



Stream41

Whitepaper

Stream41:

A decentralized live-video-streaming platform built on the Ethereum blockchain.

VERSION 1.0

AUTHOR:

Andy Chaudhuri

Designer and Developer:

White Code Labs

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ABSTRACT

In this whitepaper, we will present a decentralized model for sharing live video content through a peer-to-peer network that uses blockchain technology. This whitepaper will cover the business logic, the technology behind the application and the overall goal of the project.

We are excited to introduce Stream 41, a live-video-streaming, peer-to-peer network protocol that is fully decentralized, highly scalable, and crypto token incentivized. In this whitepaper, we will describe and explain in detail the Stream 41 network protocol - a delegated stake based protocol for incentivizing content producers to participate in a live video broadcast network in a secure way.

INTRODUCTION, VISION AND BACKGROUND

Introduction

Stream 41 is a next generation, live video streaming platform, built on the Ethereum blockchain, leveraging new technology for a design that better serves both content producers and content viewers.

Stream 41, is developed and powered by White Code Labs, a California-based, software innovation firm, with offices in San Francisco, Los Angeles and in San Diego. Since incorporation in 2013, White Code Labs has focused on a enterprise software technology and services with a mission to develop applications based on the most innovative futuristic technologies. Over the past few years, we worked with numerous renown enterprises and organizations.

We are proud to present below Stream 41, a live-video-streaming-platform, built on the Ethereum blockchain.

Vision

Over the past few years, the vision of the decentralized web has started to become a reality. The emergence of various networks and technologies significantly contribute to these advancements. Examples include Bitcoin and various token projects to facilitate p2p transfer of value, and decentralized name registries like Blockstack and Ethereum Name Service (ENS) to provide human accessible names to content and identities on the blockchain.

Similarly, decentralized networks and crypto-economic business models offer opportunities to build new networks that align the incentives of participants, enabling fair and efficient value sharing, community empowerment and effective governance.

Collectively, these developments play a significant role in allowing for the creation of a decentralized platform where trustless computing can take place to enable decentralized storage and live stream content distribution. Our proposed technology proposes a solution. We are building on the example bitcoin provides for the efficient and scalable verification of decentralized work that provides token rewards consistent with value creation. This includes the prevention of useless work aimed at maneuvering the token rewards system.

Background

Billions of individuals around the world rely on smartphones as a medium for communicating, social networking, creating and consuming entertainment. The ease of creating and consuming content helps explain the rapid growth and popularity of live video streaming over the past few years. Today, live video streaming is becoming an integral aspect of our daily life.

Professional video content contributors are increasingly using mobile as a primary device for content distribution, while more people are participating in video activities every day. Both phenomena result in content experiences that are pulling the public away from television and toward the consumption of video on their electronic devices. While more people create and consume content, today's digital media landscape is highly centralized and dominated by a small number of large technology companies such as Twitter, Facebook, and Google (YouTube). These large companies control and exercise considerable power on digital media distribution and access. While these companies have accumulated hundreds of billions of dollars in enterprise value from their video streaming and content created by their users, only a very small fraction of that value flows back to the value creators - content creators, curators, and publishers.

Since large companies "control the nodes", they have ultimate authority on how to regulate content created and the way value is distributed. After assessing the content with highest success, oftentimes these same companies then create their own content. "Borrowing" from the proven successful work, hence cannibalizing the original content creator's earnings. Meanwhile, developers wishing to create new experiences for digital media distribution channels are at the mercy of these monopolistic companies who have, overwhelming network effects, and economies of scale.

CURRENT MARKET LANDSCAPE

Below, we outline the current market landscape, the problems with the current platforms, and our proposed solution.

1. Advertising Revenue Dependency

Under the current digital system, advertising revenue is prioritized over diversity of content and viewing experience. The current focus on maximizing advertising revenue pressures creators to focus on content that appeals to the lowest common denominator of interests in order to capture the maximum number of viewers. This creates less opportunity for deeper discovery, community building and intimate bonding, and engagement with the audience.

The over-reliance on maximizing advertisement revenue has led to various fraudulent and deceitful practices. It is estimated that ad fraud-advertising revenue earned via botnets that “watch” videos and click ads may be as high as 50%, costing businesses billions of dollars. It also brings into question the actual popularity of certain content. Ad fraud is an incredibly hard problem to solve, as detection technology attempts to outfox ever-evolving fraud technology. This in turn further alienates content creators from their true fans and followers.

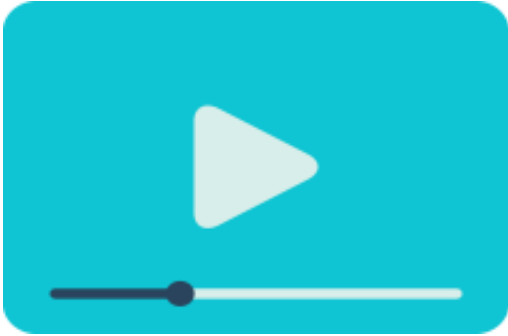
Stream 41 does not rely on advertising and proposes a direct approach for content creators to interact with their audiences in a way that the interests of content creators and their viewers are aligned without sacrificing the user experience. No matter what the audience size is, or may be Stream 41 provides content creators the tools and freedom to pioneer new approaches to online value creation.

2. Poor Engagement

Given the rampant advertisement and lack of individualized intimate experience between content creators and their audiences, the current video streaming platforms are generally characterized by poor engagement between creators and their fans. Content creators need to create content that appeals to the masses to generate meaningful income. Large technology platforms through their proprietary algorithms have significant authority and discretion in deciding what, how, and who can stream. This results in controlling the creator's ability to creatively engage with their audience while taking significant fees on revenue generated by content creators.

Through Stream 41, creators have the tools and freedom to decide how they want to interact with their audience. Creators can selectively stream content to specific audiences and decide the terms with their audience without choosing between original content and advertisement revenue. Revenue generated by content creators goes directly to the creators. Stream 41 does not deduct fees from the revenue or force audiences to watch advertisements, it is based on a token reward system that focuses on strong community engagement and meaningful interactions.

SOLUTION

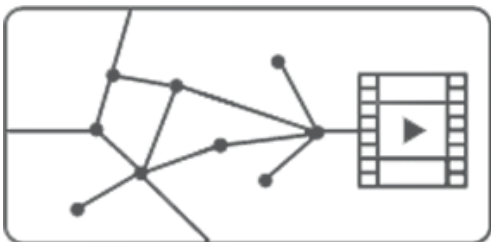
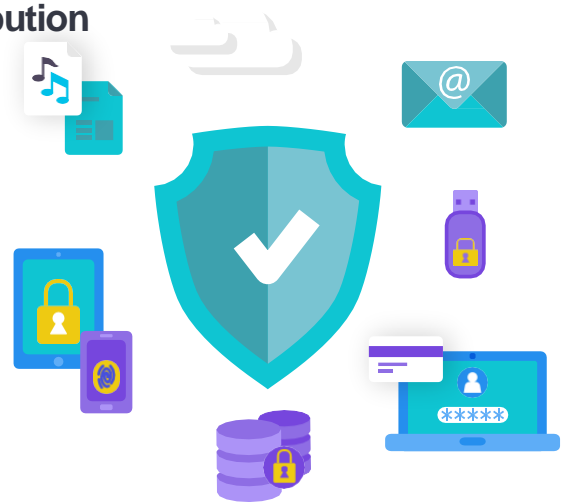


Ad-free

Stream 41 ends the overreliance on advertisement revenue currently plaguing technology companies. As a blockchain-based application, Stream 41 promotes an advertisement-free platform where content producers/broadcasters and content viewers can engage in a more meaningful way.

Fair, Transparent and Secure Income Distribution

Stream 41 provides vote-based tipping, recurring payments from fans, and business-sponsored endorsements. All of the revenue flows through the Ethereum blockchain, secure and safe without middlemen involved. Content generators can start earning right away, there are no barriers.



Peer-to-peer network

Stream 41 is a live streaming application using the peer-to-peer protocol built on Ethereum, hence revolutionizing the model of expensive centralized repositories. Stream 41 is a decentralized network that users join to earn view tokens by leveraging their redundant resources and hosting videos.

STREAM 41 PLATFORM

About Our Video Platform

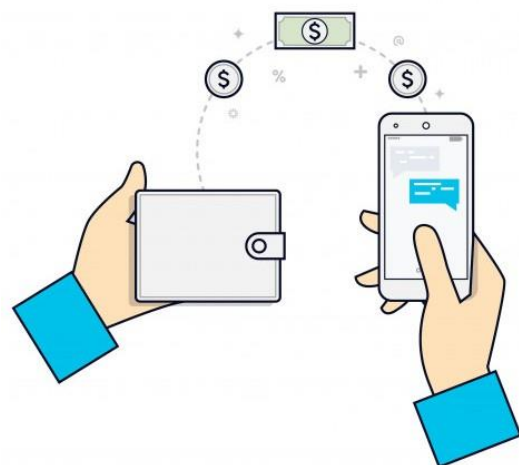
Stream 41 is a live video-streaming platform built on the Ethereum blockchain. Stream 41 is a smart-contract based monetization system, which transcends the present-day advertising-based model. Our proposed model is designed to provide sustainable revenue for all content producers. We provide the tools and freedom for content creators to engage in a more meaningful way with their audiences.

Stream 41 employs peer-to-peer video sharing technologies to establish a truly decentralized platform befitting the dawning of the blockchain epoch.

Direct monetization

The traditional and existing advertising model within the digital video streaming space only works well for the most popular content producers. It discourages personalized experiences and is susceptible to huge amounts of fraudulent activity boosting the total number of views to maximize advertisement revenue.

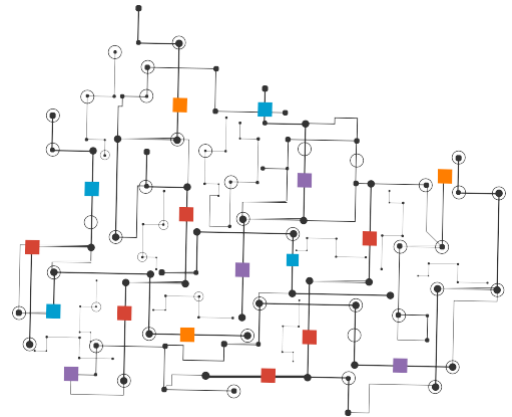
We seek a better solution. Stream 41's direct monetization and smart-contract based patronage model allows content creators to receive funds directly from their fans with no intermediaries and fees. On top of the p2p transaction ecosystem, we also provide them with tools and the freedom to choose how to interact with fans.



Genuine and Original Community Interaction

By bringing an end to the ad-based model and the need to optimize for ad revenue, Stream 41 allows content creators to interact in a genuine and intimate way with their community. View count fraud stemming from the need to create impersonal content that caters to the maximum number of views is no longer a consideration.

Instead, our blockchain solution and design enable networks and communities to thrive in genuine and original ways. Stream 41 empowers content creators and fans allowing them to directly support and interact on the platform.



STREAM 41 TECHNOLOGY

Stream 41 aims at being a fully decentralized, peer-to-peer solution, where nodes contribute their own computation and bandwidth in order to make live videos open and scalable.

The Stream 41 technology and protocol, will enable users to participate in the following flow:

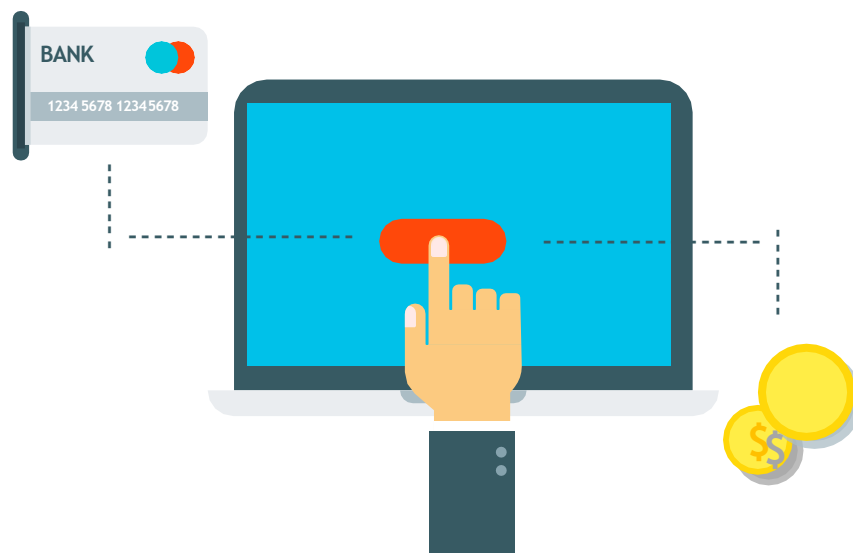
1. Capture a video on your camera, phone, screen, or webcam and send it to Stream 41 network.
2. Run nodes within Stream 41 network and be able to encode all the necessary formats to reach all supported devices.
3. Request to watch and view the live stream in the network, and have it automatically be distributed to followers and viewers in near real-time.

WHY BLOCKCHAIN?

Instant and trustless payments

Current live-video streaming platforms such as Youtube, Facebook, and Twitter act as middlemen having authority over what, who, and when content creators stream. This includes power over revenue sharing. Live streaming platforms dictate their terms and conditions leaving content creators with limited leverage. Typically, these platforms choose revenue sharing and payment terms that do not favor content creators.

As such, the current market landscape is unfavorable to the content creators who are the principal value creators. Through a decentralized network on the Ethereum blockchain, content creators will have smart-contracts directly between themselves and their audiences allowing for payments to be executed instantly and directly without intermediaries forcing inauspicious terms. We will ensure that users are in control of their money and that money flows efficiently to reward value creation by creators.





NO CENSORSHIP

No Arbitrary Censorship

Current live-streaming platforms such as Youtube, Twitter, and Facebook dictate what, who can consume, and where content is distributed. **While certain content should be regulated, significant content is censored for arbitrary reasons.**

With blockchain technology and smart-contracts, Stream 41 provides accountability and freedom to stream what you want, when you want, without a single point of failure or censorship.

THE STREAM 41 PROTOCOL

The Stream 41 Protocol encourages various actors in a live-streaming ecosystem to participate in a secure, scalable and economically rational way.

At the highest level, the protocol is designed to:

- Allow any node to send a live video into the network, and optionally have it transcoded into various formats and bitrates.
- Allow any node to request the video from the network.
- Allow participants to contribute their processing power and bandwidth in service of transcoding and distribution of video, and to be compensated accordingly.

In a decentralized network where participants are rewarded in proportion to the amount of work that they contributed, the two big challenges that need to be addressed to ensure security are:

- Can it be verified that the work that the nodes did was done correctly; and,
- Are the nodes being awarded for real work that contributed value to the network, as opposed to fake work done in an attempt to gain rewards unfairly?

Our protocol is designed to address both the verification of work and the prevention of fake work, while also offering solutions for automatic scalability of the network and baked-in governance for protocol evolution over time.

BUSINESS MODEL

In the following section, we discuss our business model and propose different revenue streams for the formation of positive, self-organizing communities.

1 Vote-based Tipping

Many people are naturally motivated to support their favorite content creators. This support can be facilitated and further fostered via gamification, with incorporated special perks like rewards for supporters. Our model provides a solid baseline mechanism to deal with rewards in a content abundant ecosystem by allowing users to support multiple creators at once through micropayments.

2 Recurring patronage

We have established a recurring patronage system for certain content creators. Some content creators may choose to create and share unique and special content with their most loyal fans.

3 Selling access to the content

We believe that direct sale of content is not an optimal monetization strategy. Today, consumers preference and businesses are moving towards subscription-based business models popularized by companies like Netflix and Spotify who grant access to entire catalogs of content. We believe that we can apply such a model to the existing patronage model. Fans can pledge any amount of tokens on a monthly basis to their favorite content creators, and if the pledge surpasses the threshold set by the content creator (e.g.: \$5 per month worth of View tokens), access to special content is unlocked.

4 Creator-delivered endorsements

While the patronage model is a great way for value exchange, many content creators today are completely dependent on sponsorships. Our goal is to encourage content creators to propose sponsorship options that are consistent with their brand, values and fans.

Stream 41 will offer an on-chain escrow service, which is a smart contract developed on the Ethereum blockchain that sponsors and creators can effectively utilize. Once the terms and conditions are agreed upon, the transaction is executed after both parties have delivered on their commitments.

STREAM 41 TOKEN

Stream 41 tokens will be used as a payment mechanism.

Token Sales

35% of the tokens will be available for sale.

5% of the tokens will be sold during its Pre-ICO token sale, and the remaining 30% will be reserved for future ICO.

Content Creators and Viewers

25% of the token supply will be used to incentivize content creators and viewers to use Stream41, and to bring their existing followers and audiences.

Team

35% of the token supply is reserved for the team and core team members. These tokens shall be distributed on a meritocratic basis to individuals that contribute significant value to the project. Up to 4% of the tokens will be invested to founding team over a 25-month period, based on the monthly performance evaluation.

Supporters and Bounties

5% of the token supply is to be used as incentive most dedicated supporters and community members for various contributions to the project. Some tokens will also be reserved to be distributed to users during the bounty and airdrop programs.