



The Blockchain Advertising Protocol  
for Complete Data Transparency

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# EXECUTIVE SUMMARY

The digital advertising ecosystem isn't in a great place. While growth in digital is booming, the most essential members of the ecosystem (namely advertisers and publishers) are frustrated and powerless in the face of an increasingly apparent reality: digital advertising has a transparency problem. In an age where measuring the performance of ad campaigns is paramount, marketers are unable to fully understand the value they deliver. As has become true for most industries, data is the key to measuring performance. But in advertising, data is trapped and siloed in black box technologies, causing data disagreements and opening the door for fraudulent activities. The end result? Waste. Wasted money. Wasted time.

Lucidity has built a blockchain-based solution (with five patents filed) that solves these issues. We provide advertisers with a unified set of data, free of discrepancies and fraud, that they can use to gauge their effectiveness. We provide publishers with a way to prove the value of their inventory and avoid identity theft. And we've built the only advertising focused blockchain technology to-date that doesn't require advertisers and agencies to change their work flow or set up integrations. In the following whitepaper, we will outline in detail the problems we're solving, how we solve it, and the team that's bringing it all together.

## THE PROBLEM

Half the money I spend on advertising is wasted; the trouble is, I don't know which half.

John Wanamaker (1838-1922)  
Marketing Pioneer and Department Store Tycoon

### Digital Advertising: A Promise Left Unfulfilled

Initially, the digital advertising revolution (beginning in the late 1990s) tantalized us with a promise to resolve Wanamaker's dilemma. Waste would be eliminated. Marketing return on investment ("ROI") would skyrocket. We were going to be living in a new era of marketing and advertising powered by data. For the first time ever, marketers would be able to precisely measure the impact of their advertising campaigns.

Fast forward about 20 years to today and we're still only... kind of there. Yes, data has revolutionized how we reach consumers, how we buy advertising, and how we track performance. But a host of problems have emerged alongside these capabilities that have many marketers still fumbling around in the dark.

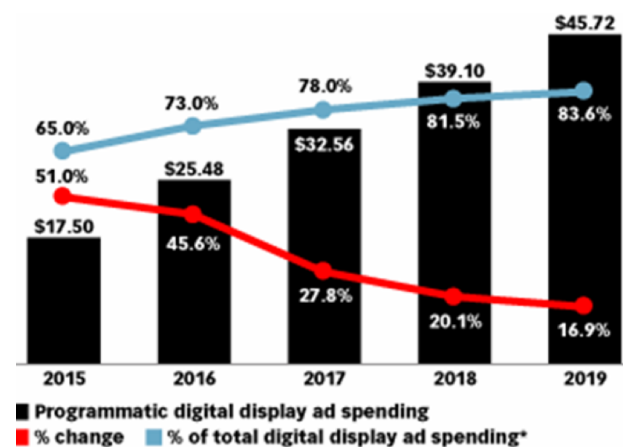
#### So what happened?

#### The Industry Answered with Scale, But Not Transparency

Programmatic ad buying happened. Don't let the buzzword intimidate you, programmatic ad buying

simply means using technology to run advertising campaigns in an automated fashion. You see, reaching consumers on all the possible places they could be - across thousands if not millions of websites and apps - is impossible to do via direct, manual transactions between buyers and sellers. Marketers needed a way to automate this process so they could place ads all over the Internet, wherever their target consumer might be, quickly and efficiently. Programmatic ad buying answered that need.

If you've ever ventured onto a website or opened a mobile app, then it is almost guaranteed you've come across a programmatically served ad. They look like any other digital display ad, often appearing as banners at the top or bottom of a site, or perhaps a pop-up on your favorite app.



In 2017, US programmatic ad spending topped out at \$32.56 billion, which was 78% of all digital display ad spending. By 2019, programmatic is expected to reach \$45.72 billion, meaning "more than four in five US digital display dollars will flow via automated means."<sup>1</sup>

It's a big deal and it's only going to get bigger. So what's the problem?

The problem is that to accomplish programmatic advertising - to traffic an ad campaign across thousands of apps and websites simultaneously - marketers need to work with a lot of different technologies. We're talking about ad servers,



DSPs, exchanges, ad networks, DMPs, to name just a few. In the years since programmatic first emerged, the advertising supply chain got complicated quick.<sup>2</sup> Marketers were suddenly inundated with managing countless black-box services (a black box simply refers to any service where the internal mechanisms and operations are unknown to the outside observer. Data goes in. Reports come out. Advertisers can only trust that everything is accurate) across an entirely fragmented ecosystem.

If the whole point of digital advertising was to allow marketers to use data to power their decisions, eliminate waste, and get the best return on investment, then working with black boxes can only be described as counterintuitive.<sup>3</sup> Where's the transparency?

### The Black Box Conundrum

As an ad campaign is passed from black box to black box on its path to completion, the corresponding campaign data that's generated is owned and operated by each centralized system.

Marketers rarely have direct access to this source-level data and instead must rely on the reporting and measurement practices of each vendor. These practices vary wildly. Some vendors might measure campaign performance one way. Others might measure it in another way. Either way, these vendors are not opening the door to allow their customers to verify what is actually happening.

The result is a measurement ecosystem that is wholly opaque and inconsistent. Data discrepancies between advertisers, publishers, and tech vendors are common.<sup>4</sup> Billing reconciliation can take upwards of 5-10 days per month and cost hundreds of people hours. And if you're a marketer trying to get a comprehensive view of your ad spending to determine ROI - well you can forget about it. Transparency is nowhere to be found.

And this is just half of the issue. It may even be just the tip of the iceberg.

You see, when there isn't transparency in an industry worth \$270 billion dollars, something very predictable happens.<sup>5</sup>

## Fraud. The Dark Underbelly of the Ad World

Advertising fraud cost marketers \$16.4 billion globally in 2017 - which to put in perspective exceeds the annual GDP of a few entire countries.<sup>6</sup> It comes in all shapes and sizes - like click fraud or domain spoofing to name a few - and as much as marketers try to evolve to defeat it, ad fraud evolves with them.<sup>7</sup> It's an arms race - a war of attrition - with no clear end in sight. If not appropriately handled, the global cost of ad fraud could balloon to \$50 billion over the next 10 years.<sup>8</sup>

We're at a tipping point. Marketers have more data, tools, and technology than ever before to measure the impact of their advertising campaigns. But issues with data discrepancies, transparency, and fraud continue to leave them handicapped. In an era where marketers are under more pressure than ever to prove that the money they spend is directly responsible for revenue, this is a death sentence. There's a reason why Chief Marketing Officers are the first to get the axe when company growth goals aren't hit.<sup>9</sup>

## THE SOLUTION

### Blockchain: A New Hope

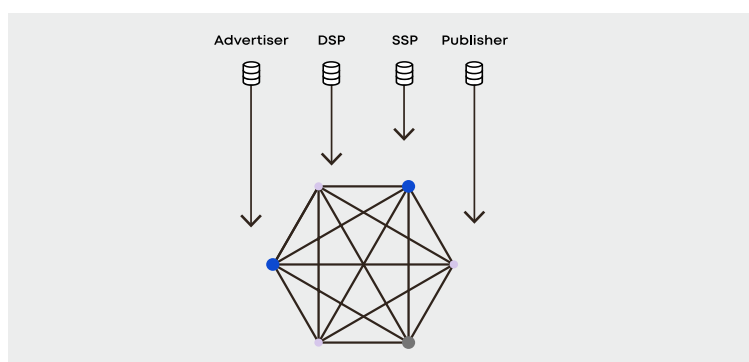
With nearly \$270 billion dollars in play, marketers can't afford to operate in a world without transparency and trust for much longer. The solution is and always has been predicated on access to one unified set of data that has been verified, that's free of fraud, and that allows marketers to properly evaluate their spend. Indeed, this was the original promise of digital advertising.

Every so often - when we get lucky - the needs of a market are met with a tool or technology that satisfies those needs like nothing has before. While it certainly can't solve every problem in the world (as some would dare to suggest), blockchain technology's specific blend of decentralization, identity, immutability, and consensus is perfectly

suited to guide digital advertising to a more transparent and profitable future.

### Why Decentralization Matters

Much of today's problems in programmatic lie in the fact that the digital advertising supply chain is made up of a myriad of black box technologies. Some of these black boxes are smaller organizations, tech vendors, and agencies, while others are behemoths - the prime examples being Facebook and Google. Regardless of size, each black box technology is incentivized to maintain ownership of its data and to measure campaign performance in a way that best serves its own self-interest.



Blockchain is a decentralized technology. No one owns blockchain. No organization programs it or controls it. As the marketing industry continues to suffer from the bloated and confusing supply chain described above, a decentralized system like blockchain can help remove operational inefficiencies (i.e. wasted money) and ensure equality and fairness across the ecosystem.

### Why Identity Matters

When an industry doesn't have transparency, "bad actors" emerge from the shadows to take advantage. These actors use the shroud of opacity to cloak their activities, often posing as legitimate, high-performing publishers who can offer real value (and most importantly, real eyeballs) to an advertiser. Of course, they can't. Often, they're



from bot farms or disreputable websites that prey on marketers who use automated means to advertise across the Internet. Instead of real consumers who may be interested in their product, marketers end up advertising to robots who generate fake impressions and clicks. These false performance metrics artificially inflate a marketer's perception of success and dramatically skew analysis of their return on investment. And they waste money. A lot of money.

Blockchain excels at establishing identity. Using advanced cryptography, blockchain technology can be used to create "digital signatures." Put simply, digital signatures provide a way to prove that someone is who they say they are. Because these signatures are backed by cryptography, they can't be faked or forged, while still maintaining anonymity in cases where this is important.

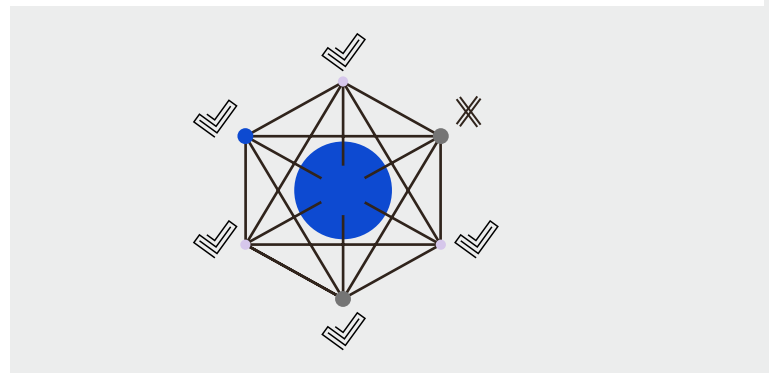
For marketers, this means publisher identity can be verified and confirmed. No more marketing to robots. No more wasted ad spend. With blockchain verified events, marketers can be confident that their message is delivered across only the best, most reputable, and highest-performing websites and apps on the Internet.

### Why Immutability Matters

While there's great value in decentralization, there is also the theoretical vulnerability of a party being able to change or alter blockchain verified data. Not quite. Blockchain is an immutable ledger, meaning all data - all recorded transactions and events - are immutable. They can't be changed after they've been published on blockchain.

### Why Consensus Matters

Data discrepancies plague the advertising supply chain. Today, it is common for data discrepancies to exist between:



- *advertiser and agency*
- *advertiser and publisher*
- *technology partners*

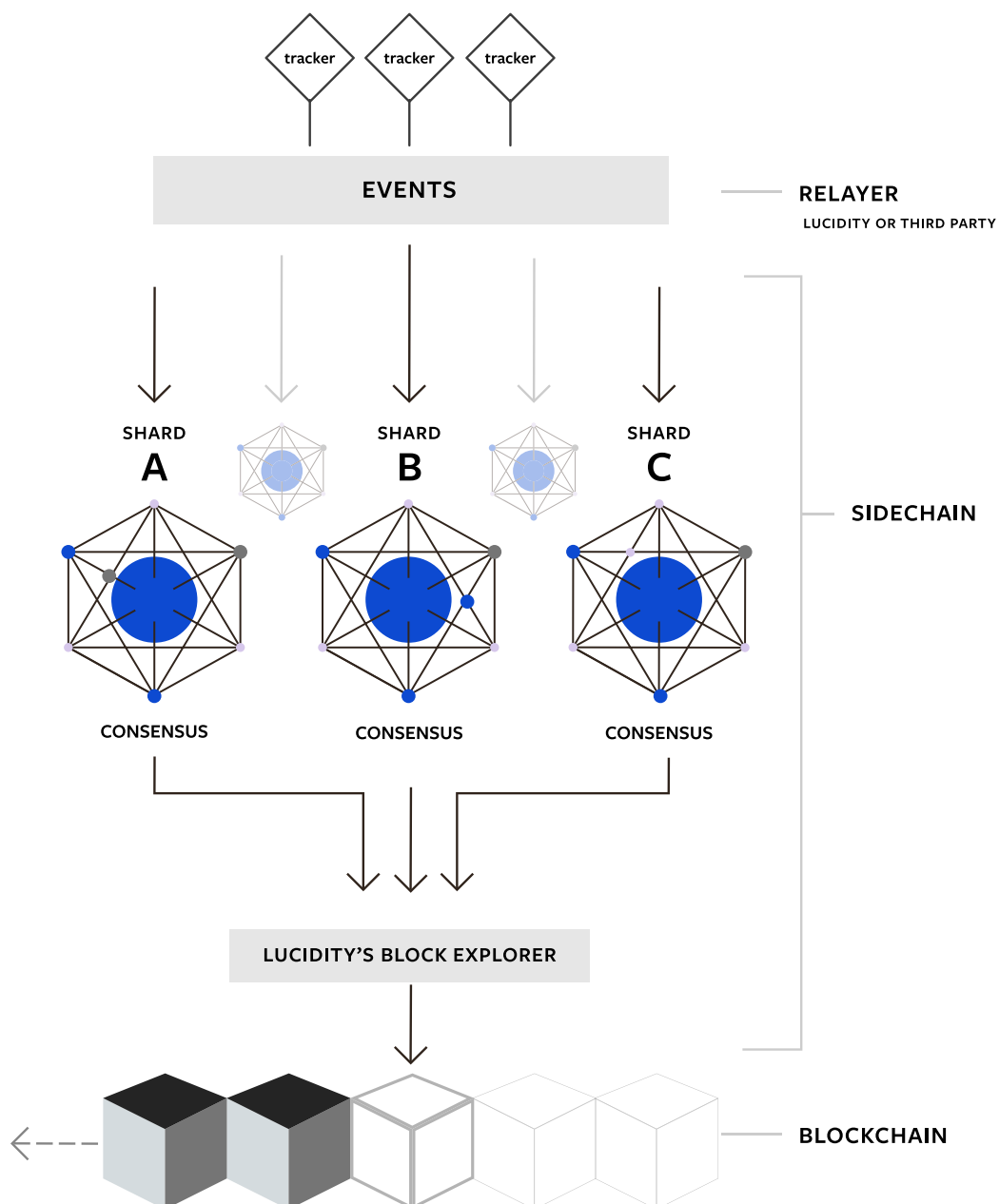
In some cases, marketers must employ entire teams to sort through an exhaustive number of spreadsheets to find these discrepancies and dispute them with their vendors, publishers, and other partners. Hours are wasted, business relationships are tested, and money goes down the drain.

Whenever discrepant data is submitted for verification, blockchain uses algorithms that are designed to resolve these discrepancies and publish the events that reflect what actually happened – otherwise known as "the truth". We'll go into greater detail later about how this works, but for marketers, it has the potential to provide a single, unified set of performance metrics.

# INTRODUCING LUCIDITY

## OUR VISION

This is why Lucidity exists. Our vision is to provide all parts of the programmatic advertising supply chain with a unified set of data that's been verified, that's secured with cryptography, and that's free of discrepancies. We want marketers to be able to properly evaluate their spend to work more efficiently and effectively with their partners, based on what really happened. We want publishers to receive proper credit for publishing amazing content that attracts high-value consumers. And we want to ensure that fraudsters never have the opportunity to dupe anyone into unwittingly paying for low-quality (or entirely fake) traffic.





## OUR PRODUCT

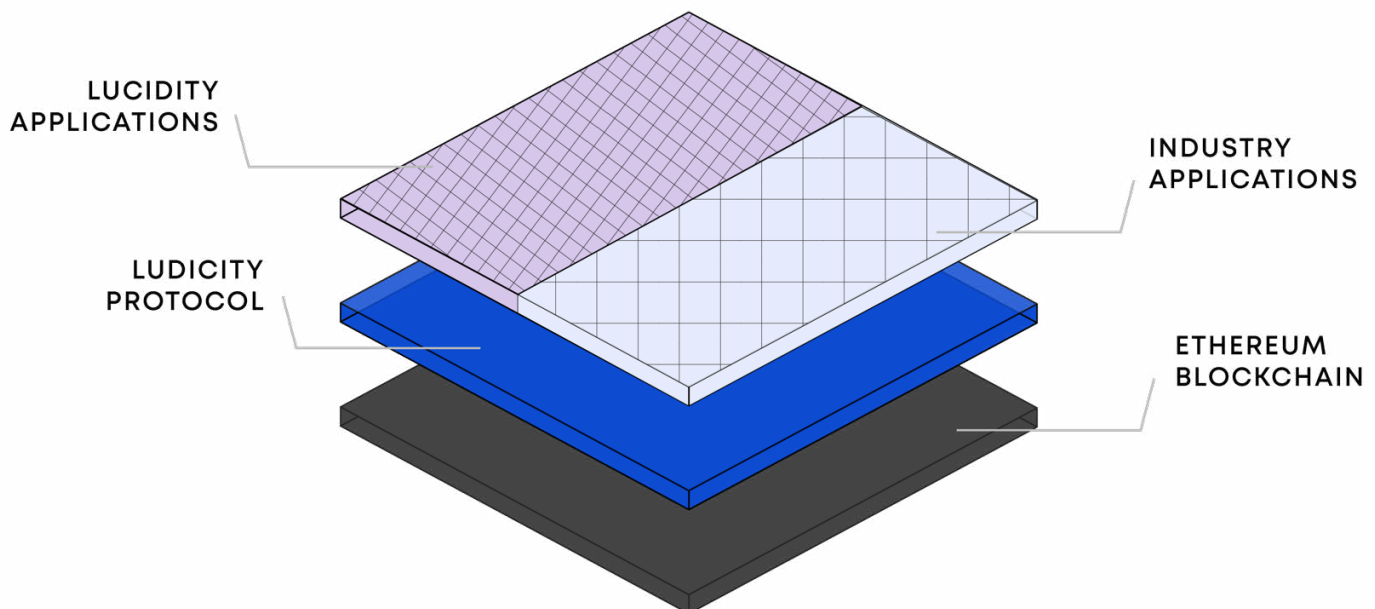
### The Lucidity Protocol

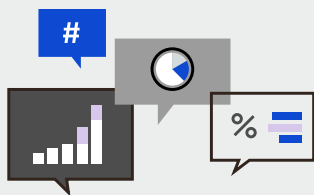
Our technology starts with the Lucidity Protocol. The Lucidity Protocol uses smart contracts to track, verify, and reach consensus on all advertising data for all members of the digital advertising ecosystem. But before we dive deeper into what the Lucidity Protocol does, let's focus a little time on what it is.

A blockchain protocol - like the Lucidity Protocol - simply refers to the software that determines the rules for how technology communicates on the blockchain, specifically between network nodes. Simply put, protocols allow us to access and operate the blockchain in very much the same way that HTTPS allows us to access the web.

The core function of the Lucidity Protocol is to create the rules for creating an accurate measurement of marketing data that's free of discrepancies and fraud. On top of this protocol we can build an endless array of applications for advertisers and publishers. Moreover, our protocol is open sourced to the community to allow others to create their own applications as well. We can't fix the digital advertising industry alone. It's vital that the entire advertising community come together to create the solutions we need to finally provide transparency and trust to an industry in desperate need of both.

The Lucidity Protocol provides the foundation for an entire ecosystem of advertising applications. It sits atop the Ethereum blockchain, powering our applications as well as the applications of our partners and peers.





### Application 1: Impression Tracking and Verification

The sad truth for today’s marketers is that their ads don’t always hit their mark. Not because the countless hours and dollars spent on ideation and creation of a campaign weren’t spot on for their target market, but because the delivery and display of ads are increasingly done in an automated fashion by computers, and technical hiccups can happen along the way. Ads might not render properly, or might never even load onto the page. Even if an ad has loaded successfully, that doesn’t mean it’s necessarily viewable by a consumer. These are legitimate technical issues. And then there are fraudsters who pose as legitimate publishers, who fake ad traffic. All these issues, both legitimate and fraudulent, cause marketers to waste their advertising money.

The above reasons are why impression tracking and verification are critical for today’s marketers. Lucidity has built an application that accomplishes impression tracking and verification utilizing the most important components of blockchain technology. This new technology brings transparency, auditability, and the ability for all players in the ecosystem to agree on their data for the first time in history.

The major distinction between the two systems is that traditional verification solutions are centralized while the Lucidity blockchain solution is decentralized and driven by consensus. The decentralized structure of the Lucidity platform means that all its participants, rather than a single entity, are in charge of independently verifying all important marketing event data. Consensus means that we allow all parties of the advertising supply chain to submit their data to create a single record of what happened. This allows the Lucidity solution to resolve any discrepancies between what would have otherwise been disparate sets of data.

Blockchain technology allows us not only to track and verify all impression-level data, but additionally resolve discrepancies between supply partner reports, identify when impressions are successfully served and loaded, and view a channel by channel (or publisher by publisher) breakdown of campaign performance. All of this data, which was formerly siloed between individual partners along the supply chain, is now securely encrypted and verified across a verification network (more on this later) where the data reaches consensus (more on this later, too). This data is then published to the ethereum blockchain as the definitive record of performance analytics.

Using the Lucidity platform is not complex and new technology investments are not required. Advertisers manage their ad campaigns using a dashboard, which provides an easy, seamless experience. Dashboard users simply copy and paste the Lucidity tracking url (generated in the dashboard) into their ad tags, a task that any digital marketer is accustomed to performing. Once complete, the verified tracking begins.



### Application 2: Payment Tracking

Programmatic auctions happen fast. Within milliseconds, in fact. During that brief window of time, demand-side and supply-side technologies negotiate the price of ad placements in an automated auctions. Because of the speed, complexity, and scale of participating exchanges and publishers, it can be incredibly difficult for advertisers to keep track of all their programmatic costs.

This problem was thrust into the spotlight last year when a major ad tech company was sued by a well-known publisher for pocketing extra money in fees. Without transparency into who’s charging how much

for what, the door opens for these kinds of price manipulations, dishonesty, overcharging, and fraud.

In the same way Lucidity tracks and verifies impressions, Lucidity also tracks and verifies payments. This allows advertisers to track all of their programmatic costs across exchanges down to the individual publisher. Advertisers can determine who's being honest (and who isn't) and optimize against overcharging.



### Application 3: Fraud Prevention

“A bad apple spoils the bunch.” That’s the shared experience among publishers in the programmatic ecosystem. A few bad publishers with low performance and high degrees of fraud are victimizing advertisers, resulting in cries for greater transparency and lower pricing for programmatic inventory.

For the publishers that produce great content (e.g. New York Times, ESPN, etc) that drives real user engagement, this damages their bottom line. Without a way to establish a programmatic identity and reputation, good publishers inventory is devalued. Making matters worse, these publishers are also highly vulnerable to identity theft by fraudsters who steal the revenue they do make.

When fraudsters pose as legitimate publisher sites and apps, they steal inventory bids from real publishers. Because programmatic is automated, advertisers end up paying to advertise on sites the computer thought was “ESPN” but in actuality turned out to be a bot site. ESPN loses out on an opportunity for revenue, and the advertiser ends up advertising to robots. While we are entering the age of the robot, we’re not at the point where anybody wants to spend their money advertising to them.

Publishers need protection. Much in the same way impression and payment verification for advertisers ensures that they have an accurate, unified view of all performance metrics across their campaigns, fraud prevention for publishers allows them to prove without question that their inventory is delivering high-value consumer attention. Specifically, Lucidity creates a decentralized registry for both websites and mobile apps that ensures these domains are protected from identity theft and fraud. Digital signatures confirm publisher identity and remove the threat of identity theft. As publishers are added to the registry, the performance they deliver is captured and verified via blockchain. This allows publishers to establish a true, verified reputation that attracts more business.

### Lucidity for Verifiers

In order for the Lucidity system to work as intended, groups of neutral 3rd parties participate as verifiers. Verifier opportunities are open to the community at large - advertisers, publishers, and others. Verifiers benefit by getting compensated for their efforts.

In order to participate, verifiers buy Lucidity Tokens (called Marketing Analytics Tokens or MATs) in order to gain access to the Lucidity platform. As token holders, they can participate in the verification process by using open-source software to track and verify marketing events. Verifiers watch the stream of data from both advertisers and publishers and submit a verifier-specific independent record of verified metrics to the platform. The platform then rewards verifiers for their accuracy by compensating them. This is a classic example of game theory where a reward mechanism is used to incentivize honesty.

The blockchain is where the aggregate of verifiers’ independently verified metrics achieve consensus and are published. This process is done through a set of smart contracts - which are small automated programs - hosted on the blockchain. A voting process starts when verifiers submit their individual records of aggregated metrics to one block. These records represent the “votes” that are tallied during the voting process. All submitted records of

aggregated metrics are stored in the smart contract. During the processing of votes, an algorithm written into the smart contract compares all submitted votes (records of metrics) against each other and identifies the largest group of verifiers who had matching verification records. The verification records should always be the same, but the system accounts for the potential of a bad actor seeking to manipulate events. Thus, the “majority” or “consensus” determines the metrics that are ultimately published on the blockchain. The consensus’ metrics are accepted and stored on blockchain as the definitive record of metrics for that voting period.

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1. <https://www.emarketer.com/Article/eMarketer-Releases-New-US-Programmatic-Ad-Spending-Figures/1016698>
  2. <https://www.lumapartners.com/luma-institute/lumascape/display-ad-tech-lumascape/>
  3. <https://www.linkedin.com/pulse/taking-programmatic-advertising-from-black-box-glass-house-liquidadx/>
  4. <https://www.mediapost.com/publications/article/264276/ad-tech-gridlock-discrepancies-between-buy-and-se.html>
  5. <https://www.statista.com/statistics/237974/online-advertising-spending-worldwide/>
  6. <https://www.emarketer.com/Report/US-Ad-Fraud-2017-Buyers-Sellers-Fall-Prey-More-Sophisticated-Forms/2002060>
  7. <https://digiday.com/marketing/domain-spoofing-in-programmatic/>
  8. <https://www.cnbc.com/2017/03/15/businesses-could-lose-164-billion-to-online-advert-fraud-in-2017.html>
  9. <http://adage.com/article/cmo-strategy/cmoss-fired-companies-miss-goals/306561/>
  10. <https://blockgeeks.com/what-is-hashing-digital-signature-in-the-blockchain/>

# SUMMARY

Unlike any other AdTech system in operation today, the Lucidity platform is reliable, accurate, and transparent, thanks to its key features:

- A decentralized mechanism for verified metrics-based billing
- An open, auditable record of performance metrics on blockchain
- Seamless integration and ease of use
- Publisher protections and fraud elimination

## THE TEAM

Our founders are a group of former colleagues who have come together again to start Lucidity. They were founding members of The Mobile Majority (now Gimbal) in early 2012, where they built a small rewards-based native advertising network and transformed it into a programmatic buying powerhouse. The Mobile Majority has won numerous awards for its products and achievements, including Best of Show at the 2014 Mobile Mafia Awards, People’s Choice at the 2015 UX Awards, and Fastest Growing Tech Company in Los Angeles from the Los Angeles Business Journal in 2016. Most recently, The Mobile Majority was ranked 66th on the annual Inc 5000 list and 34th on the Deloitte Technology Fast 500.

During the rise of programmatic advertising, The Mobile Majority executed a highly successful transition from native advertising into programmatic advertising. As part of that transition, the founding team managed and built various AdTech products including a high-quality dashboard, a multi-platform creative delivery system, a multi-channel tracking solution, a high-performance demand side platform, and state-of-the-art machine learning pipelines.

That experience in the programmatic advertising business taught the founding team firsthand about the extent of fraud in monitoring programmatic-advertising traffic. The lack of transparency prevented the team from answering many of their customers’ questions. The proliferation of blockchain technology has prompted the team to reunite and build an innovative, transparent verification platform for the programmatic age.



**SAM KIM**  
CEO, Co-Founder

Sam Kim has spent the past 20 years working with early stage startups and high growth companies across many industries including gaming, advertising technology, agriculture, and travel. After earning an undergraduate degree in engineering from Columbia University, Sam worked as a strategy consultant for Kalchas, a New York City-based incubator acquired by Computer Sciences Corporation. There he helped launch companies in the workflow management, customer relationship management, middleware, and online travel industries. Following his tenure at Kalchas, Sam joined the World Bank. He assisted two of the largest Vietnamese state-owned enterprises in the coffee and rubber markets with their long-arduous preparations to become private companies. In 2004, Sam leveraged his experience in Vietnam’s coffee and rubber markets to launch Edgepoint, a commodities trading platform for Vietnamese

coffee and rubber producers who sought to enter the highly competitive US market. The platform reduced the complexity of contract term negotiations, language barriers, and time zone differences.

While leading Edgepoint, Sam earned his MBA from the University of Chicago Booth School of Business. In 2012, Sam joined Sam Goldberg as one of the founding members of The Mobile Majority. Sam served as the COO and as a member of the company’s board. He managed several teams including ad operations, finance, business intelligence, and technology development. Sam is also passionate about working with founders to help them navigate the murky waters inherent in high growth companies. His current advisees include two gaming companies, thatgamecompany and fun-gi games.





**SAM GOLDBERG**  
President, Co-Founder

Sam Goldberg is an entrepreneur with a diverse background. He graduated with top honors summa cum laude from The Ohio State University. Goldberg was a fourth generation medical school student at Ohio State when he decided to leave medical school and attend the University of Southern California School of Law, where he graduated with top honors order of the coif. Following law school, Goldberg served as a Federal Court judicial clerk for the Hon. John D. Holschuh for the Southern District of Ohio. After his clerkship, Goldberg worked for Simpson Thacher & Bartlett LLP with a focus on business and intellectual property. He was one of two licensed patent attorneys out of more than 800 attorneys at the firm, so he was relied upon as an expert for technology transactions and litigation worth multiple billions. Goldberg was then recruited to build start-ups in Ohio.

In 2012, Goldberg and Sam Kim co-founded The Mobile Majority (now named Gimbal), a mobile software technology company. There he raised more than \$20 million in capital. He also led partnerships and revenue, with a particular ability for identifying opportunity and attracting talented people. Before building out the revenue team, Goldberg formed a licensing partnership with a major US media company and trained hundreds of their salespeople to sell The Mobile Majority's technology.

Goldberg's efforts resulted in three-year revenue growth of more than 4,500% and earned the company honors from the Los Angeles Business Journal as Los Angeles' Fastest Growing Technology Company, top 70 in the Inc 500 and top 40 in the Deloitte 500. Goldberg left The Mobile Majority in 2016.

In addition to his professional activities, he serves on multiple non-profit boards including being on the Board of Directors and Board of Trustees of JNF

USA, Board of Councilors at University of Southern California Gould School of Law, a University of Southern California Ambassador, and a charter member of the University of Southern California Blockchain Industry Advisory Group.



**MIGUEL MORALES**  
CTO, Co-Founder

Miguel Morales is a systems /application software architect with more than 10 years of industry experience, including developing blockchain-based advertising technology. As a full-stack developer, he has deployed decentralized applications on blockchain, built high-frequency web applications, designed data pipelines for machine learning and real-time predictions, designed automated cloud infrastructure, and built mobile applications. He has also been involved in multi-stage development processes for products, systems, and applications.

In 2012, Morales joined Sam Goldberg and Sam Kim as the first engineer at The Mobile Majority. As VP of Engineering, Morales designed and implemented various technical systems used in high-frequency digital advertising. He helped establish the company's design and development processes, including sprint planning, code reviews, scheduled deployments, monitoring and alerting, and quality assurance processes.

In 2016, Morales left The Mobile Majority to found his own consultancy business. He was a core contributor to MetaX's adChain, a registry of domains whose validity is crowdsourced and incentivized through adToken.16



**ALEXANDER  
VOLOSHKO**  
Protocol Engineer

Alex joined Lucidity in early 2018 to help drive the protocol layer and move the technical roadmap forward. He is a full-stack software engineer with a background in distributed systems, blockchain-based technologies, 3D computer graphics and mobile app development. Previously, Alex worked as a platform developer for a Bitcoin wallet provider. He graduated from Taras Shevchenko National University of Kyiv with a master's degree in computer science. Alex is passionate about blockchain technology as a way to redefining trust in distributed systems.



**MARCIO  
MANSUR**  
Protocol Engineer

Marcio is a SRE (Site Reliability Engineer) with a software engineer background, with seven years of experience in backend development, blockchain-based systems, web and mobile app development. Previously, Marcio worked at Modular and Consensus as DevOps engineer for blockchain platforms, as well as managed development and production environments, with focus in containerization and automation of deployment and releases processes.

Marcio likes to create great and scalable solutions, solve software problems, and propose new architectural solutions based on micro-services and continuous integration pipeline jobs to avoid errors. He's graduated in Information Systems at the Catholic University of Brazil. Marcio is passionate about Blockchain and DevOps technologies as a way of creating automated and scalable flows.



## The Blockchain Advertising Protocol for Complete Data Transparency

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