Web3 Social has the potential to radically expand crypto/Web3's user base and application space, while fixing some of the major problems with current social media.

With the recent transition from Twitter to X, change seems to be in the air. X is opting for sharing ad revenues with creators and has released its open-source protocol, [AT Protocol](#) (the first app being [BlueSky](#)). [Creator and community tokens](#) have recently returned with [Friend.tech](#). This seems like a great moment to have another look into the Web3 Social ecosystem. We are sharing a market map and reflections on the emerging tech stack in the article below.

The need for Web3 Social

At this point, few people would disagree with the premise that social media is broken. The topic has been discussed sufficiently to just reiterate some of the major problems briefly:

- Innovation is limited due to platform lock-in effects and market power of incumbents

- Controversies around censorship and de-platforming undermined trust

- Creators only get a small part of the value they generate and have limited options

- Curation algorithms are intransparent and optimized for short-term attention capture

- Users don't own their data, which is often sold to advertisers without explicit consent

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Web3 has the potential to solve these problems one by one, promising user-owned content and direct monetization. It could also provide a credibly neutral playing field for composable tech stacks with data portability and user choice (e.g. on what client or algorithm to use).

An updated market map for Web3 Social

The market map below shows an overview of the entire emerging Web3 Social tech stack, including applications and the tech stack they are built on. There are four layers of the stack that build on top of each other and provide different functions.

We segmented the stack into the following sections:

Applications

Applications, or social dApps are the most visible segment: it's where users interact, create, and consume content. A major difference to traditional social media is that users can choose between different applications while interacting with a shared Web3 Social protocol. Different applications focus on different content types (e.g. video, text, images) or different interaction patterns (from 1-1 to n-n). There are decentralized versions of Discord and X (n to n), Substack (1 to n), and Whatsapp (1 to 1) already working. Traditional social Media from Instagram to X focuses on both n to n

and 1 to n

interactions. This is also the segment with the most activity in Web3 Social. We divided example applications between the most common Web3 Social Protocols, Farcaster and Lens. We included Engagement apps, used by Web3 projects to incentivize their communities to take certain actions, since they often involve activity on social media.

Social protocols

Applications are built on top of Web3 Social protocols. These protocols usually include social graphs, identifiers, actions, and algorithms. Web3 Social protocols set the parameters of what is possible with applications and aggregate the required technical capabilities. Currently, the different Social protocols have their own ecosystems developing around them. Farcaster and Lens have generated the most activity so far (see the images in the next chapter).

While Farcaster and Lens share similar functions and overall vision, we notice differentiation occurring over time as decisions are made. Lens has focused on creator monetization from the start with features like posts that are collectable as NFTs for a fee, and even referral fees. Farcaster, on the other hand, has focused more strongly on functionality and catering

to builders. Interestingly, Farcaster requires users to pay for connecting to other clients, while Lens is subsidizing gas fees for on-chain interactions. The different strategies are reflected in the protocol architectures, for example the design of IDs/profiles, the portability of the social graph, and what processes happen on vs. off-chain.

There are many other social protocols with similar visions, including AT Protocol, Nostr, DeSo, Cyberconnect, and Orbis.

Identity and reputation

Within the larger Web3 ecosystem, a range of protocols for identity and reputation have emerged. We segment these protocols into the following categories:

- Identifiers

- Credentials

- Participation

- Access

Identifiers

Credentials

Participation

Access

Currently, most Web3 Social protocols provide their own native identity and reputation layers. Eventually, we predict this layer of the tech stack to be unbundled even further, which would allow them to become portable and composable between different Web3 Social protocols.

Low-level Infrastructure

Finally, there is low-level infrastructure at the base of the tech stack. Data storage protocols are used to store content and media in a decentralized manner. Messaging protocols make Web3 social protocols more interoperable. Wallet infrastructure abstracts away the complexity of private key management to make Web3 social applications more accessible. Finally, blockchains and Layer 2 environments provide consensus on ownership of assets (e.g. NFTs and verifiable credentials through private key ownership).

The market map presented here represents how the ecosystem looks from a high level and is not exhaustive.

Reflections on the state of Web3 Social

After establishing that bird's eye view of the emerging Web3 Social tech stack, we are offering some reflections on the progress achieved so far and the remaining challenges going forward.

The Web3 Social Tech stack is coming together with multiple thriving ecosystems

First, it is exciting to see that Web3 Social has produced a range of functional applications, even if the usage is still small. Lens and Farcaster are successful examples of how a Web3 Social protocol can galvanize an ecosystem with a diverse set of applications. They also illustrate how a composable tech stack can come together to create working consumer products.

For example, Lens uses Polygon to guarantee ownership of accounts (scaled via a custom optimistic rollup) and their associated data, stores data on Arweave, and facilitates messages with XMTP. A range of different applications has been built on Lens (e.g. Hey, Orb, Butterfly, Tape). The Farcaster ecosystem is in a similar state of development and also offers diverse applications to access it. We provide snapshots of the Farcaster and Lens ecosystems below to illustrate the diversity of applications within each ecosystem.

Source: https://www.farcaster.xyz/apps#ecosystem

Source: https://lensgarden.xyz

The different protocols across the stack need further integration

While we are excited about these thriving ecosystems, we observed that the full available tech stack is not yet used.

- The existing identity and reputation stack is poorly integrated into Web3 Social protocols. Identifiers, identity, and credentials could be used to enhance user experience, manage access, etc.

- There is still a disconnect between on-chain assets and Web3 Social protocols. For example, NFTs are mostly used as profile pictures or for gated chats in Discord.

- Web3 Social experiences are not yet integrated throughout Web3 at large.

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Web3 Social protocols are quite "fat", containing different parts that could potentially be unbundled. Both Lens and Farcaster initially used their own identifiers instead of relying on existing solutions. Farcaster has since integrated with ENS. Some functions of social protocols like curation algorithms or social graphs could eventually become independent protocols. The recent progress in open source AI models could empower this new segment of open composable algorithms for content curation - an interesting opportunity for entrepreneurs. In general, unbundling will allow for the higher degrees of user ownership and choice that we are hoping for: Users will be able to bring their identity, reputation and social graph wherever they tread online and choose how they want to interact.

A greater degree of integration of existing on-chain assets will enable Web3 Social protocols to tap into existing communities and enable novel experiences. We are seeing the first signs of this, for example, Warpcast has a dedicated Nouns channel that highlights NFT mints. In the future, holders of governance tokens or NFTs might have access to certain channels and be able to vote within social experiences. Mod Protocol is working on this vision of expanding functionality on top of social protocols with mini apps.

Finally, for Web3 Social to reach its full potential, it will also need to be integrated throughout the rest of Web3. We imagine social aspects permeating all kinds of Web3 applications. For example, gated group chats based on NFT ownership or connection requests based on financial interactions are a few examples. And as Web3 starts to merge with the internet at large, we could also imagine social experiences on the equivalents of Google, Notion, Wikipedia, etc.

Fragmentation and duplication below the application layer

Below the application layer, there are competing protocols at each subsequent layer of the tech stack. While we want a diversity of products on the application layer to give users more choice, the protocol level below should be interoperable for maximum impact. In order to avoid similar fragmentation and duplication like we see in legacy social media, these different protocols will either need to become interoperable or the Web3 Social ecosystem will need to converge on a single protocol for each segment. For now, it seems healthy to have similar attempts with different design decisions across the tech stack run in parallel, e.g. Farcaster and Lens on the level of Social Protocols.

Interoperability between protocols seems like the more realistic pathway to avoid fragmentation. Eventually, we expect shared standards to make interoperability easier for applications. There are first examples of applications that have started to aggregate the different Web3 Social protocols: Yup integrates with Lens, Farcaster, and AT Protocol. It even included posts from X before it became inaccessible because of API costs. Backwards-compatibility with and bootstrapping from existing social platforms ("spooning") is a great strategy for overcoming entrenched network effects, but can easily be stopped by those platforms (just like we saw in the case of X increasing API costs).

Crossing the chasm

What are the remaining challenges for Web3 Social? What needs to happen for these applications to reach critical mass and seriously challenge legacy social media platforms? We see the following major hurdles for adoption:

- Fixing remaining usability issues

- Producing 10x better social experiences

- Overcoming network effects

Fixing remaining usability issues

Producing 10x better social experiences

Overcoming network effects

First of all, there are still some usability hurdles that need to be overcome: Content moderation, authentication, and spam filtering are some areas in which more advanced solutions are needed. However, these challenges seem relatively tractable at this point.

For instance, authentication and abstraction Web3 elements that lead to complicated UX, seem mostly solved at this point.

[Friend.tech](#) could expand successfully beyond Web3-natives by using[Privy](#) to abstract away private key management.

The task for Web3 Social is not only to get on par with existing social media in terms of user experience, but to produce a 10x better experience. There likely won't be a single bullet to achieve this, but a growing number of small improvements that will eventually cross the critical threshold.

- Interoperability and composability will enable combinatorial innovation to create a range of experiences not possible on legacy platforms. For example, [Interface](#) allows users to see the on-chain activity of the people they follow on Farcaster. Lens is experimenting with monetization through making posts collectable NFTs.

- User ownership and choice across all levels of the tech stack will allow for much more customization while still interacting on shared infrastructure. Users can already choose between applications that look more like X, Youtube, Reddit etc. while accessing the same shared social graph on both Lens and Farcaster. In Web3 Social, when you sign up to a new social app, you'll find all of your friends already there.

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The most important challenge for Web3 Social is probably to reach a critical mass of adoption. Social is a child of Metcalfe's law

: Like any communications network, a social platform is valuable proportional to the square of its number of users. This means that the network effects of incumbents are incredibly strong. This is evidenced by the repeatedly failed attempts of many communities to leave X.com for alternative platforms: The network effects of X are so strong that most users eventually come back, as much as they dislike certain product decisions or policies.

Coordinating user migration into a new application fast enough to reach critical mass is one key strategy. Even though this is a tremendous challenge, it is not insurmountable: Onboarding single communities at a time, as well as using tokens as incentives (and rewarding early adopters) are promising strategies, for example.

Backwards-compatibility with existing platforms with hybrid solutions and bootstrapping reputation from legacy social media are also promising approaches. Friend.tech's use of X accounts for authentication (acting as a pathway for viral growth additionally) or Yup's integration with X and Threads are good examples. Eventually, the composability and interoperability of Web3 protocols should resolve this need for bootstrapping towards a critical mass, as users can be shared across applications. For example, Lens DMs show up as [Converse](#) chats as soon as a new user signs up, since both are using the messaging protocol XMTP.

Eventually, users will be able to bring their entire digital footprint, connections, and preferences with them wherever they go. Without the lock-in effect of legacy social media, it is an open question how the competitive dynamics will play out, where value will accrue, and what a sustainable advantage looks like. In analogy with the rest of Web3, it seems plausible that community ownership and trust will play key roles. Especially for applications, making their users co-owners and building long-term habits could be crucial in the long run. For protocols deeper in the stack, it might be more important to become an interoperable standard for most applications.

Either way, we could be the start of an entirely new paradigm for social media and online communication that puts users back in charge, which we are truly excited about. However, we're still very early - watch this space.