



Web3 Social: Road to Mass Adoption

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Key Takeaways

- ❖ At its core, Web3 social provides three main unique utilities compared with Web2.
 - First, **asset creation & shared ownership**: Web3 social apps can use blockchain to create a shared ownership structure with its users.
 - Second, **open data and identity**: data and credentials accumulated on-chain are shared across the whole ecosystem.
 - Third, **composable ecosystem**: dApps built on smart contract blockchains like Ethereum are inherently composable, allowing developers to build on top of existing applications in a permissionless manner.
- ❖ The Web3 social ecosystem can be divided into the following sectors: infrastructure, middleware, applications, and tooling.
 - **Infrastructure**: Projects are attempting to provide customized infrastructure tailored towards the need of social apps.
 - **Middleware**: Most of the latest innovations in Web3 are built in existing ecosystems, and middleware protocols build those existing infrastructure that aims to be the intermediary between blockchain and applications by querying, organizing, and presenting the data to application developers.
 - **Applications**: Web3 social applications are a diverse group of products that fits different scenarios. Prominent forms include social media, community-based applications, and instant messaging products.
 - **Tooling**: Different from applications, tooling is a group of products that leverage Web3's interoperability and design their products to be "portable" across different platforms and blockchains.
- ❖ Currently, Web3 social cannot directly compete with Web2 social in terms of user experience, and to succeed, it needs to provide unique and innovative utilities. We are monitoring innovations in the following areas:
 - **Mobile applications**: A large portion of the social activity happens on the mobile, and we are looking forward to more innovations on this platform.
 - **Crypto-native innovations**: Many of the current Web3 social products are replicates of Web2 products, and we believe that social products with real adoption will only come from products that use blockchain primitives to provide users with transformational experiences.
 - **Intersection with Web3 scenarios**: Successful Web3 products can also come from addressing Web3-native scenarios, like on-chain community management.

Introduction

More than 4.65 billion people worldwide use social media today, equating to 58.7% of the total global population.¹ Web2 social media companies provide people a way to easily connect with their friends and family and allow access to a huge user base, which makes them incredibly profitable. For example, Meta, the global leader in social media, has a total user base of nearly 30 billion, and generated a net income of US\$39.3 billion in 2021, with a net profit margin of about 33.38%.²

However, Web2 social media platforms present several drawbacks:

- ❖ **Unfair allocation of profit** - Users are the main group of content creators on social media, but they are not rewarded for the value they create. The platform, by controlling the distribution algorithm and attention flow, is able to make profit from the content users make without sharing it with users.
- ❖ **Siloed data and identity** - Once users build their social connections in one app, it's costly for them to switch to another app. Thus, new innovations in the space are naturally suppressed, and users also face fragmentation of their identity and experience across different apps.
- ❖ **Closed ecosystem** - Major Web2 platforms benefited from a vibrant developer ecosystem in their early ages, but once they gained sufficient traction, they closed up the ecosystem to prevent others from stealing their data and users. A monumental event in the development of social media was the shutdown of Twitter's developer API, due to concern of sharing data.

Using blockchain technology, Web3 social applications have the following three value propositions that solve the aforementioned problems:

- ❖ **Asset creation and ownership** - Web3 social apps do not need to rely on indirect monetization (i.e. ads) and can use blockchain to create shared ownership structure with its users. This can be achieved through the issuance of fungible or non-fungible tokens ("NFTs") to breed a sense of community and/or ownership.
- ❖ **Open data and identity** - The public and private key pair is not only a method of securing assets, but also creates a sovereign, consistent identifier across different platforms. Data and credentials accumulated on-chain are naturally interoperable with every application built on top of the blockchain.

- ❖ **Composable ecosystem** - Blockchains like Ethereum are not only ledgers of asset transfer, but are also open, transparent, and trustless software development platforms. dApps are inherently composable and can be used as building blocks of other apps.

Web3 applications and protocols have made meaningful explorations along those three directions, and based on technical architecture as well as customer profile, we divide the projects into the following categories:

- ❖ Infrastructure
- ❖ Middleware
- ❖ Applications
- ❖ Tooling

We will analyze each of these sectors with some prominent projects in the rest of the report.

Infrastructure

Most of the Web3 social applications are built upon public Layer-1 (“L1”) like Ethereum, but there are some notable attempts to provide customized infrastructure tailored towards the need of social apps. Compared with other dApps, social applications require faster transaction speed and larger bandwidth, as well as cheaper media storage, which could be hard to achieve on general-purpose L1. Thus, there are a few social-specific L1 that stand out for their high transaction speeds and cost efficiency of on-chain storage. However, decentralization is sacrificed to a certain extent.

DeSo

DeSo is a L1 blockchain built for social media platforms and it has the vision to provide all three of Web3 social value propositions simultaneously. With its own version of Proof-of-Stake, DeSo claims that it would ultimately be able to achieve a TPS (transactions per second) of more than 1,000 and accommodate up to ~30M users. With built-in NFT and social token functionalities, users can easily create token-based communities and achieve monetization, the blockchain itself becomes a shared data ledger and composable developer platform.

However, building custom L1s is a double-edged sword. While it allows fast transactions and low content storage costs, it loses valuable connection with the existing dApp and identity ecosystem on chains like Ethereum. There have not been widely popular consumer apps based on the DeSo ecosystem since its token launch in June 2021.

Crossbell

Crossbell is a new social L1 developed by the team behind RSS3. It is taking a different approach as compared to DeSo in that it focuses on providing a shared content storage platform. As an Ethereum sidechain, Crossbell is currently free to use, and it has built a content feed and user profile system.







Interview Highlights with Crossbell

- ❖ **Vision** - Joshua Meteora, founder of RSS3 and Crossbell, believes that the core spirit of Web3 is decentralization, and it should not be sacrificed for user experience. A custom-built L1 removes the efficiency constraint of existing blockchains and provides better UX with a sufficiently decentralized tech stack. In addition, the interoperability between Crossbell and the Ethereum ecosystem allows it to benefit from the rich content and identity system, and the sidechain architecture allows for efficient execution and cheap storage.

Middleware

Middleware are protocols built with the existing infrastructure that aim to be the intermediary between blockchains and applications by querying, organizing, and presenting data to application developers.

We will introduce four prominent social middleware protocols in this section. While all of them aim to build a better social application system, each of them takes a different approach. The table above captures the differences in their technical architecture.

Project	Decentralized Content	Decentralized Social Relations	Decentralized Identity
 Lens	✓	✓	✓
 Farcaster			✓
 CyberConnect		✓	✓
 RSS3	✓		

Lens Protocol

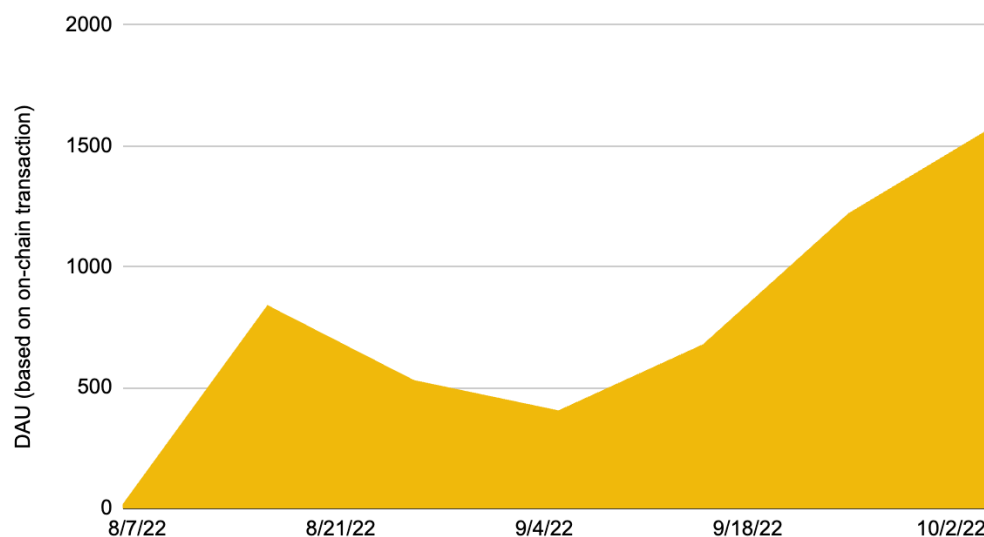
Developed by the team behind Aave (the largest lending platform on Ethereum), Lens Protocol is one of the most well-known social protocols. Similar to DeSo, all the content, interaction, and user profiles are stored on-chain, but Lens is built on Polygon and thus, is able to interact with the existing Ethereum ecosystem. It has the following features:

- ❖ **Non-Fungible Nature** - User profile, posts, even the following someone is represented as an NFT.
 - The first benefit is efficient **monetization**: a social media influencer can sell his/her post or entire profile with one click.
 - Additionally, since the NFT standard is **interoperable** and accepted in numerous marketplaces and apps, relations and content on Lens can be easily accessed and displayed on other platforms without additional technical integration.
- ❖ **Built-in Composability** - Lens Protocol is a flexible software development kit (“SDK”) that allows application developers to build on it in different ways. For example,

developers can modify the ‘Following’ module to make users pay a particular price to follow someone, or add a voting mechanism for followers of an account.

Currently, there are more than 50 applications built on Lens Protocol ([link](#)), and there are about 60,000 holders of Lens handles.

Figure 1: Number of Lens daily active users from August to October 2022



Source: Dune Analytics (by @rustamov as of 10/5/2022)

However, this on-chain architecture also necessitates frequent wallet signature, which disrupts user experience, and currently, the amount of content and social relation on Lens Protocol is not comparable to Web2 social media. Based on on-chain analytics, the daily active user of the Lens ecosystem has been as large as a few thousand in the past few months.

Farcaster

If Lens is taking a technology-first approach, **Farcaster is taking a user experience-first approach**. While everything built on Lens, including user identity, content, and social relations are on-chain, in the Farcaster ecosystem, content and social relations are stored on centralized servers (or “Hubs”), so users do not need to worry about paying gas fee, or signing signatures.

Then how do applications on Farcaster differ from Web2 apps? Farcaster gives each of its users a sovereign, on-chain identity. Based on the principle of [sufficient decentralization](#), even if centralized server operators want to block specific users, others can still find and contact that

person via their on-chain identity, and Farcaster will provide templates of self-hosted Hub for those users.

The major application on Farcaster is the Farcaster app, a Twitter-like app with crypto-native functions like on-chain activity tracking, NFT profile, post NFT collection, etc. To maintain a good community vibe, the Farcaster team tightly controls the flow of users. There are a few hundred active users. It will be interesting to observe whether the community and user experience can be maintained as the ecosystem scales.

CyberConnect

As a social graph protocol, CyberConnect aims to provide one-stop data solutions for developers of Web3 social apps. Web2 social media platforms store all the social relations on their servers, and CyberConnect aims to become the public database for different apps, thus achieving greater interoperability between apps. For example, users transitioning from app A to app B will find their friends, followers, and other synced social data seamlessly carried to the new app along with their ID. CyberConnect is also incubating consumer apps on its own. It has recently released [link3](#), the Web3 version of Linktree, with an event planner functionality.

Currently, CyberConnect has an ecosystem of [more than 70 projects](#), and there are not only social media applications, but also includes DID, communication protocols, and community management apps. Based on recent [updates](#), the total number of users with a CyberConnect identity registry is 1.49 Million, with 22.22 million API calls.

RSS3

RSS is a Web1 standard that allows people to subscribe to any feed on the internet without relying on centralized servers. While RSS's success has been eclipsed by Web2 content platforms, RSS3 aims to support efficient and decentralized information distribution in Web3 by leveraging on the best traits of RSS. Essentially, RSS3 is a protocol that aggregates content sources from on-chain and off-chain sources in a decentralized manner.

Currently, the main product of RSS3 is its data API, which queries all content-related data on Web3 and returns to developers. The monthly number of requests has passed [200 million](#). On the customer side, RSS3 has also built a search engine and subscription service for users to subscribe to content-related updates, like mirror articles, or posts on other decentralized social media platforms.

Conclusion

Based on size and valuation, social middlewares are some of the most influential projects in Web3 social. The reason is simple: it might be the industry segment with the most network effect. Without the siloed social data to lock users in, applications must constantly compete for user attention, while protocols, as developer tools, have higher migration costs.

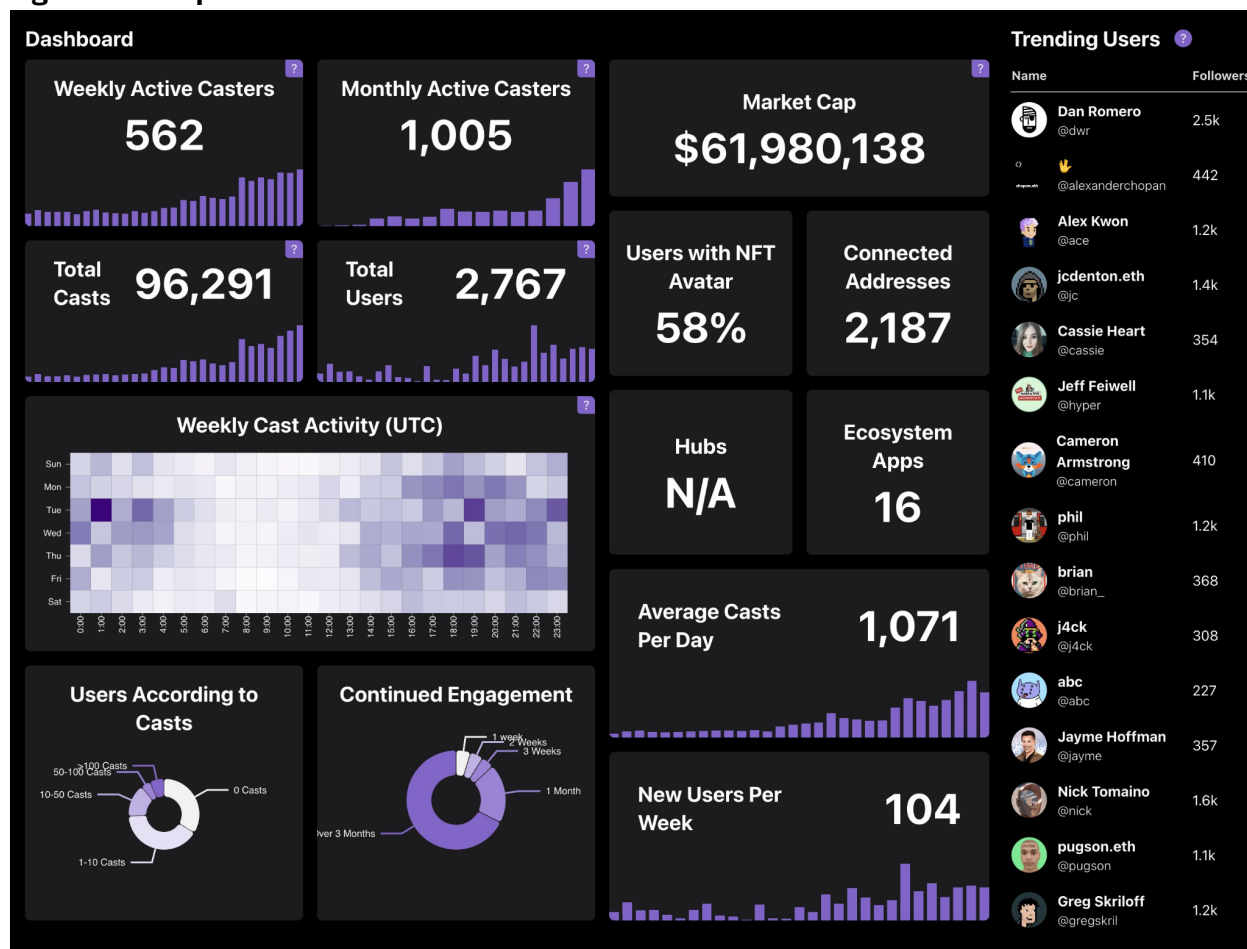
However, protocols themselves are useless without applications. For example, projects like CyberConnect and RSS3 have a large amount of API calls, but they haven't been able to turn these developer activities into consumer adoption. Consequently, all of the above protocols are actively fostering the application ecosystem and most of them are building apps themselves. In the next section, we will explore Web3 social apps that have been built.

Applications

The prior sections shed light on projects that have taken an infrastructure-first approach. In this section, we will explore projects that take a product-first approach. **One of the underlying theses of these product-first protocols is that social behaviors strongly correlate with their respective scenarios, which requires a front end to explore the product-market fit instead of only building out the infrastructure in the dark.** Ideally, iterations on the product will then inform the specifications of the design of its social protocol so that other developers can start building more dApps on top and eventually form an ecosystem.

Social Media

One interesting observation is that many of the middleware projects are building out their own native social applications. **Farcaster**, a project discussed in the previous section, iterates its protocol and a Twitter-like social media application simultaneously. Most features of Farcaster are not built on a protocol level, which enables Farcaster to better understand user preferences through experimentations and improve features at a faster pace. A functioning product also contributes to bootstrapping the first adopters as well as showcasing the capabilities of the underlying protocol to prospective external developers. The Farcaster application is currently in invite-only Beta mode.

Figure 2: Sample Dashboard of Farcaster

Source: Twitter [@dwr](#) (as of 9/1/2022)

Early productization might risk a potential lack of generalizability for the protocol. The user logic behind every major social application is different from each other, given their targeted users and use cases. **If the ultimate vision is to formulate a protocol-based ecosystem, then there is an inherent dilemma between more flexibility on the middleware front and more specificity on the product front.** It is important to differentiate between an ecosystem of independent products and otherwise an ecosystem of add-ons.

The Web3 tech stack introduces a brand new implementation of trust and verifiability, which might potentially transition social profiles from merely a display to an actual proof of one's identity. This space is still in its nascent stage, but we expect more emerging innovations with solid value-add to users. Besides Farcaster, we identify several other projects based on research and publicly available information:

- ❖ **Context** - Platform for watching wallets of friends, influencers, DAOs, and celebrities.
- ❖ **Lenster** - Permissionless social media web app built with Lens Protocol.
- ❖ **Light** - Explorer for curating and discovering social interactions in terms of NFTs, DAOs, POAPs, and DeFi.
- ❖ **Orb** - Professional social media app built with Lens Protocol.

Community

Besides social media applications, other projects tap into the private traffic space by catering to online communities. **One of their underlying theses is that the demand for acquaintance networking as well as creator-fan engagement is unfulfilled in Web2.** Consumers nowadays would rather spend time “passively” swiping short video feeds on TikTok rather than “actively” networking with their friends on Instagram or Facebook. Furthermore, the business model of short content recommendation prioritizes ads revenue over follower royalties, which leads to inefficient implementation of the fan economy.

While many large fan bases (for musicians, brands, athletic clubs, etc.) are slowly progressing into Web3 via issuing NFTs, **there currently lacks a comprehensive toolchain that can either migrate users into Web3 on a large scale or seamlessly integrate Web3 utilities into existing Web2 applications.** One of the early-stage projects we interviewed, **Niche**, attempts to address this problem by building an application where tokens are used as a gateway to community ownership.



Interview Highlights with Niche

- ❖ **Vision** - Usher in a new era of decentralized ownership. By focusing on the model of ownership through DAOs, Niche can add value to content creators, neighborhood groups, small businesses, and more.
- ❖ **Product Feature** – The price of the token fluctuates based on the market demand for joining the particular community. The ultimate objective is to incentivize active engagement and allow users to have conversations and form real connections in an intimate circle.

Besides Niche, we identify several other projects based on research and publicly available information:

- ❖ **Bonfire** - Homepage for communities equipped with social-token gated airdrops, events, content, merch, and engagement rewards
- ❖ **CrowdPad** - Platform enabling the launch of social tokens and in-built community feed and chat features
- ❖ **RareCircles** - No-code tool for creating NFTs and customized experiences for brands, creators, events, and entertainment
- ❖ **Superlocal** - Local social network that allows users to earn NFTs and share their experiences when they go to places

Although token gating is no longer a new narrative, given the rising popularity of NFTs and DAOs, its potential in addressing Web2 inefficiencies still remains relatively unexplored. We identify several pain points awaiting to be turned into opportunities:

- ❖ **Adoption hurdle** - Migrating to a new application with new mechanisms is a considerable commitment for an existing community. There needs to be a smooth and functional user journey from discovery, engagement, to monetization.
- ❖ **Ambiguous moat** - An easy way to quantify the value of an application is the difference between the new and the old experience minus switching costs for users. Many projects are adopting Web2-like user interfaces to reduce the switching costs but omit the first part of the equation.
- ❖ **User education** - There is still a long way to go for users to understand the concept of community ownership. Given that Web2 communities are often partially moderated by the platform in the backend, users might take time to familiarize themselves with the new mechanism.

Instant Messaging

Onboarding Web2 users into Web3 is not the only objective for decentralized social applications. There are projects out there that start with tapping into a Web3-native social scenario: online discussions around tokens, trading, and portfolio that currently occur mostly on Discord and Telegram:

- ❖ **Blockscan Chat** - Platform created by the team behind Etherscan that enables users to message each other wallet-to-wallet.
- ❖ **gm.xyz** - Reddit-like platform for enabling community management and establishing a user-owned social network.

- ❖ **Nansen Connect** - Messaging platform that aims to facilitate more effective crypto-related conversations by leveraging data and labels generated by Nansen.
- ❖ **WalletConnect Chat** - Direct messaging protocol that allows users to message 1-1 with other wallet users in the WalletConnect network.

Among the above projects, we have interviewed **Nansen Connect** to more thoroughly understand this vertical and its product offering.



Interview Highlights with Nansen Connect

- ❖ **Vision** - The vision of Nansen Connect is to become the go-to platform for the crypto community to discuss alphas and trading opportunities while avoiding spamming and noises on Discord channels. Connect is currently in closed Beta open to a few communities and the team plans on bringing in more Nansen features.
- ❖ **Product Feature** - The product features automatic token gating for channels and user profiling based on Nansen labels to safeguard users as they engage in trading-related online conversations with another account.
- ❖ **What is next?** - Connect is currently in closed Beta open to a few communities and the team plans on bringing in more Nansen features.

One of the biggest challenges for any Web3 messaging application is the switching cost. For average users, Discord might be flooded with noises, but it is nevertheless convenient. On the other hand, scams and hacks are quite a headache for projects and community managers, given that one channel hack might easily harm the project's overall reputation. **The Web3 tech stack introduces a new implementation of verifiable identity, which might potentially transform how conversations are carried out online, especially with regard to financial activities such as purchases, transactions, and trading.** This space is still in its nascent stage, but we expect more emerging innovations with solid value-add to users.

Tooling

We **differentiate between applications and tooling** to highlight social projects that leverage Web3's interoperability and design their products to be "portable" across different platforms and blockchains.

Engagement, Identity, and Reputation

Tokenization is one common approach. For example, **Rally** enables developers to mint social tokens to be integrated into applications and help communities design their own economies. The RLY token supply is capped at 15 billion entirely minted during a token generation event in 2020. RLY is used as the reserve currency for social tokens launched in the ecosystem by leveraging the protocol's token bonding curve smart contracts.

Figure 3: Year-to-Date Market Cap of RLY



Source: CoinGecko (as of 11/28/2022)

Following a similar logic, **Roll** allows users to mint their social tokens in the ERC20 standard with a maximum supply of 10 million. Those tokens are designed to have a vesting period to

ensure that the issuer and the holders are aligned for the long-term. Roll then profits from holding a 1% share of the maximum supply from the social token issuer.

Rally and Roll are among the top players in the social token vertical, which is still in its very early stage. There have emerged many other projects that aim to help communities issue tokens or badges for a variety of causes. For example, **Proof of Attendance Protocol** (“POAP”) enables users to issue and receive free POAP badges as a way of keeping records of online and offline experiences, especially event attendance. **Galxe** helps projects automatically issue on-chain credentials in the form of NFTs to incentivize and reward certain user behaviors. In the backend, data curators are rewarded when credentials are used in Galxe’s application modules, its oracle engine, or APIs.

Although tokenization of social activities and identities is no longer a new narrative in the Web3 social space, there is still a long way to go till mass adoption. We identify several pain points awaiting to be turned into opportunities:

- ❖ **Ambiguous utility** - It is unclear whether tokenization incentivizes actual engagement or simply speculating behaviors in the hope of airdrop whitelisting.
- ❖ **Fragmented user experience** - While monetization is one emphasis of tokenization projects, the user journey starts before and ends way after the monetization part. The tokens should embrace interoperability in terms of not only the underlying tech stack but also the end-to-end user experience.
- ❖ **Longevity** - Different from a subscription model, tokens can be held perpetually if there is no viable exit strategy, especially when a token is tied to certain utilities or benefits. After all, designing a functional economy is more difficult than just issuing the tokens.

Community Tools

Unlike standalone applications, **community-focused toolings can serve as the back office for managing a community’s presence on various applications.** For example, **Guild** is an automated membership management tool that enables platform-agnostic DAOs, creators, and influencers to gate community access and offer exclusive rewards or incentives.



Interview Highlights with Guild

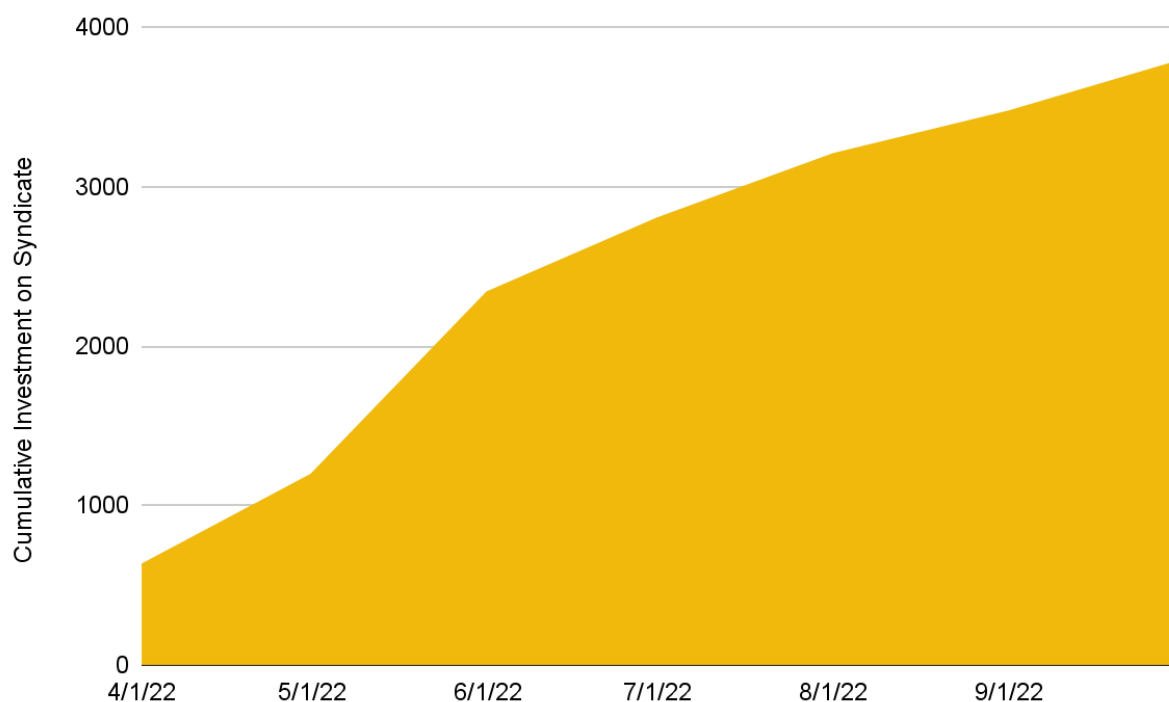
- ❖ **Product Features** - Community managers can use Guild to specify access requirements around off-chain (Twitter following, Github contribution, etc.) and on-chain (NFTs, tokens, etc.) data. They can grant roles and issue rewards in the form of access or abilities to those who qualify. Given the diversity of Guild's target users, the team focuses on supporting more integrations and potential use cases with the ultimate vision of becoming a universal middleware layer for community management.
- ❖ **Usage** - Guild had approximately 200,000 registered users in September 2022.

One notable vertical sector of community tooling is collective investing. Ian Lee, the co-founder of **Syndicate**, argues that collaborative investing will become one of the first verticals for sizable adoption of Web3 social applications. **In comparison with Web2, Web3 social applications have the potential to make the process of asset management more collaborative, transparent, and seamless.**



Interview Highlights with Syndicate

- ❖ **Vision** - By combining Decentralized Identity ("DID") and NFTs with investment DAOs, Syndicate aims to transform the investment industry like what YouTube and TikTok did for the content creation industry: lower the barrier for users to start investing together and eventually unlock a new paradigm of relationship-based investing.
- ❖ **Product Update** - In September 2022, Syndicate launched "Collectives", an social networking and community building primitive built on ERC-721M ("M" stands for "modular") that transforms ERC-721 into a platform for on-chain social networks and communities. The product prioritizes composability and capital-focused networking, two of Web3's most unique value propositions from the team's perspective.
- ❖ **Usage** - By the end of September, there have been over 900 collectives formed (university groups, angel investors, etc.) attracting more than 80,000 users in closed and public beta. By October 2022, the cumulative amount of investment on Syndicate had reached nearly 4000 ETH.

Figure 4: Cumulative Investment made on Syndicate (ETH)

Source: Dune Analytics (by @gm365 as of 10/11/2022)

In addition to Guild and Syndicate, we identify several other community tooling projects based on research and publicly available information:

- ❖ **Boomerang** - CRM for communities to track and control members across platforms.
- ❖ **Coinvise** - Tool for creating personal or community tokens, facilitating airdrops, and monetizing community membership.
- ❖ **Highlight** - No-code tool for minting NFTs, building membership communities, and engaging with fans.

Instant Messaging

Although messaging in Web2 most often occurs within a particular platform, **the composability of Web3 opens up new opportunities for platform-agnostic communication.**



Interview Highlights with Convospace

- ❖ **Protocol Description** – Convospace is a decentralized conversation protocol through which users can comment and chat with each other across different dApps.
- ❖ **Vision** – Similar to the concept of Uniswap while in a social scenario, Convospace aims to aggregate the liquidity of conversations across platforms to enable richer Web3 social experiences.
- ❖ **Usage** – The protocol had approximately 185,000 total unique users in September 2022.

Besides Convospace, we identify several other projects based on research and publicly available information:

- ❖ **XMTP** - Secure messaging protocol and decentralized communication network.
- ❖ **Dialect** - Protocol for dynamic, composable dApp notifications and wallet-to-wallet chat.
- ❖ **ECHO** - Permissionless tool for collecting, saving, and displaying comments.

Concluding Thoughts

Researching into the Web3 social space, we have observed promising innovations along these directions, and many of them offer a concrete utility that is not achievable via Web2. However, we are yet to see killer apps coming out and the path to mass adoption is not yet clear.

Currently, we are seeing major limitations to the current Web3 social landscape:

- ❖ Limited scenarios in which Web3 social provides user experience that surpasses the Web2 experience.
- ❖ Limited on-chain social data or content for users to make the DID/social media ecosystem more plentiful.

Our opinion is that currently Web3 social cannot directly compete with Web2 social in terms of user experience. Rather than directly competing with Web2 applications, it is wise to leverage its unique ecosystem on DeFi, NFT, and other verticals to provide unique, innovative utilities to users.

Currently, Web3 social cannot directly compete with Web2 social in terms of user experience, and to succeed it needs to provide unique and innovative utilities.

We are also paying close attention to the following fields of potential innovations:

- ❖ **Mobile applications.** Most current applications are focusing on the desktop side due to the flexibility of the browser ecosystem. Due to various reasons, the mobile end has been less developed. However, a larger portion of the social activity happens on the mobile, and we are looking forward to more innovations on this platform.
- ❖ **Crypto-native innovations.** Many of the current Web3 social products are replicates of Web2 products, and we believe that social products with real adoption will only come from products that use blockchain primitives to provide users with transformational experiences.
- ❖ **Intersection with existing scenarios in Web3.** Successful Web3 products can also come from solving problems Web3-native scenarios. For example, we need innovative solutions in Web3 community management, token and credential distribution, and other scenarios in which Web2 solutions are inadequate or nonexistent.

It is currently uncertain which vertical of Web3 social will take off and currently, even major Web3 social products are lacking traction compared with their Web2 peers. However, we believe that in the long-run, Web3 social will surpass Web2. The reason is simple: While Web2 applications accumulate data on their own, it has a **superior network effect**. While Web2 products accumulate data in a siloed way, Web3 applications use and contribute to a shared data ledger, and thus enjoy a network effect on the ecosystem level, rather than the application level as in Web2. We shall see what the correct protocol-application combination that can bring this vision into reality is.

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- 33) [FAQ | ECHO | Long live our opinion \(0xecho.com\)](#)

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