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A Critical Analysis Of Potential Legal Challenges For Blockchain Technology In Competition Law

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Introduction to the concept of Blockchain Technology

The block chain is a distributed database of records of all transactions or digital events that have been executed and shared among participating parties. Each transaction is verified by the majority of participants of the system. Bit Coin is the most popular crypto currency, an example of the block chain. Block chain Technology first came to light when a person named 'Satoshi Nakamoto' published a white paper on "Bit Coin: A peer to peer electronic cash system" in 2008. Block chain Technology Records Transaction in Digital Ledger which is distributed over the Network thus making it incorruptible. Anything of value like Land Assets, Cars, etc. can be recorded on Block chain as a Transaction.

In the simplest terms, Block chain can be described as a data structure that holds transactional records and while ensuring security, transparency, and decentralization. It is a network which is completely open to anyone and breaking it is extremely difficult. Each transaction on a block chain is secured with a digital signature that proves its authenticity. Due to the use of encryption and digital signatures, the data stored on the Blockchain is tamper-proof and cannot be changed. Each block in a blockchain network stores some information along with the hash of its previous block. A hash is a unique mathematical code which belongs to a specific block. If the information inside the block is modified, the hash of the block will be subject to modification too. The connection of blocks through unique hash keys is what makes blockchain secure.

Blockchain technology allows all the network participants to reach an agreement, commonly known as consensus. All the data stored on a blockchain is recorded digitally and has a common history which is available for all the network participants. This way, the chances of any fraudulent activity or duplication of transactions is eliminated without the need of a third-party.
Let's understand blockchain with the help of an example. Let us say if A needs to send money to his friend B who lives in a different location. Normally people in such cases will use PayPal or Paytm-online transactions-net banking. In order to process such transactions banks take time and since there is a process involved it comes with an extra fee which needs to be paid for such transactions like transferring fee. Moreover, security becomes a concern as high possibility of hacker disrupting the network is there. So, whether it be transaction fee or hacking, in both the cases the customer is always at the losing end. And this is when Blockchain technology comes into picture. In the gives example if instead of bank we use blockchain the transaction becomes simple and safe and secure. There are no extra funds which are required. There is third party elimination. And science its decentralized the chances of its being corrupted by any hacker is eliminated.
Blockchain is the backbone Technology of Digital Crypto Currency and Bit Coin.

It contains every single record of each transaction. There's a common misconception among people that Bit coin and Blockchain are one and the same, however, that is not the case. Creating crypto currencies is one of the applications of Blockchain technology and other than Bit coin, there are numerous applications that are being developed on the basis of the blockchain technology. While

transactions take place on a blockchain, there are nodes on the network that validate these transactions. In Bit coin blockchain, these nodes are called as miners and they use the concept of proof-of-work in order to process and validate transactions on the network.

The attributes of blockchain

The five attributes associated with blockchain technology are- its Distributed, its Secure, its Transparent, its Consensus-based and its Flexible.
In a nutshell, here's how blockchain allows transactions to take place:

1. A blockchain network makes use of public and private keys in order to form a digital signature ensuring security and consent.
2. Once the authentication is ensured through these keys, the need for authorization arises.
3. Blockchain allows participants of the network to perform mathematical verification and reach a consensus to agree on any particular value.
4. While making a transfer, the sender uses their private key and announces the transaction information over the network. A block is created containing information such as digital signature, timestamp, and the receiver's public key.
5. This block of information is broadcasted through the network and the validation process starts.
6. Miners all over the network start solving the mathematical puzzle related to the transaction in order to process it. Solving this puzzle requires the miners to invest their computing power.
7. Upon solving the puzzle first, the miner receives rewards in the form of bitcoins. Such kind of problems is referred to as proof-of-work mathematical problems.
8. Once the majority of nodes in the network come to a consensus and agree to a common solution, the block is time stamped and added to the existing blockchain. This block can contain anything from money to data to messages.
9. After the new block is added to the chain, the existing copies of blockchain are updated for all the nodes on the network.

Applicability of Indian Competition Law to Blockchain Technology

The concept of competition law is yet to have complete clarity as it was introduced very recently. Competition law has a relationship with all the contemporary issues and that is the reason there is ground for development. The concept of block chain technology can be considered to be falling under the purview of the definition of 'enterprise' as per the act. The Competition Act 2002 defines certain terminologies that are relevant for day to day scenarios. The question that arises here is whether the term enterprise is defined in any manner as anti competitive to market practices. Now looking into the definition of enterprise, it explains any entity that is engaged in economic activity.

Potential legal challenges for Block chain technology

Jurisdiction

Blockchain Technologies are not limited to one area or territory and the biggest problem is that it's not under the hands of one organization which raises the jurisdictional issues. The data that is being collected would fall under all the jurisdictions in the world which makes it obligated to follow all the data retention policies and comply with laws of all the jurisdictions. "[1]International internet law is developed by some UN (United Nations) soft law documents besides international law treaties. The coverage of international internet law is civil law (personalrights as data protection, GDPR), administrative law (cross border service requirements, licenses), commercial law (as on e-commerce), criminal law, financial law (as banking solutions on the internet base) .When we closely examine the internet, the main central authority is ICANN, the Internet Corporation for Assigned Names and Numbers which is a non-profit organization, registered in California, USA. Every computer or device that goes on the internet needs its own IPaddress. The jurisdiction of the internet is located by these registries, which help to detect parties 'locations where their IP Address (numbers assigned to every device thatconnects to the internet) is registered".
In "Faridabad Industries Association (FIA) v M/s Adani Gas Limited (AGL) (2014) (Adani Gas case)", the CCI held that a restriction imposed by a dominant enterprise may not be abusive if the dominant enterprise is imposing the restriction because it is subject to the same restriction by a third party. "The CCI, in HT Media Ltd v Super Cassettes Ltd (2014) (HT Media case), observed that pricing abuses may be 'exclusionary' (ie, pricing strategies adopted by dominant firms to foreclose competitors) or 'exploitative' (ie, which cover instances where a dominant firm is accused of exploiting its customers by setting excessive prices). In this case, the CCI held the minimum commitment charges (MCC) imposed by Super Cassettes Industries Limited to be bothexploitative

and exclusionary".

Data Retention Policy

Data Retention and Data storage facility needs to be strictly looked upon especially as per GDPR laws and the Municipal laws. As per GDPR , the data cannot be stored longer than it is required by the company or as per the policy. Cryptocurrency transactions are considered to be "pseudonymous" in nature, which implies that even while the data points aren't directly related to a specific individual, they can still be linked together based on many appearances and different data points of that person. A person's entire lifetime's worth of anonymous transactions could be made public once the data is linked to them. As a result of the persistence of transaction history on the blockchain, this danger is certain to grow over time. The data has been deleted if the company is winding up . But the problem with blockchains is that the data cannot be deleted and data stored. "In 2006 the European Union (EU) adopted a directive which imposed on telecommunication operators an obligation to store all the telecommunication data (data retention) and provide access to retained data to state authorities in order to combat serious crime. The new legislation had to been implemented by all EU Member States". Also the GDPR provides for the "Right to be forgotten" which mandates the deletion of certain data which the Blockchain companies fail to do so.

Data and Software as Intellectual property

The Data that a blockchain company stores comes is protected under the Indian Copyright Act 1957. If the company has to to transfer the data of the user to other entities and use it for other purposes, they have to take users' consent. "The ledger will inevitably contain value and ownership of that intellectual property ("IP") as an important consideration. Customers may insist on ownership of such IP, or they may choose to license it for the term of the agreement, or agree to a perpetual license if it is not exclusive to that particular blockchain network, or they may restrict the ability of the vendor to use the IP on the basis of time, recipients or method of usage.The majority of the blockchain and virtual currency projects are developed under open-source licenses. Such licenses are typically non-commercial, royalty-free and impose certain restrictions on the users. Thus, it is important for companies to understand the limitations of the open-source license granted to them and to shield off any potential liabilities that may arise due to a violation of the license conditions". If the software is not patented and there is another company using the same software there can be issues as per the technology use. "Section 2(ffc) of the Copyright Act 1957 which defines "computer programme" as "a set of instructionsexpressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a particular task or achieve a particular result", read with section 2(o) of the Copyright Act 1957 which defines "literary works" includes computer programmes, tables and compilations including computer databases.", protects software or computer programmes as "Software work" under "Literary works" as per the Copyright law of India".

Tax Jurisdiction

This can be a major problem for the state to tax blockchain entities and the people who derive benefit out of it since there is an issue of the jurisdiction . The application of tax regime on the internet is one major challenge since they don't have a physical office so income earned withinthe territory of the state cannot be calculated. This can also lead to Double taxation or tax avoidance which is a crime as per law.

Critical Analysis -

Trust has always been essential for successful trade and commerce. Any nation's government and central bank give that Trust. Laws of the land ensure that parties to a trade or commerce fulfill their obligations and penalize those who violate the trust. It implies that in order to foster trust, trade and commerce must be governed by the government. In India the market is open for blockchain technologies but there is no specific law that could provide security to the consumers but most importantly to the technologies especially the ones emerging and want to invest in the Indian market. There is a higher risk and thin chances of dispute resolution mechanism which creates a missed opportunity in this field.

Applicability of the Indian Competition Framework to Blockchain

Indian competition law does not directly deal with the blockchain entities but it lays down ground on what constitutes as anti competitive practice . Sec 3 of the Indian Competition Act of 2002 deals with what can constitute as anti competitive practices which restricts parties entering into agreements

that violate the basic principles of fair trade and consumer welfare. “In the caseof collaboration or joint ventures between competitors over a blockchain platform, there is a risk of the exchange of sensitive information between competitors, which can result in anti-c.[ompetitive trade practices. Businesses must have safeguards in place to avoid the exchange of confidential data, such as setting permissions that only allow the intended recipients to access the information contained in a block of data. Aggregating or anonymizing the sensitive data stored on the blockchain may also be helpful in preventing competitors from taking advantage of it”. Indian competition law can prevent blockchain companies from creating a dominant position in the market and avoid agreements that restrict other players in the market free entry and exit. Meanwhile Sec 4 of the competition act deals with the abuse of dominant position. As per this section, if a company is found using its position in the market to dominate they would be liable for violating the laws. It also puts a pause on predatory pricing.

Blockchain technology and significance with competition Law

Blockchain technology along with other DLTs shares a common goal with competition law. Both of them seek to achieve decentralization in their respective fields (Geradin, 2009). Blockchain offers the opportunity to build a decentralized global network (Calcaterra and Kaal, 2021) while competition law seeks to ensure that the forces of competition remain jeopardized inthe free-market economy.Blockchain has provided us with a way to manufacture trust without relying on any third party. The blockchain protocols are usually immutable and all transactions are time-stamped. This enables the parties using the blockchain to trust the integrity of the network without relying on any third party or centralized authority. This ingenuity offered by blockchain is the hallmark of its exponentially transformative capabilities. The decentralization offered by blockchains is only possible because of the trust it generates in the protocol’salgorithm”.

Criticism

Indian competition law does not provide a separate legislation for the blockchain technology and the worst part is that its not even recognised by the laws so obtaining remedy can be a big challenge. Another reason is that competition law seeks to only regulate anti-competitive agreements, abuse of a dominant position and combinations (i.e., mergers, acquisitions and amalgamations) but not agreements in fintech and blockchains which are advanced in technologyand are exclusive software agreements. “Since its introduction, blockchain technology has been revered, ridiculed, dismissed, embraced, and presently has become too large to ignore, witnessing exponential growth. The obvious indicator of this growth is that research revolving around blockchain technology has already raised competition in the form of directed acyclic graphs and hashgraph, all of which fall under the umbrella of distributed ledger technology (DLT). Segueing on the back of visibly positive effects of competition, we arrive at the essence of our paper. We show that the current competition regimes around the world are inefficient at promoting and maintaining competition around the world, dominated by the behemoth technology enterprises that have successfully monopolized and monetized data, which is indubitably, one of the most important assets in today’s digital age”.

Abuse of Dominance

Blockchain technology has been a key area of interest for many big investors and moneymakers because of advancement in technology and introduction of Web 3. A general-purpose distributed ledger technology called blockchain poses a danger to global markets and organizations. Whereas the internet made it possible to broadcast information and transfer it digitally, blockchain technology verifies who owns assets, makes them traceable, and allows for digital transfer. As a result, it permits direct asset dealing by fostering trust in the transaction and lowering uncertainty (through its use of trustworthy self-executing code).From the standpoint of competition policy, this could both present opportunities to improve both competition and efficiency and threats of anti competitive behavior. “Because blockchain is decentralized, anonymous, and immutable, questions arise regarding the ability to detect anticompetitive practices and their perpetrators. We show that some practices are de facto more likely to be implemented. On the one hand, regulators must avoid using their unfamiliarity with a new technology to justify over-regulating a potentially beneficial advancement or employing what this article calls the “blockchain excuse” for regulation. On the other hand, antitrust enforcement must adapt to stay relevant, and this suggests that regulators adopt a new methodology of “regulatory infiltration” using a “law is code” approach”.

Abuse of Dominance in Indian law is dealt under Section 4(2)(e) of the Act which provides that "there shall be an abuse of a dominant position if the dominant enterprise uses its dominant position in one relevant market to enter or protect another relevant market".

When a powerful company (or group of companies) engages in behavior that effectively eliminates or significantly lowers competition in a market, this is known as abuse of dominance. These unlawful practices could include: predatory (causing immediate losses in order to destroy a rival and increase future market dominance); exclusionary (seeking to keep a company out of a market);disciplinary (an effort to punish a company); or aimed to harm the competitive environment (e.g., by making other companies want to compete less and denying consumers the benefit of competition)These kinds of market power abuse are specifically addressed in the Competition Act. Another threat of Dominance can be that since Blockchain technologies are new in the market and specifically don't have competitors, there is high risk of monopoly and market capturing which could be a possible threat.

Conclusion

Technology should be designed to prevent possible harm to competition and to be antitrust because technology is neither intrinsically pro-competitive nor anti-competitive. Examples include blockchain technology and other digital technologies. Additionally, individual participants cannot alter the data that is available in a block chain. Because it is open source software, any user can review the underlying code for security flaws, increasing its dependability. Block chain's decentralized data is always current and traceable, creating the ideal audit trail. By using smart contracts, which are digital protocols, the data on block chains is automatically updated and amended. There is very little human involvement in this.

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