AdBleu

White paper

5 September 2017

Sujith Santhan Robin Xavier Pradeep Thomas

AdBleu

A distributed protocol and blockchain platform for direct digital advertising on the internet.

Contents

Abstract

AdBleu is an anonymous, decentralised, distributed protocol and blockchain platform for direct digital advertising. Advertisers are able to target a cohort with digital video and audio ads. Generic user profiles are registered on the blockchain without personal identifying details. AdBleu allows users to view ads, give feedback about the ads and get paid in the process. Small and large advertisers can use the platform to display ads directly to consumers. Consumers viewing the ads are paid for their time and feedback.

Users create profiles on the platform, the profiles are stored on a public blockchain. The profiles are generic without identifying personal details of each user. Ads are stored on the blockchain with a list of target profiles and required number of consumers.

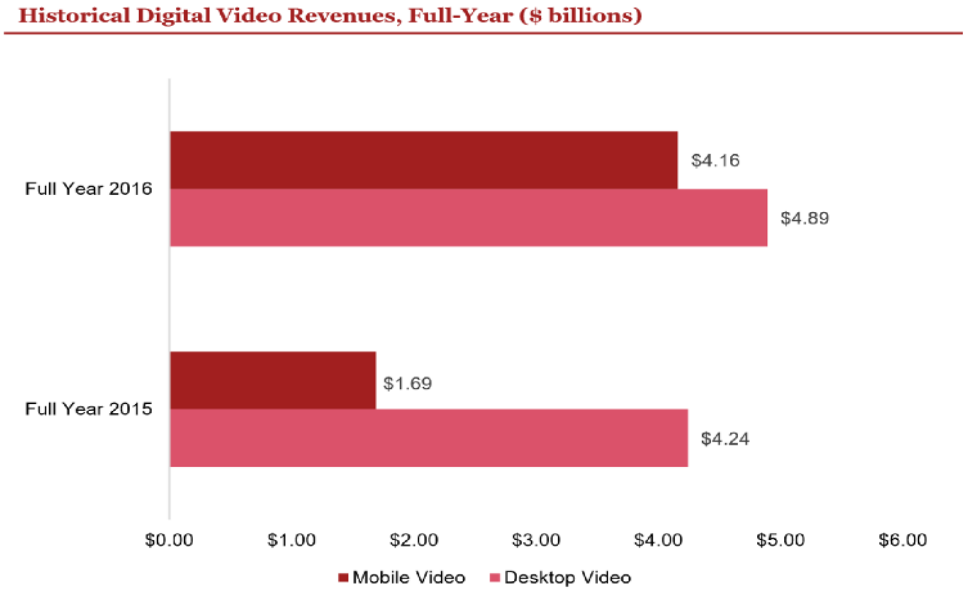
Ads are matched to users by matching algorithms, when a user views an ad and provides feedback (if applicable to the ad) the information is stored on the blockchain. The ad spend is distributed among the various consumers.

Consumers accumulate Bleu tokens on the platform. A Bleu token denotes the fractional cryptocurrency accumulated in each consumer account.

Advertisers place ads on the blockchain via a facilitator (company). The facilitator (AdBleu ..) checks that the ad confirms to country specific regulations before posting it on the blockchain. Consumers are on boarded via the facilitator (AdBleu ..). Consumers can register, open/close accounts and withdraw their accumulated Bleu tokens via the facilitator.

The document details the market opportunities, the technical architecture and model underpinning the AdBleu platform.

The Market



Source: IAB/PwC Internet Ad Revenue Report, FY 2016

"Internet advertising revenues ("revenues") in the United States totalled $72.5 billion for the full year of 2016, with Q4 2016 accounting for approximately $21.6 billion and Q3 2016 accounting for approximately $18.2 billion. Revenues for the full year of 2016 increased 21.8% over 2015."

Source: IAB internet advertising revenue report 2016 full year highlights

Digital ad revenues have been growing year on year and the trend is likely to continue.

AdBleu network

The AdBleu network is comprised of

- Advertisers
- Consumers
- Facilitators
- Miners

Advertisers

AdBleu presents small and large advertisers with a direct internet channel for engaging their target audience. Opportunities include presenting pilot ads to target audiences and gaining feedback prior to full rollout. Advertisers can also ask consumers for feedback on existing or new digital ads or products. Advertisers can run customer satisfaction surveys on existing products using the platform.

Consumers

Generic consumer profiles (shared by consumers) are stored on the blockchain without identifying personal details. A consumer viewing an ad is allocated a fraction of the total "ad spend". Feedback provided by consumers is stored on the blockchain. Consumer account balances are held in various cryptocurrencies.

Facilitators

Facilitators play a pivotal role in interfacing with consumers, advertisers and ensuring that ads comply with country specific regulations.

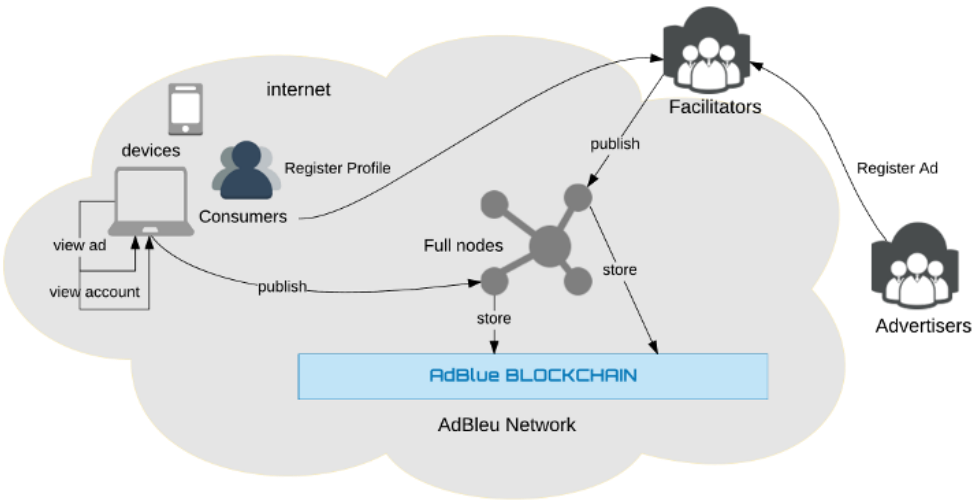
AdBleu will initially provide these services ensuring the smooth functioning of the platform. However the model is "one to many" and one public blockchain can support many facilitators.

Miners

AdBleu will initially host the mining nodes for accumulating transactions into blocks and the blockchain. When the platform is stable and if the cost of moving transactions on the blockchain remains trivial we envision opening it out to the wider market. Unlike bitcoin or ethereum mining the only revenue generated is the fee associated with the transactions and there is **no revenue** for each mined block.

Facilitators have a stake in the platform and will play a key role in mining the blockchain

Architecture



The various components in the architecture are

- UI
- Blockchain
- Full Node
- Mining Node

AdBleu UI

The AdBleu user interface is a cross platform application downloaded on a user's computer or mobile device. The UI enables users to interact with AdBleu network, managing their accounts, registration, notifications and viewing ads. The UI is the primary interface to the AdBleu network.

AdBleu blockchain

AdBleu platform has an open public blockchain, ads from advertisers are vetted to conform to regulations before being digitally signed and added to the blockchain along with the bitcoin or ethereum address containing the total ad spend.

Users register their profiles on AdBleu, which are signed and added to the blockchain.

When a user views an ad, the transaction is published to the participating nodes.

Full node

A full node can be installed by anyone wanting to participate in the AdBleu network. A full node will host the entire blockchain and receive all transactions published on the network.

Mining node

A mining node is similar to a full node with the additional task of mining blocks. Mining nodes compete with each other using a proof of work algorithm to approach consensus in the initial phase. Consensus algorithms will be swappable and future releases will include algorithms that increase speed and ensure that the sum of the transaction costs for each ad are a small fraction of the ad spend.

Cashflow

A simplified version of the cash flow is given below

Ad booking

Advertisers will be able to book ads using fiat currency. AdBleu will convert the fiat currency associated with the ad spend to cryptocurrency (taking operational costs into account) and post the ad on the blockchain. The transaction will include the ad details and the total ad spend in cryptocurrency.

Ad Examples

An example using bitcoin

Bitcoin

Total Ad spend	£1000
Number of consumers targeted	100
Current Bitcoin purchase price	1 bitcoin = £ 2436.86
Total Ad spend in bitcoin	1000 / 2436.86 = 0.41036415715
Total Ad spend in satoshi	410364157.15
Ad spend in satoshi per user	410364157.15 / 100 = 4103641.5715
Ad spend in satoshi per user rounded	4103641

Consider another example using Ethereum

Total Ad spend	£1000
Number of consumers targeted	100
Current Ether purchase price	1 ether = £ 211.63
Total Ad spend in ether	1000 / 211.63 = 4.72522799225
Total Ad spend in wei	4725227992250626092.70
Ad spend in wei per user	4725227992250626092.70 / 100
Ad spend in wei per user rounded	47252279922506260

Bleu coin

A Bleu coin is a transient construct that is not stored anywhere but derived from the cryptocurrency monetary value of the ads viewed by a user on the AdBleu blockchain

Bleu coin contains

- cryptocurrency (BTC)
- cryptocurrency unit (0.00000001)
- cryptocurrency unit name (satoshi)
- balance (4103641)

Bleu coins on the AdBleu network can hold any cryptocurrency and is not stored on the blockchain.

An example of a user's account balance after viewing the 2 ads mentioned above.

User Account Balance

Assuming a user has viewed the 2 ads mentioned above, the balance on the account in Bleu coins is.

User Acccount Balance

1. BL (BTC, 0.00000001, satoshi, 410364157)
2. BL (ETH, 0.000000000000000001, wei, 47252279922506260)

The user account balance in bleu coins is calculated dynamically based on the ads viewed by the user on the AdBleu blockchain.

Crosschain cashflow

The system uses 2 blockchains for different purposes

1. AdBleu blockchain and coins (users, facilitators)
2. Ethereum blockchain and smart token (funders)

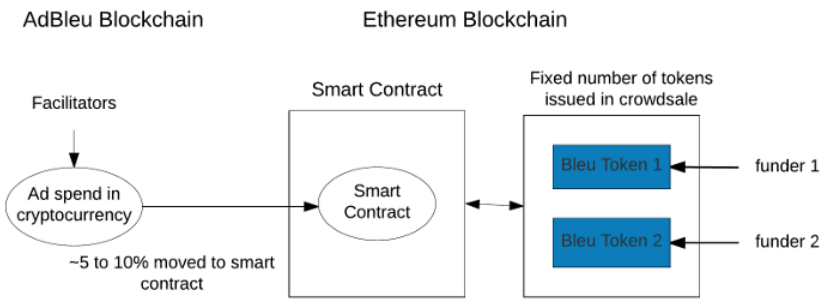
AdBleu blockchain and coins

The technology powering the AdBleu blockchain network is independent of existing blockchain solutions to reduce external dependencies and also with the primary focus of keeping the cost of transactions on the chain to a minimum. Adbleu network will primarily be based on the AdBleu blockchain comprising of users, facilitators and advertisers.

Ethereum blockchain and smart token

Ethereum will be used to host the crowd sale of the smart token contract. Funders will be able to send transactions to the inherently liquid smart contract and allocated BleuTokens, with ether(wei) as the backing currency.

Cashflow



We will look at cross chain cashflow using a sequence of events as they happen in time. The sums mentioned are approximations, transactions costs are involved in moving cryptocurrencies on blockchains.

Smart (BleuToken) token on Ethereum

A fixed number of smart tokens (BleuToken) are issued in the crowdsale on Ethereum blockchain. Funders can send transactions directly to the smart token contract. The funds are held in the smart token contract owner account. This ensures that the Bleu tokens on the Ethereum blockchain are inherently liquid and funders are able to access their contributions.

Ad on AdBleu blockchain

When an advertiser places an ad on the AdBleu network a fraction of each ad spend in cryptocurrency would be moved to the smart contract on Ethereum blockchain.

This fraction would be decided after an initial period of time and operational costs of running the AdBleu network are taken into account.

Price discovery

Smart (BleuToken) token on Ethereum

The price of a BleuToken on Ethereum is the total cryptocurrency amount in the reserve pool split by the *fixed number* of tokens issued. Funders can interact with the token contract to withdraw funds in ether (wei) and contract owners can continue contributing to the smart contract.

Account balance on AdBleu blockchain

Registered users will be able to view their account balances stored in the various cryptocurrencies on the AdBleu blockchain using the AdBleu UI.

Challenges

Appreciation/depreciation

Cryptocurrencies are on an upward trend and user account balances would appreciate in real currency terms. There is the risk of certain cryptocurrencies collapsing in the future wiping out account holdings in that particular cryptocurrency.

Cold start

Advertisers embracing an entirely new channel of delivering ads, consumers registering to view ads and getting paid in the process may seem too good to be true. The system could suffer from the cold start, chicken and egg problem; this will be mitigated by marketing campaigns to grow the network ensuring adequate supply of consumers and ads.

Transaction cost

We expect that many ordinary consumers will not want to deal with cryptocurrency wallets so we need to look at existing payment solutions like paypal and moving cryptocurrency to fiat currency.

Advantages

The team is highly skilled and experienced in developing and delivering software. The source code is open source, hosted on github and will be open to audit, suggestions, improvements etc. The system will be secured through penetration testing and open bounties.

The fundamental tenets around blockchain and cryptocurrencies are proven to be sound and on an upward trend. Ordinary consumers can participate indirectly in the cryptocurrency revolution as their account balances are held in cryptocurrencies. The system will enable the core idea of providing a symbiotic digital channel for advertisers and consumers to support each other with minimal transaction costs.

Summary

We have presented a novel system for an anonymous, decentralised distributed protocol and blockchain platform for direct digital advertising.

AdBleu presents a unique opportunity for advertisers, consumers and the digital advertising market.
