TronXChange: Finding Ads You Don’t Mind

Introduction

The global digital advertising market is valued at over $600 billion this year. Ad exchanges are fundamental to the advertising industry infrastructure, but are problematic for both publishers and advertisers. This team introduces TronXChange, a Tron-based Decentralized App that replaces centralized ad exchanges with a transparent and economical solution that connects publishers and advertisers while incentivizing a better user experience.

How Ad Exchanges Fail Publishers, Consumers, and Advertisers

Lack of Transparency: Ad exchanges are notorious for their lack of transparency in operations. Neither publishers nor advertisers can be sure of the legitimacy and integrity of ad transactions mediated on an ad exchange.
Brand Safety: Publishers can not guarantee that ad exchanges will deliver ads that adequately align with their brand values. Irrelevant, controversial, or otherwise contextually inappropriate ads can damage brand reputation.
Quality Control: The proliferation of ad exchanges has resulted in a diverse range of publishers, including those with low-quality or fraudulent traffic. Advertisers often struggle to exert control over ad placements, leading to concerns regarding the quality of ad inventory.
(Lack of) Privacy: Ad exchanges rely heavily on user data for targeted advertising, raising significant privacy concerns. The collection and utilization of personal information without adequate consent have prompted regulatory changes, such as GDPR and CCPA, to protect user privacy.
Ad Overload: Programmatic advertising facilitated by ad exchanges has led to an overabundance of often low-quality ads. This ad overload negatively impacts the user experience, decreasing the value of publishers and diminishing the efficacy of advertising efforts.
Competition and Monopoly: The dominance of a few major players in the ad exchange market stifles competition, historically leading to antitrust lawsuits. Smaller players struggle to enter the market, inhibiting innovation and diversity.

Intuition

Due to the problems described above, the existing infrastructure of ad exchanges is an ineffective solution to connecting publishers and advertisers. The status quo advantages large businesses and incentivizes these businesses to monopolize the industry.

A decentralized storage and payment system for connecting publishers and advertisers would directly address problems of transparency, audience privacy, and market monopolies. Advertisers would save on the commissions usually paid to ad exchanges, and small publishers would be able to enter the space without paying astronomical setup fees to exchanges. Both

advertisers and publishers would benefit from not having to waste valuable time manually negotiating contracts with multiple exchanges.

As a well-established, open-source blockchain platform with its own native currency, Tron is an ideal candidate platform on which to build an application which facilitates publisher-advertiser connections. Tron has been effectively proven to work in similar applications, such as allowing content creators to monetize their content directly on the Tron Blockchain. Tron's characteristic low-transaction-fee micropayment capabilities and payment transparency is well situated to guarantee publishers and advertisers of the legitimacy and integrity of their transactions, and its support of smart contracts can further facilitate transactions by automating agreement.

System Design

TronXChange is a Tron-based Decentralized App that connects publishers and advertisers. Advertisers store their ad content on InterPlanetary File System (IPFS) or similar decentralized storage technologies. Using the content hash, they then create a smart contract on the TRON blockchain to reference the ad content. These smart contracts will contain the usual metadata, but will also contain information about the type/format/size of content, as well as information about pricing and payment mechanisms.

Publishers create a profile on TronXChange, where they specify requirements for type/format/content of ads that they are willing to host. This information is also hosted on IPFS, and publishers associate this profile information with a smart contract that specifies their own payment mechanisms.

When a publisher has ad space, they will post to TronXChange, which matches the post to advertisements based on eligibility requirements specified by the publisher smart contract and the individual ad's smart contract. A winning[1] advertisement is selected, the advertiser pays the publisher directly via mechanisms described in the respective smart contracts, and the publisher retrieves the content from IPFS via the ad's hash. Publishers publish the ad alongside their pre-existing content, requiring user interaction (watching a video, scrolling past the ad, clicking, etc) as proof of publishing (proof-of-work) to validate the transaction.

For a small buy-in for each active day (each day where an ad is served), TronXChange maintains a measurement of a publisher's ad engagement throughout the day. The publisher with highest average ad engagement (proof-of-work per ad served) receives a proportional payout in TRX. This incentivizes publishers to choose ads that are the most engaging and appropriate for their audience, which in turn creates a better user experience and serves as ad quality control. In a ripple effect, advertisers are incentivized to create ads that meet publisher requirements for higher quality and engagement.

[1] There are multiple mechanisms for choosing a winning advertisement. These include choosing the first advertisement that meets the publisher requirements, the advertisement that pays the most, and even more complex programmatic (optimal stopping) or AI-based choice algorithms.