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# CONTEMPORARY AND EMERGING ISSUE IN INTELLECTUAL PROPERTY RIGHTS

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ABSTRACT

The rise of Artificial Intelligence (AI) has significantly altered the realm of creativity and innovation. AI systems are now capable of autonomously creating artistic, literary, and musical works that were previously thought to be solely within the purview of human creativity. This increasing capability of machines to produce original content introduces intricate legal dilemmas regarding authorship, ownership, and originality in the context of copyright law. Conventional copyright frameworks, such as the Indian Copyright Act of 1957, operate under the premise that only a natural person can be recognized as an author, thereby placing AI-generated works in a legal ambiguity. This research paper explores the challenges that AI-generated content presents to current copyright standards, with a particular emphasis on originality, authorship, and moral rights. It evaluates the strategies adopted in jurisdictions like the United States, the United Kingdom, and the European Union, in addition to the ongoing international dialogues spearheaded by the World Intellectual Property Organization (WIPO). The study concludes that although AI has broadened creative horizons, copyright law must adapt to reconcile innovation, human input, and equitable legal acknowledgment in the digital age.

KEYWORDS- Artificial Intelligence (AI); Creativity; Copyright Law; Authorship; Originality; Ownership; Moral Rights; Indian Copyright Act, 1957; AI-generated Content

## RESEARCH METHODOLOGY

This research employs a qualitative, analytical, and comparative methodology to investigate current and emerging issues in Intellectual Property Rights (IPR), especially those that stem from technological advancements such as Artificial Intelligence (AI), blockchain, biotechnology, and digital media. The study is primarily based on doctrinal legal research, which entails a systematic examination of statutes, international conventions (including TRIPS and WIPO treaties), national legislations like the Indian Copyright Act of 1957 and the Patents Act of 1970, as well as pertinent judicial precedents. Moreover, non-doctrinal (empirical)** components are integrated through the analysis of reports, policy documents, and expert insights to grasp the practical ramifications of IPR challenges. Data for this research is gathered from secondary sources such as academic journals, government publications, WIPO and WTO databases, legal commentaries, and reputable online repositories, thereby ensuring a thorough understanding of the current global and national IPR landscapes. The analysis adopts a qualitative content and comparative approach, pinpointing patterns, deficiencies, and reforms in legal systems across jurisdictions including India, the United States, the United Kingdom, and the European Union. Additionally, the study assesses how emerging technologies influence traditional notions of authorship, ownership,

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originality, and enforcement within IPR frameworks. Ethical standards are upheld by ensuring precise citation, recognition of sources, and the utilization of authentic and verifiable data. Ultimately, this methodology facilitates a critical examination of how intellectual property laws must adapt to embrace technological innovation while protecting human creativity, public interest, and equitable access in the digital age.

INTRODUCTION

Intellectual Property Rights (IPR) serve as the cornerstone of the global knowledge economy, offering legal safeguards to creators, inventors, and innovators. In recent years, the swift progression of technology and globalization has greatly broadened the scope and intricacy of IPR. The 21st century has introduced a variety of contemporary and emerging challenges that question the conventional notions of ownership, creativity, and innovation. The advent of Artificial Intelligence (AI), blockchain technology, the metaverse, biotechnology, and digital media has given rise to new forms of creative and inventive expression that existing legal frameworks frequently find difficult to classify. These advancements have compelled lawmakers, scholars, and policymakers to reconsider how intellectual property laws can evolve to protect both human creators and the technologies that augment human creativity.

One of the most contentious issues is the effect of Artificial Intelligence on copyright ownership. AI systems are now capable of producing poems, artworks, music, and even inventions without direct human intervention. This prompts a fundamental inquiry: who holds the copyright for a work generated by a machine? Traditional laws, such as the Indian Copyright Act of 1957, are predicated on the principle of human authorship, presuming that creativity is a product of human intellect. However, when AI autonomously generates content, it challenges this principle and reveals the shortcomings of current legal interpretations of authorship and originality. Around the world, various countries are investigating different strategies—some acknowledging AI-assisted creativity, while others refuse to grant protection to works devoid of human participation. The ongoing international discourse underscores the pressing necessity for a contemporary legal framework that recognizes technological realities while protecting human creative interests.

Another emerging concern in Intellectual Property Rights (IPR) is the increasing prevalence of Non-Fungible Tokens (NFTs) and their connection to copyright and ownership. NFTs have established a novel digital marketplace where art, music, and collectibles are marketed as distinct blockchain assets. While they provide proof of ownership and authenticity, they also generate ambiguity regarding the transfer of copyright and reproduction rights. Numerous purchasers assume that possessing an NFT grants them complete copyright authority, which is not invariably true. This disparity between technological advancement and legal comprehension highlights the urgent necessity to incorporate blockchain-based frameworks within current IP legislation to avert exploitation and infringement in the digital realm.

The notion of Intellectual Property Rights within the Metaverse presents another modern challenge. The metaverse—a collective, virtual digital space—has evolved into an arena where individuals and businesses create, exchange, and utilize virtual goods, brands, and services. This digital environment introduces intricate issues surrounding trademark protection, copyright enforcement, and patent rights, as traditional laws do not entirely apply within the metaverse. Concerns regarding jurisdiction, digital piracy, and the improper use of brand identity are becoming increasingly prevalent. As virtual economies grow, the mechanisms for enforcing IPR must adapt to ensure protection across both physical and digital domains.

In the realm of biotechnology, the issues surrounding genetic patenting and bioethics

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have emerged as both sensitive and vital concerns. The patenting of genes, microorganisms, and genetic alterations has ignited ethical discussions regarding the classification of life forms as intellectual property. While patents foster innovation in the fields of medicine and agriculture, they simultaneously raise significant human rights and ethical dilemmas, especially when such patents restrict public access to critical medical treatments or take advantage of indigenous genetic resources. Striking a balance between innovation and ethical accountability remains one of the most formidable challenges for intellectual property policymakers.

Another critical area of focus is the safeguarding of traditional knowledge and cultural expressions, particularly in developing nations such as India. Indigenous knowledge systems, folklore, handicrafts, and traditional medicine possess substantial cultural and economic significance; however, they are frequently exploited by corporations without the consent or compensation of the original communities. The initiative by the Indian government through the Traditional Knowledge Digital Library (TKDL) represents a noteworthy advancement in the documentation and protection of this heritage against biopiracy. Nevertheless, the overarching issues of ownership and benefit-sharing still necessitate enhanced international collaboration and legislative reform.

Lastly, the emergence of 3D printing technology introduces new challenges for the enforcement of intellectual property rights. 3D printing enables users to effortlessly replicate patented products or copyrighted designs within their homes, complicating the ability of IP holders to monitor or control instances of infringement. This democratization of manufacturing obscures the distinction between personal use and commercial exploitation, necessitating innovative strategies in the regulation, enforcement, and awareness of intellectual property.

TYPES AND SCOPE OF INTELLECTUAL PROPERTY RIGHTS

1. Copyright
   - Definition:

Copyright safeguards original works in literature, art, music, and drama. It is applicable to creations presented in tangible formats, including digital media, enabling creators to oversee reproduction, distribution, performance, and public exhibition.

- Examples:

Novels, poems, artworks, films, musical scores, software, and online materials.

- Duration:

Typically, the lifespan of the author plus 60 years in India (Copyright Act, 1957).

- Scope:

i. Protects the expression of ideas rather than the ideas themselves.
ii. Provides exclusive rights for reproduction, adaptation, performance, and public communication.
iii. Fosters creative sectors such as publishing, music, film, and software development.
iv. Aids in the fight against piracy and unauthorized duplication.

2. Patents
   - Definition:

A patent is a legal right that is granted exclusively for a new invention—whether it is a product or a process—that offers a unique technical solution to a specific problem.

- Examples:

Pharmaceutical drugs, electronic devices, machinery, and chemical processes.

- Duration:

20 years from the date of filing according to the Indian Patents Act of 1970.

- Scope:

i. It protects inventions that are novel, non-obvious, and applicable in industry.
ii. It grants the inventor exclusive rights to utilize, sell, or license the invention.
iii. It fosters research and development by providing potential financial benefits.
iv. It encourages technological progress and innovation across science, engineering, and medicine.

3. Trademarks

- Definition:

A trademark refers to a distinctive sign, word, logo, symbol, or design that differentiates the products or services of one company from those of another.

- Examples:

Logos such as Nike's "swoosh," brand names like "Apple," and slogans including "Just Do It."

- Duration:

10 years (can be renewed indefinitely in accordance with the Trade Marks Act, 1999).

Scope:

i. Assists in identifying the source of goods or services.
ii. Safeguards brand identity and fosters consumer trust.
iii. Represents a valuable asset for business reputation and marketing.

4. Industrial Designs

- Definition:

Industrial design protection encompasses the aesthetic or ornamental features of an item — including its shape, configuration, pattern, or color.

- Examples:

Designs of automobiles, smartphones, furniture, jewelry, and more.

- Duration:

10 years (which can be extended for an additional 5 years under the Designs Act, 2000).

Scope:

i. Safeguards visual attractiveness rather than practical use.
ii. Fosters artistic creativity within manufacturing sectors.
iii. Encourages product uniqueness in the marketplace.

5. Geographical Indications (GI)

- Definition:

A Geographical Indication refers to a designation used for products that originate from a specific geographical area and have qualities or a reputation attributed to that origin.

- Examples:

Darjeeling Tea, Basmati Rice, Madhubani Paintings, Kanchipuram Silk.

- Duration:

10 years (subject to renewal in accordance with the Geographical Indications of Goods Act, 1999).

- Scope:

i. Safeguards traditional knowledge and cultural heritage.
ii. Prevents the exploitation of local names by external parties.
iii. Promotes economic development in rural and regional areas.

6. Trade Secrets

- Definition:

Trade secrets refer to proprietary business information that offers a competitive advantage, including formulas, practices, designs, instruments, or processes.

- Examples:

Coca-Cola formula, Google's search algorithm, KFC recipe.

- Duration:

Indefinite, provided the information is kept confidential.

- Scope:

i. Not formally registered but safeguarded through contracts and confidentiality agreements.
ii. Promotes fair competition and business integrity.

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iii. Essential in sectors that depend on confidential technologies or methodologies.

7. Plant Variety Protection

- Definition:

This right protects the interests of plant breeders who have developed new plant varieties with improved traits.

- Examples:

New hybrid varieties of crops like wheat, rice, and maize.

- Duration:

6 to 15 years depending on the species (under the Protection of Plant Varieties and Farmers' Rights Act, 2001).

- Scope:

i. Promotes agricultural innovation.
ii. Recognizes farmers' rights and traditional knowledge.
iii. Encourages investment in agricultural research.

Scope of Intellectual Property Rights

- Economic Scope

IPR promotes economic growth by encouraging innovation, attracting foreign investment, and creating job opportunities. It turns intangible ideas into valuable assets that can be commercialized through licensing, franchising, or technology transfer.

- Legal Scope

Legally, IPR provides a framework for ownership, enforcement, and dispute resolution. National laws (like India's Patents Act and Copyright Act) and international treaties (like TRIPS Agreement, WIPO conventions) ensure standardized protection across countries.

- Social and Cultural Scope

IPR safeguards cultural expressions, traditional knowledge, and folklore, ensuring recognition and fair benefit-sharing for indigenous communities and artisans.

- Technological Scope

IPR incentivizes research and technological advancement by ensuring innovators can profit from their inventions without fear of imitation or theft.

- Educational and Research Scope

In academic and research sectors, IPR encourages innovation, collaboration, and the publication of original research, contributing to global knowledge dissemination.

Contemporary Issues in Intellectual Property Rights

Intellectual Property Rights (IPR) serve as legal tools to protect the creations of human intellect, including inventions, literary and artistic works, designs, and symbols. The primary objective of IPR is to encourage innovation by rewarding creators with exclusive rights over their work. However, in the contemporary era, the boundaries of creativity have expanded beyond human capability due to advancements in artificial intelligence (AI), biotechnology, and the digital economy. These technological shifts have raised complex questions about ownership, authorship, access, and fairness in the IPR system.

The dynamic nature of innovation has rendered many traditional laws inadequate. Thus, it has become essential to revisit and reform the intellectual property regime to ensure it remains relevant, inclusive, and equitable in addressing emerging global challenges.

1. Artificial Intelligence and Authorship

One of the most contentious topics in contemporary intellectual property rights (IPR) is the question of authorship and ownership concerning works generated by artificial intelligence (AI). AI technologies are now capable of producing literary compositions, artworks, musical pieces, and even inventions autonomously, without human involvement.

- Key questions arise:

Can an AI system be deemed an author or inventor?

Who holds the copyright or patent — the programmer, the user, or the AI itself?

- Example:

AI applications such as ChatGPT, DALL·E, and DeepMind's AlphaFold have generated creative or innovative outputs that challenge the distinction between human and machine authorship.

- Current Legal Position:

According to the majority of copyright regulations, including the Indian Copyright Act of 1957, only a "human author" is acknowledged. Likewise, patent legislation necessitates a "natural person" to be recognized as the inventor. Consequently, works produced by AI frequently lack definitive legal protection.

- Challenge:

Current legal structures must adapt to include non-human creators while ensuring accountability and upholding ethical standards.

2. Digital Piracy and Copyright Infringement

The advent of the internet and streaming services has led to digital piracy emerging as a significant issue concerning intellectual property rights (IPR). The unauthorized reproduction and distribution of music, films, software, and literature not only violate the rights of creators but also result in substantial economic losses.

- Forms of digital piracy encompass:

i. Illegal downloads of movies or songs
ii. Software cracking
iii. Unauthorized sharing of content on social media platforms
iv. Streaming and torrent websites that distribute copyrighted materials

- Example:

Websites such as Tamil rockers or Telegram channels frequently leak copyrighted films, inflicting considerable financial harm on production companies.

- Challenge:

In spite of stringent regulations like the Copyright (Amendment) Act, 2012, the enforcement of these laws in the digital realm is often ineffective due to issues related to jurisdiction and the anonymity of the offenders.

- Solution:

Implementing advanced digital rights management (DRM) technologies, utilizing blockchain for copyright tracking, and fostering stronger international collaboration can significantly mitigate the issue of digital piracy.

3. Biopiracy and Traditional Knowledge Misappropriation

Biopiracy denotes the unauthorized commercial utilization of biological resources and traditional knowledge, lacking appropriate consent or compensation for the indigenous communities that originated them.

- Examples:

i. The patenting of turmeric's wound-healing properties by foreign corporations.
ii. Patents for Neem and Basmati rice filed in foreign countries.
iii. These instances underscore the exploitation of India's abundant biodiversity and indigenous knowledge systems.

- Legal Response:

India has established the Traditional Knowledge Digital Library (TKDL) to catalog traditional medicinal knowledge and avert wrongful patent claims.

- Challenge:

Although legislation such as the Biological Diversity Act of 2002 seeks to safeguard this knowledge, the mechanisms for global recognition and benefit-sharing remain insufficient.

4. Patent Evergreening and Access to Medicines

Pharmaceutical companies often engage in patent evergreening, a practice of extending patent life by making minor modifications to existing drugs. This restricts the entry of cheaper generic medicines, negatively impacting public health.

- Example:

The famous Novartis v. Union of India (2013) case, where the Supreme Court denied a patent for a modified cancer drug (Glivec), reinforcing that only genuine innovations merit patent protection.

- Challenge:

Balancing innovation incentives for pharmaceutical firms with affordable access to medicines

7. Counterfeiting and Trademark Infringement

The rise of globalization and e-commerce has resulted in a significant increase in counterfeit products available in the market, which violate registered trademarks and pose risks to consumer safety.

- Example:

Counterfeit luxury brands, fake pharmaceuticals, and imitation electronic products being marketed online.

- Challenge:

Enforcing trademark rights across borders presents challenges, and counterfeit products negatively impact both consumer welfare and brand integrity.

- Solution:

Enhancing customs enforcement measures and implementing digital authentication technologies (such as blockchain-based supply chains a major policy dilemma, especially in develop countries.

8.Global Harmonization and Challenges of the TRIPS Agreement

Although the TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights) establishes baseline international standards for intellectual property protection, developing nations contend that it disproportionately benefits developed countries by emphasizing corporate interests at the expense of public welfare.

- Challenge:

Developing nations encounter obstacles in enacting laws that comply with TRIPS while ensuring continued access to medicines, technology, and education.

- Reform Needed:

There is a necessity for a more adaptable and inclusive global intellectual property system that acknowledges local requirements and fosters equitable developing countries.

Impact of Emerging Technologies on IPR in India

The emergence of groundbreaking technologies such as Artificial Intelligence (AI), Machine Learning (ML), Blockchain, and the Internet of Things (IoT) has fundamentally transformed various aspects of society, including Intellectual Property Rights (IPR). It is essential to explore the influence of these emerging trends on IPR.

- Artificial Intelligence (AI) and Machine Learning (ML)

AI and ML algorithms are progressively utilized for the creation, analysis, and optimization of patents, trademarks, copyrights, and other forms of intellectual property rights. With the assistance of AI-driven tools, patent searches are simplified, along with the analysis of prior art and the automatic drafting of new applications; thereby saving time during the filing process while improving the quality of granted patents. Nevertheless, issues regarding authorship ownership and the legal status of AI-generated content arise, challenging traditional interpretations of IP law when these technologies are applied to the creation of artistic works.

- Blockchain

This technology offers a decentralized and tamper-resistant ledger system capable of establishing immutable records for intellectual property transactions, including patents, copyrights, and license agreements. Its potential to enhance trust, transparency, and efficiency in the management of intellectual property rights is significant, as it provides a clear and secure method for tracing ownership back to its origins while monitoring usage rights. Furthermore, this platform incorporates smart

contracts that facilitate the automation of royalty payments and the enforcement of licensing terms, thereby enabling asset monetization in a decentralized manner.

- Internet of Things (IoT)

The proliferation of IoT devices equipped with sensors, actuators, and connectivity features has broadened the scope of IP law to encompass inventions related to smart systems, interconnected devices, and data analytics. The IoT generates vast amounts of data, raising issues concerning data rights, privacy, and cybersecurity. Intellectual property rights play a crucial role in protecting the innovations developed in IoT devices, software algorithms, and data analysis techniques, enabling creators to monetize their discoveries and secure a competitive edge in the marketplace.

- IPR Challenges, India

Despite numerous challenges, India has made significant strides in nurturing the IPR ecosystem; however, obstacles remain, ranging from inadequate enforcement mechanisms to insufficient regulatory frameworks. Addressing these challenges requires a collaborative effort that involves cooperation among the government, industry, educational institutions, and legal experts to cultivate an environment that values innovation, originality, and respect for intellectual property rights.

- IPR Laws and Regulations, India

In India, Intellectual Property Rights are regulated by the Copyright Act of 1957, the Patent Act of 1970, the Trademarks Act of 1999, and the Designs Act of 2000. These statutes form the basis for the protection and enforcement of intellectual property rights within the nation. Furthermore, India's dedication to fostering a strong IPR framework is reinforced by the establishment of specialized IP tribunals and the adoption of international conventions and treaties.

Challenges and Policy Implications of Intellectual Property Rights in India

Intellectual Property Rights play a crucial role in promoting innovation and creativity by providing exclusive rights to creators and inventors. The framework for IPR in India has undergone significant changes since the country gained independence, especially following its accession to the World Trade Organization (WTO) and the adoption of the TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights) in 1995.

India has implemented various statutes to regulate different types of intellectual property, including the Patents Act of 1970, the Copyright Act of 1957, the Trade Marks Act of 1999, the Designs Act of 2000, and the Geographical Indications of Goods Act of 1999. Nevertheless, despite these laws being in line with international standards, their enforcement is often inconsistent due to administrative, economic, and technological hurdles.

This paper examines the primary challenges within India's IPR framework and the policy implications necessary to strike a balance between innovation, accessibility, and economic growth.

1. Major Challenges in India's IPR Framework

- Weak Enforcement and Judicial Delays

While India possesses well-established IP laws, the mechanisms for enforcement are notably weak. The courts frequently face heavy caseloads, resulting in prolonged delays in the resolution of IP disputes.

- Example:

Cases of patent infringement in the pharmaceutical industry or copyright infringements in digital media can take years to resolve.

- Challenges:

i. Absence of specialized IP benches in numerous courts.
ii. Insufficient training for enforcement agencies and law enforcement personnel.

iii. Challenges in monitoring digital and cross-border IP offenses.

- Implication:

Weak enforcement practices deter foreign investment and negatively impact India's global standing in terms of innovation and the ease of conducting business.

2. Digital Piracy and Counterfeiting

India is confronted with one of the highest levels of digital piracy and counterfeit goods globally. The unauthorized duplication of films, software, music, and branded items leads to substantial revenue losses.

- Example:

Websites dedicated to piracy, such as Tamilrockers, or Telegram channels, often leak films prior to their official release. Likewise, counterfeit medications and imitation products are prevalent in the marketplace.

- Challenges:

The difficulty in monitoring digital networks and e-commerce platforms.

A lack of awareness among consumers regarding intellectual property rights.

Insufficient integration of cyber laws with intellectual property enforcement.

- Implication:

Digital piracy jeopardizes creative industries, deters investment, and tarnishes India's international standing in safeguarding intellectual property.

3. Balancing Public Interest and Patent Protection

India's patent system has frequently faced challenges in reconciling the need for innovation incentives for inventors with public welfare objectives, such as access to medicines and education.

- Example:

In the case of Novartis AG v. Union of India (2013), the Supreme Court rejected patent protection for a cancer treatment, highlighting that only true innovations merit patents, rather than trivial modifications (referred to as "evergreening").

- Challenges:

i. The pressure exerted by global pharmaceutical firms to prolong patent monopolies.
ii. The necessity to guarantee affordable access to life-saving medications.
iii. The limited research and development capabilities of domestic industries.

- Implication:

While India's strategy prioritizes public health, it also poses a risk of dissuading foreign pharmaceutical investments and research and development partnerships.

4.Lack of Awareness and IP Culture

The level of awareness regarding intellectual property rights among inventors, small enterprises, and academic institutions in India remains inadequate.

- Challenges:

i. A limited comprehension of the processes involved in registering and safeguarding intellectual property.
ii. The absence of intellectual property education within schools and universities.
iii. A lack of effective strategies for the commercialization of intellectual property in research institutions.

- Implication:

In the absence of awareness, numerous innovators are unable to obtain legal protection, leading to intellectual losses and a diminished capacity for innovation.

5. Inadequate Infrastructure and Administrative Capacity

The Indian Patent Office, along with other intellectual property authorities, frequently encounters a lack of sufficient manpower, technological resources, and adequately trained examiners.

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- Example:

The process of patent examination in India may extend over several years due to a significant backlog of pending applications.

- Challenges:

i. Outdated systems coupled with inadequate automation.
ii. Inconsistent quality in the patent examination process.
iii. Delays in the publication and granting of rights.

- Implication:

These inefficiencies compromise the credibility and reliability of India's intellectual property system, which in turn discourages both domestic and foreign applicants.

6. Biopiracy and Protection of Traditional Knowledge

India's abundant biodiversity and traditional knowledge systems are at risk of biopiracy and misappropriation by foreign corporations.

- Example:

The patenting of Neem, Turmeric, and Basmati rice by foreign entities incited national outrage.

- Challenges:

Insufficient international recognition of India's traditional knowledge databases.

Weak mechanisms for benefit-sharing with indigenous communities.

- Implication:

Biopiracy erodes local rights and deters indigenous communities from sharing traditional knowledge.

7. Artificial Intelligence and Emerging Technologies

The emergence of AI-generated works, blockchain-based intellectual property, and digital data ownership introduces new legal challenges for India's intellectual property rights system.

- Challenges:

i. Existing laws acknowledge only human creators, excluding machines.
ii. Ambiguity surrounding the ownership of inventions or art generated by AI.
iii. Challenges in enforcing intellectual property rights within decentralized systems.

- Implication:

India must revise its intellectual property rights policies to embrace emerging technologies while ensuring accountability and ethical governance.

Conclusion

Intellectual Property Rights have emerged as a crucial foundation of the global knowledge economy, influencing the protection and sharing of innovation, creativity, and technology. An examination of various aspects—from the types and scope of IPR to its current and future challenges—reveals that intellectual property protection now encompasses much more than just patents and copyrights. It increasingly intersects with intricate fields such as artificial intelligence, biotechnology, digital media, and traditional knowledge.

The contemporary challenges related to IPR primarily arise from swift globalization, digital transformation, and the conflict between private rights and public interest. Issues such as piracy, counterfeiting, data protection, and online infringement have become ongoing concerns in a borderless digital landscape. At the same time, new challenges like AI-generated works, gene patenting, and digital assets such as NFTs are reshaping the definitions of originality and ownership. These changes underscore the pressing need for adaptable and progressive legal frameworks.

In the context of India, numerous policy and enforcement obstacles persist—ranging from sluggish patent processing and limited awareness of IP to ineffective enforcement mechanisms and the underutilization of research outcomes. However, India's proactive measures, including the National IPR Policy (2016) and initiatives like the Startup India's IPR.

As India strives to become a digital-first economy, it is becoming increasingly important to establish IP protection mechanisms that secure creativity and innovation. A comprehensive and robust legal framework for IPR protection coupled with a policy framework to guard against cyber threats will help secure India's intellectual property while promoting innovation and creativity.Scheme, provide a solid foundation for a contemporary IP ecosystem.

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