SATOR

A Decentralized Application Transforming Television

Abstract

Streaming television has evolved into infinite viewer choice. Television channels deliver viewers to advertisers to the annual tune of $68 billion in the U.S. and $212 billion globally.[1] Though dispersed viewer choice drives volume, value accrues in a centralized manner. Accordingly, traditional TV models are increasingly threatened by user-generated content consumption growth as viewers flock to more engaging experiences. Indeed, for the first time in history in 2019, the amount of time a U.S. consumer spends watching TV was surpassed by the amount of time they spent on their phone.[2] At the same time, media suffered a general decline in trust. However, embracing these shifts can benefit every player in the TV ecosystem as the underlying demand of viewers for content continues to grow.

SATOR.io is a decentralized platform that enables global participation in the mainstream television industry. Uniting content, advertising, viewer engagement, broadcast and streaming marketplaces, SATOR.io aligns the interests of all parties involved in the creation, distribution and consumption of series television. The SATOR.io platform disrupts traditional models by entwining viewer communities in the value they create. By delivering a dynamic, multi-purpose platform where anyone can participate with the show's narrative, characters and community in a peer-to-peer fashion, SATOR.io drives audience growth and retention while expanding advertiser reach into new verticals and experiences. SATOR.io modernizes the scripted television viewer, advertiser and distribution economies. Leveraging cryptocurrency adoption and interest trends, the SATOR.io platform can remove traditional intermediaries and empower fans to become the ultimate driver of series relevant transactions - all powered with the transparency, security, liquidity and efficiency inherent to blockchain technologies.

In technical terms, the SATOR.io protocol and its native token, SAO, are a multichain system operating on Solana, Polkadot, Polygon and Ethereum. Key technical advantages of this are high block speeds, low gas fees and the ability for SATOR.io to scale to billions of users and devices around the world. Scalable and gamified, SAO incentivizes long-term liquidity by means of a tiered staking system and other DeFi-based incentives. Summarily, SATOR.io is an incentivized, social, participation TV solution.
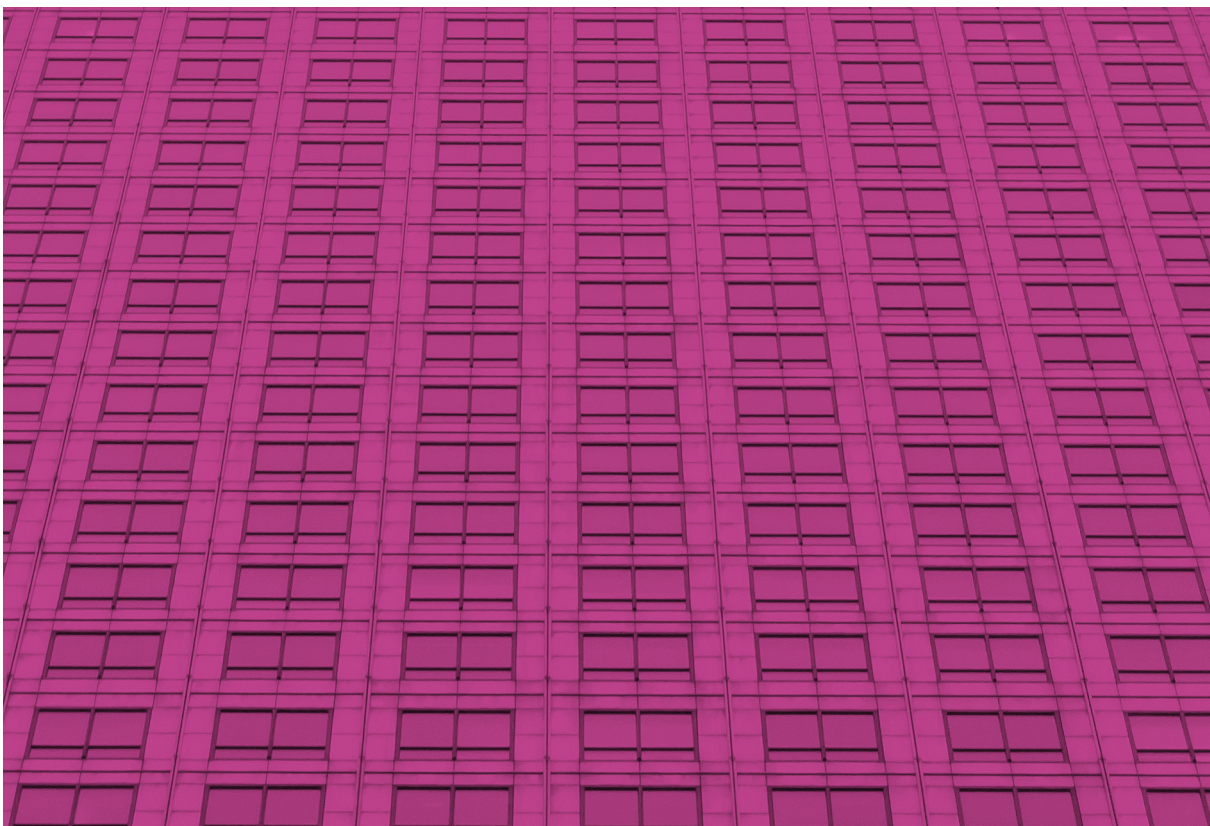
Introduction

Since the advent of television, its evolution has been shaped by technological innovation. With present day advances in blockchain technology also widely applicable to entertainment, scripted series content presents unique opportunities and challenges. At this intersection, SATOR.io provides an open-source platform enabling communities to participate and engage directly in content which further drives awareness, retention and revenues. Using sophisticated but user-friendly incentives in new ways, the platform achieves a large-scale network that:

· Creates new value for marketplace participants who contribute to growth.
· Is built on an open, distributed, and shared data layer to promote transparency and collaboration with other trending apps, channels and services.
· Facilitates inclusion in that anyone with a mobile phone may earn rewards and influence outcomes.
· Brings larger audiences to scripted series television and keeps them longer.
· Disperses direct and indirect value throughout the entire ecosystem.
· Promotes brand loyalty by allowing community stakeholders to guide governance.
· Improves advertising engagement while also decreasing cost to advertises.
· Enables a brand new feature set and rewards program for viewers and advertisers.
· Provides a set of tools for growing and participating in scripted series television network effect with the ability to cross-pollinate viewers, engagement and liquidity across properties.

Current State of Television and Blockchain

Invented about 100 years ago, the journey of television as a mass medium has been enabled by technological progress. From electronic camera tubes to eventual cable systems in place of analog signals, TV only progressed to LCD 40 years ago and HDTV 30 years ago. TV just began getting "smart" less than 20 years ago. Over many innovation cycles, TV has faced the need to adapt or fall behind. In the last decade and a half, OTT and streaming entirely blurred lines between television, film, VOD and Internet content. Presently, television may best be defined as "a writer-driven, serialized medium distributed in the form of audiovisual content to individual consumers and times and locations, on the devices of their choosing; with successful series TV always an ongoing project requiring continuous creative and production investments."[3] Traditional industry structure (see diagram A) includes legacy broadcasters as well as disruptors like Netflix who entered original programming in 2012 and quickly became a new behemoth. In contrast, the future SATOR-enhanced TV ecosystem (see diagram B) streamlines value flow and aligns incentives to drive even more value. This is important because TV programming can generally be considered resource intensive and yet fleeting, with long delays between conception and audience consumption, especially in an increasingly "on-demand" and "user-generated-content" context where other formats may be quicker to iterate according to viewer preferences or current events.

In terms of where blockchain fits in the picture, the global market for blockchain in media and entertainment is estimated to reach $1.54 billion by 2024.[4] Currently, numerous well-capitalized blockchain companies are pursuing solutions around content delivery, rights management, advertising efficiency, crowdfunding, data analytics and various types of payments.

Before
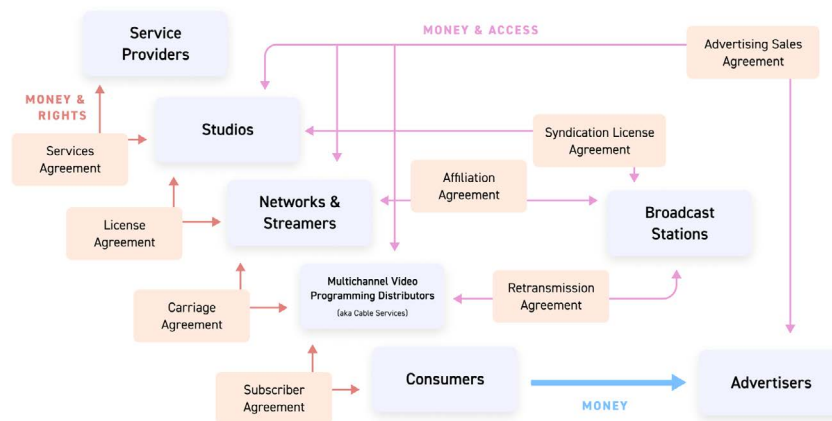
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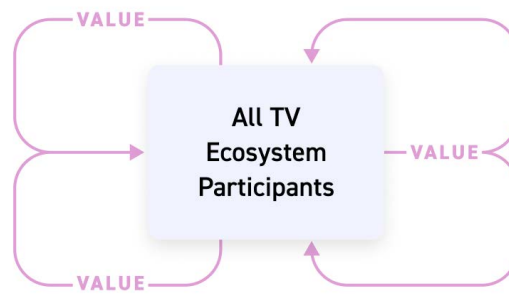
Blockchain has attained recognition as a powerful technology and 55% of media and platform executives consider blockchain a top-five priority with 83% planning to increase blockchain investments in the next three years.[5] By 2024, worldwide spending on blockchain solutions will exceed $19 billion.[6] Assets, content and applications are moving onto blockchain at increasing rates to enable multi-participant interactions. Such shifts are based upon the technology's superior aspects of transparency, real-time functionality and liquidity as well as its trustless nature, which enables users of different types to collaborate seamlessly.

Long term, blockchain could support the entire entertainment value chain from content housing and acquisition through distribution rights and record keeping. End-user demand and adoption is evidenced by facts including registered blockchain wallets passing 50 million in June 2020.[7] Global blockchain market size is expected to grow to $39.7 billion by 2025 reflecting its impressive 60-70% compound annual growth rate.[8]

Numerous disruptors are focusing on the intersection of blockchain and television given the reach and time-spent metrics across television, TV-connected devices, audio and digital (computer, smartphone, tablet) platforms. New efficiencies and opportunities are being defined by innovative companies like Theta Network, TV-Two, Elephants360, Verasity, Flixxo, Alphanetworks, Vuulr, Eluv.io and Breaker. Similar innovation can also be seen in platforms like: Ethernity celeb-driven marketplace; Chiliz digitized collectables of the sports industry; and Basic Attention Token's attention-based economy. At the same time, incumbents like Charter, Comcast and Viacom partnered together on Blockgraph; and Omnicom's Adledger consortium established itself with Publicis Media and other luminaries. In short, content delivery and rights management use-cases for blockchain in media are increasingly emerging. However, the vast industry of scripted series television remains out of reach of blockchain and vice versa due to numerous barriers.

Television Industry Trends & Challenges

The television industry is experiencing streaming dominance, fragmentation and stagnation in terms of subscribers reaching upper limits in number of subscriptions. In the current state of streaming wars, consumers are overwhelmed with choice. Thus, content must be combined with the right strategies that create personalized experiences and provide value to every customer all the time.[9] Customers will continue to be presented with more streaming options than ever before. To stay relevant and binge-worthy, it's critical for new and existing streaming series to optimize engagement.

> "There is simply too much television."[10]

Television engagement is characterized by high involvement and absorption with television content.[11] Viewers, who were passive spectators in the past, now tend towards more active engagement/roles. Social networking sites have been a tenet of "social TV," sharing one's ideas and experiences regarding TV programs with others.[12] Internal network research has repeatedly shown that viewer choice is driven primarily by emotion.[13] This engagement, fundamental to series success, can lack certain aspects of alignment, transparency and connection with the series itself. Technology that facilitates the relationship between users and broadcasters at scale will be necessary in the coming years to avoid viewer disillusionment and churn. Audiences, producers, creators and advertisers need a secure, innovative and well-engineered future.

These challenges intensify as the global television market grows from $108 billion in 2019 to $135 billion in 2020 and the $50 billion video streaming market in 2020 grows to forecast revenue in 2027 of $184 billion. This projected 20.4% Compound Annual Growth Rate comes in part from the deployment of AI and blockchain to upgrade legacy mediums to meet modern expectations.[4]

> A shortage of scripted drama due to coronavirus restrictions will lead to more partnerships to share the goods around.[14]
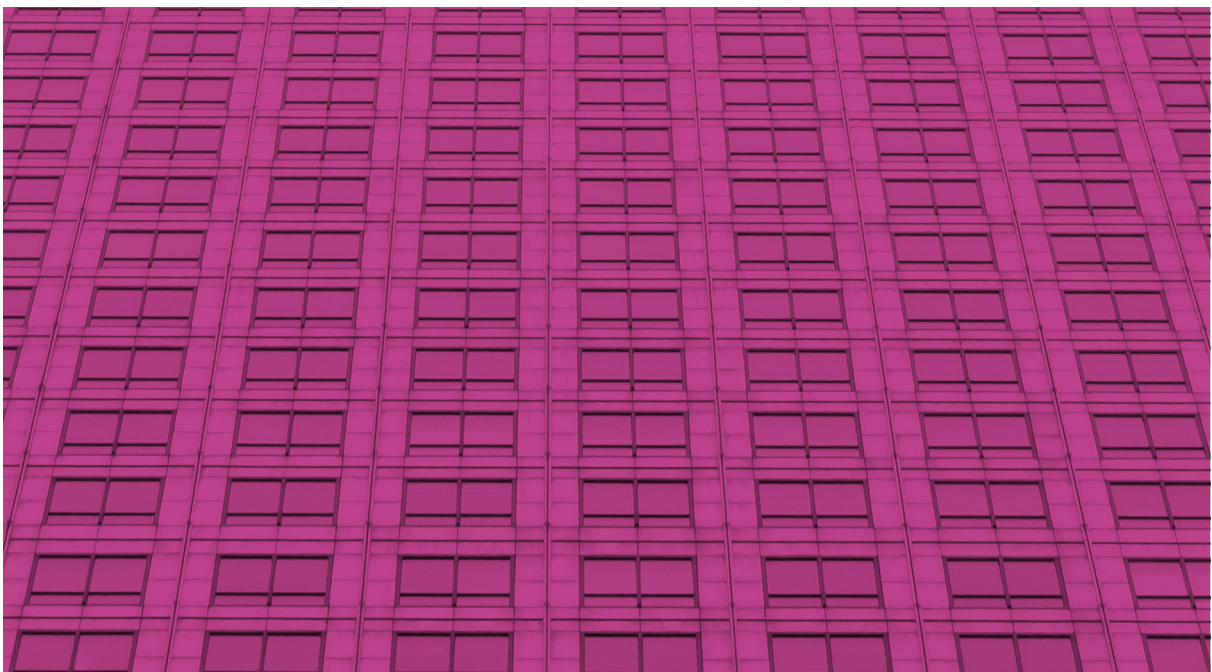
SATOR.io Platform

SATOR.io encapsulates the unique formula necessary to access and to improve the scripted series television industry for all its stakeholders. SATOR.io unites digital currency and digital television for today's peer-to-peer era by grounding the scripted series industry in a secure, efficient and participant-centric ecosystem. Using powerful new technology infrastructure to enhance scripted series television, SATOR.io drives engagement, viewership and rewards throughout the community itself. A blockchain-based digital economy enables the openness and coordination necessary to recognize viewer interests and incentivize viewer actions. The utility that SATOR.io provides encourages other technologists, brands, businesses and consumers to build, contribute to, and extend the ecosystem for further value creation.

SATOR.io Technical Description

SATOR.io is a Decentralized Application (dApp) built on Ethereum (ERC-20) with a bridge to other blockchains, primarily Flow, Solana, Polkadot and Polygon. The SATOR.io platform acts as an interface between the user and the backend blockchain technology. The goal of the SATOR.io platform is to provide a hub of utility and engagement for the wider television ecosystem participants to vote, delegate, align interests, contribute and interact. This is accomplished by simplifying the experience completely in the user-facing front-end, while leveraging more advanced functionality and proficiencies of a Polkadot-wrapped or Solana-wrapped ERC-20 in the backend. For example, SATOR.io building with Solana ensures the scalability necessary for television viewership and the natural network effect that follows scripted series. Typical popular series can average ten million viewers or more at a single time. With multiple series activating on SATOR.io at once, expected network activity will greatly exceed transaction throughput rates of other chains. Notwithstanding, SATOR.io will implement bidirectional, decentralized token bridges between Ethereum and the other chains in order to access the superior liquidity of the Ethereum ecosystem while also utilizing things like Solana's scalability solution, benefiting from the respective strengths of multiple chains. Thus, SATOR.io user application can reach mainstream scale while allowing its tokens to also be easily traded. Solana's TPS is designed to scale with the industry availability of CPU/GPU, Memory and Network Bandwidth (Moore's Law).

Developed in Rust, the programming language of SPL, smart contracts act as autonomous entities, absolving the need for trusted intermediaries. Their actions are triggered by users interacting with the application, which calls the contracts in the background. Micropayments

in SAO (SATOR.io's application token, described below) will be accomplished for first stage deployment with the SATOR Micropayments Ledger. To begin with, viewer actions—such as screen-scanning and answering trivia—will be used to verify engagement within the dApp using SATOR Micropayments Ledger. The SATOR Ledger will implement several technical measures in order to enhance both user privacy and experience. Specifically Zero Knowledge Proofs, IPFS (to store user data), and original Sator smart contracts. Using these technologies in conjunction with one another, it will allow television series viewers to securely and easily unlock rewards by satisfying a contract's predetermined conditions. User engagement will be the measurement by which these conditions may be satisfied. As the viewer completes actions fulfilling smart contract conditions, designated outcomes (such as NFTs, voting rights, badges, etc.) are unlocked. These outcomes can be programmed to automatically disperse to various stakeholders, including, but not limited to: viewers, groups of viewers, series producers, advertisers, network distributors or other affiliated stakeholders. Value accrues in a similar way to mining rewards, only with Proof of Attention replacing Proof of Work as the relevant metric for this economy.[15][16]

SATOR.io provides a unified, scalable, and interoperable platform that increases interaction through smart contracts and the associated data analysis and programmability. For instance, a viewer can share a link to friend suggesting they subscribe to a streaming Network in order to watch a particular Series where embedded in the link is a smart contract that unlocks a flow of value to any combination of the Viewer, Friend, Network and Series when conditions are met — Friend subscribing to the streaming Network being the example condition. These incentives can then be continuously

adjusted to regulate network flows and user behaviors according to changing needs or insights. Smart contracts provide access to on-chain state values and can be combined with other blockchain base-layer features to implement a dynamic and unique decentralized application, taking advantage of scalability, performance, and quick transaction finality.

SATOR Token

SATOR (SAO) tokens are used to access features in the SATOR.io ecosystem. This native token serves several key functions that provide utility in relation to scripted series television. SAO is a multi-purpose token that drives behavior for end-users, viewers, developers, advertisers, creators, talent, distributors and other ecosystem participants. SAO may be staked for numerous reasons by viewers or distributors. Viewers stake SAO to access core features such as NFTs and reward multipliers denominated in SAO. Distributors stake SAO in order to enhance viewership growth opportunities -- the more SAO staked by a TV series/distributor, the higher the level of viewer engagement multiples they unlock. Likewise, the higher the amount of SAO the viewer stakes, the higher the multiplier rate they receive. Staking is the practice of depositing a number of tokens into a digital wallet for a specified period of time (so as preventing them from being sold while staked). Holding/staking SAO supports the network, which is why the viewer gets rewarded. Staking SAO may be further incentivized by additional features such as: discounts on merchandise, streaming subscriptions, royalty payments, interactions with talent, influence over content decisions and other rewards. In this way, SAO tokens represent digital votes, memberships, loyalty points and other unique utility and value.

SAO holders can participate in the platform's governance according to their stake and the distribution of SAO rewards incentivizes them to contribute to the ecosystem. By holding SAO, they may utilize or delegate votes to propose improvements to the SATOR.io protocol, make changes to transaction fees or changes to how fees are distributed. Higher tiers in terms of staking and being active in the community unlock higher levels of rewards. In short, SAO enables community governance of the SATOR.io protocol, with true decentralization pushing the forefront of creativity.

SAO Technical Description

The SATOR Token (SAO) is a multichain compatible token based on ETH, Polkadot, Polygon and Solana. For example, SAO is integrated with SPL standards, the collection of on-chain programs targeting the Sealevel parallel runtime—i.e. a runtime that processes tens of thousands of contracts in parallel—one of several key innovations that make Solana the world's most performant permissionless blockchain. Following token implementation principles and containing functional properties of the Solana blockchain, SAO transactions are passed to nodes in a Solana cluster for validating.

Effectively, Solana is a distributed virtual machine that allows end users to construct smart contracts for transactions. Smart contracts are stateful applications stored on the blockchain and are analogous to "vaults" that contain value and only unlock if certain conditions are met. These contracts are cryptographically secure and can verify or enforce performance of the contract. Token contracts are a standard feature of the Ethereum and Solana ecosystem. SPL standard tokens can create their own rules for ownership, transaction formats and state transition functions. SAO can be stored directly in any Ethereum wallet, plus bridged to SPL standards, making it truly universally accessible to the large TV industry, growing blockchain community, and new entrants to both.

SAO Economy

SAO initial utilities serves multiple purposes in ensuring the health and growth of the network.
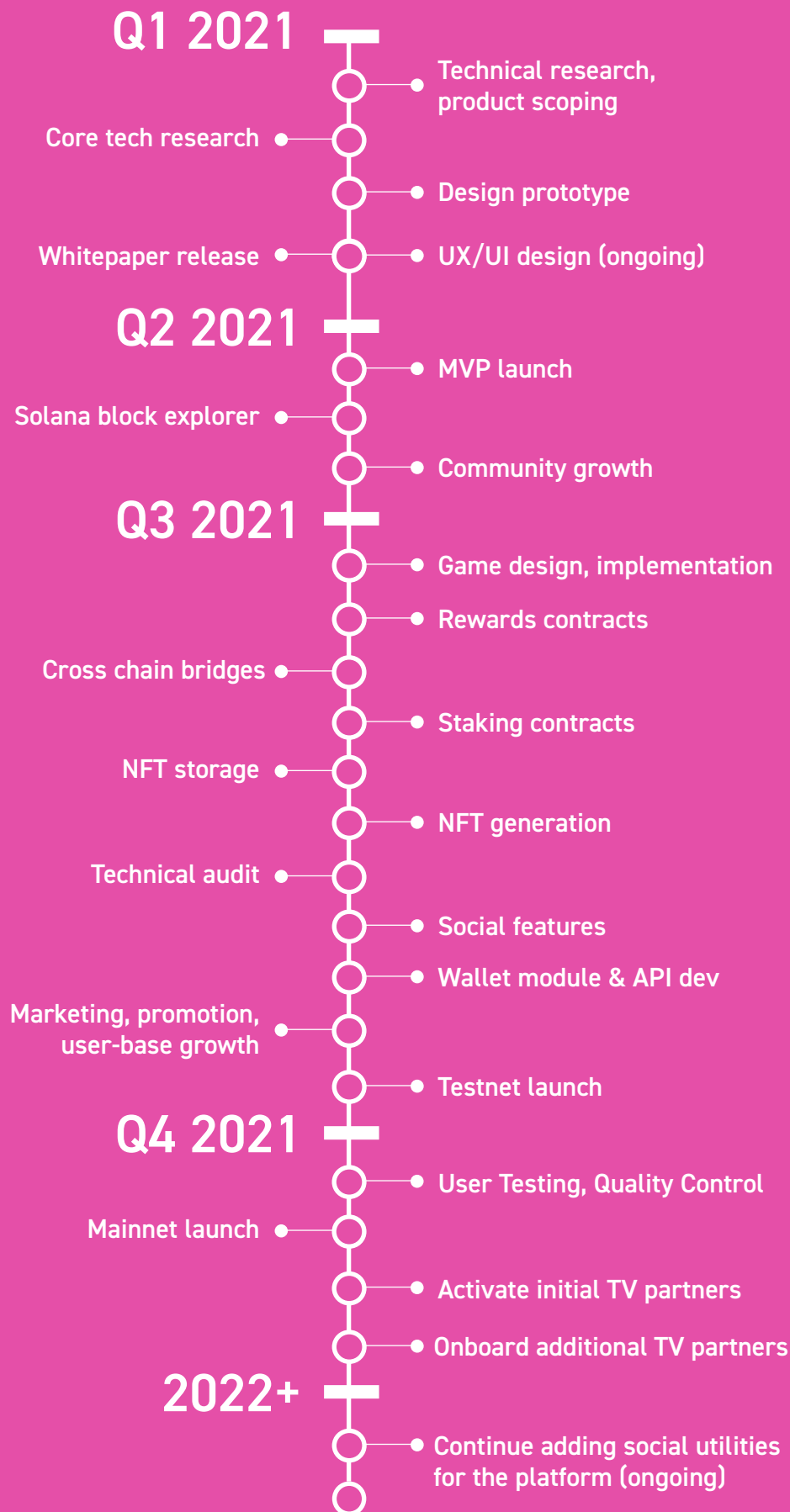
SAO Initial Features:

- Competitive trivia and episode-specific games.
- Scanning/Verifying: In-episode QR codes, easter eggs, randomized proof-of-viewership questions.
- SAO Rewards: Earning allows everyone a stake in the network and incentivizes activities beneficial to the platform.
- On-Screen Integration: Advertisers appearing within episodes.
- Engagement: Layers added to viewer experience.
- Voting: SAO holders may propose and vote on changes to the platform.
- Staking: Locking up SAO to trigger various incentives including reward multipliers.
- Viewer generated rating system: write and upvote reviews.
- NFT Transactions: Earn/collect/display/use series-based NFTs.

Longer term utilities may also include:

- Content Access: Exclusives, Alternative Endings, Bonus Episodes, Behind-the-scenes.
- Discounted subscriptions to streaming networks.
- Artist Fan Base: Fans rally in any number of ways not previously possible.
- Value Exchange: Parties interested in trading related assets and memorabilia.
- Rights Holders: Retain all or portion of their royalties in tokens.
- Wishlist Grants: Competitions only available to token holders.
- White Label: Non-affiliated retailers wishing to have greater presence online and not currently within the ecosystem can participate in and access the Platform.
- Creative Collaborations: Cross-pollination and further engagement optimization across verticals and assets in affiliated properties and channels.

Technical Progress To Date & Roadmap

Q1 2021

Technical research, product scoping

Core tech research

Design prototype

Whitepaper release

UX/UI design (ongoing)

Q2 2021

MVP launch

Solana block explorer

Community growth

Q3 2021

Game design, implementation

Rewards contracts

Cross chain bridges

Staking contracts

NFT storage

NFT generation

Technical audit

Social features

Wallet module & API dev

Marketing, promotion, user-base growth

Testnet launch

Q4 2021

User Testing, Quality Control

Mainnet launch

Activate initial TV partners

Onboard additional TV partners

2022+

Continue adding social utilities for the platform (ongoing)

Significant future development will come from growing open-source community. As SATOR moves to a fully distributed system, other developers will use our free and open source infrastructure to develop their own use cases for SAO.

Conclusion

The SATOR.io platform and the SATOR (SAO) token create and distribute value across scripted series television participants in a manner that incentivizes the health and growth of the network and its competitiveness in an increasingly crowded and coveted space. SATOR is powered by blockchain technology which will only continue to advance, ensuring interoperability and other benefits that improve the way scripted series television serves its stakeholders. In this new decentralized model, efficiency and engagement challenges are solved as SATOR.io becomes the foundational platform to all scripted television series looking to leverage new technology in an increasingly on-demand future.
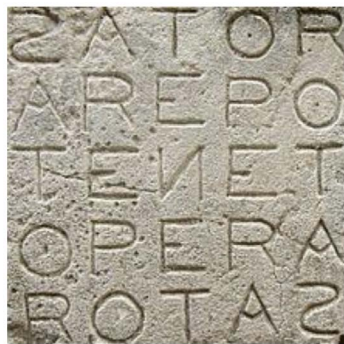
Sator Square, the earliest dateable two-dimensional palindrome.

...most ancient form of scripted content.

"You don't have a television? What's all of your furniture pointed at?"[17]

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