

Kluwer Competition Law Blog

Blockchains in competition law - friend or foe?

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Introduction

Blockchain (aka distributed ledger) technology is inherently neither pro- nor anticompetitive.^[1] It however does have the potential to be both. Given the significance of this emerging technology, the competition law impacts of blockchain are worthy of exploration.

Trust, or rather its absence, constitutes a driving force behind blockchain technology. It is a decentralized, more secure and transparent model for transactions and information sharing that operates on an encrypted peer-to-peer basis. This model challenges the need for trust between parties by instead placing trust in the underlying technological platform. This would effectively remove the need for intermediaries whose business has been to make up for the lack of trust; these include banks, brokers, governments, internet platforms etc.^[2]

The limits of blockchain's true potential are yet to be fully understood, but it is clear that it is however not the most suitable approach for all the numerous applications where it is currently being proposed.^[3] In short, key criteria in determining the utility of blockchains include the presence of multiple potential participants, each of which have both an interest and a lack of trust in one another.^[4]

Comprehensive descriptions of blockchain have been provided elsewhere^[5] and will thus largely not be elaborated on during this post. Instead, we seek to provide a well-rounded, but concise account of what blockchain could mean in a competition law context specifically - both in terms of threats as well as opportunities.

“If we call it a blockchain, perhaps it won't be deemed a cartel?”^[6]

Reaching a decentralized consensus - blockchain's core functionality - requires wide distribution of information among blockchain members concerning their transactions

(e.g. payments or goods delivery).^[7] Although essential to blockchain's effective functioning, such near-instant information distribution and resulting transparency may simultaneously strike as a collusion-conducive cocktail. Given that information exchange on blockchain can generate efficiencies by improving contractibility,^[8] its incompatibility with Article 101 TFEU needs to be evaluated on a case-by-case basis.^[9] Direct competitors using shared blockchains or collaborating in blockchain consortia^[10] are thus particularly likely to be susceptible to antitrust scrutiny. One of the core determinants of legality to consider in this context is the nature and collusive potential of information visible on the ledger.^[11] It is therefore advisable that access to competitively sensitive information is restricted or that such information is stored in off-blockchain locations.

Blockchain technology may also become 'competitively infamous' by playing a role in explicit collusion. If information distribution on blockchain enables monitoring and punishing deviations from collusive agreements, it can be treated as part of a cartel and hence restrictive of competition by object. A more sophisticated form of colluding can be codifying anti-competitive terms and conditions into a self-executing smart contract running on top of blockchain in order to automatically punish deviators.^[12] Yet, possible auditability of blockchains^[13] can render cartel members hesitant to rely on smart contracts that leave traces of illegal conduct.

It is worth highlighting that blockchain participants are not the only actors whose conduct may breach competition law. It cannot be ruled out that blockchain miners or even entire blockchains would find incentives to collude as technology develops and becomes more prominent.

Exclusive effects of blockchain mechanisms

Abuse of dominance, particularly by economic actors participating in private blockchains, constitutes another set of potentially acute competition concerns to be alert to. Refusal to deal surfaces as one practice expected to figure high on competition law enforcers' agendas, especially given that controlling access to private blockchains is its actual *raison d'être*. The gatekeeping mechanism may take various forms (e.g. preventing a competitor from accessing blockchain information, proposing or registering new transactions, validating the blocks, etc.)^[14] and be managed by different types of actors, depending on the governance choices. In case permissioned blockchain gains the status of an essential infrastructure and refusal to give access to it is not objectively justified, gatekeepers' exclusionary efforts risk violating Art. 102 TFEU.

It may be more puzzling to legally qualify the practice of modifying governance of permissioned blockchains if such modifications are done in the guise of genuinely innovating, while in reality they specifically aim at excluding competitors.^[15] An emerging concept that could be used to better grasp and conceptualise such abuse

strategies in the blockchain domain is *predatory innovation*, defined as “the alteration of one or more technical elements of a product to limit or eliminate competition”.^[16]

Turning to opportunities

Taking into consideration what has been said above, a main gain with blockchain is the relative immutability of the data it contains – data cannot be tampered with by individual participants. Further, Blockchain is open source software, which further contributes to its reliability, since any user is able to check the underlying code for security issues.^[17] The decentralized data sets of blockchain allow for reliable and complete data logs that should be both up to date and traceable, thus forming a perfect audit trail. This characteristic is combined with blockchain-based “smart contracts”, i.e. digital protocols that may automatically modify or update data on blockchains. They are able to automatically execute and enforce contracts and their breaches, while operating with minimal human intervention.^[18]

Let us now turn to the potential opportunities and benefits that blockchain technology presents in terms of competition law. First, competition enforcement may be improved as follows:^[19]

1. Reducing information asymmetry. Due to the nature of blockchains, they could significantly both speed up the collection of evidence as well as improve the reliability of information collected. Thus, blockchain technology could contribute towards more informed decision-making in competition enforcement.
2. Reducing transaction costs to parties in merger cases. Assuming that blockchains become mainstream, merging parties may be able to streamline a merger review process by granting competition authorities access to relevant parts of private blockchains. Doing so would not require making all information visible. This would have the potential to materially conserve the resources of the merging parties.
3. Improved monitoring and effectiveness of commitments. Smart contracts could be created to automatically execute in line with the conduct required in commitments and the ledger would ensure that all (trans)actions are recorded. Authorities would thus be better placed to understand how commitments are honored and companies would easier be able to provide information supporting the same.

Second, companies and their compliance functions may benefit, too. There has been much discussion about blockchain’s ability to revolutionize regulatory compliance. This discussion has particularly concerned ESG (environmental, social, governance), corruption and fraud issues and the ability to improve ESG compliance through enhanced supply chain traceability.^[20] Blockchains might however be relevant in competition compliance, as well. Commentators are proposing that it may help with restricting information exchange within horizontal cooperation in, *inter alia*, trade associations as well as in pricing so as to give central compliance functions more possibilities to avoid predatory pricing.^[21] In many cases, such compliance gains may also be obtained in technologically less complex ways. However, blockchain is a new

and transformative technology concerning which we should keep our minds open.

Third, and perhaps most importantly, blockchain has the potential to allow for significant efficiency gains. Its transformative approach could lower boundaries for new players to enter old markets. Such potential may in itself stimulate said markets. In addition, entirely new markets might be created. Also, blockchain participants may be able to realize similar efficiency gains as could be done in more traditional horizontal cooperation concerning, eg., research and development.

Some of the opportunities mentioned above might still require a bit of imagination to conceptualize in practice. However, considering the pace at which blockchain technology is developing, these may well become practically relevant sooner than expected.

Gearing up for new threats and opportunities

Recent years have shown that both market operators and competition law enforcers are venturing off the beaten competition paths – the former by embracing new technologies in their market strategies and the latter by demonstrating their readiness to challenge such strategies. Blockchain is likely to trigger the next stage in their technology-driven competition journey.

There seems to be a shift towards Lawrence Lessig’s famous ‘code is law’ notion, where systems developers play an increasingly significant role in making the rules by which such systems run.^[22] As the technology is in itself neither anti- nor pro-competitive, design of blockchains (as with platforms and other digital solutions of today) should adequately prevent potential harm to competition and this should be borne in mind throughout the entire development process – so-called ‘antitrust by design’.

Friend or foe? It depends. It is crucial to stay vigilant but at the same time receptive to opportunities that blockchains generate.

^[1] Jonathan Justl and Kevin Kim, ‘Blockchain: Challenges and Opportunities for Antitrust Compliance’. ABA Antitrust Section, Special Reports (March 2018).

^[2] Alan Penz-Sharp, ‘Blockchain for Business: Ready or Not, Here it Comes’, CMSWire (4 December 2017), available at: <https://www.cmswire.com/information-management/blockchain-for-business-ready-or-not-here-it-comes/>.

^[3] Gideon Greenspan 2015, ‘Avoiding the pointless blockchain Project’ (22 November 2015), available at: <https://www.multichain.com/blog/2015/11/avoiding-pointless-blockchain-project/>.

^[4] Ibid.

^[5] Freshfields Bruckhaus Deringer, 'What's in a blockchain?', available at:

<<https://www.freshfields.com/en-gb/our-thinking/campaigns/digital/fintech/whats-in/w-hats-in-a-blockchain/>>; Melanie Swan, 'Blockchain: blueprint for a new economy' (O'Reilly 2015).

^[6] Izabella Kaminska, 'Exposing the "If we call it a blockchain, it won't be deemed a cartel? Tactic' (11 May 2015), available at: <https://ftalphaville.ft.com/2015/05/11/2128849/exposing-the-if-we-call-it-a-blockchain-perhaps-it-wont-be-deemed-a-cartel-tactic/>.

^[7] Lian William Cong and Zhiguo He, 'Blockchain Disruption and Smart Contracts' (2018), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2985764, at 1.

^[8] Ibid., at 2.

^[9] European Commission, Guidelines on the applicability of Article 101 TFEU to horizontal co-operation agreements, §75.

^[10] Peter Gratzke, David Schatsky and Eric Piscini, 'Banding together for blockchain' (16 August 2017), available at: <https://www2.deloitte.com/insights/us/en/focus/signals-for-strategists/emergence-of-blockchain-consortia.html>.

^[11] Mark Simpson, 'Blockchain and Anticompetitive Collusion' (PPT presentation, 2018), available at: <http://www.oecd.org/daf/competition/blockchain-and-competition-policy.htm>.

^[12] Cong and He (no 7), at 28.

^[13] Ai Deng, 'Smart Contracts and Blockchains: Steroid for Collusion?' (2018), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3187010, at 3.

^[14] Thibault Schrepel, 'Is Blockchain the Death of Antitrust Law? The Blockchain Antitrust Paradox' (2018), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3193576, at 29.

^[15] Ibid., at 32.

^[16] Thibault Schrepel, 'Predatory Innovation: The Definite Need for Legal Recognition', *SMU Sci & Tech. L. Rev* (2018).

^[17] Martin von Haller Gronbaek, 'Blockchain 2.0, smart contracts and challenge' (June 2016), available at: <https://www.twobirds.com/en/news/articles/2016/uk/blockchain-2-0-smart-contracts-and-challenges#8>.

^[18] Cliff Moyce, 'How Blockchain Can Revolutionize Regulatory Compliance' (August 2016), available at: <http://www.corporatecomplianceinsights.com/blockchain-regulatory-compliance/>.

^[19] Tulpule, Ajinkya, 'Enforcement and Compliance in a Blockchain(ed) World' (January 16, 2017), CPI Antitrust Chronicle, Volume 1, page 45, available at: <https://ssrn.com/abstract=2906465>.

^[20] See eg. Michael Ristaniemi, 'Blockchain as a sustainability tool for supply chains' (April 2018), available at: <https://vvoy.fi/blockchain-as-a-sustainability-tool-for-supply-chains/>.

^[21] Tulpule (no 19).

^[22] Lawrence Lessig, 'Code and Other Laws of Cyberspace' (Basic Books 1999).

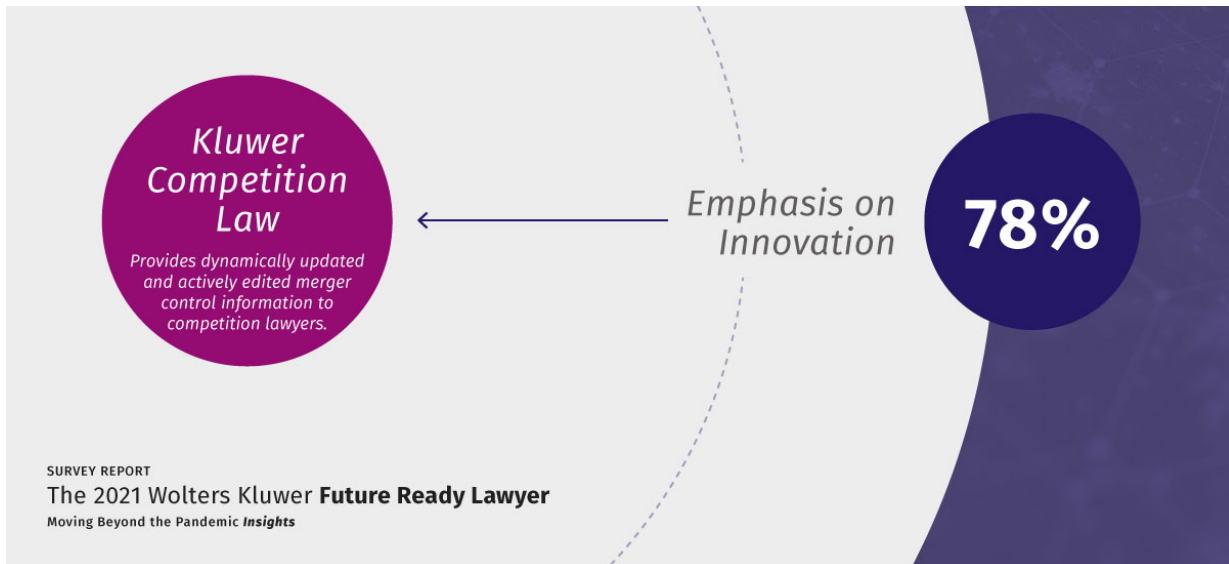
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