Blockchain in Digital Media

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Questions Addressed

1. What is Blockchain and how does it work?

2. What are the potential applications & benefits in digital media, and how can it create transparency through the supply chain?

3. What actions should major advertisers take, what's the roadmap?

Summary POV

Blockchain may prove to be a useful technology for some aspects of the digital media supply chain, but is likely not the comprehensive solution that will fix all the challenges that advertisers face. The operating principles upon which blockchain is based are certainly relevant – transparency, independent validation, security – but the technology hurdles may be too difficult and expensive to overcome. Blockchain transaction speeds are orders of magnitude too slow for RTB, the decentralized nature of the digital media industry makes it incredibly challenging to get all players on a common standard, and the level of investment required for tech firms to migrate to this new transaction standard is prohibitive. There are niche solutions that are leveraging blockchain in digital media, and represent good opportunities for advertisers to test & learn.

There are other solutions emerging in the marketplace that will seek to address the primary issues of fraud, inventory arbitrage, middleman transaction fees, and the lack of transparency into these costs. These solutions will likely be driven more by shifts in the business model, vs. a revolutionary technology change like blockchain. The concept of an end-to-end 'closed ecosystem', with a consortium-like model of advertiser & publisher participants, with no open exchanges, proactive fraud protection, and access to log-level files on all transactions that are auditable, will solve many of the problems that exist today. This model can be implemented with existing technology, it just requires advertisers and publishers to change the way they engage the market, and to join, or create a closed ecosystem.

What is Blockchain?

Blockchain is a decentralized & distributed digital ledger, where transactions are transparent & secure, time-stamped and verified by a peer-to-peer network. Picture a spreadsheet that is duplicated thousands of times across a network of computers. Then imagine that this network is designed to regularly update this spreadsheet and everyone in the network sees a single version as it is updated. The diagram below describes a standard blockchain transaction:
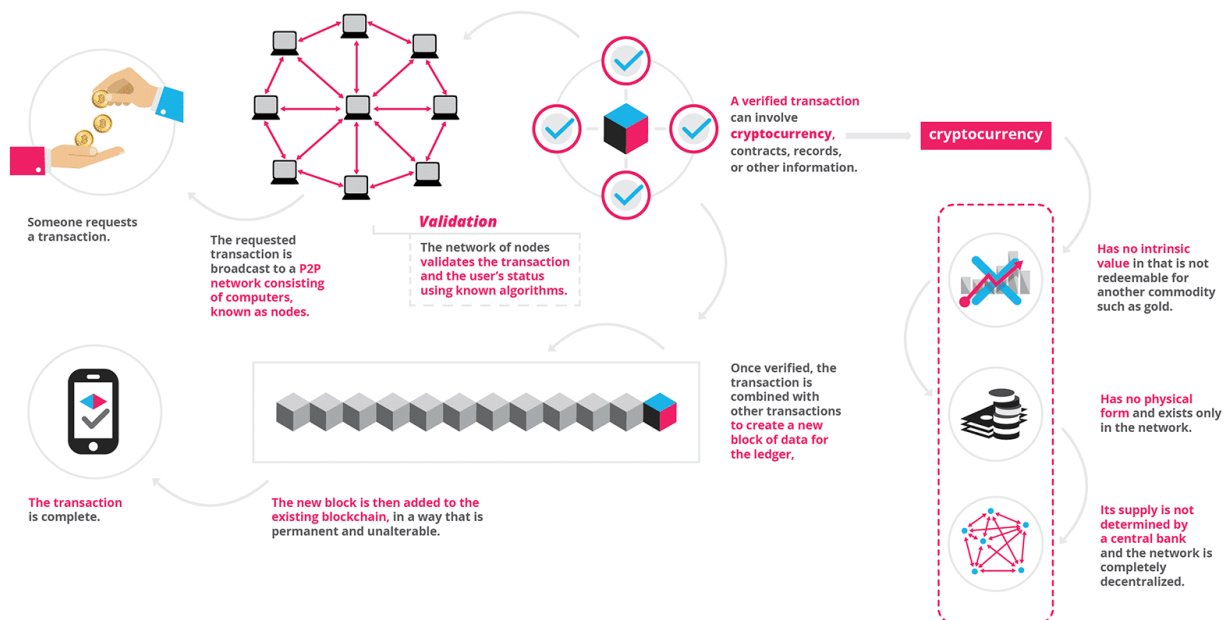
Source – BlockGeeks.com

Blockchain is best known as the platform for crypto-currencies, such as Bitcoin, but there have been recent applications developed in health care, finance, and advertising. The primary interest from advertisers is to learn how blockchain can impact brand safety, fraud, measurement accuracy, attribution challenges, and transaction transparency.

Potential Uses in Advertising

- Post-buy reconciliation – objective verification of transactions
- Media Licensing & Distribution for Creators
- Smart Contracts
- Deal ID's & Private Marketplaces
- Contained, small replicas of the supply chain with compliant participants

Challenges for Blockchain in Advertising

- Digital Ad Ecosystem is very fragmented (2,000+ vendors), so adoption of a single standard will be difficult, and there would be significant development costs & effort.

- Blockchain is limited to 10 - 30 transactions per second, where the average programmatic transaction runs in 0.36 milliseconds. Lightning Network & Coco Framework are working to increase speed to 1,600 requests per second, but RTB runs at 5 million transactions per second.

- Blockchain can't proactively stop an ad from running alongside bad content, and is too slow for real-time fraud prevention and validation.

- Blockchain design relates to trusting data, not identifying fraudulent traffic or domains, and cannot distinguish between humans and bots.

- Blockchain is not set up to monitor all transactions across the internet, so can't scale.

- Blockchain transactions costs are high, due in part to the high level of computing power required, so would represent a cost premium.

- Global standards (shared database) don't currently exist for whole formats (i.e. Video Ads), and key issues like viewability & brand safety, which the AdLedger Consortium is seeking to tackle.

- Crypto tokens are necessary, so players have to be able to convert cryptocurrencies to hard dollars, and adopt 'cryptoeconomics' to unlock the full value of blockchain.

Related Start-Ups & Initiatives:
Despite these challenges, there are a number of industry initiatives and start-ups focused on blockchain, based on the industries desire to innovate, and to capture the willing investment dollars that are flowing into this space. Below is a list of these players:

- AdEx – token based ad network, watch video here - https://www.adex.network/

- AdChain – open protocol on the public Ethereum blockchain that allows for the building of decentralized applications - https://adchain.com/

- Amino Payments – blockchain ad platform that audits ad campaign tech and data contributors; cryptocurrency named 'Grain'. AT&T and Bayer are pilot testing this solution, which purports to

deliver guaranteed reporting on fees paid to intermediaries, and the amount spent per unit of inventory - https://www.aminopay.com/

- <u>Brave</u> – blockchain-based ad-blocking browser that rewards publishers with tokens for performance. The Basic Attention Token (BAT) is their currency – requires wide-scale adoption, and publishers to relinquish direct control over their revenue sources. Watch the video here that explains how it works - https://basicattentiontoken.org/

- <u>DotBlockchain Media</u> - a new dynamic file format and supporting technology architecture, designed to modernize rights management of media files globally for all participants, targeted at the music industry - http://dotblockchainmusic.com/

- Ethereum – smart contract functionality – rules based app development platform - https://www.ethereum.org/

- <u>metaX</u> – blockchain-based ad tech start-up – launched adChain into beta last year; ADT is their currency. Provides buyers with a solution for tracking & verifying all ad impressions, and sellers with the ability to retain integrity and full value of their content - https://www.metax.io/

- <u>MadHive</u> – a video ad platform powered by blockchain tech for OTT; MADToken is its currency - https://madhive.com/

- <u>XCHNG</u> – blockchain development platform launched by Kochava (ad analytics); has Payability as a payment partner to turn tokens into dollars - https://www.xchng.io/

- <u>IAB Blockchain Working Group</u> – working to develop a standard smart contract template to transact advertising https://www.iab.com/

- <u>Rebel AI</u> – blockchain enabled ad security - https://rebelai.com/

- <u>AdLedger Consortium</u> – charged with implementing global technical standards, protocols & solutions for digital media & blockchain. Members include technology companies, ad agencies, media sellers and data vendors (Canoe, GroupM, Cadent, Meredith, IPG Mediabrands, Neustar, and others). https://adledger.org/ - running two POC's:

  - **'OpenGPDR'** – cryptographically store data on a data controller's blockchain, to create an audit trail

  - '**Campaign Reconciliation** – streamline the campaign reconciliation process, led by AppNexus, will create a contained blockchain network with a set number of players.

- Trustworthy Accountability Group (TAG) – "Verified by TAG" – a registry of legitimate advertisers and publishers, and a Payment ID system that will connect all ad inventory to the entities receiving payments for the ads. - https://www.tagtoday.net/pressreleases/tag-brings-ad-leaders-together-to-launch-war-on-digital-ad-fraud

- Ads.txt – IAB backed protocol for publishers to authorize brokers & resellers of their inventory. This initiative is gaining some traction, as more publishers are adopting the standard, but it is not a failsafe against fraud. As an example, fraudsters are able to duplicate a publisher's ads.txt file, and put it on their fraudulent sites.

- Directed Acyclic Graphs (DAG's) – an alternative method to blockchain currency – confirms previous transactions, vs. in real time (IOTA is an example).

Industry Notes

- RTB Revenue in 2017 = $8.7B, projected at $26B by 2020. This spend figure calls into question the fraud estimates.

- The past year has seen a string of lawsuits over unreconciled ad campaigns. Uber sued the Dentsu-owned mobile agency Fetch, The Guardian sued Rubicon Project, and DataXu and RhythmOne are in a cycle of suit-countersuit.

- This article shows that blockchain is not fraud-proof, as hundreds of millions in value have been stolen or deleted by fraud and error, https://www.theguardian.com/technology/2017/nov/08/cryptocurrency-300m-dollars-stolen-bug-ether

Recommended Steps for Advertisers

1. Leverage an independent industry expert to advise you on strategy, and to audit your current supply chain.

2. Talk to the organizations listed above, consider test & learn opportunities, and allocate budget to get hands-on experience with existing blockchain solutions.

3. Assess the alternative options to blockchain. The consortium described above is a real marketplace development that will be recruiting large advertisers and publishers to participate in this closed-loop ecosystem, likely to be launching in Fall 2018.

Sources:

AdExchanger articles
MediaVillage articles
Vendor Web Sites