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ABOUT US

WHITE BLACK LEGAL is an open access, peer-reviewed and refereed journal provide dedicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

SAFEGUARDING IPR IN THE DIGITAL ERA: NEED OF A REALISTIC APPROACH

AUTHORED BY - DR. DEBABRATA ROY¹

Abstract

A legal system aimed at safeguarding works of literature, art, inventions, designs, symbols, and business names is known as intellectual property. The production, dissemination, and consumption of intellectual property have undergone significant change in the digital age, which is fueled by the internet and new technology. It provides the fundamental legal framework for preserving artistic creations. The goal of the research paper is to examine the challenges and opportunities related to intellectual property rights (IPR) in the digital era. It seeks to offer a thorough examination of how cutting-edge technologies like Block Chain, Internet of Things, and Artificial Intelligence are changing the intellectual property protection scene. In order to provide stakeholders with the knowledge they need to successfully negotiate this challenging environment, this paper looks at future trends, technological advancements, legal responses, and international cooperation initiatives. The fast paced technological environment of today makes it difficult for traditional legal frameworks to keep up with the rate of innovation. In order to close this gap, this research paper supports flexible regulatory frameworks that can quickly adjust to changing technological environments. It encourages a comprehensive strategy for intellectual property protection that takes into account many viewpoints and tackles issues with ethics, privacy, and security.

Due to the ease of copying and distribution in the digital age, it is imperative to preserve intellectual property rights (IPR) such as copyright, patents, trademarks, and trade secrets. This calls for strong legal frameworks and preventative measures.

Key Words: *Intellectual Property, Technology, safeguard, challenges, protection.*

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Introduction:

Intellectual property rights (IPR) must be protected in the digital world of today. These rights include things like trade secrets, copyrights, patents, and trademarks, all of which are essential for promoting innovation and business expansion. They provide incentives and legal protection to those who invent new things. Let's now discuss artificial intelligence, or AI. The capabilities of AI are already pretty amazing, and scientists are constantly trying to make it smarter. The fact remains, though: AI is still merely a machine. It can occasionally function without the programmer's guidance. This may or may not be harmful. The issue lies in the fact that once AI begins to act autonomously, it can be difficult to control. Despite the advancements we've made in AI, many questions remain. But we're optimistic that we'll figure it out quickly and establish guidelines for the extent to which AI can be used in our daily lives and inventions.

The history of India's intellectual property rights (IPR) laws starts during the British colonial era. In 1856, the British government enacted the first modern patent law, allowing creators to temporarily safeguard their new creations. More laws protecting intellectual property were made by the Indian government after the country's independence in 1947. An earlier version was replaced in 1957 with the Patents Act, which extended the patent period for improvements and inventions to 14 years. To safeguard trademarks and artistic creations such as music and books, the Trademarks Act of 1958 and the Copyright Act of 1957 were also introduced. With a new Patents Act in 1970, India sought to strengthen its R&D, concentrating on process patents for a period of seven years (extendable to twelve). In 1999, India became a member of the World Trade Organization (WTO) and committed to adhering to global intellectual property standards. As a result, the Patents Act was modified in 2005 to conform to these regulations. In addition to these legislation, India has other acts such as the 1999 Geographical Indications of Goods Act, which safeguards goods associated with particular regions. India is also party to a number of international treaties and agreements that cover different facets of intellectual property rights and are supervised by the World Intellectual Property Organization (WIPO). Globally equitable treatment and protection for inventors and creators are the goals of these agreements.

IPRs, or intellectual property rights, are crucial for fostering innovation and original thought. Let's say you write a fantastic song or devise a clever invention. You would want to make sure that no one copies your work or steals your ideas without your consent, wouldn't you? IPR is

useful in this situation. It provides artists such as yourself with the confidence that the labor of your love will be acknowledged and shielded from unauthorized use or duplication. The knowledge that their efforts will be rewarded and protected makes people more willing to devote time and resources to creating new ideas when they have intellectual property rights (IPR). It provides innovators and creators with a sense of security and inspires them to continue producing amazing things. IPR also contributes to maintaining equity between companies and creators. It makes sure that instead of focusing on who can copy ideas and innovations the quickest, competition is centered on the caliber of each competitor's innovations and ideas. Yet, IPR protection is becoming more difficult as new technologies appear on the scene. The following sections of this talk will examine how and why these new technologies are reshaping the intellectual property rights landscape, as well as the implications for the future².

Relationship between Technology and IPR:

Information and intellectual property can be copied, transferred, and altered more cheaply thanks to technology. For instance, the average person can amass entire libraries of copyrighted text, music, and images in their homes thanks to technology like optical disk storage systems. More works are accessible to more people thanks to improved information systems and cheaper prices. Consequently, law enforcement initiatives will have to consider a far greater variety of possible infractions than they do at the moment. We can copy, transfer, and work with intellectual property and information more quickly thanks to technology. For instance, in laboratory settings, fiber optic technology can now send 100 novellas per second over a 100-mile distance. In the near future, both the home and the office will have access to these features. Rights holders may have less market cushion to realize returns from their financial and creative investments as a result of these and numerous other similar developments. They might therefore be less inspired to produce works of art. The private copying, transmission, and manipulation of information and intellectual works has increased due to technological advancements. For instance, big commercial databases' contents can be processed, stored, and shared by personal computers without the authors' knowledge or approval. As a result, it becomes more challenging for the holders of the rights to identify, validate, and stop infringement. As a result, they might be less motivated to distribute their work widely. All things considered, traditional owner-driven (civil law) enforcement has been largely ineffective in ensuring appropriate control over the public distribution of intellectual works due to advances in information

² <https://www.ijfmr.com/papers/2024/3/20153.pdf> (Last visited on 30/09/2024).

technology's cost, speed, and performance. Investors may become less inclined to support the production of intellectual works as a result. It is probable that owners of intellectual property will be hesitant to distribute their copyrighted works in a format that they have minimal physical control over. Owners now have more control over how their works are distributed thanks to the technology itself. By limiting and tracking access, private computerized electronic systems can offer the capacity to establish control. The advantages of implementing such controls may need to be weighed against any potential social costs of limiting public access and keeping an eye on how private parties use the data. The importance of public support for intellectual property rights increases as technological advancements make it harder to enforce these rights. Nonetheless, there is currently a lack of knowledge regarding intellectual property rights issues among the general public. The public can distinguish between the rights of owners to operate in the market and their own rights to use information as they see fit in their homes and places of business if they are aware of this issue. The public is likely to support an intellectual property system as long as owners' rights do not interfere with the public's sense of privacy and justice³.

Significant Impact of Technology on IPR:

The rapid pace of digital transformation is bringing about revolutionary technologies that are influencing many aspects of life, including the creation, protection, and enforcement of intellectual property (IP) rights. Because of the unprecedented innovation that digital transformation has brought to various industries, new forms of intellectual property have emerged. The range of content that can be protected by intellectual property laws has increased in the digital age, encompassing artificial intelligence, digital content, and software as well as algorithms. Laws must adapt as technology develops to take new developments into account.

One of the key technologies that will have a big impact on India's current intellectual property rights system is artificial intelligence. When AI produces any type of work, the following queries come up: Who is the rightful owner of the intellectual property when an AI system produces an original work? Should the AI system be regarded as the creator in and of itself? Or should the companies that own AI systems and human programmers be granted rights? In order to decide the future of AI-generated works and guarantee just compensation for creators, it is imperative that these issues be addressed. Because of the complexity of artificial

³ <https://ijrpr.com/uploads/V5ISSUE5/IJRPR27032.pdf> (Last visited on 30/09/24).

intelligence, there is a growing movement to reinterpret current intellectual property laws. The terms "patent owner" and "interested party" are defined in Section 2(p) and Section 2(t) of the Patents Act of 1970, respectively, meaning that "any person" It is stated that owners and stakeholders may be included. This indicates that AI is expressly excluded from its purview by its inclusion, and as a result, non-human entities are not allowed to hold patents under the law. Furthermore, "author" is defined in Section 2(d) of the Copyright Act of 1957, and it can refer to either a natural or legal person. Consequently, only works created by machines are covered by the law. AI may also violate other people's intellectual property rights.

New opportunities for the creation of intellectual property are brought about by digital transformation, but there are also difficulties in protecting digital assets. The enforcement of traditional intellectual property rights has become more challenging due to the ease of digital reproduction and distribution. Robust legal solutions are necessary to address the growing problems of software piracy, copyright infringement, and unauthorized use of digital content.

Block chain technology, renowned for its secure and decentralized architecture, is radically altering the way intellectual property rights are administered. Smart contracts built on block chain technology offer transparent, self-executing contracts that improve the efficiency of intellectual property transfers and shield them from manipulation. This could fundamentally alter not only the way royalties and licenses are paid, but also the way intellectual property is handled in general. The development of block chain technology, which powers cryptocurrencies like Bit coin, has profound effects on intellectual property. It can completely transform virtual rights management by enabling creators to take ownership of their works and protect their tracks thanks to its decentralized and transparent design. Smart contracts that automatically enforce intellectual property rights, creation timestamps, and ownership proof are all possible with block chain-based systems. Block chain technology will improve openness, lessen infringement, and encourage fair compensation for creators in the intellectual property space. Block chain technology implementation in the intellectual property space does, however, also bring up legal issues, including data security, jurisdiction, and compliance with current rules and laws. Legal frameworks must change and become clearer as this technology develops in order to fully utilize its potential and safeguard intellectual property rights.

Since data-driven technologies are the mainstay of digital transformation, concerns about data protection and privacy are raised by the massive amounts of data that are collected and

processed. Striking a balance between upholding individual rights and encouraging innovation is crucial. Strict guidelines for handling personal data are imposed by laws like the General Data Protection Regulation (GDPR), which has an effect on how businesses conduct business online. Globalization and cross-border enforcement of intellectual property: Given that the digital revolution has made market globalization possible, it is imperative that intellectual property issues be addressed on a worldwide scale. Diverse legal frameworks and legal roadblocks contribute to the complexity of intellectual property rights enforcement across international borders. International cooperation and legal harmonization are necessary for effective protection in the digital age.

Strong cyber security measures are necessary to safeguard intellectual property because cyber threats are becoming more frequent and sophisticated. Valuable digital assets are seriously threatened by cyber attacks, unauthorized access, and data breaches; however, legal frameworks must be in place to address these risks and offer remedies for intellectual property infringement in cyberspace. Change is required⁴.

Contemporary Issues relating to IPR:

The legal rights accorded to people or organizations over mental creations, such as inventions, literary and artistic works, designs, symbols, names, and pictures used in trade, are known as intellectual property rights, or IPRs. These rights encourage more innovation and creativity by enabling creators and inventors to profit monetarily from their works of art or inventions. The creation of new technologies, economic expansion, and innovation are all dependent on the protection of intellectual property rights.

The rapid advancements in technology and the emergence of the digital age are the primary causes of contemporary issues pertaining to intellectual property rights. Several of these problems consist of:

1. Lack of understanding and consciousness of intellectual property rights: A lot of people and companies might not be fully aware of their rights or how crucial it is to protect their intellectual property. This may result in unintentional violations or lost opportunities for defense.

⁴ Ibid.

2. Inadequate development of technical, machine learning, and deep learning skills: As technology develops, there is an increasing need for people with these abilities to create and carry out efficient plans for safeguarding intellectual property in digital environments.
3. Ineffective application of intellectual property laws: Lax application of intellectual property laws can promote infringement and weaken their efficacy as a means of protecting intellectual property.
4. Lack of an efficient IPR review committee: Inconsistencies or inefficiencies in the protection and enforcement of intellectual property rights can arise from a lack of supervision or coordination in the evaluation and handling of intellectual property issues.
5. Limited application knowledge and technical insight: Dealing with intellectual property issues frequently calls for knowledge and expertise in technical fields, especially those like digital rights management and patent law. Inadequate technical knowledge can make it more difficult to protect and enforce laws effectively.

These modern problems take many different forms, such as plagiarism, piracy, stolen content, copyright violations, and trademark infringements⁵.

Legal Framework for Protecting Digital Intellectual Property:

Digital technology is novel and raising their usage thanks to advancements in IT. Nonetheless, there are some significant restrictions on the application of traditional intellectual property laws. Even so, even though they fall short, international agreements on intellectual property are crucial for safeguarding intellectual property. To safeguard digital works, the US has a variety of legal regulations. The U.S. Digital Millennium Copyright Act (DMCA) of 1998 and the Copyright Law of 1976 are the two most significant agreements. The Copyright Protection governs not only domestic use of a work but also foreign works used in the United States. It also grants copyright owners the authority to use protection measures to safeguard their works and to remove such measures upon request from users, provided that the nature of the work so warrants them. Under U.S. Copyright Law, copyrights are typically granted for 25 years, 50 years, and occasionally 75 years. Copyrights then become part of the public domain. Sometimes American laws provide longer copyrights than those stipulated in the Berne Convention.

⁵ <https://www.ijfmr.com/papers/2024/3/20153.pdf> (Last visited on 30/09/2024).

The European Union has several agreements that govern the protection of digital intellectual property. The Berne Convention, signed in 1886, was the first significant international agreement to protect intellectual property. It specifically relates to copyright protection and provides the authors with a lifetime plus fifty years of work protected. International protection against all other members of the World Intellectual Property Organization (WIPO) is guaranteed by membership in the Berne Convention. The Agreement on Trade-Related Aspects of Intellectual Property Rights, or TRIPS, was negotiated in 1994 by world leaders. Trade secrets predominated when it came to information technologies, and TRIPS typically offers a broad definition for intellectual property rights. According to the TRIPS Agreements, Member States are not allowed to avoid their responsibilities under the Berne Convention.

International Law and Treaties:

To date, no such agreements have been reached regarding the remaining issues, with the exception of a very small number of cases involving very broad areas of law. The legal frameworks of many nations contain statutes that specify who owns and is allowed to use digital intellectual property, thereby enshrining the issue of intellectual property protection. The extent of what these systems deem protectable, the extent of fair use provisions, the duration of protection, and even the capacity for non-citizens to possess digital intellectual property are all fundamentally different. This presents an issue. Because they are multilateral in nature, the agreements made through the various treaties typically contain little detail. This enables each nation to fairly easily amend its private international law to provide sufficient uniformity to encourage intellectual exchanges amongst the nations' citizens. However, there are two crucial exchanges that happen between the nationals of the different nations.

A workable legal framework for the protection of digital intellectual property must overcome the important challenges presented by international laws and treaties. It is simple to forget that there are other nations, let alone other legal systems, when living in the United States. In the realm of global online trade, this is untrue. Private international law deals with the development of regulations to make the above-mentioned complexities easier for the citizens of the various countries involved in the transgressions. This area of law is typically responsible for laws governing international relationships related to commerce. The negotiation of claims, the definition of a legal violation, and the procedures for the judicial decree's enforcement or seizure are essential components of this endeavor.

Indian Laws on Intellectual Property Protection:

The unification of Indian legislation pertaining to intellectual property rights has been made possible by the TRIPS agreement. The agreement was put into effect while adhering to the minimal requirements for IPR protection. There has been a deadline set for the participating nations to amend their legislation in order to achieve the necessary compliance requirements.

The article's remaining content aims to draw attention to the changes made to intellectual property rules as a result of the agreement. The Indian Patent and Designs Act of 1911 brought patents to the Indian commercial world for the first time. When the Patents Act of 1970 went into effect in 1972, this Act was replaced. In order to comply with the TRIPS agreement, the Act which has remained the country's patent law to this day went through an amendment in 2005, becoming the Patents (Amendments) Act, 2005. The Amendment governed the expansion of product patents to cover all technological domains, including microorganisms, chemicals, foods, and medications. Additionally, a clause allowing the granting of a compulsory license has been framed as the substitute for the regulations pertaining to Exclusive Marketing Rights (EMRs), which have been repealed.

A trademark is a distinctive symbol that sets one brand apart from another and is thought to be necessary to prevent unlawful brand replication. The protection of distinguishing marks, recognition of service marks, indefinite periodic renewal of registration, elimination of forced trademark licensing, and other provisions are all included in the TRIPS agreement for trademark protection. The Indian Trade and Merchandise Marks Act of 1958 was repealed to make room for the Trade Marks Act of 1999 in light of the newly enacted legislation. According to the international methods and procedures required by the TRIPS agreement, the recently implemented regulating regulation was created. Service mark registration, multiclass application submission, extending the trademark registration period to ten years, acknowledging the notion of wellknown marks, and other provisions are all made possible by the Trademarks Act of 1999. Domain names are now also protected under the Indian legal system. The infringement provisions for the current regulations have been changed to encompass the unlawful use of identical or confusingly similar marks, whereas the prior regulation only covered goods and services for registration purposes. There is less space for defaults because to these adjustments. Any infringement materials can now be seized by the police without a warrant. A defaulter found guilty of trademark infringement faces a minimum

6month jail sentence and a maximum 3year sentence. Along with this, there would be a fine of at least Rs. 50,000, and it might potentially reach Rs. 2,00.00.

The Copyright Act is one of the few laws in India that has stood the test of time.The Act was created in 1957 and has undergone several revisions to bring it into compliance with the international norms outlined in TRIPS.Painting, sculpture, drawing, engraving, photography, creative handicraft, theatrical, literary, musical, sound recording, and cinematography are among the artistic undertakings that are protected by the Act.It reflects both the Universal Copyrights Convention and the Berne Convention for Protection of Literary and Artistic Works, 1886.

The nation is a party to the Geneva Convention for the protection of Producers' or Phonogram s' rights in addition to these two accords.Additionally, the nation actively participates in the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the World Intellectual Property Organization (WIPO).Among the Act's salient features are the following:

- Since any original work that has little in common with other works can be used for this purpose, the Act does not require quality work.
- The work's creator is granted lifetime copyrights, which will remain in effect for a little while longer after their lifetime, or until 60 years after their passing.
- In addition to authorship rights, the creator also has the right to have their works protected from changes.
- The Act was amended to include computer programming in 1984.

India now has access to components that aid in the protection of industrial designs thanks to the TRIPS agreement.These standards are met by the Designs Act of 2000, which protects unique and visually appealing designs that are in line with economic and technological progress and have the potential for commercial uses.

Products with a particular geographical origin are given a Geographical Indication (GI), which is made up of characteristics or a reputation that are specific to the location of origin.GI rights are precious and must be safeguarded from abuse by unscrupulous businesspeople.The minimal requirements for GI protection as well as further protection for wines and spirits are outlined in the TRIPS agreement.The Geographical Indications of Goods (Registration and Protection) Act, 1999, and the Geographical Indications of Goods (Registration and Protection) Ru

les, 2002, are legislative actions that India has taken in response to this. According to the Geographical Indications of Goods (Registration and Protection) Act, 1999, a "geographical indication" is "an indication which identifies such goods as agricultural goods, natural goods, or manufactured goods as originating, or manufactured in the territory of a country, or a region or locality in that territory, where a given quality, reputation, or other characteristic of such goods is essentially attributable to its geographical origin, and in case such goods are manufactured goods, one of the activities of either the production, processing, or preparation of the goods concerned takes place in such territory, region or locality, as the case may be." In India, GIs are widely used since they are present in many different items, including Kolhapur Chappal, Kanchipuram Silk Saree, Allepey Green Cardamom, Coorg Cardamom, Feni, Alphonso Mango, Darjeeling Tea, and Basmati Rice. By filing a civil lawsuit or criminal complaint, entities that are registered with GIs can stop illegal usage of the registered geographical indication.

In accordance with the recommendations of the International Union for Protection of New Varieties of Plants, Geneva, India ratified the TRIPS agreement by enacting the Protection of Plant Varieties and Farmers Act, 2001, also referred to as the "Plant Act." The establishment of a Protection of Plant Varieties and Farmers Rights Authority has been made easier by the Act. In addition to protecting plant variations and the rights of farmers and breeders, the organization is tasked with encouraging the production of new plant kinds. As of now, 114 crops and their genera have been notified by the Indian government to register under the project. With a greater focus on finding or creating new breeds, the development is expected to support the advancement of agriculture, the most significant industry of all. The program also aims to provide Indian farmers with higher-quality seeds and support the expansion of the seed industry.

In accordance with the TRIPS agreement, the Semiconductor Integrated Circuits Layout Design Act, 2000, was included into the Indian legal framework. The purpose of the Act is to guarantee that integrated circuit layout designs are protected. Transistors and other circuitry components are arranged according to layout designs. It can be expressed in any way in a semiconductor integrated circuit and consists of lead wires joining such components. A semiconductor integrated circuit is defined by the Semiconductor Integrated Circuits Layout Design Act of 2000 as a product that contains transistors and other circuitry components that are inseparably formed on a semiconductor material, an insulating material, or inside the semiconductor mate

rial and intended to carry out an electronic circuitry function⁶.

Cases on Technology and IPR interceptions:

1. MOTOROLA VS. APPLE VS. SAMSUNG AND GOOGLE:

As cell phones grew more and more commonplace in our daily lives in 2010, Apple and Samsung got into a legal dispute over alleged patent infringement pertaining to Apple's phone products. It's interesting to note that Google's Android software, which was installed on phones made by Samsung and other third parties, was also the main target of Apple's concerns. Through a distribution agreement for mobile applications, Google's legal team assisted Samsung in resolving its legal issues. In one of the most prominent legal actions in the annals of technology, Motorola sued Apple concurrently. Apple was accused of violating multiple patents related to the functioning of 3G mobile phones. In response, Apple filed a countersuit against Motorola, claiming that the latter was violating patents concerning different aspects of smart phones. In 2012, the courts dismissed this case three times because it was causing them so much trouble. The judges urged the parties to resolve their differences outside of court, noting that the evidence presented by either side was inadequate. It is noteworthy that Google purchased Motorola in 2012.

2. BLACKBERRY VS. TYPO PRODUCTS:

Typo Products is a US-based company that may be of interest to you if you're thinking about upgrading your iPhone with a physical keyboard add-on that looks like it belongs on a BlackBerry. But in 2014, BlackBerry filed a lawsuit against Typo, claiming that Typo had copied the design of its famous QWERTY keyboard. BlackBerry sued Typo Products on January 3, 2014, alleging that the latter had copied the layout of the company's well-known QWERTY keyboard. First, the court acknowledged BlackBerry's patented design and granted an injunction against the company.

In spite of a court order to stop and desist, Typo Products kept selling the keyboard as an add-on for iPhones all over the world and through other channels. Typo was consequently fined \$860,000, along with legal costs and a charge of contempt of court against BlackBerry. However, Typo has introduced "Typo 2," a redesigned version of the discontinued product. BlackBerry filed a second lawsuit against the company for interfering with its design patents, despite the company's claims that it was not subject

⁶ <https://www.indiafilings.com/learn/intellectual-property-laws-in-india/> .

to an injunction. Finally, a settlement was reached whereby Typo Products ceased selling his products for cell phones smaller than seven anywhere in the world.

3. The Music Industry VS. Napster:

In 1999, during the nascent days of the Internet, teenage tech prodigy Shawn Fanning created the Napster software, a peer-to-peer file-sharing platform that enabled individuals to freely exchange and download music. It goes without saying that Napster caught the attention of the music business. In 2000, Lars Ulrich, the drummer for Metallica, filed a lawsuit against the software's developers alleging copyright infringement, unauthorized use of a digital audio interface device, and extortion.

This may be the first instance of a well-known musician suing a peer-to-peer software provider directly. As a result, Napster was sued by big record labels like A&M, setting off a chain reaction. In 2002, the plaintiffs, who had accused the software company of violating proxy copyright, were found guilty. This year, Napster was forced to close to the public's dismay, apologize publicly, and pay up to \$26 million in damages. Some people developed animosity toward Metallica as a result of the incident.

4. VLSI Technologies VS. Intel:

Leading chip maker and tech behemoth Intel was sued by VLSI Technologies in 2021 for alleged patent infringement pertaining to semiconductor technology. This well-known case involved numerous district courts around the country. Billions of dollars are on the line, and Intel's stock price increased by 4 to 5 % during these events.

In the first case, he was awarded over \$2 billion in damages after a judge ruled in favor of VLSI. Intel filed an appeal of the Washington ruling. The court acknowledged that Intel had violated a different VLSI patent, but it also underlined the necessity of a new procedure to look over the damages estimates and figure out how much was right. After that, a different Texas jury found in favor of his VLSI, giving him a \$949 million patent-related damages award in 2022. This led to the creation of VLSI. It was given \$1 as well.

5. Apple Inc. vs, Samsung Electronics Co.:

The Supreme Court is considering a case involving allegedly stolen Apple design patents by Samsung. A company's intellectual property assets also include patents, despite the fact that this is not a trademark tassel.

And finally in Apple Inc. vs. Nokia Corporation, Apple's use of Nokia technology in its tablets, smart phones, and other communications devices is the subject of another patent lawsuit. Apple has made the decision to no longer pay for the technology patents held

by Nokia, many of which are already incorporated into Apple products. It charged Nokia, a company headquartered in Finland, with patent extortion.⁷

Realistic Approaches for Safeguarding IPR in the Digital Era:

1. Technologies referred to as Electronic Rights Management Systems (ERMS) or Digital Rights Management (DRM) identify and safeguard content, manage access to the work, preserve the work's integrity, and guarantee payment for access. DRM technologies block unauthorized users from accessing the content. License agreements and user IDs also serve to protect access. TPMs, or technical protection measures, offer an additional layer of protection for digital content. With the use of these technologies, publishing companies can safeguard and prevent unauthorized use of content like text, music, and video. The use of DRM technology allows authors to charge for the use of their creations. More and more content is being sold and distributed online using TPM and DRM technologies.
2. The oldest method used to guarantee data security and privacy over a network is cryptography. In order to do this, the information is scrambled so that only the authorized user can decipher it and make it unintelligible or unreadable. Cryptography, on the other hand, only safeguards the work when it is being transmitted or distributed.
3. A digital signal or pattern added to a digital document is called a digital watermark. It resembles the electronic TV channel on-screen logo. The work is identified by a special code. Information about ownership, sender, recipient, etc., or information about copyright authorization may be included in the message. A watermark generator, an embedded, and a watermark detector decoder make up the system. These watermarks can be removed by the authorized user using a preset algorithm. The technology of watermarking is widely employed for safeguarding multimedia content.
4. The sender and/or recipient's identity, the time and date, any unique code, etc., are all included in a digital signature. The digital product can have this information added to it. This digitally identifies and binds software for distribution to a designated customer base. Digitally signed fingerprints guard against unauthorized copying and ensure the authenticity of documents.
5. The Electronic Marketing Technique involves the automatic generation of a distinct mark by the system, which is then attached to every copy of the document. When

⁷ <https://ijrpr.com/uploads/V5ISSUE5/IJRPR27032.pdf> (Last visited on 30/09/2024).

documents are printed, copied, or faxed in electronic publishing, this technique is also used to protect copyright⁸.

Conclusion:

In order to protect intellectual property rights (IPR) from cyber threats and emerging technologies, proactive and cooperative measures must be taken. Technology breakthroughs in artificial intelligence, block chain, 3D printing, and the Internet of Things are transforming industries, and new challenges call for the adaptation of legal frameworks and enforcement mechanisms. Robust incident response plans, network monitoring, employee training, strong access controls, and encryption are all necessary for effective protection. Furthermore, cooperation between government offices, law enforcement, business associations, and private enterprises is crucial for exchanging knowledge and resources in the fight against cyberattacks. Organizations can protect the integrity of intellectual property rights, encourage innovation, and keep a competitive edge in the rapidly changing digital landscape by putting comprehensive strategies into practice and encouraging collaboration⁹.

WHITE BLACK
LEGAL

⁸ https://www.academia.edu/42247111/Intellectual_Property_Rights_and_The_Digital_World (Last visited on 30/09/2024).

⁹ <https://www.ijfmr.com/papers/2024/3/20153.pdf> (Last visited on 30/09/2024).