

BLOCKCHAIN APPLICATION: INDONESIAN COMPETITION LAW'S PERSPECTIVES

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Abstract

Having advantages of consensus mechanism in decentralizing data transaction which potentially eliminates the need for third-party intermediaries, blockchain has the potential to revolutionize markets industry to decrease the showcase control of today's centralized stages by utilizing the internet. Blockchain has been rising innovation in Indonesia, demonstrated by establishment of Indonesia Blockchain Association. Though its application in Indonesia is still restricted to cryptocurrency sector, no question that blockchains will be connected broadly in near future, and unquestionably will influence business competition. Law and technology ought to be thought of as allies-not enemies-as they feature complementary strengths, yet it might also have their curses. Some intriguing articles has even questioned how blockchain would cause the death of anti-trust, the so-called competition law. Meanwhile this article would focus on elaborating consequences of blockchain technology both positive and negative sides in Indonesia Competition Law Perspective, both in substantial and procedural law, using library research, statute, comparative, and conceptual approach.

Keywords: Blockchain; Competition Law; Smart Contract

A. Introduction

Before going any further, it is necessary to state that any issues related with the internet, has characteristics of being democratic, related with deterritorialization and entailed with technology turbulence. On the contrary, laws and regulations are lying on basis of sovereignty of a state which is centred mostly on its territorial jurisdiction. Both characteristics are going to different directions, however the current tendency is that every state preserves their sovereignty both on their visible territory and invisible digital territory.

The development withinside the generation of the commercial revolution 4.0 is presently expeditious and has a large effect in numerous elements of network life. Practically, our era's most popular buzzword goes to technology. The recent technology of blockchain is

a platform built with distributed ledger that allows developers to write and host applications. Essentially, blockchain transactional records securely in multiple locations with no centralized ownership. The repositories of data that are tamper-proof because all nodes in the peer-to-peer system the blockchain creates each contain a record of all transactions across the network to that point. This blockchain protocol defines the rules that govern the network and govern how transactions are validated. Obviously, blockchain will irreversibly change how bureaucracy and business will be running in near future.

First, blockchain is far obvious and auditable, in view that all transactions can be seen by approved participants and traceable in the ledger. Auditing turns into relatively straightforward, in view that same copies of the ledger are made on every example or node of the ledger.¹ The ledger is additionally immutable, that means transactions cannot be erased or changed without approval and traceability at the disbursed ledger. Lastly, blockchain gives low cost doubtlessly, because it makes use of the computing electricity as opposed to conventional manpower to finish returned workplace techniques which usually require substantial involvement of accountants and bookkeepers (to make certain correct, well timed and obvious transaction reporting), auditors (as periodic validators of transaction records) and relied on 0.33 parties (as outside and unbiased purveyors of trust).² To certain extent, this might be a threat to existence of professional accountants and financial auditors.

The advanced blockchain technology underlying smart contracts will be a solution for issues in e-commerce platform, particularly on promoting the protection of consumer rights.³ Yet, it is predictable to anyone that blockchain applicability is not merely in e-commerce transactions. Government bureaucracy, supply chain management, or even halal food chains are some possible applications of block chain. Most likely, this hype technology will

¹ UCL Centre for Blockchain Technologies, “Distributed Ledger Technology in the Supply Chain,” accessed February 12, 2022, http://blockchain.cs.ucl.ac.uk/wp-content/uploads/2019/08/DLT-in-the-Supply-Chain_UCL-CBT.pdf.

² *Ibid.*

³ Angelina Marlina Fatmawati and Tresnawati, “Blockchain-Based Smart Contract: Advancing Digital Consumer Protection and Preventing Private International Law E-Commerce Cases,” *Yustisia Jurnal Hukum* 10, no. 3 (2021): 356, <https://doi.org/10.20961/yustisia.v10i3.54891>.

eliminate functions of intermediary professions, which might also be the main reasons why states take precautionary measures on its application.

This is also supported by the fact that according to the E-economy SEA 2019 study, the e-commerce, online transportation, online travel, and online media sectors in Indonesia have reached a gross merchandise value (GMV) of US\$ 40 billion. By 2025 it is expected to continue to soar to \$130 billion and will become the largest digital economy in Southeast Asia.⁴ More potential transactions will entail more potential competitions, hence will there be any effect to Indonesian competition law in blockchain era?

Indonesia itself already arranged this issue into Law No. 5 Year 1999 yet no explanation on digital economy-business competition in detail. The rapid growth in the digital economy certainly has impacted on ease of access to data and algorithms⁵ which allows businesses to predict market trends, map consumers, and adjust their price strategies. This regulation was made regarding the situation on business competition in that era which still running conventionally and does not cover towards the digital economy yet. In digital trading activities, business actors and buyers are originated from various parts of the world, so that there will be difficulties to identify whether these actions can cause unfair business competition. Some potential problem arises if the conventional mindset of current competition law will still be preserved. For example, determining relevant market, as the first step in any competition cases, will be challenged by the fact that digital economy is always claimed to be borderless. But such claim is also prevented by the fact that States are preserving its sovereignty over its digital territory and its physical territory, which again forces competition authority to determine relevant market as its basis of jurisdiction and also to corroborate the locus and actus of anti competitive conduct in cross border anti trust cases. Undeniably, it will be impossible to proof the existence of an anti competitive conduct without limiting the scope of the actus, or in this case, its relevant market. Therefore, in this case, the Indonesian Competition Authority, or so-called Business Competition Supervisory

⁴ Wahyudi Wibowo, "Persaingan Usaha di Era Ekonomi Digital," Berita Satu, accessed February 16, 2022, <https://www.beritasatu.com/opini/7591/persaingan-usaha-di-era-ekonomi-digital>.

⁵ Blockchain is the running by the algorithms.

Commission (KPPU) as a body that monitors the occurrence of unfair business competition must immediately review in more detail the previous law, Law No. 5 Year 1999 and amend it to create healthy business competition, specifically in Articles 8 to 18 related to prohibited acts and in Articles 19 to 28 concerning aspects of Accountability⁶.

The rapid growth in the digital economy certainly has impacted on ease of access to data and algorithms which allows businesses to predict market trends, map consumers, and adjust their price strategies. Blockchains application in business competition will give positive and negative impacts. In optimistic point of view, it is easily predicted that implementation of blockchain can be beneficial for competition law enforcement. But in a pessimistic point of view, blockchain would cause anti-competitive agreements are easier to be concluded.

Decentralized nature of blockchain makes it easier to reach conspiracy and makes pricing between competitors even more confusing.⁷ When all the transactions and data are already decentralized in one chain which can monitored by KPPU, therefore the prevailing mechanism of anti-trust law might become irrelevant in the face of blockchain. Two approaches in competition law, per se illegal and rule of reason will not lose its relevance in time of blockchain application. It will be discussed more that these two approaches will even be strengthened by nature of blockchain.

The creation of virtual systems led to charges among competition withinside the marketplace turning into obvious and extra accessible which potentially caused cartel. Accordingly, competition regulators consider decentralized platforms as a potential alternative to sponsor-led platforms that many have recently challenged for allegedly violating anti-trust laws. Enforcement actions from other regulators, however, are pushing

⁶ Ahmad Sabirin and Raafid Haidar Herfian, “Dampak Ekosistem Digital terhadap Hukum Persaingan Usaha di Indonesia serta Optimalisasi Peran Komisi Pengawas Persaingan Usaha (KPPU) di Era Ekonomi Digital”, *Jurnal Persaingan Usaha* 2 (2021): 75-82.

⁷ Christian Catalini and Catherine Tucker, “Anti-trust and Costless Verification: An Optimistic and a Pessimistic View of the Implications of Blockchain Technology,” *MIT Sloan Research Paper*, no. 5523-18 (2018): 1-2, <https://doi.org/10.2139/ssrn.3199453>.

blockchain-based platforms away from the ideals of decentralization and toward the centralized, sponsor-led model that competition regulators hope they will disrupt.⁸

This article's structure begins with a brief explanation blockchain system, which maintains the help of using illustrated incentive issues posed in the use of blockchain then identifies a consequence of using blockchain in this digital economy regarding the business competition among the business actors. Also, this study intended in perusing the impact of using blockchain to business in relation to Indonesian competition law. Research method of this article conducted using statute, comparative, and conceptual approach.

B. Discussion

B.1. Using of blockchain in business perspective

The global blockchain and cryptocurrency markets continue to attract the attention of the online payments sector and retailers in this era. Some of the most developing and established countries dominate the field of cryptocurrencies and blockchain technology, and the digital market is gaining momentum with rising global trends. Japan and United States are two countries on top for implementing blockchain in using of cryptocurrency. China, Lebanon, Switzerland, United Kingdom, Singapore, Bahamas, Estonia even South Africa⁹ also show their effectiveness in the use of blockchain.

Blockchain is an open distributed ledger that can manually or automatically record all types of transactions between users. Each transaction or set of transactions is a block in the chain. The transactions follow a set of algorithms and rules, which are called computational logic. In theory, each transaction's existence is seen by all users, but the "meaning" or

⁸ Evan Miller, "A Tale of Two Regulators: Anti-trust Implications of Progressive Decentralization in Blockchain Platforms," *Washington and Lee Law Review Online* 77, no. 2 (2021): 389.

⁹ Toshendra Kumar Sharma, "Top 10 Countries Leading Blockchain Technology in The World," Blockchain Council, accessed April 25, 2022, <https://www.blockchain-council.org/blockchain/top-10-countries-leading-blockchain-technology-in-the-world/>.

purpose of the transaction is kept secret because the transactions are encrypted.¹⁰ All data put in blockchains are made to be permanent.

Blockchain can minimize transaction costs towards the individuals or organizations. It made blockchain seems decentralized and cost-efficient. The various incarnations of the blockchain share a common core function of providing a "decentralized consensus". To produce and maintain a decentralized consensus without a centralized authority, blockchain protocols are designed to incentivize responsible and accurate record-keeping by a community of dispersed "record-keepers," typically in a competitive manner, while reducing manipulation and tampering. In a sense, all decentralized consensus must come to some form of "majority" vote, though the algorithms may vary significantly across projects and applications.¹¹

All blockchains to varying degrees aim to create a database system in which decentralized agents or institutions can jointly record information and maintain it, with no individual party exercising persistent market power or control.¹² Distributed ledger technology allows authorized participants to access the same information at the same time to improve efficiency, build trust, and eliminate friction. Enterprise blockchain offers these benefits based on four technology-specific attributes, including:¹³

- a. Consensus: Shared ledgers are updated only after the transaction is validated by all relevant participants involved.
- b. Replication: Once a block the record of an event is approved, it is automatically created across the ledgers for all participants in that channel. Every network partner sees and shares a single "trusted reality" of the transactions.

¹⁰ Robert P. Murphy and Silas Barta, *Understanding Bitcoin: The Liberty Lover's Guide to the Mechanics and Economics of Crypto-Currencies* (California: Createspace Independent Pub, 2015), 52.

¹¹ Lin William Cong and Zhiguo He, "Blockchain Disruption and Smart Contracts," *SSRN Electronic Journal* (December 2018): 1-40, <https://dx.doi.org/10.2139/ssrn.2985764>.

¹² *Ibid.*

¹³ IBM, "What is Blockchain for Business?", accessed March 10, 2022, <https://www.ibm.com/topics/blockchain-for-business#:~:text=Blockchain%20for%20business%20is%20valuable,build%20trust%20and%20remove%20friction.>

- c. Immutability: More blocks can be added, but not removed, so there is a permanent record of every transaction, which increases trust among the stakeholders.
- d. Security: Only authorized entities are allowed to create blocks and access them. Only trusted partners are given access permission.

Currently, two types of blockchain comprises public blockchain and private blockchain. Public blockchain is where each participant can read blockchain and use it to carry out transactions, everyone can participate in the process of creating the consensus with no central register, nor a trusted third party and typically works with a coin or token.¹⁴ On the other hand, blockchain is called private when the consensus process can only be achieved by a limited and predefined number of participants which given by an organization and read permissions can be public or restricted and controlled by a preselected set of nodes.¹⁵

Blockchain itself has two layers, the protocol layer, and the application layer. The blockchain protocol sets rules for network management and transaction validation. Protocols designed to support applications incorporate an application programming interface that allows developers to access and transmit data to and from the blockchain.¹⁶ In Indonesia, most common blockchain-based product which use in business area is cryptocurrency, represented by its pioneer, bitcoins. Bitcoins are produced by records of transactions in the chain. Transactions can occur in a matter of seconds, although the risk of double spending is not reduced to a low level for ten or more minutes when it is included in a block in the chain.¹⁷

¹⁴ Dominique Guegan, “Public Blockchain versus Private Blockchain” (Documents de travail du Centre d’Economie de la Sorbonne, Université Panthéon-Sorbonne (Paris 1), Centre d’Economie de la Sorbonne. Paris, 2017), 4, <https://EconPapers.repec.org/RePEc:mse:cesdoc:17020>.

¹⁵ *Ibid.*

¹⁶ Miller, “A Tale of Two Regulators,” 390-391.

¹⁷ Gerald P. Dwyer, “The Economics of Bitcoin and Similar Private Digital Currencies,” *Journal of Financial Stability* 17 (2015): 84, <https://doi.org/10.1016/j.jfs.2014.11.006>.

B.2. Blockchain-based smart contract

Smart contracts were first discussed in 1994 by controversial cypher-punk Nick Szabo. Smart contracts are digital contracts allowing terms contingent on decentralized consensus that are tamper-proof and typically self-enforcing through automated execution.¹⁸ Self-execution and self-enforcing are key features of smart contract. The basic idea of smart contracts is that many kinds of contractual clauses (such as liens, bonding, delineation of property rights, etc.) can be embedded in the hardware and software we deal with, in such a way as to make breach of contract expensive (if desired, sometimes prohibitively so) for the breacher.¹⁹

The underlying algorithm in blockchain technology utilizes a consensus mechanism that acts as negotiators before a contract is formed, allowing the parties to arrange and choose the order terms for the counterparty.²⁰ In particular, smart contracts can improve contractability and enforcement in certain cases. This is a requirement for block withdrawals and automatic payments if the importer successfully receives the goods.

Smart contract is written into computer code that runs on a blockchain. Each block in the system is connected in sequence by a series of characters that make up the information in the block, called a "hash," making this blockchain technology immutable. The entered record is immutable, or if altered, the alteration will be detected, both through the cryptography used and from the disseminated nature of the ledger.²¹ Everything recorded on the blockchain stays there forever and no one can change it without the knowledge of the rest of the system. Basically, the mechanism of a vending machine is a basic explanation for how smart

¹⁸ Cong and He, "Blockchain Disruption."

¹⁹ Nick Szabo, "Smart Contracts: Building Blocks for Digital Markets," accessed March 10, 2022, https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html.

²⁰ Lauren Henry Scholz, "Algorithmic Contracts," *Stanford Technology Law Review* 20, no. 2 (2017): 128-169, <https://ir.law.fsu.edu/articles/607>.

²¹ A. Rosic, "What are Smart Contracts?," Blockgeeks.com, accessed March 10, 2022, <https://blockgeeks.com/guides/smart-contracts/>.

contracts work which simply executes the contract by dispensing the paid products when the chosen product is obtained after selecting and paying for it.²²

Blockchain based smart contract is revolutionizing the supply chain, food distribution, financial services, government, retail, science, health, e-commerce, agriculture and more. As a result, a virtual corporation in Singapore, Qoo10, carried out the blockchain-based smart contract of their e-trade platform, QuuBe. This settlement is one of the finest e-marketplaces in Asia. Indonesian regulations also apply the principles that form the basis of information technology and electronic transactions. The regulation is stated in the elucidation of Article 3 of Law No. 11 Year 2008 concerning Information and Electronic Transaction. One of the applicable principles is the freedom of technology options. This principle allowed the implementation of the technology related to information and electronic transactions to follow future developments.²³

B.3. Application of blockchain-based technology in Indonesia

Blockchain is quite well-known in Indonesia. Mostly, people use blockchain to keep their own data in cryptocurrency, bitcoins, or other kind of investment. The use of blockchain in Indonesia is developing rapidly, with the development of today's powerful technology and the enthusiasm of Indonesians to carry out their investment activities.²⁴

Nevertheless, there is no law on the blockchain itself. There are regulations to protect blockchain users from the technological and financial aspects in Bank Indonesia Regulation No. 19/12/PBI/2017 on Financial Technology Management, yet this rule does not regulate the

²² Tresnawati, "Blockchain-Based Smart Contract," 359.

²³ Angelina Marlina Fatmawati, "Urgensi Pengaturan Smart Contract dalam Sistem Hukum Indonesia: Studi Terhadap Pengaturan Smart Contract di Negara Belarus" (Bachelor's Thesis, Faculty of Law, Universitas Kristen Maranatha, Bandung, 2021), 49.

²⁴ Indonesia has several blockchain and cryptocurrency associations of which Indodax and Asosiasi Blockchain Indonesia (Blockchain Indonesia Association) are known to be the most prominent. Based on Bappebti data, the number of crypto investors at the end of 2021 exceeded 11 million, while the number of crypto investors in Indonesia reached only 4 million year-on-year in 2020 on Wahyu Budi Santoso, "Perkembangan Blockchain di Indonesia Semakin Masif," Sindo News, accessed March 20, 2022, <https://tekno.sindonews.com/read/700155/207/perkembangan-blockchain-di-indonesia-semakin-masif-1646129031?showpage=all>.

blockchain and merely relates to application of blockchain in terms of its usefulness as one of the platforms for implementing financial technology in the payment system category. Moreover, there is also the Government Regulation No. 15 Year 2021 on implementation of Risk-Based Business Licenses assert this regulation aims to manage a more streamlined and efficient business licensing process, and in some cases can eliminate licensing requirements for a particular business. This regulation intended to protect the users while executing transactions involving the blockchain. On the other hand, Indonesia Financial Service Authority also give their own regulation stated in Financial Service Authority (Otoritas Jasa Keuangan or “OJK”) Regulation No. 16 Year 2021 on Amendment to OJK Regulation No. 57/POJK.04/2020 regarding securities offering through equity crowdfunding. In fact, this regulation only regulates the use of blockchain related to blockchain certified as a technology-based support service to improve the quality of crowdfunding services.

B.4. Anti-trust law in Indonesia

Back to Indonesian Monetary Crisis in 1998, Indonesian Anti-Trust Law No. 5 Year 1999 was one of prerequisite laws required for International Monetary Fund Loan. Although this law was drafted under the auspices of Sherman Act, but some parts of structure and substance of this Act was essentially modified. Indonesian Anti-Trust Law is divided into three categories of anti-competitive practices comprises prohibited agreement, prohibited act and abuse of dominant position.

In general, most scholars defined anti-competitive practices into three types: exploitative abuses, exclusionary abuses, and discriminatory abuses. Exclusionary abuses comprise all practices that a dominant undertaking may use to obstruct others, restrict their options, establish entry barriers, and therefore remove or weaken the potential competition. Based on Law No. 5 Year 1999, here are some articles of exclusionary abuses: Oligopoly (Art.4), Division of Territory, (Art.9), Boycott (Art.10), Cartels (Art.11), Trusts (Art.12), Oligopsony (Art.13), Vertical Integration (Art.14), Closed Agreements (Art.15), Agreement with Foreign Parties (Art.16). Market Control (Art.19,20,21), and Abuse of Dominant

Position, Chapter V of Law No. 5 Year 1999. In Indonesian Anti-Trust Law, some of this (Article 4 to Article 16) are included in prohibited agreements category, while Article 19,20 and 21 are included in prohibited activities, and the last chapter is included as abuse of dominant position category.

The next on the line is exploitative abuses, which refers to the use of market power to impose unbalances transaction conditions or excessive prices. It consists directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions. Based on Law No. 5 Year 1999, here are some articles in relation to exploitative abuses: Monopoly (Art.17), Monopsony (Art.18), and Conspiracy (Art. 22,23,24). In Indonesian Competition Law, these are included in category of prohibited activities.

The third type is discriminatory abuses, which occurs when parties apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage. Price discrimination is the major discriminatory abusive conduct. As a means of discriminatory abuse, different consumers are charged different prices for the same product. Based on Law No. 5 Year 1999, Chapter III Part 2 about Price Fixing is one of the criteria in discriminatory abuses. These conducts are included in prohibited agreement category in Indonesia Law.

Instead of using terminology of anti-competitive practices, Law of Republic Indonesia No. 5 Year 1999 on Prohibition of Monopolistic Practices and Unfair Business Competition, use the term of unfair business competition in Article 1 no. 6 states that “Unfair business competition shall be competition among business actors in conducting activities for the production and or marketing of goods and or services in an unfair or unlawful or anti-competition manner”. As recognized in worldwide competition law, per se illegal and rule of reason approaches also prevails in Indonesia. As mentioned beforehand, these approaches will not lose its relevance in time of blockchain application. In public blockchain, per se illegal paradigm will get easier application in verifying anti competitive behaviour, while evidences on rule of reason approach will also be more obvious. Application of both approaches will face more challenges in private blockchains compared to public blockchains, yet it is certain

that evidence will be easier to find in time of blockchain application, compared to current situation.

The primary enforcement authority KPPU is an independent body that has the authority to investigate alleged violations and impose administrative sanctions. Although Indonesian Anti-Trust Law No. 5 Year 1999 provides criminal investigation and prosecution, so far there has not been any competition cases which led to criminal legal systems. This might be the reason why criminal charges from Law No. 5 Year 1999 is revoked by Law No. 11 Year 2020 concerning Job Creation. The only remaining criminal charge available according to Job Creation Law is Article 41,²⁵ which provide criminal sanctions in case of business actors refused to be heard, refuse to provide information required for investigations and or hearings, or from impeding the investigation and or hearing processes. As legal force of KPPU, this Article 41 shall not be eliminated.

B.5. Indonesian anti-trust law in digital business economy

At this point, looking at the progress of the digital economy and industry era, it certainly has a major impact on business competition practices in most countries. In a developing country context, this requires a deliberate focus on ensuring the infrastructure layer of the digital economy is both affordable and has broad coverage if meaningful access is to occur such as 5G networks.²⁶ Indonesia is assumed to have the largest internet users in the world. No doubt, Indonesia is also affected by the digital economy, especially in terms of business competition. As we see by market share, there is a relationship between the control of the digital company market and search engine platforms, social media, video sharing,

²⁵ Tresnawati, "Indonesian Anti-Trust Relaxation: Urgency for Implementation Provision and Its Correlation with Gotong Royong Principle," *Jurnal Bina Mulia Hukum* 6, no. 2 (2022): 187-200.

²⁶ Competition Commission South Africa, "Competition in the Digital Economy," accessed March 20, 2022, http://www.compcom.co.za/wp-content/uploads/2020/09/Competition-in-the-digital-economy_7-September-2020.pdf.

payment systems and as an accumulation, the strength of the four platforms above will strengthen the company`s market share in the relevant market²⁷

The Indonesian Competition Lawyers Association (ICLA) explained that there are several violations of business competition will potentially occur in the digital economy era²⁸. First, abuse of dominant position where business actors who have significant market power already have a big role in digital platforms considering that in digital platforms, business actors will be facilitated to collect buyer data. As a result, there will be an exclusive agreement between these business players and their consumers, and small competitors lose their competitiveness.²⁹ Lastly, the possibility of a cartel. With the advent of digital platforms, pricing among competitors in the market has become more transparent and accessible when the data and algorithms made the businesses to predict market trends, map consumers, and adjust their pricing strategies.³⁰ Most likely, variants of unfair business competitions will change as the era of big data will shape new competition behaviour.

This happened due to the characteristic of digital business in carrying out its business activities in obtaining data and information from vast majority of people who have limited space and time, so they access or use social media to facilitate communication with others. Personal data and information submitted to use applications and social media, combined with artificial intelligence tracks their behaviour pattern are desirable targets for business actors. This tendency will even be larger for business actors in dominant positions. Hence, an in-depth study required on how this personal data was used by business actors to interact with other business actors, or to preserve their dominant positions, direct consumers or even to rule as a monopolist. E-commerce consumers are helpless as a weaker party and this will require regulations on personal data protection. So far, Indonesian government has not

²⁷ Komisi Pengawas Persaingan Usaha, “Penelitian Pelaku Usaha dan Struktur Pasar Pada Sektor Ekonomi Digital,” *Ringkasan Eksekutif* (2020): 9, <https://kppu.go.id/wp-content/uploads/2021/01/Ek.-Digital-2020-Ringkasan-Eksekutif.pdf>.

²⁸ Fitri Novia Heriani, “Ini Potensi Pelanggaran Persaingan Usaha di Era Digital,” *Hukum Online*, accessed March 25, 2022, <https://www.hukumonline.com/berita/a/ini-potensi-pelanggaran-persaingan-usaha-di-era-digital-lt6006b094f0131?page=2>.

²⁹ *Ibid.*

³⁰ *Ibid.*

succeeded in passing Law on Personal Data Protection, although has already minimum protection based on Ministry of Communication and Information Technology Regulation No 20 Year 2016 on Personal Data Protection. Urgency of future amendment to Law No. 5 Year 1999 is also in the pipeline.

Indonesian House of Representatives has suggested a bill for the Amendment of Law No. 5 Year 1999. It started in October 2016 and has become one of prioritized bill on National Legislation Program (Prolegnas) for 2015-2019. But in fact, the deliberation of this bill had ceased in July 2017 precisely on the first-level deliberation. Its priority status was also omitted from priority list on Prolegnas since part of Job Creation Law No. 11 Year 2020 was promulgated. The amendment of Anti-Trust Law section in Job Creation Law are more to the procedural and empowerment of Business Competition Supervisory Commission than to its substance. To adjust with digital business competition, it seems that the next project on Anti-Trust Law Bill might need further coordination with consumer protection law and personal data protection law.

B.6. The consequences of implementation blockchain based on indonesia anti-trust law

Blockchains can facilitate more decentralized industry structures, by allowing markets to split into two layers: a foundation layer (or an “infrastructure” layer) with numerous participants, and a “network” layer that connects providers.³¹ When no provider can exercise a direct form of control on the foundation, no blockchain participant can possibly abuse any natural monopoly at that level.³²

By its the decentralized consensus that monitored by the government together with Business Competition Supervisory Commission (KPPU), it seems that all the business firm in Indonesia will be far obvious and auditable, in view that all transactions and data are seen to approved participants and are traceable in the ledger. The two types of blockchain, public and

³¹ Thibault Schrepel and Vitalik Buterin, “Blockchain Code as Anti-trust,” *Berkeley Technology Law Journal* (May 2020): 10, <https://dx.doi.org/10.2139/ssrn.3597399>.

³² *Ibid.*

private will be the choice for surveillance of business competition in Indonesia. First, by looking of all information and transactions recorded on public blockchains are, to some extent, visible by all.³³ Due to the public blockchain increases transparency among users, the number of anti-competitive practices may be lower in public blockchain than in other technology markets. In the case of private blockchains, transactions are only visible to users if they are designed to be so. As the mechanism by which users would vote to reveal the identity of an individual involved in anti-competitive practices on a private blockchain, a mechanism could be developed in which blockchain users vote on the creation of forks, determined by courts or anti-trust agencies, in order to delete or stop transactions.³⁴

No doubt, if public blockchain is truly applied in Indonesia, the existence of Indonesian anti-trust law will be questionable to some extent. The decentralized consensus will make all the transactions will be obviously monitored by the government in one chain. If this blockchain was made to be public, decreasing of monopoly and cartel will be obvious. Monopoly and cartel will decrease if the transactions of every firm are recorded in this chain. Government will be monitored well the competition among all the business actors in one area and minimize the illegal activity. There will be a condition when market and industry surveillance will make it easier to detect illegal activity, reducing the incentive to engage this in practices.

Blockchain application in businesses will create a good image to foreign investors due to the rapid growth in Indonesia to adjust the latest technology. The decentralized transactions among the business firms in Indonesia will show the transparency and give a legal certainty to the investors. This indicates the competition between both domestic and foreign firms are in equal position which is ideal to any stakeholder.

³³ Most of the data put in the blockchain is encrypted so that only people with the right keys can decrypt it. However, the “visible effect” remains the rule and the protocol design is visible by all. Therefore, when anticompetitive practices are set up in the blockchain, that information is visible. Only the manifestation of that practice may be encrypted. See Thibault Schrepel, “Is Blockchain the Death of Anti-trust Law? The Blockchain Anti-trust Paradox,” *GEO. L. TECH. REV.* 3, no. 2 (2019): 308, <https://doi.org/10.2139/ssrn.3193576>.

³⁴ *Ibid.*, 333.

Moving forward to prohibited agreements, as regulated in Chapter III of Law No. 5 Year 1999. In case business actors using the public one, this type of blockchain is freely accessible and usable. As a result, it is unlikely that it will be used by any specific product. Given the difficulty of changing the public blockchain, such practices are unlikely to be seen on the public blockchain. Conventions of practice in blockchain are required to be incorporated into governance design from the day the blockchain is created, something which will not be applicable simultaneously for every business actor, as they have their own timelines. It is likely that business actors would use private blockchains which meets their schedules, conditions, and interests, which might lead to the possible violations of trust when there is an agreement among the business actors. Thus, recorded transactions on the blockchain can be used as indirect evidence that can be associated to proof of communication between business actors. However, it is noteworthy to mention that trust³⁵ is an adoption from Sherman Act and there has been no case law regarding trust here in Indonesia.

Most likely, public blockchains would be applicable for public bureaucracy, while private blockchain will be used by companies both for their business-to-business and business-to-consumer issues. Nevertheless, the consequence of private one will be different case. The private blockchain can change the protocol with the consent of the relevant businessmen without having to convince anyone, including the government itself, to approve the change. This change is very influential for business actors want to deal with transactions being executed by competitors, from production to marketing. Especially on tying and predatory pricing models will be difficult to implement due to the decentralised consensus model, if software updates with additional obligations or higher transaction fees were implemented then they would only be adopted if users controlling 51% of the global processing power were convinced to implement them.³⁶ Lastly, this self-decision in private

³⁵ According to Article 12 *Law No. 5 Year 1999*, trust happen when there's a cooperation by establishing a joint company or a larger company, by keeping and maintaining the continuity of each company or its member, with the aim of controlling production and or marketing of goods and or services.

³⁶ Pat Treacy and Alex Latham, "Blockchain and Competition Law," *European Competition Law Review* 41, no. 12 (2020): 607.

blockchain will complicate government in terms of supervision of competition between business actors especially this one related to agreements among business actors.

Second, in relation to the prohibited activities stated on Chapter IV Law No. 5 Year 1999. Those prohibited activities will get a big impact due to this application of blockchain. Public blockchain will effectively limit the monopolization. Transactions executed on the public blockchain are visible to all business actors. Market oversight and industry oversight are carried out by both government leaders and business actors, reducing incentives to engage in anti-trust practices. Different case if there are some business firms do the transaction over their own private blockchain that below their own authorities. There will be, the same issues arise outside the scope of unilateral practices, namely, for collusive agreements where the identification of colluders and the unsuitability of existing mechanisms to stop and punish such practices is equally problematic.³⁷ *UnitedCorp v Bitmain*³⁸ in the US with more familiar proceedings, including market manipulation, give a glimpse of another possible collusion practice. In December 2018 UnitedCorp, a diversified technology company, sued Bitmain, the largest Bitcoin mining pool, over an alleged anti-competitive scheme³⁹. UnitedCorp alleged that a number of investors and mining pools colluded to support a specific fork of bitcoin over an alternative and as a consequence caused the price of the forks to fall, causing damage to UnitedCorp's investments⁴⁰.

Abuse of dominant positions are in the next chapter of Indonesian Anti-Trust Law. Most likely, abuse of dominant position will not be occurred in public blockchain due to its transparency. It is also hard to imagine that abuse of dominant position to happen in private blockchain when protocols have been applied since the very first time of blockchain go live, surely it will prevent abuse of dominant positions between blockchain stakeholders.

³⁷ Schrepel, "Is Blockchain the Death of Anti-trust Law?", 336.

³⁸ *UnitedCorp v Bitmain Inc. et al.*, Case number 1:18-cv-25106, in the US District Court for the Southern District of Florida.

³⁹ Treacy and Latham, "Blockchain and Competition Law," 606.

⁴⁰ *Ibid.*

In the previous section, it has been discussed that abuse of dominant position will be the most potential frequent infringement to the anti-trust law in digital era. Most likely, there is no potential frequent infringement of abuse of dominant position within blockchain, yet dominant positions will relate with the AI application in collecting all consumer's personal data which would predict consumer's future preference and behaviour, and in the end would maintain its supremacy in its dominant position, or even worse, lead to monopolistic practices. This is domain of personal data protection and AI ethics, out of anti-trust domain.

Lastly, the regulation on blockchain application. As abovementioned, currently there is no Indonesian regulation controlling use of a blockchain. Indonesia only has some regulations that regulated blockchain from the sides of investment, as majority of Indonesian people is not familiar with the nature of blockchain and consider it as parts of bitcoins, and even more distracted by the fact that Indonesian regulation deems bitcoins not as a currency but as a trading commodity. At least for now, Indonesian government still assumes the deployment of blockchain will evolved in investment and digital payment by the regulation of Bank Indonesia and Commodity Futures Trading Regulatory Agency (BAPPEBTI).

When blockchain is implemented, the current business competition regulations will not be enough to regulate competitions in blockchain era. There will be an urgency for Indonesia to amend it, preferably with an omnibus approach which includes coordination of blockchain related regulations. As mentioned beforehand, the future blockchain regulation would be amended simultaneously at least with government procurement, public governance, anti-trust law, consumer protection law, e-commerce related law, commodity trading related law. Indonesia may also refer to United States and Japan regulation regarding how they regulate blockchain application as the top two on blockchain application. Japan deems blockchain as part of cryptocurrency based on their function in this digital business and there is no omnibus regulation governing blockchain-based tokens⁴¹ itself. Nevertheless, Japan made the regulation regarding this kind of tokens under supervision by Crypto Asset

⁴¹ Takeshi Nagase, Tomoyuki Tanaka and Takato Fukui, "Blockchain & Cryptocurrency Laws and Regulations 2022 | Japan," Global Legal Insights, accessed June 22, 2022, <https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/japan/amp>.

Exchange Services, Japan Financial Services Agency and also Japanese Payment Services Act. Afterwards, referring to Japanese anti-trust law, Japanese Fair Trade Commission has been updating and amending its guidelines to apply the Antimonopoly Act (AMA) regarding the digital market, in 2021, the JFTC announced that it engaged four experts in digital area, such as 5G, artificial intelligence (AI), digital advertising, and digital privacy, as ‘digital special advisers’⁴². This fact would be required in preparing amendment of Indonesian competition law.

As abovementioned the lack of Indonesian Competition Law, Indonesia may refer to Japan in revising articles regarding digital business in Indonesian Competition Law. This would also lead to the future blockchain era when anti-trust authorities can no longer rely on conservative pyramidal structures nor continue to operate in a closed circle on the model of nation-state-led government⁴³.

C. Conclusion

Blockchain might be defined as an innovative technology that can radically change the way digital commerce. It will be easier for Government to control business firms and transactions if blockchain is implemented in Indonesia. Though, on a pessimistic side, blockchain may facilitate execution of anti-competitive practices, particularly in form of prohibited agreements through trust-less smart-contract features⁴⁴. From perspectives of public blockchain, anti-trust law might be considered unnecessary. But there will be contrasted perspectives if private block chain is applied, as private blockchain will facilitate more anti-competitive practices due to its private nature. Consequently, Indonesian anti-trust law will not lose its function, although it might need some adaptation. Definitions of

⁴² Hideki Utsunomiya, Yusuke Takamiya and Yuka Hemmi (Mori Hamada & Matsumoto), “Japan,” Digital Markets Guide-First Edition, Global Competition Review, Accessed June 22, 2022, <https://globalcompetitionreview.com/guide/digital-markets-guide/first-edition/article/japan>

⁴³ Schrepel, “Is Blockchain the Death of Anti-trust Law?”, 332.

⁴⁴ Aldo Suhartono Putra, “Hukum Persaingan 4.0: Issue Bigdata Artificial Intelligence dan Blockchain dalam Konteks Hukum Persaingan Usaha di Era Industri Ekonomi Digital,” *Dharmasiswa* 1, no. 3 (September 2021): 1131-1142, <https://scholarhub.ui.ac.id/dharmasiswa/vol1/iss3/4>.

prohibited agreements prohibited activities, and abuse of dominant positions shall be adjusted withinside the perspective of private blockchain. In regard to surveillance of blockchain, KPPU will have to involve more experts in artificial intelligence (AI), digital advertising, and digital privacy – as it is in Japan, work on digital perspective of amendment of Indonesian competition law and also have to adjust sanctions for business actors. Lastly, Competition law must affirm relevant type of blockchain to apply within the scope of the law, most likely the relevant type is private blockchains – as there is almost no risk of anti-competitive conduct in public blockchain. Law related blockchain shall consider on government authorities in terms of intervention in transactions in blockchain, which is immutable in default, but in fact can be altered based on consensus – though still traceable, among all nodes, which might be twisted by authority’s decree or court’s decision.

REFERENCES

Laws and Regulations

Law Number 5 Year 1999 concerning Prohibition of Monopolistic Practices and Unfair Business Competition.

Law Number 11 Year 2008 concerning Electronic Information and Transactions.

Law Number 11 Year 2020 concerning Job Creation.

Government Regulation Number 15 Year 2021 concerning Implementing Regulation of Law Number 6 Year 2017 concerning Architects.

Books

Lubis, Andi Fahmi. *Competition Law: Textbook*, 2nd Ed. Jakarta: KPPU, 2017.

Murphy, Robert P., and Silas Barta. *Understanding Bitcoin: The Liberty Lover’s Guide to the Mechanics and Economics of Crypto-Currencies*. California: Createspace Independent Pub, 2015.

Journal Articles

Catalini, Christian and Catherine Tucker. “Anti-trust and Costless Verification: An Optimistic and a Pessimistic View of the Implications of Blockchain Technology.” *MIT Sloan Research Paper*, no. 5523-18 (2018): 1-14. <https://doi.org/10.2139/ssrn.3199453>.

- Cong, Lin William and Zhiguo He. “Blockchain Disruption and Smart Contracts.” *SSRN Electronic Journal* (December 2018): 1-40. <https://dx.doi.org/10.2139/ssrn.2985764>.
- Dwyer, Gerald P. “The Economics of Bitcoin and Similar Private Digital Currencies.” *Journal of Financial Stability* 17 (2015): 81-91. <https://doi.org/10.1016/j.jfs.2014.11.006>.
- Miller, Evan. “A Tale of Two Regulators: Anti-trust Implications of Progressive Decentralization in Blockchain Platforms.” *Washington and Lee Law Review Online* 77, no. 2 (2021): 387-409.
- Putra, Aldo Suhartono. “Hukum Persaingan 4.0: Issue Bigdata Artificial Intelligence dan Blockchain dalam Konteks Hukum Persaingan Usaha di Era Industri Ekonomi Digital.” *Dharmasiswa* 1, no. 3 (September 2021): 1131-1142. <https://scholarhub.ui.ac.id/dharmasiswa/vol1/iss3/4>.
- Sabirin, Ahmad and Raafid Haidar Herfian, “Dampak Ekosistem Digital terhadap Hukum Persaingan Usaha di Indonesia serta Optimalisasi Peran Komisi Pengawas Persaingan Usaha (KPPU) di Era Ekonomi Digital”, *Jurnal Persaingan Usaha* Vol 2 (2021), <https://doi.org/10.55869/kppu.v2i.23>
- Scholz, Lauren Henry. “Algorithmic Contracts.” *Stanford Technology Law Review* 20, no. 2 (2017): 128-169. <https://ir.law.fsu.edu/articles/607>.
- Schrepel, Thibault. “Is Blockchain the Death of Anti-trust Law? The Blockchain Anti-trust Paradox.” *GEO. L. TECH. REV.* 3, no. 2 (2019): 281-338. <https://doi.org/10.2139/ssrn.3193576>.
- _____, and Vitalik Buterin. “Blockchain Code as Anti-trust.” *Berkeley Technology Law Journal* (May 2020): 1-13. <https://dx.doi.org/10.2139/ssrn.3597399>.
- Treacy, Pat, and Alex Latham. “Blockchain and Competition Law.” *European Competition Law Review* 41, no. 12 (2020): 602-608.
- Tresnawati, Angelina Marlina Fatmawati. “Blockchain-Based Smart Contract: Advancing Digital Consumer Protection and Preventing Private International Law E-Commerce Cases.” *Yustisia Jurnal Hukum* 10, no. 3 (2021): 354-368. <https://doi.org/10.20961/yustisia.v10i3.54891>.
- Tresnawati. “Indonesian Anti-Trust Relaxation: Urgency for Implementation Provision and Its Correlation with Gotong Royong Principle.” *Jurnal Bina Mulia Hukum* 6, no. 2 (2022): 187-200.

Thesis or Dissertations

- Fatmawati, Angelina Marlina. “Urgensi Pengaturan Smart Contract dalam Sistem Hukum Indonesia: Studi Terhadap Pengaturan Smart Contract di Negara Belarus.” Bachelor’s Thesis, Faculty of Law, Universitas Kristen Maranatha, Bandung, 2021.

Scientific Papers or Focus Group Discussions

- Guegan, Dominique. “Public Blockchain versus Private Blockchain.” Documents de travail du Centre d’Economie de la Sorbonne, Université Panthéon-Sorbonne (Paris 1),

Centre d'Economie de la Sorbonne. Paris, 2017.
<https://EconPapers.repec.org/RePEc:mse:cesdoc:17020>.

Komisi Pengawas Persaingan Usaha, “Penelitian Pelaku Usaha dan Struktur Pasar Pada Sektor Ekonomi Digital”, Ringkasan Eksekutif (2020):9 <https://kppu.go.id/wp-content/uploads/2021/01/Ek.-Digital-2020-Ringkasan-Eksekutif.pdf>

Court and/or Arbitration Document

United Corp v Bitmain Inc. et al., Case number 1:18-cv-25106, in the US District Court for the Southern District of Florida.

Website Contents

Competition Commission South Africa. “Competition in the Digital Economy.” Accessed March 20, 2022. http://www.compcom.co.za/wp-content/uploads/2020/09/Competition-in-the-digital-economy_7-September-2020.pdf.

Heriani, Fitri Novia. “Ini Potensi Pelanggaran Persaingan Usaha di Era Digital.” Hukum Online. Accessed March 25, 2022. <https://www.hukumonline.com/berita/a/ini-potensi-pelanggaran-persaingan-usaha-di-era-digital-lt6006b094f0131?page=2>.

IBM. “What is Blockchain for Business?” Accessed March 10, 2022. <https://www.ibm.com/topics/blockchain-for-business#:~:text=Blockchain%20for%20business%20is%20valuable,build%20trust%20and%20remove%20friction>.

Nagase, Takeshi. Tomoyuki Tanaka and Takato Fukui, “Blockchain & Cryptocurrency Laws and Regulations 2022 | Japan.” Global Legal Insights. Accessed June, 22 2022 <https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/japan/amp>

Rosic, A. “What are Smart Contracts?” Blockgeeks.com. Accessed March 10, 2022. <https://blockgeeks.com/guides/smart-contracts/>.

Santoso, Wahyu Budi. “Perkembangan Blockchain di Indonesia Semakin Masif.” Sindo News. Accessed March 20, 2022. <https://tekno.sindonews.com/read/700155/207/perkembangan-blockchain-di-indonesia-semakin-masif-1646129031?showpage=all>.

Sharma, Toshendra Kumar. “Top 10 Countries Leading Blockchain Technology in The World.” Blockchain Council. Accessed April 25, 2022. <https://www.blockchain-council.org/blockchain/top-10-countries-leading-blockchain-technology-in-the-world/>.

Szabo, Nick. “Smart Contracts: Building Blocks for Digital Markets.” Accessed March 10, 2022. https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/L_OTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html.

- UCL Centre for Blockchain Technologies. “Distributed Ledger Technology in the Supply Chain.” Accessed February 12, 2022. http://blockchain.cs.ucl.ac.uk/wp-content/uploads/2019/08/DLT-in-the-Supply-Chain_UCL-CBT.pdf.
- Utsunomiya, Hideki. Yusuke Takamiya and Yuka Hemmi (Mori Hamada & Matsumoto), “Japan.” Digital Markets Guide-First Edition, Global Competition Review. Accessed June 22, 2022. <https://globalcompetitionreview.com/guide/digital-markets-guide/first-edition/article/japan>
- Wibowo, Wahyudi. “Persaingan Usaha di Era Ekonomi Digital.” Berita Satu. Accessed February 16, 2022. <https://www.beritasatu.com/opini/7591/persaingan-usaha-di-era-ekonomi-digital>.