

Demystifying Crypto

Shedding light on the adoption of digital
currencies for payments in 2022



Payments for the digital economy



Checkout.com is a global payment solutions provider that helps businesses and their communities thrive in the digital economy.

Purpose-built with performance, scalability and speed in mind, our modular payment platform is ideal for enterprise businesses looking to seamlessly integrate better payment solutions. We offer innovative solutions that flex to your needs, valuable insights that help you get smart about your payment performance, and expertise you can count on as you navigate the complexities of an ever-shifting world.

It's why businesses like Crypto.com, Binance, Sony, SHEIN, Grab, Frasers Group and Moonpay trust Checkout.com.

Since 2012, we've grown to almost 2000 employees in 19 global offices, each one of us passionate about helping thousands of businesses worldwide grow through our next-generation payment platform.

Find out more at checkout.com/crypto
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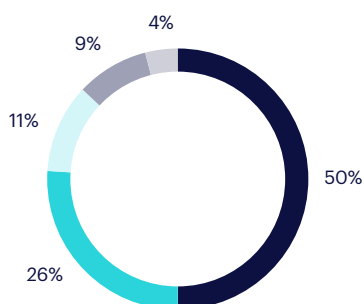
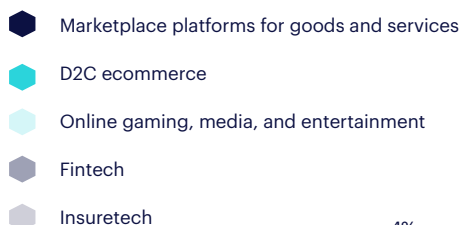
Methodology: This report looks at what is happening at the forefront of the digital economy. That is to say, we look at digital-first businesses and consumers who are not necessarily crypto native but are certainly crypto aware and crypto curious. The majority of the consumer sample is under the age of 45 and is tech-savvy with a relatively strong grounding in crypto and Web3 compared with total global populations. The majority of our sample has not yet held a digital asset but 40% plan to do so in 2022 and 6% have already used digital assets to purchase NFTs. A quarter of the sample identifies as keen gamers and 1% as professional gamers and we know this cohort to be early adopters of crypto, with 75% of our gaming respondents having already held a digital asset. The survey was conducted online and is therefore highly skewed towards a population with internet access; 86% of respondents own a smartphone. Throughout the report most consumer data has been cut per country to indicate clear geographical differences. The consumer segment featured most dominantly throughout the report is the 18-35-year-old population. This age group represents the natives of today and tomorrow's digital economy. They are going to be important for businesses thinking about the consumer base and workforce whom they will be serving for the next 30 years or more. Businesses surveyed are digital-first platforms and marketplaces, SaaS, gaming and entertainment, fintech and ecommerce merchants. 67% of merchants surveyed serve a minimum of 6 countries. 25% of merchants surveyed serve 16 countries or more. It is important to note that the merchant sample purposefully represents an online-first cohort of businesses who represent the digital economy first and foremost. Job titles surveyed included CEOs, CFOs, COOs, Group Treasurers, heads of ecommerce, payment leaders and other senior finance leaders. Our surveys were run fully anonymously by Qualtrics during February 2022.

Who did we survey?

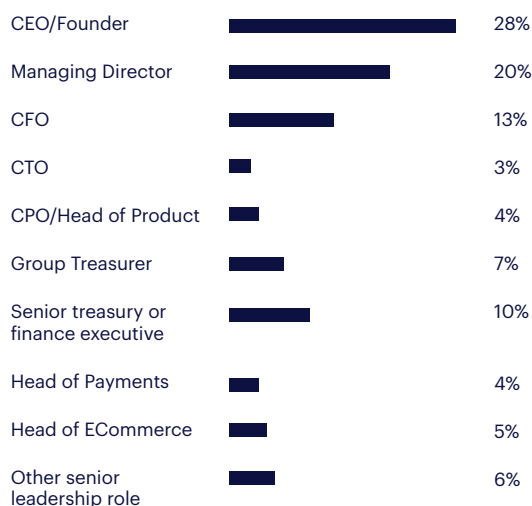
The businesses

A panel of 3,000 mostly platform-based online B2C marketplaces, fintech and ecommerce businesses across 10 countries

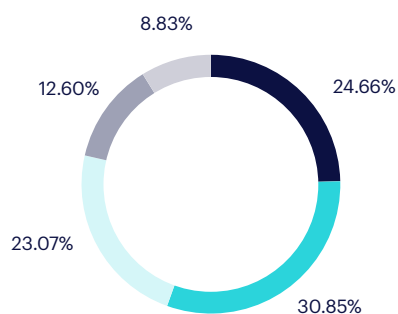
Sector



Job titles



Company Revenue



Country



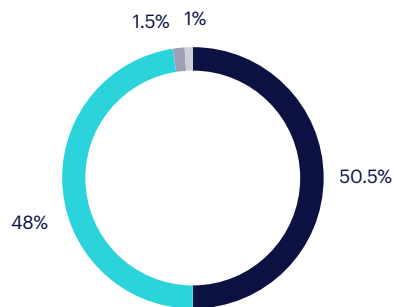
Who did we survey?

The consumers

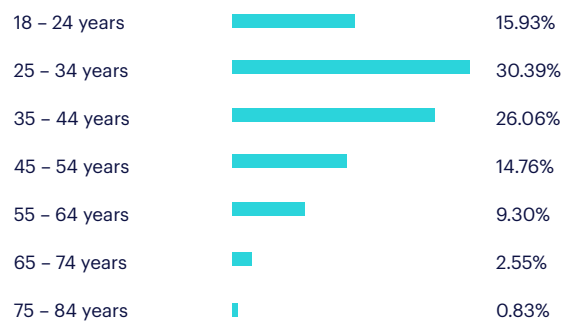
A mostly young and tech-savvy panel of 30,000 consumers across 11 countries

Gender

- Women
- Men
- Non binary/other
- Prefer not to say



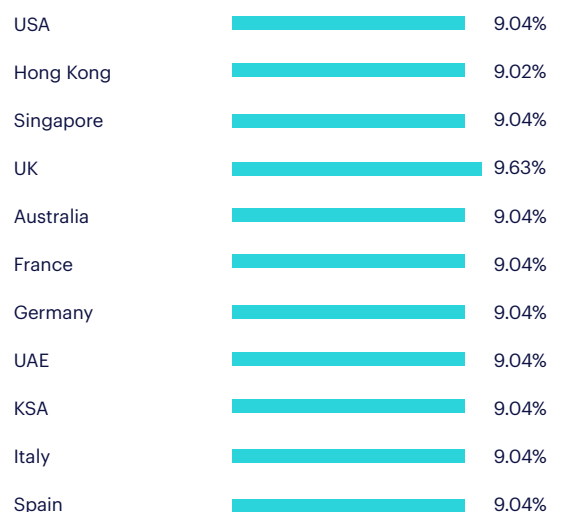
Age



Tech-savvy and crypto-curious

- 86%** of respondents own a smartphone
- 25%** of respondents class themselves as keen online gamers
- 11%** of respondents say they are full or part-time gig economy workers
- 22%** of respondents use fintech apps for wealth and investment management
- 13%** of respondents seek financial and investment advice from peers on social media and online chatrooms
- 65%** of respondents have never held any form of digital asset
- 42%** of respondents say they do not know how to buy a digital asset
- 6%** of respondents have bought an NFT

Country



Foreword

**Jess Houlgrave**

*Head of Crypto Strategy,
Checkout.com*

At Checkout.com our mission is to enable businesses and their communities to thrive in the digital economy.

Thriving today involves understanding and being ready to harness cryptocurrencies, and whether you're a crypto trading platform building a reliable on-ramp from fiat currency or an ecommerce merchant trying to decide what the advent of stablecoins means for you, we're here to help. We've spent years building technology that truly flexes to the unique demands and DNA of each and every business we serve. This makes us acutely aware of how fast the world moves, not least when it comes to the ways in which consumers expect to be able to transact all over the world.

As the technology underpinning payments evolves and improves, we see consumers adapt and adopt at pace. Businesses must pivot in line with consumer demand in order to remain both relevant and profitable. Meanwhile, fintech and payment technologies are hard at work enabling greater financial inclusion, providing ever more individuals and communities the autonomy to store and move value according to their distinct needs.

In the meantime, we have also been partnering with the world's biggest crypto exchanges, providing the on-ramps and off-ramps that enable people to move fiat currency in and out of cryptocurrencies. As a member of the Bank of England's central bank digital currency (CBDCs) Engagement Forum, I've had the privilege of partaking in important regulatory discussions and thinking about how digital currencies are shaping the future of money. The questions have become ever more pertinent and urgent.

For the past few years, Checkout.com has been tracking consumer and business sentiment and behavior around crypto, and the year-on-year trajectory since 2020 is significant. More specifically, the desire for young consumers to use cryptocurrencies as a medium of exchange for their everyday goods and services is making its mark on the global map. The use of crypto for payments is not mainstream yet, but the interest in it is significant. And it calls for us all to sit up and take note.

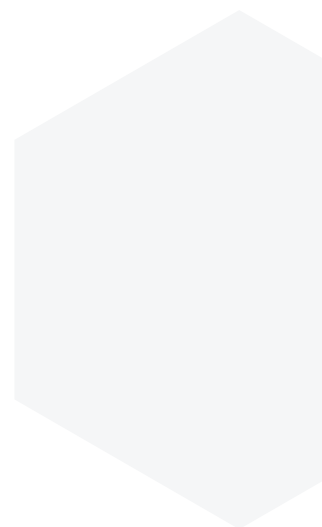
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This report combines our own proprietary research and expertise with insight from a myriad of partners. We unpack behaviors and sentiment drawn from 30,000 consumers around the world regarding crypto payments. We lift the lid on how businesses are reacting, particularly their CFOs, treasurers and payment leaders. And, crucially, we look at some of the cultural, demographic and socio-economic dynamics that are likely to forge the path ahead for the future of money – built on the blockchain. As such we have paid special attention to the 18 – 35 year old population whom we believe will be key to shaping the future of the digital economy as it evolves in the decades to come.

What is apparent from the research is that the crypto world is maturing. Everything in this space moves particularly fast. Progress is iterative and built on ‘micro-experiments’ conducted by early adopters – consumers and businesses alike. We had not anticipated that in the midst of fielding our survey, one of the most visible crypto exchanges in the world (and our partner), Coinbase, would be dropping the most talked-about Super Bowl ad of the year offering free Bitcoin to all!

But we also see an industry increasingly driven by utility, pragmatism and accessibility. Moreover, we see a payment technology which does not merely have the potential to change the way people pay, but to reinvent the very dynamics of the digital economy. This is truly a brave new world and for it to succeed for the good of all, it demands a strong regulatory framework – which we know is in progress – as well as an informed and educated community of businesses and consumers with the knowledge and power to shape something that truly works for us all. We hope this report provides the foundations for that vital knowledge. Our commitment is to keep updating this as everything changes.

Jess Houlgrave



Crypto and Web3: Defining our terms

The world that has been built on top of blockchain technologies is full of jargon and buzzwords. Here we define our use of the key terms in this report. We have also created a glossary with helpful definitions of other common terms.

◆ Crypto

When we write about crypto (or cryptocurrencies) we mean digital assets which exist today and operate on blockchain technology. They are controlled by a private cryptographic key – hence crypto. Unless otherwise specified, we use this term to describe both non-pegged and also pegged cryptocurrencies and stablecoins. This is because they share the same tech protocols and exist as part of the same ecosystem of blockchain-based assets or currencies.

◆ Stablecoins

Our findings show that the general population are not yet well adept at distinguishing between a non-pegged crypto-currency (such as Bitcoin) and stablecoins which are pegged to and backed by another asset, currency or commodity (such as USDC) or have stability in-built through mechanisms such as algorithms. However, there are parts of our analysis where this distinction becomes extremely important. And in those sections, we will be sure to be extremely specific in naming non-pegged crypto versus stablecoins, which are pegged. Corporate treasurers, for example, are very clear on the difference and this is reflected in the terminology applied.

Need more definitions?

[Skip to glossary](#)

◆ CBDCs

Although, as we will see, Central Bank Digital Currencies (CBDCs) – a digital form of fiat issued by governments – are an important part of the wider discussion about the future digitization of payments and money, we do not include CBDCs when we talk about ‘crypto’. Most CBDCs are still a work in progress and some may not be built on the blockchain. Therefore, we always refer to CBDCs as a distinct class of currencies and do not include this in our use of the word ‘crypto’.

◆ Web3

When we write about Web3 we mean the blockchain-based web which is fully decentralized, relying solely on its distributed ledger technology and no centralizing authority. This is unlike Web2, which emerged in the 1990s as the read-write web, characterized by user-generated content and improved user interfaces which gave rise to the centralized big-data behemoth businesses of today. However, what the research shows us is that Web3 does not need to exist in binary opposition to Web2. With a primary focus on utility, we seek to understand how specific aspects of Web3 are likely to change the way consumers and merchants transact and what merchants can do to cherry-pick the bits they want to benefit from.

Executive summary



The joint leap of faith

In May 2021 Checkout.com [hosted a discussion](#) with Visa, FTX and Binance to discuss crypto's 'mainstream moment'. Cryptocurrencies were seemingly 'everywhere', and there were nearly 300 million crypto users in the world¹. But was this merely a 'moment' or was it the beginning of something bigger, more sustained and ultimately much more mainstream? As crypto-ownership soared further, and the sector matured, would we see these currencies finally being used as such, being transacted between individuals and businesses, at scale and all around the world? FTX CEO, Sam Bankman-Fried, said that the next wave of adoption would be a joint leap of faith – 'both the customer and the merchant need to be willing to take the first steps together.'

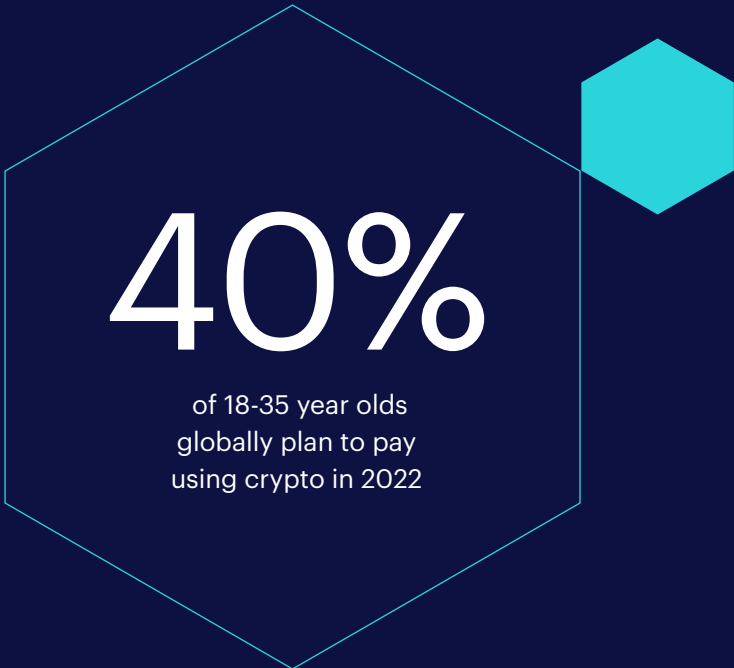
This research report asks: Are customers and businesses willing to take this next step together? To what extent have they already started to do so? What are the barriers and how might they be overcome? What are the risks and how might they be mitigated? What are the benefits to both consumers and businesses and how can those benefits be extended to more people? We wanted to understand how consumers and businesses are engaging with crypto for transacting. But we also wanted to gain insights into their knowledge and trust-levels since these will be important if blockchain-based currency can really take off, sustainably.

To answer all these questions, we extensively surveyed 3,000 enterprise businesses and 30,000 consumers across North America, the UK, Europe, MENA and APAC. The consumer segment featured most dominantly throughout the report is the 18–35 year-old population: the natives of today and tomorrow's digital economy. They are going to be important for businesses thinking about the consumer base and workforce whom they will be serving for the next 30 years or more.

We also interviewed experts in payments, finance regulation and culture. The vast majority of our research was conducted in February 2022; although, for comparative purposes, we also included some references to research conducted in March 2021. However, this report will inevitably only represent a snapshot in time, one which we intend to update in years to come.

Crypto moves toward mainstream

For now, though, the findings are thought provoking: 40% of the 18–35 year-olds say they would like to pay for goods and services with crypto during the course of 2022. Some have already experimented in doing so. However, importantly, the vast majority of such experiments are not wallet-to-wallet transactions, but instead rely on payment processors and schemes whose products help bridge the gap between fiat and cryptocurrencies.



40%

of 18-35 year olds
globally plan to pay
using crypto in 2022

The digital economy is diversifying and its communities are being built around crypto.

Visa, for example, is now partnered with 65 crypto wallets allowing consumers to spend in a variety of ways in transactions that are converted to fiat for settlement. PayPal is another example of a mainstream payment method now supporting consumers' crypto-funded payments.

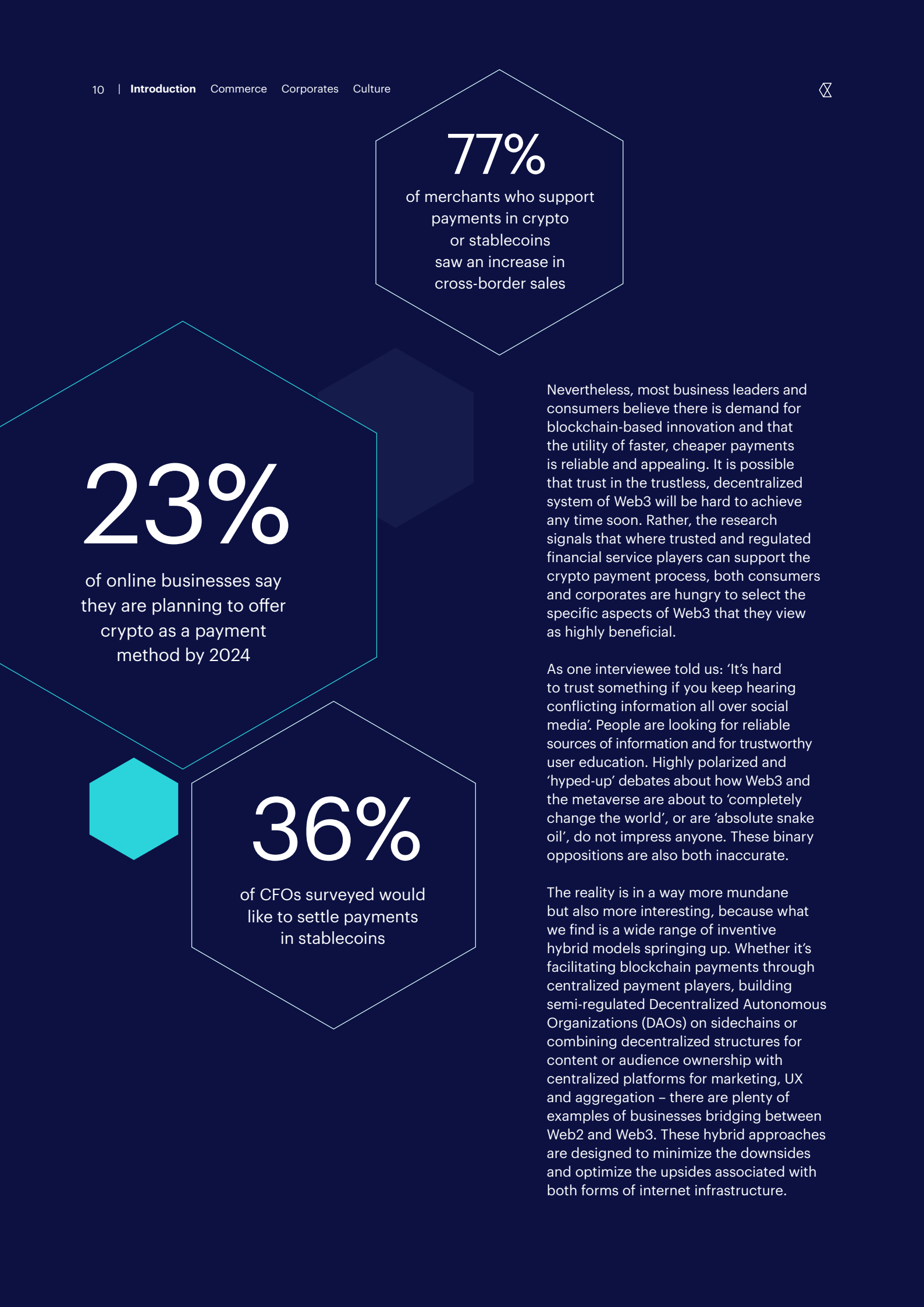
Thanks to a range of third-party players, consumers can tailor their crypto payment experiences with relative ease. Meanwhile 36% of CFOs surveyed say they would like to be able to settle some payments in stablecoins and to hold them on their balance sheets as a particular appetite for B2B transactions in stablecoins is emerging as a focus for businesses.

Our survey sample includes a small but significant community of people who make money from the online gaming, creator and gig economies. We found a larger community of participants, fans and aspiring professionals who are also very active within these economies. The data shows clearly that these communities are early adopters of crypto and have an appetite for being paid, and spending money, in cryptocurrencies. They build independent digital economies with the imaginative and experimental use of NFTs, fan tokens and creator coins and they have high hopes for the autonomy and control which DeFi and Web3 could give them.

Evolution, not revolution

For the most part though, trust and familiarity data shows that businesses and consumers alike still have some way to go towards having 'mainstream' levels of trust in cryptocurrencies and their underlying technologies.





77%

of merchants who support payments in crypto or stablecoins saw an increase in cross-border sales

23%

of online businesses say they are planning to offer crypto as a payment method by 2024

36%

of CFOs surveyed would like to settle payments in stablecoins

Nevertheless, most business leaders and consumers believe there is demand for blockchain-based innovation and that the utility of faster, cheaper payments is reliable and appealing. It is possible that trust in the trustless, decentralized system of Web3 will be hard to achieve any time soon. Rather, the research signals that where trusted and regulated financial service players can support the crypto payment process, both consumers and corporates are hungry to select the specific aspects of Web3 that they view as highly beneficial.

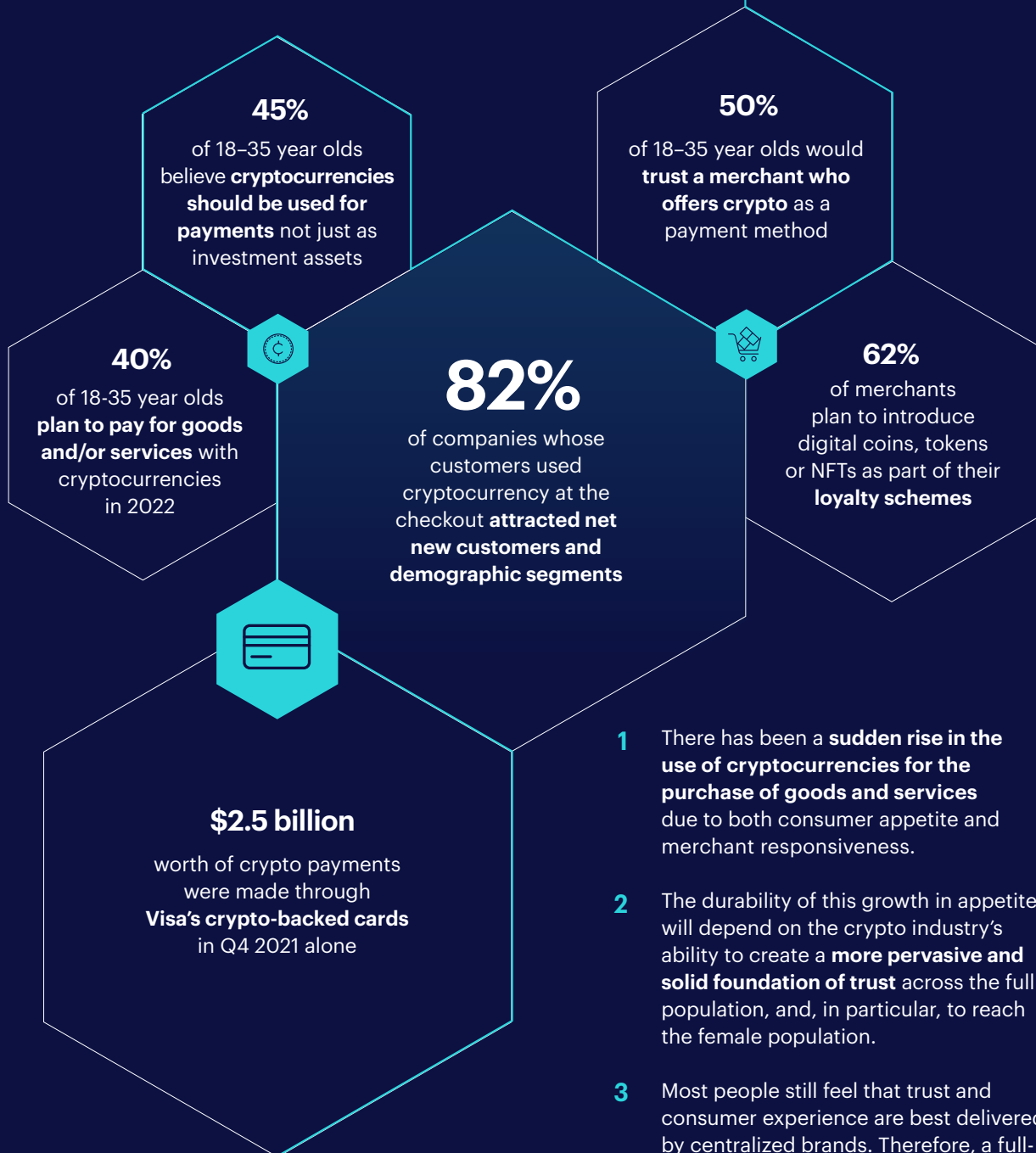
As one interviewee told us: 'It's hard to trust something if you keep hearing conflicting information all over social media'. People are looking for reliable sources of information and for trustworthy user education. Highly polarized and 'hyped-up' debates about how Web3 and the metaverse are about to 'completely change the world', or are 'absolute snake oil', do not impress anyone. These binary oppositions are also both inaccurate.

The reality is in a way more mundane but also more interesting, because what we find is a wide range of inventive hybrid models springing up. Whether it's facilitating blockchain payments through centralized payment players, building semi-regulated Decentralized Autonomous Organizations (DAOs) on sidechains or combining decentralized structures for content or audience ownership with centralized platforms for marketing, UX and aggregation – there are plenty of examples of businesses bridging between Web2 and Web3. These hybrid approaches are designed to minimize the downsides and optimize the upsides associated with both forms of internet infrastructure.

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Key takeaways



- 1 There has been a **sudden rise in the use of cryptocurrencies for the purchase of goods and services** due to both consumer appetite and merchant responsiveness.
- 2 The durability of this growth in appetite will depend on the crypto industry's ability to create a **more pervasive and solid foundation of trust** across the full population, and, in particular, to reach the female population.
- 3 Most people still feel that trust and consumer experience are best delivered by centralized brands. Therefore, a full-scale Web3 revolution looks highly unlikely anytime soon. Instead, the benefits of new blockchain technology will be delivered by those who can effectively **bridge between Web2 and Web3**, offering consumers the best of both worlds.

Beyond speculation? Crypto-backed ecommerce transactions are on the rise.

**Everyone can create money.
The problem is to get it accepted.²**

Hyman Minsky, American economist

Getting money accepted as a payment method hinges on major achievements such as widespread common agreement on value, pervasive trust in that value, the reliable effectiveness of the technology underpinning the transfer of value and the widespread trust in that technology. So, can the world accept cryptocurrencies as money?

Arguably, Bitcoin, the first and most popular cryptocurrency, spent its first 12 years of life blighted by the irony that 'currency' status was probably out of the question. As Wired's crypto writer, Gian Volpicelli, put it: 'If Bitcoin wound up becoming an asset, that was chiefly because an awful lot of people had been persuaded it could not be used as currency.'³ Barriers to acceptance initially included the fact that the network was too slow, it was seen as hard to scale, it had high percentage costs for low value transactions, had 'a whiff of illegality' and it didn't appear to be able to solve for its volatility: 'No one wanted to spend Bitcoin to buy apples and then regret their decision after its dollar value rocketed to the stratosphere.'⁴ And as Adam Jackson at Innovate Finance comments: 'So much of the debate has been around cryptocurrency as an asset and as a particularly speculative asset at that. But if you look at where the benefits ought to be in the future, it is about digital payments and revolutionizing payment systems.'

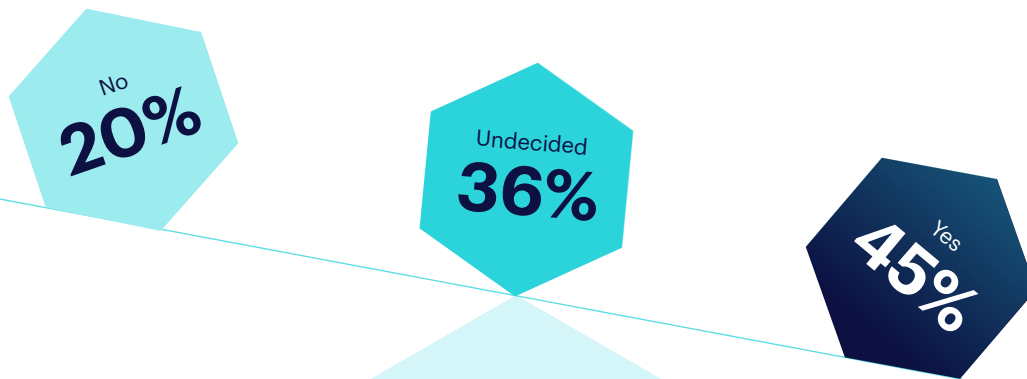
By all accounts, the past two years have been a significant turning point for cryptocurrencies. The acceptance of digital coins – whether pegged or unpegged – has moved into the mainstream. By the end of 2021, Visa alone said it was supporting 100 million⁵ merchants by offering crypto payments to consumers and converting this into fiat for businesses to receive.

According to Michelle Vautier, Senior Payments Advisor at Rally.io, 'not all crypto payments are categorized as payment methods per se because they often sit within the loyalty and rewards space while effectively still acting as a means of value transfer between consumer and merchant.'

In this chapter, we will look at consumer maturity and appetite when it comes to using cryptocurrencies for payment. We'll consider why some consumers want to be able to pay with cryptocurrencies rather than with fiat. We will also explore consumer trust and knowledge levels which will be an important indicator for the longevity of this movement towards crypto for payment.

Tipping the balance: How likely is mass adoption?

Should cryptocurrencies be used for
payments, not just investment?*



Some 40% of 18–35 year-olds surveyed say they intend to use crypto to pay for goods and services in the coming year. To put that into perspective, 42% of European consumers said they had paid (with fiat) using a digital wallet such as ApplePay or GooglePay in 2020, while 21% of European consumers reported having used a Buy Now, Pay Later option.⁶

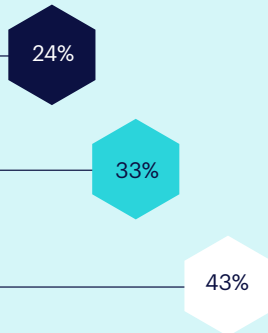
*18- 35 year old's surveyed

What's in it for the consumer?

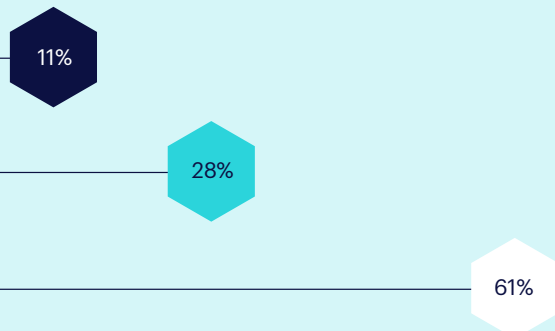
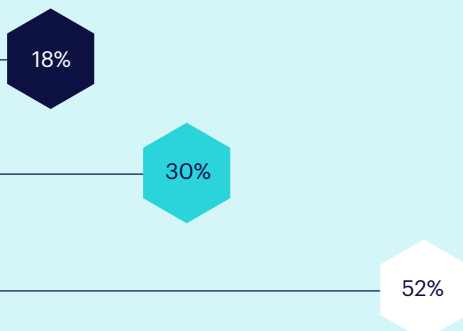
Overall adoption of cryptocurrencies as assets rose rapidly during the pandemic and many will draw some correlation between this rapid rise in adoption and the rise in consumer appetite for crypto-payments. But why do consumers, particularly the young, want to pay with crypto? There are a number of answers to that question. A trend in digital behavior can be cultural or community-driven; it may appear to have little more to it than a sense of fun, of novelty and of the exotic. But these qualities aren't going to be enough to make cryptocurrency work as money in the long term. Not least because novelty famously wears off and financial mishaps are never fun.

Consumers find utility and benefits in paying with cryptocurrencies, be they stablecoins or non-pegged crypto. Faster transactions and lower fees, particularly for cross-border purchases, provide significant benefits to consumers. Global cross-border ecommerce transactions grew by 17% in 2020 and have shown no signs of slowing⁷ as consumers equate digital shopping with borderless access. A sliver of the young consumer base currently holds cryptocurrencies but the majority of those consumers who do, understand the cross-border utility that blockchain-based currencies provide.⁸

Then there are the incentives consumers have for holding their cash in crypto and the convenience provided when that liquidity does not need to be converted in order to be spent. Through processes such as staking, cryptocurrencies can earn significant yields for consumers. This is an incentive to hold more money in crypto wallets and for that money not to be moved out of the blockchain ecosystem. At the same time, many crypto holders want to be able to move in and out of crypto-assets easily and use stablecoins as a way of holding less volatile currency rather than fiat, which requires coming off-chain. To do this gives consumers a relatively stable store of value while continuing to earn a yield on their money.

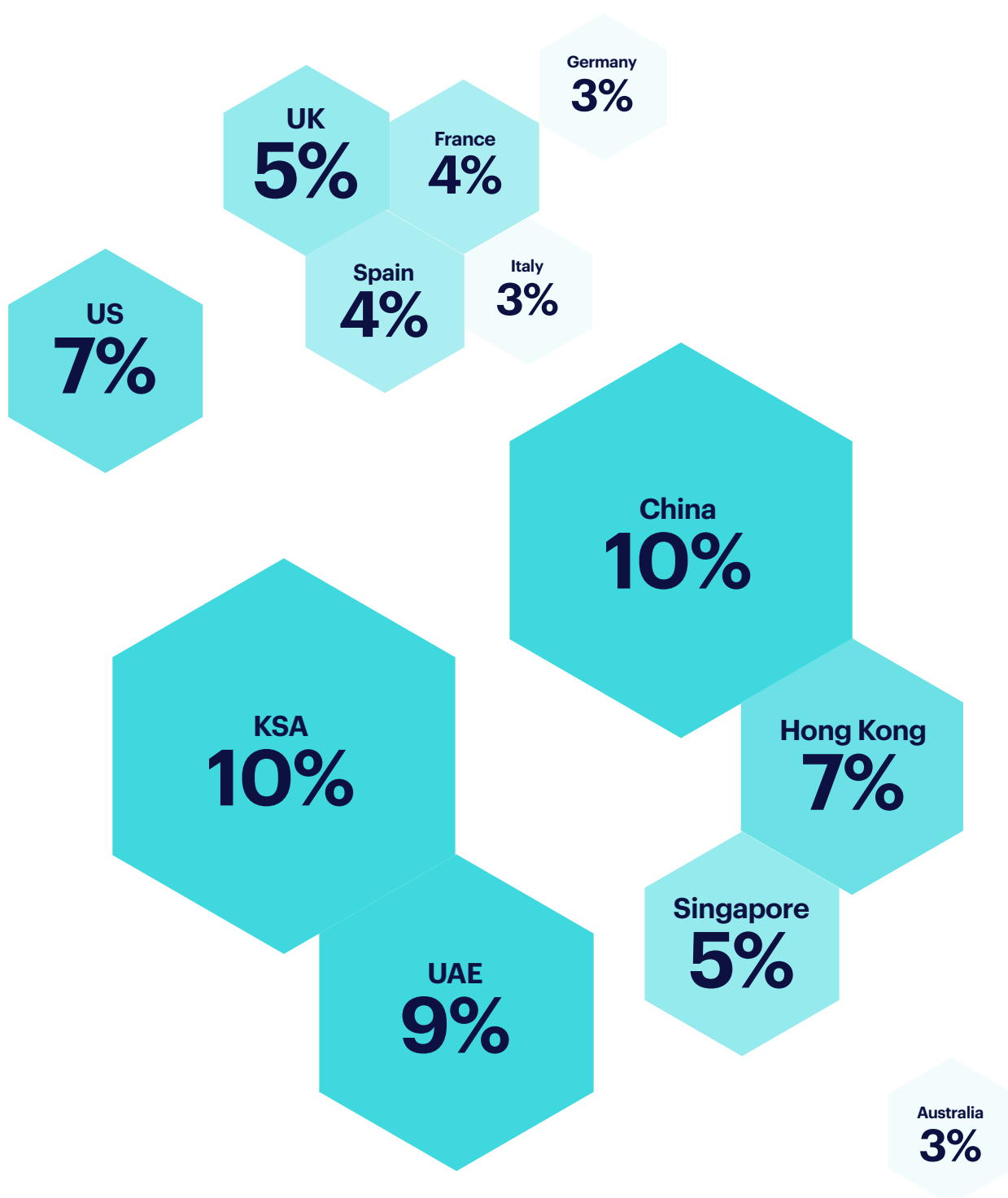
**Men aged 18-35****% of consumers who plan to pay with crypto in the next 12 months**

-  Plan to pay with crypto regularly
-  Plan to pay occasionally
-  Not at all

Women aged 18-35**Total average**

% of 18-35 year olds who paid for goods and services on the dark web in the past 12 months

While crypto used to be associated with transacting on the dark web, data shows this now only represents a small portion of crypto payments





% of consumers who believe that cryptocurrency should be used as currency, not just as an investment asset



Two sides of the same coin(s)?

Are merchants and consumers aligned?

The data indicates that merchants and consumers are largely aligned on which coins they currently view as preferable for B2C transactions. Since merchants have no obligation to settle any crypto payments in the same currency as the payment is made (indeed most do not), their primary concern is to ensure they are meeting consumer demand on the front end. To this extent, the issue is the same as with any form of payment method. Merchants need to meet consumer preference at checkout or they risk losing out on share of wallet.

Simple and timeless concepts such as brand familiarity, longevity and trust are important drivers of cryptocurrency adoption in mainstream payments. This is reflected in the data collected from both merchants and consumers. Bitcoin and Ethereum, the oldest coins with the greatest market capitalization and brand awareness, are viewed as most popular for B2C payments by both parties.



Consumer-preferred digital currencies for payments

-  Bitcoin
-  Ether
-  Bitcoin Cash
-  USDC (USD Coin)
-  USDT (USD Tether)
-  Dogecoin
-  Litecoin

The digital currencies merchants think consumers prefer

-  Bitcoin
-  Ether
-  Bitcoin Cash
-  Dogecoin
-  Litecoin
-  USDC (USD Coin)
-  Own branded coin or token

Nevertheless, the market for currencies is becoming ever more diverse and competitive. By the end of 2021, Bitpay reported a 30% drop in Bitcoin's transaction volume YoY as consumers increasingly started to pay with other cryptocurrencies.⁹ Two of the top five most preferred consumer cryptocurrencies today are stablecoins: USDC, and USDT.

Considerably less volatile than non-pegged cryptocurrencies, stablecoins allow consumers to spend more confidently without worrying about making losses. Consumers and merchants alike benefit from being able to identify the transaction value without needing to perform a spot conversion.

77% of merchants who do work with third-parties to enable crypto as a payment method report that they are continuing to iterate and experiment with different coins to see which has the most benefits in terms of attracting more customers and delivering operational efficiency. Experts anticipate that it will not be long before layer 1 blockchains and layer 2 scaling solutions generate an even more diverse range of coins that cater to specific merchant and consumer needs such as speed, security and cost.

Out of the shadows: In crypto we trust?

How consumers aged 18–35 feel about crypto

50%

feel that **all forms of crypto** are risky

34%

feel that all forms of crypto are **too risky** to become mainstream payment currencies

45%

believe crypto should be **used as currency**, not just investment asset

29%

feel that all forms of crypto are **too complicated** to understand to become mainstream currencies

13%

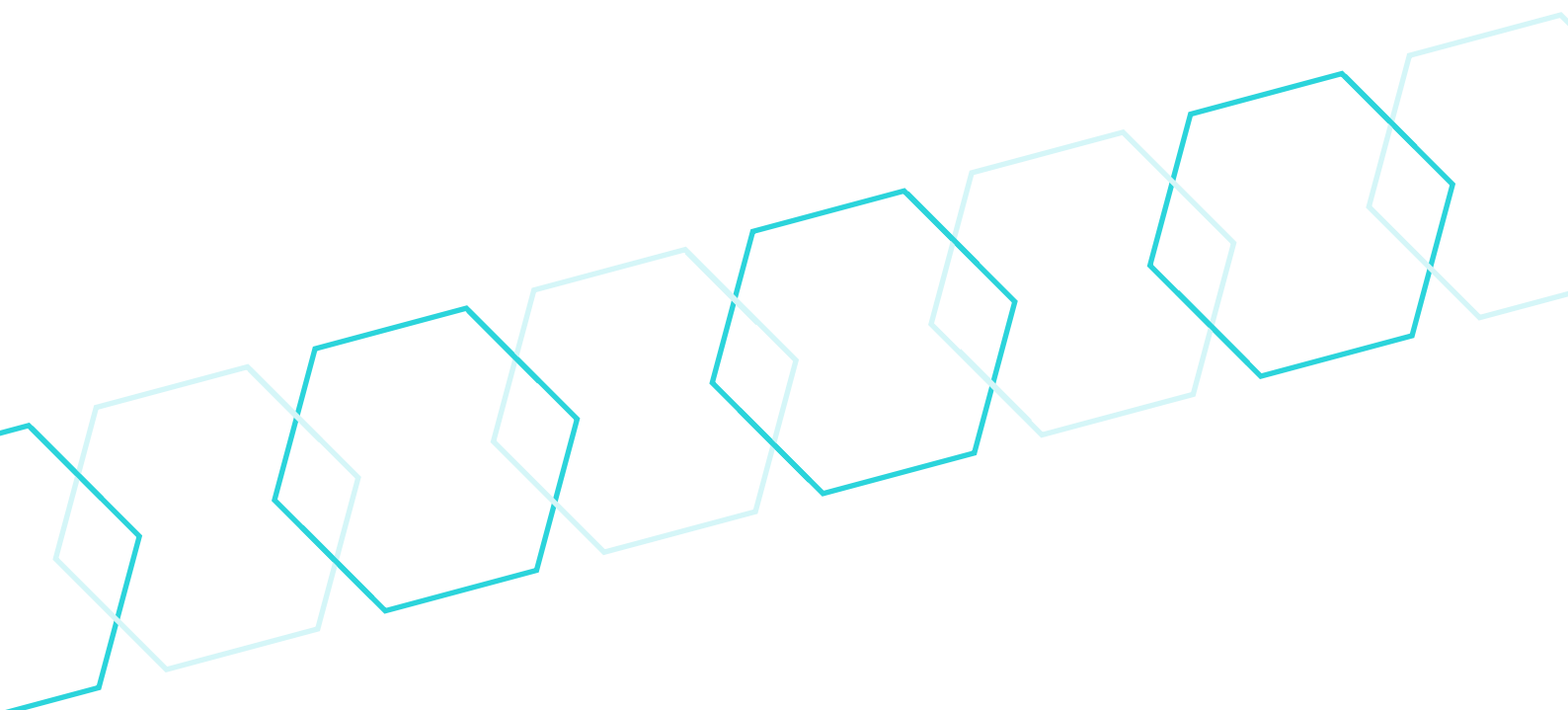
feel that all forms of crypto are **too surplus to need or demand** to become mainstream currencies

50%

would **positively trust a merchant who offers crypto** as a payment method

21%

feel that all forms of crypto are **too weighted in favor of a handful of individuals or institutions** to become mainstream currencies



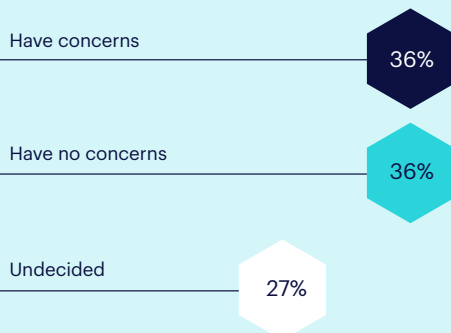
Trust and Trustlessness

Sustained mainstream adoption of cryptocurrency as a payment method – as ‘money’ – is going to require a population who can confidently place their trust in it. Widespread trust in the value and utility of any given coin, as well as in the security and efficacy of the technology which underpins it, will be crucial. Early adopters and crypto-natives will speak of that (blockchain) technology as being ‘trustless’. It is the inherent quality that makes total decentralization possible, in theory at least.

The extent to which regular consumers across the globe are, or ever will be, ready to manage their money at the level of ‘trustlessness’ is going to be important to gauge. To get there, they will need to be able, if not to ‘trust’ the world of crypto and blockchains, at least to understand it well enough to know it works and is safe, making ‘trust’ less critical.

In a recent Economist podcast on ‘Web3’, tech-expert, Benedict Evans, used the following analogy to explain trustlessness on the blockchain: “If I stand by the side of a motorway, I stand there trusting that the cars will not hit me. If I stand by the side of a railway, I don’t have to trust because I know the rails are there. The train cannot hit me.”¹⁰ In other words, the security is embedded within the technology. Trust is a piece of code.

To take the analogy a step further, one could cite the shock to the 19th century British public at the advent of the locomotive in the UK (as an example) when they would stand on the railway line and have no understanding of just how fast it was now possible for a vehicle to move, resulting in deaths. Trustlessness might work for the educated and experienced user. Uninitiated users can be endlessly, unwittingly, creative in the risks they will expose themselves to. So, education and some level of understanding will be vital.

% of 18–35 year olds who trust merchants that accept crypto payments**% of 18–35 year olds who believe cryptocurrencies will threaten political stability****% of 18–35 year olds who have concerns about the environmental impact of cryptocurrencies**

Consumers present a confusing picture on how far they trust cryptocurrencies

The majority of consumers of all ages report a lack of crypto knowledge. Even most 18–35 year olds say they 'don't know' when asked questions about the security and utility of cryptocurrencies and blockchain technologies.

Nevertheless, when it comes to the technology and its use-case, there appears to be significant appetite from the total population. An overwhelming 87% of 18–35 year olds disagree with the statement that 'crypto and blockchain technologies are surplus to consumer need'. Some 37% believe that blockchain technology makes payments faster. Of those who have experience with using cryptocurrency, 68% believe the technology makes payments faster. Meanwhile, 58% of experienced crypto holders believe that blockchains make payments safer. That compares with 31% of the total population surveyed who believe the technology provides security benefits.

There is a big education gap...

Regarding the 'crypto-brand', for now, we can see that among the population surveyed, there is a lot of conflation which negatively impacts overall trust levels. Currently, half of the total population surveyed believes that all forms of cryptocurrencies (including stablecoins) are risky, and this remains true of the 18–35 year-old segment. A third believes that all cryptocurrencies are too risky to ever become mainstream.

A similar number believe that cryptocurrencies are too complicated to understand for them to become mainstream. Meanwhile, only 27% of all survey respondents perceive stablecoins as a lower risk form of cryptocurrency than non-pegged crypto coins. This does shoot up among the cohort who claim to have experience in holding digital assets, of whom 51% see stablecoins as a much lower risk form of currency than non-pegged crypto. Meanwhile an almost equal proportion of consumers aged 18–35 have concerns about the environmental impact of cryptocurrencies, as those who do not. The jury is truly out on that issue which is nevertheless an important topic for the young demographic.

If consumers, even the younger more crypto-friendly population, view cryptocurrency as risky or opaque, the industry will need to put some effort into convincing them that, in fact, it is trustless, transparent and secure.

% of 18-35 year olds who say they just don't know...

"Blockchain technologies will make payments faster"

45%

Don't know

"Blockchain technologies will make payments safer"

49%

Don't know

"Stablecoins carry less volatility risk than non-pegged crypto"

51%

Don't know



A powerful gender divide

There is a clear gender divide that crypto adoption will have to get beyond if it's going to make it into the mainstream. The data shows a very consistent picture if you want to understand where the positive and negative perceptions lie. Gender is the dominant dividing line, more so than age and location although these matter too. Men are more likely to simultaneously view cryptocurrency as risky while also having a strong appetite to invest and spend with it – i.e. to override any perceived risk. But overall, men also tend to have greater prior experience in handling crypto and therefore higher levels of trust in its security and utility.

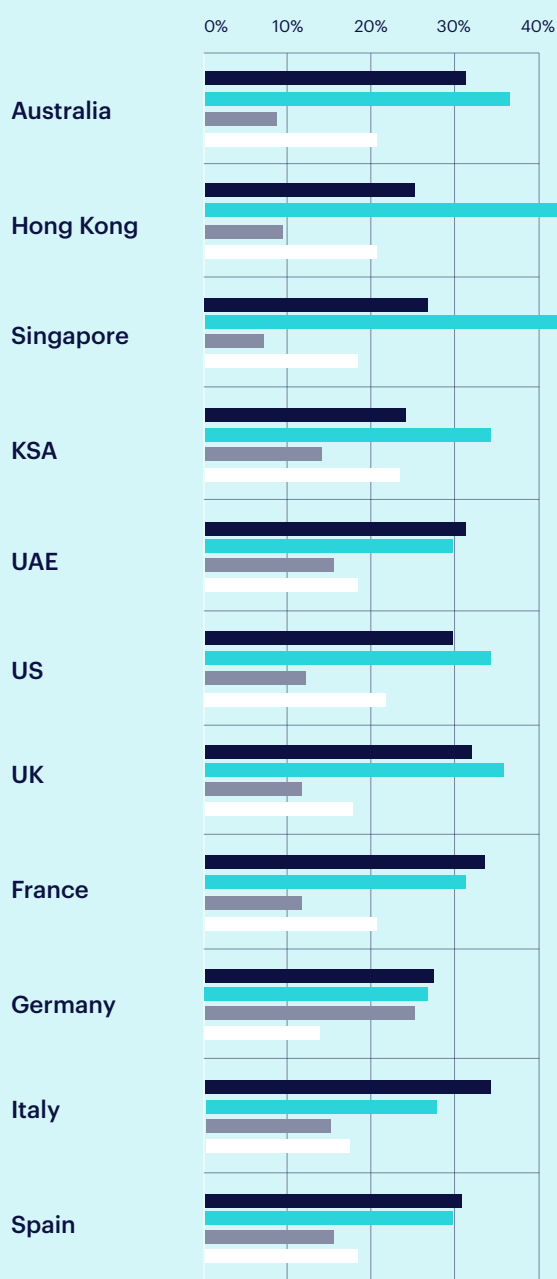
Early adopters would surely be sorry to hear that there is a gender inclusivity problem at play. Their ideology has tended to lean towards libertarianism and egalitarianism: a desire to democratize the internet and finance. But for now, at least, inclusivity appears to be lacking.

On the upside, women are on a positive adoption trajectory and are crypto-curious. If the industry can win their trust and engagement in the way it has managed to appeal to men, then vast opportunity exists and the addressable market could be doubled.

What does this mean for merchants?

If crypto still carries connotations of risk, lawlessness and prohibitive complexity, this does not translate into reputational risk for merchants offering crypto as a payment method or partnering with parties who do. The data indicates that many more young consumers will continue to trust brands who offer crypto as a payment method than those who would be turned off by this.

% of 18–35 year olds



Obstacles to consumer adoption of crypto as a payment method

- Crypto is too complicated to become mainstream
- Crypto is too risky to become mainstream
- Crypto is too surplus to demand to become mainstream
- Crypto is too weighted in favor of a handful of individuals to become mainstream

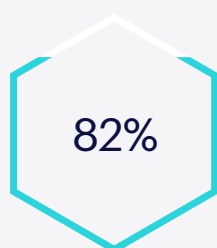
Overall, merchants who have already entered the crypto-space (or work with third parties who facilitate a back-end conversion) report positive outcomes when it comes to reputation and attracting new consumers. 73% of merchants who have offered crypto as a means of transaction for their customers in the past 12 months said they had positive marketing outcomes; 80% have seen positive press and social media mentions, and 82% said they have been able to attract new customer demographics. Appealing to an overseas audience as well as younger shoppers has proved a clear marker of success for these merchants.

Nevertheless, business leaders recognize that tradeoffs may be necessary. Not all press is positive and not all customers feel good about a brand that is associating itself with crypto. This means that 43% of merchants reported suffering some negative press and reputational harm and 43% also said they had also lost traction with some customer segments as a result of the negative press being associated with crypto.

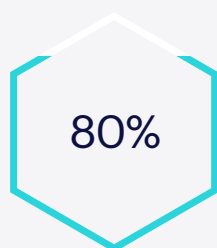


Web2 to Web3? We'll need to build bridges

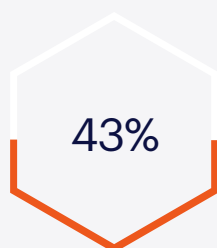
The involvement of trusted brands will be key to driving adoption of cryptocurrencies. Trusted merchant and financial brands are looked to for guidance by mainstream consumers who are not early adopters. According to a study conducted by Visa: 'Over half (59%) of crypto-aware consumers believe that cryptocurrency requires participation from established financial institutions before it achieves mainstream adoption and that this is a necessary development for cryptocurrency to have staying power... 81% of crypto-curious consumers would be interested in purchasing cryptocurrency if it were offered by their traditional bank.'¹¹



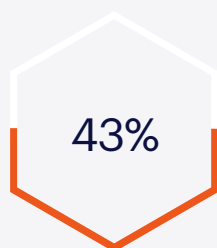
Say they have **attracted more customers** in new segments



Say they have **received positive publicity** in social media or press



Say they have **received negative press** or reputational damage

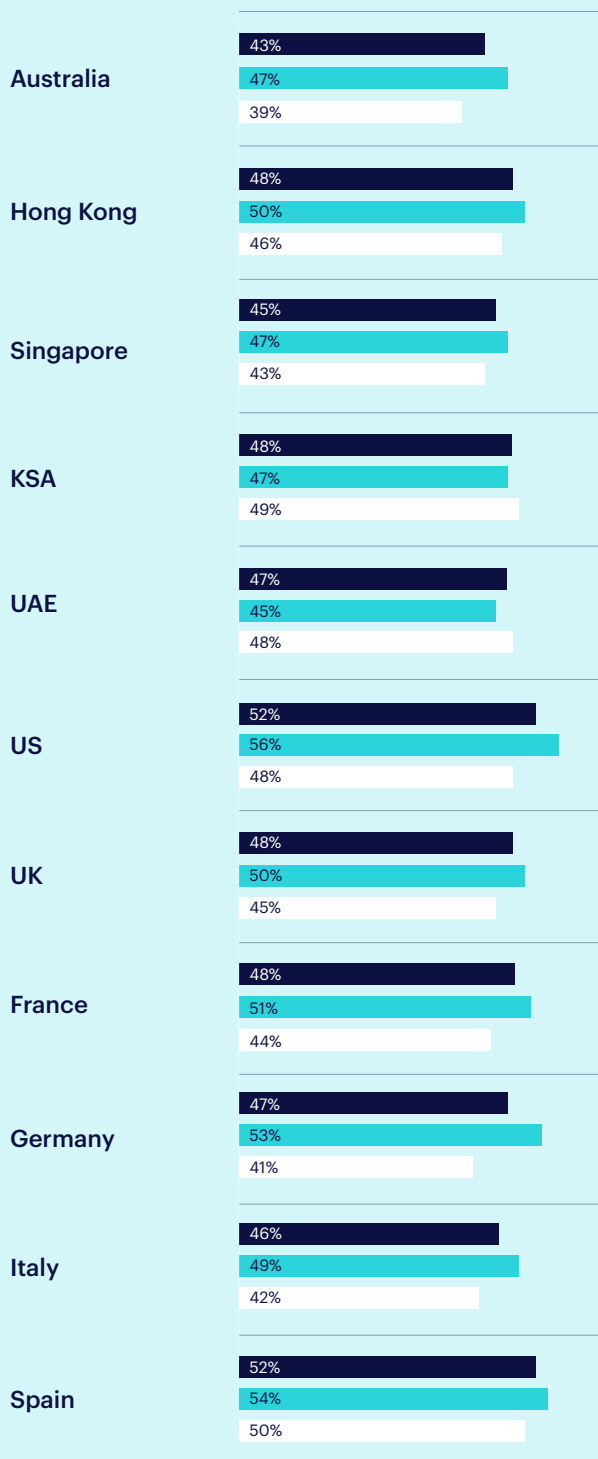


Believe they have **lost some customers** since offering cryptocurrencies as a payment method

Of those merchants whose customers have paid using cryptocurrency...

This may contradict the 'decentralized dream' but many in the industry agree that for mass adoption to be possible, consumers will lean on third-party brands both to provide trust assurances and to make the user-experience more familiar, simpler and more convenient.

As Chis Fortier, CPO at Rally.io, puts it: 'if we don't have those big debates about decentralization then the important questions won't be addressed. But when it comes to the day-to-day lives of non-early adopters, they will mostly care about what the tech enables. They will want a highly effective UX layer which provides really good customer service and support, and therefore, as the tech matures, you will find many more third-party solutions which are providing that bridge.'



% of the population who positively trust brands that accept crypto as payment

- Total average aged 18-35
- Men aged 18-35
- Women aged 18-35

Support acts: The intermediaries making it happen

% of transactions that were cross border

Non-crypto

10%

Crypto

28%

% of volume (\$) that was cross border

Non-crypto

14%

Crypto

21%

Source: i2c, Cryptobacked cards behind the numbers, 2021

Trusted payment brands already provide vital bridges

In many respects, if crypto as a payment method appears to have made tentative strides within the last couple of years, it is thanks to the support of intermediary trusted third parties. Consumers and merchants alike are offered convenience and ease since the arrival of these third-parties onto the crypto payment scene. Consumers can now use their established payment methods such as Visa, Mastercard, PayPal or Venmo to make payments in a range of cryptocurrencies. Meanwhile, solutions such as CashApp and BitPay have become synonymous with the easy movement of cryptocurrency at the touch of a mobile device.

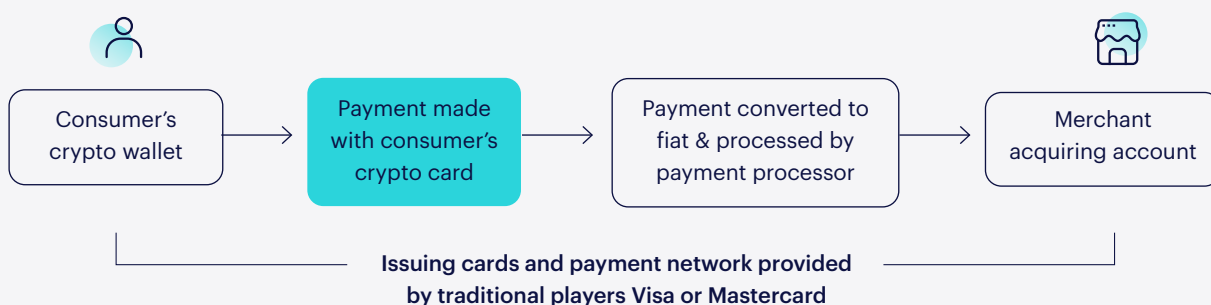
Crypto backed cards are a preferred method for cross-border payments

Crypto-backed credit and debit cards are on the rise

The rise of crypto-backed cards has been particularly impressive in recent months. In January 2022, Visa announced that its crypto-linked card usage hit \$2.5 billion in its first fiscal quarter. According to Visa CFO, Vasant Prabhu, 'This signals that consumers see utility in having a Visa card linked to an account at a crypto platform. There's value in being able to access

that liquidity, to fund purchases and manage expenses, and to do so instantly and seamlessly'.¹² Prabhu has also noted that Visa 'doesn't see the volume concentrated in a specific merchant vertical with these programs. People are using their crypto-linked cards to spend in a variety of ways — retail goods and services, restaurants, travel. They're increasingly being treated as a general-purpose account.'¹³

A crypto-backed card connects a crypto wallet, provided by a crypto exchange, like Crypto.com, Xapo or Coinbase, to a traditional issuing and payment processing platform, transacting through conventional payment networks such as Visa and Mastercard.



Crypto cards attract new customers

As Mastercard makes clear,¹⁴ networks and wallets partner with additional parties to convert crypto into fiat before it enters their networks, let alone before it reaches the merchant.

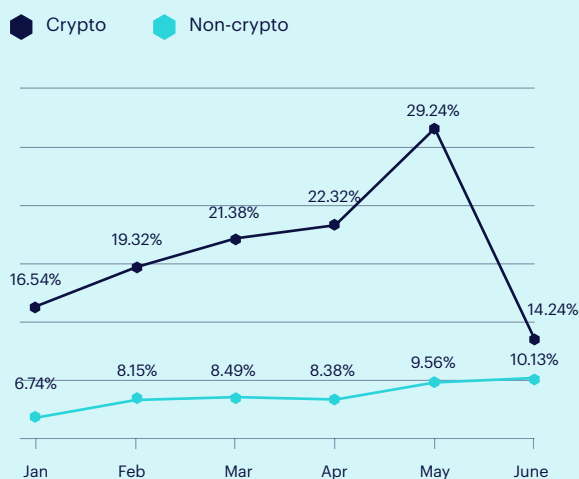
Yet their customers are deriving benefits such as reduced or waived foreign conversion fees, near-real-time transactions, rewards and multi-currency/multi-purse features that allow them to move between cryptocurrencies and fiat in a seamless, secure and compliant fashion. And according to Michelle Vautier at Rally.io, this makes good sense and is likely to remain as the main operating model for merchants: 'Merchants can accept

crypto directly and there are upsides, but the space is so fragmented with so many wallets and coins, that it's almost impossible for a merchant to keep up and ensure they are plugged into the right places.

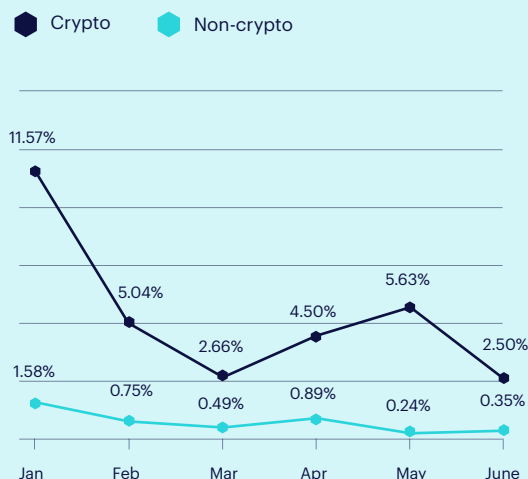
Decentralization effectively means consumers are going to expect to pay however they want to pay within that fragmented ecosystem, and from a merchant's standpoint, it is virtually impossible to keep up the pace – so they need centralizers.'

Crypto-backed cards: a highly active space

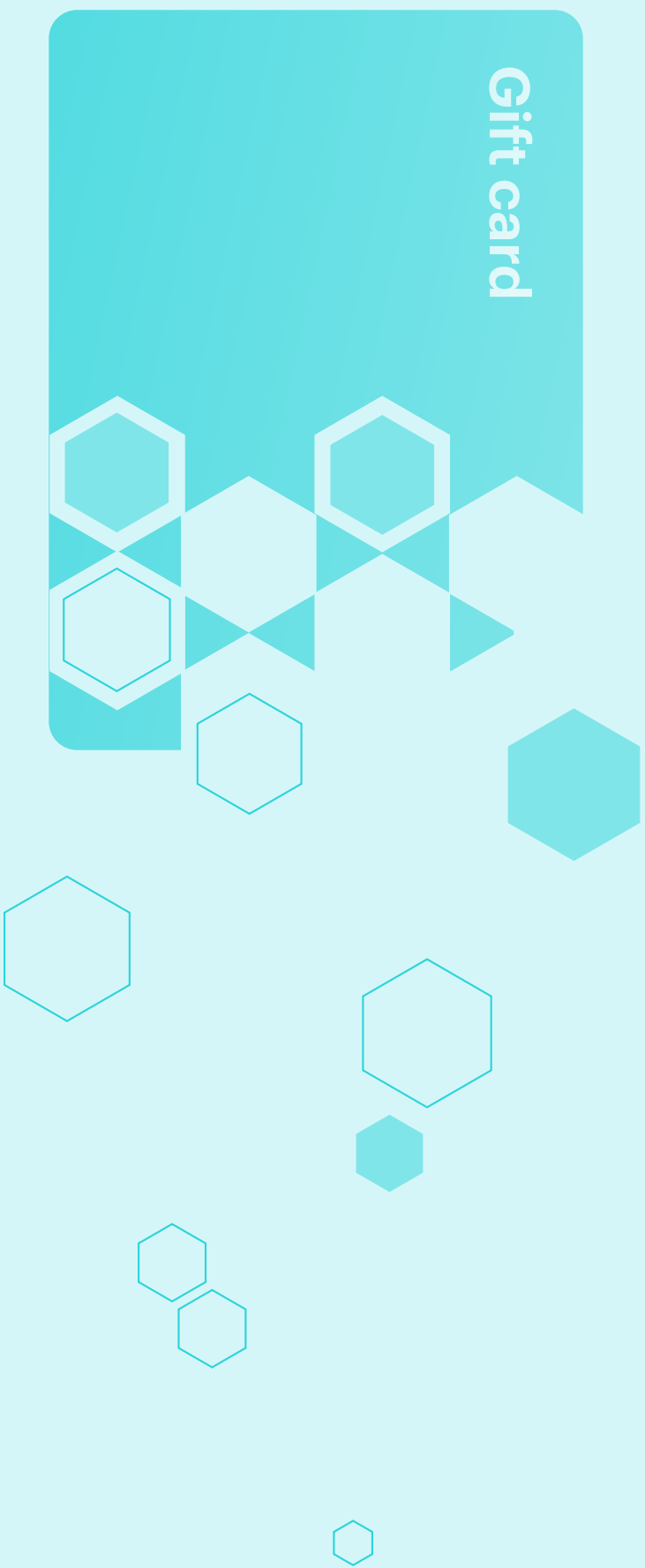
New customers % (2021)



Customers churn % (2021)



Source: i2c, Cryptobacked cards behind the numbers, 2021

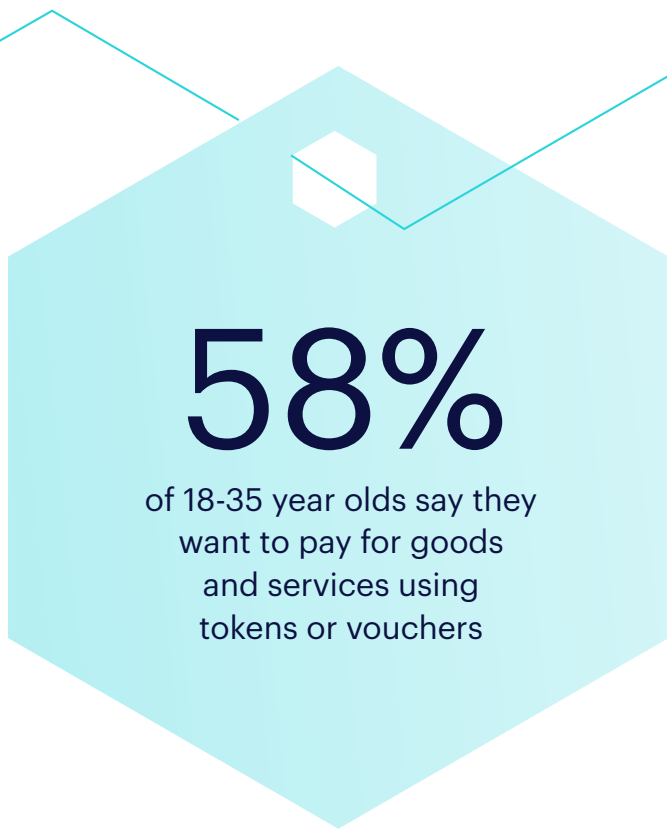


Gift card

Crypto-backed gift cards, and token-based loyalty schemes

Many crypto-backed cards also work as purchase rewards cards that allow consumers to earn money back on purchases. Meanwhile, the gift and prepaid card industry is buying into crypto at scale.

Loyalty, gift and prepaid cards are an important yet often overlooked current use-case for crypto as a means of transaction. As Michelle Vautier, Rally.io, has noted, by sitting within the rewards or loyalty ecosystems of the merchant business, the prevalence of crypto in payments may be overlooked. So, for example, while Amazon still does not offer a crypto-payment method at the checkout page, the Amazon gift card does support crypto. Indeed, thanks to third-party solutions, cards which support crypto are available for brands such as ASOS, Macy's, Uber, Blackwells, Target, Dunkin Donuts, and more.



58%

of 18-35 year olds say they
want to pay for goods
and services using
tokens or vouchers

But according to Vautier, merchants can and should be going further. 'Loyalty and rewards are currently the number one merchant use-case for crypto coins, fungible and non-fungible tokens, which are 100% carved-out for the loyalty and rewards space. If any retailer with a loyalty program today is not launching their own coin it's kind of ridiculous. Just as merchants used to have branded gift cards, today they should be launching branded coins or an NFT program.'

This is important because 66% of merchants surveyed say NFTs have the power to significantly bolster their loyalty schemes; 42% of merchants believe that offering new loyalty schemes will be key to their growth strategy in the next 12 months, and 62% say they plan to issue coins and NFTs as part of this drive by 2024. Meanwhile, 76% of all consumers surveyed want to make payments through loyalty schemes, and 58% say they want to pay for goods and services using tokens or vouchers. After all, as payments commentator Lana Swartz writes, 'Loyalty is money earmarked for a particular purpose.'¹⁵

Big consumer brands lean into NFTs for loyalty

3 examples from Loyalty and Reward Co* of how non-fungible tokens have been used for brand loyalty schemes:



AMC (AMC Stubs)

AMC partnered with Sony Pictures ahead of the film release of 'Spider-Man: No Way Home' by offering around 86,000 NFTs as freebies to select loyalty members, including those who subscribe to its Stubs Premiere and A-List programs. AMC plans to airdrop discounts and other benefits to holders of the new cinema chain NFT – and AMC will collect a small royalty on all transactions made from the trading of the NFTs.

Burger King (Royal Perks)

As part of the rollout of its Royal Perks loyalty program and continuing investment into digital platforms, Burger King partnered with NFT marketplace Sweet on a set-completion game. Customers could scan a QR code on each meal box to receive one of three collective NFT game pieces. On completion of the set, customers programmatically received a fourth NFT reward, which could be a digital collectible, free Whopper sandwiches for a year, merchandise or a call with one of the collaborating artists. Burger King has also dabbled in more simplistic cryptocurrency giveaways to drive engagement.



Clinique (Smart Rewards)

Clinique ran a competition for members of its Smart Rewards program. Three winning Smart Rewards members were awarded the limited-edition NFT and early access to a new physical product, and token holders unlocked access to receive various Clinique products once a year for the next decade.

What merchants and payments leaders should know about Web 2.5



Michelle Vautier
*Senior Strategic Advisor,
Payments, Rally.io*

The wide world of totally decentralized blockchains, what we can call 'Web3', is here and we are already enjoying the utility it has created. It is where cryptocurrencies live and where crypto-natives earn, trade and build. But most people are not crypto-natives. And for most people, that completely decentralized world might sound like fun, but really it should be entered with a solid level of awareness and education.

Consumers have grown accustomed to excellent user experience, ever-improving customer service and a reliable foundation of consumer protection. Indeed, merchants know just how important these features are when fighting in the margins of competitive advantage.

In contrast, pure Web3 can sometimes leave the individual to their own devices. It's designed for many things but coziness is not always one of them. Nor is it a space built for a trial-and-error, learn-as-you-go approach. By virtue of its total decentralization, there is no authority who can help you out, retrieve your lost funds or be held to account when something goes wrong.

Nevertheless, despite what the evangelists and hyper-skeptics might have us believe, Web3 does not have to pose such a stark or binary choice. Indeed, chronologically determined definitions of Web3 versus Web2 may be ideologically desirable for some, but from the point of view of pragmatists, businesses and consumers, this implied opposition and fatalism is unhelpful and misleading.

The potential models for hybridization – for picking and choosing – are almost infinite. Many such models will feature the use of tokens, branded coins and cryptocurrencies. These provide such exciting new potential for building community, structuring loyalty and creating innovative micro-economies or closed-loop ecosystems. And what consumer-facing business would not want to turn plain-old-payments into such an exciting opportunity to delight their customers?

At Rally.io our vision is to bridge the gap between Web2 and Web3. We call it Web2.5. To do this, we have built a 'sidechain' with admin rights. This hybrid model is essentially a regulated quasi-decentralized environment. We aim to give our users the freedom to experiment, play and push the boundaries of what a Web3 environment means. Operating as a Decentralized Autonomous Organization (DAO), users have democratic voter rights, for example. But ultimately, we remain a 'walled garden', able to safeguard (indeed we're legally obliged to safeguard) our users. We can step in to help, retrieve lost funds and remove bad actors if necessary. It's a regulated environment, meaning we are watching who comes in and who goes out.



I've drawn on all my prior payment, risk and compliance experience to build an extremely secure infrastructure which we know will meet the existing and the upcoming regulatory requirements from everything, including AML to KYC and sanctions.

By building this, we have been able to reach such a wide audience. We attract the crypto-curious as well as complete novices. Being a creator fan community platform, this is so important, we (and our creators) want to build an extremely accessible and inclusive environment that anybody would feel comfortable joining.

For merchants to successfully create these new hybrid models, they will require strong payment brains. It will mean thinking carefully about when and how fiat is converted and how any closed-loop coins are pegged to other currencies (be that crypto or fiat). What are the internal mechanisms for transacting with branded coins or tokens? And how do you remain compliant with traditional payments and risk laws? Seasoned payment professionals will not struggle in that domain. But there is more for a payments leader to love here...

We all know that you cannot wish away interchange fees. A one-dollar transaction costs 30 cents to make. It just does. On the flip side, we've all heard about the gas fees required to transact on Ethereum blockchains or, indeed, the high-energy consumption associated with proof of work protocols. Now, imagine building an economy where your users can transact freely without any payment fees (traditional interchange fees and without the often exorbitant gas fees paid on mainchain) and with a low environmental cost too. This is precisely what a closed-loop hybrid space can facilitate. And there are so many inventive ways that space can be put to use to create digital communities and marketplaces.

I'd go so far as to say that Web2.5 has so much to offer that it's not just traditional merchants who will start to hybridize; we will also see plenty of Web3 players

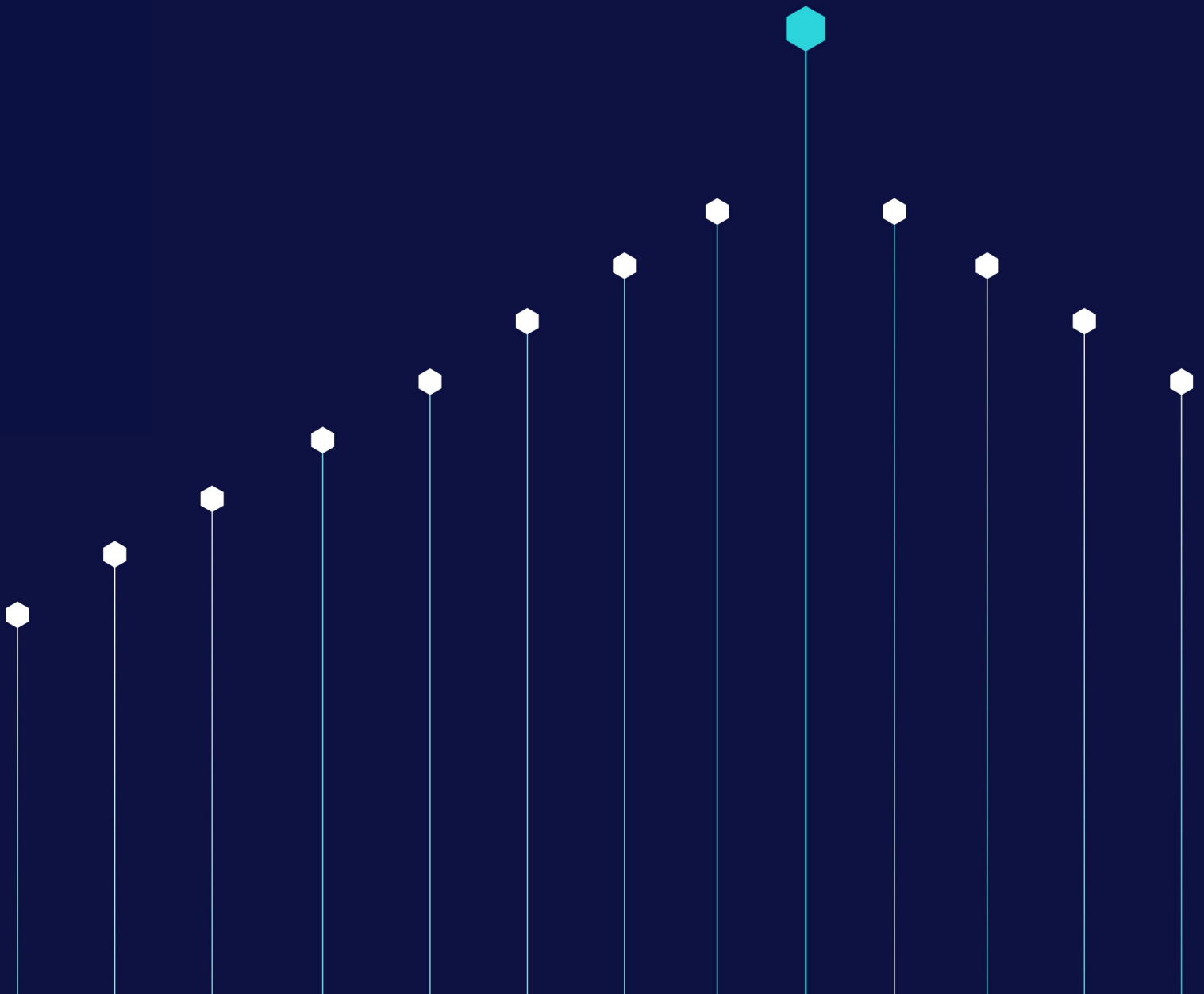
who will do so too. As they scale and it becomes impossible to ignore the problem of gas fees, they will look for models which can solve for that. And the environment debate is real too. It will be incumbent on the sector to consider how it can become more energy efficient. Hybridization can support this objective as well.

To be clear, we are far from opposed to Web3. Indeed, we see ourselves as educators, responsibly preparing consumers so that those who chose to bridge onto the mainchain can do so safely. We absolutely believe there is a role for the 'purist' element here. We always anticipated that some of our users would want to move into the fully decentralized web and ensure that if they do choose to bridge into Web3 proper, they do so armed with a great amount of knowledge and experience, and we have built that bridge. And indeed, the speed at which people do decide they want to graduate into that space has surprised us. There is no doubt that people are curious and drawn to that space and what it has to offer.

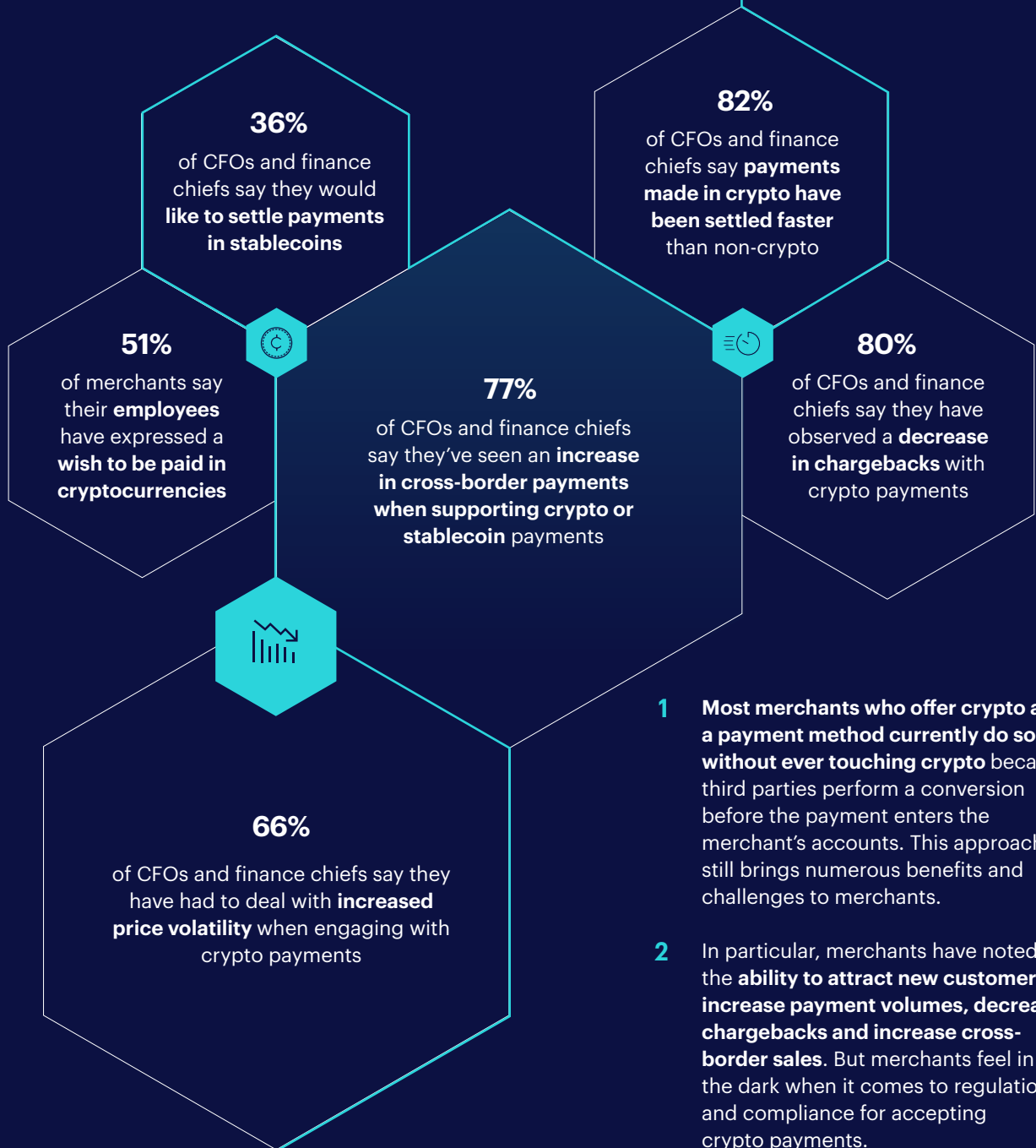
And for all that is brilliant about Web2.5, and as much as I believe the consumer interface layer is important, there are bigger issues at stake here. Our entire financial infrastructure and its sometimes archaic institutions are ripe for a shakeup. Much of it needs displacement, albeit in a thoughtful way. Blockchains, stablecoins and other types of cryptocurrencies still have a lot left in the tank in terms of what they can offer us by way of improvement and innovation. So, without doubt Web3 is here to stay and we – as businesses and consumers – will see more of it. But do I believe we will ever be living exclusively in a completely unregulated, decentralized web? No, I don't. There will always be bad actors; we will always look to some central bodies of control. Everything else might change but a total free-for-all is not where we are headed.

Corporates

What are the key implications of crypto payments
for the inner workings of businesses?



Key takeaways



- 1 Most merchants who offer crypto as a payment method currently do so without ever touching crypto** because third parties perform a conversion before the payment enters the merchant's accounts. This approach still brings numerous benefits and challenges to merchants.
- 2 In particular, merchants have noted the ability to attract new customers, increase payment volumes, decrease chargebacks and increase cross-border sales.** But merchants feel in the dark when it comes to regulation and compliance for accepting crypto payments.
- 3 CFOs and corporate treasurers are showing significant appetite** to hold stablecoins on their balance sheets, to use decentralized finance for treasury management and to offer vendors and employees payment in stablecoins in response to demand, although this may take some time to achieve.

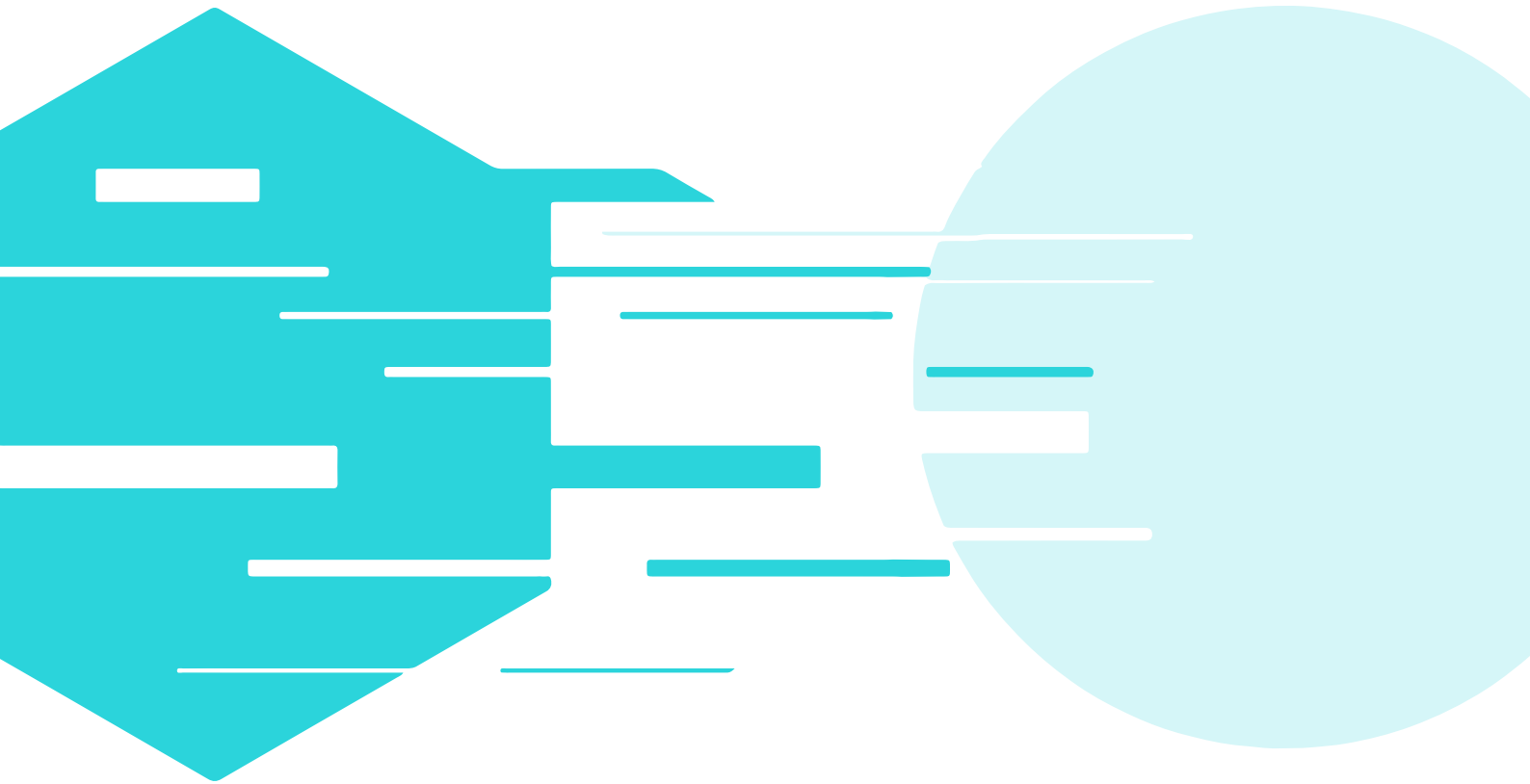
Hands-off or hands-on?

The more people accept a monetary medium, the more liquid it is and the more likely it is to be bought and sold without too much loss.¹⁶

Saifdean Ammous, [The Bitcoin Standard Academy](#)

Understanding different levels of merchant engagement with crypto

We've explored the extent to which consumers are willing to treat cryptocurrency as money, suitable for their day-to-day purchases of goods and services. Currently, a significant minority appear to be interested. We've also seen how major payment players and large merchant brands now enable transactions of digital currencies for goods, services, NFTs and entertainment. But, from the merchant perspective, to what extent is this a 'surface-level' engagement only? A sort of reluctant willingness to 'humor' a consumer fad?



Some 45% of online merchants surveyed by Checkout.com in early 2021 viewed the ability to offer crypto as a payment method as predominantly a marketing priority, a way to gain competitive advantage by exciting consumers and 'looking relevant'. However, more than half of these merchants thought this would be 'a passing fad'.¹⁷ That appears to be changing as merchants show an increased level of interest in other forms of utility such as speed, cost and cross-border enablement. Either way, merchants will have an important role to play in shaping the future of crypto as money as they respond to consumer demand, but also perhaps more importantly, as they explore the benefits of stablecoins in B2B transactions.

In this chapter we will look at how engaged merchants are with cryptocurrencies. What are the bottom-line impacts of offering payments in cryptocurrencies even when the crypto never touches their balance sheets? What challenges and benefits do CFOs and treasurers identify in blockchain-based or decentralized finance? What is the corporate treasury appetite for settling in cryptocurrencies (and holding crypto on their balance sheets)?

CFOs and treasurers experience challenges when dealing with crypto



A 'hands-off' approach is currently most common

There are multiple ways in which merchants can engage with cryptocurrencies if they are offering them as payment methods to their customers. Deloitte divides these engagement levels into two broad camps: 'Hands-on' and 'Hands-off'.¹⁸

As we've seen in chapter 1, ecommerce merchants can be supported by various kinds of third parties to allow their consumers to pay in crypto. Currently, 75% of businesses surveyed who say their consumers can pay them with cryptocurrency are 'hands off'. That means they use crypto simply as a customer offering to facilitate payments via third parties, which then convert it into fiat so that the merchant never touches crypto.

This 'hands-off approach' is generally considered lower risk, easier and quicker to implement than the alternatives available to merchants. It is a way in which corporates can leverage the consumer-facing and market-growth benefits of adding a new payment method that is in growing demand.



Top 5 reasons* for not offering crypto as a payment method



There is a current **lack of regulation**



There would be **too much tax complexity**



Our leaders **do not understand cryptocurrencies** well enough



We **lack** the necessary **third party support**



We **do not believe** our **consumers want it**

‘Hands-off’ is not without responsibility and challenges for merchants

While much of the complexity surrounding the technology and the compliance is handled by the trusted third party, merchants still need to pay careful attention to issues such as anti-money laundering (AML) and know your customer (KYC) requirements. Those merchants who have offered payments in non-pegged cryptocurrencies (which most did) also reported significant challenges around handling volatility.

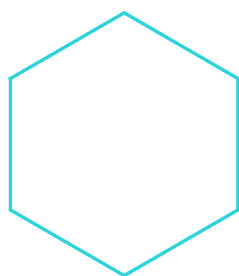
Another key challenge is felt around tax complexity. Typically, the complex tax laws would kick in substantially when a corporation is holding cryptocurrencies on its balance sheet. But the vast majority of merchants operating even at the hands-off level still report that they have been grappling with tax complexities and regulatory uncertainty. Nevertheless, all ‘hands-off’ merchants reported that they intended to continue to offer crypto as a payment method, suggesting the benefits or opportunities are currently outweighing the challenges felt by these merchants.

*Of the 26% of CFOs and treasurers who have no near-term plans to engage with crypto payments at any level.

...But 'hands-off' crypto engagement also benefits the back-end of the business

Indeed, merchants reported quite impressive benefits and gains on the back-end too. That is to say that not only did they engage new consumer segments or increase average order values, but they also saw other associated benefits of crypto-payments. A reduction in chargebacks, higher authorization rates, faster payments and an increase in cross-border sales were all noted by a significant majority of merchants. Some of these benefits might be incremental.

For example, it's apparent that if a crypto payment goes through a third party it will not be instant in the way a wallet-to-wallet crypto payment is designed to be. However, the first 'leg' of the payment will be instant, effectively speeding up the overall process. And, as any payment professional knows, success is often won in the increments and margins. According to Forrester's analysis of the economic impact for merchants accepting bitcoin through BitPay: 'Merchants saw an average return on investment of 327%.' Forrester also found that 40% of customers that pay with crypto are new to the merchant and purchase amounts are twice that of credit card purchases. Crypto is also less expensive in fees than credit cards, and there are no fraud-related chargebacks."¹⁹



Crypto payments bring notable benefits to merchants*



88% say payments have been **faster**



77% say they've seen an **increase in cross-border payments**



80% say they have observed a **decrease in chargebacks**



62% say they have observed **increased authorization rates**



40% **new customer sales** on average**



2x **higher order value** on average**



55% reduction in **transaction fees****

*CFOs, payments leaders and treasurers who do engage with cryptocurrency payments for B2C or B2B transactions.

**Source: Forrester, 2021.

Why some merchants take the 'hands-on' approach

Merchants taking the next step and adopting cryptocurrencies within their operations and treasury functions may see an increase in benefits. Payments will likely be faster and fees may be lower. Of course, these merchants will also encounter more of the risks and challenges associated with cryptocurrency.

Most companies currently using crypto in a 'hands-on' capacity still receive third-party support in the form of a custodian. This is often called 'partial custody'. Full 'self-custody' entails even more complexity and requires very significant internal experience. Whether the merchant goes it alone or enlists a third-party, this 'hands-on' approach requires a custodian. What does this mean? A crypto custodian holds the 'private keys' to a crypto wallet which gives access to all the funds it holds. This is where the merchant truly encounters the brave world of decentralized finance (DeFi). If the private keys are lost, no centralized authority can assist to recover funds.

Nevertheless, the hands-on approach gives merchants the opportunity to settle in cryptocurrencies, to hold some crypto on their balance sheets and thereby to derive the incentive benefits of DeFi. These benefits are similar to those explored from a consumer perspective in chapter 1. That is to say that passive income can be earned from holding and 'staking' digital currencies with yields that tend to be very much higher than fiat yields (in recent years at least).

Crypto settlements? Corporate treasurers seek a slice of the action



Crypto settlement may be one of the easiest and least expensive ways for merchants to experiment with holding digital assets on their balance sheets (as opposed to investing in crypto markets with the associated fees which this entails). According to data published by tradingplatforms.com, as of January 26, 2022, a total of 27 US publicly-listed companies held around 217,000 Bitcoins in their treasuries for a total notional value of more than \$8bn.²⁰ Now, more corporate treasurers are starting to consider their options.

And, according to Deloitte: 'Crypto may serve as an effective alternative or balancing asset to cash, which may depreciate over time due to inflation. Crypto is also an investable asset, and some, such as Bitcoin, have performed exceedingly well over the past five years.'²¹



% of CFOs and treasurers who would like to settle some of their payments in crypto

Stablecoins

36%

Non-pegged crypto

5%

CFOs and treasurers see risks and benefits to holding cryptocurrencies on their balance sheets

Holding crypto on the balance sheets would be risky

55%

Holding crypto on the balance sheets would bring positive benefits

66%

Merchant attitudes to holding crypto

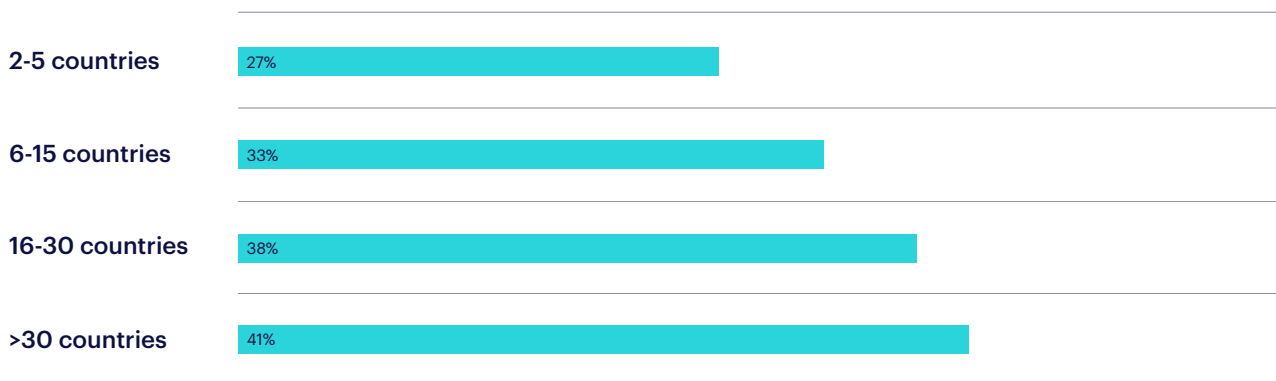
Our data indicates that over half (55%) of merchants believe holding any kind of cryptocurrency on their balance sheets would be risky. Nevertheless, two-thirds (66%) of merchants see significant upside to holding crypto of some sort. Currently, only one-third sees enough upside to want to take the leap; nevertheless, the appetite grows in line with the global footprint of the company surveyed. However, only a very small number (5%) of merchants surveyed are interested in un-pegged crypto settlements (such as in Bitcoin). The vast majority of merchant crypto-appetite is for settlements in stablecoins rather than in non-pegged crypto. 36% of CFOs and treasurers surveyed would like to be able to settle payments in stablecoins.



% of CFOs and corporate treasurers wishing to settle payments in stablecoins



% of CFOs and corporate treasurers wishing to settle payments in stablecoins per number of countries served



Positive sentiment from CFOs and finance leaders



18%

say accepting payments in cryptocurrencies **enables real-time accurate revenue sharing** while enhancing transparency to facilitate back-office reconciliation



67%

believe that decentralized finance has the potential to **significantly improve transaction banking services** (supply chain finance/trade finance, liquidity management etc)



18%

say that payments on the blockchain are **more secure** than ordinary payments



70%

say that cross-border payments on the blockchain are **cheaper and faster** than ordinary payments



69%

believe that the **speed with which crypto payments can be made and settled** has the potential to revolutionize their business models

The stablecoin opportunity and how to make it a reality

**Wolfgang Bardorf**

*Group Treasurer,
Checkout.com*

Stablecoins have a very obvious utility to corporate treasurers. However, before we get to that, it's important to be clear that there are different 'flavors' of stablecoins and some are higher quality than others. So, when we think about a future for stablecoin settlements, we need to be very specific about which stablecoins are the high-quality ones. They tend to be issued by reputable companies, and assurances that they really are backed 1:1 by the named currency or asset will be very reliable and transparent. Specifically, these high-quality coins tend to be backed 1:1 by fiat and, as such, represent a digital, tokenized means of settling payments, at fiat value, using blockchain infrastructure. What this enables is immediate settlement, 24 hours a day, 7 days a week.

This is important and exciting because there is currently something of an 'arms race' among tech companies and ecommerce companies (and indeed any

business for whom liquidity and working capital are vitally important) to achieve faster settlements and 24/7 settlement capabilities. That's something that remains unachievable in many fiat transactions. For example, the dominant dollar space remains slowed by the defined settlement time windows and complexities of the existing clearing and settlement and correspondent banking system – which is all off-chain and depends upon several intermediaries.

This current system also leads to centralized bottlenecks which trap liquidity and take away pockets of liquidity from where they are needed. In a globalized economy this is an old and suboptimal way of operating and is over-ripe for improvement. And stablecoins provide a solution to this problem of timezone and location-dependent availability of liquidity. If a corporate in Malaysia wishes to transact with a corporate in Thailand, a stablecoin would allow them to settle in USD (using a stablecoin such as USDC) in their own time zone rather than having to wait a day or so for the settlement to be conducted through US intermediaries and working within US time zones. Certain banks are already making use of these stablecoin capabilities as a means of settling internal transactions at any given hour of the week. Of course, any payment provider will need to ensure that US and international AML and sanction regimes need to be fully adhered to.



The value to businesses of immediate settlements is not in question. Nevertheless, barriers and questions do remain. A key issue which needs to be addressed is the scalability of stablecoin adoption for B2B payments. It's all very well being able to settle at speed, but the utility starts to stall if the stablecoin cannot be monetized easily. That is to say, if a business cannot pay its suppliers in stablecoins, then they will need to go through the process of converting back to fiat before they can make any use of their money which means they will be bound by the constraints of the fiat currency infrastructure. The full utility of stablecoins for corporate treasury depends upon a widespread adoption at the wholesale level.

It sounds a little like a 'chicken and egg' situation but it need not represent an impasse. There are specific and clear steps which can be taken to build the necessary trust and confidence among corporate treasurers.

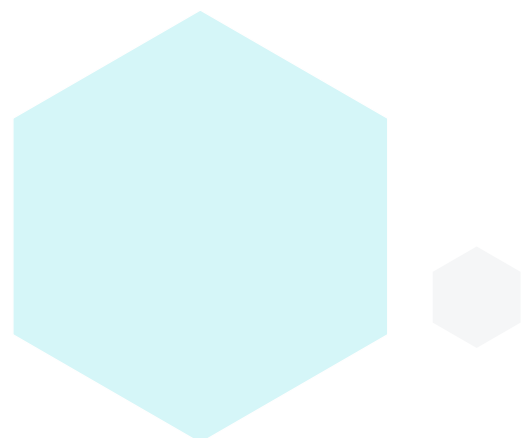
It is understandable that treasurers are cautious. We've looked at how consumers are tentatively experimenting with retail payments in blockchain-based payments. But imagine moving billions of dollars' worth of money around. It is inevitable that corporate treasurers will have a higher bar for adoption and acceptance than consumers or SMBs, at scale. They have to consider credit, regulatory and system risk before they implement new infrastructures.

Any change in payment system and infrastructure at the corporate level is going to be an operational upheaval and businesses need to be confident that the new system will be not only pervasive but also long-lasting. In order for the system to be long-lasting, it will need to be accepted by regulators. And corporates will need to be clear on the regulatory framework which underpins the payment system and its mediums.

There is another key aspect that needs a clear sustainable framework, which is the treatment of stablecoins from an accounting and tax perspective. In what circumstances could stablecoins

be accounted for as cash or otherwise be categorised as a highly-liquid asset instead of being potentially classified as an intangible asset. This matters hugely with respect to liquidity ratios, whether they be internal or regulatory liquidity ratios, and how rating agencies and creditors view the quality of the balance sheet of firms that hold stablecoins. Another accounting consideration, with its respective tax implications, is whether one needs to fair value and account for realised gains and losses of the stablecoins as some stablecoins do not trade exactly at 1:1 vs the underlying fiat but only very close to that.

In my view, the questions above are entirely resolvable – and it will only be a matter of time given the many benefits offered. Corporate treasurers don't want to work with non-transparent versions of stablecoins. They will be driving very clearly towards high-quality, robust and transparent stablecoins; and if anything, corporate treasurer demand will be helping to forge ever-better, more reliable stablecoins. I predict that the treasury community is likely to help us get to a point where the regulators are able to say confidently and comfortably, 'This is really something we can live with,' especially with an open and honest dialogue about the benefits and how risks and regulatory requirements for transparency and adherence with AML/sanction regimes are managed. Once they do so, corporates will feel that they have a solid and reliable system which has been accepted by regulators, can be trusted at scale and is built to last.



Merchants see significant demand for crypto payouts and payroll



51%

of **businesses surveyed** say that some of their workers have asked to be paid in some form of cryptocurrency

50%

of **businesses surveyed** say they have plans to offer some employees payment in cryptocurrencies in the future

66%

of **marketplace platforms** say they have plans to pay some of their vendors in cryptocurrencies

61%

of **online gaming companies** plan to pay some employees with cryptocurrencies

81%

of **crypto exchanges** plan to pay some employees with cryptocurrencies

71%

of **non-crypto fintech businesses** plan to pay some employees with cryptocurrencies

74%

of **insuretech businesses** plan to pay some employees with cryptocurrencies



Consumers express an interest in crypto-salary options

Of employees who already hold crypto

Would like to receive salary in non-pegged crypto

42%

Would like to receive salary in stablecoins

47%

Of men aged 18–35

Would like to receive salary in non-pegged crypto

31%

Would like to receive salary in stablecoins

37%

Of women aged 18–35

Would like to receive salary in non-pegged crypto

19%

Would like to receive salary in stablecoins

24%



The highest demand for crypto-salary options comes from Hong Kong, Saudi Arabia and the United Arab Emirates

Hong Kong

Would like to receive salary in non-pegged crypto

24%

Would like to receive salary in stablecoins

45%

Saudi Arabia

Would like to receive salary in non-pegged crypto

39%

Would like to receive salary in stablecoins

58%

United Arab Emirates

Would like to receive salary in non-pegged crypto

39%

Would like to receive salary in stablecoins

44%

The future of blockchain-based payroll and payouts

**Max Rothman**

Head of Digital Assets and Currencies,
Checkout.com

We are going to see a big shift in the payouts space. The option for businesses to pay their suppliers and employees in crypto, more specifically in stablecoins, is going to grow a lot over time. Just as we have seen that merchant businesses are attracted to the low-cost and high-speed benefits of settling in stablecoins, the same applies to payouts. And the benefits will be felt by both merchants, the businesses further down the supply chain and ultimately also employees.

Payouts to power supply chains

Merchants and their suppliers are reliant upon the timely receipt of funds. For some smaller suppliers in particular this need can be existential. Moreover, faster payouts could actually turbocharge the entire supply chain's liquidity and consequently improve output and productivity. If payouts, throughout the supply chain, can be made immediately and at lower costs, you will inevitably see a significant injection of cash flow into the system.

By providing immediate settlement, stablecoins can pass liquidity through the full chain in close to real-time which then means that supplies, parts, and goods can be produced and sold more quickly resulting in increased sales velocity.

There is a trust benefit here too. The entire ecosystem will benefit from having immediate knowledge that the correct funds have been sent to the right place and this is simultaneously validated by all parties. Of course, this ecosystem-wide benefit is entirely dependent on all parties feeling confident that B2B stablecoin payments and settlements are safe, protected, and happening within a clear regulatory framework. For this reason we will not see the full force of the potential here until clear and consistent stablecoin regulation has been introduced.

Payroll: The perks and the pain-points

It is not surprising that employees are increasingly asking if they could be paid in cryptocurrency or stablecoins. For the growing portion of the population who understand Web3 and crypto, the appeal is not only the speed of the payment but also the ability to earn a far greater yield on their deposits if portions of it are held on-chain.

But for many businesses, it will take them a long time to reach the point where they can deliver what is being asked for. As the data shows many people would like a split approach to crypto salary payments. Employees may want most of their salary paid in fiat and their bonuses in crypto for example. But any payment that is split in this way becomes extremely complicated from an accounting and reconciliation perspective. Not many accounting systems have dealt with this form of complexity before and in general, it would be significantly easier to pay employees entirely in one currency or another. To reach a point where a lot of people are comfortable with being paid 100% in crypto or stablecoins is also, clearly, going to be some way off and even then, the backend infrastructure required will take time to build.

Moreover, from an employer's perspective, there remains a regulatory barrier to achieving payroll disbursements in cryptocurrencies or stablecoins. It will require a merchant to hold the currency themselves so the business needs to feel comfortable with that. As the data indicates, most businesses are not yet confident of the legal and regulatory requirements that they should be conforming to and that will keep them,

and their money, protected. For this reason, we are already starting to see the smaller, nimbler, crypto-first tech companies (not least the crypto wallets!) making salary disbursements in crypto and building the infrastructure required. This will provide an important foundation for the future capabilities of large, legacy companies but it will take time.

Crypto payouts for the gig economy

The first place where I think we are likely to see a really big uptick in crypto payroll is from gig and creator economy platforms. Payroll here is already really difficult to service and stablecoin payments provide a clear benefit to the employer. These large platforms, such as Uber, tend to have millions of people all over the world who need to be paid instantly. This is a demand that traditional systems really struggle to deliver. Low and emerging markets within Latin America and Africa are already using crypto payouts for exactly this purpose – reaching a large disparate population quickly and in the face of cumbersome, or non-existent, legacy infrastructure.

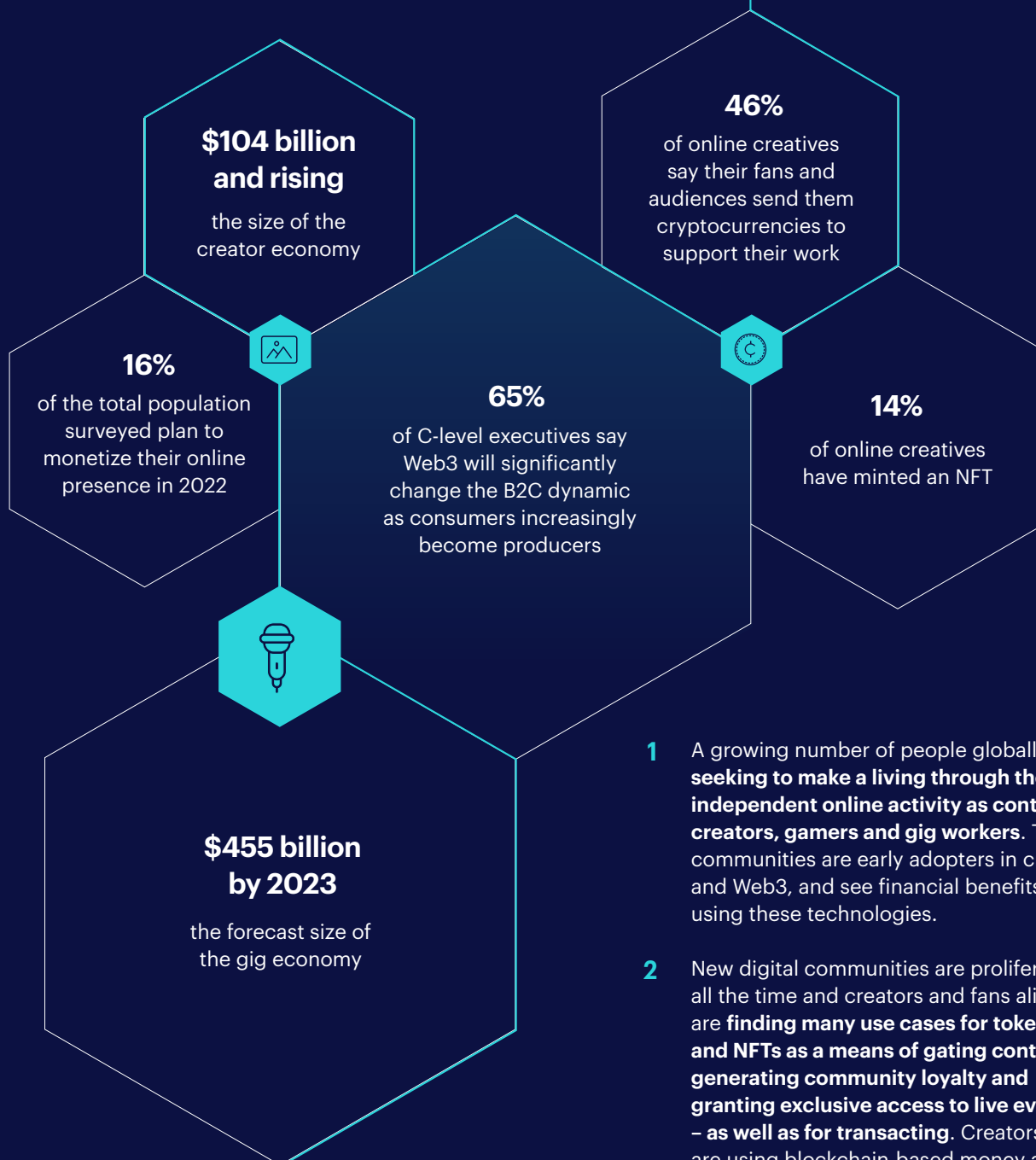
The creator economy is another pocket where we are already seeing a lot of people being paid in crypto. For example, the streamers on Twitch might now favor payments in stablecoins or regular crypto. This group tends to be more crypto native so they are very happy for the money to go directly into their crypto wallets and then stay there. They might hold it there, stake it, trade it or transact with it.

Culture

From artists to gamers, influencers to side-hustlers – how are humans shaping the future of money?



Key takeaways



- 1** A growing number of people globally are **seeking to make a living through their independent online activity as content creators, gamers and gig workers**. These communities are early adopters in crypto and Web3, and see financial benefits in using these technologies.
- 2** New digital communities are proliferating all the time and creators and fans alike are **finding many use cases for tokens and NFTs as a means of gating content, generating community loyalty and granting exclusive access to live events – as well as for transacting**. Creators are using blockchain-based money and assets to seize control of their audience relationships and their income.
- 3** These digital cultures and subcultures are stretch-testing what is possible when it comes to the use of tokens and crypto as money. They are **helping to shape tomorrow's mainstream use cases**.

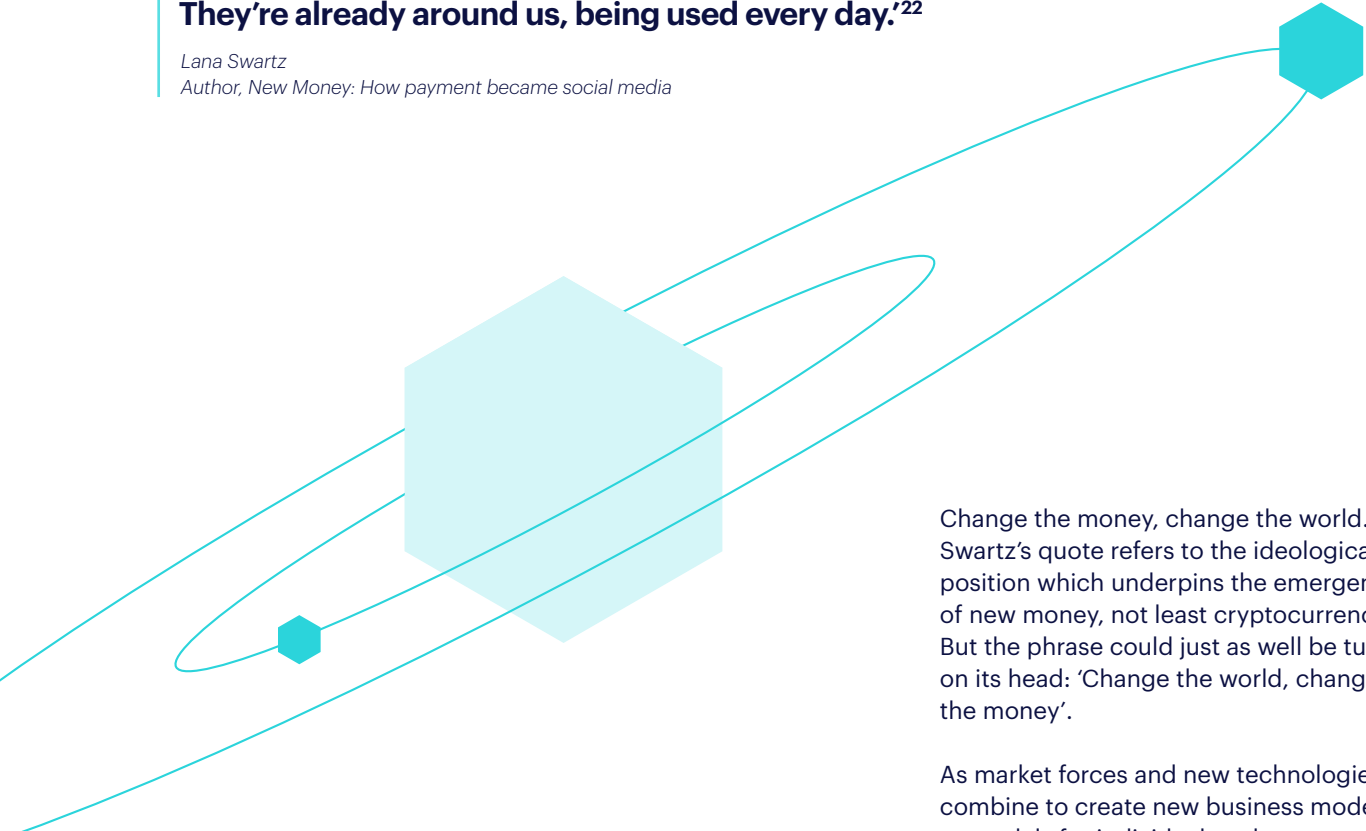
*total population surveyed

Change the world, change the money?

‘Change the money, change the world. Alternatives to money-as-usual aren’t just science fiction or utopian dreams. They’re already around us, being used every day.’²²

Lana Swartz

Author, *New Money: How payment became social media*



Change the money, change the world. Swartz’s quote refers to the ideological position which underpins the emergence of new money, not least cryptocurrencies. But the phrase could just as well be turned on its head: ‘Change the world, change the money’.

As market forces and new technologies combine to create new business models, or models for individuals to become businesses, so the utility required from money or means of value exchange can change. In this chapter we will explore how individuals intend to monetize their access to (and presence on) the internet and how these opportunities to make money might shape the kind of money people want to make: from fan tokens, community coins and proof of attendance to borderless instant value transfer. What can the gig, creative and gaming economies tell us about the future of cryptocurrencies, decentralized finance and Web3?



Web3 is often defined by enthusiasts as distinct to Web2 because it returns the ownership of data and content to its users. But according to Alex Valtingoer, CEO of Coinpanion, the distinction is a bit of a misnomer: 'What we will actually see is a merging of Web2 with Web3 where personal data will become a more decentralized product as opposed the centralized product it currently is, but there will always be centralized entities who will use personal data as Web2 has always done.' The crucial difference, according to Valtingoer, is that Web3 gives individuals the ability to control which Web2 company they give or perhaps sell their data to, and to this extent the big businesses built on Web2 will not crumble but simply be forced to become more competitive and perhaps innovative in their business models. It's a future which merchants and marketplaces seem ready to acknowledge with 65% of C-level executives surveyed agreeing that 'Web3 will significantly change the B2C dynamic as consumers increasingly become producers (whether of content or monetizable data).'

Theoretically this could have meaningful implications for every person in the world who engages with the internet. However, the survey data indicates that those who have already had exposure to Web3's decentralized system through cryptocurrencies are more likely to see and demand control and ownership of their data than those who have not. In our sample of 30,000 consumers, less than half (44%) feel that they should be able to monetize their global data footprint. That compares to 67% of consumers who hold crypto assets. Similarly, 30% of consumers surveyed said they believe that blockchain and Web3 will democratize ownership on the internet compared with 70% of consumers who hold crypto assets who think this. It is possible that crypto could be the gateway to Web3's wider utility for consumers – a way of learning firsthand just what 'decentralization' can mean in practice.

'A really great example of giving the power back to the people and more specifically to the creators, can be found in the creator economy,' says Valtingoer. 'Creators now have more opportunities to be self-sufficient. Up until now they solely relied on centralized parties to put their work out there and to get a cut of any revenue. Spotify is a classic example of this. But with Web3 technology, and NFTs are a prime example of this, creators will work with big third-party players and third parties can get a slice of the fruit. But crucially, the creator can continue to call the shots much more effectively. Individuals can and will become tiny, yet mighty, companies, at scale.'

Michelle Vautier, who previously worked at Patreon (a membership platform providing business tools for content creators to run subscription services) agrees and says: 'The creator economy is just growing and growing; I've watched it happen since my time at Patreon. It happens over time as creators figure out how to monetize online; they get better and better at creating their own economies and at being self-sustaining.' How exactly are this growing group of early adopters – creators, influencers, artists and gamers – interacting with the opportunities touted by Web3 proponents? We will look at the creator and gaming communities to uncover the utility they are helping to shape for tokens, coins and NFTs, and how that might shape the future of money and value for the rest of us.



Individuals find many ways to earn money online

Gig and marketplace platforms



\$455 billion by 2023

the forecast size of the gig economy



11% of the total survey sample

say they are full, or part time gig workers



16% of the total survey sample

say they make a regular income by selling goods on online marketplaces



33% of the total survey sample

say they occasionally make money by selling goods on online marketplaces



5% of the total survey sample

say they regularly make money from the sharing economy via online marketplaces



50% of individuals

selling their goods or services via online marketplace platforms would like to be paid in stablecoins

Online creators and influencers



\$104 billion and rising

the size of the creator economy



16% of the total survey sample

plan to make an income from the online creator economy in 2022



5% of the total survey sample

identified as independent artists and craftspeople who rely on online marketplaces to sell their work



7% of the total survey sample

consider themselves to be social media influencers who make money from their content and advocacy



33% of the total survey sample

regularly follow online influencers and creators via social media and streaming platforms



6% of the total survey sample

say they have bought an NFT and another 6% say they have minted an NFT



40% of women

aged 18–35 regularly follow online influencers and creators via social media and streaming platforms



65% of C-level executives

say Web3 will significantly change the B2C dynamic as consumers increasingly become producers



8% of the total survey sample

consider themselves to be independent creatives who already make money from their online content

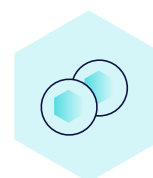
How the creator economy is engaging in Web3



17% of online creatives
have bought an NFT



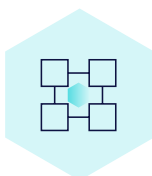
14% of online creatives
have minted an NFT



44% of creatives
plan to use crypto for payment
regularly and a further 44%
plan to do so occasionally



**46% of streamers, gamers
and creatives**
say their fans and audiences
send them cryptocurrencies
to support their work



54% of creatives
say they believe blockchains
and Web3 will democratize
the internet

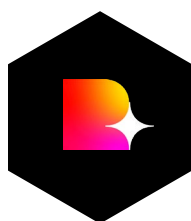


58% of creatives
say they would prefer to
pay for goods and services
in cryptocurrencies



56% of creatives
believe they should be
able to monetize their
digital data footprint

Enabling independent digital economies



Michelle Vautier
*Senior Strategic Advisor,
Payments, Rally.io*

Chris Fortier
VP of Product, Rally.io

Our combined past experience at Twitch and at Patreon taught us both unequivocally that fans really want to support the artists and creators that they love. And this market is only growing and diversifying over time. We believe that blockchain technology offers an immensely exciting opportunity for creators to seize control of their relationship with their fans and followers and to be endlessly inventive in conflating economic transactions with community engagement and live entertainment. Unique creator coins function simultaneously as currency and as something effectively resembling an 'exclusive membership badge'. NFTs can function both as assets and as focal points for an exciting collective experience for fans eagerly awaiting new airdrops. To name just two examples of many.

At Rally, we see great economic and creative potential in blockchain technology for creators of all hues. Two of the most immediate benefits secured by blockchain technology are digital scarcity and direct ownership.

Giving creators direct ownership of their financial relationship with fans removes intermediary fees, allowing creators to keep all of their earnings and thereby making the independent creator economy more lucrative, attractive and ultimately diverse. Digital scarcity, such as limited-run NFTs or supply-limited social tokens, offers unique perks or works that creators can sell or giveaway to fans who attach personal value to the art and its scarcity.

Rally.io is a platform for creators and their communities to build their own independent digital economies from the ground up. We call it a 'crypto toolbox for creators' because we build the blockchain-based tools for creators to develop economic relationships with their fans by launching their own personalized creator coins (a form of cryptocurrency also referred to as social tokens or fan tokens) as well as NFTs. But the beauty of the toolbox is that it really can be used in as many different ways as there are creators. No two independent digital economies are the same. Creators can be as imaginative in the construction of their economic structures and dynamics as they are in the work itself. Indeed, in some cases we see the lines between economic engagement and creative engagement blurring quite radically thanks to the flexibility offered by cryptocurrency and NFTs (and their inherent relationship with one another).

Three unique examples of independent digital economies



Portugal. The Man

Portugal. The Man (PTM) are a very popular American rock band. They have used their creator coin and Web3 to bring huge benefits to their fan community. There are a number of advantages to taking a fan club and making it token-based compared with a subscription-based approach. PTM's creator coins grant fans true ownership and control of their fan club membership. These coins are both access keys and currency. Unlike a subscription, coins allow fans to pick and choose what they get from belonging to the fan community. PTM has created a rich and varied body of content for their fans to access, including a huge archive of shows, bootleg recordings and other exclusive content. Their fans can use the coins to choose which content they want to view at any given time, which is obviously much more tailored than a blanket subscription. It also creates a real sense of community and that is a community which can interact and transact. More coins can be bought and they can be sold or transferred or held as assets for a rainy day. It is a fun and interactive way for PTM to engage their community and to gate and monetize a wide range of content.

Alliestrasza

Alliestrasza is a gamer and Twitch streamer, focusing on card games such as Hearthstone. Through her live stream she gathers huge audiences and organizes tournaments for the gaming community. Alliestrasza uses her creator coin to sell NFTs that bridge out of the closed-loop community and can be used as keys to those highly popular tournaments that she arranges. By doing this, she accumulates coins to make a price pool as well as to fund her living. Tokens are issued as rewards live on stream to tournament winners and this is turned into a big engagement moment, generating huge audiences and a great deal of buzz and excitement. Live streamers are always looking for new exciting content,

moments, gamification and ways to engage people. Alliestrasza has shown that tokens are a really effective way of making online communities feel like they are part of something that's happening and the fact that it all happens live is especially powerful.

Jen Stark

Jen Stark is an American multimedia optical artist with a long-standing Web3 presence. Stark uses her creator coin on Rally as a bridge between her presence on mainnet Ethereum and our safer, more regulated and user-friendly side chain. This has allowed Stark to engage a much wider fan base: people who may love her art but are far from comfortable with the world of crypto and Web3. Moreover, by offering her fans the opportunity to engage with her through her creator coin and NFTs on Rally, she effectively saves them huge amounts of money on gas fees. Art lovers can spend hundreds of thousands just in gas fees to acquire an NFT on Web3 proper, whereas the token issued on our sidechain has none of that downside. By working in this 'Web2.5' space, she's been able to really bridge the two worlds and derive the benefits of both.



NFTs: But is it Art?



Amy Jackson

London-based conceptual artist

‘Artistic activity is a game whose forms, patterns and functions develop and evolve according to periods and social contexts; it is not an immutable essence.’²³ So says the influential curator and art critic, Nicolas Bourriaud, in his seminal book *Relational Aesthetics*. He goes on: ‘Art was intended to prepare and announce a future world: today it is modeling possible universes.’²⁴ We artists have a natural home in the metaverse, then.

Writing in 1998, Bourriaud tracked a postmodern artistic movement that sought to make an artwork a catalyst for community. Art in this vein ‘would begin with an impulse or a concept introduced by the artist and then unfold into a dynamic network of relations between people and objects, stabilized and modified by a common social practice, dissolving the boundaries between art subcultures and society as a whole.’ The artist shares something, gives it up, so that society can adapt and adopt it.²⁵ Where were NFTs when we needed them?

Money can’t be art and art shouldn’t be about money, surely

Today, some commentators have derided the NFT-art boom as regressive and a fad. Detractors decry the NFT movement as reducing art to money, or to ownership and profit. Of course, centuries-old art markets have always done this, to an extent at least. But critics of NFTs see this as a step too far. Where is the art? Where, in the jpeg, is the warmth of experience and human interaction which the relationalists strove so ardently to cultivate, not least for social and political purposes. In my view, these arguments lack imagination. They’re missing the point.

The artist’s imagination has always been stretched, canvas-like, by the materials, tools and technologies available to them. Every new generation of artists operates at the boundaries of what can be done with whatever technology is to hand. Warhol made the rise of mass media and mass production both his subject and his medium. Digital technologies gave rise to new means of creating and documenting art. They also gave rise to new cultures and subcultures which artists could create, exist within, play with, critique and subvert.

As art has become ever more abstracted into concepts, virtual actions and digital ephemera, it stayed relevant – maintained its avant-garde – but it did not become easier to monetize. ‘Purists’, who think art should keep itself as far detached from money and markets as possible, might be glad to know that for most artists this has long been the case and has long shown no sign of changing. The upshot of course is that a career as an artist is out of the question for most normal people who don’t have another source of income or wealth. (And since the income bit is a time-suck, let’s face it, we mostly mean wealth.)

NFTs will culturally diversify the artworld

That’s a lot of unrealized talent and a recipe for homogenous cultural production. Imagine how artists in far-flung corners, with little prior chance of a world-wide audience, now have this potential for global exposure – and economy – at their fingertips. I’m excited by the fact that the NFT space has given me visibility of incredible artists all over the world.

Little more than a smartphone is needed now to allow any talent to directly access not only the global market but also the global cultural sphere. It is a tremendously exciting development because it has the potential to disrupt cultural homogeneity as never before. That is to say, NFTs can open the door to a much more culturally, economically and geographically diverse art world.

Who needs more stuff?

To finally have a structure by which conceptual art can be monetized (and within which the artist has agency to monetize without middlemen) in my view

allows many artists to do away with what has become an almost gratuitous obsession with ‘stuff’. There will always be artists whose work demands physical stuff. Painters or sculptors will always work in studios and handle physical matter. The problem is that for many conceptual artists, like me, the demand for stuff has become a tag-on.

My primary work is digital and never physical, but if I wanted to make money from it, then the very least I needed to do was print it. Or worse, make ‘hard-copy’ work just for the sake of it because that’s the commodity I could sell in order to sustain my digital practice. As an artist primarily concerned with issues of overconsumption, waste, and throw-away cultures, the irony has never been lost on me. NFTs have quickly changed this for me. I now operate both my practice and my market entirely online. The material waste I produce, the shipping costs and studio rent have all been cut by 100% more or less overnight.

Taking documentation to a new level

Bourriaud writes: ‘Contemporary art is often marked by non-availability, by being viewable only at a specific time. The example of performance is the most classic of all. Once the performance is over, all that remains is the documentation that should not be confused with the work itself.’ He goes on to point out that this temporal scarcity functioned as a natural convener. That is to say that early conceptual art, often taking the form of a happening or performance, became a natural convener but only in a very specific place and time. The options proposed by Bourriaud were binary – be there or have only a relic of the event (which is not the artwork itself).



How might NFTs change this? Traditional documentation – let’s say a photograph or a video – contains only old information about an event which took place in the past. An NFT can package this up with new information and catalysts for, or access to, events in the future. I think of this as dynamic documentation. For example, I might do a performance in the streets of central London. An image or reel may be sold as an NFT but the owner also receives access to an upcoming performance, perhaps by a different artist, in their local town wherever they are in the world. There are so many ways this could play out.

Another really interesting example of how NFTs can become fundamental to the visual culture of documentation is emerging in Ukraine. The Ukrainian government has announced plans to launch an NFT series which would function as ‘A museum of war’: an image for every day of the war. They point out that documenting these as NFTs will have a dual function: one is that the images will exist on the blockchain and, as such, will be ensuring unchangeable records of events. A particularly poignant use of the blockchain’s trustless permanence in the face of a mass misinformation war. Secondly, these NFTs are likely to build upon the government’s already successful move into the crypto space, a way to continue raising cryptocurrencies for the purchase of food, aid and equipment and to pay for the digital education of a young, tech-literate nation.

Enabling art as borderless activism

Don’t expect an artist to make an image, sell it as a collectible and leave it at that. NFTs are borderless communication. They are global means of cultivating community and spreading ideas. For some, this means a community of fans. For others, the community aspect can and will go beyond fandom. I, like many of my peers and predecessors, work at the blurred boundaries between art and activism.

All art is political and most artists want to change something in the world; they want to spur action. To me, this is where the real opportunity and excitement of an NFT lies. It takes us back to Bourriaud and the relational ideals that postmodernism has at its heart.

What an NFT allows us to impart to the buyers is not only an artwork – perhaps an image or short film – but a set of instructions, access to a live event, the catalyst to a performance, a recipe, a guide for how to host a charity fundraiser or an activist’s gathering – to name just a few examples. The art you sell might be objectively stunning. Or it might be seemingly innocuous. But what you get to smuggle through to a global community is an endless array of information, calls to action, organized or semi-organized events or activities: community participation which can span both the ‘real’ and digital spheres.

The point is that artists will always be coming up with new ways to use technology and the fact that content, contracts, promises, secrets, manifestos... can all be immutably embedded in an artwork has just opened up so much exciting potential for digital art to become deeply social within both the virtual and analog worlds. Bourriaud writes: ‘The first question we should ask ourselves when looking at a work of art is: Does it give me a chance to exist in front of it or, on the contrary, does it deny me as a subject, refusing to consider the Other in its structure?’ I would argue that NFTs give us entirely new structures within which not only to consider the Other but to relate to them whoever they may be, wherever they may be and whenever they may be.



Cultural commons: How can tokenization democratize cultural ownership?



Alex Valtingojer
CEO, Coinpanion

How can we make culture, and cultural capital, accessible so that all of us, including younger generations, can have a meaningful stake in it? Currently, when we think about the value that is locked up in cultural goods – be that art, real estate, antique cars, luxury watches (high-end design or heritage of any sorts), we see that only the top 1% of the population can access ownership or investment in such assets. But with tokenization, which is enabled by blockchain technology, we can completely change that. Decentralized tokenization facilitates fractionalization and this has the power to democratize ownership.

In a sense, crypto as an asset has already ushered the concept of fractionalization into mainstream investing. We could call crypto the ‘first mainstream alternative’.

And, by nature, crypto assets are already fractionalized in an intuitive and simple way. The natural next step is to look at how this can be applied to other assets from stocks and bonds through to riskier alternatives such as the art, private equity, real estate or luxury markets.

Fractionalizing these alternative markets immediately makes them more financially accessible to a much wider group of people. But fractionalized alternative assets also help address the notoriously high knowledge barrier which impacts these markets. That is to say, a lack of population-wide knowledge of the art market makes it inefficient and sometimes opaque. However, when investors can fractionalize – and thereby diversify – their investments, we will see a sudden energy and dynamism being pumped into these traditionally closed-door markets.

So how does this work in practice? We already see platforms emerging which use tokenization to fractionalize real estate. The real estate goes into a holding company and then ownership is fractionalized with tokens. This process makes it legally compliant and clear to understand, and then gives investors tokens which carry value but are also completely interoperable on the blockchain and hence within the crypto ecosystem. So, what you have is easy part-ownership of, for example, a castle, which effortlessly translates into liquidity that can be moved, traded or combined with other assets in a portfolio of tokens.



Financial markets are changing, and the public equities market is losing its prowess compared with private markets. Consider all the large, exciting companies which are taking longer and longer to float. Investors, who may traditionally have held 40% stocks and 60% bonds, are having their exposure to those early returns and riskier investments eroded. The 8% annual yields we might have seen in the last 100 years will no longer be possible as many of those early returns remain locked in the private market.

For this reason, I believe it is almost inevitable that innovations built for accessing alternative or private markets will take off in a big way in the coming years. I think it's likely in the future that the typical weighting of a portfolio will be more like 40% stocks, 20% bonds and 40% alternatives. To achieve this, I believe we will see blockchain technology become the standard for investment products (such as ETFs in particular), because it is so effective at fractionalizing private markets, making asset classes interoperable and combining them into more diverse and tailored portfolios.

And, when it comes to democratized access, it's not just historic, physical asset markets that need a shake-up. There is still a large scope to apply fractionalization to the NFT space. We are all familiar with the sky-high prices commanded by NFTs such as the Bored Ape Yacht Club series. For most people, the costs are prohibitive. But as soon as an NFT is tokenized and thereby fractionalized, you start to reach a much wider and younger audience. We know this is an audience not only hungry to have a stake in the cultural sphere, but also always reinventing what culture is. They can be simultaneously interested in vintage cars which predate their birth as well as in buying and selling gaming items such as digital skins, colors, music... and the list goes on. It is easy to see how this generation will find a natural home on the blockchain when it comes to investment, ownership and cultural participation. Their portfolios will seamlessly combine physical and digital assets as they participate in an increasingly diverse global culture-market.

It is exciting to anticipate what this accessibility means not only for consumers or retail investors but also for the creators, (artists, designers, musicians, etc.), who will see new and diversified sources of capital and will be able to create new types of assets. We should expect to see completely different kinds of cultural assets emerging from new digital and gamified lifestyles. Meanwhile, Web3 innovation will make these more accessible to everyone, so that in the future we can all have a stake in our collective cultural goods.



The booming gaming sector leans into crypto



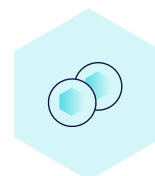
25% of the population

are keen and regular online gamers of which 1% are professional gamers



38% of men

aged 18 -35 are keen and regular online gamers



75% of keen online gamers

say they currently hold cryptocurrencies



58% of professional gamers

say they would rather pay for their goods and services in some form of cryptocurrency rather than any other payment method



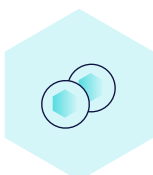
56% of professional gamers

say the majority of their fans pay them in cryptocurrencies



26% of keen online gamers

say they have bought digital goods or real estate within a virtual world or game



82% of professional gamers

say they currently hold cryptocurrency



70% of professional gamers

intend to shop using cryptocurrency in 2022



13% of keen online gamers

say they have bought an NFT. 20% say they have minted an NFT

What can gamers tell us about the future of money?



'Whoever said 'the future is already here, it's just not evenly distributed' was right and, what's more, when it comes to technology, we know that uneven distribution is concentrated with gamers. They live in the future and they are early adopters. It's no different when it comes to crypto, they are the early adopters.' So says Chris Fortier, Chief Product Officer at Rally.io, formerly of Twitch TV. The data agrees with him. We asked 30,000 consumers about their relationship with online gaming. Within that sample, 1,300 people reported that they are professional gamers who make a living from e-sports and from their online fanbase. This number reflects a 'gray area' of growth.

In 2018, it was estimated that there were 500 highly paid professional gamers in the world. Since the COVID-19 pandemic hit the globe, a pre-existing growth trajectory in the gaming space skyrocketed. And as many more people became committed gamers, spending time not only playing but also watching other players impart advice, many have seen gaming as a monetization opportunity. As the line between independent professional gamer and independent professional creator (or content distributor) is blurred, more of the community are acting on new opportunities to generate their own online economies.

Female gamers

No 70.9%

Yes 29.1%

Male gamers

No 58.8%

Yes 41.2%

All gamers

No 61.6%

Yes 38.4%

Source: Statista 2021

Worldwide gamers wanting to become professional by gender

56% of this population said the majority of their fans pay them in cryptocurrencies and 58% said they would rather pay for their goods and services in some form of cryptocurrency rather than any other payment method. 70% of this population intend to shop using cryptocurrency in 2022 and 40% plan to do so regularly. It's a small percentage of the total population, but for future-gazers, their behaviors do matter.

Nearly a third of the population surveyed currently considers themselves to be regular gamers and many of these are early adopters for much of the 'Web3' vision. According to Fortier, 'If you scrub away all the differences even within the gaming community, one thing you can say is that gamers live in the future already – they share a digital space, they care more about their digital personas in some cases than their physical ones, and they interact with vast communities using digital mediums. If that sounds like the 'metaverse' to you, it's just reality and truth for gamers.' This community is also a significant receptor for the signals coming from influential professional gamers. Their preferences and their modes of engaging economically with their fans and viewers will influence a significant proportion of the population.



But Fortier makes the point that not all gamer traits will necessarily be transferable to the rest of the population: 'Unlike most people, gamers are sitting next to a piece of equipment which is capable of directly engaging in crypto. Gaming PCs are powerful and most could mine for crypto. That's not to say all gamers mine (for most the math still wouldn't make sense), but theoretically they could, and it's one indicator of how the crypto world speaks to their strengths.'

Moreover, Fortier flags that gamers are prone to pushing the boundaries. This means they will jump from new tech to new tech and not all of it will stick. What this does mean, according to Fortier, is that even if gamers aren't going to be the ones who convert the masses, they are doing a lot of vital 'stretch-testing', effectively pushing the tech to find bugs and problems and ultimately assisting the crypto industry in the delivery of a better, more usable product.

Of course, gaming is not just made up of independent professionals. It constitutes a vast corporate industry, forecast to be worth \$260 billion by 2025.²⁸ And the entire industry is throwing its weight behind the crypto-cause. 73% of online gaming merchants surveyed say they accept payments in cryptocurrency and a further 20% plan to do so by the end of 2023. But the engagement runs deeper: more than 30% report a 'hands-on' engagement with crypto and 64% are interested in settling payments in cryptocurrencies.

Nevertheless, Ryan Selkis, CEO of Messari, believes established gaming giants remain relatively bearish and has called for the industry to look more closely at the crypto-gaming, or 'GameFi', opportunity: 'One reason the gaming industry has been so dominant in the entertainment industry (bigger than the movie and music industry combined) has to do with its early embrace of the internet's new mediums (streaming) and business models (freemium and virtual goods marketplaces). It would be ironic if those same studios missed crypto, especially since the pace of growth and revenue generation in crypto gaming isn't theoretical anymore.'²⁹

As crypto-first players gamify their products, Selkis argues that gaming businesses need only look at the revenues of a "MeH game not even available in app stores" such as NFT-based Axie Infinity, whose play-to-earn model 'reduced customer acquisition costs to zero, attracted millions of users and a \$10 billion market cap in less than a year.'

Regardless of whether or not the gaming brands pay heed, the impressive success of play-to-earn crypto games is an indicator of the potential for blockchain-based technologies to drive new revenue streams for individuals seeking ways of monetizing their digital activity.



What does this mean for merchants? Fun functionality, not frivolous fads

It cannot be stressed enough that crypto is a fast-moving space. The NFT and other token-based markets are currently riding the dizzying highs and lows of market volatility and media headlines. In recent weeks (March 2022), the tokens associated with the major Play to Earn or GameFi spaces, such as Decentraland (MANA), The Sandbox (SAND), Enjin Coin (ENJ) and Stacks (STX), have tumbled between 55 and 75% from their recent peaks. Axie Infinity (AXS) and Render Token (RNDR) have eroded about 70% of their value from their one-year peak at the time of writing.

Similarly, the NFT market is undergoing a much publicized slump. Yet, 57% of the online merchant businesses we surveyed say they have issued NFTs. Big name brands who have done so include H&M, Nike, Burberry, Budweiser, Coca-Cola, and many, many more. Use-cases have ranged from the sale of digital goods (for use in virtual spaces) and loyalty schemes to mere publicity stunts and opportunistic revenue streams.

What can merchants learn from the creator community and from their leading peers? The paramount importance of entering the token-based economy with a clear strategy, value proposition and utility in place. Consumers may be drawn to fun and to gamification, but without functionality and purpose, interest will wane very quickly. As businesses become more familiar with the utility of tokens, they can design digital economies which make as much sense to their customers as they do to their C-suite. For many digital-first merchants and marketplaces these new strategies may involve a new way of working with consumers and content creators.

Indeed, 65% of C-level executives surveyed believe that Web3 will change the B2C dynamic as consumers become creators or owners (of data) and 67% of C-levels say that Web3 will inevitably lead to changes in their business models. As the very infrastructure (and some of the power balance) of the digital economy shifts with the emergence of Web3 and blockchain technology, merchants will need to add thought and value if they are to stay relevant.

Concluding thoughts

The need for regulation is real



We need to talk about crypto payments



Adam Jackson

Director of Policy, Innovate Finance

The vast majority of media focus has long been on cryptocurrency as an asset, and as a particularly speculative asset at that. But if you look at where the benefits of cryptocurrencies and blockchain technologies ought to be in the future, it is in digital payments, revolutionizing payment systems and in capital markets' infrastructure.

Assets and security tokens (digitalizing ownership records), blockchain-based decentralized finance for more established services, Central Bank Digital Currencies and stablecoins will all revolutionize payments. They'll also radically change deposits and savings, public and private capital markets, FX and lending. The result will be lower costs, faster transactions and enhanced security. A focus on these 'more boring' applications of crypto assets and blockchain is fundamentally important and arguably overdue.

Inevitably, regulators and policymakers are influenced by the media focus upon the speculative asset side of the story. Moreover, political debate is highly responsive to the noisy social media activity wherein powerful crypto

influencers can appear to be cynically sending value up and down with the drop of a tweet. But 'Crypto' is multi-varied. It includes cryptographic-enabled technology, particularly blockchain or 'distributed ledger technology', decentralized finance as well as digital assets and currencies (which may or may not be built on blockchain – for example, a central bank digital currency does not need to be blockchain enabled.)

What the consumer and corporate worlds alike really need is a serious, technical and nuanced conversation about crypto and payments – and lots of it! We all have much to benefit from if the focus of the conversation were to shift towards looking at how blockchain assisted payments and markets can improve productivity, innovation and competitiveness.

One problem we face when we talk about cryptocurrencies or digital currencies is that a lot of what we are talking about does not yet exist. In particular, governments and central banks are burdened with the task of working out how their own versions of a digital currency might come into existence. What should they look like? How should they work? And what purposes should they seek to serve?

We need to imagine the future – or multiple possible futures. Innovation thrives when people have trust and confidence in it. Widespread debate, dialogue and education are critical for the adoption of CBDC and crypto applications, including more interactive engagement and public involvement and information in envisioning what the future of money could look like. Countries which do this will be better placed to develop a globally-leading position in this area.

Crypto payments are here already

But here and now, many forms of cryptocurrencies – both non-pegged crypto and pegged stablecoins – do exist. And what's more, they are being used for payments.

And arguably, the wholesale payments use-case for cryptocurrency is every bit as powerful as the retail one. We've already seen it with examples such as JP Morgan's JPM Coin issued in 2021. This is a permissioned, shared ledger system that serves as a payment rail and deposit account ledger, enabling participating J.P. Morgan corporate clients to transfer US Dollars held on deposit with real-time value movement, helping to solve common hurdles of traditional cross-border payments for businesses.

So why are we not talking about it more and why does the topic seem so nascent on most governments' and regulators' agendas?

In my view, it is absolutely imperative that governments which are working on the development of a CBDC ensure they are working in parallel on their regulatory framework for cryptocurrencies (or more specifically stablecoins). The way countries design their CBDCs and implement a regulatory stablecoins for payments needs to be thought of in tandem and the execution must be fully joined-up. Ensuring that stablecoins can be used alongside any future CBDC is vital for ensuring consumer choice, competitiveness and innovation.

CBDCs should not crowd out private sector stablecoins (crypto assets that aim to reduce volatility by pegging their value to government-sponsored – or 'fiat' – currencies). It should be looked at alongside regulation of stablecoins³⁰, to create a complementary financial system. The parallel Bank of England work on regulatory models for stablecoins is an important part of the jigsaw, which could enable public-private sector collaboration with central banks providing settlement finality to privately issued stablecoins and increased trust for consumers.

CBDCs may indeed help manage some of the potential stablecoin risks of reduced deposits and funding for lending to the real economy by providing a digital tool for stimulating lending. A CBDC may also help to manage risks of potential concentration of stablecoins in time into a few monopolistic private currencies. It would also mitigate the risk of 'walled garden' ecosystems – overcoming current reluctance by private institutional stablecoin issuers to facilitate payments between themselves. If a regulated stablecoin is developed alongside wholesale CBDC, competition rules may be needed to ensure interoperability between stablecoin providers. Controls should also be put in place to ensure a CBDC does not in itself create a state monopoly that crowds out the private sector.

Of course, this is a sizable undertaking. And political leaders will always have to contend with navigating limited bandwidth in a fast-changing world where the political agenda and prioritization can be forced to shift overnight. In the UK, for example, an effective regulatory approach to crypto payments will require the combined commitment of the Bank of England, the Treasury, the FCA, HMRC and political leaders. They will all need to be similarly convinced that such an endeavor is sufficiently beneficial to society at large.

We are at an important inflection point

The US, Singapore and UAE have publicly made strides in this direction since the start of the year. In the UK, we are currently eagerly awaiting the announcement of next steps by the Treasury and Bank of England on regulating stablecoins. Unsurprisingly, however, the onset of a major war in Europe and the economic intricacies of a huge global sanctions program have shifted the focus of all governments.

But arguably this could be a powerful inflection point for the relationship between the crypto world and many regulators. Two vastly different use cases for crypto have come under the spotlight since the start of the war between Russia and Ukraine. This has become an important moment for crypto players to earn goodwill and trust from regulators and politicians as well as from consumers and business leaders across the globe.

What sanctions in Russia are teaching us about crypto

On the one hand, with all eyes on sanctioned money, crypto exchanges have a brilliant opportunity to show that they are KYC and AML compliant and that they are willing and able to respond to government mandates on sanctions. Most of the largest exchanges have already been quick to comply. If the smaller actors can show the same compliance, then the entire sector will begin to look much more like a part of mainstream financial services. This could set a new course for the relationship between regulators and the crypto sector.

The media focus on sanctioned wealth being converted to cryptocurrency has raised some important awareness around how cryptocurrencies currently work. Informed commentators are pointing out that whatever movement of value might be possible on the decentralized blockchain, that value can very rarely be realized without moving back out of the crypto-sphere. That is to say that most crypto payments still involve a conversion to fiat at some point in the transaction chain. This inherently involves exchanges, payment networks and processors who provide the crypto-fiat on-ramps and the crypto-fiat off-ramps, at which point all funds are thoroughly KYC'd, which should leave bad actors with nowhere to hide.

Indeed, even though the blockchain itself may have a shadowy reputation due to its capacity for anonymity, it is nevertheless an immutable digital record. The onus is on law enforcement to get up to speed, but ultimately a digital footprint is a whole lot more traceable than cash, gold and diamonds.

What the Ukrainian government is teaching us about crypto

And, on the other hand, as the crypto funds have flooded into the coffers of the Ukrainian government and army, the utility of crypto is perhaps being seen in a new light. Moving fiat money in and out of warzones has often proved notoriously difficult, making it particularly challenging for besieged governments to access military or humanitarian supplies. A few days into the military invasion of their country, the Ukrainian government published their wallet address on Twitter and the crypto millions came pouring in, allowing speedy purchases of critical equipment. Indeed, payments were instant because they were in crypto. Major global suppliers who did not necessarily accept crypto for payments previously pivoted quickly in order to do so. What we see here is how governments and their societies can benefit from a borderless currency which is quick, easy and cheap to send around the globe. But we also see how quickly large corporations can and have adopted crypto as a payment method.

Time to take a collaborative, innovative approach to crypto policy

The conversation about crypto transformation of payment systems needs to be not only louder but also more technical and nuanced. We all need to be thinking about the parallel existence of pegged and non-pegged currencies alongside future CBDCs. But we also need to think carefully about the retail and wholesale uses of each of these forms of digital currencies. We need to think about global regulatory interoperability. Since one of the most promising benefits of blockchain payments is in cross-border transactions, regulators need to ensure that they work to enable the tech to flourish across borders. Moreover, we'll need to think about this at the levels of consumer protection and, increasingly, at the prudential level of financial stability.

The task is not an easy one, but it is critical. And in my view, a strong approach for countries such as the UK would be to embark on a sandbox-style framework for regulating crypto payments. This will require an iterative approach and collaborative industry spirit of test and learn. This is all new and we will all have a lot to learn from each other.



Pro-innovation crypto regulation: if you build it, they will come

**Ben Ruffels**

*Head of Public Affairs,
Checkout.com*

One might assume that any form of regulation is anathema to crypto enthusiasts: an affront to its decentralized origins and foundations and a betrayal of Satoshi Nakamoto's vision. In our own experience, however, the opposite is increasingly true.

As a service provider to some of the most innovative participants in the Web3 ecosystem, we see a much more positive attitude to regulation. Leading industry figures recognize the vital role it can play in protecting consumers and investors, providing the certainty craved by market participants and building trust in the ecosystem as a whole – all of which will help it to grow.

The regulatory debate surrounding crypto is getting louder

Public policy conversations about the crypto ecosystem still lacks the volume, nuance and technical rigor warranted by the wave of innovation already taking place across the metaverse, DeFi and NFTs. But regulation is rising quickly up the priority list of policymakers. This is partly driven by the huge growth of the crypto sector over the last two years, which is impossible to ignore: since 2019, ownership of crypto has grown materially in major economies³¹ and crypto asset market capitalization more than tripled in 2021 to \$2.6 trillion.³²

Another factor is the remarkable growth of stablecoins specifically. Their collective market capitalization was \$157 billion at the end of 2021, up from \$5.6 billion at the start of 2020.³³ Stablecoins are already making payments quicker, lower cost and more seamless across national borders, but it's the possible emergence of a 'global stablecoin' that is really concentrating regulatory minds. No surprise, then, that many countries are now considering the introduction of Central Bank Digital Currencies (CBDCs).³⁴

Essentially digital versions of fiat money, CBDCs would give central banks new levers of control at the center of the evolving digital money ecosystem; G7 countries have emphasized their role as an anchor for the payments system.³⁵

Checkout.com is informing the UK's approach to CBDCs through our membership of the HM Treasury-Bank of England CBDC Engagement Forum.³⁶

A pathway to consistent global regulation is emerging

Turning back to private sector stablecoins and crypto assets, what is it that governments and regulators are trying to solve through regulation? Key areas of concern include how to authorize and oversee market participants, maintain financial and market integrity, manage financial stability and ensure consumer and investor protection—not dissimilar from the issues surrounding wider financial services.

But existing regulatory frameworks were designed with the centralized, intermediated world of traditional finance in mind and don't easily map across to the crypto world's decentralized characteristics. Add to this the incredible pace of technological change across the crypto ecosystem and its inherently international nature, and you can see the challenge policymakers face.

Setting off on the right regulatory track is critical, though, if governments and regulators are to capture the benefits of crypto innovation as well as mitigate the risks. A holistic, balanced and collaborative approach is needed, offering near-term certainty but flexibility to accommodate (rather than impede) future evolution. Consistency across jurisdictions is also key to avoid regulatory fragmentation and arbitrage. Work is well under way at the global level to these ends.

The IMF, for example, has called for a comprehensive, consistent and coordinated global regulatory framework for crypto.³⁷ The Financial Stability Board has already agreed high-level principles for regulating global stablecoins,³⁸ and has been tasked by G20 countries with accelerating its monitoring and information-sharing on regulatory approaches.³⁹ And the Financial Action Task Force has set out a framework to guide how countries combat crypto-related money laundering and terrorist financing.⁴⁰

National frameworks have been slower to materialize

At the national level, however, the creation of legal frameworks for crypto regulation has been relatively slow and uneven. Regulatory uncertainty will endure, as many countries are still working out if they want to be hives of crypto innovation, bastions of tough regulation or somewhere in between.

Some jurisdictions are leading the way. In Singapore, for example, exchanges and other crypto businesses were brought into the scope of domestic regulation by the country's Payment Services Act 2019.⁴¹ The UAE announced a new regime and regulator for virtual assets in March 2022,⁴² and the EU's Markets in Crypto Assets (MiCA) regulation for its 27 member states will bring a degree of welcome certainty when finalized.⁴³



Progress in the US and UK has been less swift up until recently – but that is now changing. US lawmakers and regulatory agencies are now highly engaged on the subject, and President Biden has launched a ‘whole of government’ program in March 2022 to consider regulation of digital assets and a potential US CBDC.⁴⁴

And the UK government has set out its ambition to make the UK the best place in the world to start and scale crypto businesses, with firm commitments to bring stablecoins used as a means of payment into regulation, and consult on doing the same for a wider set of crypto assets.⁴⁵ Additionally, the UK’s Financial Conduct Authority is launching a new programme of engagement with industry to inform its thinking on crypto-related regulatory policy,⁴⁶ and the Bank of England plans to consult in 2023 on a proposed regulatory model for systemic stablecoin issuers and wallets.⁴⁷

Regulatory clarity will unlock innovation and growth

As these processes play out, rapid evolution in the crypto ecosystem is not going unnoticed by merchants in the wider economy. Many see the potential to help them win new customers, increase their cross-border sales, reduce chargebacks and support their treasury management. However, they remain unsure about compliance issues. Our survey research suggests regulatory clarity would be welcomed by a sizable proportion of merchants.

Within the parameters of internationally-agreed principles, jurisdictions that opt for well-calibrated and clear regulation, addressing risks while leaving space for innovation, are likely to attract more investment from crypto service providers and encourage wider acceptance of crypto by businesses. More competition in payments should, in turn, place downward pressure on merchants’ costs and deliver more choice for their customers at the checkout.

Our own experience suggests it is eminently possible for thoughtful policymakers to construct a safe but pro-innovation regulatory framework. A key reason for launching our business in London a decade ago was the progressive, collaborative regulatory approach pioneered by the UK. We think this ‘sandbox’ mindset will have a crucial role to play in shaping how – and also where – the Web3 economy will grow.

It is difficult to predict how the regulatory debate will develop; there are many potential forks in the road. But at Checkout.com, we’ll be closely following the discussion so we can anticipate and future-proof our merchants’ needs. Rarely has a regulatory discussion been as interesting, or as significant, for the future of money, payments and the digital economy.

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Glossary

Airdrop	A marketing technique in which crypto projects send their native tokens directly to the wallets of their users in an effort to increase awareness and adoption
Altcoin	Initially used to refer to any cryptocurrency that wasn't Bitcoin, altcoin may now refer to any new cryptocurrency with a relatively small market cap.
Bitcoin	The very first decentralized, peer-to-peer, digital currency, created by the pseudonymous Satoshi Nakamoto in 2009.
Block	A batch of transactions written to the blockchain. Every block contains information about the previous block, thus, chaining them together.
Blockchain	A publicly-accessible digital ledger used to store and transfer information without the need for a central authority. Blockchains are the core technology on which cryptocurrency protocols like Bitcoin and Ethereum are built.
Block Explorer	A tool for browsing information on a blockchain, such as transactions, wallet addresses, market caps, and hash rates.
Bridge	A protocol allowing separate blockchains to interact with one another, enabling the transfer of data, tokens and other information between systems.
CBDC – Central Bank Digital Currency	A central bank digital currency is the digital form of a country's fiat currency. A CBDC is issued and regulated by a nation's monetary authority or central bank. Only a small number of countries have yet developed a CBDC but 87 countries are actively exploring issuing a CBDC as of March 2022.
Centralized	A hierarchical structure in which authority and control are concentrated within a small group of decision-makers.
CEX- Centralized Exchange	A cryptocurrency exchange managed by a centralized business or entity. <i>i.e., Coinbase, Gemini, Kraken</i>
CeFi- Centralized Finance	Centralized businesses that participate in crypto. <i>i.e., BlockFi, DCG, Grayscale</i>
Coin	A cryptocurrency built on its own native blockchain, intended to be used as a store of value and medium of exchange within that ecosystem. <i>i.e. BTC, ETH</i>
Collateral	Any asset accepted as security for a loan, such as a physical asset like real estate, or a digital asset like an NFT.
Cold Wallet	An offline device used to store cryptocurrencies. Cold wallets can be hardware devices or simply sheets of paper containing a user's private keys. Because cold wallets are not connected to the internet, they are generally a safer method of storing cryptocurrencies. <i>See also: hot wallet (antonym)</i>
Consensus	The state of agreement amongst the nodes on a blockchain. Reaching consensus is necessary for new transactions to be verified and new blocks to be added to the blockchain.
Consensus Mechanism	A process through which nodes on a blockchain come into agreement on a transaction or state of the network. <i>See: Proof of Work, Proof of Stake</i>
Creator/ Creator Economy	Individuals who create content which is either solely or partially housed online. This includes social media influencers, video streamers, vloggers, bloggers, artists and musicians. The creator economy refers to the market for this material from which individual creators make an independent living.

Glossary

Cryptocurrency	A digital asset designed to be used as a medium of exchange. Cryptocurrencies are borderless and maintained by blockchains as opposed to centralized banks or governments. They are controlled by a private cryptographic key – a unique random string of numbers. In the same way that physical cash exists in a defined physical form and ownership is determined by holding paper bills which can be used to store and transfer digital currency. The term “crypto” is a common abbreviation.
DAO- Decentralized Autonomous Organization	An organization based on open-source code and governed by its users. DAOs typically focus on a specific project or mission and trade the traditional hierarchical systems of legacy corporations for guidelines written on the blockchain.
Dapp- Decentralized Application	An application built on open-source code that lives on the blockchain. Dapps exist independent of centralized groups or figures and often incentivize users to maintain them through rewarded tokens.
Decentralized	A system that operates without the control of a central figure or authority and replaces it with a distributed peer-to-peer network, typically facilitated by a distributed ledger.
DeFi- Decentralized Finance	The ecosystem of borderless, trustless, peer-to-peer financial tools being built on public blockchains without the use of banks. DeFi apps are built to be open and interconnected, allowing them to be used in conjunction with one another.
DEX- Decentralized Exchange	A peer-to-peer cryptocurrency exchange built on the blockchain. A DEX is run by its users and smart contracts instead of by an intermediary figure or centralized institution. <i>i.e. Uniswap, 1inch, Sushiswap</i>
Ethereum	A public blockchain serving as the foundation for decentralized applications. Ethereum is a Turing complete blockchain (as are most modern programming languages), allowing users to write and deploy complex, self-executing smart contracts which live on the blockchain.
Fork	A change to a blockchain’s protocol. When these changes are minor, this results in a soft fork. When the changes are more fundamental, this may result in a hard fork, leading to the formation of a separate chain with different rules. <i>See also: hard-fork, soft-fork</i>
Fractionalize	The process of locking an NFT into a smart contract, and then dividing it into smaller parts which are issued as fungible tokens. This lowers the price of ownership and allows artwork and other digital assets to be owned by a community.
Full Node	A blockchain node which stores the blockchain’s complete history, as well as verifies and relays transactions. <i>See also: node, light node, master node</i>
Fungible	Interchangeable; exchangeable with something else of the same kind. <i>See also: non-fungible</i>
Gas	A fee paid by a user to conduct a transaction or execute a smart contract on the Ethereum blockchain. This fee is dependent upon the transaction’s complexity as well as the current demand on the network.
Gwei	A denomination of ether used as the unit of measure for Ethereum gas prices. 10^9 gwei = 1 ether. <i>See also: gas, wei</i>
Hard Fork	A fundamental change to a blockchain that is not compatible with the existing protocol, requiring the formation of a new chain. <i>i.e. Bitcoin vs. Bitcoin Cash, Ethereum vs. Ethereum Classic</i>

Glossary

Hashing	The process of taking an input of any size and producing a corresponding fingerprint of a fixed-length. Hashing allows a set of data to be secured, stored and recalled using a unique identifier code. This is the backbone of blockchain technology, allowing data and transactions to be verified and stored in a secure manner. <i>See also: SHA-256, txn hash</i>
Hash Rate	Also referred to as hash power, this is the rate at which a computer can generate guesses to a cryptographic puzzle. Hash rate can also refer to the overall power being used by the entire network on a proof of work blockchain.
L1- Layer 1	This is the blockchain platform itself, also referred to as the base layer, mainchain or mainnet. <i>i.e. Bitcoin, Ethereum, Cardano, Litecoin, Solana, Polkadot</i>
L2- Layer 2	Protocols, also referred to as solutions, built on top of a layer 1 blockchain and commonly used to improve scalability and privacy, and to add cross-chain communication. Unlike sidechains, which use their own consensus mechanisms, layer 2 solutions are secured by their underlying mainchain. <i>i.e. Lightning Network, Optimism, Arbitrum</i>
Light Node	A blockchain node that downloads just enough data from the blockchain in order to process and verify transactions. Unlike full or master nodes, light nodes do not store a blockchain's complete history.
Mainnet	Short for main network, this is a main layer 1 blockchain, as opposed to a testnet or layer 2 solution. <i>See also: L1, testnet (antonym)</i>
Market Cap	The total value of an asset based on its current market price. A cryptocurrency's market cap is found by multiplying the price of a single coin by its circulating supply.
Master Node	A blockchain node that verifies and relays transactions, stores the blockchain's complete history and may participate in voting, governance of the blockchain and other special operations. Master nodes generally operate on a collateral-based system, similar to a Proof-of-Stake protocol. <i>See also: node, full node, light node</i>
Metaverse	A theoretical or emergent networked online space with digitally persistent environments that people inhabit, as avatars, for synchronous interactions and experiences, accessing the shared virtual space through virtual reality, augmented reality, game consoles, mobile devices or conventional computers.
Mining	In a Proof of Work system, this is the process of verifying transactions, organizing them into blocks and then adding blocks to the blockchain. Participants who perform this process are called miners.
Minting	The process of validating information, such as domain ownership, and registering that onto the blockchain.
NFT- Non-fungible token	A digital certificate of authenticity used to assign and verify ownership of a unique digital or physical asset. Unlike fungible tokens, NFTs are not interchangeable with one another. <i>See also: ERC-721, non-fungible</i>
Node	Any device connected to a blockchain network. Different nodes have varying levels of responsibility and may help validate transactions, store the blockchain's history, relay data and perform other functions. Because blockchains are distributed peer-to-peer networks, nodes come together to create the network's infrastructure. <i>See also: full node, light node, master node</i>
Oracle	A service supplying smart contracts with data from the outside world. Smart contracts are unable to access data that exists off-chain, so they rely on oracles to retrieve, verify and provide external information. <i>i.e. Chainlink, Band Protocol</i>

Glossary

P2E – Play-to-Earn	A concept in gaming in which a platform provides its players with a chance to earn any form of in-game assets that can be transferred to the real world as a valuable resource. Also sometimes referred to as GameFi or Game Finance.
P2P- Peer-to-Peer	A distributed network of two or more computers which interact directly without a central server or entity.
Private Key	An alphanumeric passcode required to withdraw assets from a blockchain wallet and authorize digital transactions. Because these private keys are long and difficult to memorize, wallets will generally associate them with a seed or recovery phrase that is easier to remember. <i>See also: public key, seed phrase</i>
PoS- Proof of Stake	A consensus mechanism that requires nodes, called validators, to stake a set amount of cryptocurrency on the blockchain in order to verify transactions and mint blocks. If a validator approves fraudulent transactions, then a portion of their stake will be slashed. <i>See also: slash</i>
PoW- Proof of Work	A consensus mechanism that requires miners to complete complex mathematical puzzles in order to verify transactions and mint blocks. When a miner correctly solves a puzzle, they gain access to mint the next block and receive the corresponding block reward and transaction fees.
Protocol	The foundational software layer of a program. Protocol has become a general term used to refer to both layer 1 blockchain networks and the layer 2 applications built on top of them – Bitcoin, Ethereum, Uniswap, and Lightning Network can all be considered protocols.
Public Key	An alphanumeric code that serves as the address for a blockchain wallet, similar to a bank account number. Other users can send digital assets to your wallet via your public key, but only you can access your wallet's contents by using the corresponding private key. <i>See also: wallet address, private key</i>
Rollup	A scaling solution that aims to improve transaction throughput and decrease fees by batching multiple transactions off-chain and then submitting them to the main chain as a single transaction. <i>i.e. Optimism, ZK, Arbitrum</i>
Satoshis/Sats	The smallest denomination of BTC, equal to 0.00000001 bitcoin. Satoshis are named after Bitcoin's pseudonymous creator, Satoshi Nakamoto.
Scalability	A protocol's capacity to handle higher demand and increase transaction throughput as the network grows.
Seed Phrase	A string of words used as a master password to access a crypto wallet. Because a single wallet can contain multiple accounts, all with their own private keys, a seed phrase makes it easy to access them all with the same password.
SHA-256	SHA stands for Secure Hashing Algorithm, a set of cryptographic hashing functions designed by the NSA. Essentially, SHA-256 takes an input of data and generates a long sequence of letters and numbers, called a hash. This hash is then used as a secure placeholder for the data it represents. <i>See also: hashing</i>
Sharding	A method of separating a network's nodes out into smaller groups (shards) in an attempt to increase scalability. These shards are then able to reach consensus on behalf of the entire network, removing the need for every node to process every transaction.
Sidechain	A parallel blockchain used to offload transactions from the main chain in order to increase scalability or add other functionality. Sidechains are connected to their main chain, or parent chain, via a two-way link which allows data and assets to be seamlessly transferred. <i>i.e. Matic, Dai, Rally.io</i>

Glossary

Smart Contract	Self-executing code deployed on a blockchain. Smart contracts allow transactions to be made without an intermediary figure and without the parties involved having to trust one another.
Soft Fork	A backward-compatible update to a blockchain. Unlike a hard fork, these changes do not require the creation of a separate chain. <i>See also: fork, hard fork</i>
Solidity	The native programming language of Ethereum, mainly used to write smart contracts.
Stablecoin	A token with its value normally pegged to another asset. Stablecoins are usually backed by a fiat currency, like the US dollar, but can also be pegged to physical assets like precious metals or even other cryptocurrencies like Bitcoin. Some are not pegged, such as algorithmic stablecoins, but all are designed to hold their value and maintain stability. <i>i.e. USDT, Dai, USDC</i>
Testnet	A software environment that mimics a mainnet blockchain, used to test network upgrades and smart contracts before deploying them to the mainnet.
Token	A token is a digital asset created on an existing blockchain. Tokens can be used to represent digital and physical assets or used to interact with dapps. <i>i.e. LINK, UNI, AAVE</i>
TPS- Transactions	The number of transactions that a blockchain can handle per second, used as a benchmark to measure its computational power.
Transaction	Data written to a blockchain. New transactions are verified by nodes on the network and then broadcasted to other nodes. Once enough nodes have verified the transaction, it is considered valid and added to a block.
Trustless	The concept of trustlessness is a core element of blockchain, crypto payments and smart contracts because of the immutable nature of the blockchain (or distributed ledger) technology. The distributed process of mining is central to creating this trustlessness. 'Trustless' means that you don't have to trust a third party: a bank, a person or any intermediary that could operate between you and your cryptocurrency transactions or holdings.
US Dollar Coin (USDC)	An Ethereum-based stablecoin – a type of digital asset whose value is pegged 1:1 with US dollar. That means holders can redeem 1 USD Coin (USDC) for \$1 at any time. Every USDC is backed by one dollar or an asset with an equivalent value, held in accounts with US regulated financial institutions.
Wallet	A software application or hardware device used to store the private keys to blockchain assets and accounts. Unlike a traditional wallet, a blockchain wallet does not actually store the coins or tokens themselves. Instead, they store the private key that proves ownership of a given digital asset. <i>i.e. Metamask, Coinbase Wallet, Ledger, Trezor</i>
Wallet Address	Also known as a public key, this is an alphanumeric code that serves as the address for a blockchain wallet, similar to a bank account number. Other users can send digital assets to your wallet via your public key, but only you can access your wallet's contents by using the corresponding private key.

Glossary

Web1	The first iteration of the web, commonly referred to as the 'read-only web.' Web1 was characterized by static websites that displayed information. There was little to no user interaction or user-generated content.
Web2	Starting in the 90s, the 'read-write web' is characterized by user-generated content and improved user interfaces. This led to the creation of blogs and social media platforms, as well as sites like Wikipedia and YouTube. Web2 placed more emphasis on user experience and interoperability between different applications and websites, giving us the vast network of connected websites and resources that we are familiar with today.
Web3	The next iteration of the world wide web built on blockchain technology, trustless open-source applications and the decentralization of data and information, which are all interoperable. Decentralization is at the core of Web3. In Web2, computers use HTTP in the form of unique web addresses to find information, which is stored at a fixed location, generally on a single server. With Web3 because information is found based on its content, it could be stored in multiple locations simultaneously and hence be decentralized. The data generated by disparate and powerful computing resources, including mobile phones, desktops, appliances, vehicles and sensors, could be sold by users through decentralized data networks, ensuring that users retain ownership control. In addition to decentralization and being based upon open-source software.

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