TECHNOLOGY

The Latecomer's Guide to Crypto

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What is web3?

This is part of "The Latecomer's Guide to Crypto," a mega-F.A.Q. about cryptocurrency and its offshoots. Kevin Roose, a Times technology columnist, is answering some of the most frequently asked questions he gets about NFTs, DAOs, DeFi and other crypto concepts.

I'm hearing this term — "web3" — all over the place. What is it?

Web3 is the name some technologists have given to the idea of a new kind of internet service that is built using decentralized blockchains — the shared ledger systems used by cryptocurrencies like Bitcoin and Ether.

The term has been around for years, but it has come into vogue in the past year or so. Packy McCormick, an investor who helped popularize web3, has defined it as "the internet owned by the builders and users, orchestrated with tokens."

Proponents envision web3 taking many forms, including decentralized social networks, "play-to-earn" video games that reward players with crypto tokens, and NFT platforms that allow people to buy and sell fragments of digital culture. The more idealistic ones say that web3 will transform the internet as we know it, upending traditional gatekeepers and ushering in a new, middleman-free digital economy.

But some critics believe that web3 is little more than a rebranding effort for crypto, with the aim of shedding some of the industry's cultural and political baggage and convincing people that blockchains are the natural next phase of computing. Others believe it's a dystopian vision of a pay-to-play internet, in which every activity and social interaction becomes a financial instrument to be bought and sold.

Why are so many people talking about web3 all of a sudden?

Part of it is the usual cocktail of hype, marketing and fear of missing the next big thing.

But the web3 boom also reflects the amount of capital, talent and energy pouring into crypto start-ups on the heels of a yearslong crypto bull market. Venture capital firms have put more than $27 billion into crypto-related projects in 2021 alone — more than the 10 previous years combined — and much of that capital has gone to web3 projects. Some big tech companies, such as Twitter and Reddit, have also started experimenting with their own web3 projects.

And the industry has become a magnet for tech talent, with many employees of big tech firms quitting cushy, stable jobs to go seek their fortunes in web3.

I want to understand web3. But first, can you remind me what web1 and web2 were?

Sure. Web1, in the traditional telling, refers to the internet of the 1990s and early 2000s. It was the internet of blogs, message boards, and early portals like AOL and CompuServe. Most of what people did on web1 was passively read static web pages, and much of it was built using "open protocols" like HTTP, SMTP and FTP. (Don't worry about what those things are — just know that an open protocol is a piece of web infrastructure that isn't owned by a single company, and that the concept of open protocols is going to reappear a few sentences from now.)

Web2, the story goes, was the next phase of the internet, starting around 2005 or so — the one characterized by social media behemoths like Facebook, Twitter and YouTube. In web2 (or Web 2.0, as it was usually called then), people began creating and posting their own content, actively participating in the internet rather than passively reading it. But most of that activity ended up being distributed and monetized by big companies, which kept most, if not all, of the money and control for themselves.

Web3, the story goes, will replace these centralized, corporate platforms with open protocols and decentralized, community-run networks, combining the open infrastructure of web1 with the public participation of web2.

The crypto investor Li Jin and the writer Katie Parrott sketched the web3 vision this way: "If the pre-internet/web1 era favored publishers, and the web2 era favored the platforms, the next generation of innovations — collectively known as web3 — is all about tilting the scales of power and ownership back toward creators and users."

That sounds ... exciting but vague. How do web3 proponents actually envision that happening?

Web3 proponents argue that a blockchain-based internet would improve on the current internet in several ways.

First, they say, web3 platforms could give creators and users a way to monetize their activity and contributions in a way that today's mega-platforms really don't.

Today, for example, Facebook makes money by aggregating user data and selling targeted ads. A web3 version of Facebook could allow users to monetize their own data, or even earn crypto "tips" from other users for posting interesting content. A web3 Spotify could allow fans to buy "stakes" in up-and-coming artists, effectively becoming their patrons in exchange for a percentage of their streaming royalties. A web3 Uber could be owned by the drivers on the network.

Matt Levine, a Bloomberg columnist, put it this way: "A basic premise of Web3 is that every product is simultaneously an investment opportunity."

Second, proponents argue, web3 platforms could be democratically governed in a way that web2 platforms aren't.

Internet behemoths like Facebook and Twitter are essentially autocracies. They can unilaterally seize usernames, ban accounts or change their rules on a whim. A blockchain-based social network could delegate those decisions to users, who could vote on how to handle them.

Third, they say, web3 would be less reliant on advertising-based business models than web2, and people would have more privacy as a result, with fewer trackers and targeted ads following them around and fewer giant companies vacuuming up their personal data.

Of course, this is a highly idealistic version of web3, sketched mostly by people who have a financial stake in making it happen. The reality could be much different.

What's an example of a web3 app that exists today?

An oft-cited example is Axie Infinity, a video game developed by the Vietnamese game studio Sky Mavis, which uses NFTs and Ethereum-based cryptocurrencies to reward players with real money for achieving in-game objectives.

In the game, players can "breed" characters called Axies, and use them in battles against other players. They can also collect virtual land, in the form of NFTs, and earn a type of digital money called Smooth Love Potion, or SLP, which can be traded on a cryptocurrency exchange. (In an article last year, the writer Casey Newton called it "Pokémon on the blockchain.")

Axie Infinity has attracted millions of players, including a number of people in the Philippines who make a full-time living from playing the game. But the game's reliance on crypto tokens makes it volatile, and players can lose money if token values drop, as happened last year.

That just sounds like gambling.

It is, sort of. But gambling is an incredibly successful industry! And web3 people would argue that if you're going to spend hours and hours of your day playing a video game, you should at least have the opportunity to get paid for it.

Are there any other apps that could help me understand the web3 hype?

It's not as sexy as a video game, but I've always thought that Helium was a good example of a web3 project that demonstrated what makes it different from the technology that came before.

Helium is basically a crypto-powered, crowdsourced wireless network. People can sign up to share bandwidth from their home or office Wi-Fi networks with the Helium network, using a special kind of device that plugs into their computer or router. In exchange, they're rewarded with Helium tokens when nearby devices use their bandwidth. The more often their hot spots are used, the more tokens they get. The Helium network has more than 500,000 active hot spots today, many of them powering connected devices like parking meters and electric scooters.

You could build a similar network without crypto by going door-to-door, trying to convince people to share slivers of their internet bandwidth with nearby devices. Or, if you were a big telecom company like Verizon or AT&T, you could spend billions of dollars to build such a network yourself. But Helium was able to build a network without huge upfront costs by allowing people to earn crypto tokens for adding new coverage to the network, effectively using crypto's popularity to finance the construction of something it wanted to build anyway.

So part of the appeal of web3 is that it incentivizes people to do things they might not otherwise do, like playing a video game or sharing their Wi-Fi with strangers?

That's part of it. But web3 advocates think examples like these are just the beginning.

Go on ...

Well, now we're venturing deep into the land of the theoretical, but some believers think that web3 could become the backbone of a new, tokenized society.

"Web3 will house our financial institutions, social interactions, personal identities and much, much more in the not-so-distant future," Lior Messika, a crypto investor, told TechCrunch recently.

Among web3 fans, there's been a lot of talk about "decentralized identity" — the notion that, in the future, we could all have a kind of reputation score that consists of a blockchain-based tally of the jobs we've done, events we've attended and projects we've contributed to. These records would essentially become permanent records of our online lives, and other people could look them up to decide whether to hire us, trust us with some task or even date us.

That sounds terrifying. Wasn't there a "Black Mirror" episode about this?

Yes, there was. And the permanence of web3, along with its dependence on volatile crypto markets, is part of the reason that the grander web3 vision has been met with so much resistance.

The writer and technologist Robin Sloan, for example, wrote that the ability to delete things — "an operation basically antithetical to Web3," in his words — was actually a desirable quality of internet services.

Stephen Diehl, a computer programmer and outspoken crypto detractor, went even further, calling web3 "the hyperfinancialization of all human existence."

Strong words! What are some other objections to web3?

Some skeptics simply believe that web3 doesn't make sense from a technical perspective. They point out that blockchains are significantly slower and less capable than standard databases, and that today's most popular blockchains couldn't even begin to handle the amount of data that Uber, Facebook or YouTube use on a daily basis. To make web3 services perform as well as consumers demand, they argue, you have to build centralized services on top of them — which would defeat the whole purpose.

There are also people who believe that web3 is an attempt by wealthy investors to pay lip service to decentralization while building new, centralized services that they control — making themselves the new middlemen, in effect.

Is that what Jack Dorsey was fighting about on Twitter?

Yes. Mr. Dorsey — the former chief executive of Twitter — is a big fan of Bitcoin, which he believes will replace the dollar and usher in world peace. And, like many Bitcoin fans, he is more skeptical of other cryptocurrencies, including Ethereum, the blockchain that most of the web3 ecosystem runs on.

In a series of tweets in December, he criticized web3, saying that it was "ultimately a centralized entity with a different label." He also took shots at Andreessen Horowitz, a well-known venture capital firm that invests heavily in web3 projects, implying that their vision of web3 would take control out of the hands of users and put it in the hands of wealthy investors and centralized tech platforms.

What do regulators have to say about web3?

So far, not much, although the topic did come up during a recent congressional hearing.

But the industry could run into hurdles once regulators start paying attention in earnest. One potentially big problem is that crypto tokens — which are critical to many web3 applications — currently exist in a regulatory gray zone in the United States. Some regulators, including Gary Gensler, the chief of the Securities and Exchange Commission, have argued that many tokens are unregistered securities, and that platforms offering tokens should be subject to the same rules as companies that issue stocks and bonds.

Crypto companies counter that tokens should be treated as a new kind of asset, not covered by existing securities laws. But it's not clear whether they'll win this argument. And if U.S. web3 start-ups are required to treat their tokens as securities, many of them may have to shut down, change their products or move to a different country.

How is web3 related to the metaverse, the other confusing tech word I can't escape these days?

The metaverse, if you've been following along, is the term we're using these days for immersive digital worlds in which users can socialize, play games, attend meetings and do other activities together. It's the vision Mark Zuckerberg outlined when he announced that Facebook was changing its name to Meta. And some crypto proponents believe that web3 is an essential part of the metaverse, because it would allow for the creation of metaverses that aren't controlled by a single company or governed by a single set of rules.

Many objects in the metaverse may also be crypto tokens, if the web3 crowd has its way. Your metaverse avatar might be an NFT. Your metaverse house might come with governance tokens or qualify you to join a neighborhood DAO. The mortgage on that house might even be packaged into a mortgage-backed security token and sold on a decentralized exchange.

OK, now my head is spinning.

That's fine. Honestly, most of this stuff is purely theoretical, and you've got plenty of time to study up if it comes to fruition.

For now, just know that web3 is a word you'll be hearing a lot in the next few years as people try to get their heads around the world of new experiences, platforms and moneymaking opportunities crypto enthusiasts are trying to create.

Go deeper:

“Beyond the Bitcoin Bubble” This New York Times Magazine article from 2018 examines the case for web3 (before it was called “web3”) as “a way of getting back to the internet’s roots.”

“My First Impressions of Web3” Moxie Marlinspike, the creator of Signal and a well known cryptography expert, takes a skeptical look at web3 and its technical underpinnings in this 2022 blog post, concluding that “decentralization itself is not actually of immediate practical or pressing importance to the majority of people.”

“The Web3 Renaissance: A Golden Age for Content” In this 2021 blog post, Li Jin and Katie Parrott make the case for web3 as a boon to artists, musicians and creators of internet media, saying that technologies like NFTs and DAOs could unlock a “true creative Golden Age.”

“Notes on Web3” In this essay, the author Robin Sloan declares himself a “a full-fledged enemy of Web3” because of its hyperfinancialization and technical limits.