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## **ROLE OF INTELLECTUAL PROPERTY IN BLOCKCHAIN**

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### **ABSTRACT**

We, earthlings are living in an era of meteoric technological change. Technology is an implement conceived out of scientific knowledge. On the flip side, Information Technology is a tool which derives its value from data. The core of Information technology is that it entirely rests on data. Blockchain technology has now become the next boundary of information technology. Blockchain technology is a decentralized database which records transactions across numerous partakers. Security, transparency and traceability of data are the most desirable features of blockchain. Intellectual Property Rights (IPR) is a world-shaking innovation which assumes a significant part in securing the designer's development precluding others from assembling or selling without the assent for quite a long time. This article investigates crucial role of intellectual Property (IP) in Blockchain technology. Further, the author herein discusses the possible applications of blockchain technology in Intellectual Property. This paper is concluded with the prospective sphere of the revolutionary technology i.e., the blockchain technology.

## BLOCKCHAIN TECHNOLOGY

Blockchain technology was first outlined by Stuart Haber and W. Scott Stornetta in 1991. Blockchain, as the name implies, is a chain of blocks each block storing information. Blockchain is a digital, decentralized, immutable ledger which facilitates the recording of transactions and tracking of assets in business network. All transactions are recorded in a system of servers called nodes.<sup>1</sup> All exchanges that are performed across a business network are grouped into blocks and are then added to the nodes. Each block is added to the node only after the node affirms that block to be a legitimate block. Since it is decentralized distributed ledger, every person in the particular network has access to it and no individual can hack the system.

The principal advantages of blockchain technology are<sup>2</sup>

1. Secured and trustworthy database: Since it has no single central database, there is no possibility for hacking or defrauding ensuring the security of data. Further, it is a peer-to-peer electronic transaction system which does not involve any third party and hence it is a trustworthy system.
2. Transparency: Since it is a distributed ledger, it can be accessed by all the people in the network. Also, no modification in the transaction history can be made without the consent of all the parties. With the wide accessibility and approval for modification by all the parties, blockchain technology ensures transparency.
3. Traceability and Accountability: Since all the transactions are recorded, the genuineness of the information can be easily substantiated.
4. Speed and Accuracy: Since blockchain is a non-manual Self operating system, transactions can be made instantaneously and effectively. Also, the approval of the transactions by all the parties before grouping into blocks guarantees the accuracy of the transaction history.

## TYPES OF BLOCKCHAIN

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<sup>1</sup> GEEKS FOR GEEKS, <https://www.geeksforgeeks.org/how-does-the-blockchain-work/> (last visited Sep. 14, 2021).

<sup>2</sup> Christine Parizo, *What are the 4 different types of blockchain technology*, TECH TARGET (Sep. 14, 2021, 8:50 PM), <https://searchcio.techtarget.com/feature/What-are-the-4-different-types-of-blockchain-technology>.

### 1. Public Blockchain:

- It is an open blockchain in which any person from the public can participate.
- There is namelessness and facelessness.
- There is no centralized control.
- Example: Bitcoin and Ethereum

Blockchain is the bedrock on the basis of which many cryptocurrencies operate on such as Bitcoin and Ethereum. Blockchain enables cryptocurrencies to operate without any requirement for a central authority. In essence, Bitcoin is the world's first decentralized digital currency which can be sent from user to user in a peer-to-peer network without the need for any middleman.

### 2. Private Blockchain:

- It is a permissioned network and is quite restrictive which allows only specific people to join.
- There is no anonymity.
- There will be a centralized control.
- Example: Hyperledger and Ripple (XRP)

### 3. Hybrid Blockchain:

As the name implies, it is an amalgamation of both public and private blockchain.

### 4. Consortium or federated Blockchain:

This blockchain is similar to hybrid blockchain involving both public and private blockchain but the difference is that in consortium blockchain multiple organizations associate on a decentralized network.

## **INTELLECTUAL PROPERTY**

Intellectual Property is a sort of property which incorporates the intangible invention of human knowledge like developments, imaginative and scholarly works, images, pictures utilized in business, etc., Protection of Intellectual Property endues the creators with a chance to pull in the cash they contributed. Intellectual Property Rights (IPR) signifies the legitimate rights solely given to the creators for the inventions of their psyches for a specific timeframe. Intellectual Property Rights incorporates Patents, Copyrights, Trademarks, Design rights, Plant

variety rights, Circuit design rights, Semiconductor topography rights, Tradename law, Trade secrets, geographical indications, etc. Among the aforementioned IPR, Patents, Copyrights and Trademarks are the most well-known Intellectual Property Rights.

## **FEASIBLE APPLICATIONS OF BLOCKCHAIN IN IP**

Intellectual Property plays a vital role in the world which is gearing up towards the blockchain technology. Nowadays, to secure patents, a large number of entities prefer blockchain to technology as a base. Blockchain technology assists in processing IP applications, licensing, smart contracts, maintaining IP records and enforcing Intellectual Property Rights. A sound IP system requires a strong, verifiable, traceable and accountable IP records which can be met only by blockchain. In the manual method, the probability for the data not being sync is relatively high whereas blockchain ensures the accuracy and accountability of data which ultimately minimizes the risk involved and improves efficiency. The remarkable features of Blockchain technology such as immutability, security, traceability, accountability, etc., can bring a revolutionary change in the field of IP.

### **1. Blockchain based Smart Contracts:**

A smart contract is a computer program which automatically manages and executes an event or action confirming to a contract or an agreement. In other words, it is a self-executing contract in which the terms of the agreement between the offeror and the acceptor are directly written into lines of codes which control the execution of the contract. These codes are then stored as a block in the blockchain network. The transactions are traceable and irreversible. These contracts are not controlled by the users. The users can only submit their transactions on the smart contracts. Like ordinary contracts, smart contracts also define rules but the prime difference between ordinary and smart contracts is that smart contracts are automatically executed via codes. Smart contract is a program that basically runs on Ethereum blockchain.<sup>3</sup> With respect to Intellectual Property, the steps involved in buying a patent include inspecting the assignment and validity of the patent, negotiating sale agreement, executing the transaction and providing information to the Patent Offices regarding the transaction. All these long winded complicated steps can be simplified by smart contracts. With the escalating progression in blockchain technology, Smart contracts can be widely integrated in the realm of IPR since the

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<sup>3</sup> USE ETHEREUM, <https://ethereum.org/en/developers/docs/smart-contracts/> (last visited Sep.15, 2021).

transaction system invigorates trusted relationship among the individuals with uncompromising security.

## **2. Blockchain for determining the authenticity of ownership:**

Blockchain is a confidential platform for substantiating the authenticity of ownership of Intellectual Property. In case of Patents, an inventor can go to a patent office to apply for patent to secure his Intellectual Property. But, in case of Copyrights, the burden of proving the ownership lies with the creator due to the paucity of official documentation. In this world of internet any person can download a created content and use at this free will. Blockchain is a timestamping authentication tool which helps the owners of the Intellectual Property to keep a hashed digital certificate which serves as an authentication and an evidence for a particular digital asset at a particular time.<sup>4</sup> These hashed digital certificates are immutable and cannot easily be accessed and hacked by any third party. Blockchain also assists in distinguishing forged products from authentic products by the means of the ledger which reveals the real ownership of those products. In this world of flourishing digitalization, it is imperative to have a system like blockchain which provides for the proof of ownership of intellectual assets.

## **3. Blockchain for registering a design or trademark:**

Traditionally, the processes and procedures for registering designs and trademarks are protracted. Blockchain helps in simplifying these complicated procedures. In certain nations such as EU and UK, it is a pre-requisite that the right holder has to demonstrate the genuine use for a certain period to maintain his trademark rights after registration which is a laborious, time consuming and an expensive process. To overcome this impediment, one could deploy Smart contracts which serve as an evidence for the first and subsequent use of the trademark. It can also be presented as evidence in the court if admissible.

## **4. Blockchain for implementing IP Marketplace:**

As aforesaid, the nodes in Distributed Ledger Technology like a Blockchain technology records and synchronize transactions in respective ledgers. With the help of Blockchain, the inventors can make their inventions available in the form of ledgers creating an IP marketplace. In

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<sup>4</sup> Sumit Prasad, *The Future of Blockchain in Intellectual Property*, AUTOMATION.COM (Sep. 16, 2021, 11:35 AM), <https://www.automation.com/en-us/articles/january-2021/the-future-of-blockchain-in-intellectual-property>.

addition, blockchain helps the inventors for finding licensees for their inventions thereby acting as a medium for transferring IP assets. IP offices employ blockchain for storing the registrations of various Intellectual Properties such as Copyrights, Trademarks, etc., in a ledger. Blockchain put back the traditional databases holding the registration information of Intellectual assets and acts as an effectively global IP registry.

## **5. Blockchain in Certification and Collective trademarks:**

Another field of promising application of blockchain is Certification trademarks and Collective trademarks. Collective marks and Certification marks are different and the key difference between the both are the former can be used only by a particular group of members whereas the latter can be used by any people subject to the conditions laid down by the owner. For certification marks, the entity which applies for registration should be considered competent to certify the products which means the certification marks have to be issued within the purview of private blockchain instead an open public blockchain. Since the private blockchains are limited to few users, it is ideally worthy of being used for Certification and Collective marks.

### **Internet and Mobile Association of India v. Reserve Bank of India<sup>5</sup>**

On 6<sup>th</sup> April, 2018, Reserve Bank of India issued a notification prohibiting all regulated entities such as banks to deal with and to provide services for digital currencies. At the time of the issuance of the notification, there was no legislation which bans the trading of digital currencies. The grounds on which the notification was issued by the RBI are

Greater loss to the economy

Aiding terrorist activities

Money laundering

Since the trading of virtual currencies came to an end, the Indian economy was likely to be suffered. And, the notification was challenged before the Supreme Court. The Supreme Court held that the circular issued by the Reserve Bank of India was unenforceable on the ground that there was no legislation banning the trading of virtual currencies.

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<sup>5</sup> Internet and Mobile Association of India v. Reserve Bank of India, MANU/SC/0264/2020.

## **CONCLUSION**

Blockchain technology has an immense potential to shape the domain of Intellectual Property in yielding better results at a greater degree. Blockchain also helps in enforcing Intellectual Property Rights (IPR). Blockchain serves the heart of justice with the brain of technology. The sooner the adaptation of blockchain in the field of IP, the greater will be the output. Mere adaptation of blockchain technology is not sufficient. Implementation of the technology is essential to achieve great results. The policy makers have to enact laws for the implementation of this technology since the rise of blockchain is inevitable. Embracing this go-to-tech tool will indubitably transform the digital world.