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# From Walled Gardens to Open Protocols: A Primer on Decentralized Social Networks

by Jared Ronis

Social media has become an integral part of our daily lives, connecting billions of people worldwide. However, the current landscape is dominated by a handful of centralized platforms that have amassed unprecedented power and influence. These platforms, while initially hailed as champions of free expression and innovation, have increasingly been criticized for their monopolistic tendencies, lack of transparency, and disregard for user experience or privacy.

Enter decentralized social media networks, a new paradigm that leverages the power of blockchain technology to address the shortcomings of traditional, centralized platforms. These networks offer a promising alternative, one that prioritizes user control, fosters innovation, and promotes a more equitable digital ecosystem. In this article, we will explore how decentralized social media networks, powered by blockchain technology, are poised to revolutionize the social media landscape, empowering users, creators, and innovators alike.

## The Failures of Web2 Social Networks

The rise of social media giants like Facebook, Twitter, and Instagram has led to a concentration of power in the hands of a few corporations. These platforms have become gatekeepers of information, wielding significant influence over public discourse and user behavior. Their monopolistic practices have stifled competition and innovation, creating closed ecosystems that limit user choice and control.

One of the most glaring issues with centralized social media platforms is the lack of user ownership. Users do not truly own their content, followers, or even their usernames. Platforms can change algorithms, terms of service, or

even seize usernames at their discretion. A recent example is Twitter's transition to X, which involved [taking away the longtime holder of the @X handle](#), highlighting the precarious nature of user identity on these platforms.

Moreover, users have little to no visibility into the algorithms that dictate what content they see and how their own content is distributed. This lack of transparency and control leaves users at the mercy of the platform's decisions, which often prioritize engagement and advertising revenue over user experience and privacy. User data is not only exploited for targeted advertising but also to train AI models without users' explicit consent or control. This raises significant privacy concerns and highlights the power imbalance between users and the platforms they rely on.

The “[Attract-Extract Cycle](#)” is another inherent problem with centralized social media platforms. Initially, these platforms attract users and developers with the promise of open APIs and the ability to build innovative applications. However, once they achieve a critical mass of users, they begin to extract value by closing off access, limiting interoperability, and imposing restrictive policies. This cycle stifles innovation and leaves users and developers with few alternatives, as the cost of switching to a new platform is often prohibitively high due to strong network effects.

Multiple countries, states, and cities have discussed or even implemented policies that directly work to change or mitigate these negative impacts as long as users stay on these platforms. These policies can come at high cost to both taxpayers and industry, or can result in untenable bureaucratic processes. Decentralized social networks offer a different solution, an alternative that is fundamentally constructed around user choice and freedom, provided users can be motivated to seek new platforms for community.

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## Understanding Decentralized Social Networks

Decentralized social networks present a fundamentally different approach to social media, one that aims to address the shortcomings of centralized platforms. At their core, these networks are built on blockchain technology, which enables a distributed, transparent, and tamper-proof ledger of transactions and interactions.

In a decentralized social network, the underlying protocol serves as a public good, owned and governed by the community rather than a single corporate entity. This means that no single party can unilaterally change the rules, censor content, or limit access to the network. Instead, the protocol is open and permissionless, allowing anyone to build applications and services on top of it.

The governance of these networks often relies on decentralized autonomous organizations (DAOs) or similar structures. Most decentralized social networks feature forms of decentralized governance, allowing users and developers to propose and vote on protocol changes, feature enhancements, bug fixes, and more. This bottom-up approach stands in stark contrast to the top-down decision-making of centralized social incumbents and even

non-blockchain decentralized alternatives.

While the specific governance mechanisms may vary between networks, they generally aim to distribute decision-making power among stakeholders, ensuring that the evolution of the platform aligns with the interests of its community. This can include token-based voting systems, reputation-based influence, or other innovative approaches to collective decision-making.

It's important to note that the journey to full decentralization is often gradual. Many blockchain protocols, including decentralized social networks, start with more centralized decision-making structures and progressively decentralize over time. This approach, known as 'progressive decentralization,' allows for rapid initial development and necessary adjustments before fully handing over control to the community. The concept of progressive decentralization is one of the key reasons that existing frameworks like the "Howey test," which determines whether or not an asset is a security, do not neatly apply to many crypto projects. While many projects may start off falling within the definitions of the Howey test, they aim to progressively decentralize over time, resulting in the project no longer meeting the requirements of being classified as a security. The Ethereum Foundation is a good example of this approach. [SEC Commissioner Hester Peirce's "Token Safe Harbor" proposal](#) addresses this concern, aiming to provide a grace period for projects to achieve decentralization without fear of securities law violations, but there has not been legislative or regulatory movement on it to date.

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One of the key benefits of decentralized social networks is the concept of portability and interoperability. Users own their social graph, which means they can seamlessly move between different applications built on the same protocol without losing their connections or content. This empowers users to choose the applications that best suit their needs and preferences, fostering competition and innovation among developers.

Blockchain technology also enables new models of user ownership and control. Through the use of smart contracts and tokenization, users can truly own their content, identity, and reputation on the network. This opens up new possibilities for monetization, as creators can directly engage with their audience without intermediaries taking a significant cut of the revenue.

By leveraging these decentralized structures and blockchain technology, these networks aim to create a more user-centric, transparent, and innovative social media ecosystem that addresses many of the issues plaguing traditional centralized platforms.

## Blockchain-Based Approaches to Decentralized Social Media

Several projects are currently leading the charge in the development of decentralized social media networks. Two prominent examples are Farcaster and Lens Protocol, each with its own unique approach and vision.

[Farcaster](#) is a decentralized social network aiming to give developers freedom to build apps/services on top of a social graph without risk of losing API access and allowing creators to have a direct relationship with their audience. It achieves this through a hybrid architecture that combines on-chain identity management with off-

chain storage and message propagation. This allows for efficient account creation, ownership transfer, and high-volume message handling without overburdening the user with complexity or the blockchain with usage.

As discussed in the previous section, Farcaster is the underlying protocol applications that can be built on, not what an end user uses directly. Two prominent applications built on Farcaster are [Warpcast](#), a broad purpose network maintained by the Farcaster team, and [Supercast](#), a network focused on enabling podcasters to monetize and interact with their fanbases directly.

[Lens Protocol](#), on the other hand, takes a more blockchain-centric approach, focusing on creating an “asset-first” ecosystem where every piece of content, including profiles, posts, and interactions, can be tokenized. This enables a wide range of on-chain interactions and transactions, such as content collection, trading, and even token-gated access to communities.

Two prominent applications built on Lens Protocol are [Phaver](#), the first blockchain based decentralized social media network to reach 100k users, and [orb.club](#), a network built for artists, creators, and crypto native users.

While both projects leverage blockchain technology, they differ in their implementation and priorities. Farcaster emphasizes simplicity and pragmatism, aiming to provide a familiar user experience while still benefiting from the advantages of decentralization. Lens Protocol, in contrast, fully embraces the capabilities of blockchain, pushing the boundaries of what is possible with on-chain social interactions.

## Non-Blockchain Approaches and Their Limitations

It is worth noting that decentralized social media is not an entirely new concept. Platforms like [Mastodon](#), a federated social network, have been attempting to provide an alternative to centralized platforms for years. However, these non-blockchain approaches have faced significant challenges in terms of scalability, user adoption, and sustainability.

Mastodon, for example, relies on a network of independently operated servers that communicate with each other using a common protocol. While this federated model provides a degree of decentralization, it also introduces complexities in terms of user experience, content moderation, and server management. In the wake of Twitter’s transition to X, Mastodon experienced a significant surge in popularity as users sought an alternative platform. However, the influx of new users highlighted the challenges inherent with the design of the platform. Many users found the platform’s user interface and server selection process to be confusing, leading to [low retention rates](#). Moreover, without a built-in economic model, Mastodon has struggled to attract the resources and development necessary to compete with centralized platforms at scale.

Blockchain-based approaches, on the other hand, offer several advantages over these non-blockchain alternatives. The use of cryptocurrencies and tokenization provides a native economic layer that can incentivize participation, fund development, and support the long-term sustainability of the network. Additionally, the programmability and composability of blockchain systems enable a wider range of applications and services to be built on top of the protocol, driving innovation and network effects.

## Benefits of Decentralized Social Media Networks

The adoption of decentralized social media networks holds immense potential benefits for users, creators, and the broader digital ecosystem. By building on open, permissionless protocols, these networks promote innovation and competition, allowing developers to create new applications and services without the risk of platform lock-in or arbitrary restrictions.

For users, decentralized networks offer greater control over their digital identities and data. Through self-sovereign identity systems and the use of non-fungible tokens (NFTs), users can truly own their usernames, content, and social connections. This empowers individuals to maintain their online presence across different applications and prevents platforms from unilaterally seizing or censoring their accounts.

The impact of decentralized social networks extends far beyond traditional social media, revolutionizing various sectors:

**Creator Economy:** Decentralized social networks provide creators with direct access to their audience without platform interference, significantly reducing the high fees associated with intermediaries. Creators can now monetize their content directly through tokenization and NFTs, as discussed in our previous [Blockchain Brief on Non-Custodial Wallets](#). This empowers them to build sustainable revenue streams without losing ownership or control over their work, potentially leading to the emergence of millions of profitable niches.

**Journalism:** Investigative journalism could thrive on decentralized platforms where censorship is minimized. Journalists could protect their sources and ensure the veracity of information through blockchain's immutable ledger, ensuring that content remains transparent and trustworthy. This approach supports a more open and accountable media landscape.

**Political Activism:** In regions with censorship, decentralized social networks offer activists safe spaces to communicate without government interference. With blockchain's ability to verify identities and activities without exposing personal details, as mentioned in our previous [Blockchain Brief on Zero-Knowledge Proofs](#), these platforms could enable secure organizing and prevent manipulation by bad actors. This has the potential to transform how grassroots movements operate and promote freedom of expression globally.

Moreover, the open and modular nature of decentralized networks fosters a diverse ecosystem of applications and services. These networks are built using interoperable building blocks, allowing developers to create a wide range of clients and algorithms that cater to specific interests and preferences. This plug-and-play approach promotes the formation of niche communities and enables users to curate their online experiences in ways that are not possible on one-size-fits-all centralized platforms.

By eliminating high take rates and opaque algorithms of centralized platforms, decentralized networks allow for more equitable value distribution and transparent operations. This shift towards user empowerment and true digital ownership is reshaping not just social media, but the entire landscape of online interaction and digital economies.

## Case Studies of Innovation in Decentralized Networks

One of the most promising areas where decentralized networks show significant potential is in the realm of verified reputation and identity. This innovation could fundamentally transform online interactions and address many of the challenges plaguing current social media platforms.

Decentralized social networks could significantly benefit from technologies like zero-knowledge proofs (ZKPs), which enhance privacy while maintaining security. As explored in our [previous Blockchain Brief on ZKPs](#), these proofs could allow for the verification of user identity and credentials without revealing private information.

SpruceID has already demonstrated the feasibility of ZKPs in the real world through its [partnership with the California DMV for digital IDs](#), further showcasing the potential of integrating this technology into decentralized social networks. Since ZKPs are built using blockchain, their integration with decentralized social platforms would be a natural extension.

This approach offers several key advantages:

- Reduction of fake accounts: By requiring verifiable proof of identity, the proliferation of bots and fake profiles could be dramatically reduced.
- Mitigation of online harassment: Users could prove their authenticity without exposing personal details, potentially deterring malicious actors.
- Prevention of scams: Verified identities could make it much harder for scammers to operate on these platforms.
- Combating misinformation: Content creators could prove their credentials or expertise without compromising privacy, helping users discern reliable information sources.
- Resistance to manipulation: By ensuring user authenticity, these networks could be more resilient to coordinated manipulation campaigns by domestic or foreign bad actors.

This innovative approach ensures trustworthiness without compromising privacy, striking a balance that has been elusive in traditional social media platforms.

Another exciting aspect of decentralized social media is the potential for new forms of user interaction and engagement. Farcaster's "frames" feature exemplifies this potential. Frames allow developers to create interactive, app-like experiences directly within a user's feed, turning posts into mini-applications capable of facilitating in-feed digital storefronts, philanthropic donations, direct payments to creators, solo and cooperative games, minting NFTs, conducting live polls, and even supporting token-gated communities.

This composability, made possible by the open protocols underpinning decentralized networks, could unlock a

*(Jon Tyson/Unsplash)*



wave of developer creativity and experimentation. Imagine a social feed where each post is a unique, interactive experience, seamlessly blending content consumption with functionality like gaming, shopping, or community participation. Centralized platforms, with their closed ecosystems and restrictive policies, often limit the extent to which developers can integrate such diverse functionalities and create truly innovative user experiences.

By prioritizing verified identity and reputation while also enabling novel forms of user engagement, decentralized social networks are poised to address critical issues in online communication while fostering a new era of digital interaction and creativity.

## Decentralized Networks as a Counter to Existing Monopolies

The rise of decentralized social media networks represents a significant threat to the dominance of existing social media monopolies. By providing open, interoperable alternatives, these networks can break the cycle of platform lock-in and give users and developers greater choice and autonomy.

The key to this disruption lies in the ability of decentralized networks to leverage the power of open protocols and composable building blocks. Just as the open nature of email and the web fostered an explosion of innovation and competition, decentralized social media could lead to a more vibrant, diverse ecosystem of applications and services.

Moreover, the existence of viable alternatives could put pressure on centralized platforms to improve their practices and better align with user interests. Faced with the threat of losing users and developers to more open, transparent platforms, incumbent players may be forced to adopt more user-friendly policies, provide greater transparency, and offer more equitable revenue-sharing models. Conversely, this also puts decentralized social networks at risk of becoming a victim of regulatory capture by lobbying efforts by existing incumbents.

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## National Security and Data Privacy Implications

The shift towards decentralized social media networks also carries significant implications for national security and data privacy. Centralized platforms have repeatedly shown their vulnerability to [data breaches](#), [account hacks](#), [surveillance](#), and [manipulation](#) by bad actors, both foreign and domestic. The concentration of personal data in the hands of a few corporations has created a single point of failure that can be exploited to influence public opinion, spread disinformation, and undermine democratic processes.

Decentralized networks, by distributing data and control across a network of nodes, can mitigate these risks. The use of end-to-end encryption and self-sovereign identity systems can give users greater control over their personal information, limiting the ability of centralized entities to access and exploit their data.

Furthermore, the open, auditable nature of blockchain-based systems can help combat the spread of misinformation and propaganda. Through the use of verified claims and reputation systems, users can more easily distinguish between trustworthy sources and bad actors, reducing the effectiveness of coordinated disinformation campaigns.

## Challenges and Considerations

While decentralized social media networks hold immense promise, their development and adoption are not without challenges. One of the primary technical hurdles is scalability, as the need to validate and store transactions on a blockchain can limit the throughput and responsiveness of the network. However, ongoing development and adoption of Layer 2 scaling solutions and off-chain computation are helping to address these limitations. To learn more about L2s, check out [our previous Blockchain Brief on understanding Layer 1 and Layer 2 chains](#).

Regulatory uncertainty is another significant challenge facing decentralized networks. As these systems blur the lines between user-generated content, financial transactions, and decentralized governance, they often fall into gray areas within existing legal frameworks. Policymakers will need to adapt and develop new approaches that balance the need for innovation with the protection of user rights and public interest.

Finally, the long-term sustainability and economic viability of decentralized social media networks remain an open question. While the use of cryptocurrencies and tokenization provides new monetization opportunities, the specific models and incentive structures that will drive adoption and growth are still being explored and refined.

## Early Adoption and Growth

While reaching critical mass remains a significant challenge for decentralized social networks, recent growth trends suggest that blockchain-based platforms like Farcaster and Lens Protocol are gaining traction. Since opening public signups in late 2023, both platforms have seen strong growth in user numbers and active usage in 2024.

As of September 10, 2024, [Farcaster has attracted 650K+ users](#), a significant increase from the 200k user mark it crossed in late March. Similarly, [Lens Protocol has grown to 532K+ users during roughly the same period](#). These signups have not been empty, with both platforms seeing high total usage and consistent daily active users. To date, Farcaster has recorded [116M Casts](#) (Tweet equivalent) and 385M post engagements (likes & retweets), with the protocol now averaging 595k Casts and 1.7 million post engagements per day. While Lens Protocol's usage has been relatively lower, with 24.8M Publications (Tweet equivalents) and 61.8 million post reactions, this can be attributed to the higher level of friction and technical knowledge required for account creation compared to Farcaster. Despite this, signups continue to see a positive upward trend on Lens Protocol.

Moreover, being built on blockchain technology provides monetary advantages for both the protocols themselves and their users, setting them apart from non-blockchain decentralized alternatives like Mastodon and Bluesky. Where Mastodon has struggled to fund operations and scaling due to lack of funding mechanisms, Farcaster and Lens Protocol generate revenue that goes directly to their respective treasuries, which can be used to maintain,



grow, and improve the protocols. As of September 2024, Farcaster has generated \$2.3M in protocol revenue, while Lens Protocol has accumulated \$501K in their treasury.

Much of YouTube's success in attracting creators relative to other social networks and platforms can be attributed to their early decision to share ad revenue with creators. However, this is at Google's discretion, who can dictate and change these terms at any time. In contrast, blockchain-based decentralized social networks have the framework for user monetization built into the foundations of their public goods protocols. This allows for an unprecedented level of transparency and flexibility compared to centralized incumbents. Apps built on these protocols can determine their own frameworks for generating revenue for creators. Most notably, if an app makes changes that a creator or user does not like, they have the option to move to a different app while still retaining the following they have already built. This is in contrast to centralized alternatives, where, for example, a creator who primarily posts on TikTok and wants to transition to Instagram, or vice versa, would have to start building their audience from scratch, promoting lock-in and decreasing competition.

Furthermore, users have found novel ways to monetize their content across both protocols. A notable example is the DEGEN token, an unofficial token distributed to the Farcaster community. Initially a meme coin rewarding participants in Farcaster's Degen channel, it now boasts a substantial following of developers, content creators, and enthusiasts who leverage it for tipping, content rewards, bounties, community initiatives, and as the native gas token of its own chain. As of September 10, 2024, the DEGEN token had a market cap of \$120 million with 776K unique holders.

While the hurdles to reaching critical mass remain, the unique advantages provided by blockchain-based protocols like Farcaster and Lens offer the best chance of success compared to non-blockchain decentralized alternatives.

## Future Directions and Potential

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Despite these challenges, the future of decentralized social media looks bright. As the technology matures and more users and developers flock to these networks, we can expect to see an explosion of creativity and innovation. The ability for anyone to build and launch applications on top of open protocols could lead to a Cambrian explosion of new social experiences, each tailored to specific niches and communities.

Moreover, the economic opportunities unlocked by decentralized networks could drive significant growth and value creation. By enabling creators and innovators to capture a larger share of the value they generate, these networks could foster the rise of a more equitable and sustainable digital economy.

Perhaps most importantly, decentralized social media represents a return to the original promise of the internet as an open, democratic medium for communication and collaboration. By putting users back in control of their digital lives and empowering communities to govern themselves, these networks could help to create a healthier, more transparent, and accountable online public sphere.

## Call to Action for Policymakers

For these benefits to be realized, however, policymakers have a critical role to play. The current regulatory ambiguity surrounding decentralized networks is hindering innovation and driving development overseas. Entrepreneurs and builders need clear, consistent guidelines to operate within, so they can invest and create with confidence.

The approach to regulating decentralized social media should be one of cautious optimism, not reactionary fear. Policymakers should strive to create an environment that fosters experimentation and innovation, while also protecting user rights and mitigating potential harms. This will require a delicate balance between providing guardrails and avoiding overly prescriptive rules that could stifle the growth of this nascent industry.

One potential model to look to is the “light-touch” regulation that helped the early internet flourish. By focusing on broad principles rather than specific technologies, policymakers can create a flexible framework that can adapt as the decentralized social media ecosystem evolves. This could involve setting clear expectations around user privacy, data portability, and content moderation, while leaving the specific implementation details to the developers and communities building these networks.

## Conclusion

Decentralized social media networks represent a paradigm shift in how we interact and communicate online. By leveraging the power of blockchain technology and open protocols, these networks offer a compelling alternative to the centralized, monopolistic platforms that dominate today’s social media landscape.

The benefits of this shift are numerous and far-reaching. For users, decentralized networks promise greater control, privacy, and choice. For creators and innovators, they offer new monetization opportunities and the ability to build without the constraints of platform lock-in. And for society at large, they represent the potential for a return to the open, democratic ideals that guided the early development of the internet.

Realizing this potential will not be easy. It will require collaboration and commitment from developers, users, and policymakers alike. But the stakes could not be higher. As we grapple with the consequences of centralized power and control in the digital age, decentralized social media offers a glimpse of a better way forward - one that puts users and communities first, and unlocks the true potential of a more open, equitable, and innovative internet.

The road ahead is uncertain, but one thing is clear: the future of social media is decentralized. And with the right approach, we have the opportunity to shape that future for the better.








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