

PULSAR 

The New Social Currency

A report on the
mainstream rise
of cryptocurrency
through the lens of
social data





Introduction

As we settle into 2018, the aggregate value of all cryptocurrencies – digital currencies issued and secured through decentralized software and encryption – is nearing \$500 billion.

Major banks are establishing cryptocurrency units. Coinbase, a crypto exchange platform, surged to the top of the U.S. App Store chart and briefly held the #1 ranking. And whether it be in a business meeting, an elevator, or at a cocktail party, it seems nearly impossible to escape weekly Bitcoin conversation. We find ourselves operating in a world in which our politics, our news, and now, perhaps, our money, are facing a new reality.

Some are convinced that cryptocurrency is the next great disruptive technology. Others are concerned with speculative behavior in the space and warn of a bubble, though many of these skeptics also concede that crypto may fundamentally change the way we store value, exchange money, and validate transactions in the long-term. Uncertainty abounds. What's clear is that we are nearing an inflection point where cryptocurrency, particularly Bitcoin, will enter the consciousness of the mainstream.

To measure cryptocurrency interest and adoption we could examine price data, trading volume, market capitalization, hash rate on the Bitcoin network, etc. Yet these figures mostly focus on the small sliver of the population who are innovators or early adopters in the crypto game. The fringes are already well-documented. Our curiosity in this case lies with the *mainstream*, pushing us to take a different approach, analyzing recent social media conversation and audience data.

Background & Methodology

Are everyday people actually talking about cryptocurrency?

We delved into data around cryptocurrency buzz to shed light on the hype from a completely new angle, focusing on the following research questions:

- To what extent is the “mainstream” social audience aware of, and genuinely interested in, cryptocurrency?
- Who are those people? Tapping into demographics and affinities data for audience understanding.
- How do they feel about this new asset class? Using social data indicators to measure perception, skepticism, and confidence over time.
- Why are they motivated to talk about cryptocurrency and what do they know about it? Evaluating the mainstream’s grasp of the technology, its use cases, and their considerations around use.

This study explores discussion across social media channels, totaling nearly 5 million mentions. The main dataset used includes US-only, English conversation data spanning September 14, 2017 – January 8, 2018, though sections of the analysis cover data points as recent as February 16, 2018. All conversation data represented within was collected and analyzed using Pulsar.

In select areas of the report, social media conversation data from Pulsar is supplemented with information from other sources, including Audiense*, Google search data, and interpretations of secondary research.

* Audiense is a platform which combines social data sources with machine learning AI, enabling users to understand the audience segments that matter to do the business. The platform integrates with Pulsar’s TRAC, providing a best in class audience intelligence solution.



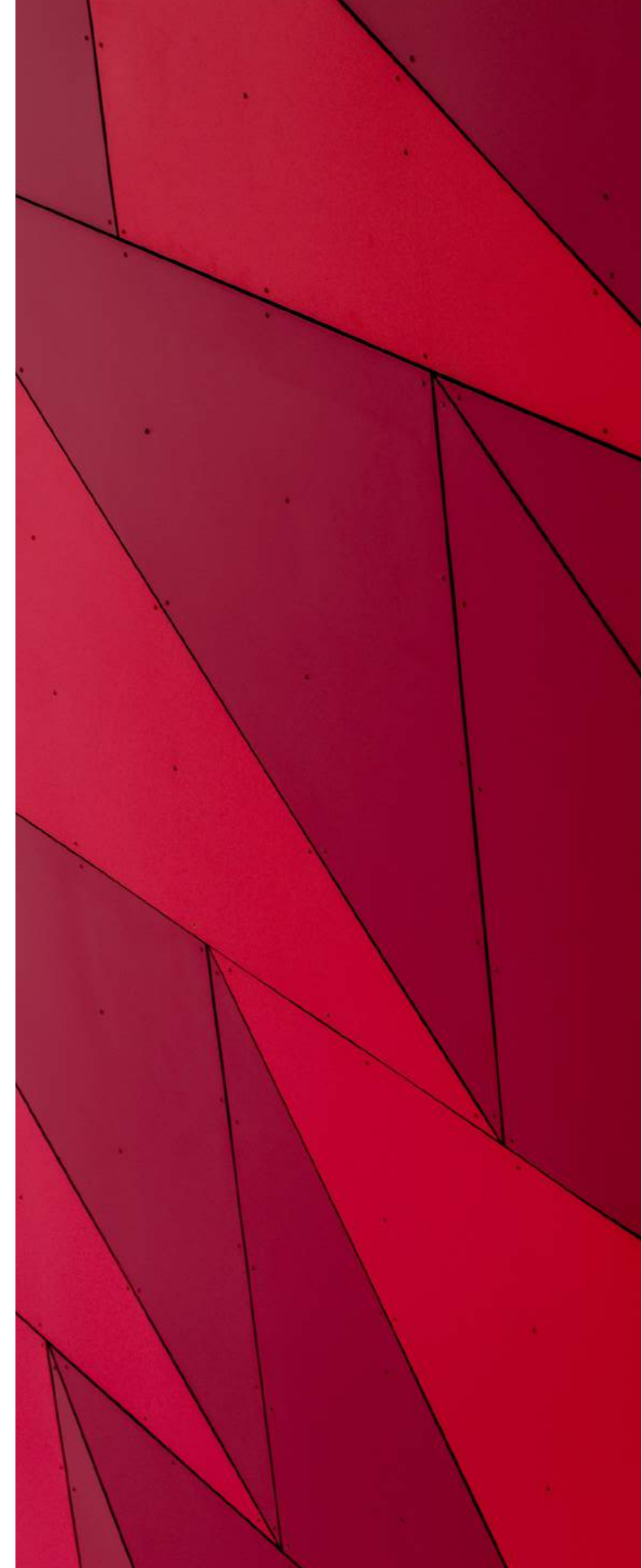
Study overview

Analysis of social media conversation data

- Cryptocurrency & Bitcoin conversations identified and analyzed using **Pulsar Platform**
- Data collected from **Sep. 14, 2017 – Jan. 8, 2018**
- More than **4.9MM posts & 19.5MM total engagements** analyzed
- Approximately **1.5MM unique users** included in the study

Key Findings

- Patterns in social media conversation signal upcoming Bitcoin price movements.
- Bitcoin is clearly still the brand name carrying the cryptocurrency market forward.
- Cryptocurrency buzz is driven by a diverse audience beyond the young, male, tech community.
- There are 5 main persona segments within the crypto audience, led by ‘Pop Culture Techies’, a group that closely resembles the mass-market consumer.
- Despite rapid price growth, the mainstream audience is still at square one in its understanding of the technology, asking: what is it?
- Sentiment tides have shifted in a more positive direction recently, but pessimism still prevails.
- Blockchain is the hook that stokes mainstream belief in cryptocurrency, while other technical attributes fade out of the public’s focus.
- The killer app that people want from cryptocurrency is frictionless payment & money transfer.
- Perception of cryptocurrency as an enabler of “shady” business has faded.
- When mainstream consumers consider whether or not to get involved in crypto, security concerns are the main barrier to entry.

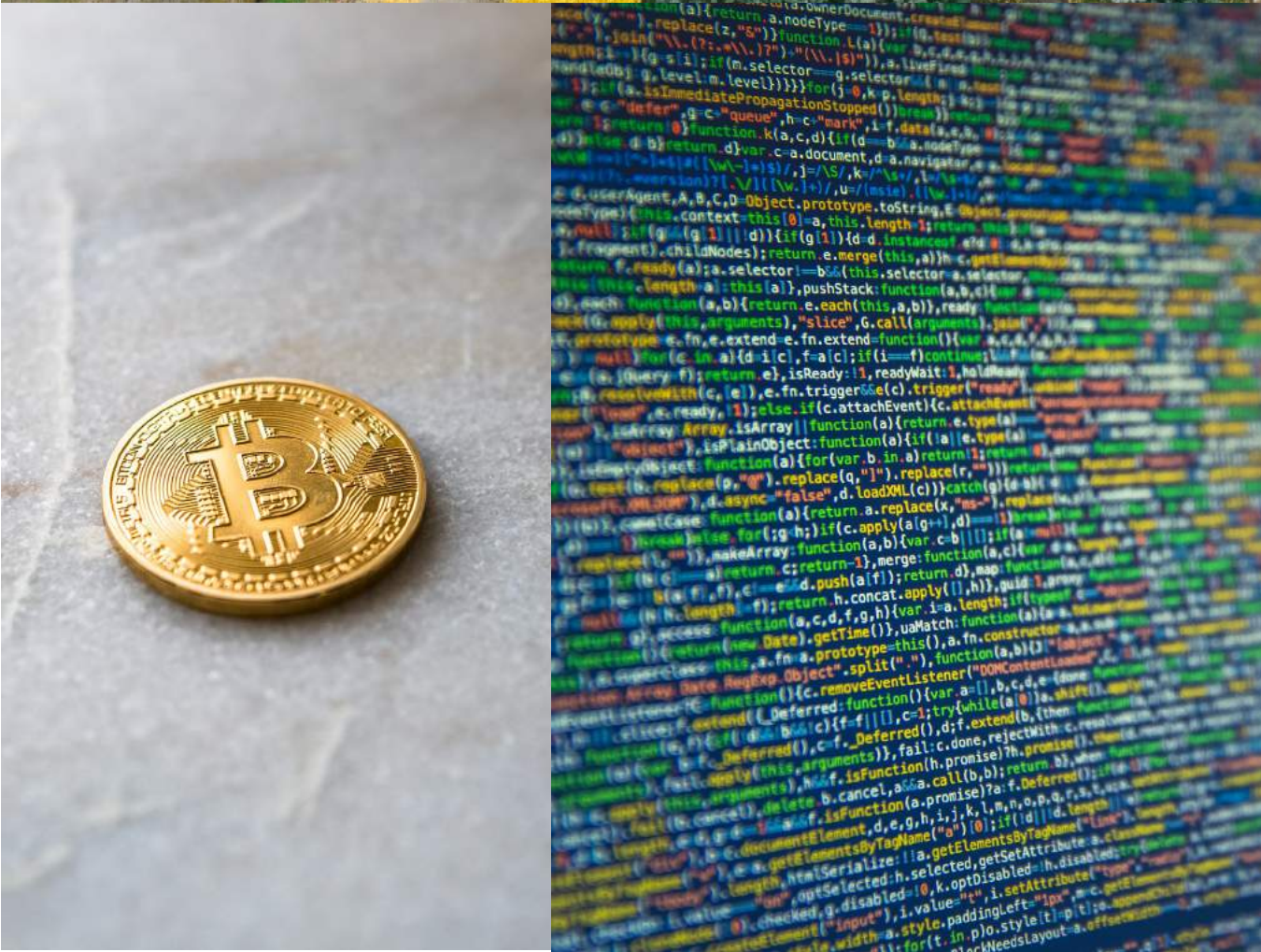




Overview

As prices rise and fall dramatically, what do conversation trends reveal about cryptocurrency interest?

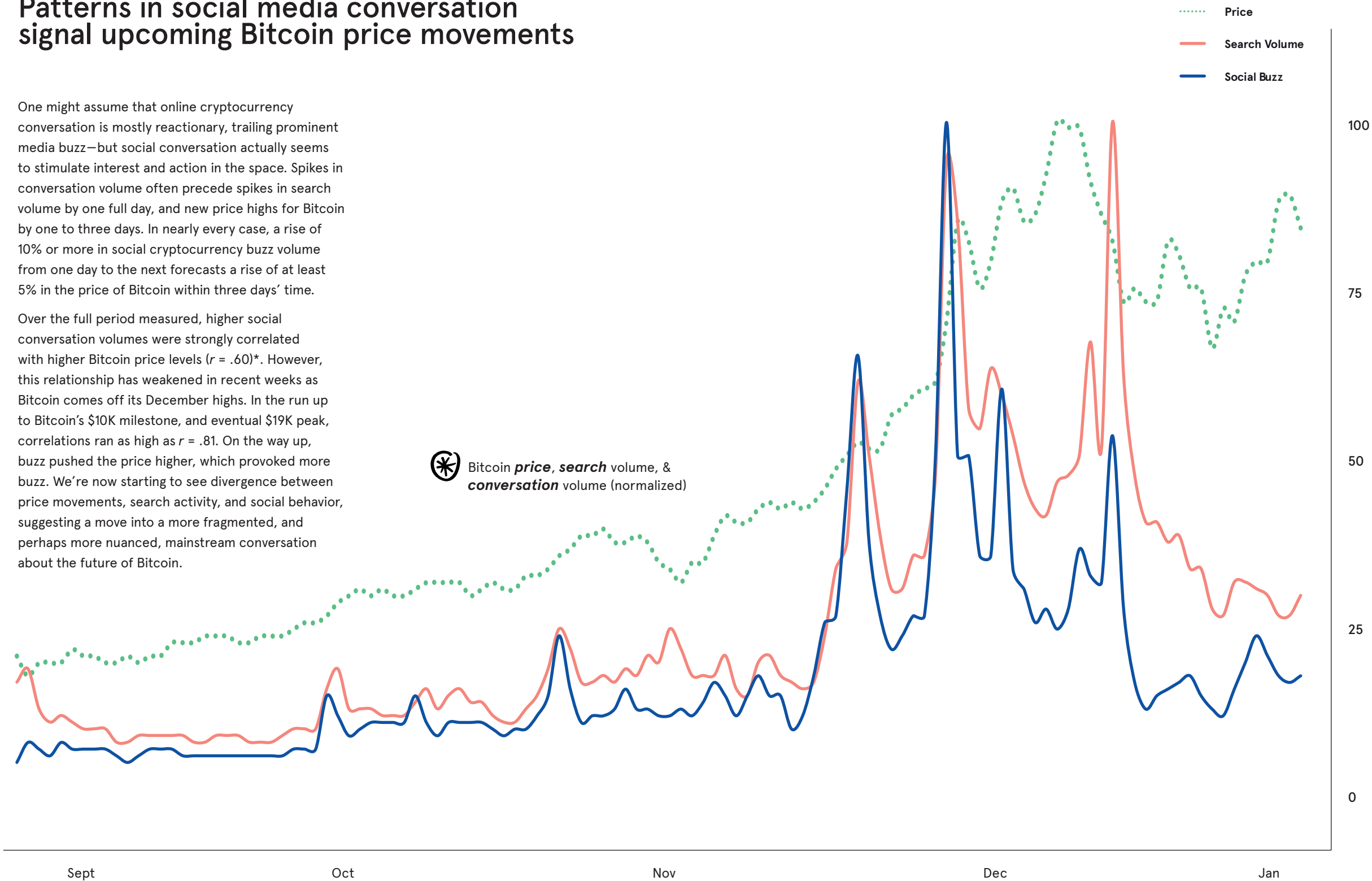
We examined the shape and scale of cryptocurrency conversation, alongside search and price data, to understand the relationship between social buzz and cryptocurrency demand. Each of these data streams offers signals about interest in cryptocurrency. Our findings from a side-by-side analysis support the hypothesis that digital engagement around cryptocurrency has a measurable impact on perception and behavior (investment).



Patterns in social media conversation signal upcoming Bitcoin price movements

One might assume that online cryptocurrency conversation is mostly reactionary, trailing prominent media buzz—but social conversation actually seems to stimulate interest and action in the space. Spikes in conversation volume often precede spikes in search volume by one full day, and new price highs for Bitcoin by one to three days. In nearly every case, a rise of 10% or more in social cryptocurrency buzz volume from one day to the next forecasts a rise of at least 5% in the price of Bitcoin within three days' time.


Over the full period measured, higher social conversation volumes were strongly correlated with higher Bitcoin price levels ($r = .60$)*. However, this relationship has weakened in recent weeks as Bitcoin comes off its December highs. In the run up to Bitcoin's \$10K milestone, and eventual \$19K peak, correlations ran as high as $r = .81$. On the way up, buzz pushed the price higher, which provoked more buzz. We're now starting to see divergence between price movements, search activity, and social behavior, suggesting a move into a more fragmented, and perhaps more nuanced, mainstream conversation about the future of Bitcoin.

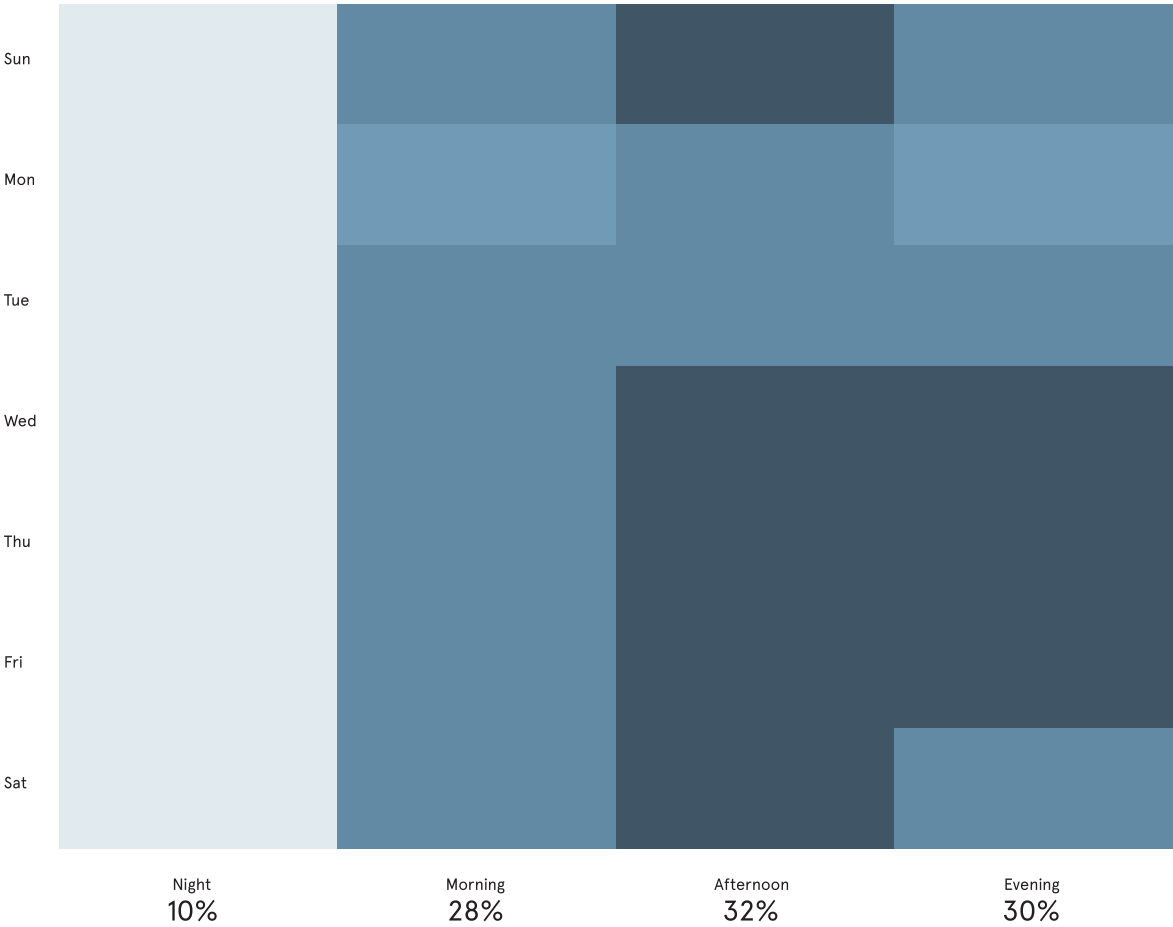


*The "r" value noted here is a correlation coefficient, measuring the strength of the relationship between social media conversation volume and the market price of Bitcoin over a given period. "R" values range between -1 (indicating a negative relationship) and +1 (indicating a positive relationship). Generally, an "r" value of 0.5 or higher signals a strong positive correlation between two variables.

Relative to other markets, crypto is 'always-on'

Unlike capital and commodities markets, cryptocurrency trading never pauses, capturing investor and observer headspace well outside of working and banking hours. This is reflected in social conversation as well. In fact, crypto buzz consistently spikes late into the evenings toward the end of each week, with peak volumes even carrying into the weekend. You might say crypto is the currency that never sleeps.

 **Conversation volume by daypart**
(darker shading represents a higher concentration of buzz)

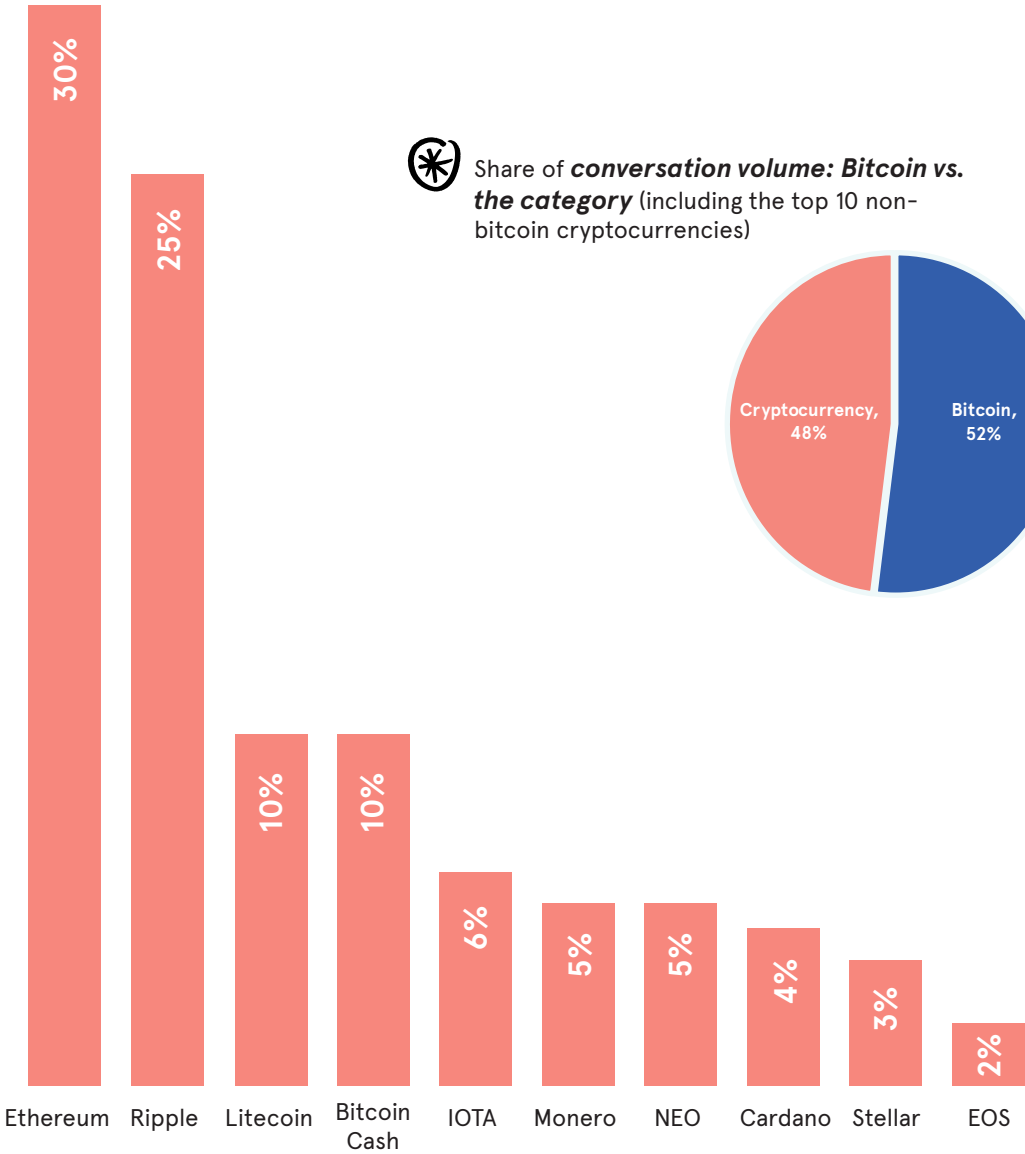



Bitcoin is clearly still the brand name carrying the cryptocurrency market forward.

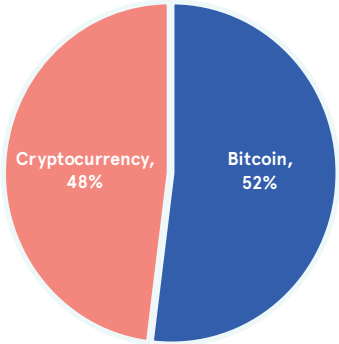


Share of **conversation volume** among the **top 10 non-bitcoin** cryptocurrencies (as measured by market cap)

Mentions of Bitcoin outpace not only generic mentions of the category (*cryptocurrency, digital currency, etc*), but the aggregate total of these category mentions plus the next top ten cryptocurrencies combined. Bitcoin's prominence in the zeitgeist reinforces the idea that consumers like having a brand name to latch onto, as brands symbolize certain values (freedom, innovation) and help simplify choices in complex markets (What new tech should I consider? Where should I invest my money?).

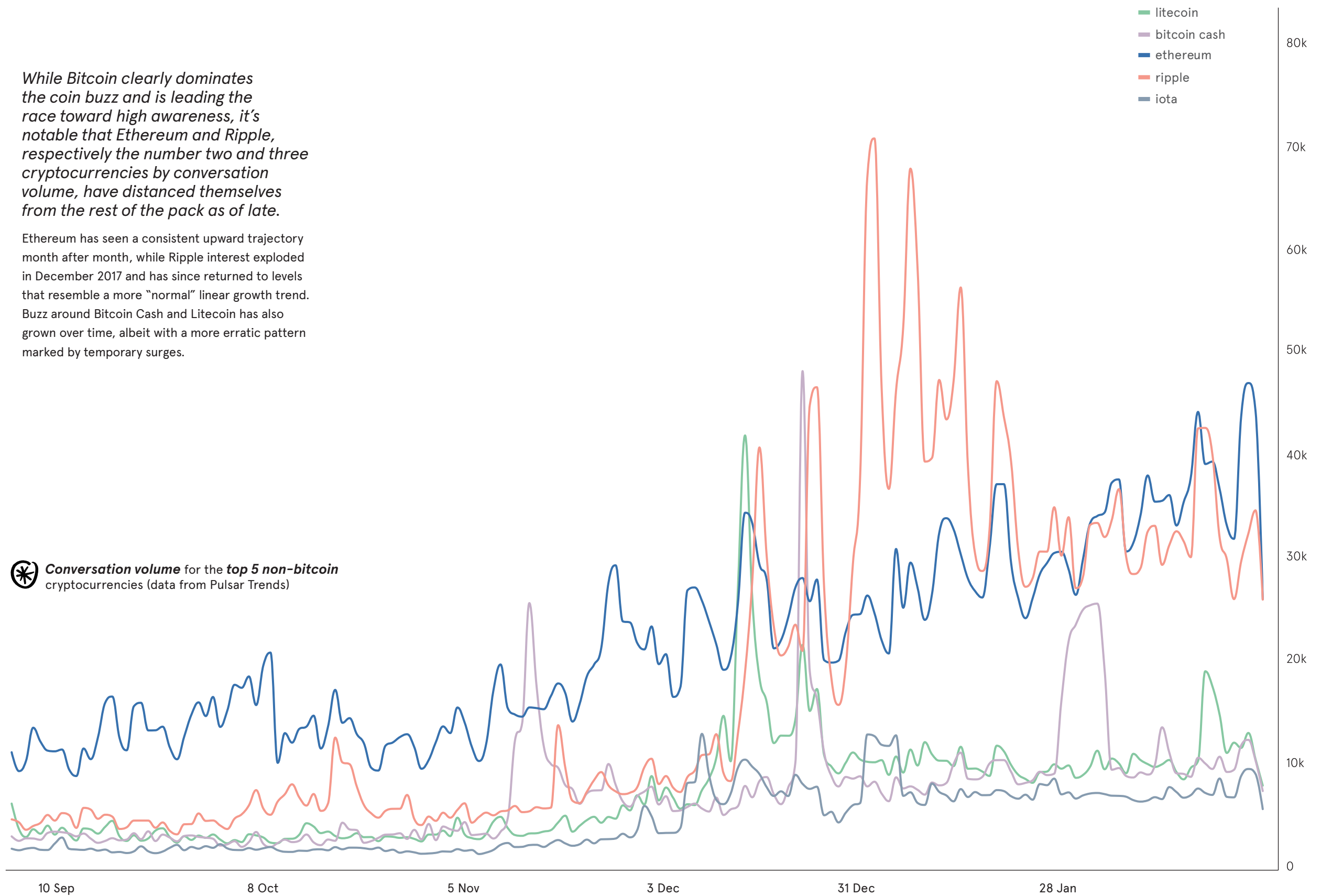



 Share of **conversation volume: Bitcoin vs. the category** (including the top 10 non-bitcoin cryptocurrencies)




While Bitcoin clearly dominates the coin buzz and is leading the race toward high awareness, it's notable that Ethereum and Ripple, respectively the number two and three cryptocurrencies by conversation volume, have distanced themselves from the rest of the pack as of late.

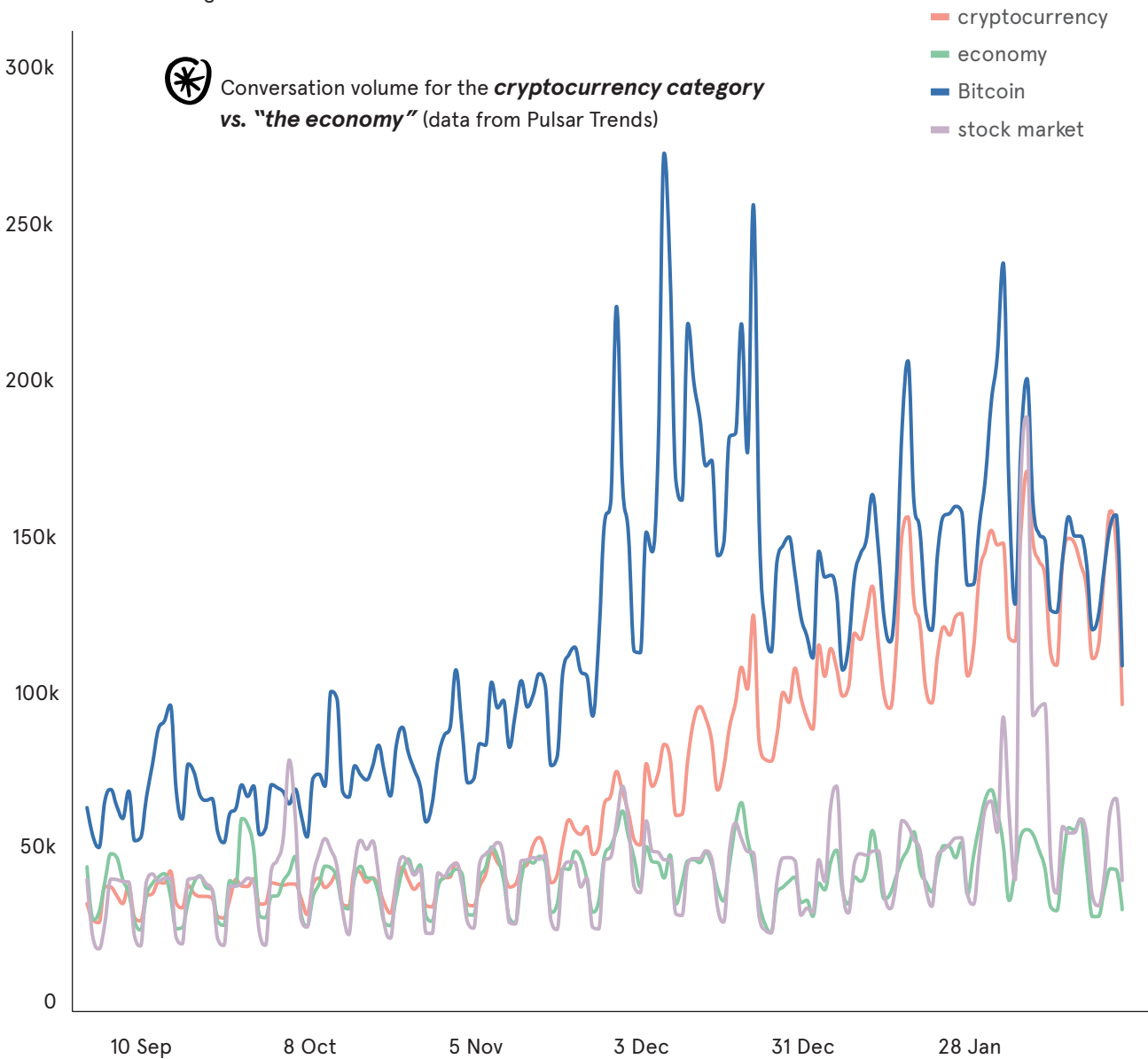
Ethereum has seen a consistent upward trajectory month after month, while Ripple interest exploded in December 2017 and has since returned to levels that resemble a more "normal" linear growth trend. Buzz around Bitcoin Cash and Litecoin has also grown over time, albeit with a more erratic pattern marked by temporary surges.



 **Conversation volume** for the **top 5 non-bitcoin** cryptocurrencies (data from Pulsar Trends)

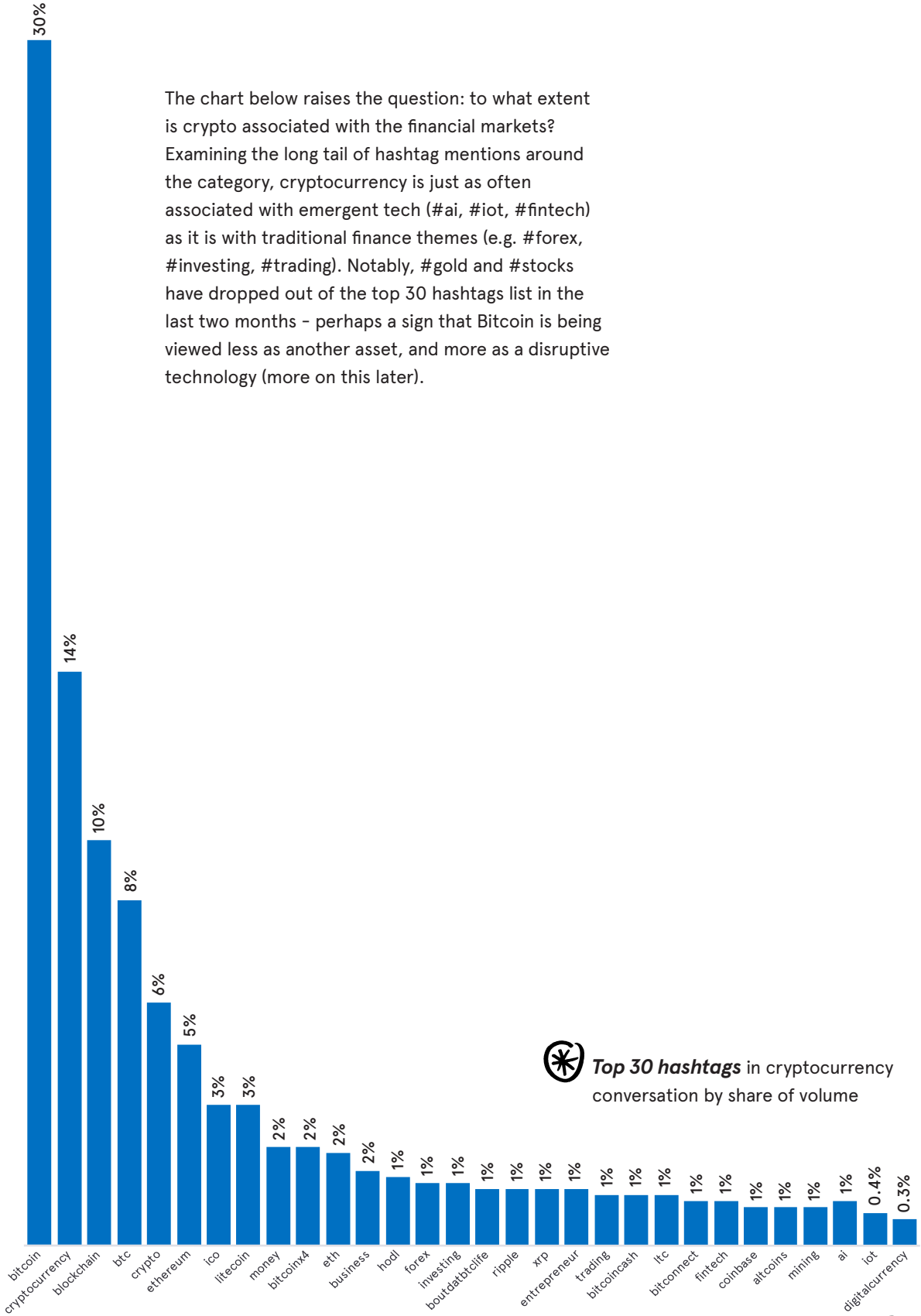
Contextualizing the rise of Bitcoin and cryptocurrency interest against broader financial market interest provides a striking view: over the last six months, crypto conversation has trended higher than conversation around the *economy* and the *stock market* ("stock market," "stocks," "dow," "#DJIA," etc.). Interestingly, we also see generic mentions of cryptocurrency gaining ground on Bitcoin, as over time the rising tide of Bitcoin seems to lift all boats.

 Conversation volume for the **cryptocurrency category** vs. **"the economy"** (data from Pulsar Trends)



The chart below raises the question: to what extent is crypto associated with the financial markets? Examining the long tail of hashtag mentions around the category, cryptocurrency is just as often associated with emergent tech (#ai, #iot, #fintech) as it is with traditional finance themes (e.g. #forex, #investing, #trading). Notably, #gold and #stocks have dropped out of the top 30 hashtags list in the last two months – perhaps a sign that Bitcoin is being viewed less as another asset, and more as a disruptive technology (more on this later).

 **Top 30 hashtags** in cryptocurrency conversation by share of volume





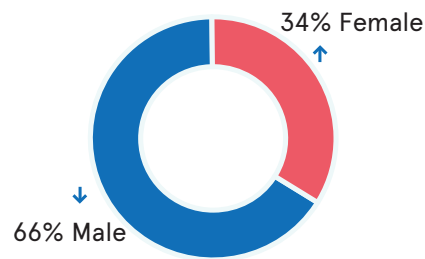
Who is driving the conversation?

Profiling the mainstream cryptocurrency audience

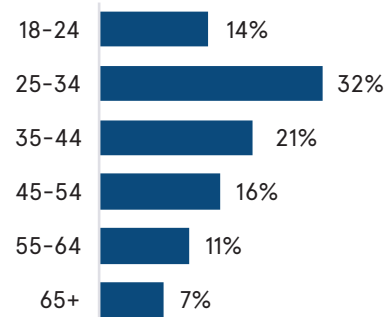
In addition to analysis of the social conversation itself, we isolated data about users participating in the conversation in order to build demographic- and affinity-profiles of the audience.

Cryptocurrency social audience demographics

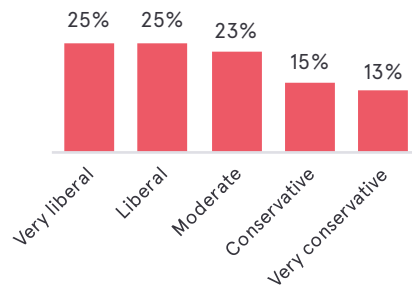
• Gender and age



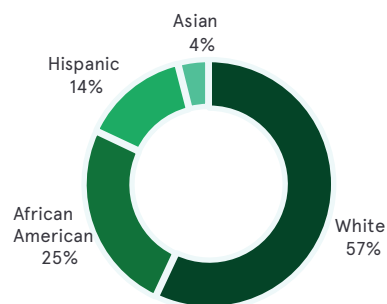
→ 33% Parents



• Political affinity



• Ethnicity



→ Audience size: 1.5MM

Crypto buzz is driven by a diverse audience beyond the young, male, tech community

When we think of who the Bitcoin investor or enthusiast is, a Silicon Valley stereotype might come to mind. But examining the online audience, relative to social media platform user benchmarks, cryptocurrency discussion is well distributed across age segments and other demographics. While the social audience is majority male, women are well-represented—over 425K women have posted about cryptocurrency in the last five months.

Throughout our study we've seen some notable shifts in volume around *what* people talk about, but the *who* — the demographic distribution of the audience — holds quite consistent. One of the only visible changes is a very slight decrease in the share of women in the audience; women were more vocal toward the end of 2017, as the price of Bitcoin was sharply ascending to \$19K.

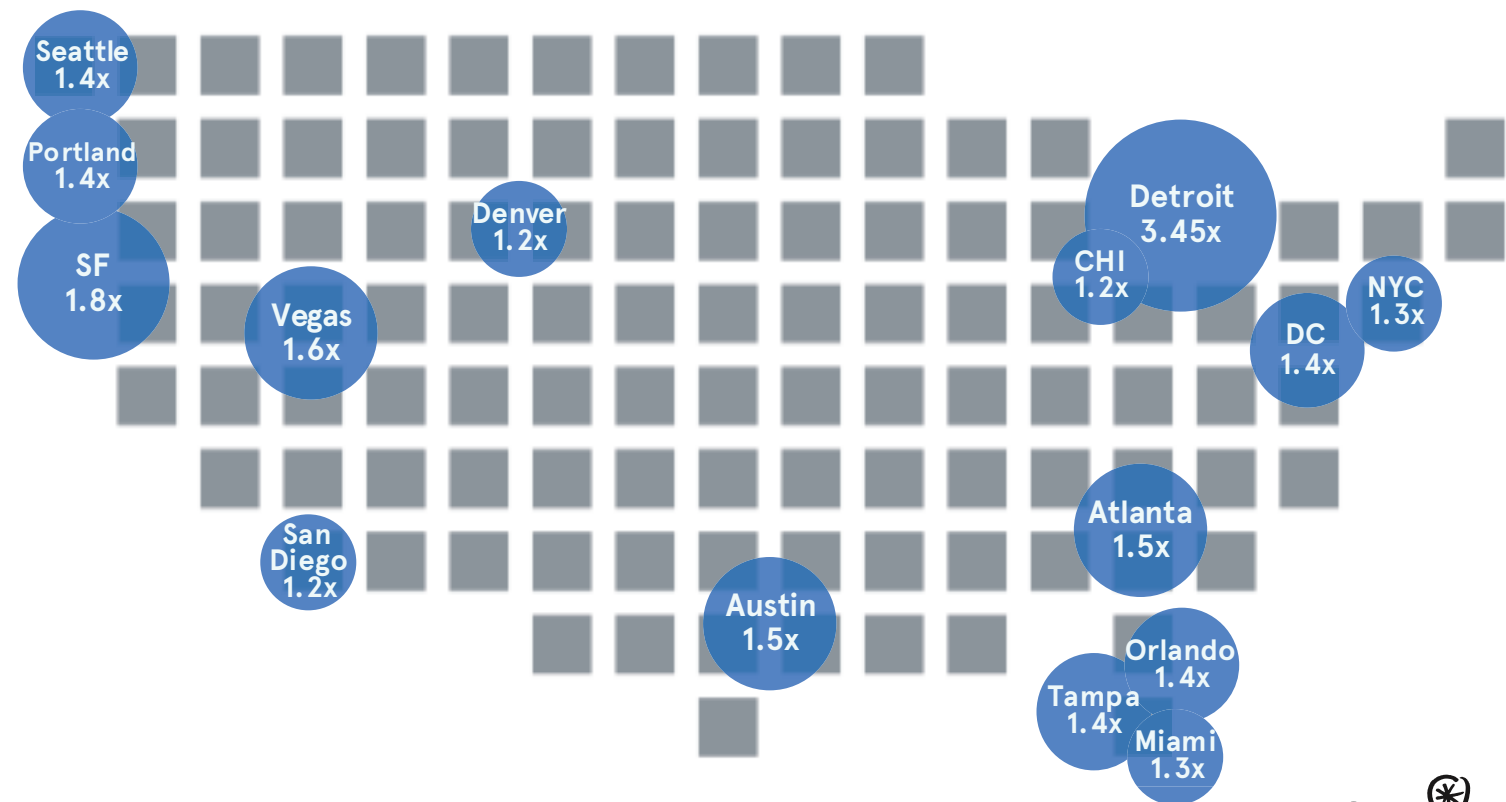
Analysis of political affinities shows a social audience that leans liberal. This indicates that the libertarian and progressive values common among the core crypto community are likely reflected in the mainstream audience.

Top cities among the audience tend to be major tech-driven business markets, and smaller startup hubs, with few outliers

Compared to other demographic data points, regional diversity within the American crypto audience is limited. Most cities that over-index for Bitcoin conversation are coastal business centers, or smaller, tech-forward cities such as Denver and Austin. Perhaps the most interesting outlier is the Detroit audience, which proportionally plays a

much bigger role in cryptocurrency conversation than it does in social media conversation generally. One theory is that the city's turbulent economic history may play a role here, pushing a relatively high portion of the population toward a crypto mentality — one where the people are less reliant on banking trust, government bailouts, etc.

Top 15 cities for cryptocurrency **conversation volume** (over-indexing relative to the overall social media user base)

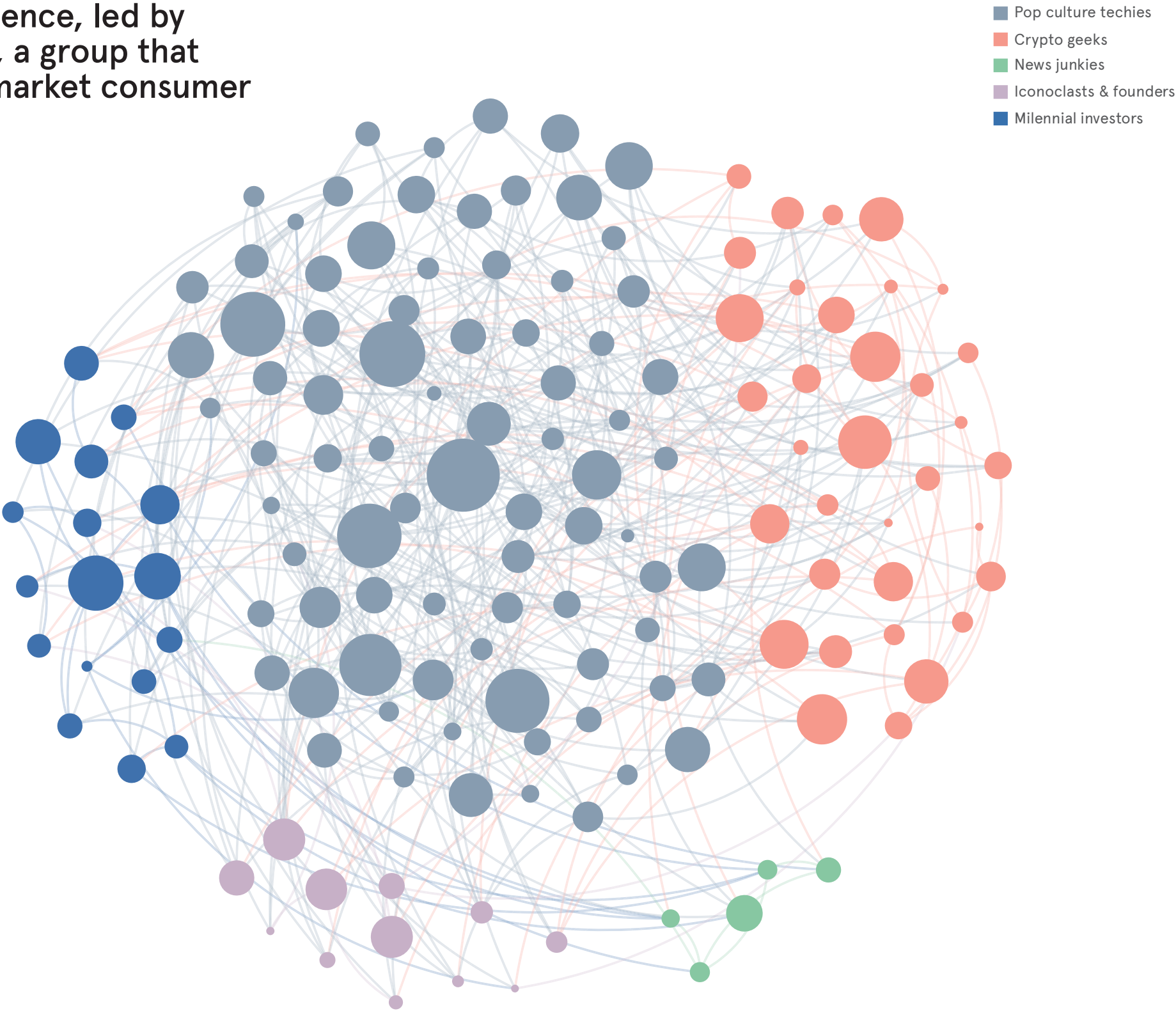


There are 5 main persona segments within the crypto audience, led by 'Pop Culture Techies', a group that resembles the mass-market consumer

When analyzing a population of people, or target market, there are generally two layers to consider: demographics and psychographics. Social media data can provide insight into both of these layers and, different from traditional market research, allows for the study of connections between people, at scale – the study of the social graph. This takes us a step closer to true sociological insight, understanding the interest patterns, cultural dynamics, and interconnectedness of a large audience.

To conduct this type of analysis, we isolated users discussing cryptocurrency on Twitter, specifically those talking about crypto considerations, their investment outlook, and emotions. Ultimately, we extracted data for more than 10K unique users and ran it through *Audiense’s tool for segmentation analysis.

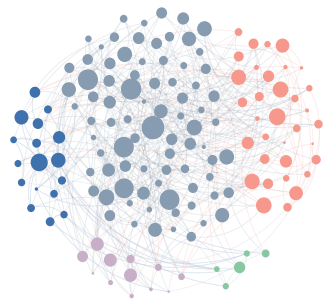
Audience mapping revealed 5 main segments, which represent 80% of the cryptocurrency social audience. The map on this page depicts a sample of the nodes within the audience, representing more or less influential users by size, as well as how they cluster and connect to one another.



* Audience segmentation is done utilizing integration between Pulsar TRAC and Audiense Insights.

While the cryptocurrency audience is demographically diverse, their top affinities follow a common thread, with a strong focus on technology, finance, and entrepreneurship.

That said, 5 separate personas emerge, distinct in terms of why they are drawn to crypto, who influences their thinking, and how important crypto is relative to their broader interest profile:



→ **Pop Culture Techies (44%):** This mainstream group has a penchant for tech culture, but are generally not technology leaders themselves; they also show strong interest in celebrities and sport.

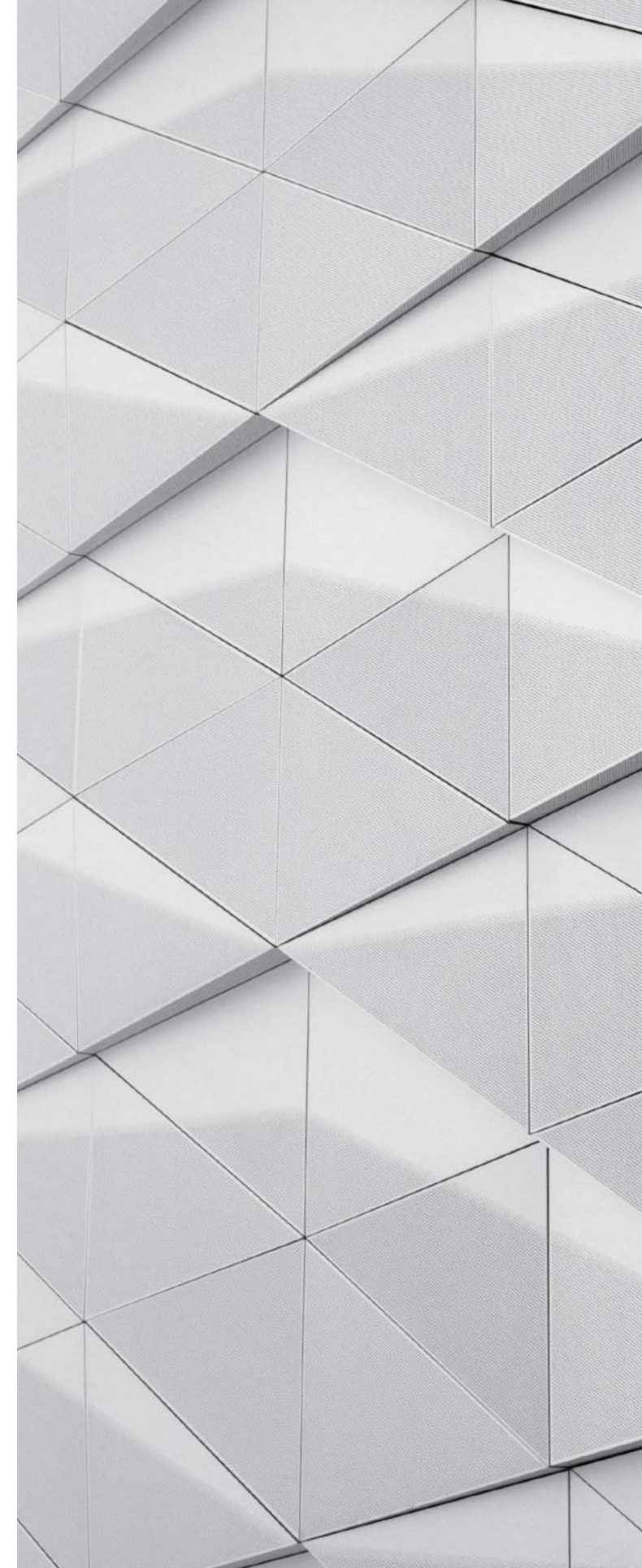
→ **Crypto Geeks (18%):** Thought leaders, developers, and investors who self-identify as participants in the cryptocurrency space; most likely to be early adopters.

→ **Millennial Investors (9%):** Generally quite young, these stock market amateurs and professionals see crypto as an exciting new investment frontier.

→ **Iconoclasts & Founders (7%):** This group is comprised of many startup founders/leaders; they tend to follow outspoken entrepreneurs with a contrarian attitude.

→ **News Junkies (2%):** The most mature segment, they are hyper-engaged around the latest news in politics and business, often following establishment media brands as well as digitally-native sources.

Segment	Gender		Age		Affinities <small>A sample of the people & brands they show a distinctive interest in</small>
	More Male <	> More Female	18-24 <	> 35 +	
44% Pop Culture Techies					
18% Crypto Geeks					
9% Millennial Investors					
7% Iconoclasts & Founders					
2% News Junkies					





Adoption & interest

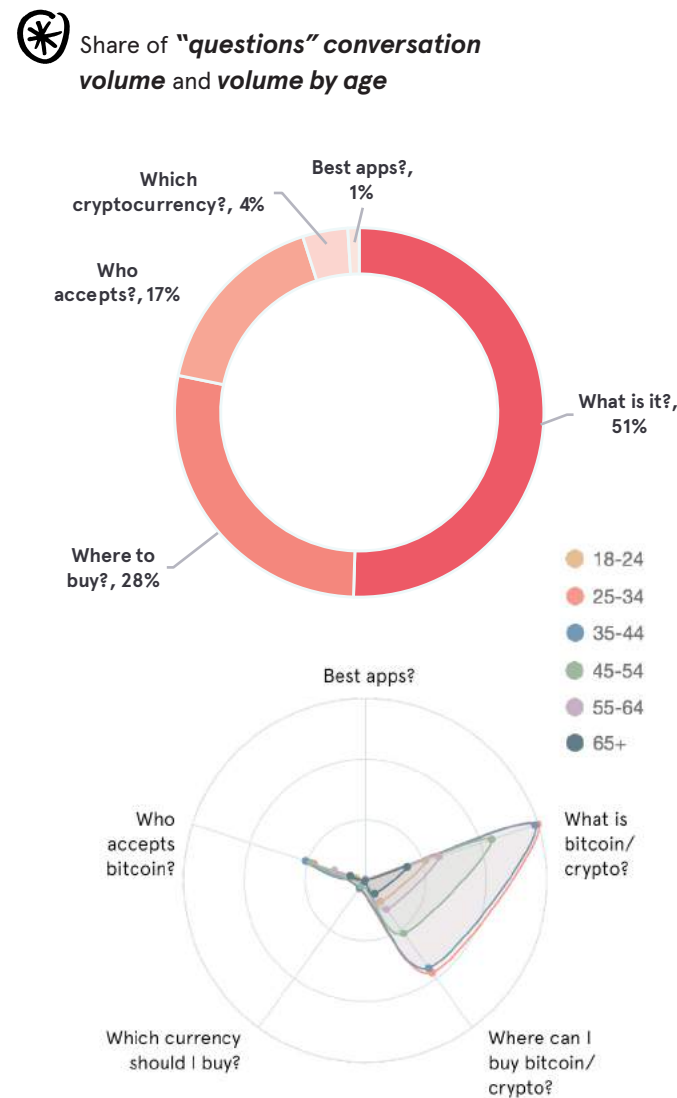
Evaluating perception of cryptocurrency as a technology

The recent explosion in cryptocurrency interest raises questions about how well the public understands the technology, and how they feel about its future. We've set out to measure how these factors of comprehension and emotion are influencing participation in the space.

The mainstream audience is still at square one in its understanding of cryptocurrency, asking: what is it?

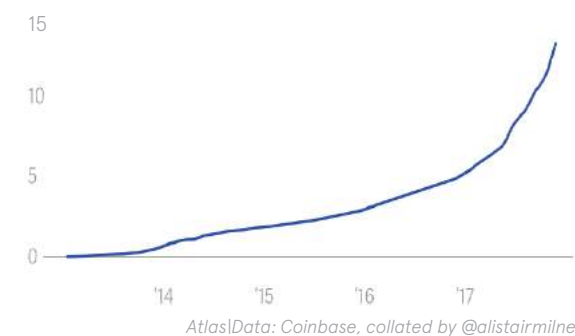
Of conversations in which people are asking questions about Bitcoin and other cryptocurrencies, a majority are asking, *What is it?* This holds true across all age groups and is most pronounced among people 35–44 years old. 25–34 year-olds show a slight edge in terms of eagerness to invest, leading the *Where to buy?* conversation. And interestingly, 45–54 year-olds drive the *Who accepts?* conversation, suggesting that this age segment is more likely to judge the legitimacy of a currency by the strength of its payment use cases/applications.

This lack of even a basic understanding of cryptocurrency — what it is, how it works, and why or if it's valuable — viewed alongside Bitcoin's hockey-stick price chart, leads many to believe we're in a bubble. The logic may flow as follows: prices are skyrocketing, yet most investors do not understand what they are investing in and cannot prove its value, which signals a market propped up by pure speculation — this is a bubble! However, others see a different story forming, a story better told by an adoption curve than a price chart. Among the early adopters/early majority we've identified talking about crypto, 51% still seek to understand the fundamentals, basic use cases, and applicability to their lives. What if, instead of labeling crypto the hot new asset class, we instead thought of cryptocurrency as a new technology?



Bitcoin has been in existence since 2009, though our data suggests we just hit the tipping point of mainstream awareness as of late 2017. Or, we can give the benefit of the doubt and start the clock in 2015, at which point we first see meaningful levels of social buzz start to register. Either way, that means we're still only one to three years into crypto's breakout. In this time, adoption rates have begun to trace the start of an *s-curve*, a progression emblematic of many of history's game-changing innovations (examples pictured below). Referencing Coinbase's user growth as a simple proxy, this exponential growth trend in cryptocurrency usage is clear. We also see this trend mirrored in search and social conversation behavior.

 Number of **Coinbase** users (millions)



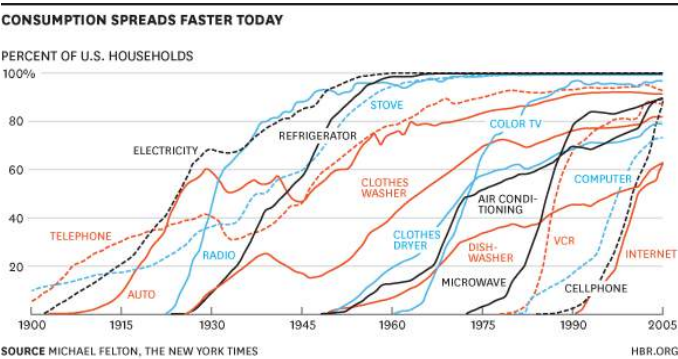
"I'm starting to take the controversial position that I'm less looking at a financial market chart and more looking at a graph for adoption rates. \$BTC"
—@parabolictrav



Let's zoom out for context

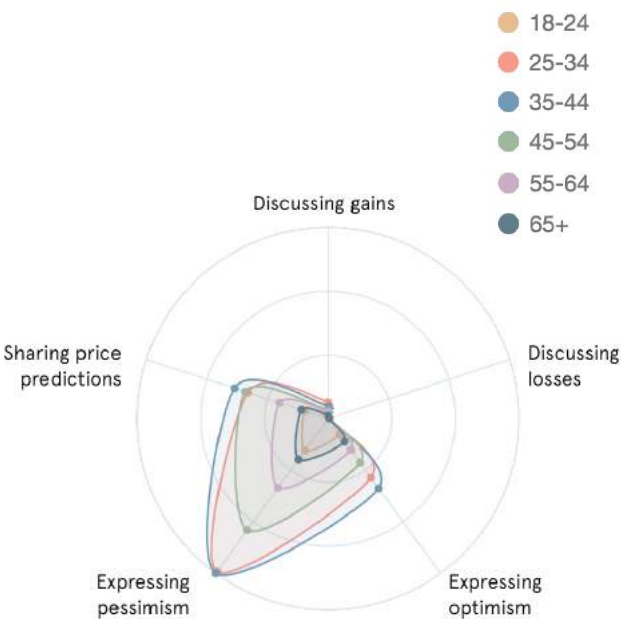
Technological adoption is happening faster than ever, but it still takes years for a new technology to truly go mainstream in terms of usage. It took 10+ years for the internet to reach 50% household penetration in the U.S. If we can look past the price chart and think about the potential for cryptocurrency in the next 3 years, given parabolic growth in users, search interest, and social media conversation, where might we be in three to five years time?

What's not clear — and won't be clear until we have the opportunity to look in the rear-view mirror — is whether or not the recent dip in price, search, and social buzz volume is just a blip on the radar or a signal of a greater negative trend. Prices are impacted in the short term; is it also a stumble on the way to adoption?

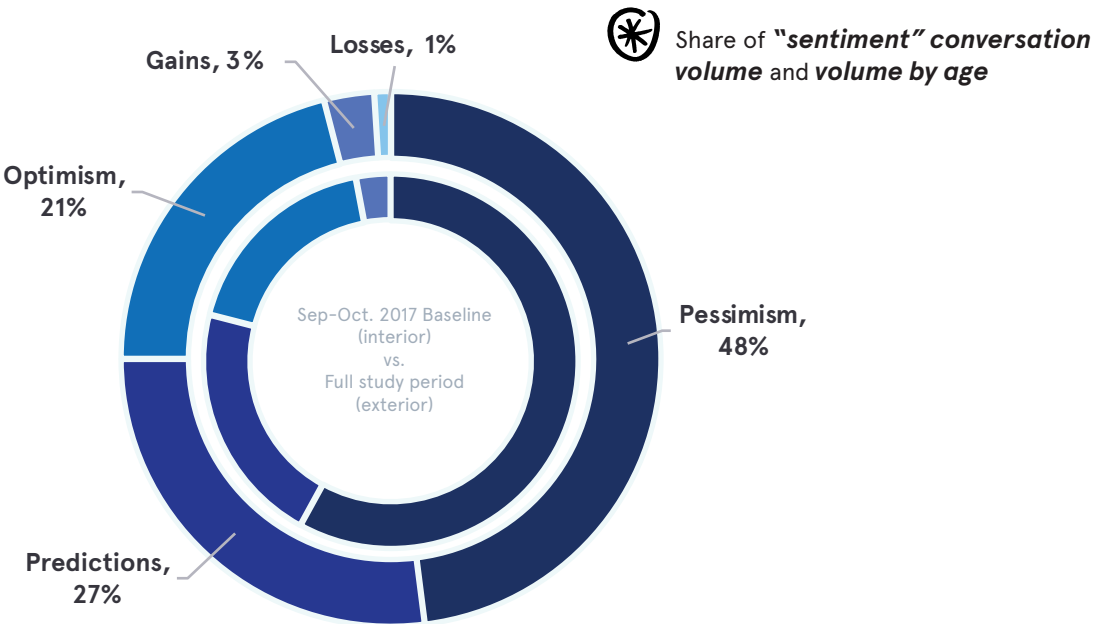
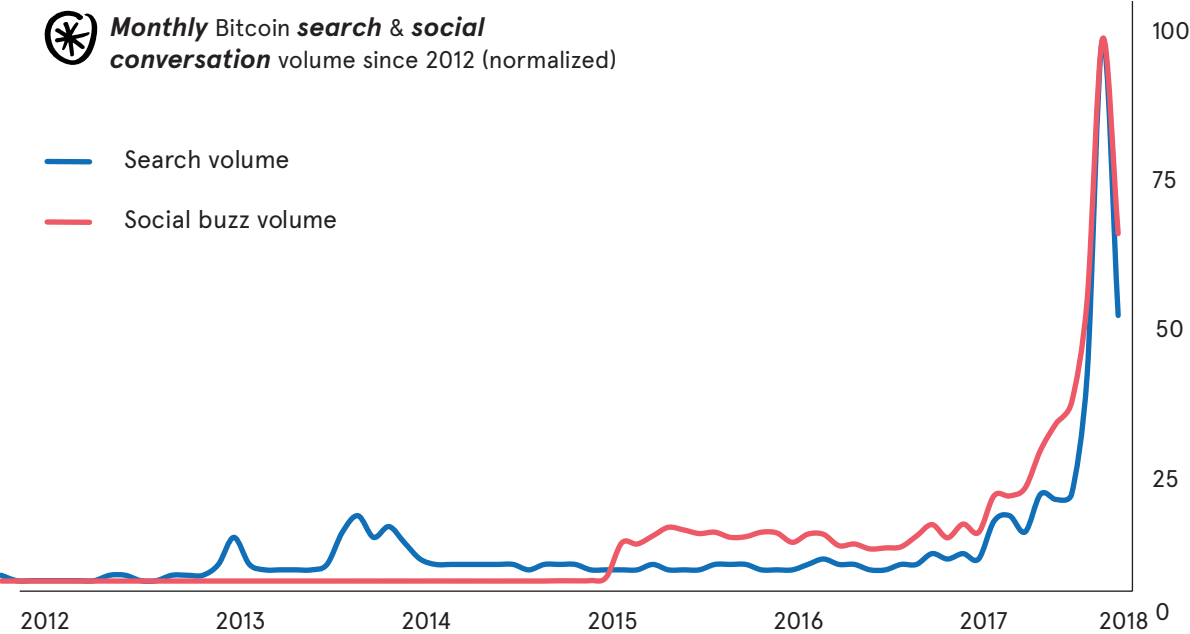


Sentiment tides have shifted in a positive direction, but pessimism still prevails

Moving beyond volume measures (price, adoption, searches, etc.), social data uniquely allows us to analyze sentiment — how people *feel* about cryptocurrency. Despite the many positive indicators around crypto, the overall climate may best be described as “skeptical,” as *pessimism* leads the emotional chatter. However, it seems opinions are gradually changing course; since mid-October, *pessimism* has decreased by more than 10%, while *optimism* and *predictions* conversations have increased. The 35+ segment of the audience have helped drive this shift in perception, becoming notably more optimistic in the last several months.



Monthly Bitcoin search & social conversation volume since 2012 (normalized)



Blockchain is the hook that stokes mainstream belief in cryptocurrency, while other tech attributes fade to the background

While a majority of the audience openly admit a fundamental lack of understanding of cryptocurrency, or of Bitcoin specifically, many are quick to talk about Blockchain. The idea of a cryptographic ledger is the top technical attribute of cryptocurrency that people discuss. This buzz is surely spurred on by corporate messaging; just as enterprise businesses have evangelized “the cloud” ad nauseam, Blockchain is now invoked as a way to announce another new wave of innovation to the marketplace.

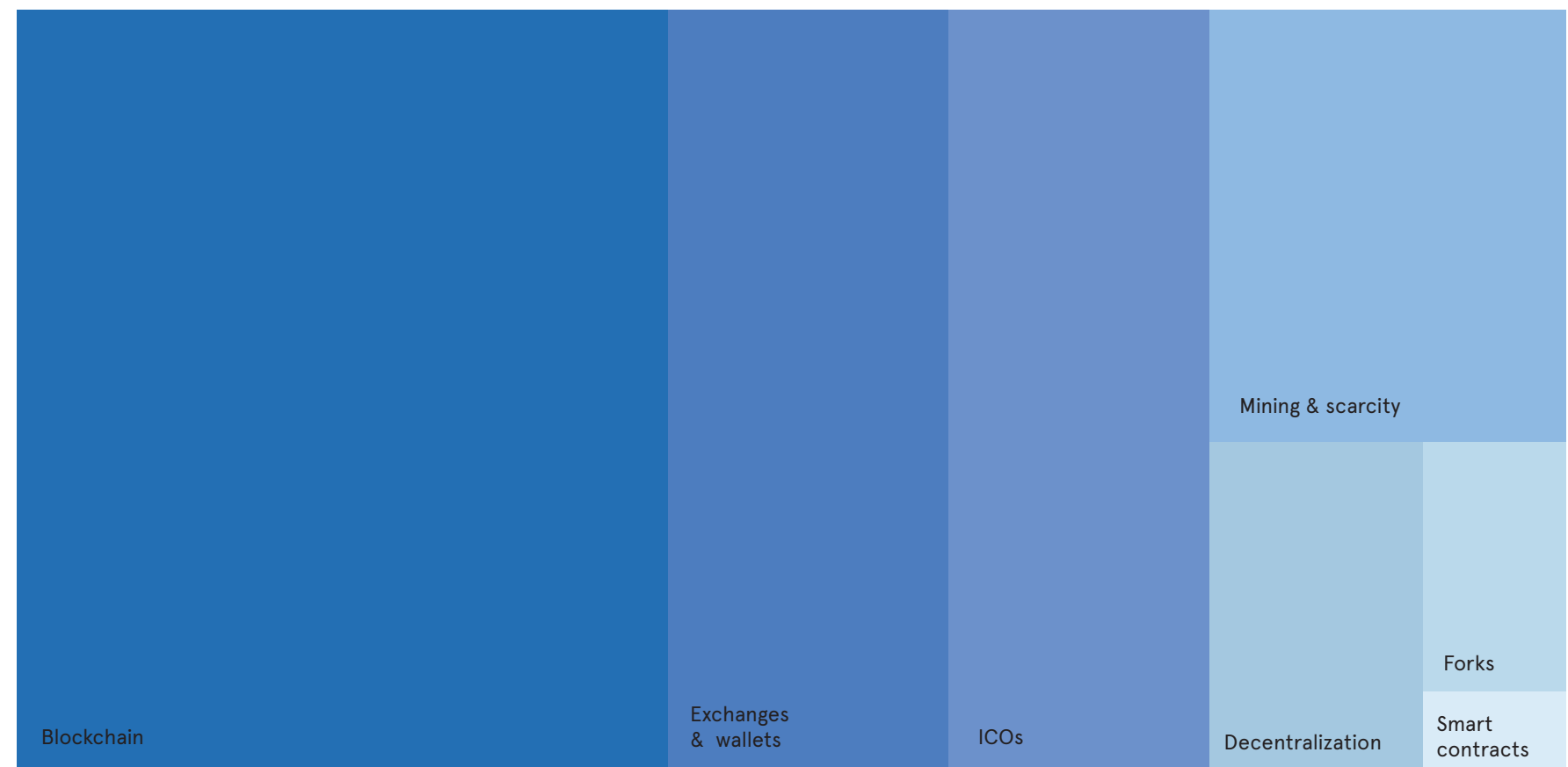
Blockchain attracts roughly 2x the amount of buzz about Exchanges, Wallets, and ICOs combined, which is notable as these latter attributes are arguably more closely tied to the average investor’s/user’s experience. Practically everyone trading or holding cryptocurrencies needs to visit an exchange to buy in, and needs some sort of wallet to store their holdings; other, more adventurous investors may even want to get in on the ground floor through ICOs (initial coin offerings - like an IPO for cryptocurrencies).

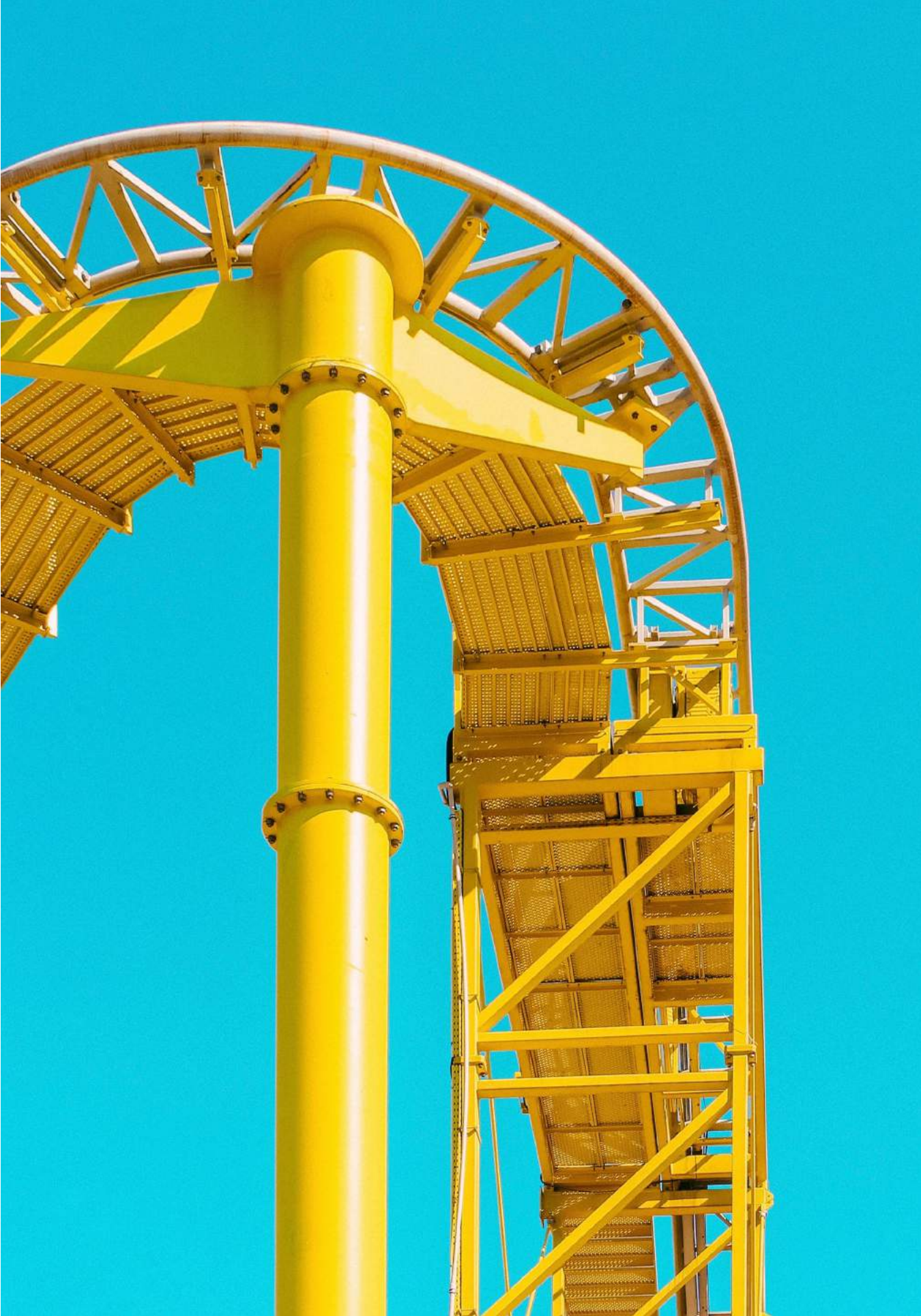
Furthermore, the attributes that ascribe value to a cryptocurrency like Bitcoin – namely its scarcity and decentralized nature – are discussed even less often. Ideas such as mathematical scarcity, security through cryptography and proof of work, and the newfound ability to circumvent trusted third parties, have not yet gained traction among the mainstream.

So why does Blockchain rise to the top? Whether consumers are convinced of its potential or are simply playing back effective marketing, Blockchain has proven its stickiness. Perhaps it’s the perfect “reason to believe,” a perception lever that boosts confidence in crypto as an investment and lends a sense of technological longevity. Think: Blockchain as the anti-bubble.



Top “technical attributes” of cryptocurrency by conversation volume





Motivations & barriers

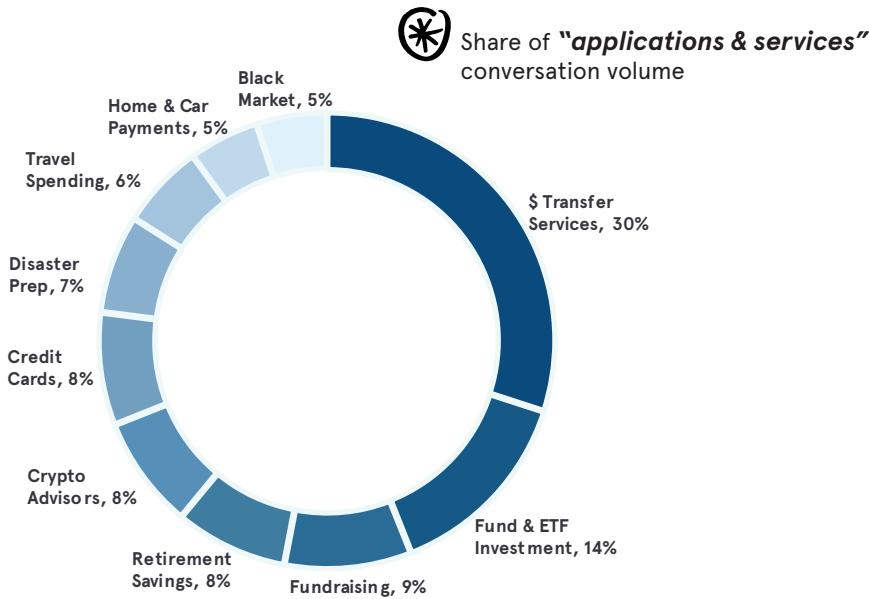
Analyzing how the mainstream discuss usage and investment considerations

There has been a rush to get into crypto for the short-term gains and potential long-term upside — but what other uses are people discussing beyond trading and holding? For those hesitant to jump in, perhaps questioning the true value or risks, what exactly is holding them back?

The killer app that people want from cryptocurrency is frictionless payment & money transfer

Current behavior sees Bitcoin’s main use case as a store of value, rather than a liquid payment system. Like gold, investors tend to buy and hold Bitcoin, expecting some degree of long-term stability and potentially huge upside (this behavior is also common with many other cryptocurrencies). However, when discussing applications of, and support for, cryptocurrency, people often call for frictionless money-transfer. Conversation around integration with transaction services such as Paypal, Square, and Western Union is frequent, outpacing buzz about crypto’s potential role in new investment funds and advisory services, Travel spending, Fundraising, etc.

Want a hint about the public’s long-term outlook? A not-so-insignificant 8% of all conversation about cryptocurrency use cases mention retirement savings.



“[crypto] allows transfer of value without any 3rd party involved. You ever tried a wire transfer? Cost \$40 and takes days”

“It’s now cheaper to send money via Western Union than bitcoin. Oh the irony!”

“Anyone know if I can send bitcoin through Venmo? Asking for a friend”

“All my cryptos I have are hold. I have my 401K through my job at hospital, and consider this a secondary retirement fund...”

“Is bitcoin, or any cryptocurrency for preppers? #preppertalk...”

“I still envision the day I can pay for my hotel rooms and flight tickets using cryptos. I also envision the day I don’t have to bring any cash when I travel.”

Perception of cryptocurrency as an enabler of “shady” business has faded

Those familiar with the early days of crypto buzz may remember the unfavorable narrative around Bitcoin, fueled by the media’s focus on Bitcoin’s use on the ‘dark web’ (see: Silk Road). Fast forward to today, and 95% or more of public chatter around cryptocurrency use focuses on legitimate applications. Buzz around the role of cryptocurrency in black market activity such as weapons and drug trading has diminished. At this point, it is more common to see crypto referenced in other obscure circles, namely disaster prep discussion: communities of “preppers” consider holding cryptocurrency as a fail safe against the possibility of a collapse in the banking system.



Among the mainstream, security concerns are the main barrier to entry

Measuring public perception of cryptocurrency — or any other entity, brand, or trend, for that matter — invites complexity. There are multiple signals to interpret from social data, which can't simply be reduced to one sentiment data point. In the case of crypto, sentiment analysis shows a slant toward pessimism or skepticism, often expressed in terms of one's price predictions. Meanwhile, from the same dataset we also find clear evidence that perception around Bitcoin's legitimacy is improving, including strong demand for various use cases beyond "holding" as a store of value.

Analysis of specific considerations allows us to draw more definitive conclusions. Of course, not everyone contributing to the

cryptocurrency buzz is rushing to buy in, but these users are dropping hints about what they see as either the main motivators or barriers to purchase and usage. When it comes to top considerations there is some variation across age groups, though concerns about *security* are generally top of mind. Many articulate this through worries about the "safety" of their investment, or through questions about the vulnerability of the cryptocurrency ecosystem: Is my Bitcoin protected, insured? What if I get hacked?

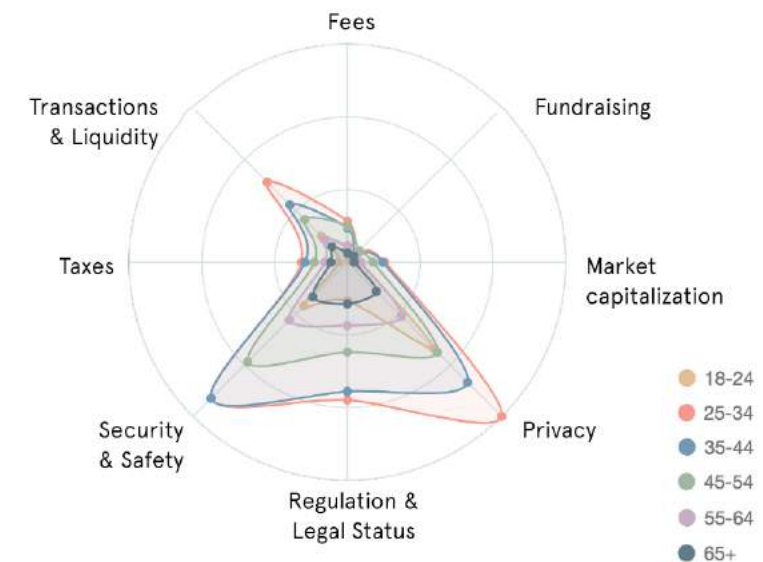
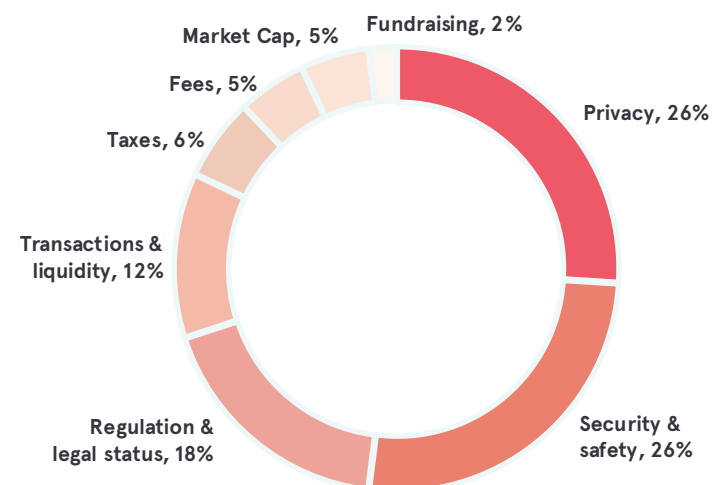
Accounting for just as much volume as *security*, *privacy* discussion is more likely to be favorable, revealing consumers' motivations for crypto investment and trading. This portion of the conversation tends to include positive mentions around themes such as anonymity/identity, encryption and traceability.

On the other hand, and running counter to one of our initial hypotheses, volume around government *regulation* and legal considerations is relatively low. Negative buzz about taxes and fees is also minimal, predominantly driven by older members of the audience. Here is a quick look at the top considerations by age segment:

- 25-34 year-olds lead *Privacy* conversation
- 35-44 year-olds lead *Security & Safety* conversation
- 45-54 year-olds are relatively more vocal about *Market Cap & Fees*



Share of "*considerations*" conversation volume and volume by age





Conclusion

It is clear that Bitcoin, and cryptocurrency generally, is creeping into the mainstream consciousness. While there's still plenty of skepticism around this relatively new technology and asset class, many social data indicators point toward a more positive outlook: pessimism is on the decline, the topic is reaching a diverse online audience, and rising prices are correlated to conversation momentum. We've moved past the point of niche interest and into an early phase of public participation in cryptocurrency; whether that move is feeding a bubble or a healthy market, time will tell.



About the author

Marc Geffen is a consumer behavior and culture researcher, forever curious about how systems, technology, and communications impact how people move through the world. As a research director, he leads custom projects for Pulsar clients, leveraging social data analysis alongside other research methodologies to deliver strategic guidance for marketing, design, and commerce. Follow him on: @Marc_it



Pulsar is an advanced audience intelligence platform that helps you find the story in the data.

Pulsar leads the evolution of social listening by bringing all the digital signals of your audience into one place and leveraging the power of data visualization and AI to help you uncover the personas, trends, behaviors and affinities that will make your marketing bullet-proof.

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