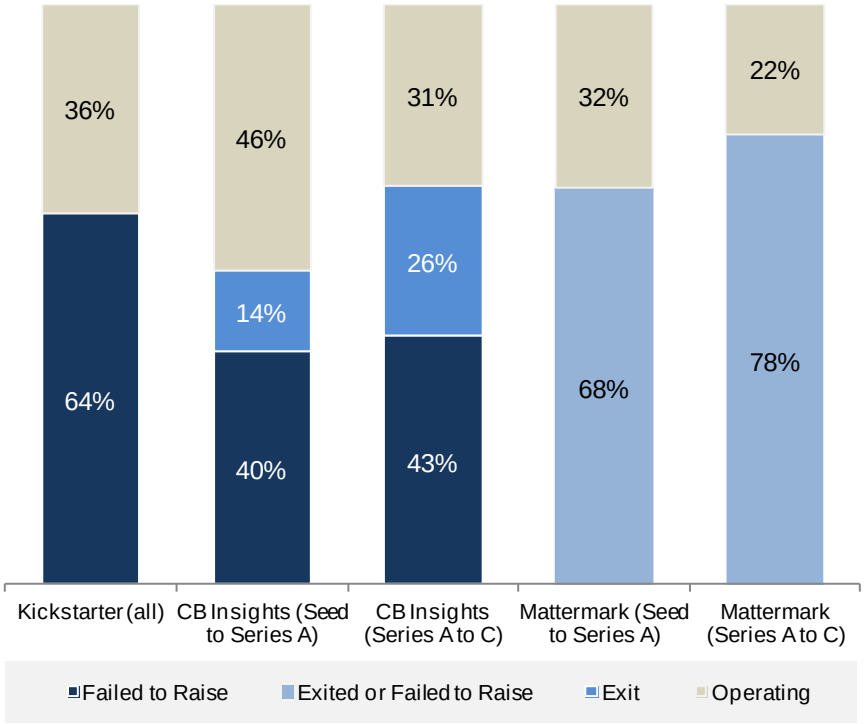
Source: Autonomous NEXT, WSJ, CryptoAware
** Denominator is BTC+ETH until 2017, top 180 crypto coins starting 2018 given token hack diversification*

While ICO failure rates are around 50%, that is in line with the 60-80% general fundraising and early stage failure rates

ICO Failure Rate by Inception



Venture and Fundraising Failure Rates

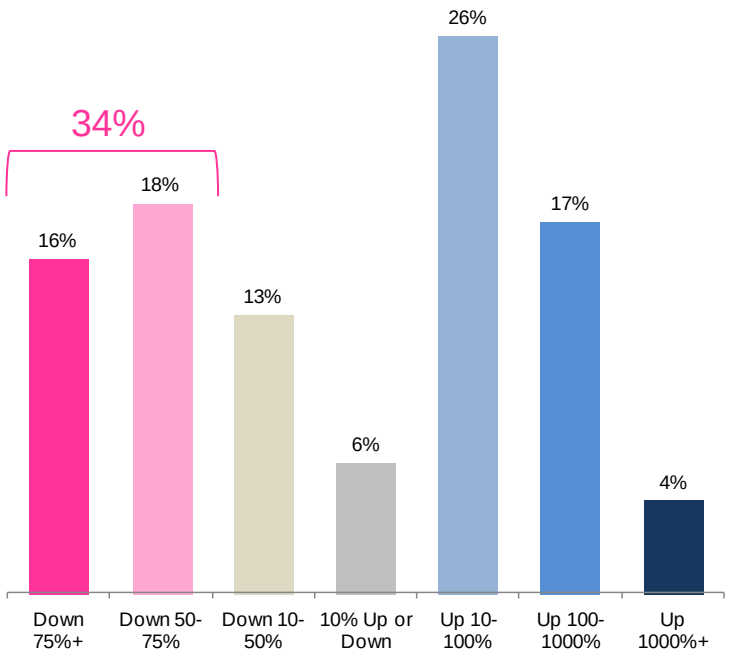


- When looking at failure of an ICO to raise a target, the correct comparison is the failure rate on Kickstarter, which is approximately 60-70%
- Looking at venture: for Seed stage startups, 55-70% are no longer operating by Series A either due to exit or failure to raise; for later stage, 70-80% do not make it to Series C due to either exit or failure

Source: Autonomous NEXT, Kickstarter, CB Insights, Mattermark, Bitcoin.com,Token Data

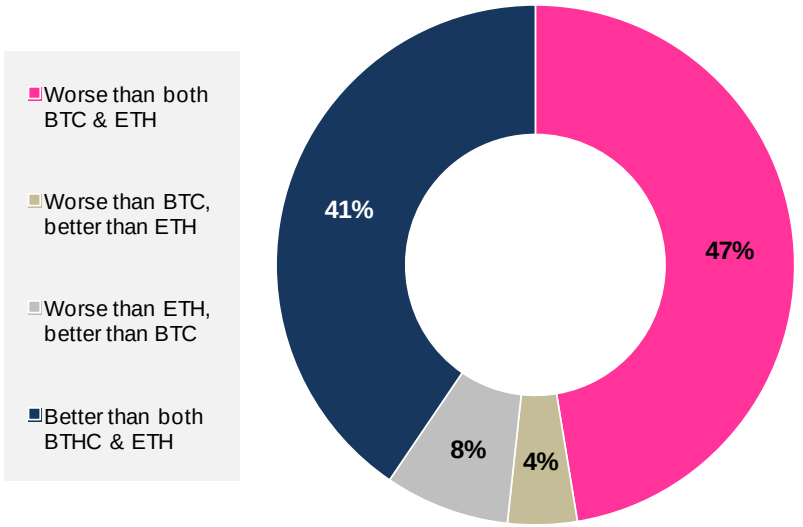
Statistically, ICO selection creates losses – 34% chance to lose more than half, 60% to underperform Bitcoin & Ether

ICO Returns Distribution (Up to 03/18)



- ICO returns have very long tails in both directions, and have a 50% chance to be either negative or positive
- 34% of losing more than half of investment
- 22% of more than doubling investment

Relative Performance (Up to 03/18)

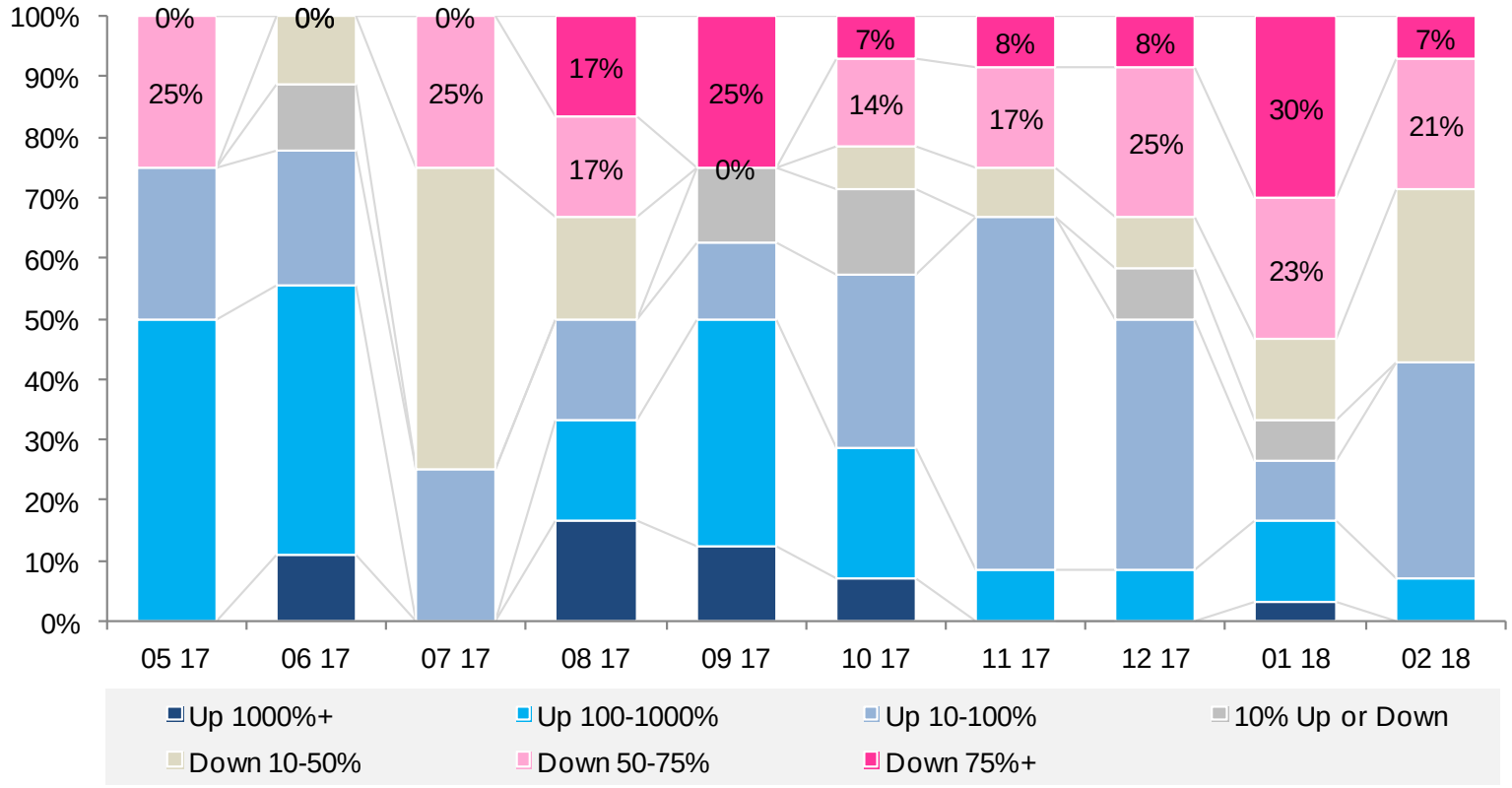


- ICO selection is subject to the same dynamics as active management and security selection: 60% of all ICOs underperformed Bitcoin and Ether instruments
- In such situations:
  - Venture investors build a wide portfolio of instruments so that the one winner pays for all the losers
  - Indexing broadly may also work by creating exposure, rather than focusing on selection

Source: Autonomous NEXT, Token Data

ICO selection appears to be getting more difficult as the return profile normalizes

ICO Returns by End Month of Token Raise (up to 02/18)



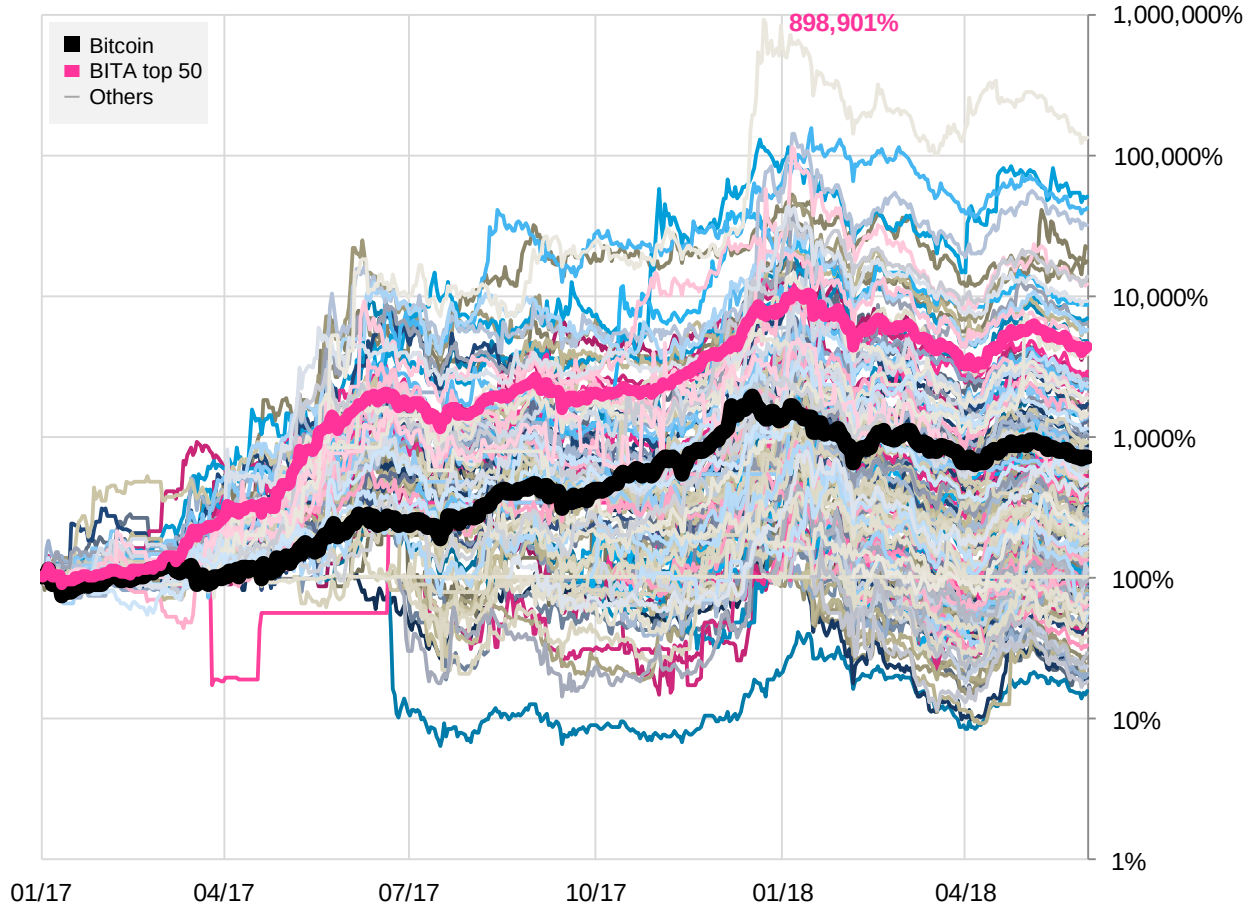
% Underperforming Bitcoin and Ether

100%	56%	50%	67%	75%	93%	58%	42%	43%	50%

Source: Autonomous NEXT, Token Data

After an ICO offering, tokens may be listed on an exchange, and experience the price performance of liquid coins

Price Performance of Top 200 Coins, 01/2017 to 05/2018, Log%



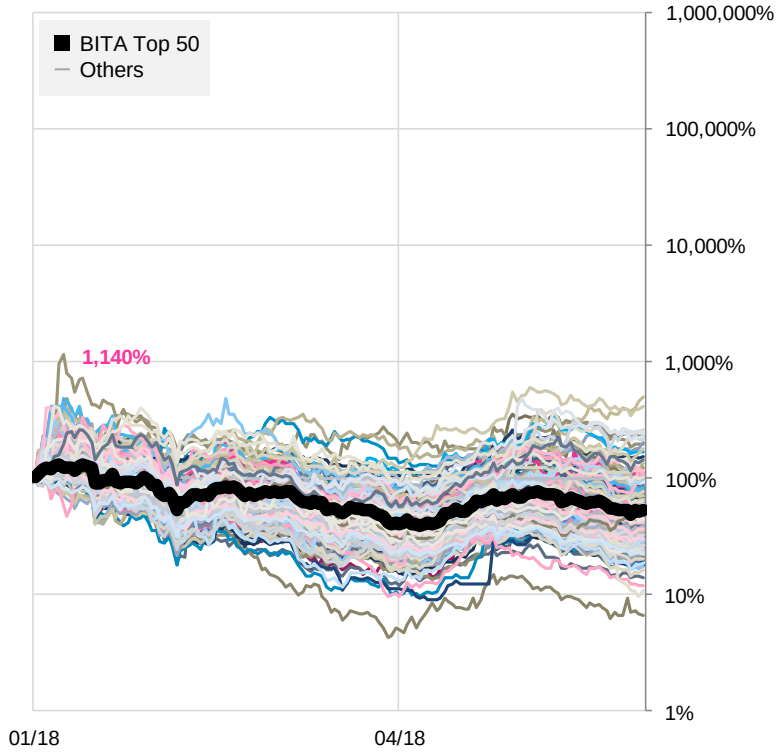
Discussion

- Price performance of the top 200 liquid coins over the last 1.5 years looks like a Monte Carlo simulation, except the scale for outcomes is an unbelievable 10% - 1,000,000%, graphed here on a log scale
- Such continued performance would suggest exponential software-like growth for digital assets
- The black bar represents BTC and the magenta represents the BITA top 50 coin Index, which immediately highlight the correlation waves between BTC and the other crypto assets

Source: Autonomous NEXT, BITA (coin market data, BITA top 50 Index)

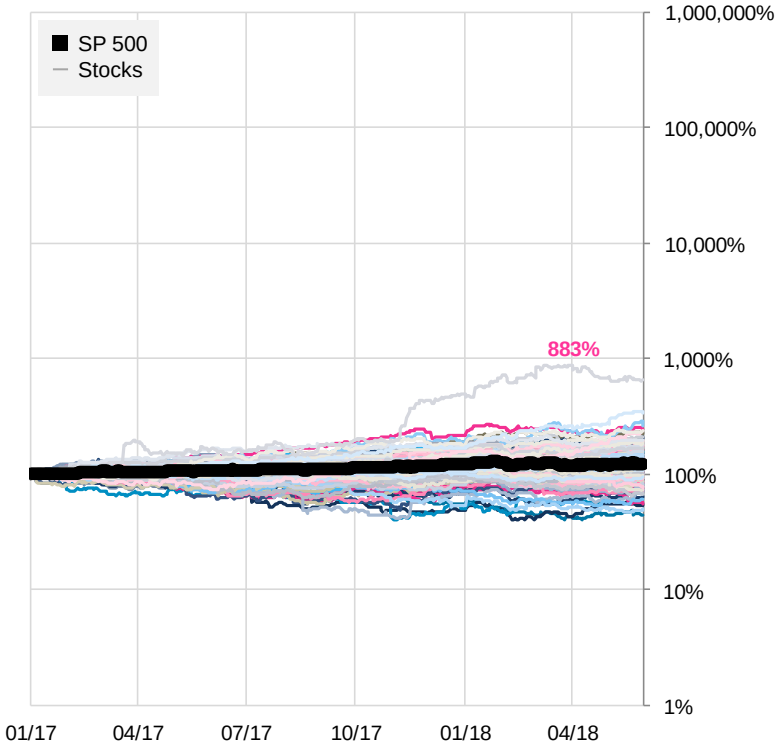
2018 has led to some volatility dampening in the crypto markets – though it is a long way off from regular equities

Price Performance of Top 200 Coins, 01/2018 to 05/2018, Log%



- Returns are still on a log scale, but the standard deviation is narrower in 2018 than in the prior year – with the highest return being 1000x less

Price Performance of 200 SP 500 Components, 01/2017 to 05/2018



- Since 2017, the S&P 500 components have had a much tighter performance distribution, with most losing no more than 50%, and very few doubling

Source: Autonomous NEXT, BITA (coin market data, BITA top 50 Index), Bloomberg (stock market data)

Crypto assets are tightly correlated with each other, with some separation starting to show in for EOS, TRX and VEN

Discussion

- In this analysis, we look at price data for the top 15 coins by end of 05/18 market capitalization
- In 2017, nearly the entire sector appears to move together
- Data is missing for several top 2018 coins given their late launch date, so the correlations may not be indicative, and prior top performers (e.g., Dogecoin) have dropped off our list
- In 2018, we do see some pulling apart of EOS, TRX and VEN from the rest of the pack, but it would be hard to say that there is a meaningful diversification among these assets

Correlation Matrix of Top 15 Coins, 2017 and 2018 YTD

2017	BTC	ETH	XRP	BCH	EOS	LTC	ADA	XLM	IOTA	TRX	NEO	XMR	DASH	XEM	VEN	MV 05/18
BTC	1.00															126.7
ETH	0.89	1.00														57.0
XRP	0.71	0.80	1.00													23.7
BCH	0.85	0.92	0.76	1.00												16.9
EOS	0.85	0.91	0.80	0.92	1.00											10.6
LTC	0.93	0.89	0.81	0.86	0.94	1.00										6.6
ADA	0.77	0.92	0.91	0.83	0.91	0.87	1.00									5.7
XLM	0.86	0.80	0.90	0.88	0.94	0.91	0.97	1.00								5.4
IOTA	0.92	0.88	0.67	0.82	0.90	0.90	0.77	0.90	1.00							4.8
TRX	0.69	0.88	0.87	0.82	0.88	0.86	0.95	0.90	0.71	1.00						3.9
NEO	0.84	0.87	0.66	0.80	0.71	0.79	0.96	0.69	0.74	0.93	1.00					3.4
XMR	0.96	0.91	0.79	0.93	0.89	0.95	0.88	0.89	0.93	0.84	0.86	1.00				2.5
DASH	0.95	0.92	0.79	0.96	0.91	0.94	0.88	0.88	0.90	0.84	0.87	0.99	1.00			2.5
XEM	0.81	0.89	0.90	0.84	0.90	0.91	0.95	0.91	0.85	0.94	0.80	0.90	0.89	1.00		2.2
VEN	0.71	0.88	0.95	0.81	0.87	0.83	0.96	0.94	0.76	0.93	0.94	0.86	0.84	0.95	1.00	1.8

2018 YTD	BTC	ETH	XRP	BCH	EOS	LTC	ADA	XLM	IOTA	TRX	NEO	XMR	DASH	XEM	VEN	MV 05/18
BTC	1.00															126.7
ETH	0.81	1.00														57.0
XRP	0.95	0.76	1.00													23.7
BCH	0.92	0.84	0.91	1.00												16.9
EOS	0.19	0.36	0.17	0.44	1.00											10.6
LTC	0.92	0.78	0.82	0.80	0.03	1.00										6.6
ADA	0.91	0.82	0.97	0.92	0.29	0.75	1.00									5.7
XLM	0.86	0.87	0.90	0.90	0.46	0.73	0.95	1.00								5.4
IOTA	0.91	0.80	0.94	0.97	0.43	0.76	0.95	0.92	1.00							4.8
TRX	0.71	0.50	0.76	0.77	0.50	0.48	0.76	0.72	0.79	1.00						3.9
NEO	0.66	0.90	0.58	0.60	0.17	0.73	0.65	0.71	0.58	0.19	1.00					3.4
XMR	0.93	0.85	0.84	0.83	0.16	0.91	0.82	0.82	0.82	0.51	0.80	1.00				2.5
DASH	0.95	0.87	0.96	0.91	0.15	0.88	0.95	0.90	0.91	0.63	0.75	0.92	1.00			2.5
XEM	0.90	0.81	0.96	0.89	0.19	0.74	0.98	0.90	0.91	0.72	0.63	0.82	0.94	1.00		2.2
VEN	0.51	0.81	0.42	0.56	0.49	0.54	0.52	0.64	0.50	0.28	0.79	0.61	0.57	0.49	1.00	1.8

Source: Autonomous NEXT, BITA (coin market data)
Note: For 2017, selected coins in lighter blue have only part-year data

Crypto assets are still correlated with traditional assets, and also move together with ETH & BTC on-chain metrics

Discussion

- When looking at correlations between the top coins and traditional asset classes, over the last 1.5 years, crypto has not been an uncorrelated asset; at best, it was uncorrelated from Fixed Income and Real Estate
- In 2018 YTD, the relationship to traditional assets has started to slip as the asset class began to lose value
- When looking at the on-chain metrics of BTC and ETH as a driver, they correlate positively with nearly all major cryptocurrencies, but for EOS, which has had a unique fundraising

Correlation Matrix of Top 15 Coins, 2017 and 2018 YTD

2017-2018 YTD	BTC	ETH	XRP	BCH	EOS	LTC	ADA	XLM	IOTA	TRX	NEO	XMR	DASH	XEM	VEN
Asset Classes															
SP 500 (IVV)	0.9	0.9	0.8	0.6	0.8	0.9	0.7	0.8	0.7	0.6	0.9	0.9	0.8	0.7	0.8
Value (VTV)	0.9	0.9	0.8	0.7	0.7	0.9	0.7	0.8	0.7	0.6	0.9	0.9	0.8	0.7	0.8
Small Cap (VB)	0.8	0.9	0.7	0.6	0.8	0.8	0.5	0.8	0.6	0.6	0.8	0.9	0.8	0.7	0.8
Fixed Income (AGG)	0.4	0.3	0.2	-0.1	-0.7	0.2	-0.1	-0.1	-0.1	-0.4	-0.1	0.2	0.4	0.4	-0.1
Commodities (DBC)	0.6	0.6	0.6	0.4	0.8	0.6	0.3	0.7	0.5	0.6	0.7	0.7	0.5	0.4	0.8
Gold (GLD)	0.6	0.7	0.6	0.0	0.4	0.6	0.4	0.7	0.2	0.5	0.7	0.7	0.6	0.6	0.7
Real Estate (VNQ)	-0.2	-0.4	-0.3	-0.1	-0.6	-0.3	-0.2	-0.5	-0.1	-0.4	-0.5	-0.3	-0.1	-0.1	-0.6
Onchain Metrics															
BTC Transaction Volume ($mm)	0.9	0.7	0.6	0.7	0.3	0.8	0.4	0.6	0.8	0.1	0.5	0.8	0.9	0.8	0.4
BTC Fees (in BTC)	0.3	0.1	0.3	0.6	-0.1	0.2	0.4	0.0	0.5	0.1	-0.1	0.2	0.4	0.5	-0.2
BTC Active Addresses	0.6	0.4	0.4	0.5	0.0	0.5	0.3	0.3	0.6	-0.1	0.2	0.5	0.7	0.6	0.1
ETH Transaction Volume ($mm)	0.6	0.6	0.6	0.6	0.1	0.5	0.6	0.4	0.5	0.3	0.4	0.5	0.7	0.8	0.3
ETH Fees (in ETH)	0.8	0.8	0.7	0.7	0.4	0.7	0.7	0.7	0.7	0.5	0.6	0.7	0.8	0.9	0.5
ETH Active Addresses	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.9	0.8

2018 YTD	BTC	ETH	XRP	BCH	EOS	LTC	ADA	XLM	IOTA	TRX	NEO	XMR	DASH	XEM	VEN
Asset Classes															
SP 500	0.4	0.6	0.4	0.4	0.2	0.4	0.4	0.5	0.4	0.2	0.6	0.4	0.4	0.4	0.7
Value	0.5	0.7	0.5	0.5	0.1	0.5	0.6	0.6	0.5	0.2	0.7	0.6	0.6	0.6	0.7
Small Cap	0.1	0.2	0.1	0.2	0.4	0.0	0.1	0.2	0.2	0.3	0.0	0.0	0.0	0.1	0.3
Fixed Income	0.6	0.5	0.7	0.5	-0.2	0.4	0.7	0.6	0.6	0.4	0.4	0.5	0.7	0.8	0.2
Commodities	-0.3	-0.2	-0.3	-0.1	0.6	-0.5	-0.2	-0.1	0.0	0.2	-0.5	-0.4	-0.4	-0.3	0.0
Gold	0.1	0.1	0.1	-0.1	-0.3	0.1	0.1	0.1	-0.1	-0.3	0.3	0.2	0.2	0.1	0.2
Real Estate	0.5	0.4	0.6	0.6	0.4	0.2	0.6	0.6	0.7	0.7	0.1	0.3	0.5	0.6	0.3
Onchain Metrics															
BTC Transaction Volume ($mm)	0.8	0.8	0.9	0.8	0.0	0.7	0.9	0.8	0.8	0.6	0.6	0.8	0.9	0.9	0.4
BTC Fees (in BTC)	0.8	0.7	0.9	0.8	0.0	0.6	0.9	0.8	0.8	0.7	0.5	0.7	0.9	0.9	0.3
BTC Active Addresses	0.8	0.8	0.9	0.8	0.0	0.7	0.9	0.8	0.8	0.5	0.7	0.8	0.9	0.9	0.4
ETH Transaction Volume ($mm)	0.8	0.8	0.8	0.8	0.1	0.6	0.9	0.8	0.8	0.6	0.6	0.7	0.9	0.9	0.4
ETH Fees (in ETH)	0.8	0.7	0.8	0.8	0.1	0.6	0.8	0.7	0.8	0.7	0.5	0.7	0.8	0.9	0.4
ETH Active Addresses	0.7	0.7	0.8	0.8	0.2	0.5	0.8	0.7	0.8	0.7	0.4	0.6	0.8	0.8	0.4

Source: Autonomous NEXT, BITA (coin market data), Coinmetrics (onchain metrics), YahooFinance (ETF prices)
Note: ETFs were used as index proxies and may hide minor slippage

Takeaways and areas for further research

- **The speculation in the space has led to attempts by financiers and investors to engineer financial outcomes and research drivers of the asset class, but the answer is simpler**
  - Since our Token Mania report, the sector has experienced tremendous financial specialization and complexity, from investor strategies to tokenomics design using behavioral finance to generate demand
  - The sector needs not financial engineering, but economic activity – this can only come from building software that users want, and driving adoption of that software such that it creates a consumer surplus

- **The exponential return profile of crypto assets looks less like an option, and more like a lottery ticket, with generational and social dynamics explaining the need for such an asset**
  - Debt, inequality and mistrust in institutions are growing; Millennials are unlikely to see traditional retirement given government balance sheets, carry record levels of student debt, and will inherit massive healthcare liabilities from older generations who are living longer lives
  - Buying the lottery ticket of crypto to get rich quick is akin to management in a failing company taking on unsustainable amounts of debt to take a gamble; further, younger generations have an informational advantage in understanding the upside of a software-based solution to economic pressures

- **It may be too early to create systematic valuation frameworks for token assets**
  - Crypto assets have created financial outcomes for asset owners, but the story of real world deployment is still in progress across retail and enterprise
  - We need better data and examples to define what economic success looks like before we can model how benefits accrue to asset owners, aside from sentiment and expectations
  - Forward looking claims about diversification and high Sharpe ratios that rely on 2017-2018 historic returns are not indicative of future performance in our view

Source: Autonomous NEXT

Emerging Crypto Fund Ecosystem

Introduction

- **The number of crypto funds is at record 312, with over 250 funds started in 2017 and 2018**
  - Formation is highly correlated with Bitcoin capital appreciation and the ICO boom, both of which highlighted opportunity in the space for different types of investors
  - Not including traditional instruments like the Bitcoin Investment Trust or BTC futures, the Crypto funds control about $7.5-10 billion of assets; traditional vehicles would add another $2-4 billion of exposure
  - Assets under management are held by just a few funds, with the top 10 funds controlling over 40%

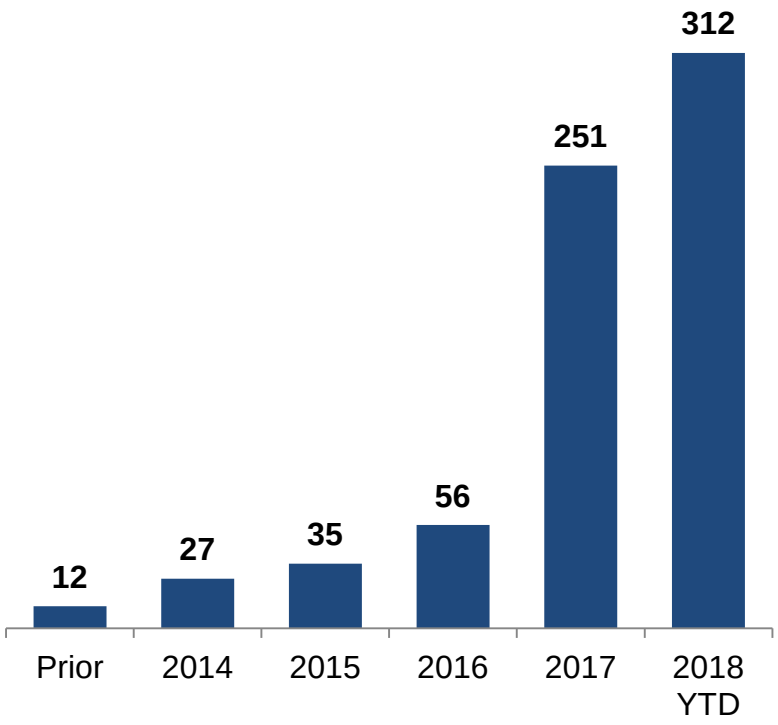
- **Increasing differentiation between crypto funds shows emerging maturity of investor strategies, which is encouraging to see**
  - Strategies of funds we track include (1) liquid venture investing in tokens, (2) cryptocurrency traders and former hedge fund managers, (3) artificially intelligent or automated bot funds, (4) traditional funds of funds, (5) token baskets, usually raising money through their own tokens to invest in other crypto assets, (6) passive crypto-indexes, (7) ecosystem funds from software platforms and (8) credit funds
  - Liquid venture is the most popular strategy, followed by capital markets trading
  - We highlight some of the more unique offerings in the marketplace herein

- **While many new funds have come onto the market, there should be legitimate concern around how viable many of these entities are in the long term**
  - Based on a model of estimated fund economics, we expect funds with less than $25 million in AUM to struggle in flat or down years
  - Key drivers that would make survival more viable are custody, trading costs, and market performance
  - Services that diligence the operational quality of Crypto funds add meaningful value at this stage

Source: Autonomous NEXT

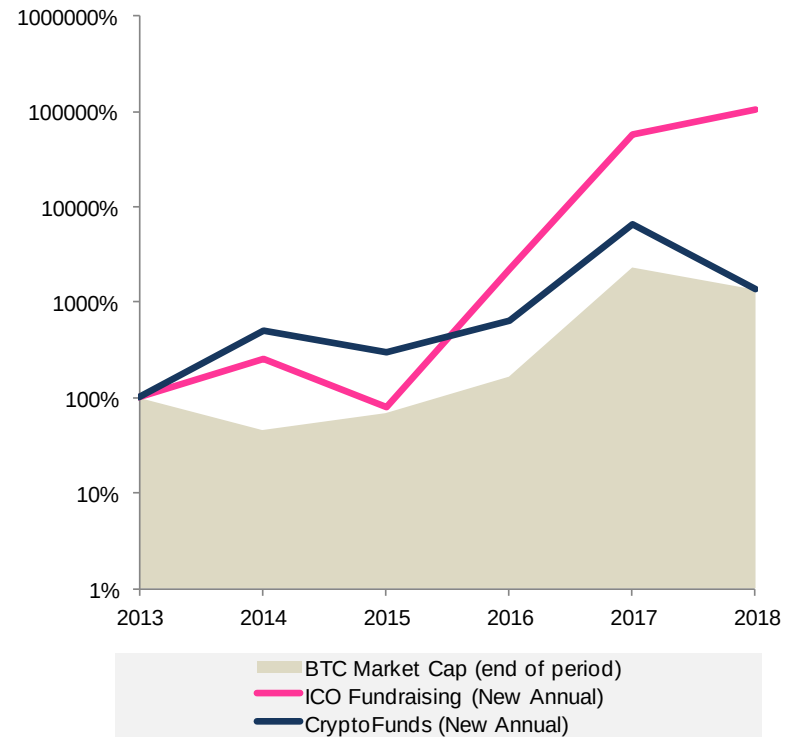
The number of crypto funds is at record 312, highly correlated with Bitcoin appreciation and ICO activity

Number of Crypto Funds



- In *Token Mania*, we highlighted the original crypto funds: e.g., Pantera, Polychain, Blockchain Capital
- Since then, over 200 new funds have entered the space, such as Galaxy Digital and a16z crypto

New Funds vs BTC vs ICOs (log)

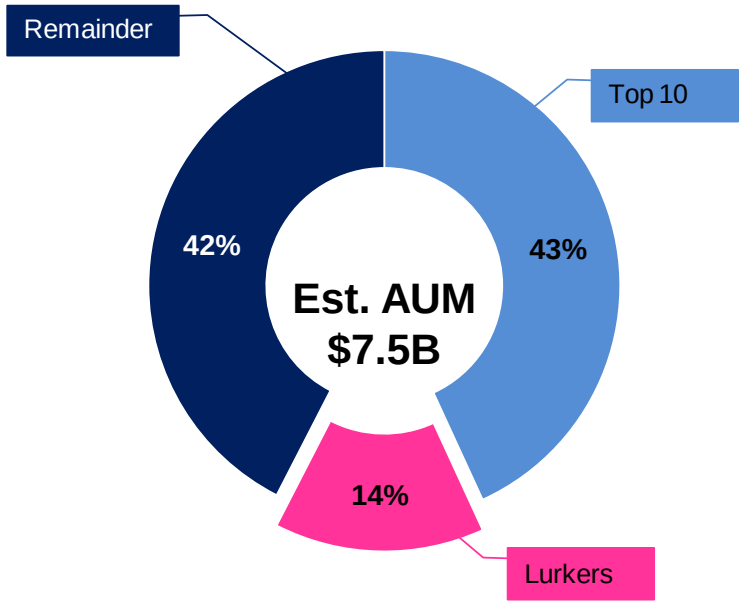


- The number of crypto funds is highly correlated with both ICO fundraising and the marketcap of Bitcoin
- Pre-sale discounts and 10,000% returns on crypto beta exposure catalyzed record fund formation

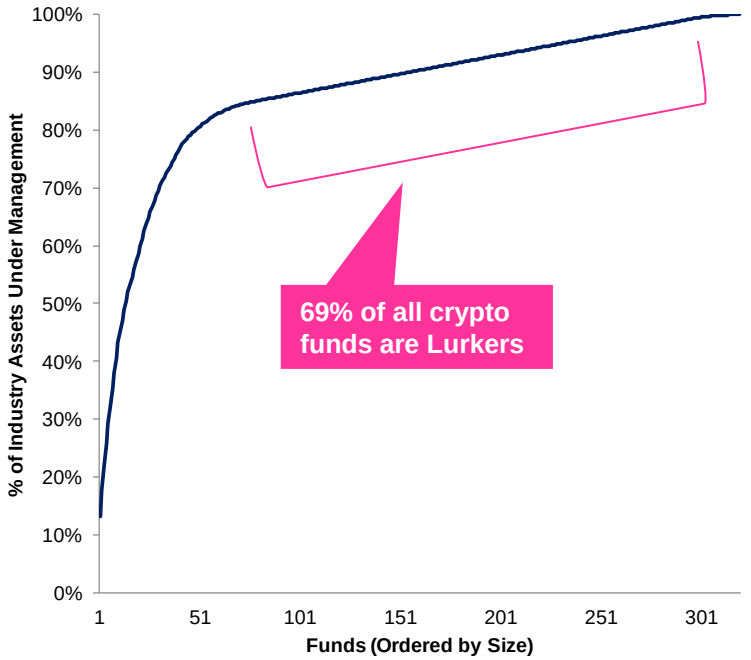
Source: Autonomous NEXT

Crypto funds hold $7.5 to 10 Billion of Assets Under Management, which is highly concentrated with the top 10

AUM Distribution (% of Total AUM)



AUM Distribution per Fund



- Fund AUM appears highly concentrated based on available date, with the top 50 funds holding 80% of assets and the top 10 funds holding 43%
- 70% of all funds are lurkers, where information on their assets is unavailable. We assume these funds to be the winnings of early adopters in 2017, with a median size of $5 million and accounting for 14% of total AUM.
- Adding traditional products to these funds, such as the Bitcoin Investment Trust, Coinshares ETNs, Bitcoin Futures, and others, would likely add another $2-4 billion to industry exposure

Source: Autonomous NEXT

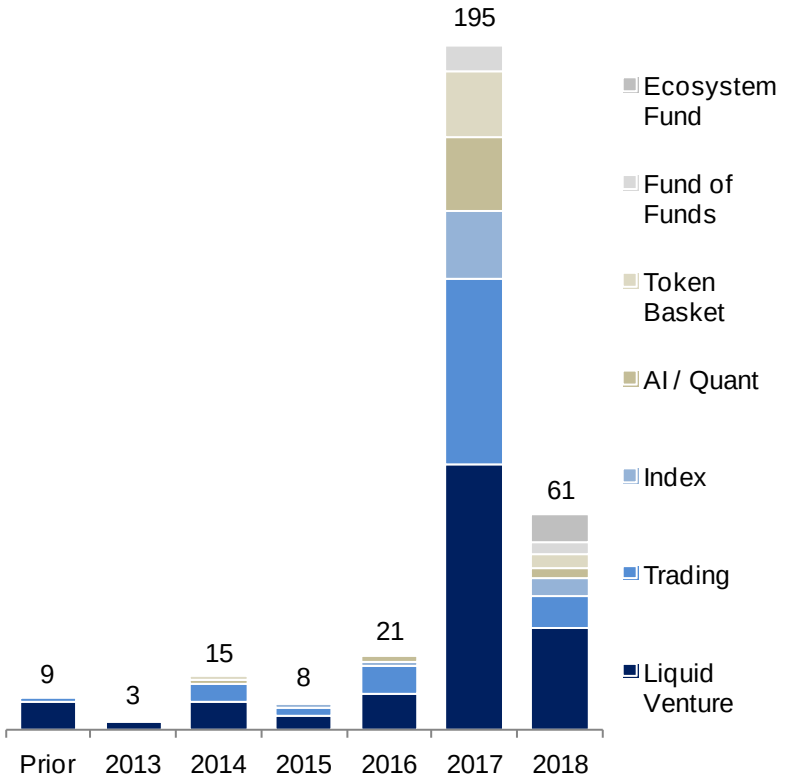
Increasing differentiation between crypto funds shows emerging maturity of investor strategies

	Description of Strategy	Value Drivers
Liquid Venture	Apply early stage technology pattern matching skills to recognize crypto projects that could be the next generation of web infrastructure	• Market size & Team • Token design • Long term holding period
Trading	Treat Crypto as any other asset class, like commodities or equities, and trade long or short positions	• Liquidity, technical trading • Short-medium term holding period
AI / Quant	Use statistical models or machine learning to generate alpha through arbitrage or factor analysis, with quant methods generalized from other markets	• Large data sets • Test large numbers of alpha hypotheses
Token Basket	Manager selection or aggregation projects that provide a single token representing several managers or investments	• Quality of underlying managers • Counterparty risk
Index	Several emerging packages of small, mid and large cap crypto currencies for asset allocation	• Passive beta exposure to the asset class • Selection criteria
Fund of Funds	Traditional fund of funds packaging of crypto funds that use hedge fund structures	• Quality of underlying managers • Two layers of fees
Credit	Investment advisors that invest in crypto lending assets from networks like SALT, like funds investing in Lending Club loans	• Underwriting risk modeling and loan selection
Ecosystem	Investment into projects that build on top of the investor's technology or use an internal product or service	• Growth of ecosystem • Use of protocol/exchange

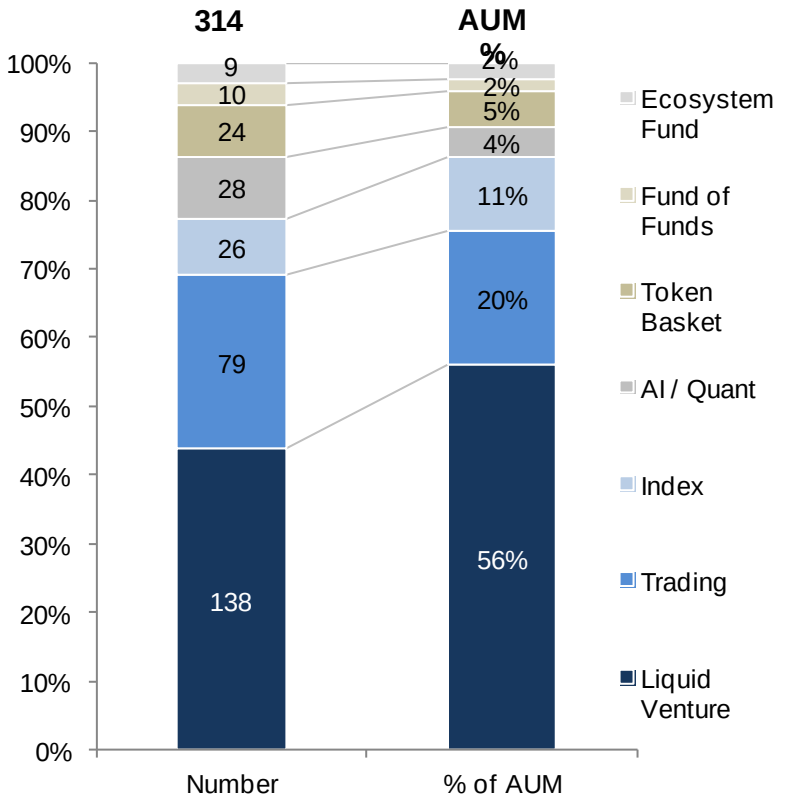
Source: Autonomous NEXT

Venture and trading funds are most numerous and hold the most assets under management

Crypto Funds by Inception & Strategy*

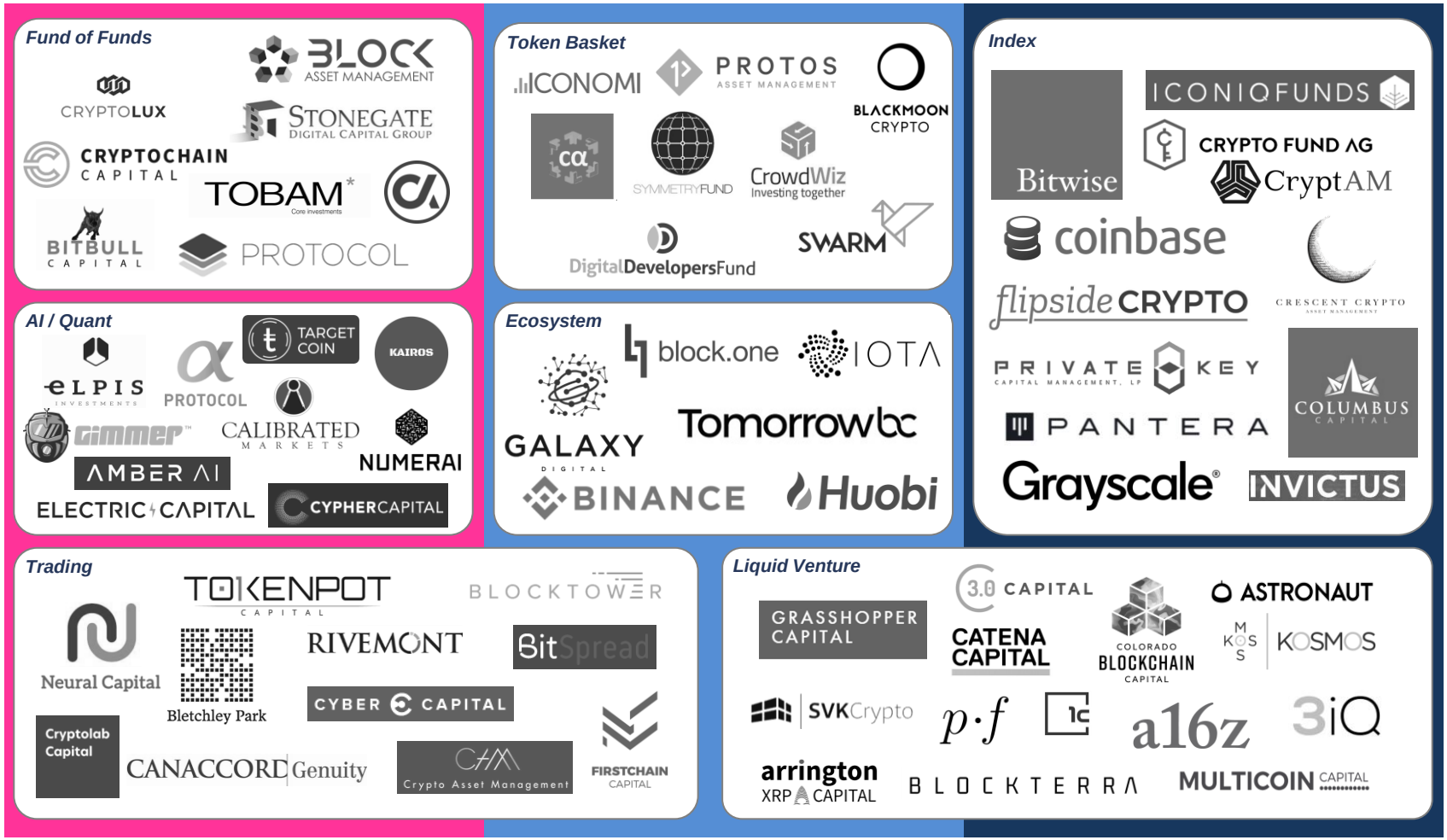


Estimated AUM by Strategy



Source: Autonomous NEXT
**Note – We exclude 1 Credit strategy fund for cleaner presentation*

Funds are segmented by active vs. passive styles and bundled vs. standalone products; examples follow ...



Source: Autonomous NEXT

Emerging Fund: ICONOMI Token Basket

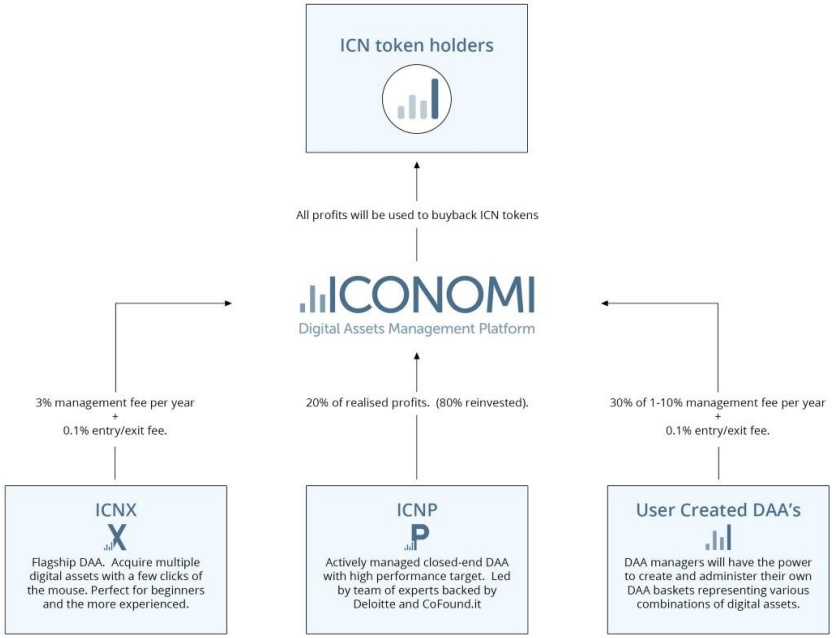
ICONOMI

Overview

- Unlike several Index funds, that are accessible to only accredited investors (e.g., Crescent Crypto, Bitwise), ICONOMI is building an investment platform for a larger market segment
- The core offering is a variety of token baskets or “Digital Asset Arrays” (DAAs) that users can buy on the platform, each featuring a high, medium, and low risk profile with high liquidity and no threat of lock-outs
- ICONOMI’s flagship DAA – Blockchain Index, is passively managed consisting of 29 blockchain-based crypto assets, such as bitcoin (15%) and ethereum (15%) representing 78% of the total market cap
- Competitors offering similar platforms consist of Prism and Melonport

Founded	Raised	# of DAAs
2016	$10.6 Million	31

Ways to get exposure to ICONOMI’s DAAs



Source: Autonomous NEXT, ICONOMI

Emerging Fund: The Bitwise Hold 10 Private Index Fund

Bitwise

Inception Date	Initial Raise	2017 Return
2017	$4 Million	2,200%

Overview

- Bitwise tracks a basket of the 10 most highly valued coins based on their market capitalisation, called Hold 10 Private Index Fund
- It raised $4 million from the likes of Blockchain Capital, Khosla Ventures, General Catalyst, and The Collaborative Fund
- The 10 coins in the HOLD 10 index are chosen to comprise of 85% of the total crypto market capitalisation; the allocation consists predominantly of Bitcoin at 61.6%, Ethereum second at 18.9%, and Ripple third at 7.1%
- The funds are held in an institutional-grade 100% cold storage vault, accessed primarily during monthly rebalancing
- Since the 1st of January 2017, the fund is up 934%, whilst Bitcoin is up 583%

Hold 10 Index Performance

Source: Autonomous NEXT, Bitwiseinvestments.com

Emerging Fund: Protocol Ventures' Fund-of-Funds

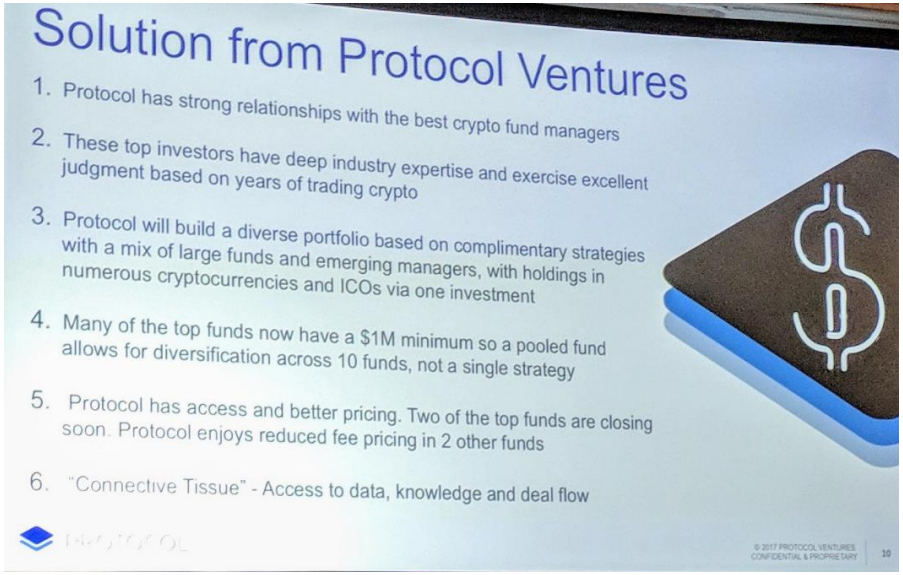
PROTOCOL

Overview

- Protocol Ventures' fund-of-funds invests in the top 10 crypto funds using a combination of historic and expected performance, quality of fund mangers and complimentary fund strategies to deliver diversification and outsized returns to inform allocation
- Two of the known funds in Protocol's portfolio are MetaStable Capital – one of the larger crypto funds, and Neural Capital – whose bet on Ethereum in 2017 earned them significant returns
- With initial funding of $1 Million coming from founder Rick Marini, the fund hopes to raise more to solidify its future, noting that the fund-of-funds space has already seen the fall of Apex Token fund who failed to raise the $13 Million capital needed to progress

Founded	Goal AUM	# Target Funds
2017	$100 Million	10

Protocol Ventures' Fund-of-funds offering



Source: Autonomous NEXT, Twitter

Emerging Fund: Numerai Quant / AI

NUMERAI

Overview

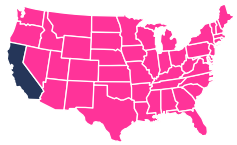
- Numerai is a decentralised hedge fund that works by building its own financial model that incorporates the machine learning models submitted by data scientists from various backgrounds and expertise.
- The Numerai team democratises participation by making an encrypted dataset readily accessible via their platform.
- Data scientists download the dataset in order to build and submit their own machine learning model, targeting regions or sectors of the stock market in search of the best accuracy in predictability.
- Numerai synthesise all submitted models into their meta model, rewarding those with the most accurate predictive models in Numeraire- Numerai's token.
- The diversity of models submitted leads to diversification in the meta model, reducing risk.

Founded

2015

Raised

$7.5 Million



California, USA

Numerai's results page per tournament

Tournament 51 Results

This tournament has resolved.

PARTICIPANTS	CONTROLLING CAPITAL	USD PAID OUT	NMR PAID OUT
475	266	$3603.05	14412.09

#	DATA SCIENTIST	LIVE LOGLOSS	VAL LOGLOSS	ROUND USD	ROUND NMR
1	GIRAS	0.690556	0.692082	$1000.00	4000.00
2	THEAFH	0.691091	0.692447	$435.28	1741.10
3	STUDYAI	0.691223	0.660740	$267.58	1070.32
4	JOSEPH_SCHUMPETER	0.691505	0.692316	$189.46	757.86
5	INVAI	0.691647	0.661223	$144.96	579.82
6	KARL_MARX	0.691776	0.692233	$116.47	465.88
7	ANYTT	0.691778	0.680470	$96.80	387.21
8	HENRYWANG7	0.691880	0.692742	$82.47	329.88
9	UUAZED2	0.691991	0.692207	$71.60	286.40
10	INTELAYER	0.691995	0.692595	$63.10	252.38

Source: Autonomous NEXT, Medium

Emerging Fund: #Hashed Venture Capital

#HASHED

Overview

- #Hashed – a successful Korean blockchain-focused fund, incubator and community builder, whose primary mission is to accelerate the global enablement of blockchain through community building and impact investing in Korea
- Evidence this mission is #HashedLounge: a community building meetup initiative, and Hashed Post: a blockchain/crypto journal
- The venture fund's successes have come from the acceleration of what is now South Korea's largest digital wallet provider – Coin manager, as well as, two others – Icon and Mediblock who rank among the cryptocurrency's top100 with a combined market capitalisation of over $3B
- The fund's current value reportedly increased from $600K to $250 million, with no outside investors

Founded	Fund Assets	Portfolio Companies
2017	$250 Million	49

The #Hashed Portfolio

VAULT12, THUNDER, LOKI, QuarkChain, IRELINE, METADIUM, traceto.io, EXIMCHAIN, IoTeX, Refereum, ORIGIN, ONTology, KAMRIA, Tomochain, SureRemit, IoT Chain, ZIPPIE, BNK TO THE FUTURE, GBX, PROPS, EverMarkets, aelf, PUNDI, bluzelle, WAX, Quantstamp, Bodhi, AIRSWAP, RED PULSE, kyber network, Simple Token, STORM, DECENTRALAND, EOS, omisego, COSMOS, Qtum, ethereum

Source: Autonomous NEXT

Emerging Fund: SALT Crypto-to-Cash Lending

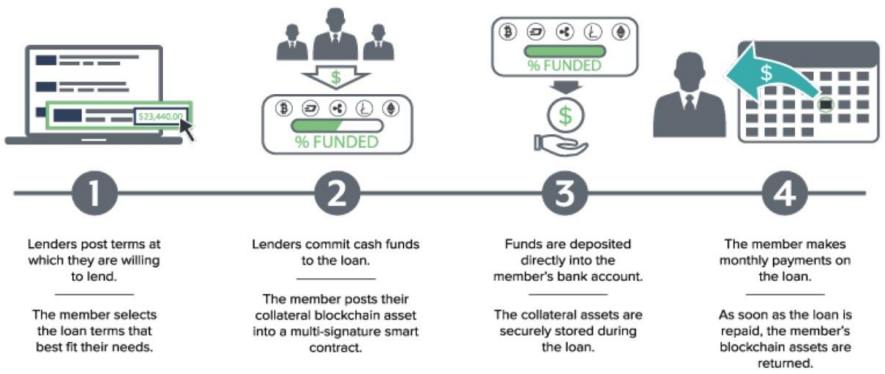
SALT

Overview

- Cash-to-crypto lending platforms such as SALT (Secured Automated Lending Technology) offer a means to obtain blockchain-backed loans using cryptocurrency holdings as collateral
- Loans are provided via SALT Blockchain Asset Management, who manage the Crypto Credit Opportunity Fund. The crypto-lending fund provides investors exposure to digital currency without directly owning them via secured debt.
- Proprietary software ensures the fund maintains over-collateralisation even during large single-day losses
- We see the Investment Advisor entity which manages the fund potentially as an analog to NSR Invest (lending investor) and Lending Club (lending platform)

Founded	Loans to date	Bonds to be issued in Q4 2018
2017	$40 Million	$200 Million

SALT's lending application process



- SALT works by offering 3 – 36 month loans of up to 60 percent of the value of the cryptocurrency collateral (depending on the loan-to-value ratio) with interest rates around 16 percent. The platform makes use of automated margin calls when the loan-to-value ratio reaches a specific threshold (dependent on the loan amount).

Source: Autonomous NEXT, Steemit, SALT

Emerging Fund: Binance Ecosystem Fund

BINANCE

Overview

- Binance, one of the world's largest crypto exchanges based on daily trading volumes, is launching a $1 Billion ecosystem fund to back blockchain and crypto startups, such as public blockchains, decentralised exchanges, custody/payments/wallets, stable digital currency, and security token platforms
- The fund serves as an initiative to collaborate with 20 vetted partners to enact lasting change and progress for the whole ecosystem. Investment will take place in 10 phases of $100 Million each.
- Binance's internal currency, BNB will serve as the sole means of investment for the ecosystem fund, driving the usage of the coin. Partners of the fund get priority in recommending projects to Binance Labs; if the fund is successful, it will also increase trading on Binance

Announced	No. of partners	Investment per phase
June 1st 2018	20	$100 Million

Binance Labs' Mandate

Source: Autonomous NEXT, Binance.com

While many funds have started after 2017, funds below $25 million are likely to struggle with fixed costs in a flat market

Estimated Fund Economics

	Small Fund		Mid Size Fund		Large Fund	
	Good Market	Bad Market	Good Market	Bad Market	Good Market	Bad Market
Revenue						
Assets	$1,000,000	$1,000,000	$10,000,000	$10,000,000	$100,000,000	$100,000,000
Management Fee %	2%	2%	2%	2%	2%	2%
Management Fee $	$20,000	$20,000	$200,000	$200,000	$2,000,000	$2,000,000
Carry %	20%	20%	20%	20%	20%	20%
Expected Performance	200%	0%	200%	0%	200%	0%
Carry $	$400,000	$0	$4,000,000	$0	$40,000,000	$0
Total Revenue	**$420,000**	**$20,000**	**$4,200,000**	**$200,000**	**$42,000,000**	**$2,000,000**
Costs						
Trading (assuming 50% turnover)						
Trading / advisory as %	1%	1%	0.7%	0.7%	0.5%	0.5%
Trading / advisory $	$5,000	$5,000	$35,000	$35,000	$250,000	$250,000
Fund Costs						
Custody min	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
Custody %	1%	1%	1%	1%	1%	1%
Custody $	$100,000	$100,000	$100,000	$100,000	$1,000,000	$1,000,000
Administration	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000
Legal	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
Personnel						
Employees	1	1	3	3	8	8
Salaries & Benefits	$120,000	$120,000	$360,000	$360,000	$960,000	$960,000
Office & Misc	$10,000	$10,000	$30,000	$30,000	$80,000	$80,000
Nice to Have						
Data & Research	$20,000	$20,000	$50,000	$50,000	$125,000	$125,000
Conferences & Mktg	$0	$0	$10,000	$10,000	$50,000	$50,000
Total Costs	**$320,000**	**$320,000**	**$650,000**	**$650,000**	**$2,530,000**	**$2,530,000**
Profit to Partners	$100,000	($300,000)	$3,550,000	($450,000)	$39,470,000	($530,000)

- Capital appreciation allowed small funds to turn into medium size funds in 2017
- But running these organisations carries significant costs, especially as infrastructure costs are high and immature
- 2018 has already seen a number of crypto funds shut down, including Alpha Protocol, CryptoF2, and Crowd Crypto Fund

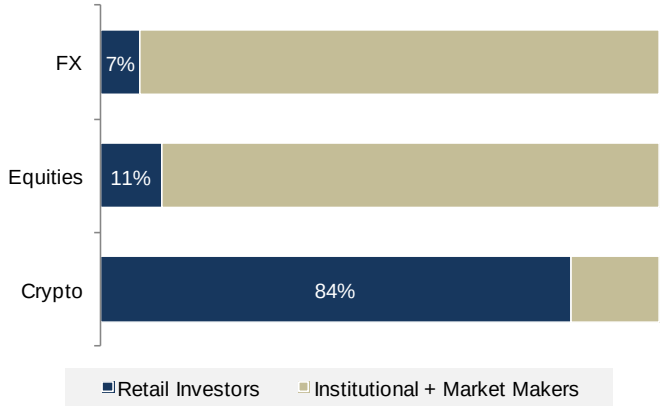
Source: Autonomous NEXT

The Asset Class Opportunity

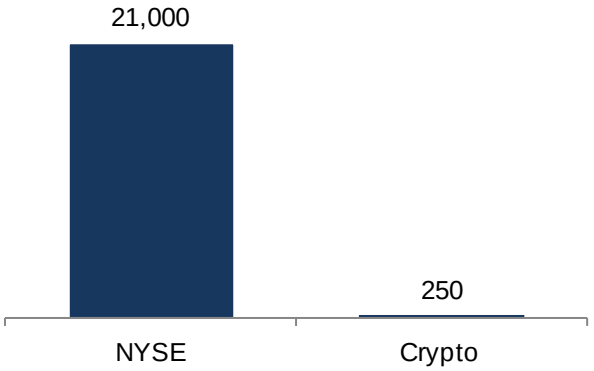
Institutional capital markets progress still early

- **Today's crypto markets are primarily retail investors circumnavigating institutional finance**
  - Unlike mature markets, where retail comprises 10-30% of the flow, most crypto assets are traded on immature infrastructure by individuals or small funds
  - Massive opportunity for capital pools, like mutual funds, ETFs, endowments and retirement portfolios to shift a portion in crypto assets
- **Institutional financial product manufacturing infrastructure is only now starting to catch up**
  - Fractured exchanges without best execution between them imply that liquidity is too shallow for large transactions, leading to an informal OTC market
  - Lack of custody suitable for traditional wrappers of asset management products, like ETFs and mutual funds, has slowed downstream adoption
- **Retail investors invested before traditional packaging was ready in 2017**
  - Generational and economic changes drive the need for a volatile risk asset across wealth levels
  - The financial industry's reticence has no impact on the investing preference of consumers

Trading Volume Retail Share



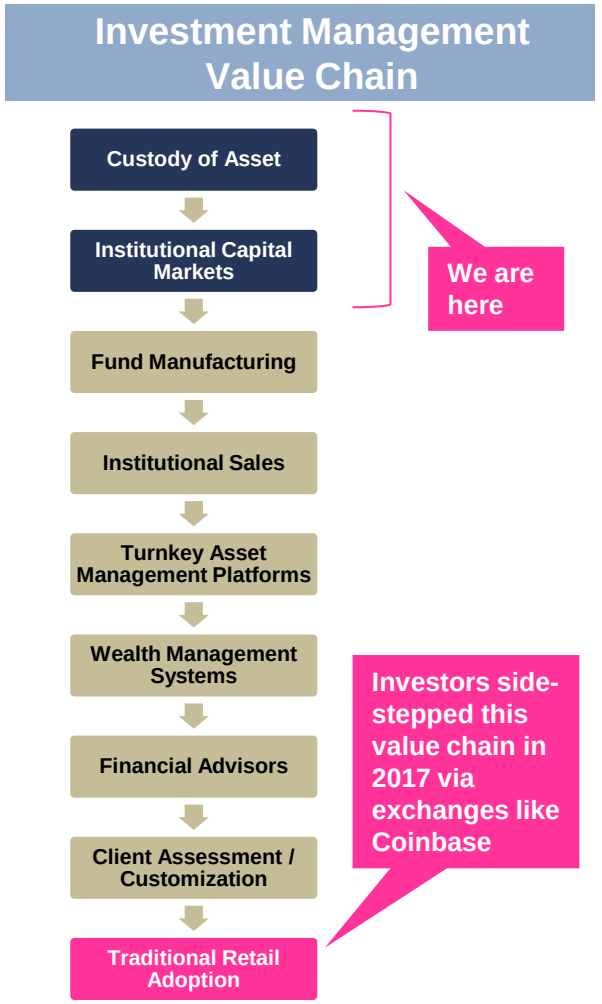
Market Capitalization ($B)



Source: Autonomous NEXT, Tabb Group (NYSE Volumes), Aite (FX Volumes),
**Note: Crypto volumes compare BTC retail exchange volume vs CME/CBOE futures exposure*

Distributors need more progress from manufacturers

- **The $80 trillion AUM wealth management industry needs crypto assets to sit in traditional instruments to distribute it**
  - Thousands of interlocking capital assets (human, financial), powered by software like financial planning, CRM, risk assessment, and various workflows distribute financial products today
  - Once institutional liquidity and custody are solved, crypto assets can be packaged and distributed like other investments within asset allocations to family offices, endowments and retirement portfolios
- **Possible meaningful outcomes that have much greater impact than early stage venture investing**
  - A crypto Index exchange traded fund with exposure to the top liquid coins and a <20 bps expense ratio would fit into many allocations at 1-5% of holdings
  - The tokenization of all asset classes and consolidation of market infrastructure and capital, starting with Security Tokens (public) and smart contracts (enterprise blockchains)
- **The asset needs institutional adoption and distribution to get out of the current scammy sentiment-based speculation period**

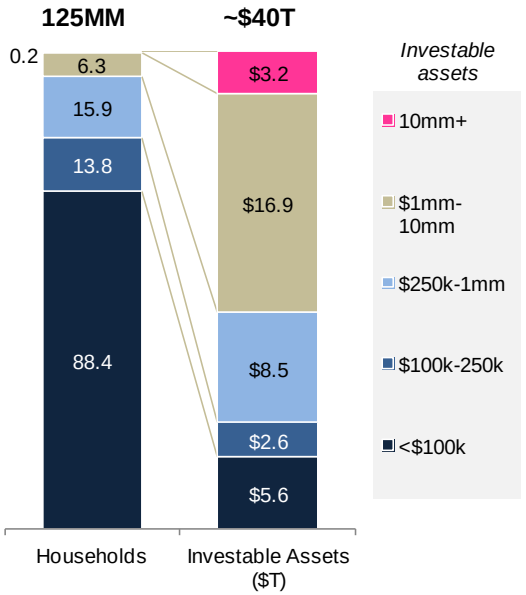


Source: Autonomous NEXT

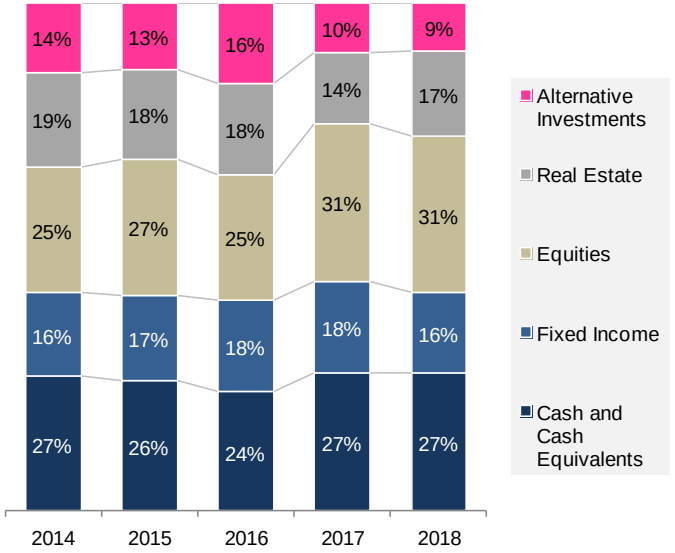
Given global asset allocations, maintaining $500 billion in crypto value does not require much change

- In the US alone, $20 trillion of assets sit with HNW investors ($1MM+ investable assets), of whom 29% have interest in crypto investments. These investors have historically put 10% of portfolios in Alternatives, which includes venture capital, various speculative commodities, and hedge funds
- Another $20 trillion sit with non-HNW investors, who historically have not had access to the Alternatives asset class, representing pent-up demand

US Wealth Management (2016)



Allocation to Alternatives for $1MM+ Households



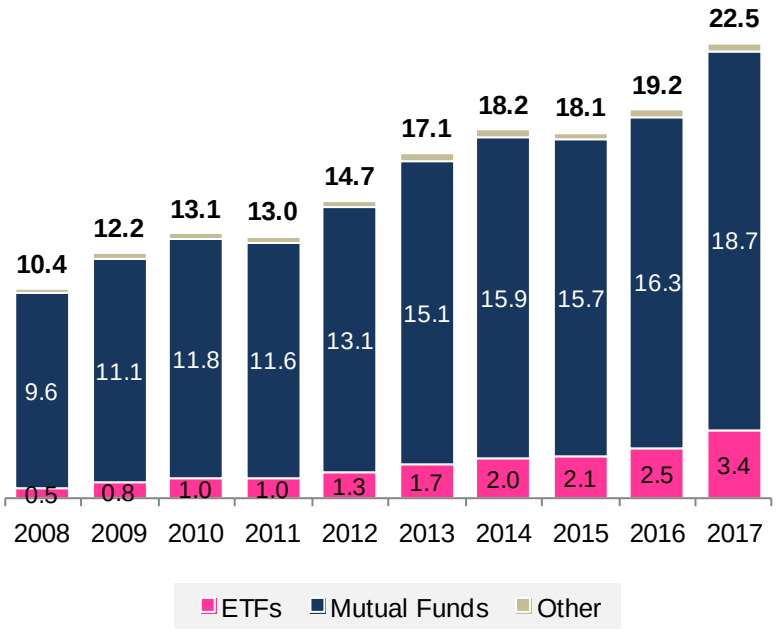
- A global allocation to Alternative investments of 10% is approximately $5-10 trillion
- A 5% allocation within Alternatives to crypto or tokenized assets is $500 billion
- Such a holding is not a fundamental shift in capital markets, but a speculative slice of a speculative slice within a globally diversified portfolio
- The 300 crypto funds described earlier are operationalizing this theme

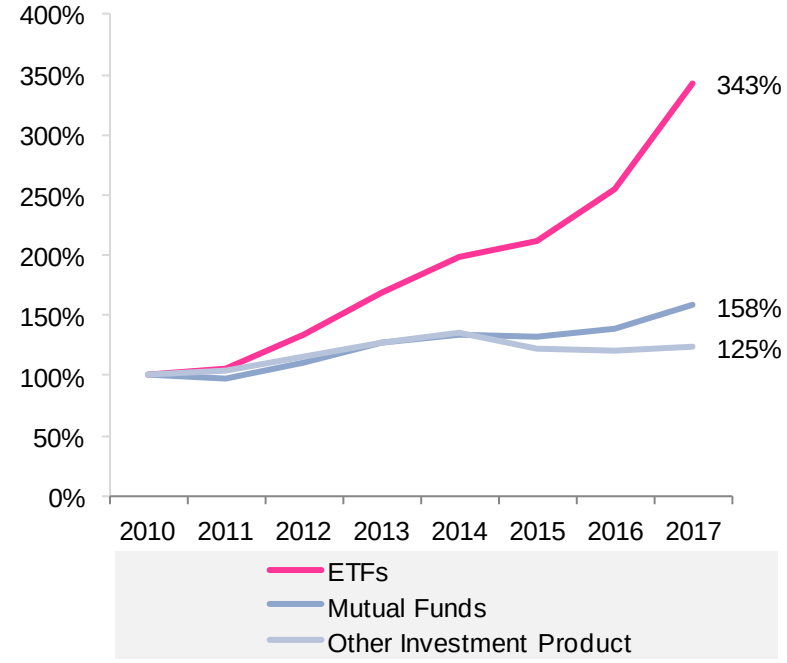
$500 billion

Source: Autonomous NEXT, World Wealth Report

Moving crypto from Alternatives into the core of portfolios using efficient ETF products would drive far larger growth

Exchange Traded Funds – Net Assets ($T), and Growth Since 2010



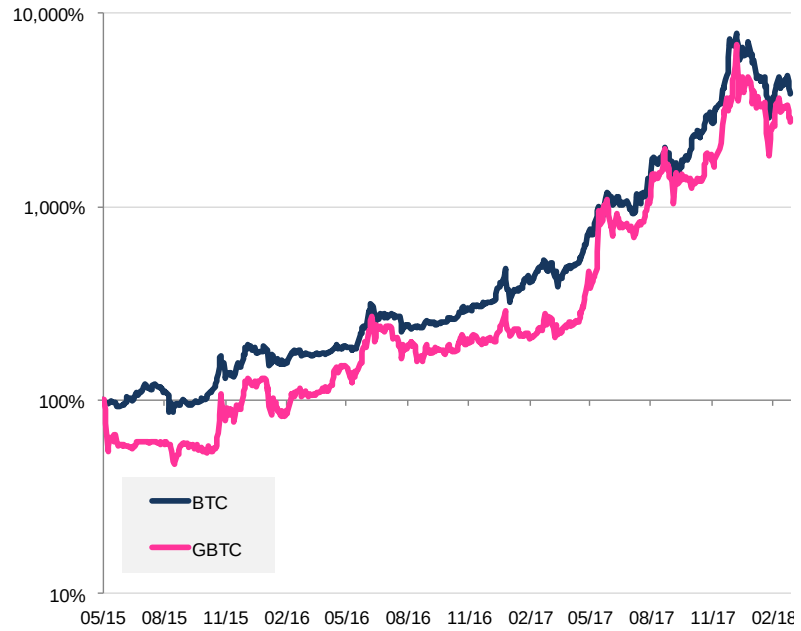


- ETFs have been a growth engine of the asset management industry, adding $3.4 trillion in 10 years, given their low cost and ease of use within a financial advice framework, distributed at scale
- Digital wealth managers, such as Betterment, Personal Capital and Wealthfront, have demonstrated how mass customization via software can be combined with efficient product for mass-affluent distribution
- A similar instrument for crypto assets, we think, would do much to normalize exposures and reduce speculation

Source: Autonomous NEXT, Investment Company Institute

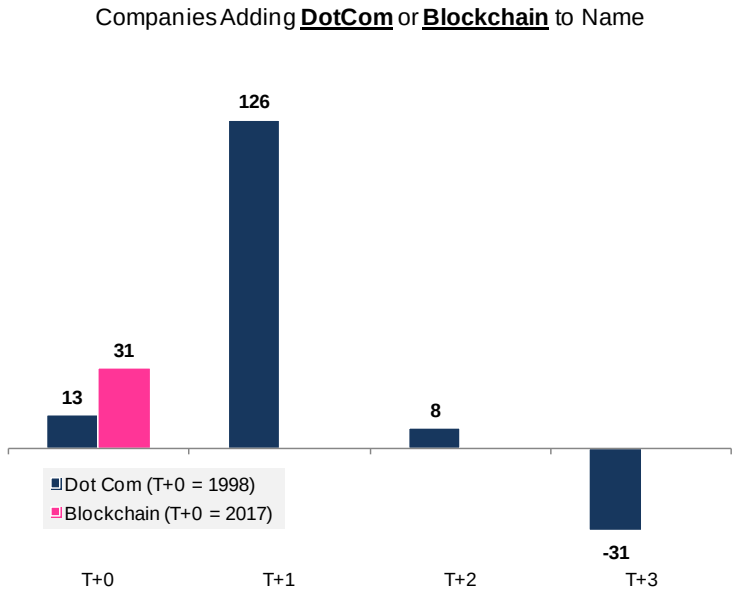
Current public market exposure to Crypto assets is unnecessarily expensive and risky

Price Drag Between GBTC and BTC



- While Grayscale's Bitcoin Investment Trust is a good entrant into the space, it has a management fee of 200 bps, 194 bps higher than the average SPDR
- It also often trades at a premium to underlying holdings of Bitcoin; investors may experience less price appreciation and additional volatility

Public Company Pretenders



- Individual public companies have attempted to capitalize on blockchain demand, by changing their name (e.g., Long Island Ice Tea), partnering with new projects (e.g., Kodak), or legitimately investing into the space (e.g., Overstock)
- But in all cases, individual companies create unneeded idiosyncratic risk that an index reduces

Source: Autonomous Research analysis, Grayscale, Bloomberg; Rau, Patel, Osobov, Khorona and Cooper (2000)

Note: Dot Com T+2 and T+3 measured on a net basis, i.e. adds net of deletions. In T+2 (2000) there were 36 companies that added Dot Com to their name and 28 that deleted. In T+3 there were 3 adds and 34 deletions.

Non-public market options, like Crypto funds or buying Crypto at exchanges, are also suboptimal

Issues with Crypto Funds

- Management fee of 2% and success fee of 20%, with some funds going up to 3% and 30%, for what is really crypto beta exposure
- Advisory fees to pay for capital introductions netted from performance (e.g., 5% for Coinlist)
- Must be an accredited investor ($1mm in net worth or $200k in income in last 2 years)

- Not available to regular retail investors
- Performance drag from fees
- Additional manager selection risk
- Not integrated with retirement assets and brokerage custodians

Issues with Crypto Exchanges

- Current retail penetration is still low, at 5 to 10%, and likely of only the largest currencies
- Exchanges take large trading spreads and can charge to move money in and out (e.g., 4% Coinbase fee for credit card purchase, 200 bps exchange rate spreads)
- Exposure to longer tail of tokens is far more difficult given quality of UI/UX, finding trading pairs on emerging exchanges, or investing in ICOs

- Still too complex for many non-techie investors
- Cyber security and human error risks
- Token selection risk
- Not integrated with retirement assets and brokerage custodians
- No risk assessment and suitability review

Source: Autonomous NEXT
Graphics: From Pexels.com

Developments in Custody

Theme Overview

- Under American regulation, securities managed on behalf of a client by an investment adviser must be held at a qualified custodian (e.g., broker/dealer or bank), which has control over the assets and issues account statements
- Blockchain-based assets are stored on a decentralized ledger, controlled by nobody by design, and accessed via private keys by owners of the assets; there are no portfolio accounting or tax statements available
- These issues have been most relevant for Crypto funds, which manage assets on behalf of direct investors and would like to outsource, rather than invent, functionality
- While these ideas may seem orthogonal, several players have either focused on (1) key management, access and storage, or (2) building hardware solutions and smart accounts to approximate traditional custody needs, including large players like Fidelity, Nomura and others

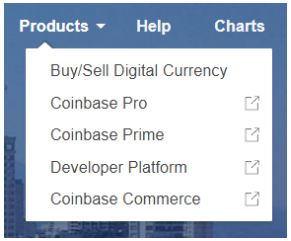
Select Company Examples

BitGo

- $54MM raised
- Over $10B in transactions / month
- CEO was on founding team of Google Chrome
- Strong multi-signature, multi-currency capabilities
- 0.25% fee per outgoing transaction, plus volume discounts

coinbase

- $216MM raised
- Crypto exchange with $20B in retail and institutional assets
- Custody product is $100k set up, 120 bps per year, $10MM minimum
- Reportedly $1B+ in 2017 Revenue



Trustology

- Venture funded by ConsenSys and run by Alex Baitlin (former UBS, BNY Mellon lead on innovation and blockchain)
- Product still in development, but promises architecture of smart accounts that have detailed permissions with custom hardware

"Different people can write different smart contracts yet operate them on a shared network with immutable performance guarantees"

Source: Autonomous NEXT, SEC , BitGo, Coinbase, Trustology

Developments in Institutional Exchanges and Liquidity

Theme Overview

- Crypto exchanges have been successful in gaining large global user bases, but not building mature infrastructure
- Current trading happens on about 200 exchanges and another 50+ over the counter (OTC) venues. This means that markets are shallow and large block trades – which is what institutional trading requires by definition – is hard
- Arbitrage exists between crypto and decentralized exchanges, OTC venues, publicly traded products (GBTC, Futures); there is no requirement to provide "best execution" or lowest price across venues
- Various projects tackle how to connect these disjointed markets, for example using established FIX APIs to pipe into existing liquidity pools, high-frequency trading firms and market makers
- Enterprise blockchain projects are also addressing capital markets issues, by working on traditional securities

Select Company Examples

CUMBERLAND MINING (A DRW COMPANY)

- One of the largest market makers in institutional crypto
- Part of Chicago-based market maker / prop trading firm DRW
- $100k minimum trade size
- Early investor in ecosystem

'"buy and sell Bitcoin, Ether and about 30 other cryptocurrencies 24 hours a day, seven days a week"

B2C2

- London-based OTC company in business since 2015
- Institutional trading, liquidity pool, synthetic crypto exposure
- Services via FIX & REST APIs
- $1mm monthly trading minimum

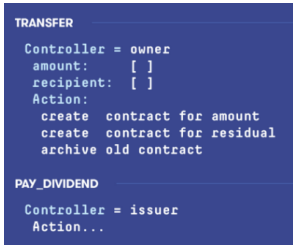
"We got a call for a $50 million trade last week."

XTRD

- Raised ICO financing in presale
- Building FIX API, unified exchange interface, dark pools
- Team with experience in traditional HFT infrastructure

Digital Asset

- $110MM raised from venture
- Led by top Wall Street talent
- Chosen by Australian Stock Exchange ($1T+ traded equities) to replace trading stack
- Own DAML, smart contract language used by institutions



Source: Autonomous NEXT, Cumberland Mining, B2C2, XTRD.io, Digital Asset, Bloomberg, Business Insider
**Disclaimer – Lex Sokolin is an advisor to XTRD*

Developments in Decentralized Exchanges

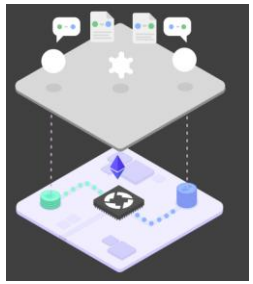
Theme Overview

- To understand this theme, consider the analogy of Napster and BitTorrent. While Napster facilitated P2P sharing of music, it used centralized servers and was shut down. BitTorrent, on the other hand, was fully decentralized to millions of users sharing small pieces of content, so there was nobody to shut down. Decentralized trading aims to remove shut-down risk from individual companies and build liquidity into software permanently.
- Efforts like Shapeshift are akin to Stripe, layering trading into APIs that apps can integrate, but rely on a proprietary order book, which has led to wide spreads
- Actual decentralized trading would require no intermediary between users, but challenges in liquidity remain; projects like Republic Protocol ($30MM ICOs) are working on decentralized dark pools
- Further, second level protocol projects are working on “atomic swaps”, which allow for users to swap across chains

Select Company Examples

0x

- Raised $24MM ICO, trades at $500MM marketcap
- Off-chain order relay with on-chain settlements via Ethereum network for ERC20 tokens
- 16 projects are building on top of 0x including MelonPort, Aragon, Augur, ChronoBank and Lendroid

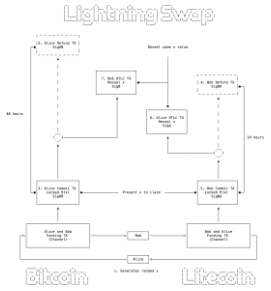


AIRSWAP

- Raised $36MM ICO in 2 days
- Uses a P2P trading model which matches users through an indexer protocol, providing a discovery mechanism for users to chose their counterparty
- Oracle included for market data

LIGHTNING

- Overlay network for Bitcoin, allowing for instant, high-volume transactions using native protocol
- Relevant in-progress functionality is called an “atomic swap”, like an OTC trade between counterparties on different chains



Source: Autonomous NEXT, Lightning Labs, 0x, Airswap

Developments in Institutional Products

Theme Overview

- Several traditional instruments already deliver exposure to the crypto asset class; they range from eToro's CFDs, various trusts (e.g., Grayscale's Bitcoin Investment Trust*), the Bitcoin futures products, several asset management products, and brokerage SMAs
- Other notable examples include Revolut, a neobank that allows for crypto currency exchange within its app, and Robinhood, which is working on free crypto trading
- The proliferation of such products help along several dimensions: (1) train new entrants to trade crypto exposure, (2) allow regulators to engage with crypto within familiar constraints, (3) increase price quality through ability to take both long and short positions, (4) start the conversation about asset allocation and risk management
- What these products do not do yet is meaningfully integrate into the wealth management distribution pipeline

Select Product Examples

Cboe
CME Group
LedgerX

Futures and Derivatives
- LedgerX pioneered crypto derivatives, soon followed by large institutional futures offerings from CBOE & CME, regulated by CFTC
- These instruments allow for directional market bets at large sizes, including going short

CS Coin Shares
VanEck

Exchange Traded Products
- Coinshares created ETNs tradable on Nasdaq Stockholm, tracking Bitcoin and Ether, 250 bps fee
- VanEck, a $40B asset manager, filed with the SEC for a Bitcoin ETF offering; the Winklevoss twins also have pursued this

Name	Bitcoin Tracker One
Issuer	XBT Provider AB (publ)
ISIN	SE0007126024
Type	Certificate
1st Trading Day	2015-05-18
Tracked Asset	Bitcoin (BTC/USD)
Leverage	1:1
Minimum Investment	1 Share
Annual fee	2.5%

EXANTE

Brokerage & Proprietary Funds
- HQ in Malta, has lobbied for positive crypto regulation
- Access to 35,000 stocks, 20,000 derivatives, 15 cryptocurrencies, proprietary funds
- First BTC fund set up in 2012 with €200m

Source: Autonomous NEXT
**Note: We've already covered Grayscale in last year's Token Mania*

Developments in Security Tokens

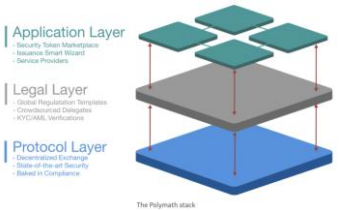
Theme Overview

- In 2017, tokens projects did not want to be categorized as securities in order to side-step regulation and maximize fundrasing; this has led to a backlash and poor behavior by opportunistic actors
- One response by the financial industry is to use the concept of tokens recorded on distributed ledgers, but tokenize traditional securities in the capital structure
- Investors already know how to value Security Tokens, and regulators already know how to regulate them, which has kicked off a race to build platforms to support such instruments
- Further, tokenization of ownership of illiquid assets – expensive paintings, commercial real estate, commodities – democratizes ownership at much lower net-worth levels, and may catalyze a boom in the assets being tokenized
- Such financial invention may also come with systemic risk and over-engineering

Select Company Examples

POLYMATH — THE SECURITIES TOKEN PLATFORM

- $59MM ICO raised, trades at $100MM marketcap
- Aims to replicate the success that Ethereum has had with utility tokens for security tokens by creating a standard and an offering platform



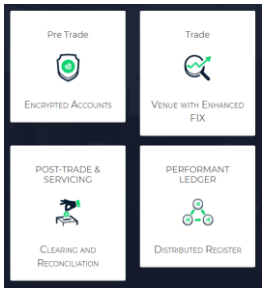
EMPLUM

- $10MM raise in venture
- Acquired a broker/dealer and an Alternative Trading System that will power tokenized security launches, and secondary trading
- Seeks to replace the IPO process with regulated token offerings

"create a turn-key solution for the initial issuance and secondary trading of ICOs as unregistered private securities"

tZERO

- Subsidiary of online retailer, Overstock, which has made several fintech related moves
- $168MM raised in token sale
- Involved in launching a regulated security token exchange and an Alternative Trading System

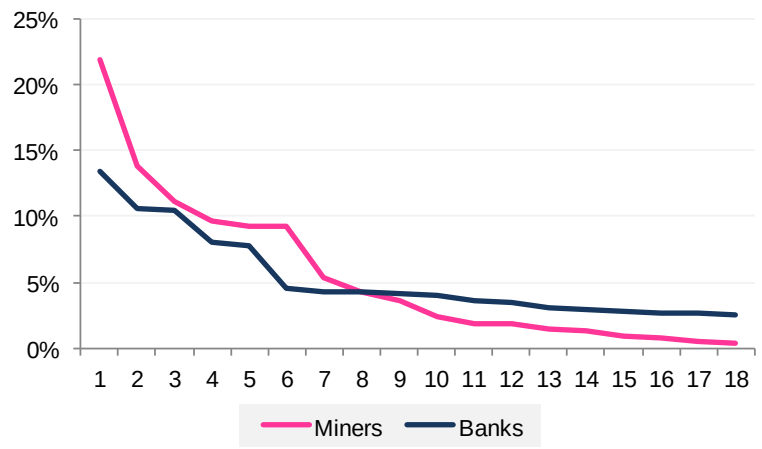


Source: Autonomous NEXT

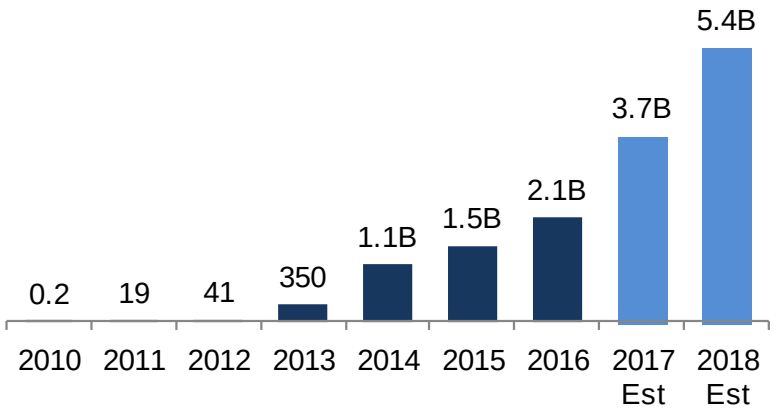
A parting word on the role of banks in a trustless system

- Banks have traditionally been the trusted intermediary of the financial system, receiving access to cheap money from governments, and therefore a return on that capital, for providing financial products to customers
- To secure the financial system from systemic risk, banks have to maintain capital on their balance sheet at a level which is tightly regulated
- Cryptocurrencies do not need to be kept in a bank, nor do they need the backing of one, so the role of creating trust in the financial system falls away
- However, blockchains need to be maintained through consensus mechanisms, like Proof of Work or Proof of Stake, which is the process by which trust and stability in a crypto financial system are manufactured
- We see an opportunity for banks to take up the mantle of maintaining crypto financial systems by dedicating capital – similar to maintaining capital reserves dedicated to stability -- towards validating transactions in the emerging economy

Industry Concentration*



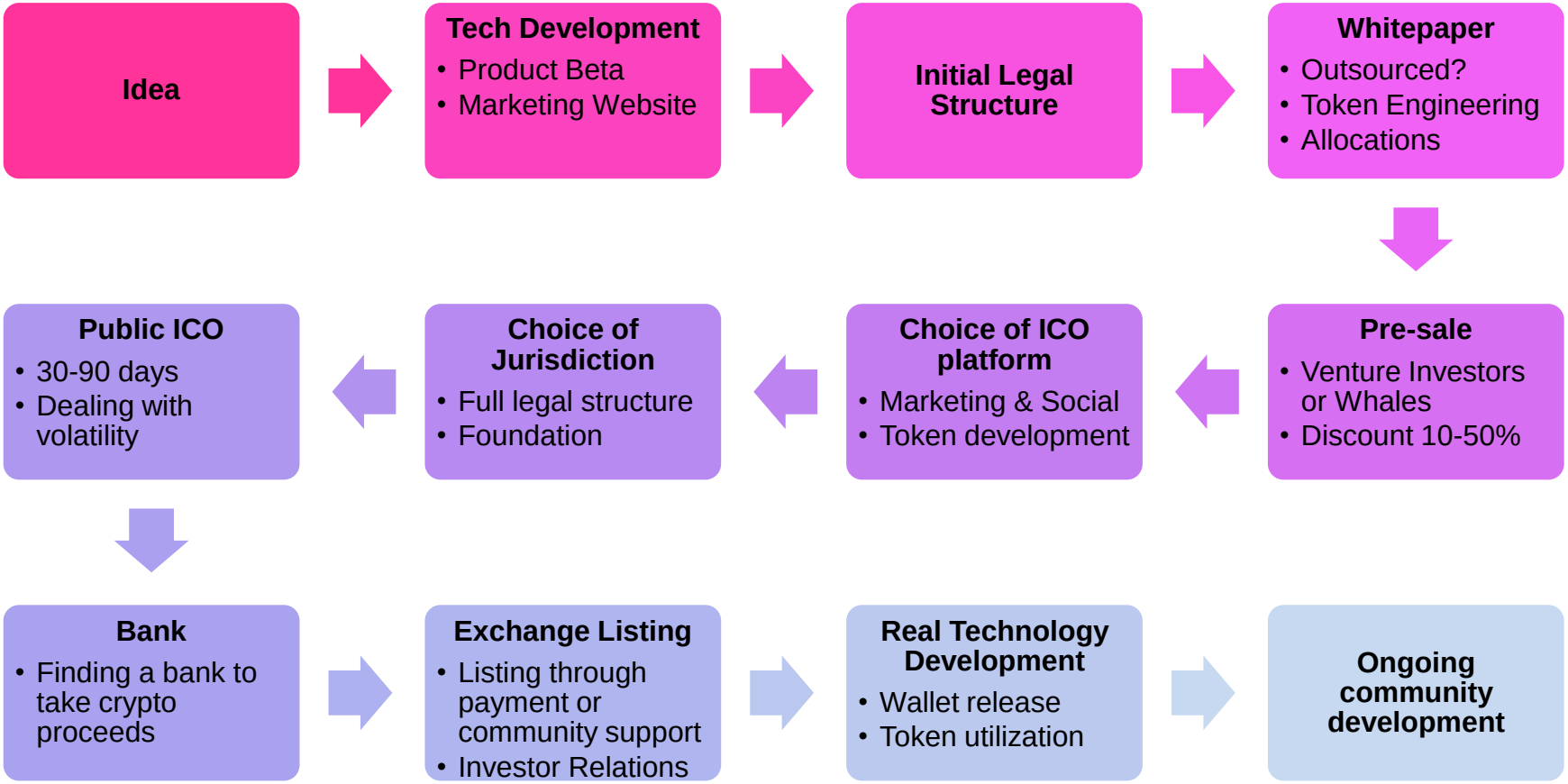
Bitcoin Mining Revenue Pool ($MM)



Source: Autonomous NEXT, Statista, Blockchain.info
**Note: Miner data based on Blockchain.info 4 day revenue, Bank data based on marketcaps of global top 20*

ICO Process and Token Engineering

The ICO process is like the entire venture to IPO lifecycle, compressed into a 12 month process, without a product or market traction, and with hostile financial service providers



Source: Autonomous NEXT

What started out as a cypherpunk's ideal bootstrapping method has become a pay-to-play minefield

Crypto Law Firm Cost

Phase 1

$70-100K with $25K down

- Assistance on White Paper
- Implementation plan
- Disclaimer, offering restriction language for marketing materials/website
- Regulatory analysis and structuring paper

Phase 2

$300-600K or 1% raise

- Advice on process
- Full legal documentation
- Prospectus if needed
- No tax advice or US investors

ICO Platform Cost

"Basic" ICO Launch

BTC 40 + 3% raise ~ $200K-$1 Million

- Technology
- Legal
- Business Consulting
- Marketing Consulting

Marketing Execution

BTC 40 + 1.5% raise ~ $200-$500K

- Monthly PR campaign
- Growth hacking package
- Bounties allocation not included

Positive ICO Rating

$1,500 for 4 "expert" reviews

Liquidity

Crypto Exchange Launch

$1-3 Million

- More popular tokens will be listed based on community demand
- Many tokens can be traded on decentralized exchanges, but liquidity is poor
- Post-ICO proceeds are needed in cash to pay the exorbitant fees of advisory firms
- Even established currencies like XRP wanted to pay for liquidity at Coinbase and Gemini

Compared to Traditional Exchanges (Nasdaq/NYSE)

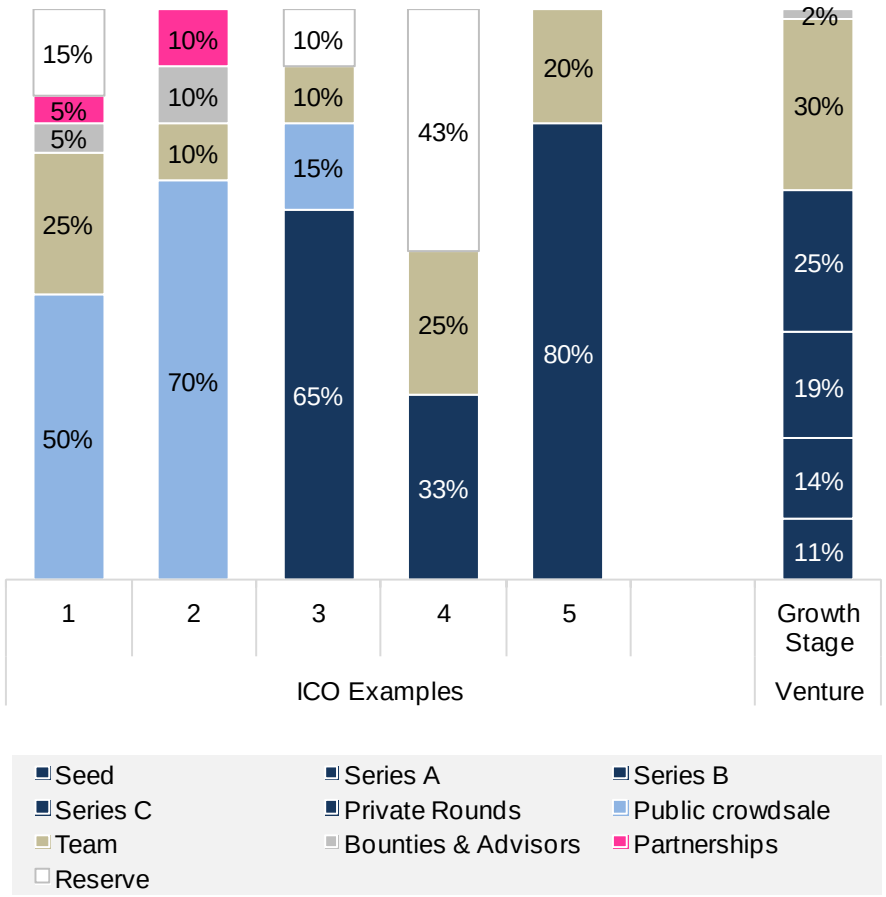
$150-500K ongoing up to $500k

Source: Autonomous NEXT, ICO Box, Confidential Law Firm, Brave New Coin

Token offering allocations may look like venture cap tables, but are closer conceptually to a use of funds schedule

- While there are similarities between a venture-based company capital table and an ICO, these are only analogies:
  - Utility tokens are not equities and are not dilutive to other equity holdings, seen by some as “free money”
  - The ICO reflects the use of funds on marketing, via partnership, advisor and bounty budgets, which is notable
  - ICO advisors are often recruited as credibility anchors for a short term fund-raising event rather than long term strategy
- Most tokens claim to have a non-deflationary monetary policy, i.e., no more tokens will be issued after the generation event, which makes the comparison to a “final” pre-IPO cap table relevant
- Reserves and centralization of control over large token holdings is important given issues of liquidity and market manipulation

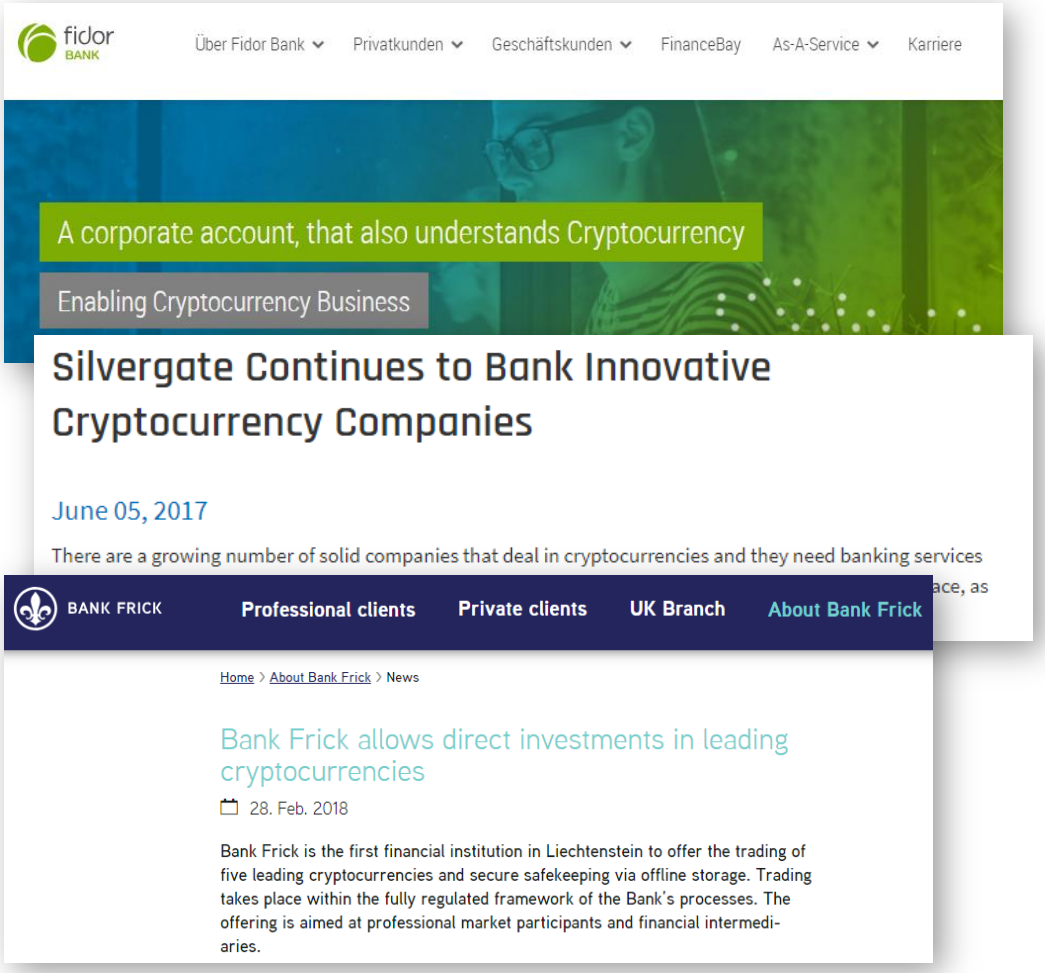
ICO Allocations vs. Cap Table in Venture Capital



Source: Autonomous NEXT

A challenge to selecting the right jurisdiction is finding a functional, regulated bank that accepts crypto proceeds

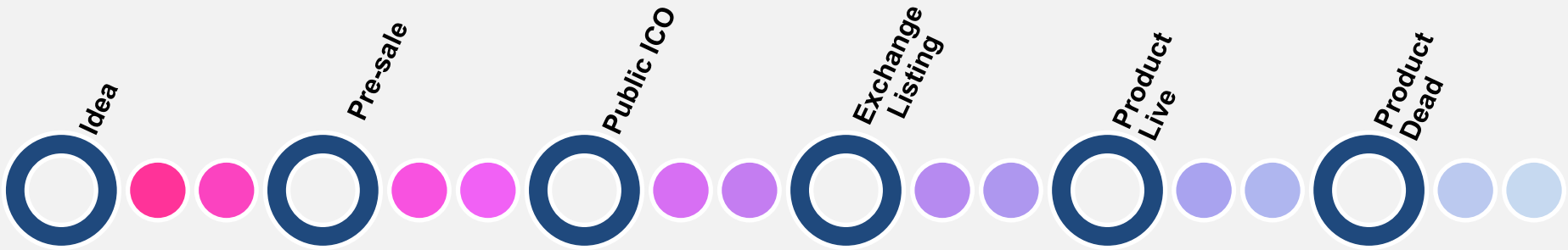
Banking for Crypto Proceeds



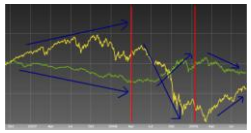
- Correct legal structure and a friendly jurisdiction is imperative for projects
- Taxation complexities may require the setup of a foundation in a friendly jurisdiction – something that happened in the Crypto Valley in Zug, Switzerland in 2017, but is now more difficult to do
- Since ICOs raise money from the crowd across the globe in both public and private sales, banking the proceeds is a challenge if the project did not do appropriate KYC/ AML
- Traditional banks, like Citi and Bank of America, have been understandably reticent to engage in this business line, even cutting credit to retail customers buying Bitcoin
- Some players like Fidor, Bank Frick, and Silvergate have emerged to satisfy demand for corporate banking services in jurisdictions like Lichtenstein, Luxembourg, Gibraltar and Malta

Source: Autonomous NEXT

What does the token resemble during this journey?



Just a regular unit of data



Seed stage equity investment → Growth stage equity crowdfunding → Publicly traded equity → Wiped out equity

Obligation to list an asset on an exchange → Unpaid debt

Project finance obligation to deliver open source network → Obligation to maintain open source network

Grant to a Foundation without obligations

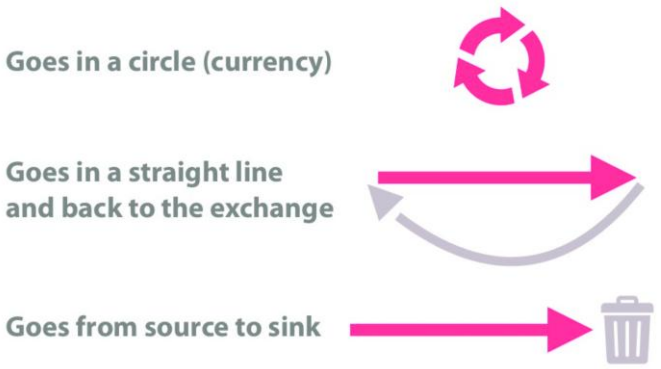
Obligation to pre-sell unbuilt product → Pre-paid product crowdfunding → Just like a gift card → An expired gift card

No wonder it's difficult to regulate!

Source: Autonomous NEXT, Wikimedia

Designing economics of a token requires modeling participant behavior inside the new network …

Token Flow Models (20|30)



Economic Activity Reach

- In designing the economics of a token, understand how many end points the token is meant to hit, and how it travels between them: (1) does it circulate between participants within an economy, (2) is it exchanged between two or more parties in pre-defined roles, (3) or is it only paid into a service and then destroyed

- Another framing for this question is where the token can be used, and for how many use-cases: (1) some utility tokens can only be used in one place for one service, (2) protocol tokens can be used to power many use cases within a single or several protocol layers, (3) cryptocurrency are meant to support economic activity within digital and physical economies, (4) and some currencies like the dollar are universally used across all economies

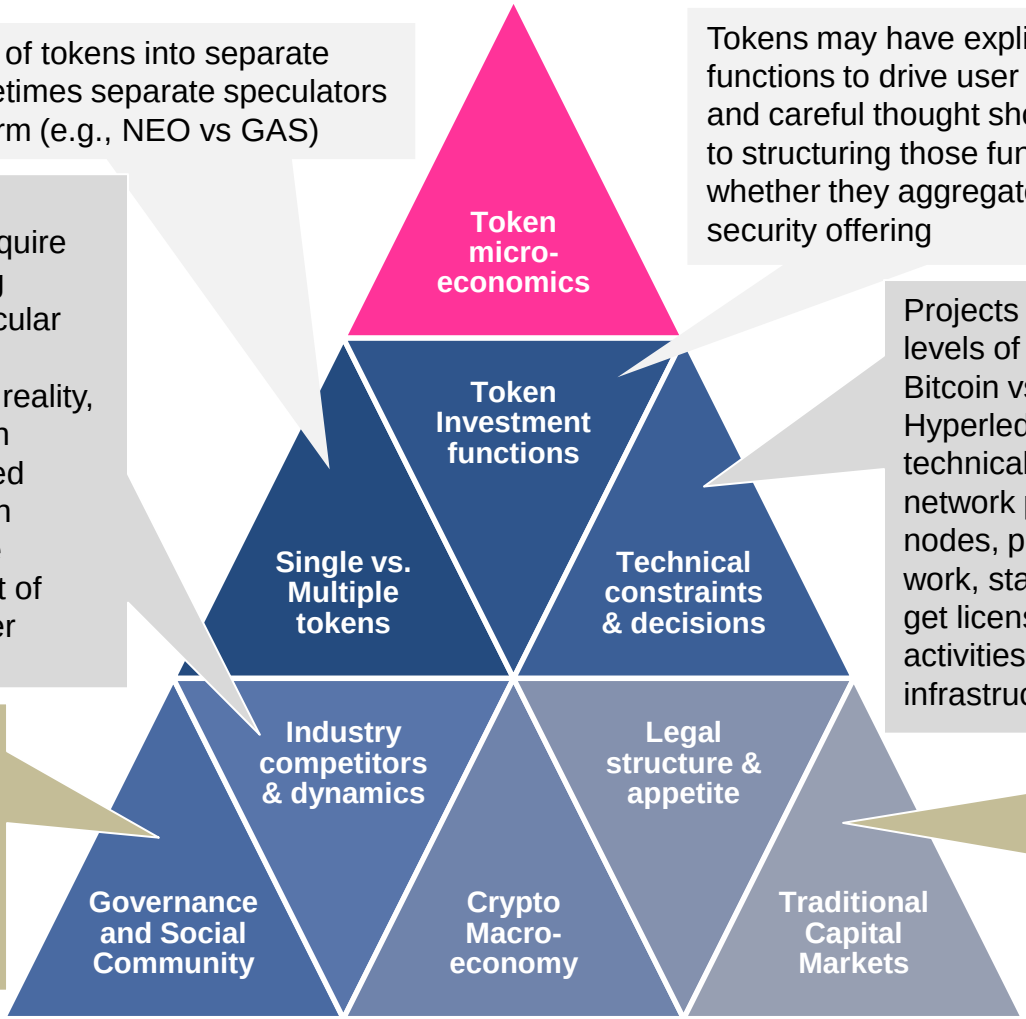
Source: Autonomous NEXT, 20|30

... as well as the full external context of a project

Splitting the functions of tokens into separate instruments can sometimes separate speculators from users of a platform (e.g., NEO vs GAS)

Tokens may have explicit economic functions to drive user participation, and careful thought should be put in to structuring those functions, and whether they aggregate up into a security offering

Many token projects are industry specific*, and require knowledge and operating experience within a particular industry, like banking & payments, media, virtual reality, or retail. Even blue ocean projects, like decentralized exchanges and prediction markets, are now mature enough to have a rich set of competitors and customer acquisition dynamics



Projects may have various levels of centralization (e.g., Bitcoin vs EOS vs Ripple vs Hyperledger), and associated technical choices may require network participants to run nodes, perform computational work, stake tokens or capital, get licenses, or perform other activities for the technical infrastructure to function

Without functional, fair and transparent governance and ongoing community engagement, no network can succeed (e.g., EOS, Tezos)

The global environment – economic, legal and crypto – is a major driver for fundraising and user growth

Source: Autonomous NEXT
**Note: As an example, Brave New Coin uses the NAICS industry codes for classification*

Example of token segments by internal and external factors

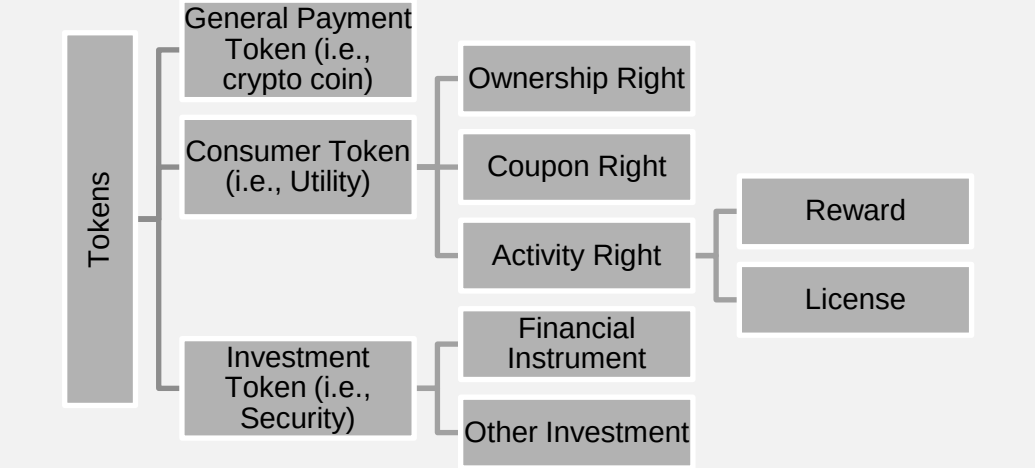
Technical Layer	Purpose	Underlying Value	Utility	Legal Status*
Blockchain-Native Tokens **Description:** A token that is implemented on the protocol-level of a blockchain **Characteristics:** ▪ Critical to operate the blockchain ▪ Integral component of the blockchain's consensus mechanism ▪ Part of the blockchain's incentive mechanism for block validators/other nodes **Examples:** BTC (Bitcoin, Bitcoin); ETH (Ether, Etherum), STEEM (Steem, Steem)	**Cryptocurrencies** **Description:** A token that is intended to be a "pure" cryptocurrency **Characteristics:** ▪ Intended as a global medium of exchange ▪ Functions as a store of value **Examples:** BTC (Bitcoin), ZEC (Zcash), KIN (Kin, Kik)	**Asset-backed Tokens** **Description:** A token that functions as a claim on an underlying asset **Characteristics:** ▪ Allows trading via IOUs without actually having to move the underlying asset ▪ The issuer is responsible to hold the underlying asset ▪ Introduces counterparty risk **Examples:** USDT (Tether USD, Tether), GOLD (GOLD, GoldMint), Ripple IOUs (Ripple)	**Usage Tokens** **Description:** A token that provides access to a digital service, similar to a paid API key **Characteristics:** ▪ Grants holders access to exclusive functionality of the service **Examples:** BTC (Bitcoin), STX (Stacks, Blockstack)	**Utility Tokens** **Description:** A token offering owners clearly defined utility within a network or (decentralized) application **Characteristics:** ▪ Closely tied to the functionality of the issuing network or application ▪ Internal network/app currency but not necessarily attempting to be a currency ▪ Grants owners the right to actively contribute to the system vs. passive investor role ▪ Avoids security-like features **Examples:** GNO (Gnosis), STEEM (Steem)
Non-native Protocol Tokens **Description:** A token that is implemented in a cryptoeconomic protocol on top of a blockchain **Characteristics:** ▪ Integral component of the protocol's consensus mechanism ▪ Part of the protocol's incentive mechanism for nodes ▪ Tracked on an underlying blockchain to which it is not integral (e.g. ERC20 Tokens on Ethereum) **Examples:** REP (Decentralized Oracle Protocol, Augur)	**Network Tokens** **Description:** A token that is primarily intended to be used within a specific system (e.g. network, application) **Characteristics:** ▪ Token has functionality within the issuers system ▪ Not intended as a general cryptocurrency **Examples:** GNO (Gnosis), STX (Stacks, Blockstack)	**Network Value Tokens** **Description:** A token that is tied to the value and development of a network **Characteristics:** ▪ Tied to the value generated and exchanged on the network (e.g. transaction fee volume) ▪ Closely intertwined with key interactions of network participants **Examples:** ETH (Ether, Ethereum) STEEM (Steem)	**Work Tokens** **Description:** A token that provides the right to contribute to a system **Characteristics:** ▪ Owning Tokens is the precondition for contributing to the system ▪ Contributions are either incentivized with a rewards system or holders get utility from the system/decentralized organization **Examples:** REP (Reputation, Augur), MKR (Maker, Maker DAO)	**Security Tokens** **Description:** A token that behaves like a security **Characteristics:** ▪ Showcases security-like features, e.g. voting on decisions regarding the issuing entity, dividends, or profit shares ▪ Holders are regarded as owners ▪ Little or insufficient utility **Examples:** SPiCE (SPiCE VC), Bitwala (tba)
(d)App Tokens **Description:** A token that is implemented on the application-level on top of a blockchain (and potentially protocol) **Characteristics:** ▪ Integrated within the application ▪ Part of the app's incentive mechanism for nodes and/or users ▪ Tracked on an underlying blockchain to which it is not integral (e.g. ERC20 Tokens on Ethereum) **Examples:** WIZ (Wisdom, Gnosis), SAFE (Safecoin, SAFE Network)	**Investment Tokens** **Description:** A token that is primarily intended as a way to passively invest in the issuing entity or underlying asset **Characteristics:** ▪ Promises owners a share of asset value or in (future) success of the issuing entity ▪ No or little significant functionality **Examples:** Neufund Equity Tokens (Neufund), DGX (Digix Gold, DigixDAO)	**Share-like Tokens** **Description:** A token with share-like properties **Characteristics:** ▪ The issuer promises token owners a share in the success of the issuing entity (e.g. dividends, profit-shares) ▪ May or may not come with voting-rights ▪ Mostly on no/weak legal basis **Examples:** DGD (DigixDAO), LKK (Lykke) *Likely to be classified as a security token*	**Hybrid Tokens** **Description:** A token featuring traits of both usage and work tokens **Characteristics:** ▪ Grants access to system functionalities ▪ Allows owners to contribute to the system **Examples:** ETH (Ether, Ethereum, after Casper), DASH (Dash)	**Cryptocurrencies** **Description:** A token that is a pure cryptocurrency **Characteristics:** ▪ Acts as a store of value and medium of exchange ▪ Not emitted by a central authority against which owners have claims In Germany (according to BaFin): ▪ currently not regarded as lawful, functional currency ▪ not regulated by e-money laws **Examples:** BTC (Bitcoin), ZEC (Zcash), LTC (Litecoin)

Untitled INC

*details dependent on respective jurisdiction

Various Taxonomies have emerged to categorize projects, with emerging common themes

Brooklyn Project



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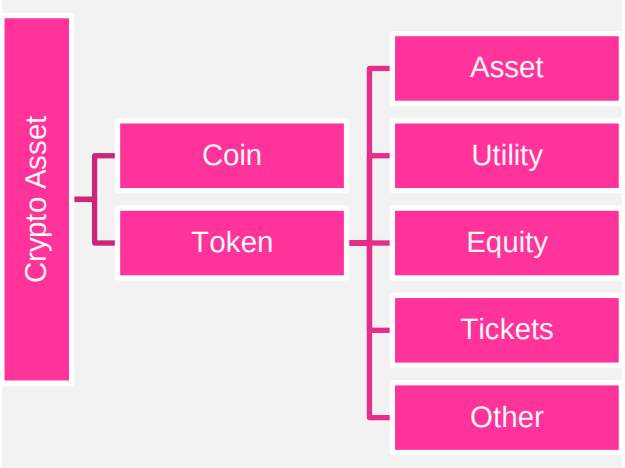
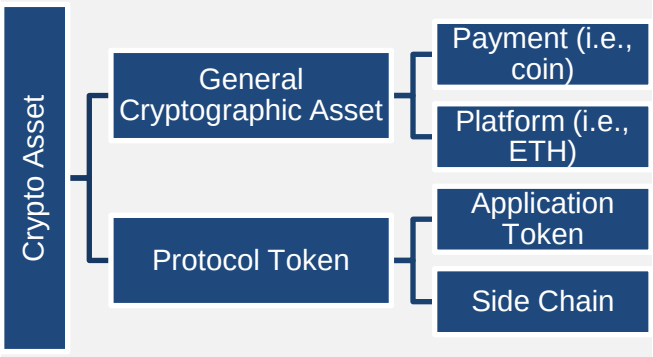
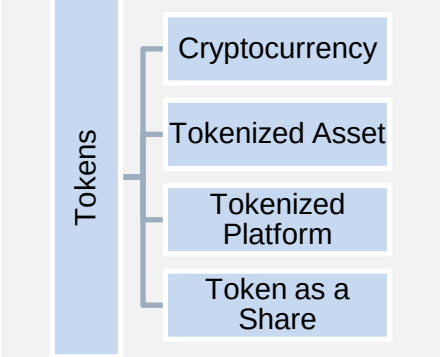


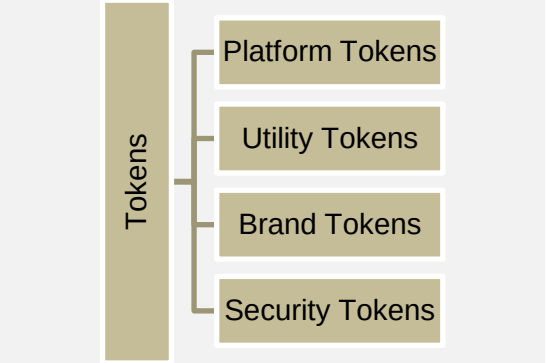
Brave New Coin



Untitled Inc

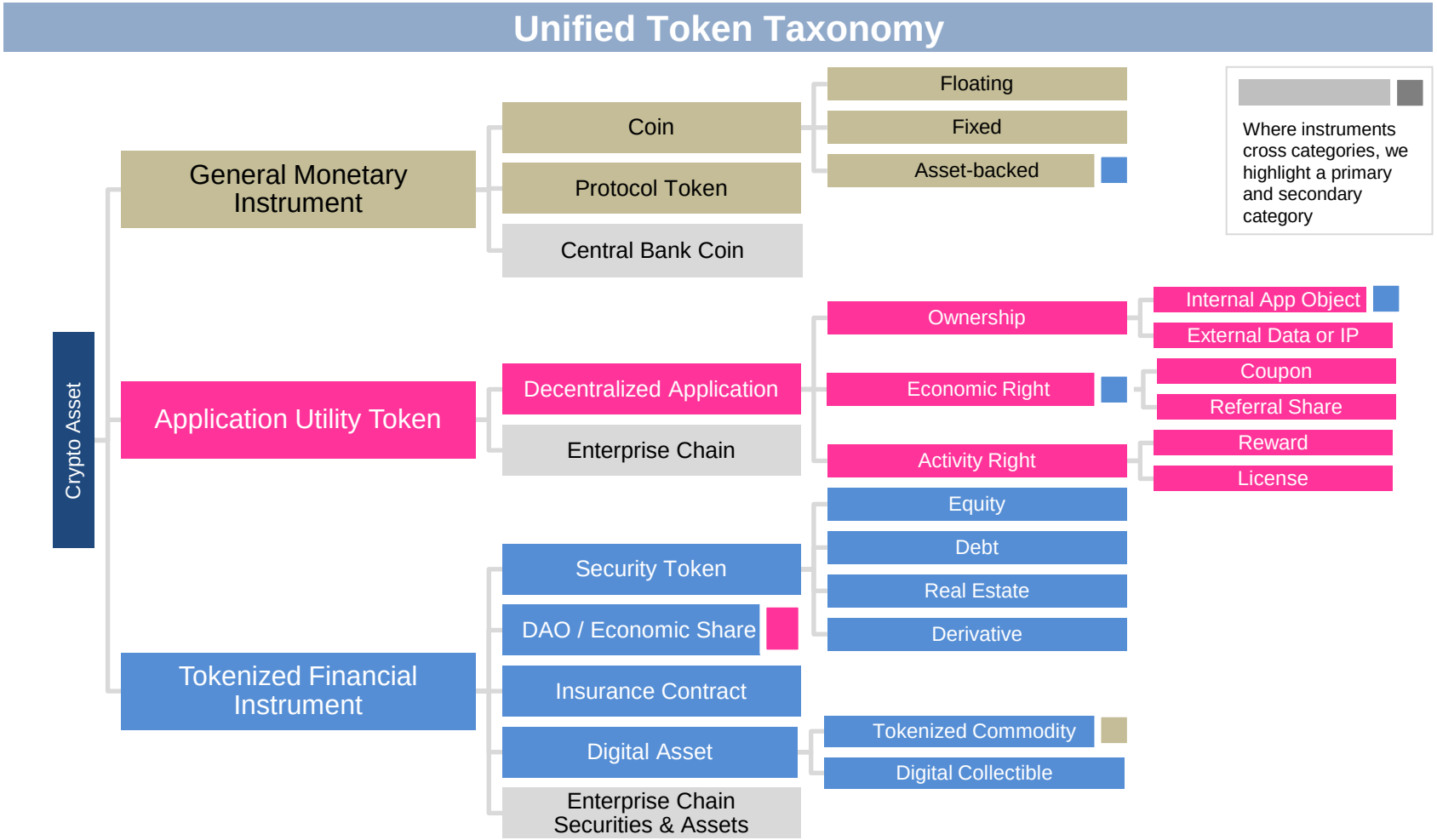


OnchainFX



Source: Autonomous NEXT, OnChainFX, Brooklyn Project, Brave New Coin, Untitled Inc, 20|30

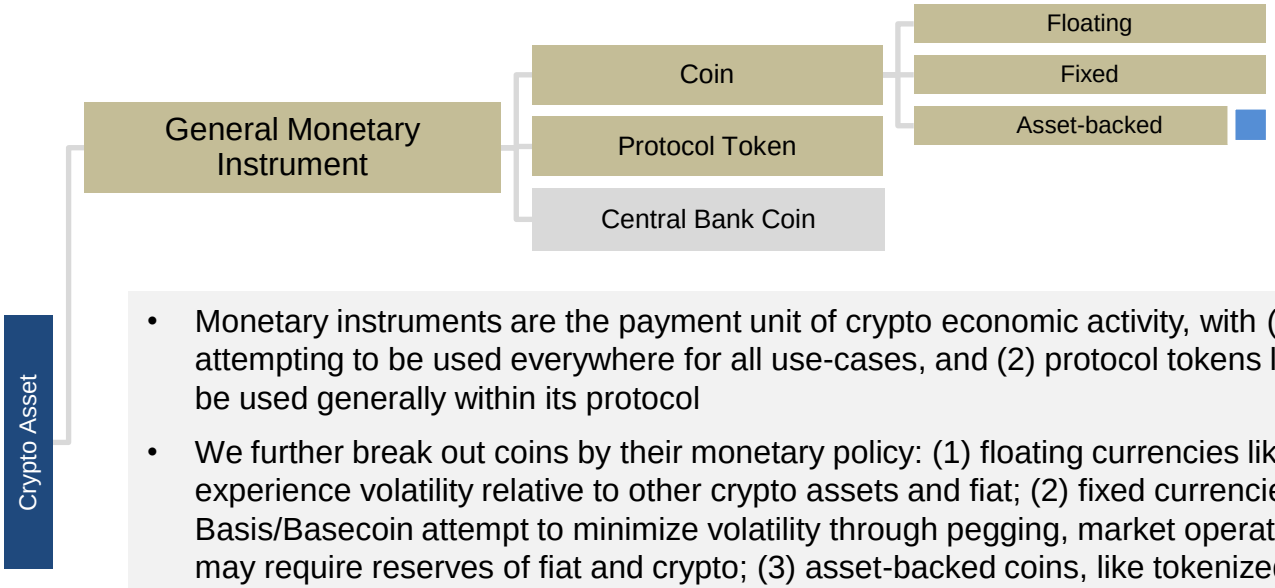
Our taxonomy combines these frameworks into the broadest view of architecture in the space



Source: Autonomous NEXT

The first category most resembles currencies, which we call monetary instruments

Unified Token Taxonomy

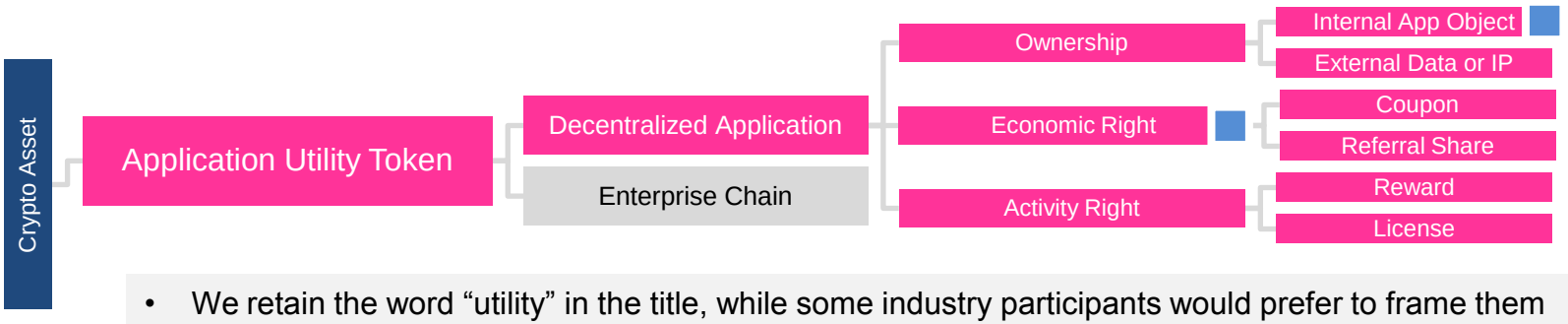


- Monetary instruments are the payment unit of crypto economic activity, with (1) coins like BTC attempting to be used everywhere for all use-cases, and (2) protocol tokens like ETH attempting to be used generally within its protocol
- We further break out coins by their monetary policy: (1) floating currencies like BTC or LTC experience volatility relative to other crypto assets and fiat; (2) fixed currencies like USDT or Basis/Basecoin attempt to minimize volatility through pegging, market operations, or inflation and may require reserves of fiat and crypto; (3) asset-backed coins, like tokenized diamonds currency CEDEX or the Royal Mint's gold-backed RMG
- Note that asset-backed coins look quite similar to tokenized assets. We do, however, see a distinction between a currency with physical reserves backing the value, and a physical asset that has been split into shares and sold as an investment
- While no meaningful Central Bank / fiat coins have yet been launched, both intellectual exercises as well as various internal pilots have been performed across the world; a Bank of England study from 2016 suggested that GDP would rise by 3% if 30% of GDP was digitized in this manner

Source: Autonomous NEXT, Bank of England

The second category parses the Utility tokens that have come from ICOs and smart contracts

Unified Token Taxonomy

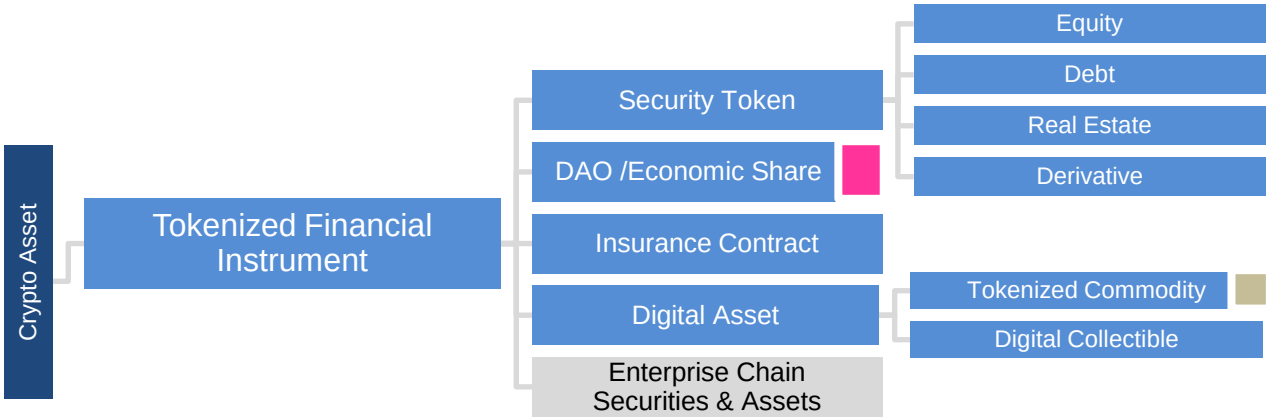


- We retain the word “utility” in the title, while some industry participants would prefer to frame them as consumption tokens that power smart contract platforms. “Utility” correctly points out generalized functionality, i.e., something being useful, and is not limited to consumer or enterprise use cases but generally how software is powered when interactions provide surplus and are valuable
- The first split is between (1) tokens used in applications on public, decentralized networks, like Filecoin and (2) tokens or units of account used in applications on private, enterprise networks, like the UBS Utility Settlement Coin project, which we believe in the long run will be interoperable
- Within decentralized applications, we leverage the thinking of the Brooklyn project, which splits out token features as definitional. Rights enabled by tokens include (1) ownership of internal and external objects (e.g., Identity, Cryptokitties), (2) economic participation (e.g., Binance coupons), and (3) the ability to perform activities, like doing work for rewards or purchasing a license to use a software. The subcategories here are likely to multiply as projects innovate new models.
- Economic rights and ownership of digital objects have attributes of financial instruments, but require more detailed analysis as to particular features in order to quality as such

Source: Autonomous NEXT

The third category bundles together existing and emerging financial instruments, delivered via blockchains

Unified Token Taxonomy



- The category of financial instrument primarily refers to the coming wave of security tokens, which are akin to equity or real estate crowdfunding sitting on more modern, decentralized infrastructure. These assets have an established and clear role relative to capital tables of corporate entities.
- We expect a convergence of enterprise and public blockchains as consortia digitize existing capital markets, insurance and asset management, and thereafter become interested in crypto liquidity
- Economic participation in decentralized applications (e.g., DAO, profit sharing, referrals) will inadvertently qualify as a financial instrument even if not explicit in the capital structure
- We include digital assets, such as tokenized commodities (e.g., a tokenized share of a painting) and digital collectibles (e.g., Cryptokitties), as a financial instrument when they function as a store of value and are legally structured as to become a regulated commodity

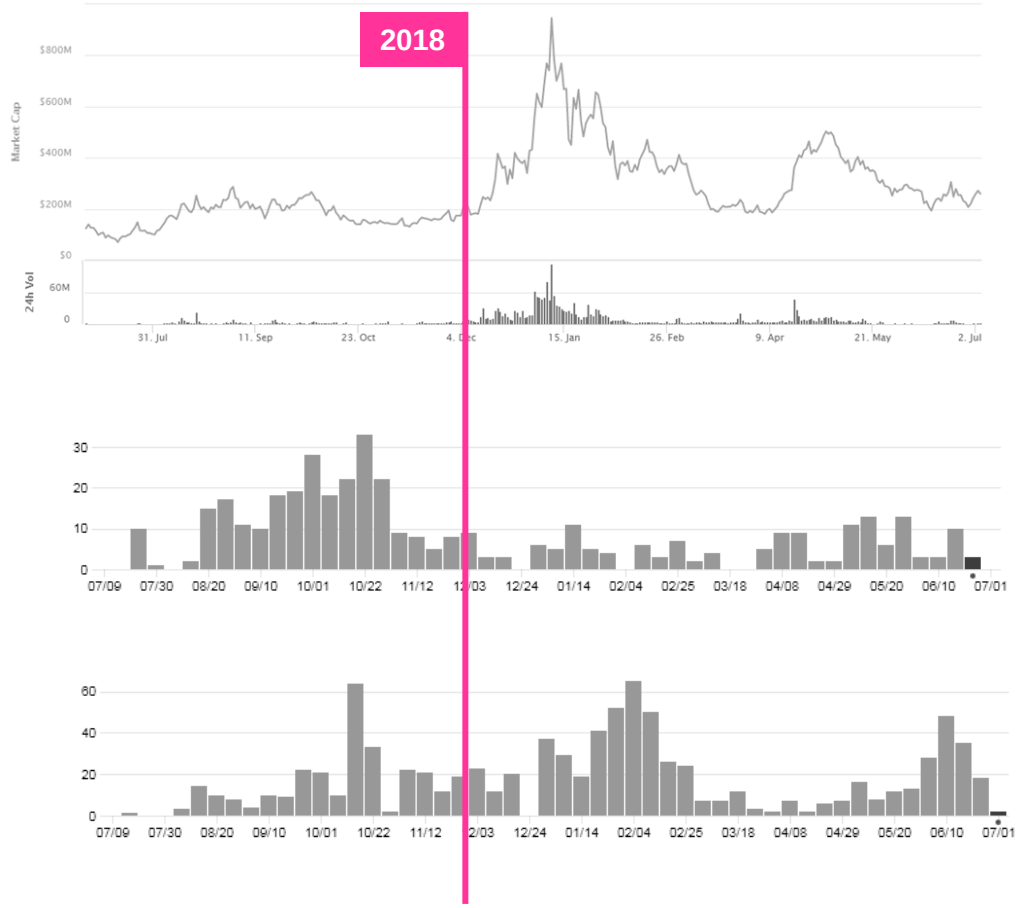
Source: Autonomous NEXT

For public token projects, investor relations and attempts at monetary policy join early stage technology development

Token Mechanisms as Price Management

- After a decentralized project achieves all the previously described milestones, including token engineering and exchange listing, investor relations and token price management become a key part of the process
- Arguably, this is not a great use of time for an early stage technology development team and can be highly distracting, but is necessary given that token liquidity literally powers many of the proposed applications
- As an example, see the disconnect between code commits for the Brave Browser (useful) and the price of the token impacted by the general crypto capital markets (irrelevant)
- Economic mechanisms such as Burning, Staking, or creating digital collectibles are meant to improve the performance of a crypto asset by improving its function as a store of value, but may inadvertently handicap the use of the token as a medium of exchange

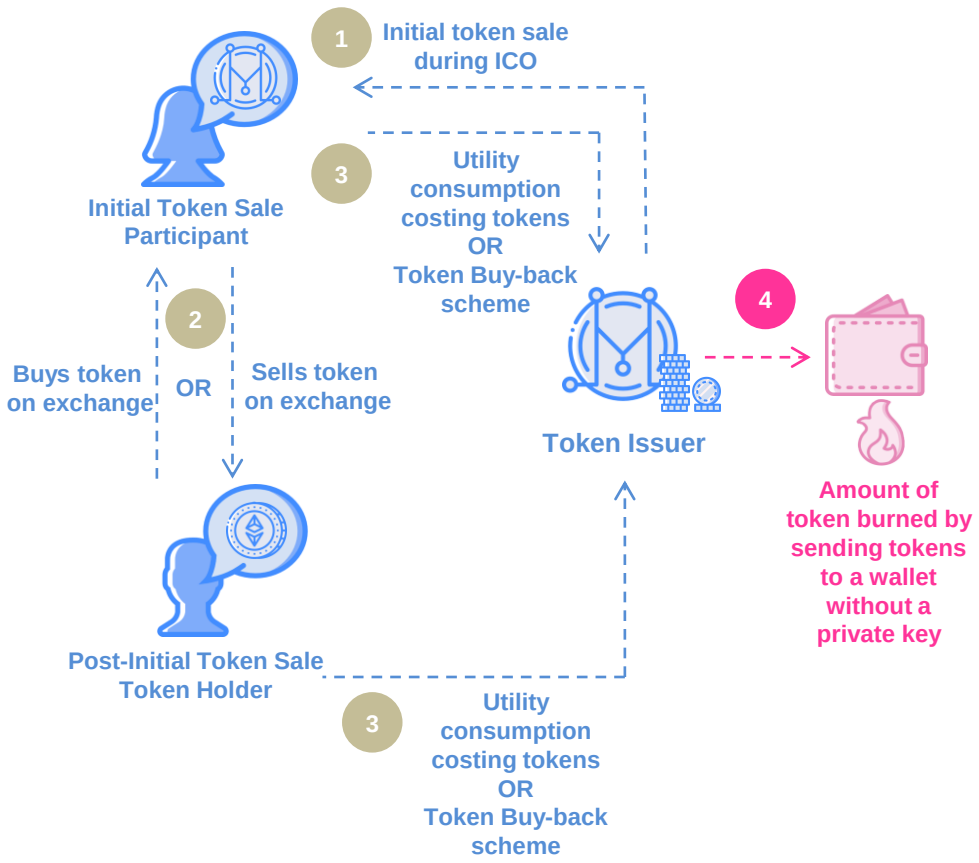
Price of BAT token vs Commits to Code Repositories



Source: GitHub, Coinmarketcap for Brave project

Burning mechanic meant to reduce supply, increase price

Token lifecycle map with burning mechanism



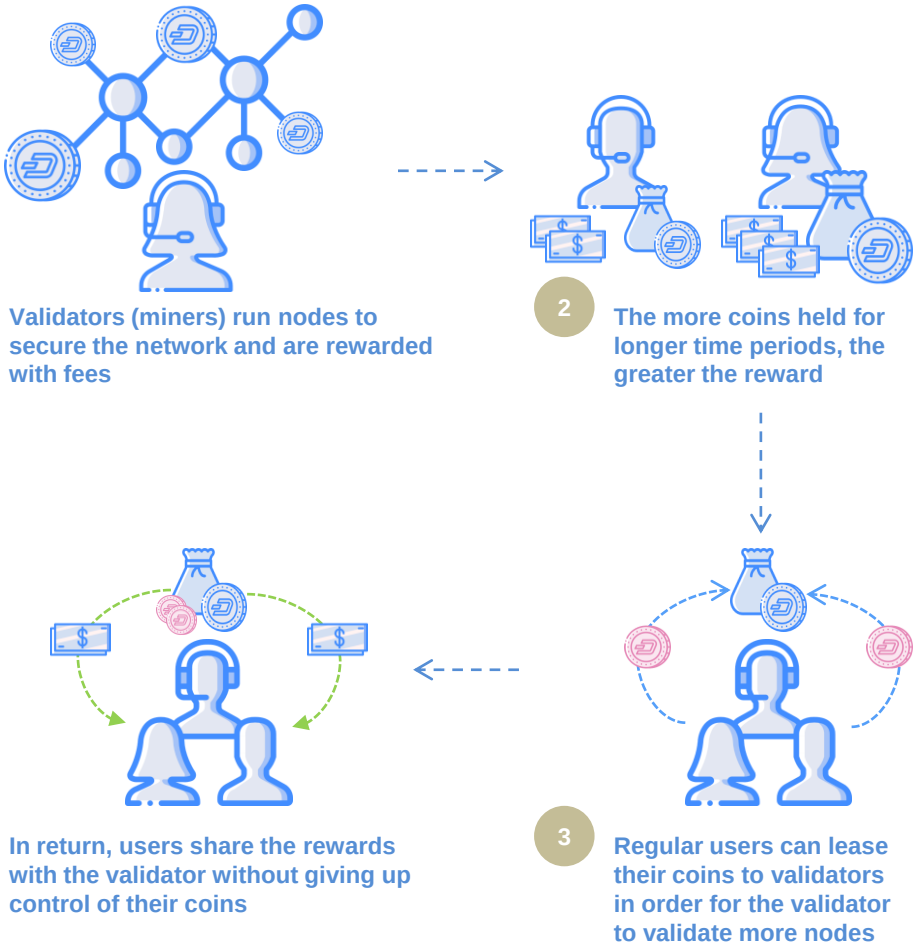
Overview

- Token “burning” is the act of sending a token to an eater address – a digital wallet for which there is no private key
- The reasons for burning include
  - Destroying unsold tokens (e.g., Neblio ICO)
  - Reduction of token supply to cause price appreciation
  - Proof-Of-Burn (PoB) consensus algorithm which requires miners to burn coins to earn mining rights
- The action can be akin to traditional share buy backs, since a company is spending its Treasury Tokens on giving economics back to shareholders, but the connection with price appreciation is far more tenuous
- Binance, for example, uses 20% of their profits each quarter to buy back its native coin BNB from the market in order to “burn” them

Source: Autonomous NEXT
Graphics: Icons made by Smashicons from www.flaticon.com

Staking mechanic intends to encourage holding and committing coins, thereby reducing supply, increasing price

Example of Staking Mechanism



Overview

- Staking is the act of buying and holding (or committing) crypto assets for a fixed period of time, potentially earning an economic return, similar to a fixed deposit
- Proof-of-Stake (PoS) is a protocol consensus mechanism which requires participants to stake their assets in order to validate blocks on the network (e.g., Dash, NEO, Lisk, PIVX). Rewards are paid out to holders or “validators” of the coin based on the length of time and quantity of the coin held, as opposed to computational resource energy consumption used in Bitcoin’s Proof-of-Work. Other permutations, like Delegated Proof of Stake, use such assets to elect validator parties.
- Each validator locks up their coin for the period of their respective stake, meaning this becomes an illiquid position which reduces available trading supply and potentially increases price

Source: Autonomous NEXT
Graphics: Icons made by Smashicons from www.flaticon.com

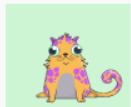
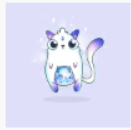
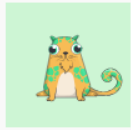
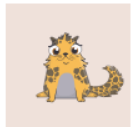
Collectibles designed to be scarce and drive purchases, which increase value of monetary instrument and asset

- Each crypto collectible is a scarce blockchain-recorded digital object, most of which are being created within the gaming category
- Crypto Kitties is the most famous such game, having raised $12 million from investors, at one point taking up 70% of Ethereum transaction capacity, and selling the most expensive cat for over $100,000 in 12/2017
- Other permutations of digital collectibles have sprouted across several smart contracts platforms, though they have low adoption given a niche user base
- Yet they provide an example of potential value capture similar to art

Current Top Digital Games (07/18)

#	Name	Balance	Users 24h	Volume 7d	Tx 7d
1	ETH.TOWN: Moon Factory is LI...	♦637.56	25 +25.00%	♦111.19	6,604
2	ETHERBOTS	♦490.72	1 -66.67%	♦0.50	512
3	CryptoKitties	♦337.26	108 -0.92%	♦157.43	15,485
4	Etheremon	♦177.51	19 +35.71%	♦7.72	5,078
5	CSC - Crypto Space Commander	♦173.21	4 -20.00%	♦4.94	1,139
6	ETHERCRAFT	♦167.15	1 —	♦0.15	348
7	Ether Tulips	♦93.80	0 —	♦0.00	4
8	Ether Goo - Idle Game	♦89.71	31 +3.33%	♦1.69	5,065
9	MegaCryptoPolis	♦67.08	38 -2.56%	♦219.45	2,550
10	Cryptocup	♦56.49	3 -25.00%	♦2.15	175

Most Expensive Digital Cats

Kitty	Date	Amount
	Dec. 7, 2017, 3:28 a.m.	253.3369 ETH
	Dec. 7, 2017, 7:41 p.m.	247.0000 ETH
	Dec. 2, 2017, 8:32 p.m.	246.9258 ETH
	Dec. 8, 2017, 9:31 a.m.	237.5460 ETH
	Dec. 8, 2017, 9:34 a.m.	225.0000 ETH
	Dec. 5, 2017, 4:45 p.m.	222.0000 ETH

$100-300k, depending on value of ETH

Source: Autonomous NEXT, Dappradar.com, Kittyexplorer

Regulatory, Legal and Tax Considerations

The following section reflects input from global law firm Latham & Watkins.

Latham & Watkins' FinTech lawyers help clients around the globe navigate the critical and ever-changing business, legal and regulatory issues associated with the technological disruption of financial services. Latham mobilizes a cross-disciplinary and global team with deep experience in regulation and technology to serve the full spectrum of the FinTech ecosystem on any aspect of a FinTech matter; whether it be the regulatory implications of establishing a new crypto-asset, adopting a new technology or system, or the considerations of investing in, or acquiring, a FinTech company. To find out more, or for more information, please contact Stuart Davis (stuart.davis@lw.com) or Sam Maxson (sam.maxson@lw.com).

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This document is not a solicitation for legal work under the laws of any jurisdiction in which Latham lawyers are not authorized to practice.

Source(s): Latham & Watkins LLP

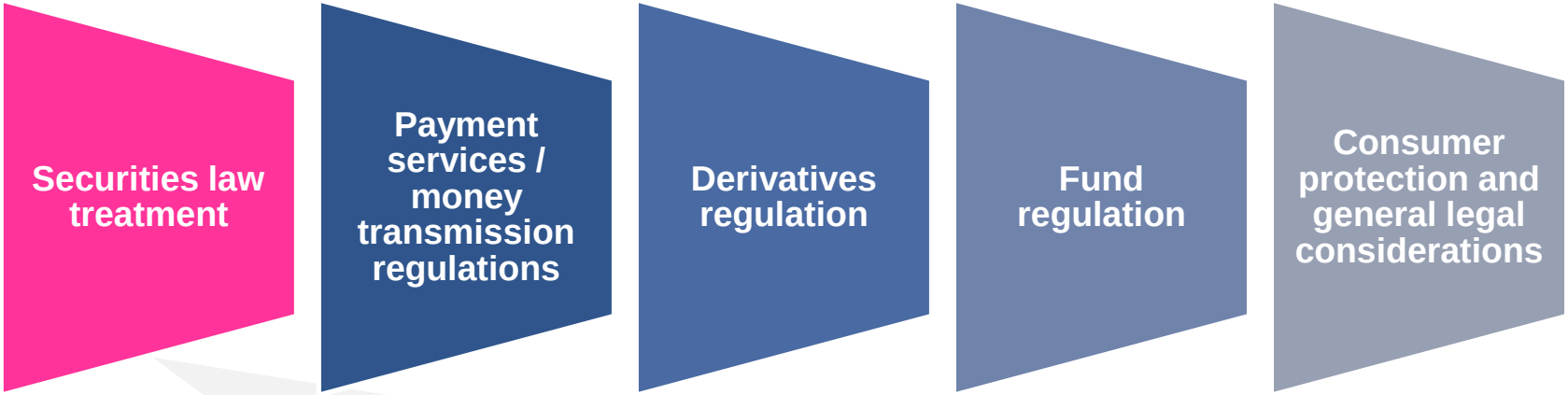
Introduction

- **Regulators generally use a technology-neutral approach, focusing on human business activities and not developments in hardware / software**
  - Most jurisdictions around the globe take a technology-neutral approach to financial regulation, although there are some exceptions
  - This means they typically do not regulate specific technologies, but rather the activities which are carried out using those technologies
  - Distributed ledger technology (DLT) and blockchain are no different and where they are employed to conduct financial services activities it is likely that some or all of those activities may be regulated under the laws of one or more jurisdictions

- **A distinction between first generation cryptocurrencies and second generation coins and tokens can be instructive, but not dispositive**
  - In a number of jurisdictions, a general distinction can be drawn between:
    - First generation cryptocurrencies (e.g. BTC / ETH), which are more likely to be unregulated (or, if they would have been regulated on issuance, are no longer regulated) and
    - Second generation coins / tokens (e.g. those built on the ERC-20 protocol) that provide holders with some rights (e.g. the right to receive a good or service, or some form of debt / equity participation right in the issuer), which may be regulated depending on their characteristics
  - However, this general distinction is no substitute for analyzing whether a particular cryptocurrency or crypto-asset is subject to regulation under the laws of the relevant jurisdiction as the regulatory treatment of cryptocurrencies and crypto-assets is fragmented across jurisdictions
  - We use the term crypto-asset broadly to cover both first generation crypto currencies and second generation coins / tokens, unless stated otherwise
  - Note that airdrops may also fall within the scope of regulation and should still be considered in line with the regulatory regime of the relevant jurisdictions

Source(s): Latham & Watkins LLP

Key Issues – Securities Law



- Across jurisdictions there are typically four approaches to applying securities laws to crypto-assets
  1. Active prohibition (e.g. China, South Korea)
  2. Not prohibited, but securities laws interpreted broadly to cover the majority of crypto-assets (e.g. US)
  3. Not prohibited, but securities laws interpreted neutrally (e.g. UK, France, Hong Kong, Singapore)
  4. Specific licensing regimes / regulatory guidelines relating to crypto-assets (e.g. Japan, Switzerland, Malta, Gibraltar).

- If a crypto-asset is classified as a security some of the typical regulatory consequences which may flow are:
  - A public offer of the crypto-asset would have to be run in compliance with requirements governing the offering and distribution of securities (such as the requirement to produce an approved prospectus / offering memorandum) unless an exemption applies. Typically, assessing whether an exemption applies requires analysis of the exemptions available in the jurisdiction of the issuer as well as the jurisdictions containing the target market for the offer.
  - There are also likely to be restrictions on secondary market trading of the crypto-asset (e.g. lock-up periods) as well as requirements that the crypto-asset is only tradable on a regulated trading platform.
  - In addition, intermediary services provided in relation to the crypto-asset (e.g. broker-dealer, custody activities) are also likely to be regulated.

Source(s): Latham & Watkins LLP

Key Issues – Money Transmission and Derivatives

Securities law treatment

Payment services / money transmission regulations

Derivatives regulation

Fund regulation

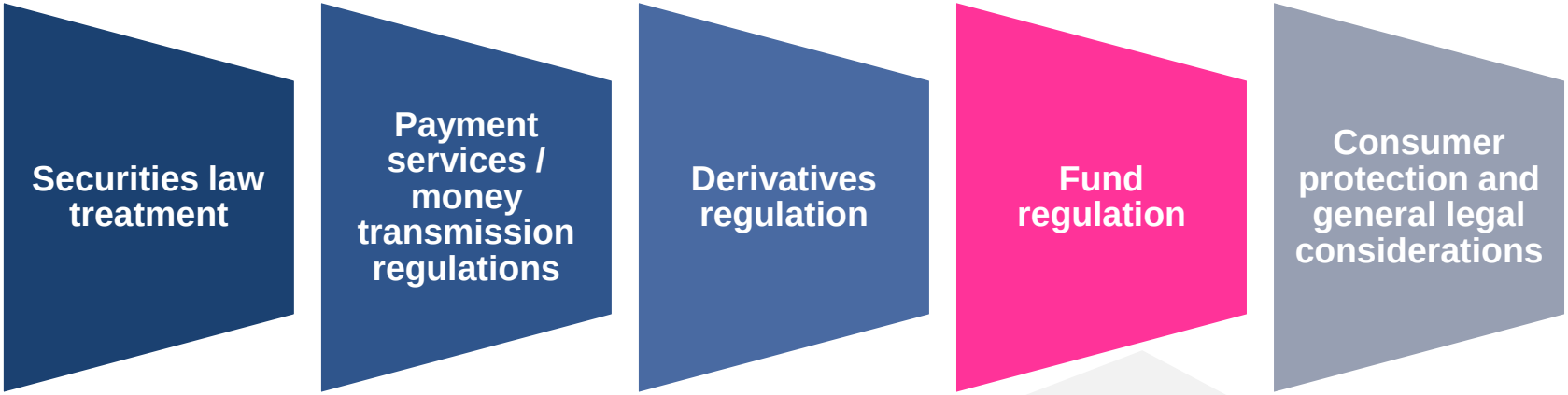
Consumer protection and general legal considerations

- The value of some crypto-assets (sometimes called "stablecoins", e.g. Tether, Basis) is pegged to the value of a fiat currency, using a variety of different mechanisms (e.g. fiat collateralization, seigniorage algorithms)
- As a general rule of thumb, centrally-issued fiat currency pegged coins will be treated as a form of electronic money / pre-paid or stored value instrument which may require the issuer to be licensed / registered. Intermediaries providing payment / transmission services in relation to such instruments may also need to be licensed / registered. Typically, this is not the case with non-pegged cryptocurrencies.
- Note that in some jurisdictions it may also still be necessary to assess whether centrally-issued fiat currency pegged coins might be classified as securities

- Other kinds of stablecoin/asset-backed coins are pegged to the value of underlying assets or indices which are not currencies (e.g. gold or diamonds)
- These kinds of stablecoins may be classified as derivatives in certain jurisdictions. Stablecoins which employ seigniorage algorithms (or similar mechanisms) may also be classified as derivatives in certain jurisdictions, depending on their precise structure
- Some of the typical regulatory consequences which may flow from classification as a derivative are:
  - Issuer may be required to be licensed / registered
  - There may be restrictions on the sale of the instrument to certain types of counterparty (e.g. retail)
  - Other regimes may apply (e.g. EMIR in the EU / Dodd-Frank in the US).

Source(s): Latham & Watkins LLP

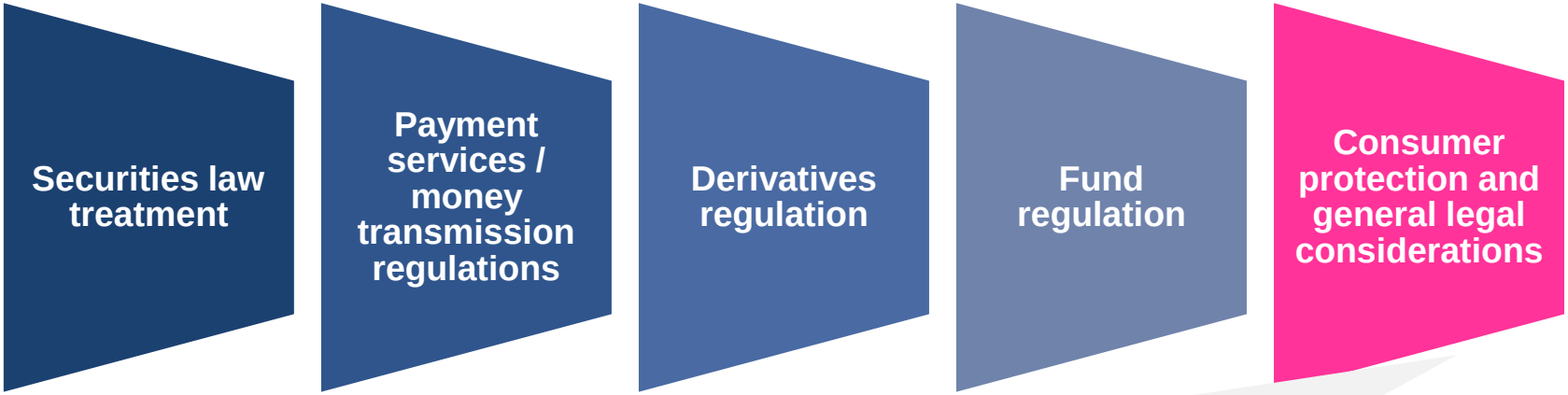
Key Issues – Fund Regulation



- Discretionary management of a portfolio of crypto-assets typically requires the manager to be licenced in the jurisdiction in which it is based
- Substantive legal documentation is typically required to govern the formation and membership of the fund
- There may also be restrictions on the types of investor the fund may be marketed to (e.g. retail), as well as restrictions on the ability to market the fund into certain jurisdictions (e.g. the AIFMD marketing regime in the EU)
- Some jurisdictions may require the appointment of a licenced depository as well as pre-subscription disclosures and post-subscription investor information requirements (e.g. statements and net asset value (NAV) calculations)
- Note the potential difficulties in calculating the NAV in relation to a fund holding ICO tokens (e.g. how do you calculate the value of a token in an early stage company, particularly if it is not traded on an exchange?)

Source(s): Latham & Watkins LLP

Key Issues – Consumer protection & legal considerations



- Even if a crypto-asset is otherwise "unregulated" in a given jurisdiction, any offer or sale of the crypto-asset is still likely to be subject to consumer protection requirements applicable in the jurisdiction of the purchaser (note that these may also apply to regulated offerings, too)

- Typical consumer protection requirements include:
  - Requirements to provide full disclosures to consumers and ensure that communications are clear, fair and not misleading
  - Potential restrictions on the method of sale of the tokens (e.g. requirements for disclaimers, cooling-off periods, ongoing post-transactional requirements)

- In any event, issuers should always have regard to general legal considerations (e.g. fundamental legal principles around fraud and misrepresentation) and ensure that they are fully compliant with AML / KYC and applicable sanctions regimes, both in relation to the sale of crypto-assets as well as the ongoing operation of the platform they are establishing

- Marketing materials and whitepapers should be carefully reviewed against these priciples

Source(s): Latham & Watkins LLP

From a strategy perspective, global regulatory approaches follow three directions according to role in global economy

Crypto Delaware

- Develop the most permissive and attractive regulatory environment for innovation and spur economic activity from startups
- Some jurisdictions offering a tailored approach to consumer protection
- **Examples: Gibraltar, Malta, Switzerland**

Sovereign Technology Sword

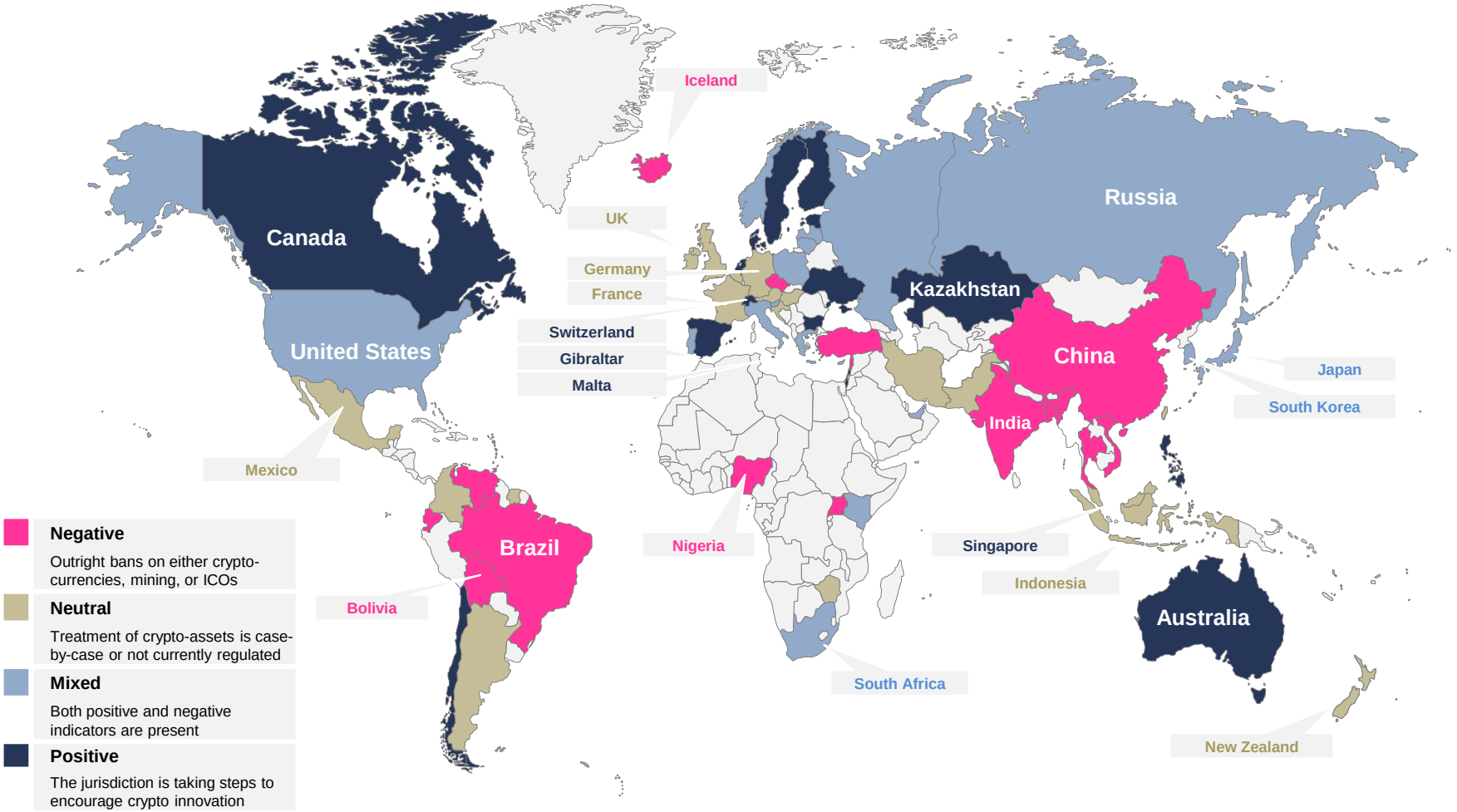
- See technology and economic competition as a national mandate, which can be controlled and directed with sovereign power and national investment
- Generally, decentralized anonymous networks are antithetical to this type of actor
- **Examples: China, Russia**

Consumer Protection Shield

- Put existing regulation and law first, preferring to leverage existing frameworks that have worked to generate economic prosperity
- Generally, less interested in innovation outside regulated bounds in favor of maintaining a sound economic system
- **Examples: United States, United Kingdom**

Source: Autonomous NEXT
Graphics: Icon made by Prettycons from www.flaticon.com

Global Crypto Temperature at a Glance



Source(s): Autonomous NEXT, using analysis from Bloomberg, as of March 19th, 2018, Thomson Reuters, Latham & Watkins LLP

State of Regulation: United States of America

Outlook

MIXED

Key Regulators

- **Securities and Exchange Commission (SEC)**
- **Commodity Futures Trading Commission (CFTC)**
- **Office of the Comptroller of the Currency (OCC)**
- **50 state regulators**

- US financial regulation operates at both a federal and state level
- At the federal level, it must be determined whether the crypto-asset is a security regulated by the SEC or a commodity regulated by the CFTC
- At the state level, the regulatory approach to crypto-assets has been inconsistent. Certain states (e.g. New York) require a specific licence for cryptocurrency related activities, whereas others do not.
- If the crypto-asset is not a security, it will be regulated as a commodity. Generally, spot market transactions in commodities are not regulated by the CFTC other than with respect to anti-fraud and anti-manipulation enforcement authority. However, a derivative based on the crypto-asset (such as a forward contract) will be regulated as a swap under CFTC regulations absent an exemption.
- Other banking, payments and investment advisor regulation may apply to the companies making or selling crypto-assets. From the AML perspective, cryptocurrency exchanges and administrators of centralized cryptocurrency are regulated by FinCEN as Money Service Businesses, while mere users of cryptocurrency are not.

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis to determine whether they are subject to financial regulation. First, to determine whether the asset is a security, the *Howey* test for investment contracts is applied. If the crypto-asset is a security then the US securities laws apply at both a federal and state level in relation to any purchase or sale of the assets involving US persons, within the US or from outside the US. It is worth noting that US securities law has significant potential extra-territorial reach, such that merely marketing of ICOs via websites which are accessible by US persons may be enough to trigger application of US securities laws.
- For the securities analysis, the main inquiry is whether a person is investing money in a common enterprise and expects profits from third party efforts.
- BTC and ETH have been expressly designated as commodities by the CFTC and the SEC has indicated that it does not view either to be a security

Recent Developments

- In June 2018, Director of the SEC's Division of Corporation Finance William Hinman signalled a way forward for consumer tokens by suggesting that digital assets are likely not securities "where there is no longer any central enterprise being invested in or where the digital asset is sold only to be used to purchase a good or service available through the network on which it was created."

Source(s): Latham & Watkins LLP

State of Regulation: United Kingdom

Outlook

NEUTRAL

Key Regulators

- **Prudential Regulation Authority (PRA)**
- **Financial Conduct Authority (FCA)**

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis to determine whether they are subject to financial regulation
- Cryptocurrencies (e.g. BTC / ETH) are not currently regulated, provided they are not part of other regulated products or services
- Cryptocurrencies are unlikely to be characterized as currency or money for financial regulatory purposes

- The PRA and FCA have continued to take a broadly neutral approach to crypto-assets, placing the onus on market participants to assess for themselves whether or not crypto-assets fall within the scope of existing UK financial regulation

- For crypto-assets which constitute regulated investments in the UK, market participants involved with the offer, promotion, issue, trading, settlement and custody of those investments will need to consider UK licensing, conduct of business and AML / KYC requirements. Securities offering documentation (e.g. offering memorandum) and marketing requirements are also likely to apply to offerings of such investments.

- The principal risks associated with crypto-assets in the eyes of the PRA and FCA are: (1) financial crime (money laundering and terrorist financing), (2) fraud and manipulation / consumer detriment, (3) price volatility, (4) relative illiquidity, (5) cyber crime

Recent Developments

- In September 2017, the FCA issued a consumer warning on ICOs warning consumers of the risks involved with investing in ICOs and stating that “most ICOs are not regulated by the FCA”
- During June 2018, the PRA and FCA each recently wrote to authorized firms setting out their expectations in relation to the activities of those firms in relation to crypto-assets
- During 2019, EU anti-money laundering legislation will be extended to crypto-exchanges and crypto-wallet providers even where these are not otherwise regulated
- The FCA continues to learn more about crypto-assets through its regulatory sandbox and has recently consulted on the launch of a new global sandbox which would potentially allow firms to run pilots across a number of jurisdictions in a customized regulatory environment, overseen by the FCA and overseas regulators. Over 40% of companies accepted to cohort 4 of the FCA regulatory sandbox are using DLT and a small number of firms will be testing propositions relating to crypto-assets.
- An FCA discussion paper on cryptocurrencies is expected in H2 2018, following participation by the FCA in a crypto-asset taskforce being undertaken in combination with the Bank of England and HM Treasury.

Source(s): Latham & Watkins LLP

State of Regulation: France

Outlook

NEUTRAL

Key Regulators

- **Financial markets authority (Autorité des marchés financiers (AMF))**
- **Prudential control and regulation authority (Autorité de contrôle prudentiel et de régulation (ACPR))**

Status of Crypto Assets

- The regulatory status of crypto-assets must be assessed on a case-by-case basis in order to determine whether they are subject to financial regulation
- Cryptocurrencies (e.g. BTC / ETH) are not currently regulated, provided they are not part of other regulated products or services (e.g. cryptocurrency CFDs / payment services / regulated intermediaries activities in connection with the marketing of assets putting forward the possibility of a direct or indirect financial return or a similar economic effect).
- Cryptocurrencies are unlikely to be characterized as currency or money for financial regulatory purposes; French consumer law rules are likely to apply to the marketing and sale of crypto-assets.

- Crypto-assets and ICOs are not specifically regulated under French law (except that issuers, sellers or intermediaries in connection with the sale or purchase of crypto-assets are specifically subject to French anti-money laundering rules)
- The French capital markets regulator (AMF) and the French banking and insurance regulator (ACPR) have taken a broadly neutral approach to crypto-assets, placing the onus on market participants to assess for themselves whether or not crypto-assets fall within the scope of existing French financial regulation
- For crypto-assets which constitute regulated investments in France, market participants involved with the offer, promotion, issue, trading, settlement and custody of those investments will need to consider French licensing, conduct of business and AML / KYC requirements (note that AML rules also apply to crypto-assets which do not fall within the ambit of regulated investments rules). Securities offering documentation (e.g. offering memorandum) and marketing requirements also likely to apply.
- Principal risks associated with crypto-assets in eyes of AMF are: (1) financial crime, (2) fraud and manipulation / consumer detriment, (3) price volatility, (4) relative illiquidity, (5) cyber crime

Recent Developments

- In January 2018, the Economy Minister Bruno Le Maire created a working group headed by former central bank official Jean-Pierre Landau with the purpose of establishing a crypto-assets regulatory framework.
- In February 2018, the AMF published an analysis concluding that derivative contracts relating to crypto-assets may be characterized as regulated financial contracts. On this basis, the AMF and the ACPR have jointly decided to published a blacklist of websites which propose, in France, derivative products relating to crypto-assets without being authorized to do so.
- The AMF launched a public consultation from October 2017 until December 2017 on crypto-assets. In February 2018, following the consultation, the AMF indicated that it had decided to work on creation of a specific legal framework for ICOs. This framework should encompass all types of ICOs and provide for sufficient guarantees for investors, with a focus on money laundering risk and investor protection on the secondary market. The AMF contemplates the involvement of independent experts in connection with ICOs.
- In June 2018, the Chairman of the AMF confirmed that the AMF is in favour of a specific legal framework for crypto-assets consisting of the implementation of an AMF “label” granted on a voluntary basis and of a regulatory framework for crypto-assets trading platforms having common features with the status of electronic money and payment services institutions and financial securities trading platforms.

Source(s): Latham & Watkins LLP

State of Regulation: Germany

Outlook

NEUTRAL

Key Regulators

- **Federal Financial Supervisory Authority (BaFin)**

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis in order to determine whether they are subject to German financial regulatory rules.
- Specific crypto-assets can be presented to BaFin in order to obtain an assessment of their regulatory status.
- BaFin has stated that certain cryptocurrencies (e.g. BTC / ETH) constitute "units of account" which are regulated financial instruments under German law.
- BaFin has also stated that cryptocurrencies may be subject to e-money regulations if (contrary to the case of, e.g. BTC) there is a specific issuer and the cryptocurrency represents a claim on this issuer.

- German financial regulatory law does not stipulate any specific requirements for crypto-assets. The applicability of German financial regulations therefore depends on the classification of the crypto-assets under the general German regulatory rules.
- Depending on their specific structure, crypto-assets may qualify as regulated instruments (e.g. securities, derivatives, investment fund units or e-money) or entail the provision of regulated services.
- In this case, market participants involved with the offer, promotion, issue, trading, transfer, settlement and custody of the crypto-assets will need to consider German licensing, conduct of business, and AML/KYC requirements.
- If the crypto-assets qualify as financial instruments, prospectus and marketing requirements are also likely to apply to offerings of such instruments.

Recent Developments

- In November 2017, BaFin issued a consumer warning on ICOs warning consumers of the risks involved with investing in ICOs and stating that "undertakings and persons that arrange the acquisition of tokens, sell or purchase tokens on a commercial basis, or operate secondary market platforms on which tokens are traded are generally required to obtain authorisation from BaFin in advance".
- In 2017, BaFin reportedly initiated 13 investigations regarding unauthorized financial services in connection with token offerings. In four of those cases winding-down of the activities was ordered.
- In February 2018, BaFin released an advisory letter on the classification of tokens as regulated financial instruments, stressing that the general regulatory rules apply. The advisory letter only contains very high-level guidance, leaving uncertainties of how securities tokens, utility tokens and currency tokens are to be classified under the general rules.
- During 2019 or early 2020 EU anti-money laundering legislation extending to crypto-exchanges and crypto-wallet providers even where these are not otherwise regulated is expected to be implemented in Germany.

Source(s): Latham & Watkins LLP

State of Regulation: Switzerland

Outlook

POSITIVE

Key Regulators

- **Swiss Financial Market Supervisory Authority (FINMA)**

- Switzerland has generally been seen as an accommodating jurisdiction for crypto-asset activity
- Although no specific law or regulation relating specifically to crypto-assets has been proposed, FINMA has issued regulatory guidelines which clarify its approach when applying existing Swiss financial regulation to crypto-assets
- Broadly, FINMA will focus on the economic function and purpose of the crypto-asset in determining how it should be treated for financial regulatory purposes. The key factors for FINMA are the underlying purpose of the crypto-asset and whether they are already tradeable or transferable.
- FINMA categorises crypto-assets into three types, but hybrid forms are possible:
  1. "Payment tokens are synonymous with cryptocurrencies and have no further functions or links to other development projects. Tokens may in some cases only develop the necessary functionality and become accepted as a means of payment over a period of time."
  2. "Utility tokens are tokens which are intended to provide digital access to an application or service."
  3. "Asset tokens represent assets such as participations in real physical underlyings, companies, or earnings streams, or an entitlement to dividends or interest payments. In terms of their economic function, the tokens are analogous to equities, bonds or derivatives."

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis to determine whether they are subject to financial regulation
- According to the FINMA guidance ICOs will be regulated by FINMA as follows:
  1. "Payment ICOs: For ICOs where the token is intended to function as a means of payment and can already be transferred, FINMA will require compliance with anti-money laundering regulations. FINMA will not, however, treat such tokens as securities."
  2. "Utility ICOs: These tokens do not qualify as securities only if their sole purpose is to confer digital access rights to an application or service and if the utility token can already be used in this way at the point of issue. If a utility token functions solely or partially as an investment in economic terms, FINMA will treat such tokens as securities (i.e. in the same way as asset tokens)."
  3. "Asset ICOs: FINMA regards asset tokens as securities, which means that there are securities law requirements for trading in such tokens, as well as civil law requirements under the Swiss Code of Obligations (e.g. prospectus requirements)."

Source(s): Latham & Watkins LLP using public sources; FINMA ICO Guidelines

State of Regulation: Russia

Outlook

MIXED

Key Regulators

- **Bank of Russia (BoR)**
- **Russian Finance Ministry (RFM)**

Status of Crypto Assets

- Crypto-assets, including tokens and cryptocurrencies (e.g. BTC / ETH), are not currently defined under Russian legislation and therefore are not regulated
- Taking into account the wording of the existing draft laws and explanatory notes thereto, crypto-assets are not treated as financial instruments

- There has been a mixed regulatory approach to crypto-assets in Russia
- Historically, the BoR has been hostile to cryptocurrencies stating that exchanging cryptocurrencies for goods, services or fiat currency may constitute a "questionable transaction" for the purposes of Russian anti-money laundering legislation. A ban was also imposed on 40 websites offering information about cryptocurrencies and crypto-exchanges in May 2017, but later overturned in early 2018
- However, draft legislation has been proposed on "digital rights", "digital financial assets" and "investment platforms" which would provide an explicit legal and regulatory framework for crypto-assets in Russia

Recent Developments

- Draft legislation is currently being considered by the Russian parliament which would provide an explicit legal and regulatory framework for crypto-assets, in particular:
  - recognition and definition of a transferrable "digital right"
  - recognition and definition of a "token"
  - definition of "investment platforms" (informational systems used for fundraising)
  - registration of investment platforms with the BoR and requirements to such investment platforms (including a minimum capital requirement of Rub 5m)
  - governance requirements for investment platforms
  - registration requirements for operators of investment platforms
  - requirements on the entities raising funds via investment platforms
  - requirements relating to the conduct of token offerings
  - licensing requirements for operators of crypto-fiat exchanges
  - reserved powers for the BoR and RFM to issue further regulations specifying a list of transactions which may be carried out with tokens, the permitted terms of such transactions, the maximum amount of investments made by a non-qualified investor within the same issuance of tokens and the maximum amount of investment made by a non-qualified investor through different investment platforms during one year, etc.

Source(s): Latham & Watkins LLP

State of Regulation: China

Outlook

NEGATIVE

Key Regulators

- **People's Bank of China (PBC) and other regulators**

Status of Crypto Assets

- Trading of crypto-assets and ICOs in China is effectively illegal

Recent Developments

- In September 2017, PBOC, CSRC, the China Insurance Regulatory Commission, and other regulators issued a joint statement announcing a ban on all ICOs.
- In February 2018, it was reported that China may ban access to foreign websites related to ICOs and also access to foreign platforms related to cryptocurrency trading.

Hong Kong

Outlook

NEUTRAL

Key Regulators

- **Securities and Futures Commission (SFC)**
- **Hong Kong Monetary Authority (HKMA)**

- Hong Kong currently does not have any specific regulatory frame work for crypto-assets

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis in order to determine whether they are subject to financial regulation (e.g. whether they are "securities").
- Cryptocurrencies (e.g. BTC / ETH) are not currently regulated, provided they are not part of other regulated products or services

Recent Developments

- On 19 March 2018, the SFC took action against Black Cell Technology Limited ("Black Cell") in respect of its ICO to the Hong Kong public. This is the first regulatory action taken by the SFC against a cryptocurrency issuer. Black Cell, which is a public company incorporated in Hong Kong, promoted digital tokens called KROPS through a website which is accessible by the Hong Kong public, pitching that the ICO proceeds would be used to fund the development of a mobile application wherein one can have access to every food source in the world, and that holders of the tokens would be eligible to redeem equity shares of Black Cell. The SFC considered such arrangement may constitute a "collective investment scheme", and therefore a "security", under the SFO and instructed Black Cell to refund purchase monies to purchasers.
- It appears that the SFC is uncomfortable that utility tokens are being used for investment but are not regulated like other investment products. The SFC has expressed the view in a private regulatory forum that these tokens should also be subject to SFC regulation, although the legal basis for this view is unclear.

Source(s): Latham & Watkins LLP

State of Regulation: Singapore

Outlook

NEUTRAL

Key Regulators

- **Monetary Authority of Singapore (MAS)**

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis in order to determine whether they are subject to financial regulation (e.g. whether they are “securities” or “collective investment schemes”).
- Cryptocurrencies (e.g. BTC / ETH) are not currently regulated, provided they are not part of other regulated products or services

- Singapore currently does not yet have any specific regulatory framework for crypto-assets
- A Proposed Payment Framework (PPF) is being developed to review existing payments and remittance frameworks and will provide for licensing, regulation and supervision of relevant segments of payments ecosystem and remittance business, including virtual currency intermediaries
- MAS is also working on Project Ubin, which will use distributed ledger technology to improve financial market operations
- Singapore is a global leader on Fintech innovation and regulatory sand-boxes, which seek to accelerate national innovation

Recent Developments

- On 22 May 2018, the MAS consulted on expanding the tiers of recognized market operators so that digital assets can be traded with certain recognized market operators
- On 24 May 2018, the MAS censured 8 cryptocurrency exchanges and one ICO issuer none of whom have been named. The ICO issuer was required to refund all monies raised from any Singapore investor and cease making any offering in Singapore.

Source(s): Latham & Watkins LLP using public sources, Autonomous NEXT

State of Regulation: Japan

Outlook

MIXED

Key Regulators

- **Financial Services Agency (FSA)**

- Japanese law recognizes the following three categories of regulated financial products into which crypto-assets may fall depending on their particular characteristics:
  - "cryptocurrencies"
  - "prepaid payment instruments"
  - "securities"

- Regardless of the category of crypto-asset, Japanese licensing requirements may nonetheless be triggered depending on the types of activities taken with respect to Japanese residents.

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis in order to determine whether they are subject to financial regulation
- Providing Japanese residents with cryptocurrency-related exchange or broker-dealer services (e.g. BTC / ETH) requires a Japanese cryptocurrency exchange license
- Generally crypto-assets are deemed "cryptocurrencies" by the Japan FSA and trigger Japanese cryptocurrency license obligations from their initial offering
- To obtain a cryptocurrency exchange license, a person must, among other things: (1) have a well-functioning corporate governance system, (2) properly segregate client assets, (3) demonstrate adequate system security, (4) comply with AML / KYC requirements, (5) be periodically audited by external auditors
- If token holders are entitled to a distribution of profits or assets that are generated from or related to the issuer's business, such tokens may be deemed "securities" depending on the form of consideration paid by the token holders to the issuer

Recent Developments

- On 1 April 2017, cryptocurrencies were deemed to be a "legal form of payment"
- The Japan Virtual Currency Exchange Industry Association, a self-regulatory body (composed of registered crypto-exchanges) with the power to create rules for cryptocurrency exchanges, was launched in April 2018

Source(s): Latham & Watkins LLP

State of Regulation: South Korea

Outlook

MIXED

Key Regulators

- **Financial Services Commission (FSC)**

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis to determine whether they are subject to financial regulation.
- However, in general, ICOs are still purportedly prohibited by the FSC.

- Although the initial regulatory position was to regulate ICOs as securities offerings (in cases where the crypto-assets concerned were classified as securities under Korean law), it was announced, in the form of press release on 29 September 2017, that all ICOs (including in form of securities) would be prohibited

- Since the press release has no formal legal effect, the precise impact of the prohibition is currently unclear. While there would technically need to be a violation of existing Korean laws and regulations for enforcement action to be taken, there is a possibility that the FSC would attempt to challenge an ICO based on the press release. In addition, the scope of the purported prohibition is not clear and so it is not apparent whether it includes, for example, ICOs engaged in overseas with participation of Korean investors.

- While regulatory climate in Korea is uncertain, some of the largest blockchain projects are indeed being built out in the jurisdiction funded by local funds

Recent Developments

- On 30 January 2018, a ban was imposed on the use of anonymous accounts to conduct transactions in cryptocurrencies
- On 30 May 2018, the Supreme Court overturned the lower court's decision in September 2017 and recognized the legal status of cryptocurrency as it is traded on an exchange. Accordingly, the Bitcoins derived as crime proceeds are subject to confiscation.
- On 31 May 2018, FSC responded to the Supreme Court's ruling, clarifying that the cryptocurrencies are not financial assets and there is no change in the regulation.
- New regulations were recently issued which provide for a new regulatory framework for cryptocurrencies, imposing AML and KYC requirements on cryptocurrency exchanges.

Source(s): Latham & Watkins LLP using public sources

State of Regulation: Gibraltar

Outlook

POSITIVE

Key Regulators

- **Gibraltar Financial Services Commission (GFSC)**

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis in order to determine whether they are subject to financial regulation. This will remain the case even once the proposed token sale regulations come into effect as these are designed to govern only tokens which are not securities under existing securities legislation
- Even if a crypto-asset does not fall within the scope of existing financial regulation in Gibraltar or the proposed token the regulations on DLT may still apply to the underlying technology (e.g. platform facilitating the sale of the crypto-assets / the platform which will be developed and operated by the issuer of the crypto-assets)

- The Government of Gibraltar has proactively sought to introduce legislation providing an explicit legal and regulatory framework for crypto-assets
- This includes regulations on DLT (which came into effect on 1 January 2018), setting out a light touch approach to regulation of DLT providers underpinned by 9 core regulatory principles, and proposed regulations on the promotion and sale of non-security tokens in and from Gibraltar which will cover: i) the promotion, sale and distribution of tokens; ii) the operation of secondary market platforms in relation to tokens; and iii) the provision of investment and ancillary services relating to tokens.
- Gibraltar's DLT regulations are an unusual example of a jurisdiction taking a technology-specific approach to financial regulation
- To the extent that crypto-assets constitute regulated investments in Gibraltar, market participants involved with the offer, promotion, issue, trading, settlement and custody of those investments will need to consider local licensing, conduct of business and AML / KYC requirements. Securities offering documentation (e.g. offering memorandum) and marketing requirements are also likely to apply to offerings of such investments.

Recent Developments

- In March 2018, the Government of Gibraltar published a white paper setting out the scope of the proposed token sale regulations. Among other things, the white paper states (1) "The public offering of tokens that constitute securities are already adequately caught by existing securities legislation and do not require further regulation.", (2) "Most often, tokens do not qualify as securities under Gibraltar or EU legislation. In many cases, they represent the advance sale of products that entitle holders to access future networks or consume future services. They are akin to mobile phone companies pre-selling airtime in networks they plan to build using the proceeds of those airtime sales. As such, these tokens represent commercial products (albeit reliant on future availability and utility) and are not caught by existing securities regulation in Gibraltar."
- According to the white paper, crypto-assets that "function solely as decentralised virtual currency (e.g. Bitcoin) or as central bank-issued digital currency" will be excluded from the limb of the proposed token regulations covering primary market promotion, sale and distribution of tokens, however they will be subject to the other two limbs covering secondary market activities and investment and ancillary services.
- The white paper states that the last of the three Regulations should be completed by the end of October 2018, suggesting that full implementation of the proposed token sale regime will not be before Q4 2018

Source(s): Latham & Watkins LLP using public sources; Gibraltar Finance, "Proposals for the regulation of token sales, secondary token market platforms, and investment services relating to tokens" (March 2018)

State of Regulation: Malta

Outlook

POSITIVE

Key Regulators

- **Malta Financial Services Authority (MFSA)**

Status of Crypto Assets

- Crypto-assets must be assessed on a case-by-case basis in order to determine whether they are subject to financial regulation
- This will remain the case even once the proposed Virtual Financial Assets Act comes into effect, although a bespoke financial instrument test will apply to crypto-assets

- The Government of Malta has proactively sought to introduce legislation providing an explicit legal and regulatory framework for crypto-assets and the technologies underlying them
- The Maltese Parliament is currently considering three bills related to DLT and crypto-assets: i) the Malta Digital Innovation Authority Bill; ii) the Innovative Technology Arrangements and Service Bill; and iii) the Virtual Financial Assets Bill
- In particular, the Virtual Financial Assets Bill proposes the introduction of a bespoke "financial instrument test" for crypto-assets
- To the extent that crypto-assets constitute regulated investments in Malta, market participants involved with the offer, promotion, issue, trading, settlement and custody of those investments will need to consider local licensing, conduct of business and AML / KYC requirements. Securities offering documentation (e.g. offering memorandum) and marketing requirements are also likely to apply to offerings of such investments

Recent Developments

- On 13 April 2018, the MFSA published a consultation paper relating to the bespoke financial instrument test under the Virtual Financial Assets Act
- According to the consultation, the test is likely to be a three-stage test:
  (1) The first stage would involve a determination whether a crypto-asset is a "virtual token" which would be exempt from regulation under the proposed Virtual Financial Assets Act. The consultation defines a virtual token in terms effectively identical to the concept of a utility token: "Virtual token means a [crypto-asset] that has no utility, value or application outside of the DLT platform on which it was issued and that cannot be exchanged for funds on such platform or with the issuer of such [crypto-asset]."
  (2) Crypto-assets which are not virtual tokens would then be subject to a second determination as to whether they constitute financial instruments under the EU Markets in Financial Instruments Directive (MiFID) which would be regulated in accordance with the relevant existing provisions of MiFID (as implemented under Maltese law)
  (3) Only those crypto-assets which are not virtual tokens or MiFID Financial Instruments would be subject to regulation as "Virtual Financial Assets" under the proposed Virtual Financial Assets Act (which proposes, among other things, to impose licensing requirements, ongoing obligations on issuers of Virtual Financial Assets and persons who intend to provide services in relation to Virtual Financial Assets, in each case if the issue or service in question is provided in or from Malta)
- On 4 July 2018, the MFSA published a consultation paper relating to the draft Virtual Financial Assets Regulations to be issued under the proposed Virtual Financial Assets Act

Source(s): Latham & Watkins LLP using public sources; MFSA, "Consultation paper on the financial instrument test" (13 April 2018)

State of Regulation: UAE

Outlook

NEGATIVE

Key Regulators

- **Securities and Commodities Authority (SCA)**

Status of Crypto Assets

- Crypto-assets are not currently regulated in onshore UAE
- Chairman Resolution No. 3 R.M. of 2017 (concerning the regulations as to the promotion of financial products and the introduction of financial services and activities within the UAE) (the "PIRs") regulates the offering of "Financial Products." Crypto-assets that constitute Financial Products (which includes securities) will be subject to the PIRs.

- The SCA (the regulator for "onshore" UAE, i.e., excluding the free zones) has taken a negative regulatory approach to crypto-assets by warning investors against the risks of ICOs and refusing to regulate or recognize ICOs
- The onus appears to be on market participants to assess for themselves whether or not crypto-assets fall within the scope of existing UAE financial regulation
- For crypto-assets which constitute regulated financial products in the UAE, market participants involved in the offer, marketing or promotion of such crypto-assets will need to consider SCA licensing and conduct of business and AML / KYC requirements. Securities offering documentation and marketing requirements will also to apply to offerings of such investments.
- The principal risks that the SCA believes investors should be aware of are: (1) lack of regulation of ICOs, (2) fraud, (3) difficulty in verifying foreign laws and regulations to which ICOs not operating in the UAE may be subject, (4) difficulty in recovering invested funds in the event of a collapse of the ICO, (5) price volatility, (6) insufficient liquidity

Recent Developments

- On 1 January 2017, the UAE Central Bank issued the Regulatory Framework for Stored Values and Electronic Payment Systems ("Electronic Payment Regulations"), which offers a new licensing framework for stored value facilities offering certain digital payment services. The Electronic Payment Regulations state that all virtual currencies (and transactions thereof) are prohibited. However, in February 2017, the Governor of the Central Bank, issued a statement that the Electronic Payment Regulations do not cover virtual currency and do not apply to BTC or other cryptocurrencies, currency exchanges or underlying technology such as blockchain.
- On 4 February 2018, the SCA issued a public warning statement on ICOs, cautioning investors against the risks associated with investment in ICOs.The SCA also confirmed that it does not regulate or recognize any ICO.

Source(s): Latham & Watkins LLP

State of Regulation: Abu Dhabi Global Market

Outlook

MIXED

Key Regulators

- **Financial Services Regulatory Authority (FSRA)**

Status of Crypto Assets

- Crypto-assets must be assessed by the FSRA on a case-by-case basis in order to determine whether they are subject to the regulatory regime, including the Financial Services and Markets Regulation ("FSMR")
- Crypto-assets that have the features and characteristics of a "Security" (as defined in the FSMR) are deemed to be, and regulated as, Securities under the FSMR
- Crypto-assets (including cryptocurrencies, e.g. BTC) which do not exhibit features and characteristics of a Security under FSMR are deemed to be commodities and are not regulated under the FSMR

- The FSRA (the regulator for the Abu Dhabi Global Market ("ADGM") financial free zone located in Abu Dhabi) has taken a mixed regulatory approach to crypto-assets
- The FSRA has issued regulatory guidance on the regulation of ICOs and virtual currencies and offers potential issuers the opportunity to enter into a consultation process with the FSRA in relation to a proposed offering, including whether the issuance of any such crypto-asset would constitute a regulated activity
- The FSRA has also recently launched a framework to regulate spot crypto-asset activities
- However, the FSRA has confirmed that it does not regulate non-security crypto-assets other than as part of a regulated derivative or fund
- For crypto-assets which constitute regulated investments in the ADGM, market participants involved in the offer, marketing or promotion of such crypto-assets will need to consider FSRA licensing and conduct of business and AML / KYC requirements
- If the proposed ICO constitutes an offering of securities then any offer in or from the ADGM will need to be made pursuant to a FSRA-approved prospectus or otherwise in reliance on an available exemption from registration

Recent Developments

- On 9 October 2017, the FSRA published guidance on the regulation of ICOs and virtual currencies under the FSMR, which explains the status of crypto-assets, as described above.
- On 25 June 2018, the ADGM launched a framework to regulate spot crypto-asset activities, including those undertaken by exchanges, custodians and other intermediaries in ADGM. The framework applies to crypto-asset businesses dealing in crypto-assets with a market capitalization of USD4 billion or more and addresses the risks associated with crypto asset activities, including risks relating to money laundering and financial crime, consumer protection, technology governance and custody and exchange operations.
- On 25 June 2018, the ADGM also published a guidance note on regulation of crypto-asset activities in the ADGM. The guidance note sets out the FSRA's regulatory approach in relation to different types of digital assets. In brief, the FSRA regulates security tokens, crypto-assets and derivatives and funds relating to security tokens, crypto-assets and non-security tokens.

Source(s): Latham & Watkins LLP

State of Regulation: Dubai International Financial Centre

Outlook

NEUTRAL

Key Regulators

- **Dubai Financial Services Authority (DFSA)**

Status of Crypto Assets

- Crypto-assets are not currently regulated in the DIFC
- However, the DFSA is likely to consider crypto-assets that have a claim on something, such as an asset or commodity, to be securities, any offering of which would be subject to the DFSA securities rules and regulations
- The DFSA's view on utility tokens is currently unclear

- The DFSA (the regulator for the Dubai International Financial Centre ("DIFC") financial free zone located in Dubai) has taken a mixed regulatory approach to crypto-assets.
- Similar to the SCA, the DFSA has warned investors against the risks of ICOs and has confirmed that it does not regulate ICOs.
- While the onus appears to be on market participants to assess for themselves whether or not crypto-assets fall within the scope of existing DFSA laws and regulations, the DFSA has confirmed that it is open to discussing potential token offerings with issuers.
- For crypto-assets which constitute regulated investments in the DIFC, market participants involved in the offer, marketing or promotion of crypto-assets will need to consider DFSA licensing and conduct of business and AML / KYC requirements.
- If the proposed ICO constitutes an offering of securities then any offer in or from the DIFC will need to be made pursuant to a DFSA-approved prospectus or otherwise in reliance on an available exemption from registration.

Recent Developments

- On 13 September 2017, the DFSA announced that ICOs should be regarded as high-risk investments and that the risks associated with ICOs may increase when offerings are made on a cross-border basis. The DFSA urged investors to exercise caution and undertake due diligence to understand the risks involved. The DFSA also clarified that it does not currently regulate ICOs or provide licensing to firms in the DIFC to undertake ICO fundraising activities.

Source(s): Latham & Watkins LLP

Tax Considerations - Overview

- **The tax position in respect of ICOs is still a developing area and the approach taken varies across jurisdictions**
  - This is a general guide of the types of taxes that may arise and possible trigger events in the ICO lifecycle. The tax position for each country will differ and it is strongly recommended that specific tax advice is sought in each relevant jurisdiction on a case-by-case basis before an ICO process is undertaken.
  - In the UK, for example, the tax authority (HMRC) has to a large extent held off implementing specific laws or guidance in relation to ICOs and the focus has instead been placed on applying the relevant general tax principles from other analogous transactions. HMRC considers that the tax treatment of any transaction involving crypto-assets needs to be 'looked at on a case-by-case basis taking into account the specific facts', each case being 'considered on the basis of its own individual facts and circumstances'. Other jurisdictions, such as Israel, have instead expressed an intention to implement specific laws and guidance on ICOs, the scope of which remains uncertain.
  - Whether or not an ICO process and any subsequent transactions involving a crypto-asset may result in a taxable event will depend on a number of factors including the specific facts, structure of the offering and the nature and rights attaching to the crypto-asset

- **There are a number of circumstances in the ICO process and in the lifecycle of a crypto-asset which may give rise to a taxable event arising for either the issuing company or the investor. We give a very general overview of some key trigger points and the taxes that may be at play. Possible taxes to consider include:**
  - Corporation taxes; taxes on income; taxes on capital gains; VAT or other similar sales or value added taxes; stamp taxes or other transfer or issue taxes; employee payroll and social security contributions; inheritance and death taxes.

Source(s): Latham & Watkins LLP

Tax Considerations - Issue of tokens

Issuing Company

- **Corporation taxes**

  On issue, the issuing company will need to consider whether the issue of the crypto-asset and receipt of the funds will result in a corporation / income tax liability. The analysis will often depend on the characterisation of the type and terms of the specific crypto-asset issued to investors and the functions and purpose of the ICO. For example, it may be the case that the relevant tax authority would view crypto-assets which grant a right of access to an online platform and specific services as being related to the trading activity of the ICO company, in which case, there is a risk that the proceeds raised may be viewed as being taxable trading income (rather than as being akin to an equity offering).

- **VAT**

  The VAT treatment of issuing/transferring tokens will need to be considered on a case by case basis and the characterisation of the type and terms of the specific tokens will again be relevant. It may be the case that the issuance of the tokens will be exempt or outside the scope of VAT but this will depend on the specific facts. The VAT treatment will also depend on the nature of the supply and the location and nature of the investor.

Investor

- **Taxes on Income**

  If the crypto-assets carry with them a right to participate in the profits of the ICO company, this may be viewed by the relevant tax authority as being similar to a right to receive a dividend or other distribution, potentially resulting in a tax on income arising for an investor on receipt of such profits.

- **Employee payroll taxes**

  It may also be the case that some investors are issued the crypto-assets under an ICO in connection with their employment. This may result in payroll deductions and/or social security contributions being imposed depending on the relevant jurisdiction and the perceived value of the crypto-assets issued.

- **Stamp taxes or other similar issue taxes**

  The issue of the crypto-assets could give rise to documentary or stamp taxes for the investor or the issuing company (depending on the laws of the relevant jurisdiction).

Source(s): Latham & Watkins LLP

Tax Considerations - Transfer and other issues

Issuing Company

- Generally the transfer/disposal of the crypto-asset from an investor to a third party should be tax neutral for the issuing company.

Investor

- **Taxes on capital gains or income**
  A transfer/disposal by an investor of a crypto-asset may result in a tax charge for the investor on any chargeable gains (or even income in the event of those who habitually trade).
- **Inheritance or death taxes**
  On death of an investor who holds crypto-assets, it may be necessary to consider if any inheritance or death taxes will arise upon the passing of their estate.
- **Stamp or transfer taxes**
  The transfer of crypto-assets could give rise to documentary, stamp or similar transfer taxes for the transferor or the transferee

Miscellaneous Issues

- In a scenario where a company or an individual is transferred a crypto-asset as consideration for any sales in the course of a trade, the company or individual may be subject to income tax on the value of the crypto-asset and any F/X gains.
- Where an ICO company receives a different form of crypto-asset in exchange for one that it has issued under an ICO this may also lead to a charge to income or capital gains tax arising on any disposal. Stamp taxes or other similar transfer taxes may also be in point.
- In a scenario where an ICO company buys back its own crypto-assets, this may also lead to a charge to income or capital gains tax arising on any disposal. Stamp taxes or other similar transfer taxes may also be in point.

Source(s): Latham & Watkins LLP

Appendix

Featured Data Sources

BITA

BITA is the first professional index and data provider in the digital asset space. Through state of the art technology, BITA has the mission to develop enterprise-grade infrastructure for the digital asset investment market.

- **Liquid coin prices**
- **Returns and marketcaps**

token data

Token Data provides data, analytics and long form content on cryptocurrencies, tokens and ICOs

- **ICO failure stats**
- **Part of underlying ICO data**

Coin Metrics

Coinmetrics is a free and open source software project, presenting data through our convenient website portal. Individuals seeking to verify our data scraping methods or fork the code can visit our Github**.**

- **On-chain metrics stats**
- **Transactions, addresses**

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Latham & Watkins' FinTech lawyers help clients around the globe navigate the critical and ever-changing business, legal and regulatory issues associated with the technological disruption of financial services. Latham mobilizes a cross-disciplinary and global team with deep experience in regulation and technology to serve the full spectrum of the FinTech ecosystem on any aspect of a FinTech matter.

- **Legal and Tax considerations**

Dalia

Dalia was founded in Berlin in 2013, with a clear vision to utilise mobile technology to change the way that attitudinal data is collected, analysed and presented. Our goal is to be known as the platform and methodology of choice for global consumer understanding.

- **Consumer survey**

20|30

20|30 is a venture studio building the future on blockchain. We are blockchain-agnostic and experiment-driven. Our four first experiments have all led to early sales success.

- **Token engineering**
- **Taxonomies and macroeconomics**

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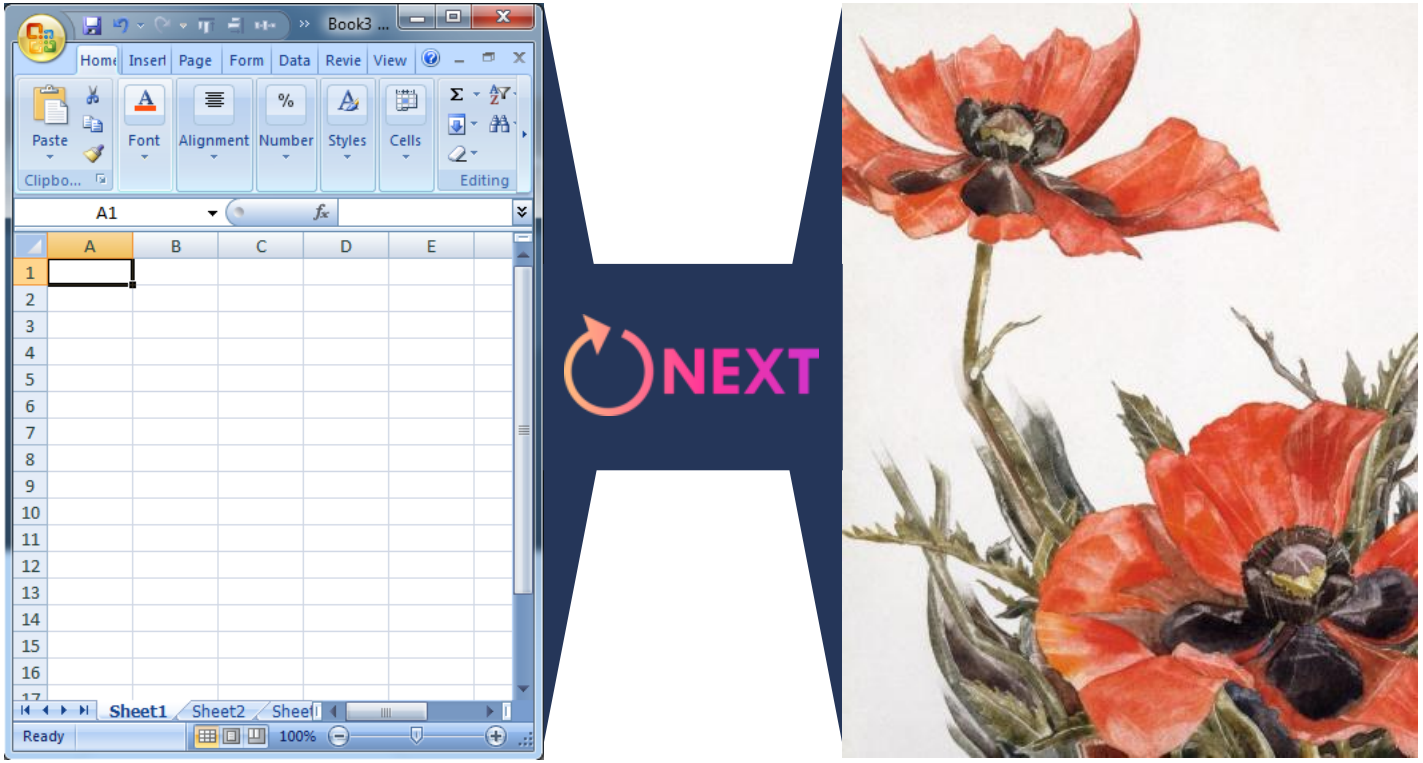
Autonomous NEXT is a mission-driven innovation and fintech analysis process for financial firms and investors



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- Autonomous offers unique and unbiased perspectives on the future of Fintech by exploring the way in which technology will shape the global financials industry.

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Lex Sokolin

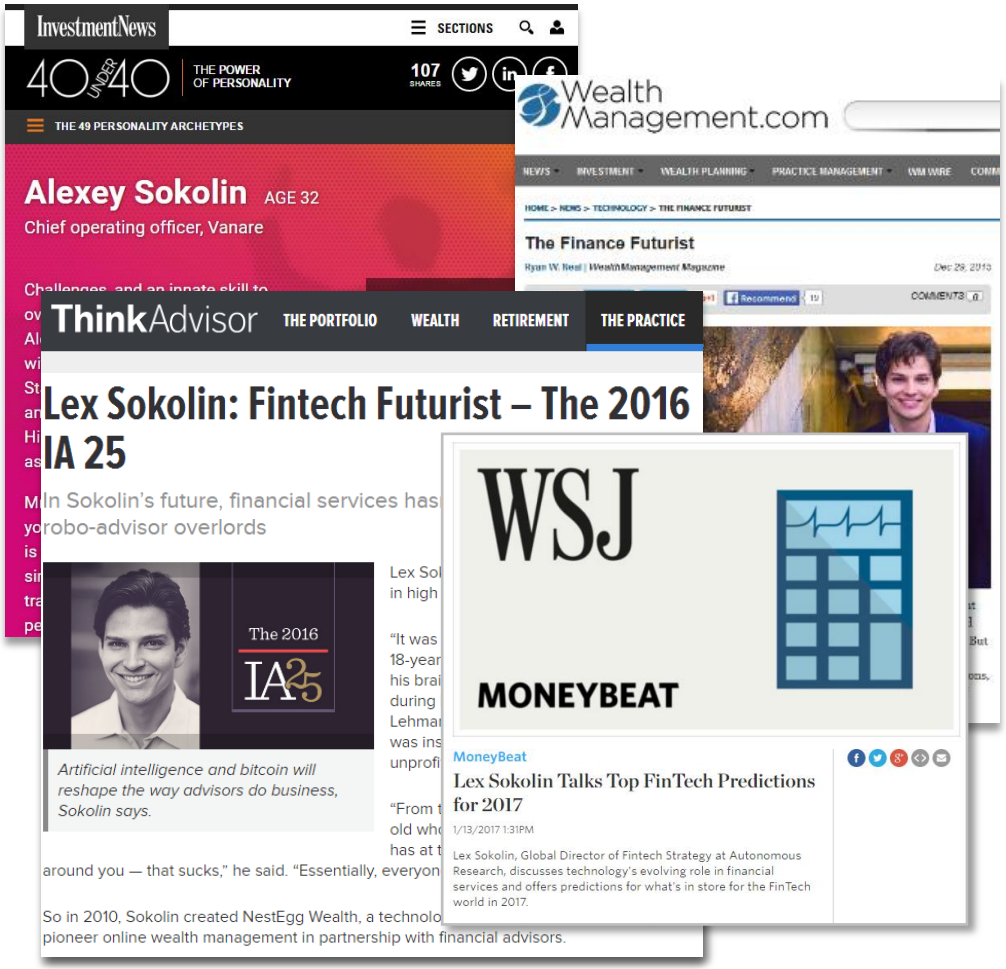
Global Director Fintech Strategy

Lex is a futurist and entrepreneur focused on the next generation of financial services. He directs Fintech Strategy at Autonomous Research, a global research firm for the financial sector, helping clients understand and leverage innovation.

Lex is on the Board of Directors and previously was the Chief Operating Office at AdvisorEngine (formerly Vanare), a digital wealth management technology platform that received $50 million in financing from WisdomTree. He was also founder and CEO of NestEgg Wealth, a roboadvisor that pioneered online wealth management in partnership with financial advisors, acquired by AdvisorEngine.

Lex is a contributor of thought leadership to the Economist, WSJ, Bloomberg, CNBC, Reuters, Investopedia, American Banker, ThinkAdvisor, and Investment News, among others. He has spoken on the future of technology and achieving extraordinary growth at conferences like Money2020, Lendit, Schwab Impact, TD National LINC, T3 Enterprise Edition, and the Financial Planning Association.

Prior to NestEgg, Lex held a variety of roles in investment management and banking at Barclays, Lehman Brothers and Deutsche Bank. He holds a JD/MBA from Columbia University and a B.A. in Economics and Law from Amherst College.



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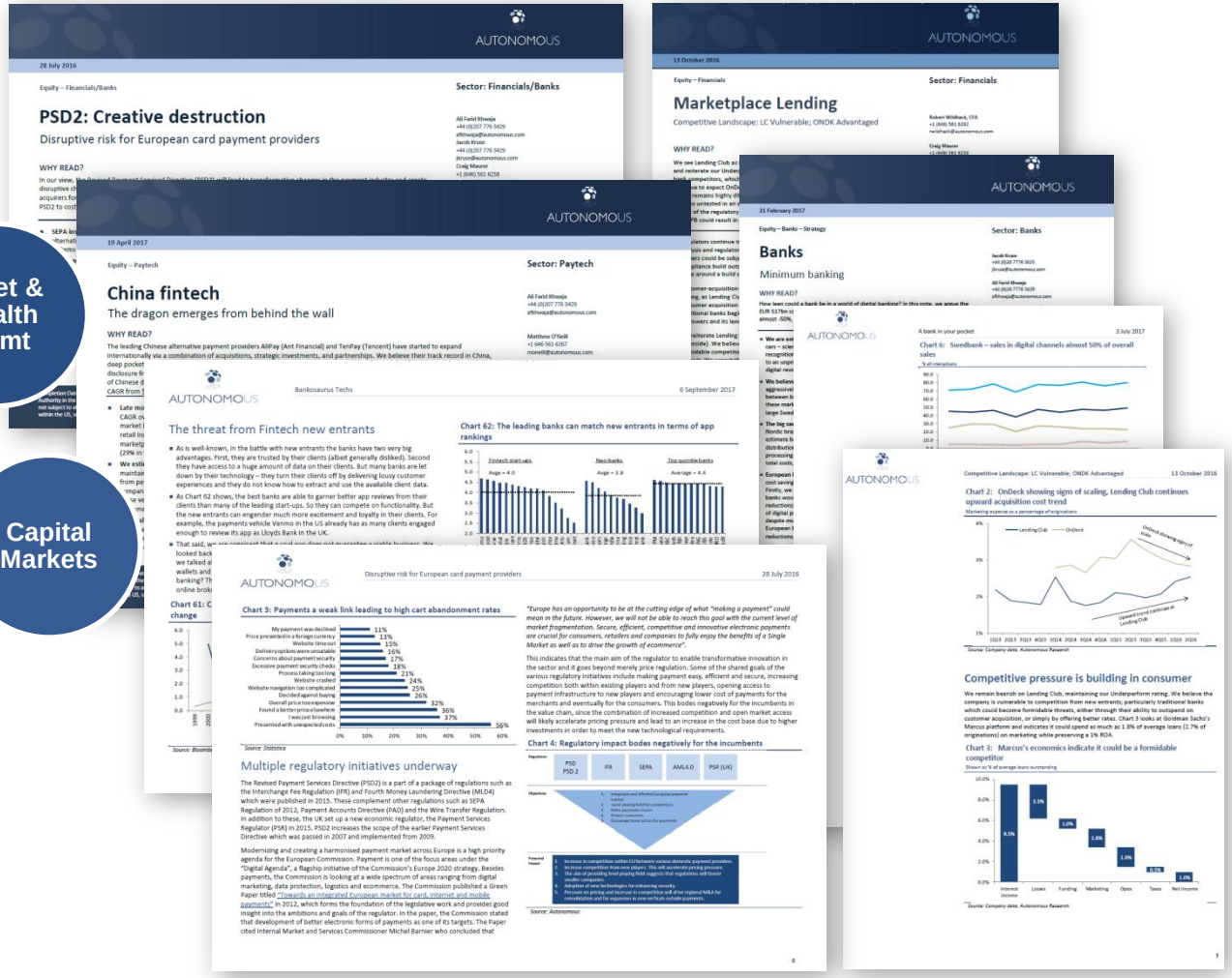

Source: Autonomous Research

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