Interplay Between Competition Laws & Blockchain Technology

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The Blockchain and the implication of Competition laws in the Blockchain are two varied ideas. But still, the competition law can be applied in its pure sense to blockchain technology in India. They are far different yet they intersect concepts that can help to create the new business ecosystem regulations. In the first instance, we will try to understand the Blockchain and its regulations and then apply the competition framework present in India. i.e., Competition Act, 2002 (Hereinafter referred to as Act). 'Blockchain' is a database that stores lists of not centralized entries yet, which cannot be easily changed after creation. There are blocks in a Blockchain ecosystem with some records entered using the cryptography method, with each block connected and checked by the hash function to other blocks.[1] In most circumstances, a blockchain is manageable via a peer-to-peer network (P2P) through a compulsory block-changing consent process.[2]

Keywords: *blockchain, competition, agreement.*

INTRODUCTION

For applying the competition law to the Blockchain, there is one influencing factor that we have to consider and i.e., whether the participation in blockchains amounts to or can define as

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[1] Arvind Narayanan and others, *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction* (Princeton University Press 2016)

[2] Rodney D Ryder & Nikhil Naren, *Internet Law: Regulating Cyberspace and Emerging Technologies* (Bloomsbury Professional India 2020)

an agreement? Under the Act, the agreement is defined as "any arrangement or understanding or action in concert"[3]. As per this definition, one can derive that the object and legality of the agreement is no concern when it comes to competition law. And hence it can be said that whenever two individual parties or firms participate in the Blockchain with the predefined rules, they agreed upon there is an agreement between them. And hence as it is falling within the ambit of an agreement, the application of competition law becomes easier.

It can be said that the Blockchain is the union of many entries, and hence there is no single power that takes all the decisions, and multiple entities take decisions. So here, the question arises: Can a combined dominance by all the entities be considered as dominant enterprises within the ambit of the Act? But the concept of combined dominance is not there in Indian law. The blockchain may be considered as an enterprise because the enterprise is defined under the Act as "a person or a department of the government"[4] and person also include "an association of persons or a body of an individual, whether incorporated or not, in India or outside India"[5] if we read the definitions of enterprises and person together then we can include the Blockchain application within the Act.

Another concern regarding the Blockchain issue is the jurisdiction of the Competition Commission of India (hereinafter referred to as CCI). As blockchain technology doesn't have any restriction of geographical boundaries, it can exist across the globe. And thus, it creates an issue about the jurisdiction of the CCI to regulate blockchain technology. But section 32 of the Act empowers the CCI to regulate the abuse of dominance, anti-competitive agreement, and cross-border mergers and acquisitions, taking place out the boundaries of India but having an adverse ill effect on competition policies in India. In this manner, the collective regulations from all the competition authorities will place an important role.[6]

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[3] Competition Act 2002, s 2(b)
[4] Competition Act 2002, s 2(h)
[5] Competition Act 2002, s 2(1)
[6] Thibault Schrepel, '*Is Blockchain the Death of Antitrust Law? The Blockchain Antitrust Paradox'* (2018) 3 Geo L Tech Rev 281 <https://ssrn.com/abstract=3193576> accessed 15 October 2021

Blockchain as a concept has been around for several decades, and its business models have grown along with it. Using the Indian Competition Act, 2002 as a framework, the current section of this article will determine the state of the blockchain market. Before we get started, it's important to remember that a blockchain network serves the needs of three different types of entities: blockchain developers, participants/users, and cryptocurrency miners. Furthermore, it is vital to comprehend the policies of blockchain in order to establish whether the agreements are anti-competitive or pro-competitive in nature within the meaning of the Act.

BLOCKCHAIN AND ANTI-COMPETITIVE AGREEMENTS

As stated in the Preamble, one of the purposes of the Act is to avoid harmful competitive activities. Competition between products and services suppliers will stabilize prices at an acceptable level in markets that operate unimpededly. Price agreements are standard ways to interfere with the process of competition and ultimately reduce or eliminate competition. If competition is significantly damaged, such agreements are anti-competitive.

Section 3(3) addresses specific anti-competitive agreements, practices, and decision-making by cartels for those providing similar or comparable goods or services. The vertical restrictions imposed by agreements between companies in various phases of manufacturing and supply shall be dealt with under paragraph 3(4). The maker and a seller are basic examples of that kind of partnership. As the scope of an agreement is broad enough, the phrase 'accord' is employed for concerted and informal understanding. The agreement is covered by the one clause that may be between undertakings, companies or persons, or associations of persons. The agreement should be for the manufacture, delivery, distribution, stockpiling, purchase, or control of products or services. If the agreement causes or is expected to cause, significant adverse effects on competition in India, section 3 shall be prohibited and declare such an agreement as unlawful.

HORIZONTAL AGREEMENT (SECTION 3(3) OF THE ACT)

When the firms are engaged in the same economic activity, the anti-competitive agreements become collusion or bid-rigging. For a collusive agreement to be successful in blockchain technology, there are mainly three ingredients that have to be fulfilled, and they are:

I.   Exchange of information and arriving at mutually agreed strategy,

II.   The self-enforcing self contracts,

III.   There should not be or less uncertainty about the market positions.

I. Exchange of information and arriving at a mutually agreed strategy

It is very easy to share a large amount of data or information through the blockchain, which helps to increase transparency. Transparency is the key to boosting the competition, but in some cases, it is possible for the member of that blockchain to access the information of his competitors. Unless the blockchain developer takes any precautionary measures, the information therein ledger is accessible to all the blockchain participants. And hence the adequate measures should take place so that this feature does not enable competitors to observe other competitors actions.

II. The self-enforcing smart contracts[7]

Aside from the exchange of sensitive information, the CCI forbids any behavior or collaboration that could have a negative impact on the competitive environment. In view of the foregoing, the usage of smart contracts in blockchains may prove to be effective collusive tools, raising serious anti-competitive implications. In their most basic definition, smart contracts are self-executing digital contracts that are automatically performed depending on the fulfillment of specified circumstances, with no need for human interaction on either

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[7] Vishal Rajvansh & Saumya Sinha, 'The Interactio between Blochchain and Competition Law in the Indian Competition Regime'*(Kluwer Competition law Blog,* 2021) <http://competitionlawblog.kluwercompetitionlaw.com/2021/05/05/the-interaction-between-blockchain-and-competition-law-in-the-indian-competition-regime/> accessed 16 October 2021

side.[8] These agreements are used for various transactions in a blockchain. To their credit, smart contracts may be designed to automatically define punitive measures against collusions, increasing the transparency advantage that blockchains provide while also encouraging more competitive business practices.[9] Although they have the potential to facilitate collusions and make them more dynamic,[10] such contracts can be developed by parties to a blockchain to automatically construct agreements upon automated fulfillment of requirements based on the shared information.[11] Essentially, intelligent contracts are computerized programs based on algorithms.[12] When it came to Hyundai Motor Company and Kia Motors Corporation,[13] the CCI concluded that while the use of algorithms in and of itself is not discriminatory, such algorithmic techniques should not be utilized to encourage anti-competitive behavior in the relevant market.[14]

III. There should not be or less uncertainty about the market positions

The market uncertainty is the reason due to which the stability of the cartel may affect. However, the maximum number of players who will participate in blockchain will reduce such uncertainty. Hence to conclude, we can say that it is not always true to assume that collusion takes place in blockchain technology. But the risk of such collisions is very high considering the transparency and sharing of sensitive information about the competitors and markets. And thus, just like other industries, blockchain also needs to avoid certain conducts. And ensure that the competition-sensitive data is not shared among the competitors.

BLOCKCHAIN AND ABUSE OF DOMINANCE

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[8] Lin William Cong & Zhiguo He, 'Blockchain Disruption and Smart Contracts', [2018] *NBER Working Paper No\ 24399*

[9] *Builders Association of India v Cement Association of India & Ors* Case No 29/2010

[10] Thibault Schrepel, 'Collusion by blockchain and smart contracts' *(2019) 33(1) Harvard Journal of Law and Technology*

[11] Lianos, 'Blockchain Competition – Gaining Competitive Advantage in the Digital Economy: Competition Law Implications' (*Oxford University Press*, 2019) <https://www.ucl.ac.uk/cles/sites/cles/files/cles_8-2018.pdf.> accessed on 14 October 2021

[12] Eliza MIK, 'Smart contracts: Terminology, technical limitations and real-world complexity' (2019) 9(2) *Law, Innovation and Technology* <https://ink.library.smu.edu.sg/sol_research/2341.> accessed on 14 October 2021

[13] Hyundai Motor Company and Kia Motors Corporation, Combination Registration No C-2019/09/682

[14] *Ibid*

To understand the abuse of dominance under competition laws, one has to analyse the market power, i.e., market dominance and the impact of the dominance over the competition. But for understanding the abuse of dominance and the entity's market power, we have to understand the concepts of relevant product market and relevant geographical market.

RELEVANT PRODUCT MARKET

"The relevant product market constitutes all items or services that, because of the qualities of the products or services, their prices, and the intended purpose, were regarded as interchangeable or alternatives for the consumer." In the consumer's view, these products or services all compete with each other, so all such products and services from the product market can be used alternatively.

In the case of blockchain application, there are different ways in which the relevant market may be defined, and they are as[15]:

I. Each blockchain as a separate relevant market

This condition applies only if there is no viable alternative to the current blockchain, either in non-blockchain or in any other offline medium. In a nutshell, this type of situation may arise when a blockchain application is developed in order to create a new market that does not currently exist.

II. Blockchains with similar applications as one relevant market

A relevant product market may be defined by a market analyst when there are no equivalent non-blockchain applications available. Blockchains that provide identical applications may be considered relevant product markets in this situation. Blockchain applications that create products or services that are relatively new but that are similar to existing products or services are the most likely candidates have to take into consideration for this type.

III. Relevant market consist of similar blockchain and non-blockchain application

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[15] Schrepel (n 6)

As a result, when they are all close substitutes, the relevant product market can be described as including the original product, similar blockchain applications, and other similar digital/non-digital substitutes (if any).[16] Online sales and offline sales from brick-and-mortar stores are treated in the same way as part of the same relevant market in this manner.

In the case of a blockchain application, the delineation of a relevant market is dependent on the future development of blockchain technology as well as the facts of the particular case (with particular emphasis on the availability or absence of near replacements to the blockchain application in question).

RELEVANT GEOGRAPHICAL MARKET

A geographic market is defined as "geographic market is not simply the physical territory in which competing enterprises operate; it is also the portion of the territory in which the conditions of competition for the supply of goods or services, or the demand for goods or services, are distinctly homogeneous and distinct from those in neighbouring areas." Furthermore, section 19 (6) lays down the factors that should be considered while determining the relevant geographical market.

Where the identity of the blockchain participants and their respective geographical location is unknown, finding out the geographical boundaries to decide the relevant market is a very complex task. The details in the blockchain with a fake identity will complicate defining the relevant geographical market. Defining relevant geographical markets will be easy if the identities and locations of the participating nodes are known. And hence it will completely depend on the case and its fact to decide geographical market.

MARKET POWER (DOMINANCE)

Market power is assessed by various factors, and it does differ from case by case. The share of the company is a more important aspect while considering the market power. Suppose the market comprises only of the blockchain. In that case, the number of transactions, active users,

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[16] *Ibid*

total revenue, number of blocks, etc., will be considered to decide the firm's dominance. Suppose the market is comprised of both blockchain and non-blockchain applications, in that case, the market shares can be assessed based on the number of transactions, active users, total revenue, number of blocks, etc. Barriers to entry are the most important factor that has to take into consideration. If there are no barriers or fewer barriers for the new entry, market power may be limited. Blockchain with a high market share will not increase the price suddenly as such a high price will imply high profitability and incentivize the new player to enter the market. Conversely, more barriers in new entry show the increased market power.

While deciding the market power of blockchain applications, the presence and absence of network effects will also be an essential factor. The network effect means an increase in the total number of participants of goods or services increases the network's value for the user. And hence it is very difficult to conclude that a particular blockchain application is dominant and abusing its market power in blockchain applications.

THE WAY FORWARD

While the CCI's efforts to raise awareness of the potential risks involved with the usage of blockchain technology have been praiseworthy in the past, they should be applauded for their continued efforts. Simply acknowledging the existence of anti-competitive concerns, on the other hand, will not result in the resolution of such problems. Consequently, a temporary system is required immediately in order to prevent the emergence of such difficulties and the occurrence of such problems in the first place. The fact that it has become obvious that blockchain falls within the purview of the Act does not preclude the possibility that the current provision under Section 3 will not be sufficient to deal with the conflicts that may emerge as a result of this.