



Chapter 1

Navigating Contemporary Global Challenges in Intellectual Property Rights

Dr. Aswathi Sukumaran

Assistant Professor, School of Law, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai

Abstract: *Intellectual property rights have become fundamental to global commerce, innovation, and cultural exchange, but they face unparalleled obstacles in the modern period. The fast progression of technical innovation, the emergence of digital platforms, and the globalisation of markets have heightened discussions over enforcement, accessibility, and equality. The article analyses significant worldwide issues in intellectual property rights, including cross-border enforcement complications, e-piracy, biopiracy, and the conflict between safeguarding innovation and promoting public interest in sectors such as health and education. The study emphasizes the necessity for adaptive legal frameworks, cooperative international governance, and inventive policy solutions to reconcile the rights of creators with the demands of society. Ultimately, the articles conclude by addressing modern global challenges in intellectual property*



rights necessitates a flexible combination of legal reform, technological advancements, and ethical considerations to cultivate a just and sustainable ecosystem for intellectual property.

Keywords: Cross-border, IPR, Biopiracy, Globalisation, Digital Piracy.

1. Introduction

Humanity's capacity to discover or develop new methods is essential to its economic, social, and cultural advancement. In the age of technology, information and skills are more important for a nation's economic growth than resources. Innovation is crucial to the development of enterprises and, in turn, to the expansion of any nation's economy. As a result, the brain's intangible output is just as valuable and precious as any material possession¹. Nonetheless, the process of creation or invention necessitates considerable effort, time, and investment. To validate such diligent endeavours, intellectual property rights serve to safeguard an individual's creativity, allowing inventors or creators to attain recognition or financial rewards for their innovations.² It fosters an atmosphere where creations and innovations can flourish, striking an appropriate balance between the broader public interest and the rights of the creator. The phrase "Intellectual property" encompasses inventions as well as literary and artistic creations.³ Designs and symbols, names and images that find application within various industries.

¹ Robert L & Ostergard, Jr., *Intellectual Property: A Universal Human Right?* 21 *HUM. RIGHTS Q.* 156-178 (1999).

² Rosemary J. Coombe, *Intellectual Property, Human Rights & Sovereignty: New Dilemmas in International Law Posed by the Recognition of Indigenous Knowledge and the Conservation of Biodiversity*, 6 *IND. J. GLOBAL LEGAL STUD.*, 59(1998).

³ Neeraj Bidhuri, *India's Burgeoning IPR Regime*, 2 *INDIAN J.L. & LEGAL RSCH* 1 (2021)

Given the ever-widening acceptance of a right to protection of intellectual property, one might assume that there is at least implicitly an equally broad and agreed upon rationale or justification for this right. This, however, is not the case. Among those who write on the subject, there are two dominant, and not at all consistent, lines of reasoning.⁴ John Locke's labour theory of property, one of the foundations of traditional property rights in the modern world, is a logical starting point for attempts to justify IPR, that is, the protection of exclusive ownership in intangible objects that acquire their value mainly from creative efforts.⁵

2. The Significance of the Study

An examination of intellectual property rights in the digital era is essential due to the substantial impact that digital technologies have on global economies, innovation, culture, and legal systems.⁶ As digital technologies like artificial intelligence, blockchain, and the expansion of e-commerce and social media disrupt sectors, IPR become ever more crucial in maintaining a balance between promoting innovation and protecting artist's rights. This article provides useful information on the evolution of IPR, the challenges it faces, and its broader global impact in the contemporary digital environment. The significance of the research is shown here from many perspectives.

This research on intellectual property rights is crucial because it improve academic insight, direct business practices, impact

⁴ *Id at 1.*

⁵ Edwin C. Hettinger, *Justifying Intellectual Property*, 18 PHIL. & PUB. AFF. 31, 34 (1989).

⁶ Dr. Vishwasrao Sadu Mane, *Intellectual Property Rights (IPR): Their Role, Challenges, and Global Impact in the Digital Age*, 1 INSIGHT BULL. MULTIDISCIP. INTERLINK INT. RES. J.16-34, (2024).



legislation, empower artists, and promote global commerce and economic expansion. It addresses significant issues in the world of intellectual property, including technical advancements, digital piracy, and ethical dilemmas pertaining to access and equality. Since it provides a comprehensive understanding of these opportunities and challenges, the study is a crucial tool for many stakeholders, including legislators, corporations, legal professionals, artists, and scholars, to navigate the complex and evolving landscape of intellectual property rights in the digital age.

3. The Evolution of Intellectual Property

Intellectual property rights originated with the protection of material innovations, such as tangible inventions, creative works, and brand identifiers.⁷ However, the notion of intellectual property has evolved due to new ways of production and consumption brought about by the digital era. Traditional intellectual property rules were designed to safeguard physical goods like books, inventions, and brands⁸. However, intangible assets including data, software code, digital designs, and multimedia material have multiplied due to the rapid development of digital technology.⁹

The shift to a digital environment has made it more challenging to enforce IPR.¹⁰ The conventional framework permitted the

⁷ Harish Suryavanshi, *India's Intellectual Property Rights Regime & Global Economic Influence*, 11 INT'L. IN HOUSE COUNSEL J., Autumn 1(2017).

⁸ Raunaq Kalra, *IPR Management, Protection and Enforcement in India Need for Stronger IPR Regime*, 7 INT'L J.L. MGMT. & HUMAN. 1854 (2024).

⁹ C.L. Avadhani et al, *The Evolution of Intellectual Property Rights in Ancient India and the Present Scenario There on - An Analysis*, 10 INT. J. RES. INNOV. APPL. SCI.151-164 (2025).

¹⁰ Gopakumar, N. K. *Traditional Knowledge Digital Library: Protecting India's heritage*. LEXISNEXIS, Butterworths Wadhwa. 10 (2013).

enforcement of laws within the confines of a nation's borders, with intellectual property generally confined to a specific geographic region.¹¹ Intellectual property operates on a worldwide level today, propelled by the expansion of the internet and digital platforms.¹² The intellectual property rights framework in India has its roots in the era of British colonial governance.¹³ The initial patent legislation, known as the Act on Protection of Invention of 1856, was influenced by the British Patent Law of 1852 and conferred exclusive privileges for a duration of 14 years. Subsequent legislation encompassed the Patents and Designs Protection Act of 1872, the Protection of Invention Act of 1883, and the comprehensive Indian Patents & Designs Act of 1911, which continued to be in effect following the independence of 1947.¹⁴ The early copyright regime can be traced back to British law, particularly with the Copyright Act of 1847, which extended British protections to India. This was succeeded by India's first copyright legislation after independence, the Copyright Act of 1957.¹⁵

Following independence, India reformed its intellectual property rights legislation to align with its socio-economic objectives, particularly through the enactment of the Patents Act of 1970. This legislation prioritized process patents and ensured affordable access to medicines, significantly impacting the pharmaceutical sector. To align with the stipulations of the WTO's TRIPS Agreement, India undertook amendments to its patent framework

¹¹ Ahuja, V. K. *Intellectual Property Rights in India*, LEXISNEXIS.15 (2009).

¹² *Id.*

¹³ Basheer, S., & Kochupillai, M. *The Evolution of Indian Patent Law: A Historical Perspective*. 3(8), *J. INTELL. PROP. L. & PRACT.* 539-552 (2008).

¹⁴ Elizabeth Verkey & Jithin Saji Isaac, *Intellectual Property*, Eastern Book Company,15 (2026)

¹⁵ Yukta Singh, *Emerging Trends in the IPR Regime*, 3 *INT'L J.L. MGMT. & HUMAN.* 1864 (2020).



in the years 1999, 2002, and 2005. These revisions included the reinstatement of product patents and the establishment of exclusive marketing rights. The government approved its inaugural National IPR policy in May 2016, aimed at fostering a comprehensive ecosystem for innovation.¹⁶ Currently, India upholds an extensive array of statutes that encompass patents, copyright, trademarks, designs, geographical indications (1999), plant varieties (2001), and semiconductor layouts (2000). Patent filings have experienced a significant increase, with over 138,000 patents submitted from 2015 to 2021, including more than 85,000 in the realm of emerging technologies.¹⁷

Pervasive in the fields of computer programming, video games, music, and movies, where users illegally download, distribute, and post works protected by copyright. Concurrently, a diverse array of digital platforms and online services has proliferated, encompassing social media networks, e-commerce websites, and content-sharing platforms, all of which have arisen from the globalized digital economy.¹⁸ These platforms have facilitated a global connection between content creators and audiences, however, they have simultaneously enabled unprecedented levels of illegal use of intellectual property. Consequently, the digital era presents a dual nature: it has fostered an unparalleled degree of interconnectedness and cooperation, yet it has simultaneously engendered significant concerns regarding the exploitation of intellectual property.¹⁹

¹⁶ NS Gopalakrishnan & T G Ajitha, *Principles of Intellectual Property*, Eastern Book com. 20 (2014).

¹⁷ Neeraj Bidhuri, *India's Burgeoning IPR Regime*, 2 INDIAN J.L. & LEGAL RSCH. 1. (2021).

¹⁸ *Supra* note 17.

¹⁹ Elkin-Koren, N., & Salzberger, E. *The Law and Economics of Intellectual Property in the Digital Age: The Limits of Analysis*. ROUTLEDGE. (2012).

4. Challenges in the Contemporary Era in IPR

4.1. The Ambiguity of Authorship with AI Generated Content

Authorship and copyright ownership are now fundamentally uncertain due to the development of artificial intelligence. Since human creativity is the foundation of traditional copyright law, it is questionable whether AI generated works should be protected by copyright at all.²⁰ When AI systems employ large collections of previous publications to create material that may mimic or copy elements of these datasets, the problem goes beyond identifying the author to include determining who owns the intellectual property.²¹ This creates legal ambiguity about the distinctions between originality and plagiarism, undermining the core concepts of uniqueness and innovation that copyright laws aim to safeguard.

4.2. Digital Piracy and Copyright Enforcement

The simplicity with which digital content can be replicated and disseminated has resulted in widespread piracy, posing significant challenges to the enforcement of copyright laws.²² In the contemporary landscape, intellectual property rights have assumed a significant role due to the ease with which digital media can be reproduced and disseminated worldwide without proper

²⁰ Mayoank Prakash, *Issues and Challenges of Artificial Intelligence in Copyright Laws*, II *LAWFOYER INT. J. DOCTRINAL LEG. RES.*, Page 493-504 (2024).

²¹ V. Vinayak Dev, *An Analysis on Intellectual Property Rights in India*, 27 *SUPREMO AMICUS* 513 (2021).

²² Catherine Aguinis, *Intellectual Property Rights: Safeguarding Innovation in the Modern World*, *Washington University* 22(5) *J. INT'L BUS. RES.*, 1-2.(2023).



authorization.²³ Online piracy and copyright infringement present significant challenges, especially in nations such as India, where the digital landscape is evolving at an accelerated pace.²⁴ The international landscape of trade demands a concerted effort to align intellectual property rights legislation among nations; however, the challenge of piracy continues to pose significant enforcement issues.²⁵

4.3. Patent Trolls and Stifled Innovation

Patent trolls represent a significant impediment to the advancement of innovation. Their practices often lead to a chilling effect on creativity and technological progress.²⁶ Certain entities obtain patents not for the purpose of fostering innovation, but rather to engage in litigation, raising significant concerns regarding patent trolling that hampers authentic advancements in the field. These entities manipulate the patent system by strategically acquiring intellectual property rights to initiate litigation against innovators, rather than engaging in the development of products or technologies themselves. This practice imposes considerable legal and financial challenges on genuine innovators, potentially discouraging investment in research and development.

²³ Gautam Sharma & Hemant Kumar, *Intellectual Property Rights and Informal Sector Innovations: Exploring Grassroots Innovations in India*, 21 J. WORLD INTELL. PROP. 123 (2018).

²⁴ *Supra* note at 22.

²⁵ *Supra* note at 22.

²⁶ Anusha Unnikrishnan, *Analyzing the Impact of Emerging Technologies on Intellectual Property Rights: A Comprehensive Study on the Challenges and Opportunities in the Digital Age*, 29 LAW & WORLD 66 (2024).

4.4. Balancing Access to Essential Innovations with IPR Protection

Striking a harmonious equilibrium between the accessibility of vital innovations and the safeguarding of intellectual property rights is crucial.²⁷ Finding an equilibrium between safeguarding intellectual property rights and facilitating access to vital innovations, including pharmaceuticals and sustainable energy solutions, presents a complex ethical and legal dilemma.²⁸ The patent system significantly influences the accessibility of medicine for ordinary individuals, especially in developing nations where the stipulations of TRIPS agreements may restrict the availability of affordable pharmaceuticals.²⁹ This tension between individual entitlements and societal challenges fosters a continuous discourse regarding the efficacy of existing intellectual property rights frameworks in advancing the collective good.

4.5. Cross Border Enforcement and Jurisdictional Fragmentation

Fragmented jurisdictions, excessively high litigation costs, and reactive enforcement strategies significantly undermine the integrity of global intellectual property protection.³⁰ The increase in digital activities within virtual environments introduces intricate challenges for cross-border enforcement. This complexity arises from the fact that creators, users, and servers are often

²⁷ Anchal, *Challenges in IPR due to digitalization*, III E-J. Acad. Innovation & Res. Intell. Prop. Assets 100-107(2022).

²⁸ *Id.*

²⁹ Carolina Castaldi, *Are intellectual property rights working for society?* 53 Res. 53 104936(2024).

³⁰ Udiksha Rana & Amanpriya Singh, *The Conflict of Laws and Cross-Border Enforcement of India's IP Rights in Online Fantasy Games: 1(2) J. DEV. INTELL. PROP. RES* 66-79(2025)



situated in various nations, complicating the identification of the relevant legal framework or jurisdiction.³¹ In the absence of a well-defined international legal structure, the challenge of managing intellectual property infringement across various jurisdictions intensifies significantly.³²

4.6. Significant expenses and restricted availability for small and medium-sized enterprises.

The substantial expenses associated with intellectual property rights registration and legal services present considerable obstacles for small and medium enterprises.³³ In India, the costs for patent registration can range from 30,000 to significantly higher amounts, contingent upon the complexity of the application. For numerous small and medium-sized enterprise proprietors, the substantial expenses associated with obtaining formal intellectual property rights, both financially and temporally, act as a significant barrier to safeguarding their innovations. This deficiency in awareness and insufficient implementation of intellectual property rights could hinder a nation's progress in technology, economic development, and societal advancement.³⁴

5. Recommendations

As suggested by the Parliamentary Committee of IPR, India must modify the Copyright Act 1957 to establish a distinct framework for safeguarding AI-related innovations in order to handle AI-generated material and authorship ambiguity. A working paper on

³¹ *Id.*

³² *Id.*

³³ Bikash Kumar Halder, *Intellectual Property Rights in India: Challenges and Opportunities*, *INT. EDUC. RES. J.*, (2024).

³⁴ Robert M. Feinberg & Donald J. Rousslang, *The Economic Effects of Intellectual Property Right Infringements*, 63 *J. BUS.*, 71 (1990),

Generative AI and Copyright, which addresses authorship identification, has been published by the DPIIT. Important reforms include clearly defining whether AI-generated content is eligible for copyright protection, requiring clear labeling of AI content to avoid consumer confusion, and setting a three-year timeline for the development of comprehensive AI copyright law.³⁵

To effectively address the challenges posed by digital piracy and ensure robust copyright enforcement, it is imperative for India to enhance its cyber laws by implementing comprehensive frameworks designed to monitor and eliminate illegal content. Additionally, the establishment of Intellectual Property Rights cells within state police departments, complemented by specialized training, should be prioritized through coordinated efforts among customs, law enforcement, and intellectual property offices. The regulation of e-commerce necessitates enhancement to effectively curb the sale of counterfeit products on digital platforms. Furthermore, it is imperative to invest in technology-driven solutions, such as data analytics and artificial intelligence tools, to assist customs authorities in identifying intellectual property violations with greater efficacy.

Addressing the challenges posed by patent trolls and fostering innovation necessitates a reform of the patent examination process.

³⁶This includes reducing arbitrary patent rejections, streamlining the timelines for document submissions, and prioritizing expedited examinations specifically for startups and micro, small, and medium enterprises. Enhanced examination of patent

³⁵ Government of India Committee Report: Review of the Intellectual Property Rights Regime. PRS Indi (2026) available at <https://prsindia.org/policy/report-summaries/review-of-the-intellectual-property-rights-regime>

³⁶ DPIIT, IPR Reforms: Working Paper on Generative AI and Copyright. Ministry of Commerce and Industry (2025). available at <https://www.dpiit.gov.in/static/uploads/2025/12/ff266bbeed10c48e3479c941484f3525.pdf>



applications ought to discern entities that obtain patents exclusively for the purpose of litigation as opposed to fostering innovation. Concurrently, it is essential to uphold Section 3(d) of the Patents Act 1970, accompanied by more explicit criteria delineating what qualifies as significant innovation to avert the practice of evergreening.

To achieve a balance between access to essential medicines and the protection of intellectual property rights, it is imperative for India to promptly invoke compulsory licenses in times of health emergencies. Additionally, establishing clearer guidelines will help mitigate uncertainty for pharmaceutical companies.³⁷ The nation must persist in leveraging the flexibilities afforded by TRIPS Agreements to guarantee access to affordable medicines, promote pharmaceutical research targeting niche segments and novel drug discovery rather than mere incremental modifications, and temporarily suspend patent rights for drugs related to pandemics, all while upholding international compliance.³⁸

To address the challenges of cross-border enforcement and jurisdictional fragmentation, it is imperative for India to establish Memoranda of Understanding on intellectual property cooperation with nations such as Japan, the United States, Denmark, and Sweden. This collaboration would facilitate the exchange of best practices and ensure that India's intellectual property framework is harmonized with international agreements through cooperation with the World Intellectual Property Organization. It is essential to pursue mutual recognition agreements with other nations concerning trademarks and

³⁷ *Review of the Intellectual Property Rights Regime Standing Committee Report Summary*, available at <https://prsindia.org/policy/report-summaries/review-of-the-intellectual-property-rights-regime>

³⁸ *Supra* Note 37.

patents.³⁹ Additionally, enhancing customs border control through technological solutions is crucial for monitoring counterfeit goods. Furthermore, the involvement of state governments in the formulation of intellectual property rights policies is necessary to foster improved coordination across jurisdictions.

In light of the challenges posed by high costs and restricted access for small and medium enterprises, India has undertaken notable reforms.⁴⁰ These include a reduction in patent filing fees for micro, small, and medium enterprises, decreasing the range from Rs 400-4400 to Rs 1600-1750. Additionally, expedited examination fees have been lowered from Rs 2,500 to Rs 8000, and fees for Geographical Indications have been eliminated for MSMEs.⁴¹ The government ought to enhance intellectual property education by incorporating it into the NCERT curriculum, offer comprehensive IPR training for MSME Officers across the country, establish four additional National Institutes of Design with INI status, create CIPAM as a dedicated professional entity for targeted IPR initiatives, and initiate national awareness campaigns aimed at SMEs in remote regions, involving NGO collaboration.

6. Conclusion

Innovation protection, public welfare, technical development, and global integration are all intertwined in India's complicated IPR debate. A dynamic, adaptable IPR framework that adapts to 21st-century realities while being rooted in India's constitutional ideals and development aspirations is desperately needed, as shown by

³⁹ *Supra* Note 33.

⁴⁰ Govt proposes to reduce IPR fees for MSMEs and startups, *THE ECONOMIC TIMES*, Sep 17, 2019
<https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/govt-proposes-to-significantly-reduce-fees-for-iprs-for-msmes-startups/articleshow/71152612.cms>

⁴¹ *Id.*



the six primary difficulties that have already been covered in the paper.

India has to pursue a balanced approach going ahead that protects intellectual property without sacrificing access to reasonably priced medications, promotes technological innovation while avoiding abuse, and makes IP systems available to small businesses while upholding international compliance. In order to position India as a responsible global leader that exemplifies how intellectual property protection and social welfare can coexist in the knowledge economy, India's IPR regime must ultimately act as a catalyst for inclusive innovation that protects creators while guaranteeing that knowledge, medicines, and technology remain accessible to all segments of society.

