



CPI's Europe Column Presents:

Is Blockchain the Real Antitrust Game Changer?

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I. Introduction

Governments must anticipate today's cutting-edge technologies to be effective in fast-moving markets. Blockchain potentially is a great tool to assist antitrust in regulating data-driven markets and fully exploiting its core principles – competition and consumer welfare. Blockchain offers antitrust a remarkable opportunity. However, blockchain is not immune from the economic principle of *trust*² and *antitrust* scrutiny. Total *laissez-faire* markets and uncontrolled centralization can all promote a lack of trust rather than an abundance of trust.³

II. Distributed Ledger Technologies

Blockchain is part of the so-called *Distributed Ledger Technologies* (“DLT”), which include cryptocurrencies and smart contracts. Although blockchain emerged in 2008 with the introduction of bitcoin, today blockchain has been successfully implemented in a variety of industries and situations from supply chain to consumer goods. For example, Walmart implemented blockchain in its supply chain to track goods, which enabled Walmart to do what usually was performed in seven days in 2.2 seconds.⁴ Similarly, Nestle, with IBM Food Trust, is adopting blockchain to track the origin of food and reduce costs, in addition to gains in efficiency.⁵

Today, blockchain can be used to record and store “virtually everything of value.”⁶ The logic behind blockchain is similar to that of a buyer group. Blockchain enables people to bypass intermediaries by creating a network made up by the same blockchain users, which is governed by a computer protocol. Specifically, participants in the network agree on a set of rules enshrined into a computer protocol. Similar to a game, if everyone follows the rules, everyone wins and the network properly functions.⁷

In short, blockchain participants act together to get goods and services that are usually provided through intermediaries by benefiting from network effects that one could not experience as a single individual to pursue a shared social and economic goal.⁸ Each blockchain participant sees and verifies everything stored in this decentralized ledger/database by increasing transparency. Any transactions, assets or data is recorded in a decentralized database made up by a vast number of computers on the Internet, rather than a centralized database. This implies that blockchain is potentially safer than centralized database because hacking a blockchain implies striking simultaneously all computers that are part of the blockchain ledger/database;⁹ the costs would be prohibitive.

Furthermore, computer programs that run on a blockchain called “smart contracts” can enable blockchain's users to perform more sophisticated tasks than simply recording and storing data in a blockchain. Smart contracts, for example, can manage the ownership of any assets saved in a blockchain. Smart contracts are contracts built into a code and enforced by a program¹⁰ that can potentially automatize any order if the specified conditions are met.

Therefore, DLT have the potential to make any services and goods cheaper and more efficient.

III. Centralized vs. Decentralized Platforms

One of today's main antitrust concerns is related to the Internet centralization and the monopoly power of the so-called *Big Tech*. Blockchain is decentralized by design and has the potential to decentralize today's centralized platforms controlled by *Big-Tech*.¹¹ Blockchain can also enable each Internet user to both own and control potentially all its personal data stored in a blockchain, better protecting privacy than existing regulation¹² through the adoption of a public key cryptography.

A public key cryptography consists of a pair of keys: a public key and a private key. While the public key is openly shared in the blockchain network, only the owner of the private key can decrypt data encrypted with the public key. Thus, blockchain increases both transparency and privacy.

In other words, anyone can adopt blockchain technologies potentially in any businesses and situations to record and store any assets more efficiently than present centralized platforms and databases. The same government agencies can employ blockchain and DLT in general to do their regular work more efficiently. Antitrust agencies can adopt DLT to effectively tackle today's digital and data-driven markets.¹³

Everything is tracked in a blockchain; antitrust agencies can exploit blockchain to control and verify a company's behavior and practices in specific markets that raise antitrust concerns.¹⁴ One of the primary antitrust challenges concerns the costs of monitoring companies' compliance with antitrust remedies, which can be auto-enforced through smart contracts that run in an antitrust blockchain.¹⁵ The antitrust agency's smart contract would monitor companies' activities to detect anticompetitive practices and auto-enforce remedies if the specified conditions are met.

Furthermore, antitrust enforcers might impose the adoption of a blockchain on *Big-Tech* to supervise constantly their exploitation of data in present data-driven markets in a more effective way than traditional compliance reports.¹⁶

However, blockchain is not perfect and should not be immune from the antitrust scrutiny.

IV. Is Blockchain Immune from the Antitrust Scrutiny?

Blockchain offers antitrust an enormous opportunity, but as any powerful tool it also has the capacity to harm as well as benefit if abused and left totally uncontrolled.

Although blockchain is decentralized by design, the risk of centralization is effective. Today, a few selected participants *de facto* control leading blockchain networks and the potential for collusion and forms of monopolization is high.¹⁷ Antitrust represents a fundamental gatekeeper of the economic democracy in present and future markets¹⁸ based on blockchain technology and DLT in general.

As in the past, antitrust agencies need to ensure a level playing field to compete in markets that exploit innovative platforms and technologies. The largest companies can continue in developing competitive technologies by creating alternative platforms or advancing the existing ones in open markets through the support of antitrust law.

In summary, blockchain could be the real game changer for antitrust enforcers to tackle *Big tech* and the Internet centralization. However, blockchain needs the antitrust scrutiny to make decentralized democratic platforms effective.

As in any field, also in blockchain technologies antitrust is necessary to ensure people's trust in blockchain by enabling competitive technologies and innovation to succeed over monopolies' supremacy.¹⁹

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² Giovanna Massarotto, *Can Antitrust Trust Blockchain?*, forthcoming ALGORITHMIC ANTITRUST (Springer, 2021), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3622979; KEVIN WERBACH, THE BLOCKCHAIN AND THE NEW ARCHITECTURE OF TRUST, MIT Press (1st ed., 2018).

³ Giovanna Massarotto, *Antitrust in the Blockchain Era*, NOTRE DAME J. EMERGING TECHNOLOGIES 252, 278 (2020).

⁴ UCL CBT, *DLT in the Supply Chain Report (2019)*, available at <http://blockchain.cs.ucl.ac.uk/dlt-in-the-supply-chain-report/>; Hyperledger, *Case Study: How Walmart brought unprecedented transparency to the food supply chain with Hyperledger Fabric*, available at <https://www.hyperledger.org/learn/publications/walmart-case-study>.

⁵ Michael del Castillo, *Blockchain 50: Billion Dollar Babies* (Apr. 16, 2019), Forbes, <https://www.forbes.com/sites/michaeldelcastillo/2019/04/16/blockchain-50-billion-dollar-babies/#227d39fc57cc>.

⁶ DON TAPSCOTT & ALEX TAPSCOTT, BLOCKCHAIN REVOLUTION. HOW THE TECHNOLOGY BEHIND BITCOIN AND OTHER CRYPTOCURRENCIES IS CHANGING THE WORLD (Penguin, 2016).

⁷ Giovanna Massarotto, *From Digital to Blockchain Markets: What Role for Antitrust and Regulation* (2019), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3323420.

⁸ *Id.*

⁹ Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* 3, available at <https://bitcoin.org/bitcoin.pdf>.

¹⁰ See Massimo Bartoletti & Livio Pompianu, *An Empirical Analysis of Smart Contracts: Platforms, Applications, and Design Patterns* (Mar. 18, 2017), https://www.researchgate.net/publication/315454656_An_Empirical_Analysis_of_Smart_Contracts_Platforms_Applications_and_Design_Patterns.

¹¹ Massarotto, *Antitrust in the Blockchain Era*, *supra* note 3.

¹² See, e.g. EUR. COMM'N, EU DATA PROTECTION RULES (2019), https://ec.europa.eu/commission/priorities/justice-and-fundamental-rights/data-protection/2018-reform-eu-data-protection-rules_en; *Bundeskartellamt Prohibits Facebook from Combining User Data from Different Sources*, BUNDESKARTELLAMT (Feb. 7, 2019), https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/07_02_2019_Facebook.html?nn=3591568; *FTC Charges Deceptive Privacy Practices in Googles Rollout of Its Buzz Social Network*, FED. TRADE COMM'N (Mar. 30, 2011), <https://www.ftc.gov/news-events/press-releases/2011/03/ftc-charges-deceptive-privacy-practices-googles-rollout-its-buzz>.

¹³ Massarotto, *Can Antitrust Trust Blockchain?*, *supra* note 2.

¹⁴ *Id.*

¹⁵ GIOVANNA MASSAROTTO, ANTITRUST SETTLEMENTS—HOW A SIMPLE AGREEMENT CAN DRIVE THE ECONOMY 204, 206-07 (Wolters Kluwer, 2019); Giovanna Massarotto, *Grasping the Meaning of Big-Tech Antitrust Consent*, COMPETITION POLICY INTERNATIONAL (CPI) (Feb. 24, 2020) <https://www.competitionpolicyinternational.com/grasping-the-meaning-of-big-tech-antitrust-consent/>.

¹⁶ Massarotto, *Grasping the Meaning of Big-Tech Antitrust Consent*, *supra* note 15; Massarotto, *Can Antitrust Trust Blockchain?*, *supra* note 2.

¹⁷ Massarotto, *Can Antitrust Trust Blockchain?*, *supra* note 2.

¹⁸ Giovanna Massarotto, *From Standard Oil to Google: How the Role of Antitrust Law Has Changed*, 41 WORLD COMPETITION 395, 418 (2018).

¹⁹ Massarotto, *Can Antitrust Trust Blockchain?*, *supra* note 2.