Leveraging Blockchain in a New Era of Antitrust

Decentralization Research Center

Flashbots

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About Decentralization Research Center

The Decentralization Research Center (DRC) is a 501(c)(4) social welfare non-profit that advocates for decentralization as a fundamental characteristic of emerging technologies. This includes the development of blockchain protocols and applications that are immutable, censorship resistant, transparent, secure, and enable data self-sovereignty.

About Flashbots

Flashbots is a research and development organization formed to mitigate the negative externalities posed by Maximal Extractable Value (MEV) to stateful blockchains, starting with Ethereum.

Cover photo: David Yu

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Introduction

The current pace and direction of technological innovation have challenged both antitrust law and enforcement. We argue that blockchain technology offers structural advantages in promoting competitive and fair markets and could help avoid the current dilemma of choosing between competition-stifling monopolies and damaging ex post enforcement. As examples, we provide two real-world cases that represent the type of cases where blockchain could be employed to further the goals of antitrust law while offering companies non-destructive means of settling regulatory action.

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Antitrust Principles and Blockchain

Antitrust law aims to preserve "free and unfettered competition as the rule of trade" (*Northern Pac. Ry. Co. v. U.S.*, 1958) and "economic freedom and…free enterprise" for the benefit of consumers (*United States v Topco Associates Inc.*, 1972). The price of a particular product or service has long been the main factor in determining consumer welfare. However, in an era in which digital products are often free, antitrust law that focuses on price often fails to curtail monopolistic practices that harm consumers in other ways, from the exploitation of data to the spread of misinformation and the leveraging of market power to stifle competition (see Bork, 1978; Wilson, 2019; Hovenkamp, 2019; Spelliscy et al., 2023; De Vynck et al., 2023). We see blockchain technology as an ally to new legislation and enforcement that considers factors of harm outside of price, as well as a renewed interest in decentralized power and technological approaches to antitrust (see Khan, 2017; Wu, 2018; cf., Melamed, 2020; Hovenkamp, 2023). The development of blockchain technology can provide a structural layer for competition and a return of the economy of peers.

Decentralization, transparency, and immutability are critical elements of blockchain technology that can contribute to open, fair, and low-cost competition. Consumers can own their data, use competing platforms, and create networked economic enterprises (OECD, 2020). As a Commodity Futures Trading Commission (CFTC) report stated, permissionless blockchains offer "opportunities to leverage efficiency improvements in payments and financial markets, more transparent and auditable financial services, enhanced financial sector resilience, dismantled barriers to access to financial services, promotion of innovation and competition" (2024, p.7; see Goldsmith Romero, 2024).

Blockchain systems introduce novel ways for businesses to align their interests, find new efficiencies in shared services, and create open marketplaces for competition while providing consumers with choice, transparent price discovery, and more purchasing power. Instead of consolidating under one roof, institutions can invest in decentralized mechanisms that create platforms for competition. These tenets counter the monopolistic practices of the modern digital marketplace, aligning blockchain technology with the goals of antitrust law (Blaszczyk, "Trustless Trust," 2024; Spelliscy et al., 2023): blockchain technology fosters competition by eliminating intermediaries, while antitrust law aims to achieve it by eliminating anticompetitive practices.

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Leveraging Blockchain in a New Era of Antitrust

In this section, we give an overview of two examples of how blockchain could improve antitrust outcomes, all the while giving companies facing enforcement less destructive ways of complying with antitrust law.

1. Decentralized Power: Redefining Intermediaries

In October 2023, the Wall Street Journal (WSJ) examined Intercontinental Exchange's (ICE) billion-dollar bet to "overhaul the clunky plumbing of the mortgage market" ([Osipovich](#), 2023). ICE's goal was to expedite the mortgage process, streamline profits, and reduce overhead for consumers. To do so, it made acquisitions that, in addition to ICE's existing mortgage software businesses, consolidated the process from multiple independent services to a near-one-stop shop.

ICE Mortgage Technology executive, Ben Jackson, highlighted ICE's ability to cross-sell several servicing, data, and analytics products to major financial institutions as a primary indication that their acquisition strategy was paying dividends.[1] Institutions such as banks leverage software and data products from ICE to identify customers, process loans and then sell them to other financial institutions, and provide refinancing and other retention modules. These institutions use ICE's proprietary software and all compete in the same loan origination and servicing market.

However, consolidating mortgage origination and processing software providers impacts market competition. Financial institutions invest considerable time and resources into integrating software providers, and once integrated, switching costs are significant.[2] In 2023, ICE completed its acquisition of Black Knight, the second-largest mortgage servicing software provider—behind only ICE itself—after

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1   "Since ICE completed its acquisition of Black Knight in September, M&T Bank has become a new customer of Encompass, replacing its existing loan origination platform and adding ICE's data and document automation platform. ICE also cross-sold MSP and several data and analytics products to Fifth Third Bank, an existing customer of ICE, Ben Jackson, president of ICE and chair of ICE Mortgage Technology, noted." *ICE's mortgage business outperforms in Q3 despite industry headwinds,* Housingwire, 2023

2   In 2019, Black Knight and PennyMac Financial Services entered into a legal battle over alleged anti-competitive behavior and trade secret theft relating to the integration of a loan servicing software. *ICE Awarded $155 Million For PennyMac Misuse of Black Knight Confidential Information in Mortgage Servicing Software*, ICE, 2023

settling with the FTC over competition concerns. The FTC challenged the combined ownership of the largest software providers of loan origination systems (LOSs) and product, pricing, and eligibility engines (PPEs) and stated:[3]

> *The FTC's administrative complaint alleged that the proposed deal would combine Black Knight's Empower with ICE's Encompass, the dominant LOS in the country, and Black Knight's Optimal Blue PPE with its largest rival, ICE's Encompass Product and Pricing Service PPE. The administrative complaint further alleged that the proposed acquisition would make it more likely that ICE would limit rival PPE providers' access to ICE's dominant Encompass LOS. The FTC alleged the proposed acquisition would allow ICE to raise costs to lenders, resulting in higher fees to homebuyers.*

ICE rightfully identified an opportunity to create new efficiencies and bring a traditionally analog process into the digital age. However, in doing so, they created a vertically integrated monolith at the center. We suggest that blockchain technology introduces a solution for this type of market consolidation, through an interoperable protocol and a marketplace for services instead of divestiture and siloed completion. In this example, ICE could use blockchain technology to develop a standardized protocol for institutions to manage consumer loans from origination to completion (USV, 2016). Each stage in the mortgage servicing supply chain could be applications on the protocol that compete against one another without creating data silos or competition disadvantages due to an institution choosing a certain provider at a different stage.

ICE could act as the protocol provider for mortgage servicing and then compete on an equal playing field for each stage in the supply chain. Consumers and regulators could ensure data integrity and fair competition through cryptographic primitives that control data access, and businesses could choose service providers based on their core offerings rather than being restricted by switching costs or the

> **ICE could act as the protocol provider for mortgage servicing and then compete on an equal playing field for each stage in the supply chain.**

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3 *FTC Secures Settlement with ICE and Black Knight Resolving Antitrust Concerns in Mortgage Technology Deal*, FTC, 2023

technical debt connected to prior integrations. If data portability and interoperability are two of the most critical business factors for institutions selecting a mortgage software provider, enabling a capable actor such as ICE to develop a data and identity protocol for mortgage servicing may result in better outcomes for consumers.

2. Resolving Remediation with Blockchain

In United States v. Google, the United States Department of Justice (DoJ) cited an exhaustive effort, looking at nearly 10 years of ad auction data, that showed how Google increased their profit margin and distorted competition (Robertson, 2023). The opacity of these auctions impeded participants, large online publishers and ad buyers, and regulators from understanding and documenting manipulative practices. This is not unusual in the technology sector. Technical complexity and opacity often lead to years-long investigations, by the end of which the damage to the market may be irreparable (Geradin & Katsifis, 2021). Credibility in such systems can be improved using blockchain technology as a coordination tool to improve auction credibility through new mechanisms and privacy-preserving technologies.

Closing arguments in the Google case were delivered on November 25, 2024, with a ruling anticipated in 2025. As the possibility for settlement or remediation comes into scope, we can investigate how blockchain can be a tool for remediation to allow Google to continue to play an important, pro-competition role in the market for ad auctions. For example, a remediation plan could stipulate that Google transfers the operations of their ad auction from their centralized servers where Google maintains a view into live and historical bidding data, into a decentralized structure. A decentralized network of trusted execution environments (TEEs) could be leveraged to enforce ad auction rules while maintaining data privacy and ensuring robust operations of the ad auction platform. Google could provide a provably secure platform where participants in their ad auctions can trust the technology layer rather than Google to uphold the auction rules. TEEs and blockchain technology are examples of mechanisms that can support systems where credibility of operators and verifiability for participants harmoniously coexist (see European Financial Transparency Gateway, 2020).

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A remediation outcome that directs Google to decentralize their ad auction mechanism would lead to three important outcomes for consumers and regulators. First, in running provably credible auctions in a TEE network, Google would still be able to provide the market with a technology layer that they remain the most well-capitalized and sophisticated actor in the market to provide. Participants and regulators could verify the rules of the auction by attesting the auction mechanisms are running in TEEs. Second, new auction designs and strategies using TEEs and blockchain technology may introduce new market efficiencies. Third, antitrust regulators could achieve the desired outcomes of a more fair and transparent market with minimal disruption to auction participants and consumers.

Conclusion

In providing these examples, we hope to open discussion as to where and how blockchain technology can be used to improve antitrust outcomes. Antitrust regulators should meaningfully explore how novel systems can achieve the outcomes of antitrust policy at the technology layer, reducing the need for antitrust measures and providing new means of transparency, trust, and safety for consumers. Blockchain technology could help prevent market structures that facilitate collusion and monopolization through decentralization, itself a form of antitrust self-regulation. However, even in cases where companies are facing ex post enforcement, or in cases where companies wish to avoid such enforcement, blockchain offers a technological layer that could allow these companies to maintain various positions of advantage while still being in compliance with antitrust law.