

# Viral-Next Gen Blockchain based Social Engagement Network

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## Abstract

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## 1 User Problems and Basic Solutions

This is a Sample Problems of the Viral Project.

## 2 Vision Statement

To bring blockchain and crypto adoption to the masses we would got to bridge social communication with defi and tokenised economy. The Viral Network of Applications standards are designed in such a way that our vision to bring an proficient, user-friendly mobile application will combine several divisions of decentralized protocols that can lead to an ultimate tool for crypto acknowledgement. The divisions which we are focussing to rebuild is listed

### Social Media

1. To create a Real-world Decentralised Social Media
2. To construct an Autonomous self-evolving platform
3. To construct an Interactive Next-Gen Social Media To form a clean people-owned platform appropriate for all age groups

### Crypto Adoption

1. To provide people to hop into crypto from fiat effortlessly and securely
2. To give access to use cryptocurrencies to internet people without investing

3. To bring all major crypto for individuals to adapt rapidly using a single wallet

### **NFT and Metaverse**

1. To democratize NFTs to Masses
2. To kickstart Metaverse adoption

### **Blockchain**

1. To supply the utmost speed of transactions through On-Chain and Off-Chain solutions
2. To Develop a feeless, fast, Zero Inflation, Deflationary, smart contract chain

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### 3 Unified Mobile Application - An Intro to Viral

[App Brouchure](#)

*Images*

A Next-Gen Social Media platform bridging interactive media, NFTs, and blockchain technologies' underlying applications into an every-day user-based mobile app. Viral bridges Social Media with Blockchain, Wallets, Exchanges and NFT Markeplaces to bring the ultimate one-app for the common masses to adopt into the tokenised economy.

Every media shared on viral is an unique NFT where it can be utilized to create limitless achievable outcomes across the platform. Users can share ultra-short to short videos, thoughts through text, sell NFTs and additionally make communication between one-on-one, private groups and, open channels with total genuine privacy. App users will be benefitted from zero ads, cryptographic encryption, censorship-resistant and, also get to use various cryptocurrencies throughout the platform. Every user is an active contributor to the platform by which they receive rewards (payment) in Viral Coin for effectively utilizing the Viral Application and it's child platforms.

### 4 Viral Platform Architecture

*Diagram*

1. **Viral App:** Decentralized Social Media Platform bridging Blockchain applications for limitless possibilities.
2. **Viral Smart Chains:** Horizontally Scalable EVM Smart Chain on Top of IOTA's Tangle.
  - (a) **Payment Channels (L2):** State Channels to move value off-chain for lightning fast micro-transactions.
  - (b) **Zk-Rollups (L2):** Batching Multiple Off-chain NFT Standard Tokens (ERC721) to On-Chain,
  - (c) **Viral Bridge:** Interopability of various major cryotocurrencies by wrapping tokens decentralized such as Bitcoin, Ethereum,etc into Viral Smart Chains.
  - (d) **Horizontal Chains:** Additional of New Chains anchored to IOTA Tangle that communicates between multiple Viral Smart Chains for unlimited scaling
3. **Smart Wallet:** Viral's App's built in Non-Custodial Viral Smart Chain compatible hot wallet that allows user to send and hold tokens, mint NFTs and receive rewards.
  - (a) **Viral CEX-Centralized Exchange:** Trustless Non-Custodial Exchange for Fiat-Crypto trading
  - (b) **Viral DEX-Decentralized Exchange:** Automated Market Making Protocol for exchanging Viral tokens
  - (c) **P2P Exchange:** Trustless anonymous exchange leveraging Peer-to-Peer protocol
  - (d) **Viral Name System:** Decentralized blockchain based username protocol for transfers instead of cryptographic public address.
4. **Child Platforms:** Independant platforms anchored to the viral network for effective improvement of protocols
  - (a) **Dev-Space:** Application for Developers to decide on reward allocation for improving Viral-Beta

- (b) **ROV App:** Curator Platform to vote and remove reported content on Viral-Alpha
  - (c) **Ad Platform:** Decentralized Ad platform connecting Influencers, businesses and users for trustless engagement-proof ads.
  - (d) **Reward Pool:** To incentivize all users, miners, developers using smart contracts for their content, validation of transactions, and continuous development through unbiased pointing strategy that offers more rewards to bigger contributors.
5. **Other Backend:** For contingencies which will be later decentralized in the further phases of the development roadmap

## 4.1 Development Tech Stack

*Diagram*

1. **IPFS:** IPFS stands for Interplanetary File System is a peer-to-peer distributed file system that is used for maintaining and distributing files across our Viral IPFS Private network.
2. **GunDB:** GunDB is a fully decentralized graph database to store information from user to user meaning that your changes are not affected by any centralized server.
3. **WebRTC:** WebRTC stands for Web Real-Time Communication, an open-source project built primarily for peer-to-peer real-time connections.
4. **Javascript:** JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive.
5. **NodeJS:** Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser.
6. **ReactJS:** React is a free and open-source front-end JavaScript library for building user interfaces based on UI components.
7. **Solidity:** Solidity is an object-oriented, high-level language for implementing smart contracts, mostly used for executing code in Ethereum Virtual Machine
8. **IOTA Smart Contract Protocol:** The IOTA ecosystem allows to spin up a smart contract blockchain and anchor it to the IOTA tangle

## 5 How Whitepaper Structured

For an efficient understanding, we have separated the Viral Architecture/Ecosystem's major sectors.

- Social Media and User Experience (Page 1-10)
- Blockchain, Token Ecosystem and Layer 2 (Page 10-15)
- Smart Wallet (Page 15-20)
- Child Platforms (Page 20-25)
- Revenue and Incentives (Page 25-30)
- Viral DAO and Governance

## 6 Social media and User Experience

Viral is a multi-media sharing decentralized social network that brings meta-experience with friends, family and other people to communicate, share posts and send messages across the globe with absolute privacy. Viral sets Non-Fungible-Tokens (NFT) as a standard for every post that shared in the network which intends to bring interactive social experience and utility use cases of blockchain environment.

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**Note:** To bring NFT as a standard for a social media post doesn't essentially implies it ought to be sold for tokens, rather it conveys that each post in Viral is a unique piece of data in the blockchain that gives the power of ownership of the user which if needed can be opted to transfer in exchange for tokens inside the Viral Platform.**note.**

---

```
1
2 pragma solidity ^0.8.10;
3
4 contract HelloWorld {
5
6     string public greet = "Hello World!";
7
8 }
```

Listing 1: NFT Snippet for Enable/Disable Open Sale

### 6.1 Types of Post

[ELI5 Explanatory Video - Viral NFTs](#)

Please read <https://sampil.com/> to have a visual experience of the Viral Social Network

*Image for all Post Types in a Visualized Manner*

#### 6.1.1 Shots

Shots are **10 sec motion pictures** with added loop transitions to bring life to photos. Pictures can be shared as shots, an exciting looped motion picture.

People can share their

1. Personal Sneak-Peek, Moments and Events
2. Exclusive Photoshoots, commercials, to your fans
3. Turn photos into lively shots by adding shot animations through Viral

#### 6.1.2 Thoughts

Thoughts are **text-based sharing** for micro-blogging. Attach photos, long/short videos, documents, etc. There is no limit on words or media. People can share other users thoughts to their followers using re-Thought feature.

### 6.1.3 Drops

Drops are **20 second disappearing stories** shared to followers which auto-disappears once seen. It features AR filters, texts, shot elements, links, music, transitions and, much more. Every Drops will be purged in 30 days

---

**Note:** Drops will not be minted as unique NFT due to it's nature of disappearing medianotte.

---

### 6.1.4 Interactive Videos

IVs are short 30sec full-screen **narration based videos**. It is based on **gamification of videos** to interact within the videos.

### 6.1.5 NFT Utilities

Minting (Creating) an NFT in Viral is **as easy as creating a social media post**. Viral provides multiple NFT utilities for users to mint, buy, sell with an easy user experience. Viral will take a **1.5% commission** selling NFTs which will be reverted to the reward pool

### 6.1.6 Tunes

Artists can **sell their music albums**, singles as NFT for the fans/people to buy and own it

```
1
2  pragma solidity ^0.8.10;
3
4  contract HelloWorld {
5
6      string public greet = "Hello World!";
7
8  }
```

Listing 2: NFT Snippet To Sell Multiple Copies

### 6.1.7 Sketch

**Digital arts**, paintings, sketches can be sold through NFTs

```
1
2  pragma solidity ^0.8.10;
3
4  contract HelloWorld {
5
6      string public greet = "Hello World!";
7
8  }
```

Listing 3: NFT Snippet to sell single asset

### 6.1.8 Originals

**Physical assets** can be sold through Viral's Original NFTs where people can buy and flex

```
1
2  pragma solidity ^0.8.10;
3
4  contract HelloWorld {
5
6      string public greet = "Hello World!";
7
8  }
```

Listing 4: NFT Snippet to provide extra information such as Name, Address, Mobile Number, before transferring coins with end to end encryption between seller



### 6.1.9 Tickets

**Exclusive passes** for events, ownership of clubs, a digital ticket for everything can be sold as NFT. See Listing 3

### 6.1.10 Filters

Filters can be sold, and owned by user's thereby get rewards for it

```
1
2 pragma solidity ^0.8.10;
3
4 contract HelloWorld {
5
6     string public greet = "Hello World!";
7
8 }
```

Listing 5: NFT Snippet to distribute shares Just like company share where if 100 NFTs is sold, the person who holds 50 NFT will hold 50% of the company

Please read <https://sampil.com/> to have a visual experience of the Viral Social Network

## 6.2 Avatars

Personalized Avatars are generated free for every viral user using a selfie. Users can edit their avatar skin, outfit, hair, etc. These avatars will be shown in their public profile where other users can see them 3D View.

*Image*

These avatars are brought into Viral to integrate metaverse and to provide an **interactive experience**

[Avatar Demo-Video](#)

```
1
2 // ReadyPlayerMe Integration Examples
3
4 1. ReadyPlayerMe WebView- How creating Avatars work using Partner API
5 2. Downloading Asset- GLB File using Event Listener
6 3. Mapping skeletons and face
7 4. Animating and storing the file as a 3D Viewer File inside the application
   using IPFS Public/Clusters
8 5. How Animations will work
```

### 6.2.1 Meta-Chat

Meta-Chat is a feature to **show your facial reactions** in real-time when you chat with your friend. Viral captures your face reactions and transfer it to your avatar which the mutual friend can see on **top of his/her chat page**.

*Image*

This gives you a **virtual experience** of videocalls through avatars and text chat.

[Meta-Chat Demo](#)

**SDKs and APIs Used** : List the APIs

*Formula*

*Flowcharts*

### 6.2.2 Live and Rooms

Decentralized **Live Video Events and Audio Rooms using Avatars** (or) Normal Cams. Celebrities can host live events with their fans using their avatars

*Image*

[Live-Events Demo](#)

**SDKs and APIs Used** : List the APIs

*Formula*

*Flowcharts*

## 6.3 Engagements

### Like, Comment, Share, Tip

Users can like, comment, share, reThought, and also tip Tokens to their favorite posts and influencers. The number of likes will influence the recommendations list of other users.

Additionally a hidden engagement dislike will be added to every post but won't be visible to the users/nor owners, which is exclusively utilized for interest-based algorithm to filter out disliked content

*Algorithm/Mathematical formula for recommendation engine*

### Tip

The tipping feature in Viral engagements tip/support user's favourite influencers' contents. It works as a donation/reward where all the tips will be directly sent to the receivers wallet. Users can send tokens of their own choice to reward other users content on the platform.

Viral will charge commissions on Tips and deposits it to the reward pool. These commissions are calculated in such a way where the percentage varies depending on the end face value.

The tipping amount will be round of to tens and will leave the commission on both separated amounts.

*Formula*

The Charges are

(Ending with 1,2)\$ tips - 22% i.e., 11, 62, 761, 952

(Ending with 3,4,5)\$ tips - 19% i.e., 23, 64, 765, 953

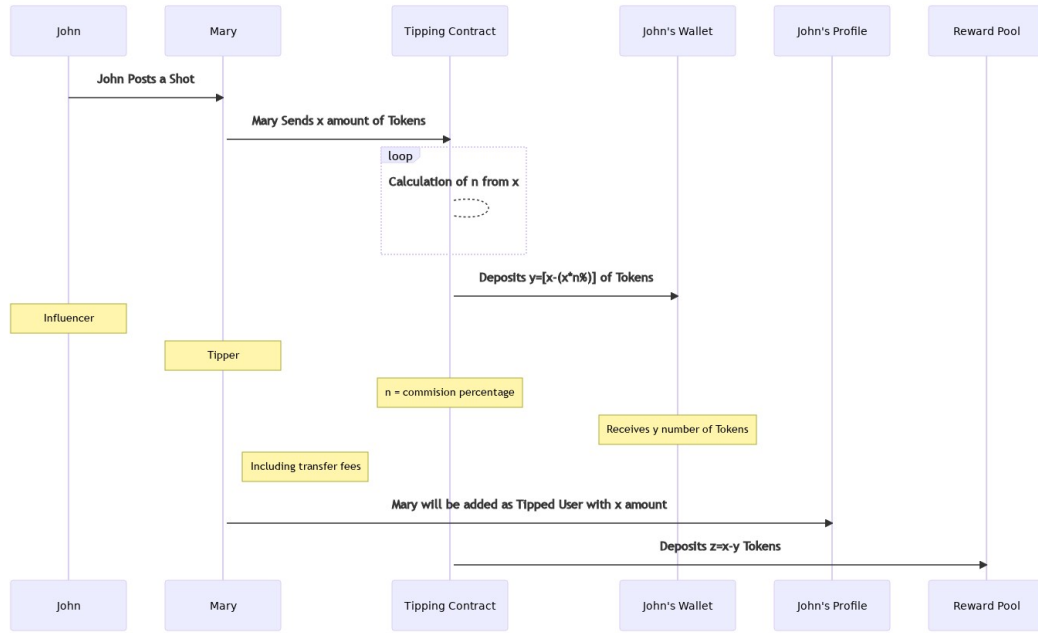
(Ending with 6,7,8,9)\$ tips - 17% i.e., 16, 48, 27, 79

(Ending with 0)\$ tips - 12% i.e., 10, 60, 720, 1000

For example: If a user is tips worth 57\$ then the commissions charged will be:

For the first 50\$ - 12%

And the remaining 7\$ - 17%



```

1
2 pragma solidity ^0.8.10;
3
4 contract HelloWorld {
5
6     string public greet = "Hello World!";
7
8 }

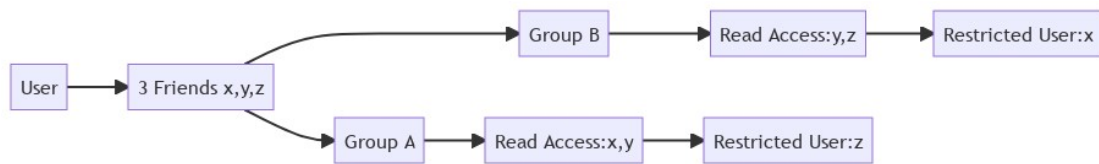
```

Listing 6: Tipping Solidity Snippet

## 6.4 Other Features

### 6.4.1 Privacy Groups

Privacy Groups is a unique feature in Viral to create unlimited friend's groups list to ensure maximum privacy for users to post and share to particular groups of users i.e., Family, Friends, Close Friends, Besties, etc. This feature can empower complete privacy over viewers for certain posts.



```

1
2 pragma solidity ^0.8.10;
3
4 contract HelloWorld {
5
6     string public greet = "Hello World!";
7
8 }

```

Listing 7: GunDB Privacy Group Snippet

### 6.4.2 Audio Emoji

This is a short feature where all the emojis in Viral if touched will give a **short sound of the emoji**. This will be accessible on chats and comments section of a post.

### 6.4.3 Interest Based Recommendation

To make the viral platform more user-friendly interest-based recommendations are utilized. We have numerous ways to fetch interest from a user **without collecting data on a centralized server**, a few of them are

- Like and Dislike
- Hashtag Follows
- Search-Based Interests
- Based on Activity
- Shares with other friends
- Following interests
- Based on Comments

All the user interests will be **stored locally** on the device to ensure **maximum security** and will be taken to show recommendations.

*Flowchart*

## 6.5 User Security and Privacy

*Abstract*

This is classified into

1. Media Storage
2. Chats or Private Messages
3. Interests of User
4. Chat backups

### 1. Media Storage

All Media uploaded to Viral is End-to-end Encrypted where all the files are encrypted using Symmetric AES-256 Encryption Standard on the device and gets uploaded to Trustless IPFS Public Nodes and Trusted IPFS Cluster Nodes. Thus promising the security of media.

### Encryption

*DetailedExplanation*

### Decryption

Private Account Media Decryption

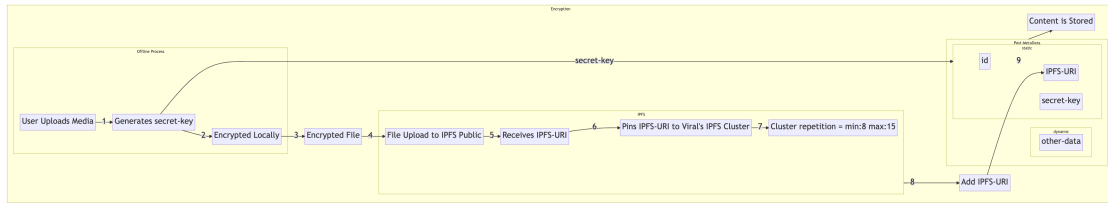


Figure 1: Encryption of Media in Viral

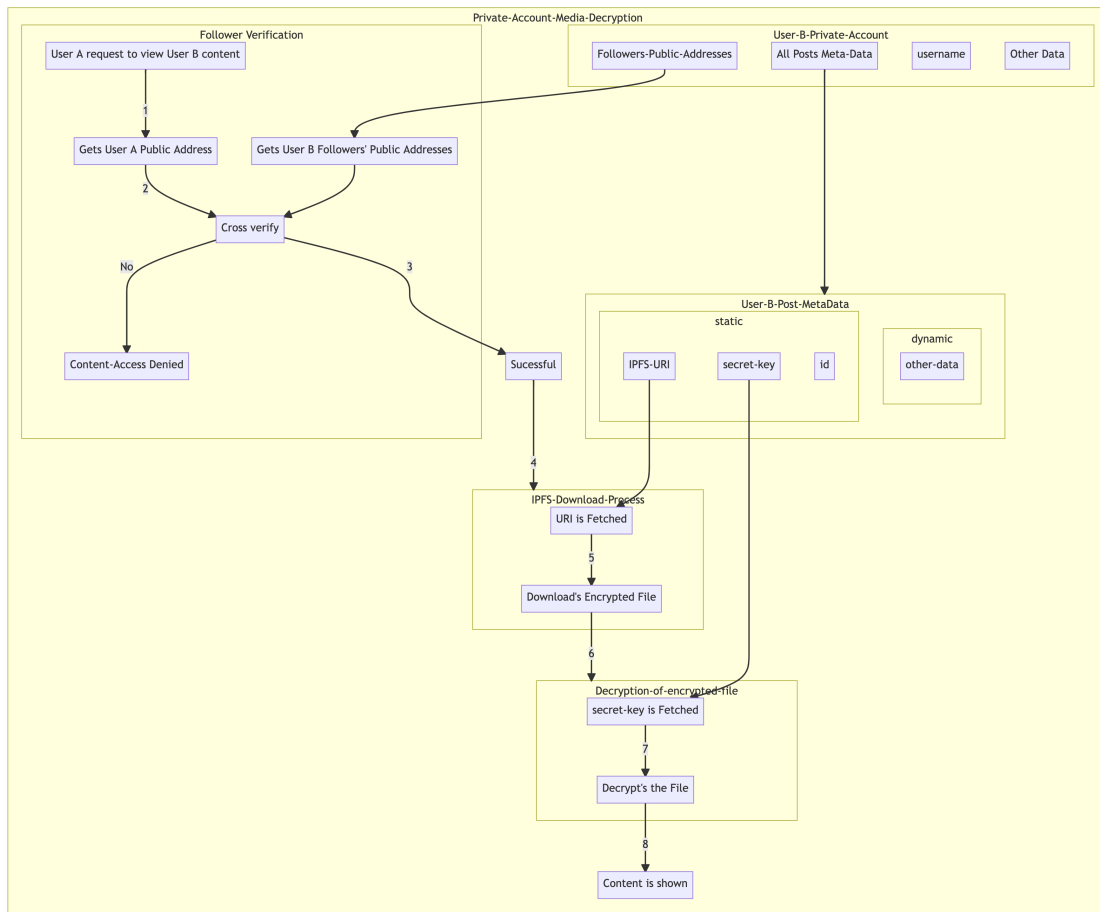


Figure 2: Decryption Media of Private account in Viral

*DetailedExplanation*

Public Account Media Decryption

*DetailedExplanation*

## 2. Chats and Private Messages

For Chat-based encryption, Viral uses **public and private key** encryption method. There are no centralized cloud-based servers involved in storing messages which can potentially trigger breaches. Every single message is encrypted and can be only decrypted by the receiver.

Public-Private key encryption more secure than a single shared key which is utilized in multiple chat platforms.

*VisualRepresentation*

Alice writes and Hello and to Bob – Bob Receives an encrypted message - Bob decrypts using his private key – Bob Sees and Hello from Alice

[GunDB Explanatory Video](#)

## 3. Interests of User

Users' interests will be **saved locally** on their devices ensuring full privacy of personal data.

## 4. Chat Backup

Since Viral is a **Offline-First Chat** messages will not be stored in cloud. To Backup messages Viral will offer **cloud options** such as Google Drive/Dropbox where you can securely encrypt and save your **backup**. While Migrating to another mobile we will be providing a feature to transfer existing messages/interest to your new device.

## Phase 2 Development

We will be focussing on Quantum Resilience of all media encryption used in Viral while commencing the Phase 2 of Development Roadmap

## 6.6 TOR/VPN Anonymity

Viral will be a safe haven for anonymity, privacy, and security in eliminating the tracing of users' identities by exploiters . Users can benefit from TOR and VPN Routing Features built in our Decentralized application to hide their IP address and go fully anonymous.

TOR routes you through several additional nodes while encrypted, no one can trace it back to you. VPN will redirect your internet traffic through a secure tunnel, hiding your IP address and encrypting your data in the process.

## Content Delivery

Visualization with changes to minting as NFT

AES – 256 Encryption Snippet

## IPFS Cluster

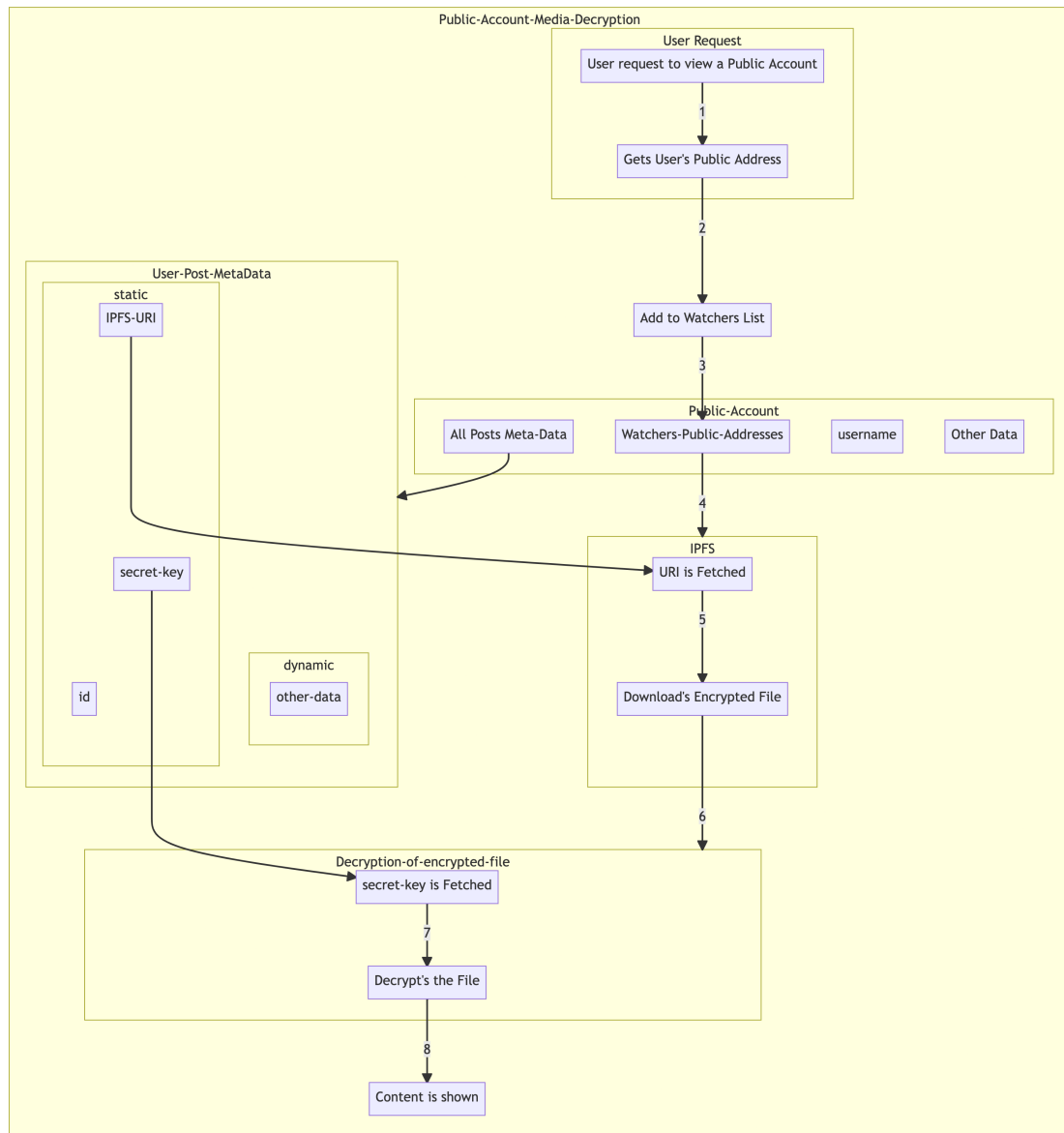


Figure 3: Decryption Media of Public account in Viral

Visualization of Repetition

Addition of Nodes – Trusted Way

Phase 2 – Trust less Way (IPFS-VM)

## 7 Blockchain, Token Ecosystem and Layer 2

### 7.1 Viral Smart Chain – Short Intro

Viral Smart Chains, is a network of horizontally scalable EVM Chains on top of IOTA Tangle used for Viral Social network with fully deployed defi ecosystem with Off-Chain solutions. Viral Smart Chains aim to provide an easy understandable one-platform for all the non-crypto users who are subjected to higher gas fees, congestion in network, volatility and scattered defi solutions.

### 7.2 IOTA Smart Contract Protocol

IOTA provides an Off-Chain Smart Contract Solution for developers to create multiple-chains on Top of IOTA's immutable Tangle. Since Ethereum transactions are processed On-chain by every single node on its network, it faces additional congestion, slow transaction time and subject to higher miner fees. IOTA's off-chain smart contract solution makes use of blockchains anchored to the Tangle where the smart contracts are ran and achieved consensus with small set of committee nodes. This achieves a high scalable throughput and immutable records since the states of smart contracts such as Account Balances, Input Conditions and Consequences over time are updated on IOTA's Tangle.

#### Architecture

*ArchitectureFlowChart*

There are several components to understand more about IOTA's Smart Contracts Protocol. It gives us multi-chain functionality to run smart contracts from different chains which allows a horizontal scaling of blockchains without a need for plasma or side chains.

#### Consensus and Validators

IOTA's Smart Contract Chain uses a Byzantine Fault Tolerant *BFT* Algorithm, which guarantees consistency and byzantine fault tolerance if less than 1/3 of nodes are malicious. So the verification process runs on Nodes within a chain committee. With a Proof-of-Stake Consensus each Viral chain will be run by a network of validator nodes, which run a consensus on the chain state updates. The validators of the chain *Nodes* form a committee, a bound together closed set of nodes. The committee of the chain can allow new validators and validator nodes to be added or replaced. This also makes the chain itself agnostic to its validators *thecommittee*.

Viral Smart Chains leverages IOTA Tangle's properties of scalability, high throughput, feeless transactions and immutable records. Only when a supermajority of the validators (the quorum) of a chain reaches consensus, the results get added to the chain where a new state update can be signed, which unlocks the AliasOutput for the chain and produces the next state UTXO which is stored on the Tangle as an immutable record. In summary, the chain's state (data) will be stored on Tangle as an immutable record. The amount of the validators to reach a consensus is configurable for each chain. The committee itself can also be variable in size - from a few nodes up to hundreds of nodes, and each node can be part of many different committees.

- **Validators** – Each Single Node running the Chain



- **Committee** – The Group of Nodes running a chain
- **Quorum** – Number of Nodes to be in consensus to validate a transaction

To know more about IOTA's Smart Contracts : [Whitepaper](#), [Documentation](#), [Blogs](#)

### 7.3 Viral Smart Chains

Viral Smart Chains are a family of separate chains anchored to the IOTA's Tangle where each chain can communicate with each other via intermediary L1 Value Tangle.

#### Viral's Approach

A Single chain will seem complex for setting different fees for different actions on the blockchain i.e Smart Contract Calls/Deployment, Sending Tokens to other Address, etc. Viral's approach is to bring multiple chains categorized by its purpose to serve the Viral Application with fee structure thereby also creating separate chains to provide zero network fees for minting NFTs on Viral App (ERC721 and ERC1155) while rewarding the validators of all Viral chains (including zero fee chains) from the miner pool (total collected fees of all chains) based on validator's total validated transactions for the day through an automated smart contract.

#### Validators

Viral Chains will work on Proof-of-stake consensus where validators (miners) are required to stake their Viral Coins in order to participate in the network for validating transactions. The mining power in proof-of stake depends on the amount of coins a validator is staking. Participants who stake more Viral Coins will be most likely to be chosen to add more blocks. When a transaction is validated and attain consensus by the quorum of validators (Read IOTA Protocol), the state of the transaction/smart contract will be recorded in the Value Tangle's UTXO Ledger which makes it immutable. The Transaction will be secured by the validators inside the Viral chain and also the L1 UTXO Ledger.

#### Fees

Viral Smart Chain is built primarily to ease the need for gas-based transaction fees like other smart contract blockchains. Transaction fees are only levied as a fixed percentage as and “transfer fee” in Viral Smart Chains for Sending, receiving tokens between accounts and smart contracts.

Transfer fees are fixed at 0.05% of transfer value of the tokens paid in Viral native coin. The minimum fee is capped at \$0.0005 of the fiat value of Viral Coin which is determined using price oracles.

#### Visualization

Native Token : Bob wants to transfer 100VRL to John : Fee levied will be 0.05 VRL

Other Tokens : If 1 vMATIC = 0.1 VRL

Mike wants to transfer 6000 vMATIC to Mia : Fee levied will be 0.30075 VRL (approx. 3.0075 MATIC) including Swap and Transfer Fee

#### NFT Chains

Currently on popular smart contract blockchains such as Ethereum, Polygon the amount of gas required for a transaction is determined by the demand for the transaction to be included, regardless of what type of transaction it is where it is dynamically adjusted based on number of user's interacting with the network at the time.

This brings us to an effect that a single blockchain cannot set certain fees or eliminate gas fees for a particular type or category of a transaction regardless of it's nature i.e, smart contract, account transfer. Multiple parallel state blockchains can solve this issue by altering few blockchains as permissioned for a certain use cases and can make it feeless without hindering the other fee-based chains.

Viral's aim to democratize NFT to the masses and bring massive NFT Adoption we will be running separate zero-fee chains for deploying ERC721 and ERC1155 Token directly from the Viral Application. The Validators for the chain will be open to join the network where they'll be rewarded from the miner pool (total fee collected) based on the total transactions they validate in a day.

### Family of Chains

- **Genesis Chain** : Initialization of First Chain with Viral Coin and Stable Coin Deployment with Smart Contracts that defines governance, fees, etc
- **General Chains** : For Every n number of active Viral Wallet users a new general chain is deployed. These chains are used to store user funds and create new accounts on the blockchains. So Users can do intra and inter chain transactions with high throughput and flexible scaling.

### De-Fi Chains

Smart Contract Deployment Chains specifically for categorized DApps

- **DEX Chain** : Running smart contracts for Viral Wallet's Decentralized Exchange
- **ERC20 Chain** : To Deploy new ERC20 Tokens that can be transacted between chains and accounts
- **Viral NFT Chain** : Feeless Viral ran Smart Contract Chain specifically to deploy user's NFTs on-chain
- **ERC721/115 Chain** : To deploy new Non-Fungible Tokens for other platforms outside the Viral Application
- **Marketplace Chain** : To create smart contract based marketplaces for NFTs and much more
- **Other Chains** : For creating Dapps for lending, asset tokenization, yield farming, tools and infrastructure, etc

### Development

```
1
2     _Root_
3
4     - _Initialization of the chain_
5     - _Deployment of new contracts_
6     - _Registry of contracts_
7     - _Chain ownership management and Access control list_
8     - _Fee management_
9
10    _Accounts_
```

```

11
12     - _On Chain ledger accounts_
13     - _Securely moving tokens between accounts_
14     - _Ensuring consistency of the on-chain ledger_
15
16     _Eventlog_
17
18     - _Keeping timestamp immutable log of On-Chain events_
19
20     _Blob_
21
22     - _Keeping registry of Binary objects of arbitrary sizew_
23
24     _Configuration of Committee and quorum_
25
26     _Wasp Nodes_
27
28     _EVM Plugins_
29
30     _Configuring Fees_
31
32     _Smart Contract Deployments_
33
34     _State Updates on Tangle_
35
36     _Multi-Chain Integration_
37
38     _Core-Contracts_

```

## 7.4 Token Ecosystem

### 7.4.1 Viral Coin - Native Token

Viral Coin is the native currency, a digital coin that does all the operations inside the Viral Smart Chains. It is used to store value, send and receive funds within the Multi-Chain Viral Blockchains. Viral Coin is used for paying fees inside the network, staking, governance, rewards and much more.

### 7.4.2 Viral Stable Coin

Viral Stable Coin is a sub-native token, an algorithmic stable coin pegged to the US Dollar that is widely used in the Viral Application for sending and receiving tokens across users wallets. Due to constant volatility of the crypto market there is a barrier for the common people and businesses to get into cryptocurrencies. As Viral's aim to become the one-stop crypto solution for the masses we are providing a way for the user's to automatically transact in Stable Coin without any complex need for swapping their current tokens. In Short, when an user transact in Viral Coin, he can opt to send the receiver viral stable coins to avoid depreciation of the asset while transacting.

As far as we know there are several stable coins are in the market 1.Fiat-Peg Centralized, 2.Crypto Collateral 3. Algorithmic. In our case we can take 3 coins 1. USDC 2. DAI 3. AMPL. USDC maintains the peg but holds the funds on its reserves centralized which comes with its demerits. DAI aims to maintain the peg using collateral of several crypto coins, in which USDC hold the reserve of more than 50% of the DAI's crypto backing, which also makes DAI a centralized cryptocurrency. AMPL is an algorithmic stable coin which maintains it's peg by contracting and expanding it's supply of tokens to achieve stability, this achieves true decentralization but fails to operate swiftly for sudden price movements due to it's rebase function ran in a stipulated time and also rebases in a slow, long way which takes upto a week after a sudden price movement. This is where most crypto projects fail to provide a decentralized stable currency for the masses.

Terra blockchain is the most successful running algorithmic stable coin which maintain its stability by changing the stable coin's supply by burning and minting it's native token LUNA. In better words, when Terra (Stable Coin) demand increases to more than \$1, Luna (Native token) will be burned and New Terra tokens will be minted, where increase in supply of tokens resolves the demand and maintains the peg of the stable coin and vice versa. Viral Stable Coin adopts the algorithmic stable coin algorithm used in many of Terra's stable coins.

Viral Coin and Viral Stable Coin will be the two primary coins in the Viral Social Platform. The supply and demand of Stable Coin is always balanced by making Viral Coin as it's variable counterweight that absorbs it's volatility.

**1 VSC - \$1 (Expansion)** : When Viral Stable Coin trades at a price that is high relative to it's \$1 peg i.e., \$1.15, the demand for VSC is higher than the circulating supply. To bring the peg back to \$1, the supply of VSC should be increased to balance the demand. During Expansion State trading bots will mint VSC by burning VRL, which has an effect of lowering Viral Stable Coin Price (by expanding the supply) and increases the Viral Coin price (by reducing it's supply). The smart contracts will trade until the price peg of 1 VSC = \$1 is achieved.

*Formuka for Expansion*

**1 VSC - \$1 (Contraction)** : When Viral Stable Coin trades at a price that is low relative to it's \$1 peg i.e., \$0.95, the demand for VSC is lower for the circulating supply. To bring the peg back to \$1, the supply of VSC should be decreased to balance the demand. During Contraction State trading bots will burn VSC and mints VRL, which has an effect of increasing Viral Stable Coin Price (by reducing it's supply) and lowering the Viral Coin price (by expanding it's supply). The smart contracts will trade until the price peg of 1 VSC = \$1 is achieved.

### **Viral Stable Trading App**

High Frequency trading cannot be run using automated smart contracts to maintain price peg of Viral Stable Coin. Users can stake their Coins, run automated arbitrage trading and receive profits using the Viral Stable Trading Application a separate application to maintain the peg of Viral Stable Coin

Users will be able to stake both coins VRL and VSC proportionally to a smart contract in the mobile app which process all transactions of burning and minting VRL for VSC automatically without the need for user signature and receive profits from arbitrage opportunities by minting and burning the coins to balance the volatility. The Smart Contracts will add and subtract coins on each pools to maintain stability.

### **7.4.3 Wrapped Tokens**

To acknowledge the tokenized economy Viral will bring popular cryptocurrencies such as Bitcoin, Ethereum, Dogecoin, etc into the Viral Smart Chains using wrapped token method. Since interoperability of blockchains are not possible (blockchains cannot talk to each other), centralized exchanges are used to exchange cryptocurrencies between each other using order books where the exchanges act as a custodian maintaining the user's crypto holdings (E.g.: Bitcoin to Ethereum). To eliminate centralized processes, tokenization of other blockchain coins are introduced. Original Tokens will be reserved in it's native blockchain and a copy of the tokens, new wrapped tokens will be minted (created) on Viral Smart Chains. The wrapped tokens will be 1:1 pegged with the native cryptocurrency and can be used in various de-fi applications. Viral Smart Chain's approach is to develop several wrapped tokens of popular cryptocurrencies for its users to invest and exchange in a decentralized manner.

## **Viral Decentralized Bridge**

Intro

Type of Viral Bridges

ERC20 Bridge

Abstract

List of Cryptocurrencies

Mechanism

Flowcharts

UTXO Bridge

Abstract

List of Cryptocurrencies

Mechanism

Flowchart

Conclusion

Hence Users can invest in Bitcoin and other popular cryptocurrencies if they want to, without any hassles of other wallet applications or other blockchain wallets.

## **7.5 Off-Chain (Layer 2) Solution**

### **7.6 Payment Channels - State Channels**

Off-chain transactions refer to those transactions occurring on a cryptocurrency network that move the value outside of the blockchain. Due to their zero/low cost, off-chain transactions are gaining popularity, especially among large participants. Off-chain transactions can be contrasted with on-chain transactions.

#### **Advantages over On-Chain Transactions**

1. Payments/Transactions can execute instantly. The transaction throughput per second will linearly increase by the number of users which can scale upto tens of thousands per second.
2. Off-chain transactions doesn't require a native token's transaction fee since everything occurs outside the blockchain and can be collected in commissions agnostic to the transferring tokens.
3. It is the most secure and anonymous way to send micropayments for day-to-day transactions where the details of the transactions will not be broadcasted to the blockchain.
4. Some popular Off-Chain Networks are Bitcoin's Lightning Network, Ethereum's Liquidity Network, Raiden Network

#### **Viral Lightning Payments**

Our foremost vision is to bring usability of Viral Coin for daily life transactions prior to other cryptocurrencies such as Bitcoin, Ethereum, etc. This can be achieved by marketing use cases to the Viral Coin on Lightning Payments for micro-transactions (Eg: Buying a coffee, paying for a taxi ride). Since On-Chain transactions are expensive and require consensus (to validate each transaction among all the nodes on the blockchain), Off-Chain transactions is the better approach for Viral Users. Since our market is dependent on retail and micro-transactions usage Viral Application focusses heavily on Off-Chain micro-transactions rather than On-chain.

All Viral Users State Channels

Flowchart for making a state channel

Fees

Routing Nodes

Study other Whitepapers

## 8 Smart Wallet

### 8.1 Viral Wallet

Abstract  
Story  
Intro

### 8.2 Viral CEX

Centralized exchanges (CEXs) are a type of cryptocurrency exchange that is operated by a company that owns it in a centralized manner. Centralized exchanges most commonly facilitate trades between users by maintaining an order book: a collection of buy and sell orders posted by individual traders. CEX users do not actually exchange crypto or fiat currencies with each other. Instead, when they deposit their funds onto an exchange, the latter takes over the custody of the crypto assets and issues a corresponding amount to the buyer and seller. Users store their crypto assets on the exchange. Since the private key's ownership rests with the exchange, there is a risk of total loss should the exchange be compromised (Not your Keys, not your Coins). Cases of this kind are rare but historically have already occurred with losses in millions. CEX exchanges are under the control of regulators, third-party providers, and legal regulations. To prevent money laundering, operators are required to collect extensive data about their customers (KYC). This regularity is contrary to the basic idea of cryptocurrencies.

Justify the Problems  
Write a compelling Idea's Abstract  
Explain the terms vividly  
Abstract Diagram  
User Registration & KYC  
Double Security using Multi-Sig Wallets  
Loss of Keys  
Automated Withdrawal  
Order Book Exchange  
Exchange Fees  
Makers Incentives  
Limited Markets  
Conclusion

### 8.3 Viral DEX

Decentralized exchanges (DEX) are a type of cryptocurrency exchange that allows for direct peer-to-peer cryptocurrency transactions to take place online securely and without the need for an intermediary or a custodian, unlike Centralized exchanges. Decentralized exchanges are simply a set of automated smart contracts (code). They establish the prices of various cryptocurrencies against each algorithmically and use “liquidity pools” — in which investors lock funds in exchange for interest-like rewards — to facilitate trades. While transactions on a centralized exchange are recorded on that exchange's internal database, DEX transactions are settled directly on the blockchain itself. There will be no custodian or any services which need to be maintained by a certain company to run a truly decentralized crypto exchange. DEXs are usually built on open-source code, meaning that anyone interested can see exactly how they work. That also means that developers can adapt existing code to create new competing projects — which is how Uniswap's code has been adopted by an entire host of DEXs with “swap” in their names like Sushiswap and Pancakeswap.

Intro  
Liquidity Pools  
Fee Structure  
Staking Rewards  
Price Impacts  
Oracles  
Conclusion

## **8.4 Viral Name System**

## **8.5 Custodian Services**

## **8.6 Other Wallet Features**

### **QR Pay**

The need for faster transactions is rising higher every year and new technologies have been introduced such as NFC, Scan Code, etc. Since Viral Wallet is a crypto wallet, it will be hard for people to use a public address to send and request Viral Coins or other cryptocurrencies to Merchants using the Smart Wallet . QR Pay is a feature to be added on the Smart Wallet to facilitate faster recognition of seller's wallet address and the amount to be transferred by scanning a simple generated QR Code through Viral Application. This QR Pay will come when the user doesn't know their username and want to request money from a nearby person. This will be helpful for businesses to collect payment from users swiftly by entering the amount needed to be paid.

# **9 Child Platforms**

## **9.1 Content Moderation Platform**

Centralized social media holds the administrator rights of users' data which circulates in their platform and also misuses their authority by deleting or expelling a certain user from posting content. This effectively increases the chance of eliminating individual rights, dealing with governments, and most importantly losing the trust of the people. Usually, content moderators on existing social platforms will be held responsible for removing illicit content whereas sometimes due to a centralized approach these moderators are told to filter independent content posted by creators on certain topics where the companies works with the governments sideways. This is why a decentralized community such as ROV is needed for the Viral Network to automate the process by giving administrative rights of the source-uri of contents inside the Viral-Alpha Application to a swarm of moderators which is going to be the key for independent content and removal of explicit contents in a faster and democratic way possible.

ROV is an abbreviation for Republic of Viral, a decentralized community-based organization inside Viral Network to govern, filter out reported contents, give support to users, verify VIPs, vote on involvements of community members, etc. The Community is solely developed to bring a decentralized way of allowing a network of administrators under a voting mechanism to remove NSFW, spam content in the Viral Network, and aims to create a cleaner social media while restraining the power of censorship resistance. ROV is designed for curators to work as employees of an organization with a common goal with maximum trust and anonymity. This decentralized way effectively reduces the opinion of a single person, an entity's founder, and any external influence where the community only decides which is better for the platform. ROV eliminates the need for a centralized entity to run a social platform that holds the power of democracy while ignoring censorship resistance.

Moderation and Manual Removals

Type about we focus on the source rather than the full post  
Type about how Viral has both IPFS Public and IPFS Private  
Removal of Content from Viral IPFS-Clusters

#### Timer for Removals

To ensure faster removals and counter the delay of manual approach of votes calculation, after content is reported it will be directly posted on ROV's Application where the voting poll for the specific post timer will run according to the category's emergency for removal. This ensures faster content removals in no time, where it takes 24 – 48 hours for a centralized social media entity. We have listed out the major categories and timings for reporting illicit content in Viral.

- Spam or Fraud – 2 hours
- Bullying or Hate Speech – 45 mins
- False Information – 1 hour
- Sexual Harassment - 30 mins
- Nudity – 30 mins
- Violent or Disturbing – 30 mins
- Something Else – 2 hours

#### Algorithmic Automated Removal Methods

Additionally, to improve faster removals we will be rolling out another AI feature that finishes the poll timer if the votes are more than 10 and 95% have voted to remove content or keep content. This effectively eliminates the possibility of waiting to remove the content till the timer ends, if the post is in a high state of emergency to remove. There will be an AI feature also to filter out pornographic content on the platform automatically without any votes.

#### Formula for Ending Timer

##### Separate Application

ROV will be having a separate Mobile Application for curators and moderators to easily vote for reported contents using swipe methods similar to dating apps such as Tinder. Since ROV is a restricted content application it will not be available on the Play Store and App Store. The Mobile Application will be only available on Android as a 3rd Party App and won't be available for iOS devices due to their security policies.

#### Process of Polls

##### Flowchart

Continuous Removal Caution to change to private account

#### Re-Appeals

A unique feature of ROV given to the users of Viral to re-appeal or re-report against the decision of voters while giving an explanation where the ROV curators can again vote to keep the content again or remove based on the explanation given by the user who re-reported. The timer for re-appeal is 5 hours per post where if votes are more than 25 and 90% opt again to keep or remove the timer will end prematurely.

#### Limitations



## Private Accounts

Viral's content reports are only applicable to public accounts. Viral's vision to bring complete privacy and security to private accounts which are exempted from being reported. ROV curators will not moderate, nor involve to view the contents of secured private accounts. Thus, it leaves decisions in the hands of followers whether to view their content or not.

## IPFS Public Node

### Criteria to Join

Viral DAO token holders will be given privilege to run ROV as curators and so on

### Eliminating Bad Curators

To eliminate biased curators we will be bringing a safe mechanism to filter out bad curators in the community using a feature called positive/negative points. Every single poll will contain two options for the curators to select, "Remove" or "Keep", the poll results are based on the majority's decision. When a vote for a poll and falls under the majority's vote the curator will receive a Positive point, if the curator is on the minority side, which is the losing side he/she be getting a Negative point. Each of the positive and negative points will be added to his profile. An algorithm will run to take the percentage of both points, where if the negative point falls above 30% to the positive point, his ROV account will be suspended for a couple of days. We have deciphered the factors where there could be no bad actors in the community. There will be records to everyday's positive and negative points.

This Positive/Negative points suspension factor will be running after every single vote after the poll finishes. Some factors determining the suspension are

If Negative Point is 30%- 40% to the Positive Point – Account suspension for 3 days

If Negative Point is 40%- 50% - Account suspension for 6 days

If Negative Point is more than 50% - Account suspension for 12 days

We have also made factors to suspend an ROV account forever based on the number of suspensions they get on their account. The factors are

20 times 3 day suspension

10 times 6 day suspension

3 times 12 day suspension

There will be a test-net and live-net to practice voting at its best

Example :

User A: Day 26; Positive – 234; Negative – 55; Result: More than 20%: Suspension for 3 days

User B – Day 30; Positive – 523; Negative – 343; Result : More than 50% : Suspension for 12 days

### Community Help & Support

ROV will be having a separate section for community help & support, where ROV curators can easily offer their support to Viral users by providing them answers for their queries through the application. The Curators will act as support persons for their issues and thereby providing answers for their problems. It will be a decentralized substitute for centralized customer support. Since the curators cannot offer custom support by an admin staff in a centralized company rather, they can offer support for their questions regarding the usage of the application. For

every contribution by the curators, they'll receive their fair share of rewards.

#### Verification of Accounts of Celebrities

ROV curators also will be responsible for several actions on the decentralized platform, one of it's the "Verification of Accounts". Since Viral doesn't take a single byte of data, we won't be requesting any country's identification information like other centralized social medias, it is up to the curators to opt for giving a verified tick for the VIPs on the viral platform.

Data to Disclose

About Verified NFT

Flowchart

Regional Voting

#### Requesting ROV

Since ROV is regarded as a DAO (Decentralized Autonomous Organization) we make sure others request ROV for a specific task, poll, support, etc. This feature will be given only to verified profiles where they can write to ROV in any matter where the curators can come collectively to help regarding the issue. This will help VIPs, Governments to write to ROV curators which will be displayed on their feed where they can take necessary actions for it.

#### Rewards for Contribution

ROV users' wallets will be connected to their username where every day according to their contribution the Viral Coins will be allocated every 24 hours and will be airdropped to their wallets where they can collect manually. According to the features and intensity of work will be appointing a pointing structure in the development phase of the ROV application

Rewards according to daily positive points

## 9.2 Developer Platform

### Story

Viral Dev-Space is a platform for developers to develop, communicate together with other experts, and receive rewards for their contribution to the Viral Open-Source applications and future development plans of the public and the Viral DAO. The Space for developers is created to decentralize and automate the Software Research & Development sector of Viral Applications in an efficient way by providing rewards in Viral Coins through unbiased voting based on the intensity of their contribution and popularity in the development community.

Viral will be providing an opportunity for all developers regardless of their educational background, region, and language to work on improving the viral decentralized applications on fields such as security, interoperability with other social giants and also to make the application bug-free while providing new updates to the beta software which will be available as an Open-source repository. Giving new opportunities to develop for an upcoming massive social network will pave a way for fastening the development process by using the potential of mass development techniques.

Short Benefits:

1. Full Automation on Research & Development
2. Potential of a bigger development community

3. New, Exciting Unknown Developments for the application
4. Shorter Time for fixing bugs and issues
5. The cost of Development is considerably low
6. Decentralized HR & Rewards according to the contribution
7. Expedite the Development of Viral Future Plans
8. And many more advantages to receive a contribution for the application's source code in trade for daily rewards

#### Allocation of Rewards

The rewards are based on democratic voting where every developer will have their own project feed to appreciate the work of other developers. There will be an engagement feature to “Like” the contribution they’ve pushed to the code repository. After a developer makes a commitment to the repository by pushing his/her code to the master repository, their work will be posted on the project’s main feed. At the end of the day every 24 hours, the amount of likes every post received by the user profiles on all the projects will be taken to segregate the amount of rewards per developer. Refer Rewards section for detailed information on the segregation of total revenue separated for developers.

#### Application

Viral will provide a web application where developers can join, interact in development groups and receive rewards daily every 24 hours according to their contribution. This application will be maintained by Viral DAO. The App will serve as a community platform where any developer can choose their favorite preferences, communities, and development projects. Developers can choose the project of their preference by searching and also by opting for an interactive questionnaire to find out which project is suitable for them. After giving their preference they can choose the project they want to work in. The developer will have a limit of working on two projects at a time, where they can remove themselves from the project team and opt for other projects as well. This will ensure that developers will have an increased productivity and a higher success rate in specific projects.

#### App Features

- Choosing preferred project
- Collaborative Workspace for Developer Teams
- Easy Work-Management
- GitHub Account Integration
- Private and Project Group Chats
- Add New Projects to Dev-Space by providing a whitepaper

## **10 Revenue and Incentives**

## **11 Viral DAO**

## **12 Viral Coin ICO**

## **13 Development Roadmap**

## **14 Phase 2**

### **14.1 Atomic Swap DEX**

### **14.2 NFT L2 Solution**

### **14.3 Viral DAO Platform and ICO**

### **14.4 Viral Decentralized Ads**

### **14.5 Influencer-Ad Platform**

#### **Story**

Viral Influencer Ad-Platform is a Gig-based marketplace where Content creators can post their ad-gigs under specific categories such as impressions, engagement, link clicks, etc to various businesses where they can purchase with the trust of the blockchain. After the promises of the gig are achieved the payment will be released to the influencers. This effectively reduces the unwanted issues regarding promised results. Viral will be tapping the potential of influencer marketing by running ads through popular content creators. We want to effectively eliminate the excess process of a business to find influencers, contact, fix, transfer amount, etc into a simple user-friendly platform where it can

- Find Influencers based on Filters
- Check all the gigs available
- Request a custom gig and receive a quotation
- Pay using Viral Coins
- Check all statistics of your running Ad

#### **How it will work?**

Business Owners / Individuals / Buyer can search for an influencer account with advanced search filters Finds an Influencer with the list of gigs Purchases a Gig Amount Paid will be stored in a smart contract (vault/escrow) The influencer gets a notification to create content Buyer reviews the created content and approves Influencer posts the content attributing the buyer The Ad runs successfully and expected engagement by the gig is reached Now the smart contract will release the stored amount to the Influencer's wallet The buyer gets results, Influencer gets paid  
Flowchart

#### **Complete Trust**

If the Gig result is not achieved the payment will not be paid to the influencer. When an individual purchases a gig, he will be paying through Viral Coins where the amount will be securely stored in a vault (smart contract) which is only released to the influencer's wallet if the gig achieves its result. Here any individual and business owner can be sure that the influencer will

need to achieve the result to get paid.

### Search Filters

Influencer Ad-Platform will provide the Business owners and individuals looking for promoting their content on Viral where they can narrow their search to their expected influencers. This makes it easy for individuals and businesses without worrying about the research. We will be providing Filters to narrow down their search as much they can. Some filters are

- Account Category (Eg: Food)
- Fan Base (Eg: more than 1M followers)
- Account Age (Eg: 6 months)
- Daily Impression (Eg: 257k views)
- Country (Eg: Canada)
- Reviews and Ratings
- Sort by : Top/Trending/Age/Fans/Impression/Rating

### Cancellation and Refund

The cancellation and refunds window will be updated by the Influencer on every of their gig where if the Buyer cancels and apply for a refund before the certain hour of posting the picture, the smart contract will refund the exact amount paid to the buyer's wallet. After the refund window, the smart contract will not refund the buyer.

## 14.6 P2P Exchange

Nowadays people want cryptocurrencies without transaction fees, exchange fees, and also without KYC process in an anonymous way. But in order to buy cryptocurrencies on central exchanges using Fiat-Money, it is not possible without disclosing their personal information and identity cards for Anti-Money-Laundering purposes. Buying cryptocurrencies using fiat money is not possible on Decentralized Exchanges, since it is a platform to swap from one cryptocurrency to another cryptocurrency in a decentralized manner without any centralized order books.

This is where P2P exchanges come in. Peer-to-peer refers to the exchange or sharing of information, data, or assets between parties without the involvement of a central authority. These P2P exchanges work on connecting two users who are willing to sell and buy cryptocurrencies for fiat currencies. Thereby making an agreement of holding the seller's cryptocurrencies in a smart contract until the buyer deposits the fiat-currency funds to the seller and gets confirmed.

### Advantages over Centralized

1. Peer-to-peer transactions generally do not require the involved parties to provide identification, protecting everyone's right to privacy.
2. P2P exchanges allow the purchase of cryptocurrencies through the regional medium of exchange that the seller opts for (E.g. PayPal, Square, M-Pesa etc). Viral offers P2P solutions to all countries' local payment methods for the users without any hassles.

### How it Works

In Viral's P2P exchange either user can buy Viral Coin or sell it for their region's fiat currency. The steps are carried out where the buyer and seller with the same payment method and almost

the same amount is matched automatically for the exchange to take place

Flowchart

Security

Since Viral Coins opted for selling through P2P will be collected in a smart contract similar to an escrow account, it will be only released when the seller confirms the buyer's transaction to their payment method. If there is any conflicts arise between both the buyer and seller, each one can opt for an issue request where the algorithm will take care of the process automatically by asking for proof of transaction from the user, thereby resolving the conflict.

If the Transaction isn't done on a certain ETA of fund transfer, the escrow amount will be released to the seller itself without any hassles. If the app is closed by mistake, the process will be running in the background where the user can hop into the page without any trouble. There will be a chat connection started for the seller and buyer to contact each other if there is any need to. This ensures a complete trustable environment on the contract, connection, and also the users who wish to exchange their assets.

Indestructible

Our ultimate vision is to develop a decentralized social media without any central authority or a need for a company to run its product, a P2P Exchange will carry out its process of buying and selling Viral Coins for Fiat money. This ensures the trades cannot be banned nor withdrawn no matter what the land rules are.

## **14.7 Addition of Popular De-Fi Platforms**

## **14.8 Business-Wallet API and SDK**

## **15 Future Plans**

## **16 Team**

## **17 References**

## **18 Glossary**