

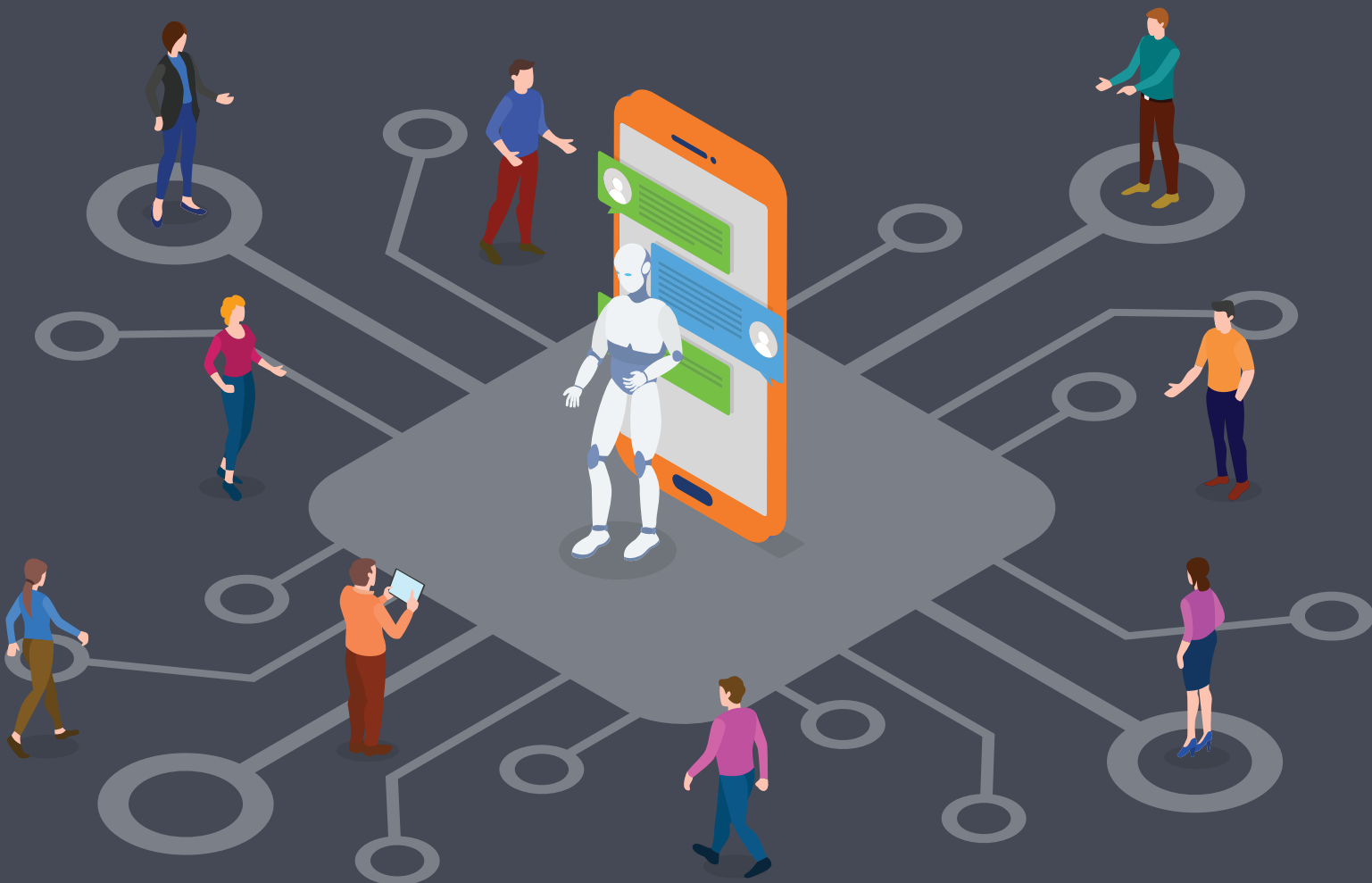


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# INTELLECTUALIS

Revolutionizing Industries:  
The Synergy of IP & Technology/AI



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## EDITORS' NOTE

**Dear Readers,**

We proudly present the fifth edition of Volume 5 of Intellectualis, with the theme '**Revolutionizing Industries: The Synergy of IP & Technology/AI**'. In this edition, we have covered contemporary topics under the broad theme of AI, technology and their intrinsic relationship with different fields of IP. Our members have also contributed to topics such as IoTs & IP Strategy, the role played by IP in commercializing & developing biotechnology and nanotechnology and protecting trade secrets in the age of digital information sharing. Others have written pieces on aspects that have not been covered sufficiently in the existing literature, such as AI in music, art, autonomous vehicles, video games. Furthermore, our committee persons have contributed to the discourse by holistically looking at social media & internet's impact on trademark law and brand protection.

We hope that you take the time to read what our e-newsletter has to offer. We would like to extend our gratitude to the student body of School of Law, CHRIST (Deemed to be University) for their overwhelming response to the newsletter. This edition would not be possible without all our committee members, especially those in the Research and/or Editorial sub-team. We would also like to thank our Faculty Coordinator Dr. Avishek Chakraborty for constantly supporting us and guiding us through the drafting of this newsletter.

We hope you enjoy reading this edition!

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## IP Issues Involving Text & Data Mining (TDM)

Amisha Sharma & Thomas Alex

### Introduction

A significant proportion of copyrighted content is frequently copied during text and data mining. Researchers must use computer programmes to access, copy, and process texts and other content to "mine" them. Even if researchers have legal access to the information and can read it through their university library, copying a significant portion of such works may violate their copyright (the definition of "substantial" varies on the context and circumstances).<sup>1</sup> However, copyright was never intended to impose limitations on using the concepts, information, and data found in the work. In a case involving online browsing, the UK Supreme Court recently reaffirmed the following principle: "Generally speaking, it is an infringement to manufacture or distribute copies or modifications of a protected work. There is no violation for merely reading or seeing it."<sup>2</sup> It is possible to think of text and data mining as a technology that merely replaces human viewing or reading. Therefore, copying during a text mining process should not be seen as an activity intended to exploit the copyright-protected material but rather as purely incidental to how this technology operates. In this regard, it can be seen that copyright holders (publishers) have typically been willing to grant researchers permission to mine

works that are part of their catalogues, especially given the possibility that the research could lead to mutually beneficial outcomes, such as the creation of software tools that subsequently increase the value of their catalogues. In this approach, readers and researchers support copyright owners rather than competing with them.<sup>3</sup>

### Issues:

1. Application of TDM to IP Research Contributes To Overcome Problems
2. Legal Restrictions On Databases (Text and Data Analysis)
3. EU's Recent Addition Of Limitations On Copyright To Legalize Certain TDM Research
4. Benefits Provided By Fair Use Provision of US Copyright Law and Critical Analysis

### Application of TDM To IP Research Contributes To Overcome Problems

To advance science and innovation in the EU, OpenMinTeD aims to make it possible for researchers, research institutions, and data suppliers to locate, utilize, and combine resources for TDM needs. Therefore, OpenMinTeD's primary objective is to mine all scientific knowledge rather than specifically TDM legal sources. However, throughout the project's first

three years, a legal working group was entrusted with addressing some of the legal concerns related to TDM tools and services. The project had first to ascertain whether and how "resources"—often literary works sometimes arranged in protected databases—and "components"—usual software or online services/workflows—were protected by copyright and related rights, and to what extent specific exceptions and limitations applied within the particular case of TDM.<sup>4</sup>

### Licensing Issues in a Typical TDM Workflow

Licensing compatibility must be checked at three levels in a typical TDM workflow: the content or data level, the tool level, and the service level. Content generally refers to mineable resources. Especially in the field of NLP, they are frequently made up of literary works and are referred to as corpora. However, they can also be made up of other forms of data, such as sounds, photos, databases, etc. (data mining), or a combination of these. Tools are the equipment used to carry out TDM tasks, such as computer programmes (software) that execute certain TDM or ML algorithms.<sup>5</sup> A common strategy today would be to use internet services (the nearly ubiquitous "in the cloud") that let researchers choose or upload any number of corpora and TDM them using the service provider's software. As a result, there are three levels and three related types of legal documents, and specific acts required for TDM analysis may or may not be permitted under each class or type of legal document. For instance, a researcher may have gathered N corpora, each with its licence, and plan to TDM them with a particular

piece of software, either locally or as part of an online service. If a special exemption or limitation exists, which is not covered by this chapter 29, then whether they can do that and under what circumstances will frequently depend on what the associated licences establish. For content and tools, all of the licences are for open-source software or content (FLOSS). They are the most well-liked because of their permissive conditions, which encourage an open and collaborative scientific environment and are the "easiest" to analyze. The two characteristics that make analysis easy are "public licences," which implies they are standardized contracts made available to the general public. As a result, it is not essential to create a case-by-case study of the particular licence created by provider Y or vendor X. Typically, a relatively large number of providers are covered under a single licence or a few licences (such as CC BY or GNU GPL). However, it also implies that the possibility of incompatibility is decreased because there are far more chances for a small number of standard licences to be compatible with one another than there are for a large number of custom licences. However, incompatibility or conditional compatibility exists, frequently brought on by the so-called phenomena of licence proliferation, even within the field of "open licences."

### Exceptions to Text and Data Analysis

In the UK, an exception to copyright law permits academics to duplicate works "for text and data analysis." This means that a person who has legal access to a work may copy it to do a computer

analysis of any information recorded in the work. Under the following circumstances, the exception is valid:

1. The computational analysis must be conducted for non-commercial research purposes,
2. The copy must include proper acknowledgement (unless this is practically impossible).

The clause further states that copyright violations occur when copies are made, transferred or utilized for purposes other than those that are allowed under the exemption (although the researcher could ask the owner for permission to do either of these things). Furthermore, copies produced for text and data analysis cannot be sold or rented out for a fee. The vital part of the clause is that it forbids contracting out of the activities covered by the exception. Contractual clauses that aim to restrict or exclude performing the conduct authorized under the exception are unenforceable.<sup>6</sup> Although text and data analysis primarily focus on mining literary works, all categories of copyright works are covered by the exception. A similar exception also applies to recordings of performances.

### Practical Ramifications

To conduct computational analysis of a work's content, researchers who have lawful access to an electronic work or recording of a performance (for example, through the library of their institution) are free to make additional copies of those works or recordings without seeking permission from the copyright owner (for instance the publisher or the

recording company). This is true regardless of the constraints outlined in any licencing agreement between the publisher and the library. However, unless it is impracticable for practical reasons, the research must be non-commercial, and the source must be acknowledged. This frequently happens when computational examination of enormous amounts of work is involved.

### Legal and Technological Restrictions On Databases

Keep in mind that there may be other legal or technological limitations that prevent you from accessing specific collections of works, such as databases of scientific publishers. These databases include JSTOR, ScienceDirect, and LexisNexis, as examples.<sup>7</sup> Any data collection, formation, or works that require a significant investment to obtain, verify, or exhibit their contents is protected by a "database right" in the UK and the EU. The database right is an exclusive right that forbids systematic, insubstantial extraction of the database's material as well as substantial or re-use of the content (the terms "significant" and "systematic" are context-dependent). Furthermore, a contract may also control how a database is used. Specific "terms and conditions" that prohibit certain actions, such as text and data analysis, may need to be accepted to gain access to a database; however, as with the copyright exception mentioned above, using a database for legal purposes such as text mining.<sup>8</sup> However, just like with the copyright exception mentioned above, a contract cannot forbid users from engaging in legal database operations for text and data analysis.

According to the European Court of Justice, the owner of a database not covered by copyright or a "database right" is free to set the terms of the database's usage in contracts. This effectively means that the owner can forbid or restrict text and data analysis of the database by invoking contract law. Technology safeguards that prevent systematic access to its contents and "bulk" copying are also typically used to protect databases. One must access the entire corpus of these digitized public domain books simultaneously. However, individual public domain works in Google Books can be read and downloaded. Therefore, before conducting a comprehensive computational examination of a database's contents, researchers may need the database owner's consent and technical support. For this reason, the collaboration between database owners and researchers continues to be a crucial part of text and data mining research, even though scholars can rely on the exception for text and data analysis.<sup>9</sup>

### **Benefits Provided By Fair Use Provision of US Copyright Law and Its Critical Analysis**

Fair use is a provision in the United States Copyright Law that provides the legal right to use copyrighted materials without permission from the copyright holder under certain circumstances. This provision is based on the belief that the public should have access to limited amounts of copyrighted material for criticism, comment, news reporting, teaching, scholarship, and research.<sup>10</sup> The critical analysis of fair use is that it often leads to controversy because it is open to interpretation

and is difficult to define. For example, what is "fair use" for one person might be considered "copyright infringement" for another. Additionally, the term "fair use" is relatively new and it is unclear how it will be interpreted over time. Furthermore, because this doctrine is open to interpretation, it can often create confusion for both users and copyright holders. Overall, courts have generally done an excellent job of balancing the interests of authors and users and ensuring that the rights of both are respected.

### **EU's Recent Addition of Limitations on Copyright to Legalise Certain TDM Research**

In April 2019, the European Union took a significant step towards modernizing copyright laws for the digital era. The EU copyright reform package approved an amendment that permits text and data mining (TDM) of copyrighted works for research and cultural heritage institutions. TDM is an automated process of analysing large datasets or text materials to detect patterns, associations or other insights.<sup>11</sup> Under the new provisions, organisations such as libraries, museums, research organisations, and others that have lawful access to works from press publishers, archives and scientific and cultural heritage institutions can make text or data mining of these works for research or cultural heritage purposes. The use of the works and other subject matter involved must be non-commercial. The EU has also committed to monitor and review the implementation of the TDM limitation, in particular its impact and effectiveness, and any restrictions imposed by certain Member States. The review will include

assessing the scope of the right established, the impact of certain restrictions placed on the right, and possible ways of further limiting the scope of the right. The review's objective is to ensure a practical and balanced application of the right.<sup>12</sup>

## Conclusion

**Patents:** Novel techniques and systems can be protected through patents in data and text mining. For instance, if a business creates a novel machine-learning algorithm for classifying text, it can submit a patent application to stop others from exploiting the algorithm without authorization. However, there are restrictions on what can be protected in this area, and courts may interpret what qualifies specific algorithms or methods for patent protection.

**Copyrights:** Copyrights can protect the original works of authorship created in data and text mining. For example, a report generated by a text mining system that includes insights and analysis based on large amounts of data may be considered a copyrighted work. However, there may be limitations to copyright protection in this field, such as the fair use exception, which allows limited use of copyrighted material without permission for specific purposes, such as commentary, criticism, or research.

**Trademarks:** In data and text mining, brands can safeguard the branding of their products and services, including their logos. For instance, if a business uses a sign to identify its text mining software, it may want to register for a trademark to stop others from using the same symbol and

perhaps confuse customers. It is important to note that the scope of Intellectual Property protection in data and text mining is constantly evolving, and laws and regulations can vary from country to country.<sup>13</sup>

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## IP & The Rights of Video Game Developers

- **Kandalam Abhisvara**

### Introduction

Video games are by-products of complex authorship that require human interaction while playing a computer programme on specific hardware and feature a variety of artistic mediums, including music, text, sites, video, graphics, and characters.<sup>1</sup> From the legal lens, it is a complicated synthesis of multiple components that can each be independently protected under various legal provisions. Video games combine both technology and creativity.

The valuation of the video game market in the world reached almost 200 billion USD in 2021, and it is predicted that the value in 2026 will be around 330 billion USD and that the number of gamers will soon reach three billion, which indicates that video games represent a very important critical field for social interaction.<sup>2</sup> There are three main primary forms of IP protection for video game developers: copyright, trademark, and patent laws.

### Copyright Law

Copyright law protects the original expression of an idea, such as the source code, audio and visual elements, and character designs in a video game. This means that the developer has the exclusive right to control their work's distribution, adaptation, and commercial exploitation. The distribution, adaptation, and commercial exploitation of their work. While not specifically explicitly protected by the Copyright Act, video games are protected under the class of literary and artistic works. The economic and moral rights of the developer are protected in accordance with Sections 14 and 57 of the Copyright Act. Under the TRIPS agreement, Rental Rights granted to the developer, as discussed in Article 11, that are granted to the developer, as discussed in Article 11, and it is the member nation's duty to ensure that they are not violated by the reproduction of the content, which would result in the loss of the developer.<sup>3</sup>

In the case of *Atari v. North America*, the issue that arose was whether North America had violated Atari's copyright in the Pac-Man video game.<sup>4</sup> The court responded by saying: “V, “*video games are not protected under the copyright but are protectable up to a limited extent insofar as the particular form in which it is expressed provides something new idea.*”<sup>5</sup> The court imposed a preliminary injunction against North America to prohibit it from violating Atari's copyright.

### Trademark Law

Trademark law, on the other hand, protects distinctive logos, characters, or branding associated with a video game. Trademarks are used

to identify a particular brand and distinguish it from others in the marketplace. A video game developer can use trademarks to prevent others from using similar logos, characters, or branding that may confuse consumers and dilute the value of their brand. If a video game developer creates a popular video game character, they can trademark the character's name and image. This gives them the exclusive right to use that character in their video game and control how others use it.

Users will only be able to distinguish the original game or the distinctiveness of the device they are using without trademark protection. In the *ESS Entertainment 2000 v. Rock Star* case, Rock Star created the video game ‘Theft Auto: San Andreas’, which included a city called Los Santos that was strikingly similar to Los Angeles.<sup>6</sup> The ESS entertainment firm owns and operates the Play Pen Gentleman's Club in Los Angeles. Drawing inspiration from this, there is a location called "Pig Pen" in the game with an identical sign. In order to decide whether the court applied this constituted infringement, the *Rogers v. Grimaldi*<sup>7</sup> test this constituted infringement, the *Rogers v. Grimaldi*<sup>7</sup> test was applied by the court in this instance. According to the test, using a trademark in connection with creative work does not constitute trademark infringement “unless or until there is no artistic connection present to the underlying work, or if it misleads in finding the source of the content's work.” This approach led the court to the conclusion that no infringement had occurred.

## Patent Law

Patent law can also play a role in protecting the functional elements of a video game, such as the rules or methods of play. Patent protection lasts for a limited time and gives the developer the exclusive right to make, use, and sell the patented invention. However, obtaining a patent for a video game can be difficult and expensive, as the criteria for patentability is are often strict.

For instance, if a video game developer creates a new method of play, such as a unique control system or game mechanic, they can apply for a patent. This gives them the exclusive right to use that method of play in their video game and control how others use it. However, they must demonstrate that the invention is novel, non-obvious, and useful helpful in order to obtain a patent.

Owing to the development of technology, people can now illegally copy and disseminate the content of creatorscreators' content. Technological Protection Measures<sup>8</sup> are a series of digital protections that are used in the software created by video game creators to address this issue and protect their content.<sup>9</sup> A dispute of patent infringement arose between Magnavox Co. and Activision Inc.<sup>10</sup> The issue problem was relating to Magnavox's creation of a game system that supported two players and allowed them to spring a white dot ball that resembles a digital ping-pong ball to go forward and back. They filed for a patent for the same.

The Magnavox game format, which was the subject of the patentthe patent's subject, was also used in the Activision games of the 1980s. Activision was found to be liable by the courtThe court found

Activision liable, and Magnavox leveraged that ruling to prevent every online game that employed a ball and paddleball-and-paddle format.

In addition to these IP rights, video game developers may also use trade secret protection to protect confidential information, such as source code or design documents. Trade secret protection lasts as long as the information remains confidential and is not made publicly available. For example, if a video game developer creates a proprietary game engine, they can keep the source code confidential and protect it as a trade secret. This gives them a competitive advantage and helps prevent others from using their technology without permission.

## Conclusion

Effective management of IP rights is crucial for video game developers. This can include registering trademarks and copyrights, negotiating licenses and contracts, and enforcing their rights against infringement. Moreover, video game developers can also license or sell their IP rights to others for financial compensation. This can include licensing the right to use a video game on a particular platform, such as a mobile device or gaming console, or licensing the right to use characters or other elements of the game in merchandise, such as toys or clothing.

In conclusion, Understanding and effectively managing IP rights is critical for video game developers. IP rights provide legal protection for the creative and innovative works of developers, ensuring they are properly compensated for their efforts and can continue to produce high-quality video games. Whether it is through trademark

registration, enforcement of copyrights, or licensing of IP rights, video game developers should take advantage of all available legal tools to protect their creations and interests.

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## The Role of Blockchain Technology in Protecting IP Rights

- Neha Srikanth & Diya Naveen

### Introduction to Blockchain Ttechnology

Blockchain is a decentralized, immutable database that makes it easier to track assets and record transactions in a corporate network. An asset may be physical or abstract (branding, intellectual property: patents, copyrights, etc branding). On a

blockchain network, practically anything of value may be recorded and traded, thereby lowering the risk and increasing efficiency for all parties. For keeping a secure and decentralized record of transactions, blockchains are well known for their

critical role in cryptocurrency systems like Bitcoin. A blockchain's novelty is that it fosters confidence without the requirement for a reliable third party by ensuring the accuracy and security of a data record.

### **Why is intellectual property rights protection so important?**

The ability to think is the feature that most effectively sets humans apart from other organisms that live on Earth. Humans can think, analyse, and act correctly to complete a task. Imagine working countless hours and enduring many sleepless nights to learn that someone else is taking credit for your work. What would you think?

You wouldn't want to see your creation in someone else's possession since it would be obscene. Think of another scenario where you would need to spend significant time in court to obtain control over your rights if someone attempted to assert a copyright or an intellectual property claim.

By removing intermediaries from the picture and establishing a decentralized ledger, blockchain technology aids in reducing such activities to a safe and secure place to keep your intellectual property. Decentralization is one of the critical characteristics of blockchain technology that makes it ideal for securely storing digital information. Another characteristic that offers an unchangeable history of ownership is immutability. Since no one can access your data, the intellectual property owner can stop someone else from claiming ownership of the data.

In order to grant licenses or collect royalties, smart contracts give an extra degree of protection. Additionally, one can use blockchain in

conjunction with the Internet of Things (IoT) to protect user data.

If you intend to use blockchain to store your intellectual property data, you must hire qualified legal counsel with experience in intellectual property law. The council will assist you if someone tries to infringe, and the attorney can explore strategies to protect your work.

### **How can blockchain technology protect IPR?**

Blockchain technology can help create a register of unregistered intellectual property rights, including unregistered copyright and design rights, as it can quickly provide proof of the creation date and rights management details (if applicable), and jurisdictional requirements.

It would only be beneficial if an authorized and reliable third party, like an IP office or a Collective Management Organization, were involved in a blockchain-based registry, to which any public member could submit rights management information as a timestamped entry. Alternately, account holders may also be right holders, in which case the Registry would not only record IP rights but also enable their transfer. A new blockchain-based copyright management system would then be needed to be used by many rights owners and cover a lot of copyrighted works to reach its full potential. A scenario where a work (for instance, a sound recording) could rely on its registration in a digital ledger, presuming these approaches are scalable, dependable, and simple to adopt.

### **Blockchain as an IP Registry**

Blockchain can work as a technology-based IP, allowing IP owners to store hashed digital certificates of their intellectual property and utilize the platform to employ a smart contract to get whatever royalties they have earned from anyone who uses their innovations or creations. Patent offices and other regulatory organizations frequently have lengthy approval waiting periods. The first-mover advantage, which requires incumbents to respond quickly to safeguard their ideas and intellectual property, might be harmed by this delay. Decentralized registration systems will take the place of centralized ones, making it simpler to register new intellectual property, amend filings, and transfer ownership whenever necessary. As a result, regulatory bodies can function more effectively with fewer resources.

### Smart Contracts and Governance

Smart contracts can automate the management and enforcement of intellectual property rights by encoding the terms of ownership and licensing into code. This can include royalty payments, usage restrictions, and transfer of ownership. Additionally, smart contracts can create decentralized autonomous organizations (DAOs) to govern intellectual property rights, allowing for a more decentralized and transparent decision-making process. However, it's worth noting that using smart contracts and blockchain technology in intellectual property rights is still an emerging field, and ongoing legal and regulatory challenges must be addressed.

### Application of Blockchain in intellectual property rights IPR

Blockchain offers many features that contribute to data security and have a significant influence on the area of intellectual property. Since we do not yet fully understand the potential of blockchain, we may also observe use cases not included in the ones below.

- For Determining Ownership

Blockchain technology is a reliable platform to determine ownership and confirm its authenticity. The conventional process of applying for a patent in person at a patent office to protect the IP is rife with numerous issues. It will be difficult for someone to demonstrate that they are the owner of creative work.

As IP owners maintain immutable hashed digital certificates that cannot be stolen or viewed by other parties, a blockchain serves as a timestamping tool. Looking up the relative ownership of the products in the digital ledger also aids in separating counterfeit goods from tangible commodities. Additionally, blockchain is an authentication method to verify the authenticity of any intellectual property that violates any prior work or IP.

- For maintaining Maintaining Vversion Ccontrol of Ddigital Asassets

Since digital assets have several versions during their lifespan, it is crucial to link different versions of digital assets. Blockchain technology can connect every iteration of a person's digital assets and use them for complete lifecycle maintenance.

As each file will be given a distinct fingerprint, the platform will offer two versions, and it will eliminate duplications. ; bBlockchain could be helpful to defensive publications. Each network

node can simultaneously decide which content to host and whether or not to enable indexing and searching for the database.

- To unify the global IP system. Unifying the Global IP System

The issue of international patent system unification can be resolved by blockchain technology. It can significantly increase the efficiency of IP management, hasten business innovation, and promote information sharing through the ledger. Even in India, Section 65B (Admissibility of electronic documents) of the Indian Evidence Act, 1872, may be crucial for enforcement and jurisdiction in transactions over a blockchain network.

- For enabling Enabling the IP Marketplace

Blockchain uses several computers (or nodes) to record, share, and synchronize transactions in a distributed ledger that holds data. It can serve as a marketplace for intellectual property by allowing creators to list their innovations and digital creations as ledgers with brief descriptions.

Blockchain technology can be used as a worldwide IP registry by IP offices to hold IP assets in a distributed ledger. It can maintain due diligence in IP deals and expedite IP audits. By leveraging smart contracts, blockchain can serve as a channel for exchanging or transferring IP assets between two entities. It can also be an authentication method when exchanging or sharing intellectual property. We could secure payment ways for transmitting money using bitcoins.

## Conclusion

As blockchain technology spreads, business leaders and developers will have to collaborate to create standards and interoperability protocols. The potential of blockchain is actively being investigated by several governmental organizations and IP registries, including the European Union Intellectual Property Office (EUIPO). Several groups are discussing international standards for self-executing contracts. Therefore, it only seems a matter of time before the law addresses the potential obstacles in the large-scale legal application of the technology, such as questions of governing laws and jurisdictions, the enforceability of smart rights, data security and privacy concerns, reliable rules and definitions for smart contracts, and it permeates IP law and practice.

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## Viable Intersections: IoTs and IP Strategy

Anjali Saran

### Introduction

In contemporary times, the term *IoT*, or Internet of Things, alludes to the aggregate networks of associated gadgets and the innovation that works with correspondence among different devices and the cloud, as well as between the actual gadgets.<sup>1</sup> It mainly refers to all the things that are connected to the internet. They can be the things like *Alexa* of Amazon, or cars, TVs, etc., that run on the internet to fall under this category. IoTs have, of late, become extremely popular. A part of this reason can be attributed to the changing dynamics of the world at present, which depends heavily on internet usage.

Therefore, it's not shocking to see that millions of inventions are taking place along these lines. While inventions along these lines do call for IP protection yet, the strategy and planning behind the protection of these inventions are what calls call for a comprehensive effort to protect these intangible assets. This is what this article deals with exploring.

### IoT Protection

The Internet of Things (IoT) represents the next phase of the internet revolution.<sup>2</sup> IoT is the fundamental part of any company that is centred around this concept. It can be a company for logistics, data management, or even healthcare. For the smooth functioning of all these systems, there needs to be a comprehensive IP strategy that could prevent the system from being used by competitors.

Before delving into the IP Strategy Checklist, it is essential to note that IoTs amongst themselves are diverse, and every step is based on the need of the specific product or service or idea that is being dealt with.

The IP Strategy Checklist mainly consists of 4 significant steps that most of these companies follow to protect their assets. These include:

1. Ideation Process, which involves the creation or development of an idea. This step involves analyzing the idea, thinking about the business prospects, as well thinking so as to secure the IP.



2. Product Service and Development Stage, which deals with the analysis of the commercial market. This stage mainly deals with an intersection of IP and the product as a whole. It involves thinking along the lines of the use of a product or service.
3. IP Protection, i.e., choosing the most appropriate form of IP to secure your assets. This step involves preparing a comprehensive IP Strategy to protect the product or service. It yields answering answers glaring questions regarding the monitoring process, registration process, etc.
4. IP Commercialization, which primarily deals with branding and valuation of the IP from time to time.<sup>3</sup>

These four steps, which involve further sub-steps to reach the desired goal, are the ones that help in the protection of IoT. All the steps mentioned above collectively help in providing the necessary protection to a product/service at the time of its launch till it is protected under the required laws.

### Disadvantages of IP Strategy Checklist

The IP Strategy checklist looks simple to follow; however, things may turn out to be completely different if the Checklist is not followed correctly. For instance, the IP identification process is not as simple as it looks, and one wrong move can have disastrous consequences. Another challenge is the documentation process. The process needs to be carefully reviewed, the failure of which can impact the business. Some people also go for NDAs (Non-

Disclosure Agreements) to prevent any leakage of information from any sources.<sup>4</sup>

While being innovative is good, it should be done after careful analysis. Any impulsive behaviour here will again lead the person to doom. Therefore, a careful study of the prevalent market practices should be at before deciding on the type of IP and then only after careful deliberation should a person proceed with the final registration. Deciding on the wrong IP for the product/service can leave the subject vulnerable to being breached and infringed. The foremost mistake a person can make is to ignore the steps of the creation of creating the IP Strategy. The steps measures have to be carefully pondered before arriving at any decision. Careful planning will also mean that the person has an idea of how the strategy is going to be implemented.<sup>5</sup> If there is any lapse in the creation of the IP Strategy and its implementation, then the entire Checklist in itself will crumble, leaving no scope for the product/service to survive.

Apart from the above-mentioned points, preparing an IP Strategy Checklist is not easy; hence it requires cost for research, market analyzation analysis, marketing the product/surface, and hiring professionals to help with the entire process. In other words, it requires high costs up until the stage where the idea turns profitable under existing market conditions. Hence, it has been argued that having an IP Strategy Checklist does not suffice till the Checklist until it has been planned meticulously and is followed in its entirety.

### Conclusion

While many people may argue about the IP Strategy Checklist, yet, it has been the most effective means for any IoTs, as they all require their prime product/service to be protected in this new Digital Age. At present, where there are cars being designed to provide a conducive atmosphere within, and retail and healthcare IoT are selling as hotcakes, it is only prudent for any business to invest in this process rather than regret it later. This proves the hypothesis stated above that, indeed, IoT and IP Strategies have something in common. While they may not have 100 per cent compatibility, IoT still depends on a reliable IP Strategy method to prevent any form of setback or failure.

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## Interplay Between Copyright Law & AI/Technology In The Music Industry

- Samrudh P

### Introduction

Music and how it has been produced and created have undergone many challenges in the last century. With technology taking a substantial part in music production and its success, there are concerns regarding the copyrightability of such pieces. AI (Artificial Intelligence) taking over the music industry can also be plausible in the near future. Now more than ever, musicians and producers have become increasingly reliant and

dependent on technology and AI to produce music. The copyrightability of such works of art is at contention since the primary question is on the ownership of the copyrightable subject, as this varies with jurisdiction and conventions.<sup>1</sup> The fundamental element to consider is the development in this particular field of music and AI in that particular jurisdiction.

### AI-Generated Music

Taryn Southern, known for her work as a TV Host and Actress, created the first music album with songs composed entirely by AI. The technology used here was IBM Watson BEAT Program, which would have music compositions previously installed as input. From then on, it'll create other musical pieces based on the copyrighted compositions it has been fed. The entire album and its legality is inexact, as the output is based on copyrighted input.<sup>2</sup> The issue of originality and copyrightability was resolved in the case of *Naruto et al. v. David Slater*,<sup>3</sup> where a monkey clicked a selfie with a trigger placed by a photographer. The question before the Court was whether an animal could sue in copyright infringement cases. Under the Copyright Act, 17 USC Sec. 101, only a human has the statutory backing to sue for copyright infringement. This case did help establish a general understanding of how non-human entities are perceived concerning IPR laws. The Act also explicitly states that only humans can create works of authorship. Furthermore, YACHT, the band, released their album in 2019, which was a synthesis of all their previous works. A total of 82 songs were inputted via machine learning tools, and with the help of neural networks, deep learning and AI, ten songs were released in the album titled Chain Tripping.<sup>4</sup> As far as the Indian Jurisdiction is concerned, Sec. 2 (d) of the Copyright Act, 1957 defines an 'author'. Subsequently, an author is supposed to be present to be granted the copyrightability of the entity. In the case of *Tech Plus Media Pvt. Ltd. v. Jyothi Janda*,<sup>5</sup> the court held that just having a written document of the client's portfolio isn't enough to claim copyright

over it. Plaintiff was identified as a juristic person incapable of being the author, as defined under sec. 2 (d) of the same act.

### AI Functionality

Machine Learning is the branch of AI that is focused on developing systems that learn from data via an automated process of identifying patterns in available data and then applying the knowledge to new data.<sup>6</sup> A dataset is then formed, in the initial stage per se, when the first data is inputted and processed. Further, the data is turned into a model that summarises the patterns in the training data while making generalisations.<sup>7</sup> Data gathering, pre-processing, training, testing and validation are the following few subsequent stages in the process.<sup>8</sup> Neural Networks and deep learning methods enable an AI to be capable of copyrightability of any creative work. Deep learning is complicated machine learning using much more extensive neural networks.<sup>9</sup> The deep learning method is claimed to be of higher accuracy and is expected to be the fastest-growing technique in AI.<sup>10</sup> To address all the growing concerns surrounding AI, there is a proposed AI Act in the EU, which is in the spirit of addressing every pending issue regarding AI and technology.

### International Countries and EU's Stance

In 2021, the AI Act, proposal agrees with a widened definition of AI systems. Annex 1 of the Act lists various techniques and approach machine learning, logic and knowledge-based, statistical approach, search & optimization (S&O) methods, etc. Furthermore, there is one prominent test that can be identified from previous judgements of the

Courts, as there are four criteria that have to be satisfied for any output by AI to be granted a copyright. They are as follows:

1. Production in the Literary, Scientific or Artistic Domain: This has been incorporated in the EU copyright law via the Berne Convention, which leaves the question open. Hence, it is only through this convention that requires this criterion. The EU copyright law doesn't explicitly mandate this criterion.
2. Product of Human Intellectual Effort: This stems from the CJEU Case law on concepts of originality. The Court in Painer and Cofemel case has established multiple times that there needs to be a touch of originality and authenticity related to the author in the piece of creative work.
3. Result of Creative Choices: Preparation, Execution and Finalisation are the 3 broad phases of the creative process, as iterated in Painer. CJEU has formed this structure for bettering the legal assessment of the originality vis-à-vis AI outputs.
4. Which Choices Are Expressed in the Output: The author's free and creative choices should be expressed perceptibly. In the case of Infopaq International A/S v Danske Dagblades Forening, the Court opined that, "It is only through the choice, sequence and combination of those words that the author may express his creativity in an original manner and achieve a result which is an intellectual creation."<sup>11</sup>

## Conclusion

Although it differs from jurisdiction, the approach needs to be taken concerning the developments, state of the art, and culture in that particular area/region. As in Hong Kong (SAR), India, Ireland, New Zealand and the UK, the authorship of a creative piece of music/ art by an AI is given to the programmer, as he is the one behind the technology and hence his creativity is the one that is being in use to create the entity at hand. However, in the US, only a human is granted the benefits of copyright, as is decided in a catena of cases, Feist Publications v. Rural Telephone Service Company, Inc.<sup>12</sup> A similar decision was taken by an Australian Court in the case of Acohs Pty Ltd v. Ucorp Pty Ltd., where the Court opined that any creative work done with the intervention of a computer cannot be copyrighted as a human didn't produce it. A different approach has been taken by the EU, where a human touch is necessary, and a 4-criterion test has been established to test this out. Although technology and AI are yet to develop to a significant extent until it comes to a hiatus, the legal concerns are dilemmas concerning it wouldn't stop there.<sup>13</sup> Regarding ChatGPT and concerns related to its credibility and usage, it has been banned and caused trouble among educational institutions. Such new technology and its usage in the music industry wouldn't cease here; instead, this is just the beginning of a new era of music and creativity.

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## Intersecting IP & Data Privacy

Joanna Jacob

### Introduction

*A lightning's struck the world; It's lashed out onto the whole of humankind, obliquely in its most unnatural form: AI or Artificial Intelligence, the emergence of the future paradigm of normalcy, a phase of complete transformation from the reality that was so known until this time, on its pedestal to turn into a universe of its own.* Although the vast outbreak of tech and technology-based operations replacing human labour and their efforts have been something that's been making rounds for quite some time now, what is still suppressed to the whole world is a fact that is known vaguely to most of them - the threat to personal information, integrity, societal status and well-being. In a world where robots have almost completely taken over their creators, a fact again which is widely known, it is only evident for us individuals to comprehend further that our world, our innovations, our existential details, and our identities are all in a

detrimental medium extremely palpable to its influences authorizing it.

### AI Scattered across IP – The Relevance of AI Within IP

Like in any medium, artificial intelligence has also captured its niche yet highly progressive arena within the realm of intellectual property. For creators and innovators of works spread across the pavilions, AI has taken its place by making the lives of such innovators easier by providing patents for their work, research, application, creating, developing, visualizing and more. In terms of its capabilities, AI is highly capable of administering and protecting data, all involving IP profile management and patent developments and trademark protections, etc. Inventors now rely upon AI much to the extent that it is even used to manage patent applications!<sup>1</sup> Especially with advancing technology in today's world, the amount

of data at our fingertips and the amount generated by humans, as well as AI, the threshold of it to absorb that hefty amount, is likewise complex. Fortunately or unfortunately, details regarding a human being's entire existence are on a platform, most times even in many. All that information is personal yet valuable to our identity as citizens; information such as our medical and birth records, names, birthdates, social security numbers, and our financial and contact information are all the ones that represent us individually in any society. And what is truly unfortunate without any hesitance is that a lot many times, crucial information is ink splashed. Personal details are infringed upon by impersonating and abetting immorality and worse. And what led to it arising was the inexplicable surge of tech across the world that has now garnered widespread control over people's lives in a three-hundred-sixty-degree spectrum.

### **The Intersection of IP & Data Privacy - The Consequential Effects of Data Theft**

Tangible assets have more of a guaranteed and administered protection against theft, infringement and impersonation of anyone's data. It has enforced legislation to deal with its specificities; on its other end, intangible assets are likely to face an ironical bias since it has to go through much scrutiny often as its protection requires further consideration. In business, data is often modelled as intellectual property - details of clientele, and business propositions that are strictly meant to be protected as it would certainly be bound by non-disclosure.<sup>2</sup> Data privacy is primarily concerned with the proper care and administration of a person's data. Not only must it be protected against infringement or malice

of any kind, but it must also follow its regulatory norms. The scope of intellectual property will continue to expand as newer creations and innovations keep coming up. In the midst of it all, privacy could become what isn't a priority. Since IP and privacy laws are centrally concerned with the regulation of personal information the challenge of providing a degree of exclusivity for information that is itself inherently non-exclusive. The *UNDHR (Universal Declaration of Human Rights in 1948)* has suggested 'La vie privée' as a universal human right in international human rights. The idea of the right to privacy as a fundamental human right has increasingly informed the development of private and public law in multiple jurisdictions.<sup>3</sup>

### **The Eventual Result Of The Right To Data Portability**

When individuals or companies have protected data, data portability becomes a concept where users can protect their data in any form they wish. And instead of storing it in any closed platform, that does not keep the material or data entirely safe and guarded. And the Right to Data Policy, therefore, allows such individuals or professionals to keep their data safe and protected and even enables them to access it whenever they require it. It gives them the provision to use it as often as they want to and use it for various purposes providing different services. Measures suchlike this also provides choices like being able to move the given data, copy or even transfer to another device safely and securely where no malpractice could be done. Also, this ensures that its usability is not in any way affected. *According to the GDPR (General Data*

*Protection Regulation*), the right to data portability is one of the eight significant rights enforced by the GDPR.<sup>4</sup> In such cases, the data is usually subjected to a data controller who engages with the content for whatever purposes it may require in a manner it is authorised to do. On the other hand, Intellectual Property Rights are acquired legal rights which belong to the creators of any entirely original content work. These could include inventions, artwork, books and philosophies, stories, and scientific developments. And in IPR, there are four branches: trademarks, patents, copyrights and trade secrets. In the Indian Constitution, Intellectual Property Rights usually are enforced with the concern of consumers in mind. Most of the provisions of the IPR stand by that fact even. It constantly seeks to help consumers and make them aware of the rights that are at their behold. And if at all their rights are infringed upon, they don't need to worry or feel helpless when they feel that they're being cheated or exploited in any way. In such a manner, this ensures that people can come forward against it with their rights protected and guaranteed by the IPR of the Indian Constitution. When brought to people's notice, have always been available since the framework of the Constitution was initiated; the lack of awareness becomes the major factor as to why people have to deal with such issues where they are at a loss because of no fault of their own. With provisions of choice, safety and awareness of the consumers, reliability and effectiveness of their purchases and further on. IP Rights were enforced to ensure that the products available to the public in the market are quality

certified and authentic and prices meet the amounts that its audiences expect.

### Conclusion

IPR and Data portability have a lot of similar aspects when it comes to the commonalities in their concepts. But it is constitutionally accepted that intellectual property rights have the authority to ensure that original works are never misused. Since if it does, it will be able to seal the damages done as most of them could be acquired back. On the other hand, data portability only protects the content while using and transferring the material. IPR ensures that it could make it official that the data belongs to a particular entity. For that, patents, trademarks and copyrights come into the picture. When an individual or any entity owns material or content that has originality in its content or scope, they could always go ahead with it and patent it if it concerns theories or records. Otherwise, a trademark is something most original materials are transformed into so that no one can ever use it as their own.

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## Challenges of Protecting Geographical Indications In The Digital Age

- Ananya Singh

### Introduction

Products with distinctive origins and reputations are protected by geographical indications (GIs), which are significant intellectual property rights. Examples include champagne from the Champagne region of France or Parma ham from Parma, Italy.<sup>1</sup> These signs encourage regional manufacturers and economies while also ensuring the items' reputation and quality. Geographical

indications must be adequately protected for all products; this knowledge has grown since the TRIPS Agreement was adopted. A registered GI tag prohibits the use of the registered GI mark or the company name of any product that is confusingly similar to or imitating the registered product. Due to the borderless nature of the internet, the rise of e-commerce, a lack of



consumer awareness, the difficulty of proving infringement, the rapid pace of technological change, the requirement for international cooperation, and the advent of the internet has made it simpler for counterfeiters to sell their products online; thereby violating GIs and lowering the reputation and calibre of authentic goods. IPR protection has gained prominence in recent years. Most intellectual property in terms of high knowledge-based technologies is owned by developed nations, who seek to protect their own interests through IPR conventions. These nations frequently complain about the inadequate IPR protection in developing nations and accuse them of IP piracy. Developed nations have passed rules to preserve their genetic resources, especially those that produce GI goods.

### **Thailand: A Case Study**

Thailand seeks to lessen the issue of exploiting origin-based names with its sui generis GI protection scheme. The Thai GI Act was passed in response to biopiracy involving the country's well-known Thai jasmine rice as well as due to the needs of the multilateral trading framework. The primary motivator was thought to be the biopiracy problem. Due to the internet's global reach, it is challenging to enforce geographical indications and keep an eye on the sale of fake goods. An attempt to safeguard its national "assets" by seeking a patent for the rice genes at the USPTO and the rising trade liberalisation through bilateral FTAs and RTAs with economies like the United States has created a situation that has begun to question GI protection in Thailand. This is because patents registered in the United States have a short duration of protection (only up to 20 years). Furthermore,

Thailand never advocated for the patenting of living things (such as artificially created micro-organisms) during the multilateral trade talks on patent protection.

### **Additional Challenges**

Additionally, the ability of counterfeiters to disguise their tracks and avoid detection has increased with the advent of digital technology, making it challenging to demonstrate GI violations. E-commerce, which has made it simpler for individuals to access and buy things from around the world, including fake goods, has compounded the issue due to the rapid speed of technological advancement. The vast number of online marketplaces makes it challenging to keep an eye on, and regulate the sale of fake goods, which increases the infringement of GIs. This presents a challenge to the legal systems to keep up with the changing landscape of the digital world. The general lack of consumer knowledge of GIs is another problem. Many individuals are not aware of the significance of geographical indicators or how to tell authentic items from fakes. Because of this, it is more challenging to safeguard GIs because customers might unintentionally buy fake goods. Last but not least, international coordination and cooperation are necessary for defending GIs in the digital age. In relation to intellectual property rights, different nations have varying rules and regulations, thereby posing a challenge to defending GIs. Nevertheless, it is essential to safeguard customers from fake goods, support regional manufacturers and economies, and guarantee the quality and reputation of items. GIs in the international arena is still a work in progress, partly because Article 23 of TRIPS only provides

vital protection of wines and spirits and not for other products. By modifying Article 23 of the TRIPS, it is crucial for India to request the expansion of GI protection to additional products in addition to wines and spirits. The rising significance of expanding the protection of geographical indications for wines and spirits, to all products is also demonstrated by the World Trade Organization (WTO) negotiations in the realm of industrial and agricultural products.

### Conclusion

Nations must however recognise that national laws are the best mechanism for protecting GIs because these laws—and not the articles of the treaty—offer protection for GIs. Such protection increases the possibility of market access, which adds value to exports. The GI tag is crucial for developing and preserving abstracts and the distinctiveness of a

product's essentials and attributes. India is not far behind in pursuing this aspect of intellectual property.

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## SEP 'Bruh'? Will You Be My 'FRAND'?

### Introduction - Standard Essential Patents (SEPs)

As per the ISO/IEC Guide 2:2004, “standard” is defined as “a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, aimed at the achievement of the optimum degree of order in a given context.” It is the industry standard which is to be met in order for a product or process to work in a given manner.<sup>1</sup> As per the European Telecommunications Standards Institute (ETSI) and its IPR policy, the condition for essentiality is:

### Sudekshana Venkatesan

“ESSENTIAL” as applied to IPR means that it is not possible on technical (but not commercial) grounds, taking into account normal technical practice and the state of the art generally available at the time of standardization, to make, sell, lease, otherwise dispose of, repair, use or operate EQUIPMENT or METHODS which comply with a STANDARD without infringing that IPR. For the avoidance of doubt in exceptional cases where a STANDARD can only be implemented by technical solutions, all of which are infringements of IPRs,

*all such IPRs shall be considered ESSENTIAL*". Standard essential patents are obtained for such technology, which is mandatorily required for manufacturing a standard-compliant product. SEPs are especially widely used in the arena of technology, especially phones.

### Features of SEPs

The market standard for a particular technology or a tech product will be laid out only when someone has come up with such a technology. The producer of such technology will therefore gain an upper hand when he has patented such technology as SEP. Now any producer in the market, in order to be able to survive in the market, will have to use such patented technology. Such use is to be licensed by the SEP holder on a royalty basis. Under IPR laws, the patented product can be licensed by the patent-holder on such terms as agreed, usually on payment of a royalty. It can be seen that the SEP holder wields enormous power and control over the other players who have to depend on the license which is to be issued by him and attempts to dictate unfair terms to the other players, who end up complying with them as their survival in the market depends solely on the license which is to be issued by him. The superior bargaining power can be misused to earn disproportionate revenues. This is where the intervention of the law is required.<sup>2</sup> However, the law or Courts cannot simply determine upon the question of fairness of the terms dictated by the SEP holder. While it is important to uphold the rights of the producer seeking a license, the rights of the patent holder are also to be protected. This is in line with the incentive theory of intellectual

property. If the interest of the patent holder is neglected, then it amounts to a strain on any further innovation as the innovator is to operate on the premise that his interest will be out the window once the licensing terms come into the picture, he will just choose not to invest into the innovation. That is not a desirable effect from the point of view of the bigger picture.

### **FRAND Licensing**

As seen above, given the high chances of abuse of the position of power held by the SEP holder and also the need for upholding the interest of the SEP holder, the Courts cannot really adjudicate in favour of one party. This is especially with reference to technology. Though compulsory licensing is still an option that is predominantly used in the field of pharmaceuticals, where the public interest is of prime importance. But in technology, there is no imminent and patent threat to public interest and such compulsion cannot be justified. In such a case, a win-win solution is what will cater to the interest of all parties involved. Such a solution is FRAND licensing. FRAND stands for Fair, Reasonable and Non-discriminatory licensing. What happens in the field is that just like there are Copyright Societies, for the purpose of SEP licensing, a Standard Setting Organisation (SSO) is established.<sup>3</sup> The licensing of SEPs is done by the SSO. The SSO will determine whether a patent can be "standard essential" and be licensed as per FRAND terms. This makes sure that the SEP holder gets his due share while access to the standard essential technology is available to the other players in the market. The FRAND terms ensure a balance between the use of the standard by all the

manufacturers in the industry and the fair benefits reaped by the SEP owner.

### The Downside

Even non-essential technology may be added to the pool of SEPs. When this is done, the licensing cost shoots up for the patented product and results in a higher cost of production for the licensees, and also drives up prices for the consumers.<sup>4</sup> The main issues involved with SEPs are:

- Over-declaration of SEPs
- Lack of standardized data
- Difficulty in determining royalty rates

### Case Study: Ericsson & Micromax

In March 2013, Ericsson sued Micromax for infringing its SEPs used in manufacturing mobile phones.<sup>5</sup> In this case, the Delhi High Court, while hearing an appeal from the decision of the Competition Commission, dealt with SEPs and FRAND licenses and looked into the IPR and technology aspects.

### Conclusion

As far as SEPs are concerned in the field of technology products and processes, the right way to go is the FRAND way. That way, both parties arrive at a win-win and also the issue is dealt with at the level of the SSO and does not add to the burden of the Courts. Taking a holistic view,

considering all factors, FRAND licensing can be highly beneficial. However, the dangers which emanate from SEPs should also be kept in mind and regulations and decisions should be made in view of such underlying factors.

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## The Role of IP in the Development & Commercialization of VR/AR

**Manushri Bhat**

### Introduction

IP plays a crucial role in developing and commercializing virtual reality (VR) and augmented reality (AR) technology. VR

technology involves creating computer-generated environments that simulate real-life experiences and allow users to interact with digital objects as if they were real. The commercialization of VR

technology has been made possible through the protection of various forms of IP.

### Role of IP in VR

One of the critical forms of IP in VR is patents. Patents provide inventors with the exclusive right to prevent others from making, using, or selling their inventions for a limited period of time.<sup>1</sup> Patents enable VR companies to protect their technology and prevent others from copying their innovations, which is essential for attracting investment and encouraging innovation. Another essential form of intellectual Property in VR is copyright. Copyright protects the creative expression of VR content, including the graphics, sounds, and text used to create immersive environments. This protection allows VR companies to generate revenue from their creations and ensures that others cannot simply copy and distribute their VR content without permission.<sup>2</sup> Trademarks also play a role in the commercialization of VR technology. Trademarks are used to identify and distinguish VR products and services, which is vital for building brand recognition and consumer trust. Furthermore, trade secrets play an important role in VR commercialization by allowing companies to protect confidential information, such as software code, business plans, and marketing strategies. This protection is essential for maintaining a competitive advantage and preserving the value of VR technology.

### Intellectual Property (IP) affects virtual reality (VR) in several ways:

- a) Protection of Technology: IP laws, such as patents, allow VR companies to protect their technology and prevent others from using their inventions without permission. This helps VR companies secure investment, defend against infringement claims, and establish dominance in the market.
- b) Competitive Advantage: VR companies may use trademarks to protect their brand and distinguish their products from others. This helps prevent consumer confusion and protects the company's reputation and products, giving them a competitive advantage.
- c) Licensing and Permissions: VR applications often incorporate content, such as images, videos, and audio, that are protected by copyrights. Ensuring that all necessary licenses and permissions are obtained is crucial for VR companies to avoid legal trouble and protect their IP.
- d) Legal Disputes: IP laws can also give rise to legal disputes, such as infringement claims, when one company believes that its IP rights have been violated by another. These disputes can be such that they are time-consuming and costly and can distract companies from their core business activities.<sup>3</sup>

With respect to IP and the Metaverse, they are closely related. It is important to note that as more and more technological innovations progress, There will be IP items both in the virtual and physical worlds in the near future. Many new

products will be introduced into the virtual world in the upcoming years as a result of the intense competition among the goliath firms. The metaverse is the "next big thing" in consumer branding and will define how brands interact with customers. Brands and branded goods will not exist in the metaverse since everything there is made up and virtual. We require IPR rules in order to safeguard these trademarks and their concepts. Any equipment or product is protected by patents, whereas software technologies are covered by copyright.<sup>4</sup>

### Conclusion

In summary, IP affects VR by providing legal protection for VR technologies and products and plays a vital role in developing and commercializing VR technology. It enables companies to secure investment, defend against infringement claims, establish their brands, and maintain a competitive advantage. As discussed, patents, copyright, trademarks, and trade secrets help VR companies protect their technology and content, build brand recognition, and generate revenue. The protection of intellectual property rights allows VR companies to invest in their technology, bring innovations to market, and create

exciting and immersive virtual experiences for users. This field is ever-growing and changing, and comprehensive laws must be brought about in order to regulate it, owing to its highly volatile platform. An in-depth understanding of its ins and outs will help form a clear picture of its future in relation to intellectual property and its associated rights.

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## Using IP to Protect the Rights of Video Game Developers

- Devrata Siddhartha Morarka

### Introduction

The number of gamers worldwide keeps increasing. A survey conducted in 2020 stated that the global number of gamers would surpass

3 billion by 2023, and this hypothesis was then proved to be true as the number of gamers present as of today is around 3.09 billion people. Technology advancements have accelerated

changes in video game design, complexity, and variety. Nowadays, players have a broad variety of forms and genres to pick from, and “AAA Games”—those created with the greatest budgets in the industry—often provide dozens or even hundreds of hours of narrative material. (God of War is a prime example of having an amazing storyline). Video games are also becoming more realistic in terms of graphics. They are able to capture every aspect, including the characters' own personalities, which are increasingly often represented by well-known Hollywood actors or influencers. The foundation of video games has always been its intellectual property, similar to other artistic works (IP). Video games are typically significantly more complicated than conventional copyright-protected works. They are a mixture of several elements such as computer programs, literary works, music as well as trademarks. Hence, the specifics of video games make it really difficult to apply intellectual property laws. Numerous aspects of online gaming remain unclear for video game producers.

### Usage of Trademarks

The trend of deeper realism in video games is growing, which has been helped in part by technology's capacity to portray even the smallest elements with realistic accuracy. Therefore, it seems logical that game designers would opt to incorporate aspects from the actual world into their creations, such as real-life brands, items, or scenery. This is evident in games that simulate combat; to give players a more realistic

experience, producers frequently base these games on historical events and include replicas of real weapons, military vehicles, planes, uniforms, and other gear. Many of these items also include trademarks, which may be used to protect things like a company's name or emblem. This begs the question of whether a video game's creative production justifies the usage of trademarks in general. Warfare-themed video games are a good example because they have faced a lot of criticism and disagreements about how realistically they portray real-world items. A disagreement over the use of Humvee military vehicles in the Call of Duty franchise, for instance, was the subject of a significant intellectual property litigation in 2020. A New York district court reached a first-instance settlement in the matter in March 2020. Activision Blizzard's use of trademarks connected to AM General's Humvees was found to be protected by the First Amendment of the United States, according to the court. The Rogers test, which was developed in the 1989 Rogers v. Grimaldi case, was applied by the court in its analysis. The district court concluded: “If realism is an artistic goal, then the presence in modern warfare games of vehicles employed by actual militaries undoubtedly furthers that goal.”

### How IP Rights of Video Games Can Be Protected

The formation of legislation is one of the ways one can protect the IP rights of video games. The legislation must specify the ways their IP rights can be infringed and then the punishments handed out if the IP rights are infringed. As of today, India

doesn't have legislation for the protection of the IP rights of video games, and therefore only patents, copyrights, and trademarks can protect the IP rights of video games. Video games get protection under the realm of literary and artistic work, even though they don't directly get protection under the Copyright Act. Section 14(10) and 57(11) of the Copyright Act, 1957 provides moral rights as well as economic rights to the artistic works of video game makers. Patents are granted for an invention that is new and original and gives the right to the owner to use it. The patent can be taken for game controllers or any minute detail that makes this product different from other products. With the advancement of technology, people can make illegal copies of video games and distribute the content of other creators, which is wrong. This leads to the original creator making losses, and to solve this problem the developers use a software that is made of a sequence of digital protections which are called TPM (Technological Protection Measures).

## Conclusion

It is obvious that designing a video game is an IP difficulty and that video games are a significant challenge for IP law itself from this very small collection of possible difficulties alone. It is challenging for legal rules to keep up with evolving technology, as is the case with other rapidly emerging sectors, therefore some degree of legal ambiguity is inescapable. However, it will be simpler.

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## Challenges of Protecting Trade Secrets in the Age of Digital Information Sharing

- Aditi Shandage

### Trade Secrets & Laws Governing Trade Secrets

The ownership of a formula, pattern, compilation, programme, device, method, technique, or process by a business that gives it a competitive advantage can be defined as trade secrets.<sup>1</sup> Trade secret law

protects technology and business knowledge that is not widely known in the industry and forbids unauthorised third parties from using it for commercial gain. Trade secrets and sensitive information are not uniformly protected by law in India. They are protected by many independent



clauses in different statutes such as the Indian Contracts Act and Information Technology Act. Furthermore, Indian courts have also recognised the protection of trade secrets.<sup>2</sup> The General Agreement on Tariffs and Trade (GATT), the North American Free Trade Agreement (NAFTA), and Trade-Related Aspects of Intellectual Property (TRIPS) are responsible for the growth of trade secret protection in the global community.<sup>3</sup>

### **Satisfying Secrecy Requirements for Digitally Stored Information - Additional Difficulty**

Businesses do not see technology as patentable information but rather as secrets. This is primarily due to increased market competition, which has led to competitors innovating whenever information is made available. Although this encourages healthy competition, it becomes more challenging for small enterprises to compete or succeed once business majors have access to such information. Trade secret theft before the advent of digital technology involved suspenseful schemes like using aeroplanes to take pictures of rival factories. Trade secrets are increasingly kept in digital files, and their protection is largely provided by cybersecurity, making trade secret theft easier. In the context of cybercrime, often unseen criminals may target the prized intellectual property of a company. As we progress to live in today's digital world, for the majority of businesses, cyber theft has been a major setback. Due to the removal of all trade barriers caused by globalisation, countries may now expand their enterprises globally and provide their customers with a wide variety of high-quality goods and services. However, with

this globalisation of the digital world comes a variety of digital threats and insecurities. Data has become a useful tool in the modern digital age, and many countries have specific legal safeguards in place to protect trade secrets. Despite this, India lacks explicit laws governing the preservation of trade secrets, which in turn is a threat in itself. The IT Act of 2000 does not adequately address phishing, surveillance, bullying, hacking, disseminating fake news, and other infractions.<sup>4</sup>

The development of information technology is a fantastic instrument for corporate growth and customer engagement, but it also significantly raises the danger of data misuse or cybercrime. Unfair commercial practices are known to include the illegal use of a company's confidential information. Previously if someone wanted to misuse the company's information, he or she could steal documents kept in the office. However, everything is now kept in a digital vault or a piece of software. Therefore, it is not impossible for a hacker or cybercriminal to acquire a company's trade secrets. The hacker or cybercriminal can readily access the data while simply sitting in his or her room. Remote infiltration of a computer system by cyber criminals and hackers operating beyond the physical boundaries of the nation where a computer server is located can lead to the theft of protected trade secrets.<sup>5</sup> Since competitors' trade secrets are likely to be sought after by others, access to confidential information must be severely restricted. Signing NDAs, assembling a SWAT squad, and using top-notch software can all help to lower the likelihood of cyber theft. SWAT, on the other hand, stands for special weapons and tactics.

The majority of issues arise because the business lacks a specialised team charged with maintaining the confidentiality of sensitive information and trade secrets.<sup>6</sup> Furthermore, digital information sharing is also one of the major threats to trade secret protection. This is an online mode of communication or sharing of information. Technology has made long-distance communication a million times faster and easier. Data can be transmitted quickly and cheaply thanks to the Internet's extensive accessibility and worldwide reach. As a result, it is possible to instantly and cheaply distribute creative property that can be transformed into digital data to millions of people via the Internet. If a third party gets hold of a trade secret, it will not take more than a few seconds for him/her to simply copy-paste the data and leak it across. If not a third party, then even while the owner of the trade secret is communicating online, his one click by mistake could cost him millions of dollars.<sup>7</sup>

### Reasonable Precautions for Firms:

Companies should ensure that staff members are aware of the possibility of electronic surveillance (e.g., of email, Internet, and telephone use) by the company to look for misuse of trade secrets. Companies can limit access to such credential information by keeping it in the hands of a few professionally trained men. Furthermore, companies should focus on buying or making new strong websites or online security vaults to avoid any kind of existing loopholes on the Internet.

### Conclusion

Since most of the trade secrets today are being stored digitally due to rapid technological developments, asking companies not to do so is no solution. As seen above, the Internet brings with it an abundance of threats to trade secrets, and therefore, it is very important for companies to look out for any loopholes that could lead them to a major loss. India today is a developing nation with new ideas and businesses every day; therefore, the need to bring in legislation concerning trade secrets is very important. All digital threats faced by trade secrets can be reduced or removed by having strong software that provides safety vaults and by also bringing in new laws.

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## Role of IP In The Development & Commercialization of Nanotechnology

- **Melissa Joseph**

### Introduction

Nanotechnology is a rapidly advancing field that has the potential to revolutionise many industries and improve the quality of life for people around the world. This technology involves the manipulation of matter on a molecular and atomic scale, which can lead to the development of new materials, devices, and systems with unique properties and capabilities. It has been identified as one of the critical technologies of the 21st century.<sup>1</sup> With its potential to revolutionise a wide range of industries, from healthcare to electronics to energy, the development and commercialisation of nanotechnology have become a priority for many countries worldwide, including India. To fully realise the potential of nanotechnology, it is

essential to have a robust intellectual property (IP) framework in place. IP refers to the legal rights that protect inventions, creative works, and other forms of intellectual property, such as trademarks and trade secrets. These rights enable creators and innovators to control and profit from using their creations, which can provide incentives for further research and development. Intellectual property refers to a set of legal rights that protect the innovations of the mind, such as inventions, literary and artistic works, symbols, names, and images used in commerce. Several types of IP are relevant to the development and commercialisation of nanotechnology, including patents, trademarks, copyrights, and trade secrets.

## IP and Nanotechnology

In the case of nanotechnology, IP plays a significant role in the development and commercialisation of new products and technologies. This is because nanotechnology often involves the creation of new materials and methods, which can be protected through patents.

Patents provide

- exclusive rights to the patent holder,
- allowing them to prevent others from making, using, or
- selling the invention without permission.

This protection can be crucial for companies that have invested significant resources into developing a new nanotechnology product or process, as it can provide them with a competitive edge in the market. This can provide a financial incentive for companies and researchers to invest in developing new nanotechnology products and processes, as they can recoup their costs and profit from their innovations.<sup>2</sup> However, obtaining a patent for a nanotechnology invention can be challenging, as the patent examination process requires a high level of technical expertise and can be time-consuming and costly.

## Other Modes of Protection

Trademarks are another basic form of IP in the nanotechnology field. They protect the branding and reputation of a company's nanotechnology products and can help distinguish those products from those of other companies. However, obtaining a trademark for a nanotechnology product can be difficult, as the process requires a high level of creativity and originality. Copyrights are another

form of IP relevant to the development and commercialisation of nanotechnology. They protect the written and artistic expressions associated with nanotechnology products, such as technical papers, research papers, and software. However, obtaining a copyright for a nanotechnology product can be difficult, as the process requires a high level of creativity and originality. Trade secrets are a form of IP that protect the confidential information and know-how associated with a company's nanotechnology products, such as formulas, processes, and manufacturing methods. However, protecting trade secrets in the nanotechnology field can be challenging, as the area is highly competitive, and the information is often difficult to keep confidential.

## Challenges

One of the main challenges is determining what is considered the patentable subject matter. Because nanotechnology often involves the manipulation of matter at the atomic and molecular level, it can be challenging to determine the line between a natural phenomenon and a human-made invention.<sup>3</sup> This can lead to uncertainty and confusion when determining what should be protected by patents. Another challenge is the lack of legal and regulatory frameworks tailored to nanotechnology. As a relatively new and rapidly evolving field, nanotechnology may not always fit neatly into existing IP laws and regulations. This can create uncertainty and confusion for both inventors and patent examiners, and may make it more challenging to protect and commercialise new nanotechnology products and processes.

Additionally, the cost and time associated with obtaining and enforcing patents can be significant, particularly for small and medium-sized enterprises (SMEs) and researchers working in nanotechnology. These costs and time can be prohibitive for some companies, particularly those with limited resources. There is a lack of specific IP laws that cater to the unique challenges posed by nanotechnology, leaving the sector vulnerable to IP theft and infringement. It is difficult to obtain patent protection for nanotechnology innovations due to the difficulty in proving the novelty and non-obviousness of the technology, as well as the difficulty in defining its exact composition and structure. A valid and enforceable patent may only be obtained for a specific invention if the claims are new, non-obvious in comparison to the previous invention, and have industrial application, as stated in TRIPS Article 27(1). However, patenting nanotechnological innovations is not the same as patenting other technologies, and how a particular "invention" is seen varies from nation to nation. In India, a "inventive step" is a characteristic of an invention that incorporates "technical advancement" in comparison to the prior art and renders the invention non-obvious to a person versed in the art. This definition is found in section 2(1)(j) of the Patent Act, 2005. After being amended in 2005, these requirements were made much stricter, and the addition of Sections 3(b) and 3(d) has presented difficulties for emerging technologies in India. Section 3(b) of the Indian Patent Act prevents the patenting of nanobiotechnology because of presumptions about nanotoxicity. Due to nanoparticles' high

penetration capacity, they can enter human bodies and produce nanotoxicity. Nanobiotechnology can also cause environmental damage. In addition, section 3(d) leaves open the question of whether a particle size counts as patentable subject matter. Nanotechnology describes inventions with a size of 100 nm or less. Often, a nanomaterial can be a composite of different particles or new inventions, or a nanoparticle of an already-existing material, with no obvious differences in its qualities or industrial uses.<sup>4</sup> The "standard efficacy" criteria of Section 3(d) might not be met by the invention.

### Conclusion

The limited IP enforcement mechanisms in India make it difficult for companies to effectively protect their nanotechnology innovations.<sup>5</sup> The lack of specific IP laws and limited enforcement mechanisms make it difficult for companies to commercialise their nanotechnology innovations, hindering the growth of the sector. India needs to address these issues by creating specific IP laws for nanotechnology, improving IP enforcement mechanisms, and providing more support for the commercialisation of nanotechnology innovations. The role of IP in the development and commercialisation of nanotechnology is crucial. A robust IP framework can incentivise companies to invest in research and development and protect new products and technologies from infringement. However, the IP landscape for nanotechnology can be complex and challenging. Governments and other stakeholders must continue to work towards a strong and effective IP framework that considers the unique characteristics of nanotechnology.

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## Computer Inventorship: An Innovation Revolution On The Horizon

- **Amisha Sharma**

### Introduction

Patent rules in the technology industry will most certainly continue to evolve and adapt to keep up with the high pace of innovation. Some trends that may impact the future of patent laws include a greater emphasis on international harmonisation, efforts to address the issue of "patent trolls," and a greater focus on protecting software and computer-implemented inventions. Furthermore, developing artificial intelligence (AI) and machine learning technologies may bring forth new difficulties and chances for patent holders. However, details of the future of patent laws in the technology sector will depend on several legal, political, and economic aspects and how the industry continues to develop.<sup>1</sup>

### Objectives

This article makes the case that the Patent and Copyright Clause of the Constitution should treat inventive computers as inventors. By stimulating the invention of innovative computers, treating nonhumans as inventors would promote the establishment of intellectual property. This article

discusses whether or not the computer should qualify as an inventor under patent law and whether or not computational inventions should be eligible for patent protection. It contends that even if AI would not be inspired to invent by the possibility of obtaining a patent, computer inventorship would encourage the development of inventive machines. This would result in fresh scientific discoveries. The baseline criteria for innovation must be re-examined, possibly the entire patent system, to accommodate creative computers.

### AI as Creators

The development of computer technology has had a significant impact on how innovations are developed and how inventorship is established. It is getting harder to pinpoint the origin of inventions due to the growing influence of AI and machine learning in creating new products and technology. This calls into question the conventional ideas of inventorship and ownership and may necessitate a review of current norms. Due to these shifts, new collaboration and shared ownership types may

emerge in the computer industry. This might take the shape of open source or crowdsourcing methods, where the efforts of several people are recognised and rewarded. There may also be a greater focus on developing clear and transparent.<sup>2</sup> In AI and machine learning technologies, there is a greater emphasis on developing clear and transparent procedures for identifying inventorship. With nearly as many U.S. patents and applications mentioning AI in the last six years as in the preceding 20 years, the past 25 years have also seen a growth of patents in AI technologies, from fundamental AI technology to a wide variety of application sectors.<sup>3</sup> By law, human inventors, not AI computers, were the ones who received all of these patents that mentioned AI. What does it indicate for the nature of creativity, though, if a computer can outperform humans in a game that calls for highly nuanced, strategic, and creative problem-solving? Could a machine be considered an innovator if it resolves a human-identified problem? What if an intelligent computer with creativity solved the issue by itself, for example, dynamically optimising a machine learning-based quasi-optimized system design? On its face, the legislation does not grant the computer the status of an inventor.<sup>4</sup> According to the court's ruling in *New Idea Farm Equipment Corporation v. Sperry Corporation and New Holland Inc.*<sup>5</sup>, the term "person" even excludes legal entities like corporations because "humans conceive, not companies." An obstacle to the computer becoming an inventor is the requirement that they contribute to the conception of the innovation.<sup>6</sup> The justification is that only humans are capable of

creative vision. This is accurate for ideas describing earlier techniques in AI, where humans created structured instructions by hand and gave them to a computer to solve a problem that humans clearly defined. The computer serves as a tool or aid for a human problem-solver rather than an innovation in and of itself. The person who uses the computer to create such a contribution is a human problem solver.<sup>7</sup> Because of this, it seems improbable that the computer, even one as intelligent as AlphaGo, would be recognised as the inventor of innovation when it solves a problem that a person has identified. In terms of patent law, computers cannot be called inventors because they have yet to be given the status of individuals. When a dispute over ownership can occur, the law's language is quite detailed and intended to shield individual inventors against muscular legal bodies asserting a right. The requirement that an invention is a mental act creates a second language barrier because it is challenging to demonstrate that the computer is capable of such an act. According to Abbott, non-patent incentives exist to encourage the development of robot inventors; therefore, even if they cannot obtain patents, they will continue to grow.<sup>8</sup> Then, "Patents might increase social costs without producing noticeably more innovation." Can the computer qualify as an inventor if it recognises a problem and develops a solution if the contribution criteria for inventorship are satisfied when a single entity independently engages in "the whole performance of the mental component of the creative act"? It may be argued that what matters in this situation is what is generated ("a definite and permanent idea"), not where the conception takes

place ("the mind").<sup>9</sup> When computers can conduct self-learning and deep learning while solving problems and producing a clear and permanent representation of the result, the case against denying the computer's invention may be called into question. If the AI computer engages in this problem-solving, it has satisfied the inventorship condition and should be credited as the inventor rather than its human operator. Even if it is assumed that having a "mind" of some sort is necessary for invention (i.e., having "a distinct and permanent idea of the complete and functional invention"), what kind of mind is required? The courts have yet to establish any clear criteria to distinguish between a brain qualified for invention and one that is not.<sup>10</sup> It was made clear that the advancement of science or valuable art was made possible by the invention, not the inventor's thought process, when the "flash of genius" requirement for patentability was abolished by Congress in 1952. There was an argument that patentability ought to be decided objectively by the nature of the contribution to the growth of that art, and not merely by the nature of the mental process by which the invention was made. Patentability ought to be assessed objectively by the nature of the contribution to the growth of that art, and not subjectively by the character of the mental process by which the invention may have been made which was the justification given in that case. Patentability is not to be negated by how the invention was made, as stated in Section 103 of the Patent Act. As it applies in this case, the mental process required for inventorship should not disqualify a computer from receiving credit for an

invention when the computer independently came up with a solution to a problem. That solution was judged objectively by the nature of the contribution to the advancement of that art. A computer invention could also be recognised through shared inventorship. Can a human and a machine jointly produce anything if the creative act is collaborative? Joint inventors are defined as "two or more persons" in Section 116(a) of the Patent Act as the ones who came up with the innovation.<sup>11</sup> Collaboration requirements and contributions to the invention are two factors that can prevent the computer from being recognised as a joint inventor. According to the Kimberly-Clark Corp. court, joint inventorship involves "some type of colouring," where joint inventors must be "working toward the same aim." When a human creates a computer programme that is then executed by a computer to produce a tangible outcome, the collaboration condition is satisfied. As was already mentioned, the contribution made by the computer to innovation presents the biggest obstacle to a laptop being recognised as a joint inventor. As a result, the computer would be less likely to be considered a joint inventor under the current legislation. As AlphaGo-like machines continue to aid humans in anticipating the unexpected and making quick advances, they also pose critical issues regarding inventorship and put our current patent system under scrutiny. Our legislators and courts need to reconsider the definition of an inventor to maintain a robust patent system in the digital age.

### **The Legal System**

Robotic creativity will also have a wide range of effects on the legal industry. According to Abbott, "creative robots are destined to compete with and



supplant human innovators as they increasingly automate human knowledge-work." Robots may eventually replace people with a person of ordinary talent in the art and make it difficult or impossible for individuals to come up with 'non-obvious' inventions when the employment of creative robots in research becomes widespread. A whole field of inquiry could be invented before robots do it.<sup>12</sup> Abbott argues that it needs to be better known than inventive robots have been inventing since the 1990s and that they have done so almost entirely independently of people. This lack of understanding is why there has been resistance to acknowledging the role a robot or the computer plays in invention thus far. It is not recognised that this phenomenon is common in modern times. Due to worries about patentability, owners of inventive robots have been reluctant to disclose where inventions came into being. The invention of computers also sheds light on other facets of patent law. For instance, computers might be the fictitious expert witness that courts sometimes utilise to assess creativity. This would address one of the most severe critiques of the patent system—that too many patents of dubious value are issued—and justify raising the threshold for patentability. Rethinking the baseline criteria for innovation and the entire patent system may be necessary to accommodate creative computers.<sup>13</sup>

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## When AI Violates Copyright

- Mayur Sherawat

### Introduction

Creative works, especially art produced by AI (Artificial intelligence) bring with them multiple instances of copyright infringement class action. To create such machine-generated art, AI developers are required to feed into the ANN (Artificial Neural Networks)<sup>1</sup> large amounts of base images. This is done to bring about learning in the ANN. All aspects of the images, such as their colour usage, form, texture, size, depth and subject placement, are analysed with the help of the human element and the AI's ability. This analysis takes place continuously until the AI is capable enough to create an image on its own. The questions that surface at this stage are whether the image created is the work of an AI, the creative work of the developer, or merely an elaborate collage of the artworks and photos used in the pre-curation stage.

### Case Study – Getty Images and More AI Tools/Technologies

These images used in the pre-curation stage have, at times, been taken by the developers from the internet, regardless of whether the base images were copyrighted or not. For example, let us take the case of *Stability AI v. Getty Images*<sup>2</sup>. Getty Images, one of the largest image libraries, initiated a lawsuit against

Stability AI (now known as Stable Diffusion). The allegation, against the text-to-image AI art generator, was that "Stability AI unlawfully copied and processed millions of images protected by copyright and the associated metadata owned or represented by Getty Images absent a license to benefit Stability AI's commercial interests". This suit, having been filed in High Court of Justice, London, awaits a decision. Image analysis processes thus form a grey area where, similar to an artwork produced by a human, taking a copyrighted image as mere reference does not amount to copyright. Can the same approach be valid when a machine neural network attempts the same? The Indian Copyright Act, 1957 under Section 2(d)(vi) defines who shall be deemed the author of a computer-generated work - "author" means, in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created<sup>3</sup>. In reference to AI art generators such as Nightcafe.studio, the ownership rights to the creators are only provided if the "modify work" option on your pre-owned art is used or all of the base images used by the AI pre-owned by the creator. As a caveat, the generators advise AI Artists (those who use such platforms for art generation) to check copyright laws of

their respective nations, because of the difference of judicial understanding on the topic of AI ownership (evidenced with U.S. courts completely against ownership of AI art in recent pronouncements).

### Conclusion

In conclusion, whenever any AI art is produced, the ownership and the ability of the creator to copyright said work depends on the creator's national copyright laws, the degree of human effort that went into its creation and the base images used by the AI generator. When an AI generator reproduces a copyrighted work, the developer of the AI and the creator may be held liable if such work is passed off of an original

creation without the consent and license of the original author or artist.

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## Role of IP in the Development and Commercialization of Biotechnology

- Swaroopa Parthasarathi

### Introduction

The Intellectual Property Rights regime has grown to prove that it is all-pervasive in different societal sectors. In recent times, it is gaining importance in biotechnology and slowly becoming the need of the hour. Biotechnology is an innovation that uses natural frameworks, living creatures, or parts of it to create or make various items.<sup>1</sup> The development of the genetic resources of biodiversity is known as biotechnology. Broadly defined, biotechnology includes any technique that uses living organisms or parts of organisms to make or modify products,

to improve plants or animals, or to develop microorganisms for specific uses.<sup>2</sup> Like any other industry, development and modernization is crucial for the biotech business; likewise, it needs to be protected under IP laws. Intellectual property has, in fact, fuelled research and advancement in this area because organizations are highly dependent on the safeguards that IP frameworks provide.

### Current IP Protection

The current system empowers the commercialization of seed improvement, monoculture, and the security of new plant

assortments, microorganisms, and hereditarily changed living beings.<sup>3</sup> However, the consequence is that many biogenetic variants are being dissolved, which sparks the necessity for a balance between maintainable biodiversity and an IP framework. Trademarks serve to protect biotechnological innovations. The government allows different organizations to sell similar medicinal substances, but only one organization (the parent organization) can utilize the trademarked name. Biotech companies use licenses to secure their innovation rights. For example, AstraZeneca has the innovation rights for Symbicort Turbuhaler, which is the dry powder medication used in inhalers for asthma patients. A unique feature of patents in the genetic engineering field is that patent protection is also provided to plants. The International Union for the Protection of New Varieties Convention 1986 (UPOV)<sup>4</sup> mandates that every member country adopt national legislation to give at least 24 genera or species protection within eight years of signing. This right which is granted over plant varieties bestows the right holder with the authority to sell any produce of the plant (seeds). However, this does not extend to consumption.

### Patents for Biotech

A patent is an exclusive right granted for an invention, which is a product or process that provides, in general, a new way of doing something or offers a new technical solution to a problem.<sup>5</sup> All countries have their own patent protection laws, but very few protect biotechnological inventions. These countries are Australia, Bulgaria, Canada, Czechoslovakia, Hungary, Romania, Japan, the Soviet Union, and parties to the European Patent

Convention. The method and type of patenting varies from country to country. Many countries however still don't find it necessary to patent biotechnological innovations, although it is a booming field. Patentable biotechnology inventions involve products such as nucleotides, amino acid sequences, microorganisms, processes or methods for modifying said products, uses for the manufacture of medicaments. etc.<sup>6</sup> Just like any other field, genetics also requires its creators to have ownership rights over their inventions and gain an advantage over other competitors so that they can economically exploit their invention to the fullest. In a sense, it is a monopoly, the absence of which would lead to free access and overuse of that right.

### Role Of IP: Boon Or Bane?

There have been heated debates and discussions about whether intellectual property, particularly patent systems aid in the growth and commercialisation of biotech or whether it hinders the research and development process. Some feel that it delays the entire process of delivering pharmaceutical and medicinal goods to the public, which is something that cannot be delayed. This discussion is grounded in the developing and developed countries' debate, wherein it is viewed that IPR might benefit the developed countries to a certain extent, whereas it might destroy developing countries. The foundation for such a premise stems from the idea that biotech products are of utmost importance in society, and for developing countries, each product is an asset. They cannot afford to incur losses, either in the form of humans or money. Since obtaining a patent or license is tedious, it is believed that it will obstruct and pull

down the entire development process and ruin the existing framework. However, if looked at from a commercialisation and globalisation point of view, in actuality, a country in possession of a patented life science product will propel its growth and increase its profits, thereby leading to increased GDP. On the other hand, when talking about developed countries, the issue arises regarding innovation and ownership. Due to the abundance of homogenous industries, determining ownership becomes difficult, with each company fighting to top the charts of innovation. If one genetic engineer comes up with something new, it fires another biotech company to develop something even better, in order to be able to bask in the limelight of innovation. All of this said and done; a recent report shows that IPRs have encouraged collaboration between biotechnological entities and, as a result, enabled further research and development of new biotechnologies, specifically in emerging and developing economies.<sup>7</sup>

### Conclusion

IP has allowed biotech inventors to create and innovate more, with the confidence that they are protected by law. It allows them to apply for licenses and patent their creations, thus pushing biotechnology to the realm it should belong to. The patent system encourages innovation and research so that essential products are available to society. It lets inventors enjoy their rights while fully

disclosing their inventions to the public. In this manner, it strikes a balance between public policy and the interest and protection of inventors.

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# The Inter-Relationship with Non-Fungible Tokens and Copyright Infringement in the Metaverse

**Karan Mathias**

## **Introduction**

NFT is a digitized token or code that represents real-life objects such as art, films, music, and so on and is stored as a link on the blockchain. They are bought and sold online using cryptocurrencies, primarily Ethereum, and built using the same software as other cryptocurrencies, such as Bitcoin, Tether, and others. These tokens act as a virtual asset's certificate of ownership. The term "non-fungible" refers to something unique in nature. NFTs may be used to track ownership of nearly everything that exists, including digital art, music, movies, games, tweets, and even pornography in some cases. Blockchains are crucial in the development of NFTs. They link blocks to a list of records using cryptography, which is then locked using a string of characters that identifies two pieces of data or a 'cryptographic hash' to a preceding block.<sup>1</sup> Two NFTs can never have the identical blockchain, making it impossible to imitate or copy the original work. The non-fungible feature of bitcoin distinguishes it from that of an NFT. Cryptocurrencies are fungible, meaning they may be traded or exchanged for one another and retain their worth through the process. For example, one bitcoin is always equal to another bitcoin. Due to their unique blockchain and digital signature, NFTs, on the other hand, can never be swapped, modified, or stolen. Each non-fungible token serves as a guarantee of authenticity, proving that an asset is one-of-a-kind and non-transferable.<sup>2</sup>

The Copyright Act of 1957 in India allows authors to register their original works with an authorized registrar. A person can gain copyright on their original literary, musical, dramatic, and aesthetic works under Section 13 of the Act. Section 22 of the Act states that the work's copyright will last for the author's lifetime and sixty years after death. The most important concern resulting from the massive influx of non-fungible tokens is who owns the copyright and what the repercussions are in the event of an infringement arising. It is a common perception in most people's minds that the mere possession of an NFT is the same as actually owning it, but this reasoning needs to be revised.<sup>3</sup>

## **The Nature of NFTs**

Only ownership of the specific copy of the item is passed to the NFT buyer, and the asset's originator always retains the copyright. Let us look at a scenario to assist us in comprehending this. Assume you have a signed snapshot of your favourite star. The way the photograph is signed distinguishes it as a one-of-a-kind item, similar to NFT. In this situation, you are the owner of the one-of-a-kind autographed photo, just as you would be if you owned an NFT. The photographer who took a photograph retains all other copyrights in the photograph, allowing him to manufacture duplicates, change, or create other derivatives. To begin with, if a person is minting an NFT based on someone else's copyrighted work, the actual

authorization from the real owner of that work is required to be given. It must be noted that only the genuine and true owner of the copyright has the right to duplicate, distribute copies, or develop derivatives of such work, according to the Copyright Act of 1957. Unless the artist explicitly gives copyrights in such asset to the holder of NFT through a contractual arrangement, the NFT holder is not permitted to distribute and collect royalties from such commercialized material.

### Copyright Issues Involved

NFTs have changed how artists and makers make a living, and how people buy, sell, and interact with art. Beyond Bitcoin and Ethereum, NFTs are becoming more interested in blockchain technology. Experts are split on whether NFTs are the future of art or just a fad, but the amount of money being exchanged for art backed by NFTs has the art community, technologists, and financiers paying notice.<sup>4</sup> While an artist's production of an NFT that reflects a work of art may be seen as exclusive to them, they can retain the copyright to work and manufacture more NFTs based on the same work. As a result, a person who has acquired an NFT does not automatically acquire ownership of the original digital file and hence does not have exclusive access to the file. This is one of the things that catch the attention of casual watchers in NFT markets which is that buyers are not automatically proprietors of original objects. They have no way of ensuring that the file is not replicated or used by anyone else.<sup>5</sup> The origination problem, which is evident in other types of blockchain technology (such as smart contracts), is also present in the NFT sector; anyone might

theoretically contribute artwork to an NFT without establishing that they are the original originator of the work. This raises the danger of fraudulent actors uploading NFTs to auction marketplaces while acting as the original owners or developers of valuable goods.<sup>6</sup>

### Conclusion

While we are still in the early phases of developing crypto infrastructure and have only recently begun to test the waters in the unexplored areas of white paper promises, the possibilities for creating cryptocurrencies are endless in a new era of the digital revolution in which a transparent environment with available data records and automated programs could alter our perceptions of many traditional activities. The legal ambiguity and the restrictive phrasing of intellectual property laws threaten the viability of NFTs in India, particularly for creative art-based assets. It is now up to legislators to make an appropriate change to the existing law to acknowledge copyright holders' rights as part of the statutory bundle of rights under Section 14 of the Copyright Act. Blockchain and the NFT standards show a lot of promise in providing practical solutions to the various real-world issues that have plagued the artefacts market and copyright offices for a long time. While the technology is new, the unique NFT tokens have achieved much real-world popularity in India and worldwide, similar to cryptocurrencies. Although a lot of difficulties can be resolved using technology alone, others necessitate comprehensive legal frameworks and appropriate language. Thus it would be interesting to see how regulators,

legislators, and stakeholders balance their interests in developing India's new NFT framework.

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## Legal Implications of 3D Printing & IP Rights

Preemal D'Souza

### Introduction

Additive manufacturing, often known as 3D printing, is a group of procedures that creates items by layering material to match consecutive cross-sections of a 3D model. Although the most popular materials for 3D printing are plastics and metal alloys, they may be used to create almost anything, including live tissue and concrete.<sup>1</sup> With modern technological advancements, 3D printers have become readily available for domestic and industrial purposes. These cost-effective devices have given rise to many IP (intellectual property) related problems. This article attempts to educate the reader on the various implications 3D printing has in the legal field and the laws that govern it. To

begin with, let us first understand what a 3D digital file is. It is essentially an electronic file containing 3D data. A 3D digital file is used to store data which the user would like to print. A big concern of firms today is the circulation of these files, which would make it easy for anyone to 3D print products with or without the owner's authorization. Currently, there is no particular law in place to check this. However, copyright laws give the owners the right to file a suit in case their patented products are produced without authorization. Patents protect the technical aspect of the products, whereas, Industrial design rights deal with the aesthetic appearance of products. Both these rights



preserve the originality of the author's work and apply to 3D-printed products.

### About 3D Digital Files & Applicability of Copyright Laws

There is an ongoing debate on whether copyright laws apply to 3D digital files, as they facilitate the process of 3D printing. It is only morally right to extend these privileges to the software, as it takes the owner their intellectual capabilities to create the same. While it is relatively easy for a person to modify the file and question the authenticity of the owner's claim, the Berne Convention for the Protection of Literary and Artistic Works, which is an international copyright agreement, states that *"the author has the right to claim authorship of the work and to object to any distortion, mutilation or other modification of, or other derogatory action concerning, the said work, which would be prejudicial to his honour or reputation."* Thus, maintaining copyright protection is crucial, and unauthorized reproduction and printing of an object may result in legal repercussions under copyright laws. On 6 May 2013, for the first time in humankind, Cody Wilson fired a 3D-printed gun. Ever since that day, there has been controversy regarding the printing of 3D guns.<sup>2</sup> As technology evolves, 3D printers are becoming increasingly affordable to the everyday person, leading to abuse. A day after the firing, Cody posted the gun's design drawings on an open source online. The graphics were downloaded by 100,000 individuals worldwide in the first two days of their publication, 'The Liberator' being the name given to the gun.<sup>3</sup> Though Cody being a left liberalist intended this to be a political move, the publishing of the 3D digital

file has given people access to print unregulated firearms. Cody's company, defence, distributed and circulated downloadable weapon designs for free, which sparked intense debate. The Liberator was the closest firearm to an all-plastic gun. One of the plastic guns needs a nail as a firing pin and a six-ounce piece of steel to set off metal detectors. This is done to ensure that the weapon doesn't violate the US Undetectable Firearms Act, which mandates that a metal detector may detect firearms. The main concern is that these guns are untraceable, as criminals can easily remove the metal piece and bypass security. Owners of these guns do not require a background check and can keep them as 'ghost guns' as they do not have a serial number. 3D-printed guns are also easier to destroy as plastic melts easier than metals, which facilitates criminals to destroy evidence. As mentioned earlier, 3D printers are becoming more and more economical.<sup>4</sup> This allows people with a keen interest in 3D printing to explore the technology conveniently.

### Copyright Problems

However, there arise intellectual property questions when these hobbyists print unauthorized material. Usually, the personal use of a trademark or other work protected by copyright is not seen as a violation of IP rights. However, if a hobbyist started utilizing 3D printing for profit and infringed on someone else's intellectual property rights, the owner of those rights may file a lawsuit for copyright infringement.<sup>5</sup> Some nations are discussing charging everyone who engages in personal 3D printing. With this, these nations will give the protection of IP rights a higher priority.

But levying these fees could halt the development of 3D printing. Therefore, paying this cost for copyright protection is not worthwhile if it prevents innovation from 3D printing.<sup>6</sup>

### Conclusion

A combination of legal and technical solutions will need to be implemented to address any potential obstacles brought on by 3D printing in business settings.<sup>7</sup> These could include encryption of 3D models to make copying more challenging to safeguard the intellectual property it contains. Furthermore, requiring authentication for 3D printed or printable products by having barcodes, QR codes, or other microstructures on the surface can help stop counterfeiters from producing duplicates.<sup>8</sup> As technology advances, more legal problems are expected to arise; thus, IP lawyers must well equip themselves to deal with the same.

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# Impact of Internet & Social Media on Trademark Law & Brand Protection

- Shreya Jagadish

*The internet is becoming the town square for the global village of tomorrow – Bill Gates*

## Introduction

The impact of the Internet and social media on trademark law and brand protection is far-reaching and complex. The widespread use of these platforms has created opportunities and challenges for businesses looking to protect their brands and trademarks online.<sup>1</sup> In this paper, we will explore how the Internet and social media have changed the landscape of trademark law and brand protection and how brand owners can safeguard their rights in this ever-evolving digital environment. Because of social media, the way we interact and share information has changed dramatically. Because of technological advancements, information is more freely available in the digital world, making us more vulnerable to intellectual property violations. Social media, in general, is a type of online media created by the user's social interactions. It differs from television, radio, and newspapers because information flows from multiple sources rather than just one due to advanced web 2.0 technology. Popular social networking platforms include Twitter, Instagram, Facebook, Myspace, YouTube, and Piratebay.<sup>2</sup> We can understand this by referring to the well-known case law of *Eureka Forbes Ltd. v. Pentair Water India Pvt. Ltd*<sup>3</sup>, in which the plaintiff sought a permanent injunction prohibiting the defendant from publishing, placing advertisements, or distributing any material

defaming or maligning the plaintiff's product due to disparagement. The plaintiff is a well-known water purifier company that uses UV rays to purify water. The defendant company, also in the water purifier business, advertised as follows: "Water contains contaminants that are invisible to the naked eye and to your UV water purifier." The Court concluded in this case that, even though the defendants did not explicitly mention the plaintiff's firm name, the advertisement amounted to the disparagement of the plaintiff's products because the plaintiff used UV ray technology.

## Impact on Trademark Law

Common marks should be avoided, as people nowadays hashtag everything on social media. This trend may work in favour of or against the product or service. Nike, for example, has a registered trademark, "Just do it", with a swoosh symbol, but it also promotes its products with hashtags such as #running or #freerunning, which are not trademarked. These linked hashtags help to give the product a better name. On the other hand, a McDonald's hashtag, #McDstories, became popular on the social networking platform Twitter, and everyone used it to send complaints about the company's products and services.<sup>4</sup>

One of the key ways in which the Internet has impacted trademark law is by increasing the speed and ease with which content can be created and shared. This has made it easier for individuals and businesses to create and distribute infringing or dilutive material, including trademarks and branding materials. For example, a person can create and sell counterfeit goods using a well-known brand's name and logo, or create a website using a similar name and logo to a well-established brand, thereby misleading consumers and damaging the brand's reputation. This can lead to confusion in the market, dilution of the trademark, and harm to the brand's commercial value.<sup>5</sup> To address these challenges, trademark laws have been updated to provide more excellent protection for brand owners in the online space. For example, the Anti-Cybersquatting Consumer Protection Act (ACPA) was enacted in 1999 to provide a cause of action against individuals who register domain names that are identical or confusingly similar to trademarks<sup>6</sup>. The ACPA enables brand owners to bring legal action against cyber-squatters who use domain names to mislead consumers or profit from the goodwill of another's trademark. Furthermore, the Uniform Domain-Name Dispute-Resolution Policy (UDRP) was created to provide a quick and cost-effective method of resolving disputes over the registration and use of domain names that are identical or confusingly similar to trademarks. The UDRP allows brand owners to file a complaint with a designated dispute resolution provider, who will then adjudicate the case and order the transfer of the disputed domain name if it is found to be infringing.

### **Social Media and Brand Protection**

Social media has also significantly impacted trademark law and brand protection. Platforms such as Facebook, Twitter, and Instagram have created new opportunities for businesses to reach and engage with consumers and new challenges for protecting their brands and trademarks.<sup>7</sup> For example, businesses may face trademark infringement or dilution from unauthorized uses of their trademarks by third parties on these platforms or from content created by consumers that is misleading or harmful to the brand. To address these challenges, brand owners must proactively monitor and enforce their trademarks on social media platforms. This requires a comprehensive approach that balances legal protections with an understanding of the unique challenges posed by the digital environment. For example, brand owners should regularly monitor their trademarks on social media platforms and take steps to address any infringing or dilutive uses. This may include sending cease-and-desist letters, filing complaints with the platform, or taking legal action if necessary. Brand owners should also develop a clear and consistent trademark use policy for their employees and partners and educate them on the importance of protecting their brands and trademarks online. This includes guidelines for using trademarks on social media and the steps to be taken if an infringing use is discovered.

Deep linking, pay-per-click advertising, meta-tagging, or the offer of counterfeit goods on online selling sites are all examples of online trademark infringement. This frequently exploits the

company's brand name, tainting its image and goodwill. In *Mattel Inc. v. Jayant Agarwalla*<sup>8</sup>, two Indian brothers created the Facebook game Scrabulous. Mattel Inc. and Hasbro filed a lawsuit against the brothers for trademark and copyright infringement. The Court stated that Scrabble is a well-known brand and that using a similar mark would be trademark infringement.

### Conclusion

In conclusion, the Internet and social media have profoundly impacted trademark law and brand protection, creating new opportunities for businesses to reach and engage with consumers and new challenges for protecting their brands and trademarks. To succeed in this digital environment, brand owners must be proactive in monitoring and enforcing their trademarks and develop a comprehensive approach that balances legal protections with an understanding of the unique challenges posed by the digital landscape.

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# Protection of IP in the Field of Autonomous Vehicles

- Prarrthana Gopi

## Introduction

Autonomous technology is one of the most important and fast-advancing technologies in the transport industry. As more companies around the globe in the automotive and electronics industries have set out to try and collaborate with new companies to develop self-driving cars, the need to secure IP rights and safeguard emerging technologies in this field is getting more complex and interesting. A vehicle that can recognize its surroundings and operate without human input is referred to as an "autonomous vehicle." There are five stages of progress, ranging from Level 0 (i.e., no automation) to Level 5 (i.e., complete autonomy), according to the Society of Automotive Engineers International. However, these advancements in autonomous vehicles also bring new legal and ethical challenges. These include issues such as data privacy, cybersecurity, and liability in the event of accidents involving autonomous vehicles. Governments and international organizations are working to address these challenges and create a regulatory framework for the deployment of autonomous vehicles.<sup>1</sup> It is important for companies involved in the development and deployment of autonomous vehicles to stay updated on these legal and ethical developments in order to ensure compliance and minimize legal risk. Moreover, with the rapid growth of the autonomous vehicle market, companies must also protect their intellectual property through patents, trade secrets, copyrights,

and other forms of IP. As new technologies are developed, companies must have a solid IP strategy in place to protect their innovations and maintain a competitive advantage. The legal landscape for IP protection in the autonomous vehicle industry will continue to evolve, and it is important for companies to stay informed and adapt their strategies accordingly.

## Laws Across Jurisdictions

Following the US Supreme Court's judgment in *Alice Corp v. CLS Bank International* in 2014 about the applicability of subject-matter patents, getting patents for algorithms and software has grown more challenging and has had a global effect.<sup>2</sup> Due to this, the majority of autonomous car manufacturers protect their technologies and machine-learning information as trade secrets. Trade secret protection can provide an advantage in terms of cost and resource allocation for autonomous vehicle companies, but can also limit transparency and hinder the evaluation of the safety and proficiency of the AI systems. Most companies use each of the three types of IP rights—patents, trade secrets, and copyrights—that each has its benefits in protecting autonomous vehicles and can help businesses stay competitive. In India, semi-autonomous and fully autonomous vehicles rely on computer software, algorithms, and AI, which fall under the scope of Section 3(k) of the Indian Patents Act, 1970. This provision states that mathematical methods, business methods,

computer programs, and algorithms are not considered patentable inventions.<sup>3</sup> The provision has not yet been fully tested in Indian courts. Current patent laws are insufficient to protect AI systems, and it can be challenging to describe the methods or functions of an AI system in a way that meets the requirements for a patent grant due to the iterative and incremental evolution of the underlying algorithms.

### Forms of Suitable IP Protection

Trade secret protection can be a viable alternative to patent protection for the software-based technology used in autonomous vehicles, and companies can take measures to protect the confidentiality of their trade secrets by requiring NDAs, limiting access, and documenting their efforts. However, if the information is easily reverse-engineered or not easily kept confidential, patent protection may be a better option. The increasing acquisition of start-ups by traditional car manufacturers and suppliers may result in more trade secret lawsuits in the future. Trade secrets and patents both have advantages and disadvantages in protecting the technology used in autonomous vehicles. Trade secrets can protect abstract ideas, including algorithms and software, which cannot be protected by patents, and is less expensive and time-consuming than obtaining a patent. However, trade secrets must be kept confidential, which can result in security measures and limitations, and are vulnerable to reverse-engineering. Companies should weigh the pros and cons of both types of protection and decide the best method to protect their intellectual property. The growth of technology and intellectual property in the

automotive industry will lead to challenges and opportunities. While there may be an increase in patent and IP claims, it also presents a chance for companies to protect their innovative products and gain a competitive advantage. However, with the increased risk of trade secrets and other legal claims, companies will need to implement proper IP due diligence and hiring practices to minimize risks. The *Waymo v. Uber* case serves as an example of the importance of proper IP management in the growing technology-driven automotive industry. Relying solely on trade secret protection for autonomous vehicles and AI technology has drawbacks. Keeping trade secrets confidential requires significant security measures, which can be cumbersome and limit access to the information. This puts new companies entering the field at a disadvantage as they have to start from scratch.<sup>4</sup>

### Conclusion

Additionally, the temptation for competitors to steal trade secrets by hiring away employees or through other means still exists. As the field of autonomous vehicles and AI evolves, there may be a need for new concepts of intellectual property protection to ensure a smooth transition. The development and commercialization of autonomous vehicles present new challenges for protecting intellectual property. The use of patents, trade secrets, copyrights, design rights, and trademarks will all play essential roles in protecting the various innovations and technologies related to autonomous vehicles. Companies must carefully consider their options and comply with relevant laws and regulations to ensure maximum

protection for their IP. It is also important to note that the IP landscape for autonomous vehicles is constantly evolving, and companies must be proactive in adapting to new developments and changing requirements.

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## Impact of AI on IP Rights

### Introduction

In the present day, AI technology is evolving quickly. It is important to acknowledge the growing impact of AI development. Robotics, algorithms, machine learning, and automated decision-making systems are all included in the definition of artificial intelligence. Since the early 1900s, AI systems have been created. Today's AI-driven technologies create content with monetary worth. AI is already helpful; it is assisting us in understanding healthcare, climate change, transportation, and cybersecurity concerns. Europe is investing in an AI future that is competitive. The European Commission has introduced the European approach to artificial intelligence in an effort to enhance its positive aspects and eliminate its drawbacks. AI needs to be regulated to maximize its benefits while also eliminating its worst uses. As of now, firms creating the technology and lawmakers attempting to stay up

**Janet Treesa**

with the evolution will choose how much authority is granted to AI-operated systems.

### Relationship Between AI & IP

Correlative relationships exist between AI and IP. While AI may help with the administration of Intellectual Property Rights, IP governs and can safeguard it. One AI-based application that uses automated translation is WIPO Translate. It is critical for the IP ecosystem to promote innovative technologies and build a long-term financial foundation for inventions. For many nations throughout the world, AI has evolved into a strategic capability. A growing number of strategies for AI capacity development and AI regulatory measures are being adopted. With the assistance of the Member States, WIPO has started to compile the key legislative measures relevant to AI and IP. Traditional enforcement methods are being hindered by information technologies. They



reduce the cost, speed, and privacy barriers to copying, transferring, and transforming works, making it more common and challenging to catch and prove. Creative property owners may be less motivated to create and share intellectual works if their rights are not effectively enforced. The advantages society derives from the free exchange of ideas could be in danger as a result. Additionally, if infringements are pervasive and unchecked, the validity of intellectual property law itself may be questioned. The bulk of professional sectors will be impacted by the growth of AI, and the legal profession is no exception. Legal technology is a topical topic involving law companies. Future developments may significantly alter the role of a lawyer. In light of the future of law as a profession, law firms, and the job of a lawyer, knowledge of these technologies and elements is crucial.<sup>1</sup> There are concerns that attorneys may be replaced in the legal industry, along with many other positions that may be lost as a result of technological advancement. However, AI offers opportunities in the legal industry, including the ability to avoid mistakes and the capacity to be more precise. The definition of legal personality may alter in the future due to the rapid growth of AI.<sup>2</sup> In September 2019, WIPO organized a conference to discuss the impact of AI on the IP policy of various countries and the relevant questions to set the foundation for better-informed policymaking by member states. Pursuant to the conference, WIPO published a Draft Discussion Paper on IP and AI in December 2019 (*WIPO Discussion Paper*), inviting member states and other interested parties to provide comments and suggestions. The *WIPO Discussion*

*Paper* identifies thirteen issues that relate to the issue of AI and IP policy, out of which a few are discussed. Ownership and inventorship are the subjects of law, that help in addressing questions, including whether the law should allow or demand that an AI programme be identified as the inventor, or whether a human should always be the inventor. It also takes into account the practical difficulties of determining which human ownership or authorship should be given to AI systems in the event that this cannot be done; specifically, whether this decision should be left to private arrangements, such as corporate policy, with the possibility of judicial review by appeal in accordance with current laws concerning disputes over inventorship. The topic of patentable subject matter and patentability standards are covered in the WIPO Discussion Paper. Here, it takes into account the questions of whether inventions produced by an AI application on their own should be exempt from IPR laws, whether particular rules should be added for inventions aided by AI, whether patent examination criteria should be modified for AI-aided inventions, etc. The understanding of the inventive step test that must be met for an invention to be granted a patent in the context of AI inventions is also explored under the WIPO Discussion Paper. Another part of this paper deals with the disclosure of the technology and whether AI-assisted or AI-generated inventions present any challenges in the disclosure requirement.<sup>3</sup>

### **AI in Trademark Law**

The buying process, how goods are purchased, and the relationship between the consumer and the

brand are all covered by trademark law. Consumer knowledge and the person or thing who makes the purchasing decision both have an impact on the purchasing process. The information that consumers have access to and their purchase decisions are impacted by AI. Although there haven't been any cases that directly address the relationship between AI and liability for trademark infringement to our knowledge, a number of cases that the Court of Justice of the European Union (CJEU) has heard over the past decade may be relevant in light of this new technology to help answer this question.<sup>4</sup> Case examples include *Louis Vuitton v Google France* in which the final verdict favoured Google stating that unless an active part have been taken by Google in the keyword advertising system they would not be liable.<sup>5</sup> A similar judgment was upheld even in the case of *Coty v Amazon*.<sup>6</sup> Therefore, it would seem that an AI application provider would not be held accountable for infringement if they have adequate takedown procedures in place, similar to those detailed in the Google and eBay cases, and were not aware of infringing conduct.

### AI and Copyright

Although one could argue that this distinction is unimportant, how the law approaches novel forms of machine-driven creativity may have significant commercial ramifications. It is already possible to create works in the fields of journalism, gaming, and music using artificial intelligence. The lack of a human author for these works theoretically qualifies them as being free of copyright. They could thus be used and reused by anyone without restriction. The companies selling the works would

receive some extremely terrible news in that case. Imagine investing millions of dollars in a system that creates music for video games only to learn that the music is not legally protected and that anyone in the world is free to use it. Perhaps an exception can be made to the trend of copyright laws by moving away from originality standards that reward talent, labour, and effort when it comes to the products of powerful artificial intelligence. The alternative appears to run counter to the reasons why creative works were first protected. Giving copyright to the person who made it possible for artificial intelligence to function seems to be the most logical course of action, and the UK's model appears to be the most effective. With the assurance that they will see a return on their investment, such a strategy will guarantee that businesses continue to invest in the technology.<sup>7</sup>

### Conclusion

AI systems might infringe on current intellectual property rules in the near future, in addition to adding value by developing fresh products. According to Philip Thompson, a trade and IP analyst at Property Rights Alliance, it is the responsibility of IP enforcement authorities to acknowledge the human administrator as the genuine owner of AI-produced innovation and the one who bears responsibility for its wrongdoing. In general, there is a drive to include AI innovations in the purview of patent law. When it comes to data protection, AI inventions have several challenges. The best way to grant an innovator monopoly protection is through a patent. However, the lengthy patent procedure, which takes 20 years, might not be ideal for advancements in artificial

intelligence.<sup>8</sup> The value of human thought and invention should be the legislator's top concern. Specific rules will help to clarify the hazy IP protection picture for AI technologies, which are revolutionizing every aspect of life.

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## Mechanisms to Tackle Warez Trading: The Lessons Learnt

- Shreya Sampathkumar

### What is “Warez Trading”?

Titled the “Warez Scene” (pronounced the same as “wares”), this movement consisted of an underground, organised, global network of pirates whose sole objective was to obtain and prematurely

release digital media in an unauthorised manner.<sup>1</sup> One need merely search the term “Warez” on any search engine to view a plethora of piracy sites ready to supply the world with the latest unreleased media forms. While newer forms of piracy have

infiltrated the internet, Warez was the first pirate network that posed a serious threat to the other side of the debate on intellectual property protection - safeguarding the interests of those who invest in commercialising the work of their minds to generate a greater incentive to create. The Warez Scene operated on the premise that members of the community could take all they wanted as long as they gave back. The principle of “barter” manifests itself through a non-profit exchange which highlights a lack of one of the elements that constitute infringement in accordance with several provisions of the Copyright Amendment Act, 2012, since no intent to sell or trade the content appears to be present. This very fact would constitute a non-actionable infringement as per the court’s reasoning in the LaMacchia case.<sup>2</sup> Although at the time of the MaMacchia case<sup>3</sup>, the term “Warez” was not as prevalent, LaMacchia was an early Warez trader.<sup>4</sup> Warez sites are specialised servers - simply put, Warez distribution centres.<sup>5</sup>

### Who is a “Warez Trader”?

A minimum of four distinct sub-groups constitute the term “Warez Trader”. To acquire a comprehensive understanding of the Warez scene, each of these sub-groups should be looked at individually. Warez trading is perhaps simpler to understand if one compares it to the working of a garment reseller’s warehouse.<sup>6</sup>

- a. Warez Distributors - Large, organised operations which generate high volumes of Warez in a short span of time. Their procedure of operation involves dividing several distinct tasks between members;

namely, bringing in new Warez, cracking any protective measures that may prevent its unauthorised use, testing the unlocked Warez to see if it still works, packing the Warez to simplify distribution, couriering Warez to and from different sites, systems administration and monitoring this entire process.<sup>7</sup> In a garment reseller’s warehouse, this could be compared to bringing in boxes of newly-manufactured clothing, breaking open the seals on the boxes, checking the contents to ensure no damage was sustained, packing it up in a manner that simplifies the sale of the clothing, sending the clothing to different reseller shops and finally, overseeing this process.

- b. Warez Collectors - These entities collect and trade Warez apart from distributors. Their typical composition is of hobbyists who try to obtain admission into a Warez distributor group. Their motives are fuelled by the pursuit for prestige.<sup>8</sup> Compare collectors to thrift store resellers - they pride themselves on their ability to find a designer/rare pieces of clothing that they occasionally trade, but mainly collect as “conquests”.
- c. Warez Downloaders - These entities download Warez (on trial or permanently) mainly because it is free. While they do not trade Warez, some commercial piracy entities may download Warez to sell as independent dealers.<sup>9</sup> Downloaders can be

compared to the general public who shop at thrift stores merely because they are cheaper than brand stores.

- d. Abandonware Enthusiasts - They collect, distribute and trade software - usually games - that are no longer on the market. These enthusiasts perceive themselves to be archivists or historians, but are otherwise indistinguishable from the other types of Warez traders.<sup>10</sup> Fashion archivists, who may be compared to abandonware enthusiasts, collect vintage fashion that no longer exists on the market.

These sub-groups of traders form part of a structure that is rooted in the first occurrences of networking, traceable back to the advent of Macintosh® personal computers (PC). As PC culture was popularised, networking technology too developed, resulting in the emergence of the internet - where the earlier discussed groups coalesced. While early computer networks in which one individual could interact with only one server by telephone, newer networks connected everyone to everyone, thereby greasing the wheels of digital information transfer while incurring almost no cost.<sup>11</sup>

### **Dilemma of an Observable Whole**

Since 2021, Warez files have been available on the internet through BitTorrent and “one-click” hosts.<sup>12</sup> In a distributed network, an observable whole might simplify the comprehension of economic activity. Economic activity in the Warez scene assumes the form of digital data transfer, which cannot be observed apart from the traces

they leave. Thus, a Warez activity researcher has mere fragments of information to construct evidence of a trade.<sup>13</sup> In such circumstances, is there even a hypothetical whole to contemplate? Added peril comes into play when one considers the sheer quantum of software traded through Warez networks. Most new software released tend to flood the Warez scene in twenty-four hours of their being released into the market (phenomenon titled zero-day Warez), and in some occasions, even earlier if the trader has contacts within the relevant industry.<sup>14</sup> This would entail the inherent illegality and immorality of the Warez scene, especially from the eyes of the software industry. Warez trading in other words, is organised theft on a platform of mass participation, giving suffering stakeholders an agenda of Warez eradication.<sup>15</sup>

### **Why Tackling Warez is Problematic**

Warez distribution can be said to render the ‘Warez’ program terminally ill - the software becomes part of the public domain despite legal problems. This is because pirated software spreads like wildfire because of the number of ways one can circumvent the law. Some methods that traders use is through the Warez underground, to the Internet by way of file sharing programs, commercial file storage and FTP (file transfer protocol) sites. The pirated program when first released is used by distributors as an upper-hand to barter with other distributors for different newly released programs. This way, the Warez scene ensures that all major groups have access to the latest protected media - and then this Warez spreads from these sources to users from the general public. IRC channels are the next to be

flooded with Warez'd content after they infiltrate private FTP sites. The next step is for file-sharing services like KaZaa, DirectConnect and Bearshare to be updated with final posts to certain news groups. Once all target locations are spreading the Warez, the internet becomes the final destination in a journey of various distribution methods.<sup>16</sup> Attempts to erase the Warez scene include most recently, the SPARKS raid of 2020, Operation Cyber Strike and earlier related busts, Operation Fastlink, Operation Buccaneer, Operation Site Down - following a repeated pattern, all of these enforcement actions trigger a transient shutdown of the Warez scene which resumed after a certain period of recuperation. Thus, every time an operation has been initiated, the Warez scene bounces right back up and resumes working smoothly, although with added security measures. These busts, often conducted by covert cybersecurity agents, point out another way the Warez scene infects mainstream culture.<sup>17</sup> These raids target highly centralised network sources - typically group heads and co-heads who form the primary connections for the spread of pirated content.<sup>18</sup> Keeping in mind the limited resource base with which cybersecurity operations may be enforced, the entities involved in these procedures make focused choices to concentrate powers on these individuals who head the Warez scene. Although the trajectory of attack at first glance appears to be structured, dispersed and rhizomatic, it is built on shaky foundations - as the infamous history of busts demonstrates when one head is cut off, another five take its place.<sup>19</sup>

### What Factors Must Cybersecurity Professionals Keep In Mind While Tackling Warez?

An important prerequisite to assign liability with reference to criminal principles of copyright law is that all offenders are rational (*homo economicus*) who will stop engaging in offending behaviour when threatened with punishment. However, those involved in the Warez scene do not find the idea of being caught and punished fearful. While some traders have a code of ethics that they follow, they tend to be unresponsive to rules that do not act in their interest. Interestingly, Warez traders' egos are fuelled by the imminent threat to their operations in making them feel superior about bypassing the law within the Warez scene. Criminalisation might produce undesirable effects of reinforcing the "Robin-Hood" complex of Warez traders (they tend to believe that they are in pursuit of a good cause that the law is unjustly against). If copyright rules become more stringent, traders' self-imposed moral justifications for engaging in the act of trading Warez may increase as a result.

### Conclusion

Being on the other side of having a criminal sanction imposed against something one has invested a considerable amount of time and effort in may deepen offenders' bonds unto one another. It creates a perception of an "us versus them" world, where the Warez traders join troupes to revolt against "unjust" oppression. It increases feelings of commonality between individuals and binds them to one another in generating loyalty to the cause - these individuals tend to feel like they only belong in the Warez scene as against a world

that is “out to get them”. Prestige, ego and reputations are the core motivators for an individual to participate in Warez trading, and as long as something is kept out of their reach, recognition constitutes an incentive to breach measures that separate them from the “prize”. Consequently, Warez trading may look more attractive to those contemplating participation.<sup>21</sup>

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