

# Decentralized Social Network with Own Domains – Detailed Project Plan

## 1. Introduction

This document outlines a detailed plan for building a **Decentralized Social Network** where each user's profile is represented by a unique NFT domain (e.g., `.eth` or `.crypto`). The network leverages decentralized storage (IPFS, Arweave), blockchain-based identity, and decentralized governance to ensure complete user sovereignty over data and identity.

## 2. Vision & Objectives

- **Vision:** Create a censorship-resistant, user-owned social platform where identities, content, and interactions are decentralized.
- **Objectives:**
  - Empower users by granting them complete control over their identity and data.
  - Provide a seamless, wallet-based login and authentication experience.
  - Utilize blockchain and decentralized storage to guarantee transparency, security, and data permanence.
  - Establish a decentralized governance model (DAO) to guide future developments.

## 3. Key Differentiators

- **User Sovereignty:** Unlike centralized platforms (Facebook, Twitter), users own their data and identity via NFT domains.
- **Censorship Resistance:** The decentralized nature ensures that no single entity can control content removal or user bans arbitrarily.
- **Interoperability:** Integration with other Web3 projects (e.g., ENS, Ceramic, The Graph) offers a robust ecosystem and cross-platform data portability.
- **Decentralized Governance:** A DAO empowers users to vote on platform changes, ensuring community-driven evolution.
- **Enhanced Security & Privacy:** Using wallet-based authentication and decentralized storage minimizes risks associated with centralized data breaches.

## 4. Comparison with Similar Projects

- **Farcaster & Lens Protocol:**
  - Both focus on decentralized social interactions, yet our project emphasizes **own domains as identities**, ensuring that profiles are not just addresses but verifiable NFT assets.
  - Our approach integrates decentralized storage (IPFS/Arweave) for content permanence, whereas others may rely on off-chain solutions.
  - The governance model is fully integrated via DAO, offering a more direct user influence over platform rules.

## 5. Core Components

### 5.1 NFT Domains as Profiles

- **Functionality:**
  - Each user mints an NFT that represents their unique domain (e.g., `alice.eth`).
  - The NFT holds metadata such as profile information, avatar, and links.
  - Users can transfer or sell their profile NFT.
- **Technology:**
  - Smart Contracts (Solidity, ERC721 standard)
  - Integration with ENS or Unstoppable Domains

### 5.2 Decentralized Storage

- **Content Storage:**
  - Static content (profile data, posts) stored on IPFS/Arweave.
  - Dynamic or frequently updated data can be managed using Ceramic Network.
- **Multimedia & Large Files:**
  - Utilize Filecoin, Crust Network, or Storj for cost-effective storage.

### 5.3 Decentralized Identity & Authentication

- **Authentication:**
  - Login via wallet (Metamask, WalletConnect) using digital signatures.
  - Integration with Decentralized Identifiers (DIDs) for a seamless identity system.
- **Security:**
  - Eliminate passwords; rely on cryptographic proofs for secure authentication.

### 5.4 Social Interactions

- **Content Creation:**
  - Users create posts, comments, likes, and share media, all stored as JSON objects on IPFS.
- **Engagement:**
  - Implement mechanisms for likes, follows, and re-posts; consider using non-transferable reputation tokens (SBTs).
- **Messaging:**
  - Integrate peer-to-peer messaging protocols (e.g., XMTP, Matrix) with end-to-end encryption.

### 5.5 Decentralized Governance (DAO)

- **Governance Model:**
  - Establish a DAO using frameworks like Aragon or DAOhaus.
  - Enable token-based or reputation-based voting on proposals and platform changes.

- **Transparency:**
  - All governance proposals, discussions, and votes are recorded on-chain for auditability.

## 6. Technical Architecture

### 6.1 Frontend

- **Frameworks:** React.js or SvelteKit
- **Libraries:** ethers.js, web3.js, IPFS-http-client
- **Wallet Integration:** Metamask, WalletConnect

### 6.2 Backend & Smart Contracts

- **Blockchain:** Ethereum or Polygon (for lower fees)
- **Smart Contracts:** Developed using Solidity (ERC721 for NFT profiles, DAO contracts)
- **Deployment Tools:** Hardhat/Truffle for development and deployment

### 6.3 Data Indexing & Interaction

- **Indexing:** Utilize The Graph protocol to index on-chain data (posts, follows, etc.)
- **Dynamic Data:** Use Ceramic Network for real-time profile updates and social feeds

## 7. User Flows & Use Cases

### 7.1 Profile Creation & Domain Minting

- User connects their wallet.
- The user mints a profile NFT representing their domain.
- The NFT is associated with metadata stored on IPFS (profile details, avatar).

### 7.2 Content Posting & Interaction

- User creates a post that is uploaded to IPFS.
- The post metadata (CID, timestamps) is recorded on-chain.
- Other users interact via comments, likes, and shares.

### 7.3 Governance Participation

- Users stake tokens or reputation points to propose changes.
- DAO votes on proposals which are then implemented through smart contract upgrades.

## 8. Security, Recovery & Moderation

- **Security:** Rely on blockchain's immutability and decentralized storage to mitigate data tampering.

- **Account Recovery:** Implement social recovery systems or trusted guardians to help users regain access if keys are lost.
- **Content Moderation:** Use community moderation via DAO proposals and reputation systems to handle spam or abuse.

## 9. Monetization & Future Roadmap

- **Monetization Strategies:**
  - NFT mint fees for profile domains.
  - Microtransactions for premium features.
  - Token-based tipping systems.
- **Roadmap:**
  - **Phase 1:** MVP with profile minting, basic posting, and wallet authentication.
  - **Phase 2:** Expand with messaging, advanced social interactions, and DAO governance.
  - **Phase 3:** Integrate with additional decentralized services (streaming, advanced storage solutions).

## 10. Conclusion

This detailed plan presents a decentralized social network that not only redefines social interactions but also empowers users with true ownership of their digital identities and content. By focusing on NFT domains, decentralized storage, and user-centric governance, the platform differentiates itself from both traditional social media and similar Web3 projects.