

Web 3.0: An NFT Internet

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It is safe to say that, nowadays, it is difficult to imagine our life without the Internet. This proved to be legitimate in the wake of the recent COVID-19 pandemic which forced most of the world to adapt to online settings for their professional, educational, financial and recreational needs. Due to our rising dependency on the Web in the past 30 years, there have been two major iterations of the Internet.



Web 1.0 (also known as Syntactic web), the very first iteration of the Web, consisted mostly of static 'read-only' webpages created by limited content creators. While this allowed users from all over the world to read and browse these web pages, user interaction was limited just to these functions. Further, there were no search engines during this time period, which made navigating the World Wide Web a complicated process.

Web 2.0(also known as the Social web), the next iteration of the Web, facilitated greater user interaction and participation. Now, users could create their own unique online identities across various applications which led to the popularity of blogging sites and inspired the creation of user contribution-based websites like Wikipedia and Medium. As the value for user-generated data increased, Web 2.0 fueled the rise of social media starting with Myspace followed by current giants like Facebook, Twitter, etc. This data generated is used for targetted advertising by companies, especially e-commerce, to inexpensivly market their products and services to potential customers all over the world [1,2].

The development of Web 3.0 can be attributed as an attempt to resolve some of the shortcomings of Web 1.0 and Web 2.0, which is the accumulation of power within a few central entities(like Google, Amazon, Facebook, etc). This meant that the content that a user can publish to the Web had to conform to the terms and conditions of the respective platform entities that they use. Web 3.0's decentralised architecture proposes Internet applications and services powered by distributed ledger technology, most notably blockchain. This concept is very similar to Tim Berners-Lee's idea of the Semantic Web, where central entities do not exist and individuals can rightfully own and share their data with other users, eliminating the

need for "trusted third parties". This hints at the transition of the Web from the current large, centralised entities which provide services and access to their respective platforms in exchange for monetising user profile data (by selling it to third parties for marketing purposes) seen under Web 2.0 to one where decentralised applications ensure user participation by respecting user data ownership without compromising on privacy. Data is, then, not owned but shared with different applications and services showing different views of the same data based on the level of clearance approved by the user. The Web should be able to contribute to and leverage trusted sets of shared data without relying on the messy status quo of replication, data lakes, API bloat and redundant harmonization procedures [3]. This data-first architecture means that the Web of the future needs to go back to the 5 core principles laid out by W3C for Web 1.0: Web for All, on Everything, for Rich Interaction, of Data and Services, of Trust.

This intent of owning back the data became the core guiding principle of Web 3.0. Satoshi Nakamoto's bitcoin whitepaper in 2009 was one of the first steps in this direction which laid out a potential roadmap to decentralisation in the financial ecosystem. This was a breakthrough in the sense that it put forward the idea of coupling blockchain with smart contracts. With Ethereum's whitepaper in 2014, the popularity of smart contracts increased tremendously. In the blockchain ecosystem, smart contracts are open-source, self-executing code that executes itself when certain predetermined conditions are met without the need for middlemen or regulatory parties. This paved the path for applications (DApps), tokens (layer 2 blockchains), DeFi, NFTs and social tokens.

Tokenization is a concept of representing any digital or a physical asset as a token. Digital tokens enabled by DLTs accomplish the task of disseminating access, ownership and information without the need for central entities who act as "trusted third parties" (regulators and intermediaries). The records of transactions of these tokens can be accessed by anyone at any time, which allows for expediting the facilitation of the transactions without the need for paper trails, regulator intervention and approvals or record verifications by central authorities. This nature of digital tokens transcends beyond territorial barriers and allows for fractional ownership of assets which allows for the possibility of new business opportunities as the market allows for small investors across the world to participate in the trade of digital assets.

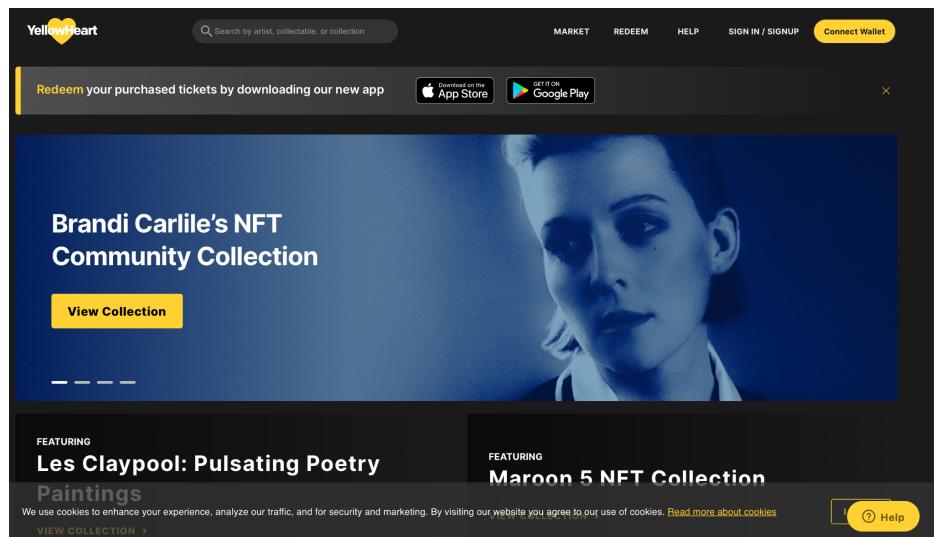
For the scope of this article, I classify crypto tokens based on their fungibility. A fungible asset implies that two units of an asset are identical and mutually substitutable for example, currency and stocks. Native cryptocurrency tokens, like Bitcoin and Ethereum, are fungible in nature. Any two Ethereum tokens are interchangeable because they are essentially the same. Cryptocurrencies are hence fungible in nature.

Another DLT based asset class are categorized as the non-fungible tokens (NFTs). NFTs (Non-fungible tokens) are tokens that can be used to represent the ownership

of unique items, almost like a deed to a physical or digital item like real estate, digital art, etc. The idea here is that the possessions are unique and are not interchangeable. They all have their own unique properties that are theirs and theirs only in contrast to fungible assets (like how no two pieces of land are the same even if they are of the same size). Being a non-fungible asset class comes with its own properties of non-divisibility and is infinitely rare (with many creators making limited tokens). NFTs are secured using the Ethereum blockchain such that at any given time, they can only have one official owner. Ownership records are immutable and new NFTs cannot be copy-pasted into existence[6].

A comparison	
An NFT internet	The internet today
NFTs are digitally unique, no two NFTs are the same.	A copy of a file, like an .mp3 or .jpg, is the same as the original.
Every NFT must have an owner and this is of public record and easy for anyone to verify.	Ownership records of digital items are stored on servers controlled by institutions – you must take their word for it.
NFTs are compatible with anything built using Ethereum. An NFT ticket for an event can be traded on every Ethereum marketplace, for an entirely different NFT. You could trade a piece of art for a ticket!	Companies with digital items must build their own infrastructure. For example an app that issues digital tickets for events would have to build their own ticket exchange.
Content creators can sell their work anywhere and can access a global market.	Creators rely on the infrastructure and distribution of the platforms they use. These are often subject to terms of use and geographical restrictions.
Creators can retain ownership rights over their own work, and claim resale royalties directly.	Platforms, such as music streaming services, retain the majority of profits from sales.
Items can be used in surprising ways. For example, you can use digital artwork as collateral in a decentralised loan.	

Source: ethereum.org



[A ticket that gives you access to an event or a coupon](#)

In the digital realm itself, the possibilities with NFTs are endless but they are not just limited to that. The creator of an NFT could attribute the value of a digital NFT good to deeds in the physical space which has led to another class of NFTs called social tokens. These tokens could be used as conference and concert tickets, backstage passes, invites to private discord groups, expert opinions [4], guidance, one on one time with the creator (tokenizing time), influence the creative process of the creators [5] and their work ([Stoner Cats](#)) and so on.



While the research around blockchains is still evolving, NFTs and social tokens have already started sending ripples into imagining a new kind of intellectual property management, social interactions in the digital space and questioning the current state of the internet. When one imagines a scenario in which every social interaction is an economic transaction where individuals are incentivized to build their digital identities, they are forced farther away in the physical space. This will also result in higher barriers of entry on the Internet (Web 2.0 is economically accessible to the global south upfront) and an arms race for better computational resources for gaining more stake in the ecosystem which only further elevates the disparity. In such a scenario, NFTs could have unintentional and unintended consequences if these avenues of research are neglected. Further research and critical perspectives on the token economy could focus on identity, ownership principles, emerging business models, marketplaces and livelihoods of communities in blockchain ecosystems (Play to Earn, for example, new virtual job ecosystems), mitigating risks in the long term effects.

References:

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