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“Copyright Law and the Promise of Blockchain Technology”

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Certificate

This is to certify that Junaid Muhammad Anshad, student from National Law University Odisha, Cuttack, has successfully completed and submitted his report, **Copyright Law and the Promise of Blockchain Technology**. This has been submitted in fulfilment of his internship at the Centre for Intellectual Property Research and Advocacy (CIPRA) during the month of 1st December to 30th December 2020.

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DECLARATION

Certified that this research work is my original work and I have not borrowed any material from other's work nor have I presented this partly or fully to any other institution/college/university.

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INTRODUCTION

Throughout history, law and technology have been complementary to each other. When novel technologies are provided protection by law in the form of intellectual property rights, while technology helps to make the functioning of the legal system more efficient. This is an era of technological revolution where we witness a technology surpass another in quick succession. Among the innovations, disruptive technologies like the Internet of Things, Artificial Intelligence, Blockchain technology can bring revolutionary changes even to the legal sphere but it needs the backing of a proper legal framework for smooth functioning.

Recently, the Controller General of Patents, Designs & Trademarks called for Expression of Interest to companies actively operating in technologies including blockchain for the improvisation of Intellectual Property law in India.¹ Several other jurisdictions have also called for the utilisation of emerging technologies in order to enhance the functioning of the administrative setup.

Blockchain technology which is among the latest additions to forms of digital technology has its implications in varied fields from tracing illegal fishing to the regulation of elections. Latest developments have come up in the field of fintech with several Indian banks experimenting with pilot projects and the induction of a working group by RBI to study regulatory issues is a clear indication of it². Its application in the copyright law regime, especially in music industry is becoming popular. Through this paper, we shall acknowledge the impact of introducing blockchain technology to copyright law as well as discuss the challenges faced by it.

¹ Divij Joshi, *India's IPR Regime Looks to Hi-Tech to Improve Administration – From Video Conferencing to AI and Blockchain*, SPICY IP (Oct. 23 2020), <https://spicyip.com/2018/10/indias-ipr-regime-looks-to-hi-tech-to-improve-administration-from-video-conferencing-to-ai-and-blockchain.html>.

² NISHITH DESHAI ASSOCIATES, *THE BLOCKCHAIN : INDUSTRY APPLICATIONS AND LEGAL PERSPECTIVES* (2018)

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BLOCKCHAIN TECHNOLOGY – WORKING & FUNCTIONING

Blockchain can be described as a ‘foundational model’ which provides a new platform for economic and social purposes.³ Blockchain was devised by anonymous people under the pseudonym of Satoshi Nakamoto. Blockchain is basically a type of collection of information stored electronically. The transactions are recorded in a ‘decentralized digital ledger’. It is maintained by the parties and is immune to interventions from outside. The pieces of information are classified into blocks and each block records transactions in a given time frame. They also provide certain references to the previous block hence forming a chain-like system. Each computer that forms a part of the network is called a node and a local copy of the complete blockchain is saved in each computer. Every node is supposed to authenticate the transactions by other nodes. It is established in such a way that subsequent changes cannot be made to a block without the consensus of other participants. A change in the order requires majority support from computing powers. It ensures integrity and transparency based on mathematics and not based on trust. Blockchain offers multidimensional utility as it can store transactional, multimedia, design, or literally any other kind of data. In this era of cyberattacks, blockchains remain less vulnerable, so it can be projected as a better alternative.

Blockchain and IP enjoy a two-way relationship, as blockchain itself is an IP that could be employed to protect other IPs. Blockchain technology has the power to revamp the protection and use of copyright by providing a transparent, foolproof, and standardised system.

BLOCKCHAIN TECHNOLOGY - IMPLICATIONS ON COPYRIGHT LAW

Presently, intellectual property rights are regulated by third-party authenticators which include the government authorities and departments of that particular jurisdiction. It has physical limitations that have arisen especially following the advent of online media and digitalization at the world level. The use of blockchain technology can improvise the copyright law regime from its filing stage to its implementation. Some of these possibilities are discussed.

³ SHRADDHA KULHARI, THE MIDAS TOUCH OF BLOCKCHAIN: LEVERAGING IT FOR DATA PROTECTION 15 (1st edn. Nomos 2018)

- **Copyright Registration**

Unlike other IP rights registration is not formally required to secure copyright protection. A copyright is created when a work is created itself, provided it is original. Copyright registration can form evidence and validate the existence of ownership of a work. It can stand for the goodwill and branding of the owner. The process of registration involves a cascade of complicated, time-consuming, and expensive procedures. A third party like a government department is involved in order to authorize the registration. The rights of the right-holder shall only be applicable to the jurisdiction under which it is registered. However, as India is a signatory to several international conventions on Copyright including the Berne Convention, copyright registered in India is also applicable to countries that are also contracting members of those conventions.

As per the Indian Copyright Act of 1957, copyright may subsist in an original work of art, literature, music, cinematographic films, sound recordings, and computer programs. In India, once the application is made to the registrar of copyrights, it has to go through a mandatory 30-day window for objections and it is scrutinized by a copyright expert. If the objections are resolved, copyright is granted. Though it might look simple, it can take about 4 months in a normal course. The functioning of the registry differs in different jurisdictions.

Blockchain technology can provide an immutable, time-stamped and permanent storage of information. These characteristics provide an alternative to overcome some of the issues faced by registries. A digital-based system could also eliminate the need for intermediaries like government authority, agents, or representatives. However, to start with, the blockchain registries is transparent and could be operated by government registries. The use of this technology can save time and reduce the expenditure involved in copyright registration.⁴ The authenticity of the work can be determined by setting up a database of existing copyrights. The verification of the authenticity of works may not be as effective but the same is valid with the traditional system of registries.⁵ The involvement of third-party registration authority could maintain the same level of accuracy if they are incorporated into the blockchain system as well. Ascribe, Vaultitude and Binded are three currently existing blockchain-based IP websites which provide copyright certificate as a proof of ownership. The republic of Georgia recently launched the blockchain land registry system and

⁴ Gönenç Gürkaynak et al., *Intellectual property law and practice in the blockchain realm*, 34 COMPUT. LAW SECUR. REV. 856 (2018).

⁵ Blockchain Workshops, *How Blockchains Can Support, Complement, Or Supplement Intellectual Property*, INTERNET GOVERNANCE FORUM (), https://www.intgovforum.org/multilingual/index.php?q=filedepot_download/4307/529.

about 1.5 million land titles launched with an average registration time of just 3 minutes.⁶ An analogous system in the context of copyright registries can also be revolutionary.

- **Management of Copyright.**

In the present Intellectual Property law, certain aspects of managing IP rights have been promised a change with the introduction of blockchain technology.

Smart contracts along with blockchain technology can be used for licensing and transferring of copyright ownership. ‘Smart contract’ is an idea first proposed by Szabo in the early 1990s that could be used to execute the contractual obligations in the form of a software code.⁷ The basic function of a smart contract is to trigger transactions when the pre-defined criteria in the contract are met. Most smart contracts encode the ‘if-then’ criteria and help to perform a multitude of easily automated transactions with less cost and human intervention. When brought together with blockchain, they could achieve an immutable, authentic, and verifiable register to track contract fulfilments. This could be practically put to use in the copyright law regime to standardise the terms & conditions and for use in varied jurisdictions.⁸

Blockchain technology the power to change the landscape of the Copyright law regime. It can reduce the distance between the creator and the consumers by getting rid of intermediaries. The absence of brokers, purchasing platforms, etc can increase the income of the creator. The content creators can also receive the amount through direct transactions from the consumers each time their content is used. Grant of license for authorized use may also be provided similarly on payment of subscription or royalty amount.⁹ It can also make them aware of the sale and use of their work. As per studies, in the music industry, a musician only earns \$23.40 when music worth \$1000 is sold.¹⁰ The change it can bring about cannot be called anything less than revolutionary. Mycelia Project is such a developing hub for music-related copyrights with the aim to foster creativity around the world and commercialise it to the benefit of creators rather than intermediaries. Even

⁶ *Improving The Security Of A Government Land Registry*, BITFURY EXONUM, <https://exonum.com/story-georgia>.

⁷ *Blockchain and its application in the field of IP Smart Contracts and IPR management*, TALKING TECH : CLIFFORD CHANCE (July 18 2019), <https://talkingtech.cliffordchance.com/en/emerging-technologies/blockchain---distributed-ledger-technology/blockchain-and-its-application-in-the-field-of-ip.html>.

⁸ Bala’zs Bodo et al., *Blockchain and smart contracts: the missing link in copyright licensing?*, 26 INT. J. L. INFO. TECH. 316 (2018).

⁹ Maximilian Kiemle, *Blockchain and Copyright Issues*, 4IPCOUNCIL (Jan 2019), https://www.4ipcouncil.com/application/files/9315/4876/6157/Blockchain_and_Copyright_Issues.pdf

¹⁰ Arya Taghdiri, *How Blockchain Technology Can Revolutionize the Music Industry*, 10 HARV. J. SPORTS & ENT. L. 173 (2019).

micropayments could be materialised. Further, the anonymity of owners can be preserved in a blockchain system as blockchain allows to withhold all information regarding identity in the chain as well as off-chain while maintaining the ownership.

The issues of piracy especially in this digital age can be detrimental. Direct and indirect sales worth about €336 million have been lost due to piracy in the European Union alone in 2014.¹¹ With many social media platforms allowing to share works with a wide number of people, identifying unauthorized copies becomes even more difficult. Many social media handles oblige copyright holders to grant a royalty-free license too. The contents spread spontaneously and becomes difficult to track. Here a blockchain platform could will ensure the ownership rights of the content as it is immutable once introduced and with the help of technologies like web-crawling, the unauthorized copies could be tracked down.

According to section 10 of the Indian Contract Act, 1872, “all agreements are contracts if they hold the free consent of parties willing to contract, for a lawfully accepted consideration and with an object.” By this definition, it seems wide enough to include the smart contract under it. Just like any other contract, a smart contract also consists of essentials like offer, acceptance, and consideration. However, it is still unclear whether cryptocurrencies can be a form of valid consideration but since it has not been expressly construed as an illegal object, cryptocurrencies may be recognised as a form of consideration. Since the Indian Contract Act only provides instruction for tangible contracts, section 10A of the IT Act needs to be considered which provides the validity of electronic contracts. Contractual obligations of smart contracts are therefore enforceable provided all the requisites of a contract are followed.

- **Enforcement of Copyright.**

In the seventeenth century, Robert Hooke first published his findings in a Latin anagram as proof of discovery. Many scientists also tried to prove their ownership by sending letters to somebody or even to themselves. Evidence collection is another area where the current system faces challenges, especially in the online format. Evidence is the primary concern why copyright registration is required in the first place. When a copyrighted work is available online, it difficult to track down the unauthorized copies because of the huge number of such documents present. Also whenever

¹¹ EUIPO, *The Economic Cost of IPR Infringement In The Recorded Music Industry*, EUIPO (May 2016), https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/resources/research-and-studies/ip_infringement/study7/Music_industry_en.pdf.

goods or services are bought online, it is difficult to identify whether it is genuine, and tracking down these bad actors is also not quite easy. Using blockchain technology can solve this issue to an extent as timestamping can be used to authenticate the creation and modification time. This can reduce the burden on third parties such as notaries or e-notaries. The hash function of the blockchain helps to clarify the integrity of the file. It is a cryptographic form of signature which helps to record and authorise transactions.

For any right to make legal sense, it should be enforceable. Similarly, the IP rights to have any legal authority should be enforceable. Counterfeiting is a major issue faced by the IP community around the world. According to a report by European Union customs, about 41.3 million fake articles were seized by the customs departments in 2016 alone. Blockchain taken technology can be used for track and trace purposes to combat counterfeiting. Copyright can be provided with proof of origin as blockchain utilizes a timestamp but it has not been legally recognised in most parts of the world.

The Hangzhou Internet Court was the first court in the world to embrace blockchain as evidence in a case of copyright infringement.¹² In this case, a snapshot of the defendant's website was used to prove the unauthorized use of the plaintiff's copyrighted content. The snapshot was captured and saved by a blockchain service called 'Baoquan'. It was digitally signed, timestamped, and hashed, and hence it functions as an unalterable material. They relied upon the creditability of the blockchain technology and derived at the decision. In 2018, the Chinese Supreme Court also permitted the usage of digital evidence and authentication for the digital courts provided they are timestamped and electronically signed. In the U.S states of Ohio, Vermont, Illinois, and Arizona, blockchain records have been accepted to be evidence if it is digitally signed.¹³ In the United Kingdom, a pilot project has been launched in 2018 August at the Her Majesty's Courts & Tribunal Service where Blockchain technology will be used to store digital evidence securely.¹⁴

In India, the position of admissibility of blockchain as evidence is still undergoing evolution. In the case of *Anvar P.V. v. P.K. Basheer*¹⁵ which overruled the judgement in *State (NCT of Delhi) v.*

¹² Frederick Mostert & Wang Jue, *The Application and Challenges of Blockchain in Intellectual Property Driven Businesses in China*, 11 *Tsinghua CHINA L. REV.* 13 (2018).

¹³ Ariel Watson, *What Blockchain Means for Digital Evidence Sharing, Security and Verification*, *CELLEBRITE* (Jun. 5 2019), <https://www.cellebrite.com/en/blog/what-blockchain-means-for-digital-evidence-sharing-security-and-verification/>.

¹⁴ Alexia Pollaco, *The Interaction between Blockchain Evidence and Courts – A cross-jurisdictional analysis*, *BCAS* (April 23 2020) https://blog.bcas.io/blockchain_court_evidence#_ftn3.

¹⁵ *Anvar P.V. v. P.K. Basheer*, (2014) 10 SCC 473.

Navjot Sandhu case stated that the digital platforms are vulnerable to tampering and the conditions specified in section 65B of Indian Evidence Act is to be followed strictly. A new rule called the Hearsay rule came into being through this judgement. It held that all evidence except oral ones to be inadmissible before the court. Henceforth, all digital evidences were recognised only as hearsay evidences unless it satisfies the conditions outlined in section 65 B. Though blockchain might fall within the category of Electronic evidence, it is contentious.¹⁶ Electronic evidence requires validation with extrinsic evidence as per section 65B (4) of the Indian Evidence Act, 1872.¹⁷ However, blockchain technology is quite different from the working of other electronic evidence as it cannot be tampered with. This is completely different in comparison to normal electronic evidences like photographs, emails, multimedia recordings, etc. As to the lack of human intervention, the need for extrinsic evidence is not required. So, it may be made accessible even without a validation certificate.

In the United States v. Lizarraga-Tirado under the U.S jurisdiction pronounced a judgement based on a google earth image produced by the computer itself to prove that the defendant was not at a different location. The court accepted this argument on the basis that it was not alterable.¹⁸

In India, the position in the Anvar v Basheer case was further altered and weathered down in the recent case of Shahfi Mohammad v. State of Himachal Pradesh.¹⁹ The court stated that the requirement of a certificate was not mandatory but merely procedural which could be relaxed in the higher interest of justice. This judgment throws light on the widening ambit of the evidence law which can provide space for the admissibility of blockchain as evidence in the future. This judgement still requires further clarification before giving a final word and it has also been questioned in another case of the Supreme Court.²⁰

Blockchain has also spilled out into the field of arbitration and dispute resolution. With more and companies resorting to online dispute resolution blockchain technology can offer more possibilities for development. It can take the form of an arbitration agreement lodged in software or separate but

¹⁶ DR. VICTORIA L. LEMIEUX, BLOCKCHAIN FOR RECORDKEEPING: HELP OR HYPE? 43 (Social Sciences and Humanities Research Council of Canada 2016).

¹⁷ Indian Evidence Act, 1872, § 65B(4).

¹⁸ Lipika Ray & Raj Shekhar, *Blockchain Technology: Admissibility Of The Digitally Signed Ledger Vis-À-Vis The Evidence Laws*, LAW & TECH TIMES (July 30 2020) <https://lawandtechtimes.wordpress.com/2020/07/31/blockchain-technology-admissibility-of-the-digitally-signed-ledger-vis-a-vis-the-evidence-laws/>

¹⁹ Shahfi Mohammad v. State of Himachal Pradesh, (2018) 2 SCC 801.

²⁰ Arjun Panditrao Khotkar v. Kailash Kushanrao Gorantyal, 2020 SCC OnLine SC 571.

existing parallelly. Arbitration can happen even without the help of human intervention by just the entry of inputs and technologies that are interoperable.²¹ Even when human intervention is allowed, few paper works like escrow function could be facilitated by blockchains. The Guangzhou Arbitration Commission has already facilitated online arbitration with the help of multiple technologies including blockchain to issue awards.²²

Orphan Works

Blockchain has the potential to provide a long-term solution to the issue of Orphan Works. Orphan works are such works with copyright whose right holder cannot be located or identified. Blockchain technology could provide few solutions to resolve the issues of orphan works. The information of ownership is attached indelibly to work in blockchain and the change in ownership if any. In such a scenario, the possibilities of works falling into being orphan works do not arise in the future.

In the current scenario, a blockchain register for each blockchain could be set up with the record of searches made on it, and the record of the use of that work. When a good amount of search has been made over time and the owner is still not found it could be equated to be considered as ‘diligent search’ conducted²³. Recording the use of the orphan work will help to understand who has used the work and the number of times, which could be helpful to get compensation if the owner is identified later.

FUTURE DEVELOPMENTS – CHALLENGES & LIMITATION

In China, Hangzhou, Beijing, and Guangzhou internet courts have already announced the initiation of official judicial blockchain platforms for functioning.²⁴ In India, Niti Aayog has released a strategy paper providing recommendations for the use of blockchain in India. The plan to start a national wide governance blockchain project called India-Chain is in discussion. Hence, a shift to

²¹ GABRIELLE PATRICK & ANURAG BANA, RULE OF LAW VERSUS RULE OF CODE: A BLOCKCHAIN-DRIVEN LEGAL WORLD 41 (IBA Legal Policy & Research Unit 2017)

²² Chen Zhi, *The Path for Online Arbitration: A Perspective on Guangzhou Arbitration Commission's Practice*, KLUWER ARBITRATION BLOG (March 4 2019), <http://arbitrationblog.kluwerarbitration.com/2019/03/04/the-path-for-online-arbitration-a-perspective-on-guangzhou-arbitration-commissions-practice/>.

²³ Annabel Tresise et al., *What Blockchain Can and Can't Do for Copyright*, 28 AUSTL. INT. PROP. L. J. (2018).

²⁴ Guodong Du, *Why are Chinese Internet Courts Keen on Blockchain Technology?*, CHINA JUSTICE OBSERVER (Dec. 15 2019), <https://www.chinajusticeobserver.com/a/why-are-chinese-internet-courts-keen-on-blockchain-technology>.

utilizing the advances provided by Blockchain technology in the future can be identified with basic steps being taken towards it.

However, as with any other innovations, blockchain technology too face few hurdles before its wide implementation. The cost of establishing a blockchain system can be expensive and tedious with gaining interoperability and creating a huge database to start with²⁵. Cheaper solutions are being developed to store data as well as the amount of data to be received will be enormous.

Before its widespread adoption, there should be a clear understanding of the know-how of the technology on the part of the public, judges, and officials to make proper decisions. This will require a great amount of training and it must be applicable to people with varied technological adeptness. Therefore, a simple and easy interface is recommended. There is a need for proper legal understanding in this matter as we have seen that the Indian law has been dormant with fewer developments compared to its global counterparts like China. It should be regulated before it is too late so as to avoid misuse and its future is not known. Moreover, there could be conflicts of jurisdiction as different nodes of a blockchain might be located physically in different parts of the world. Figuring out which court or tribunal will have jurisdiction over such a matter will be another concern. If it falls under all jurisdictions, it can also cause multiplicity of legal proceedings. At a possibility of interoperability and uniformness of IP regulations around the world, it would cause issues in the legal standpoints of different countries some being extremely stringent to another being liberal in approach. In case if a work is published through a blockchain platform, the country of origin becomes difficult to identify. Article 5 of the Berne Convention guarantees rights depending upon origin and article 5(4) states that when the publication is simultaneously done, the country with the shortest protection should be considered as the country of origin. Since the Internet allows users from around the world, it can be treated as a simultaneous publication. In that case also, most countries provide a lifetime+50 year protection at the least.

The trustworthiness of the information entered into a blockchain can be questioned. If a piece of inaccurate information is added to a blockchain, it further exacerbates the situation by making it further difficult to make corrections later. In online copyright registries, a neutral third party is often allowed to ensure accuracy and avoid fragmentation. Even the official judicial blockchain platform of Huangzhou has collaborated with trusted parties for that matter. It is not that data cannot be

²⁵ Ellie Mertens, *Blockchain Party*, 274 *MANAGING INTELL. PROP.* 15 (2018).

amended or omitted, but it requires the approval of the majority of the participants of that blockchain. There is not much sense made if the information entered into the chain is not accurate in the first place.

CONCLUSION

As per WIPO, the Intellectual Property Protection system “aims to foster an environment in which creativity and innovation flourish.”²⁶ This goal can only be accomplished when copyright law could be realized more accessibly and adeptly. Blockchain technology offers faster examination, licensing, record management, reduce cost, and better accessibility. The employment of this technology will be in the progression of that aim. Introduction of the foolproof blockchain technology can not only assist but even take over the functioning of copyright registries. The process of licensing of a copyright through blockchain can bring revolutionary changes to the relationship between the owner and consumer. The aspect of enforceability of blockchain based data as an evidence in India is not explicitly agreed upon but still undergoing evolution.

Blockchain technology has been implemented into the legal system in many countries and is in the process of implementation in many others. Though India seems to have taken a laid back approach, recent developments have shown genuine interest in utilizing the technology, but the developments have been slow. Further, this could just be the tip of an iceberg, the introduction of blockchain incorporated along with new technologies like AI technology might offer humongous possibilities to the world IP regime. It can be challenging from the perspective of IP law, as it will have to evolve itself to allow its implementation and regulate the new environment to sustain comfortably. Ultimately, before such a system become a reality, it would inevitably require massive work and holistic discussions.

²⁶ *What is Intellectual Property?*, WIPO, <https://www.wipo.int/about-bip/en/#:~:text=By%20striking%20the%20right%20balance,creativity%20and%20innovation%20can%20flourish.>