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# Intellectual Property Governance and Economic Transformation in India: A Socio-Legal Analysis of Innovation-Driven Development

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## ABSTRACT

The transition of global economies from resource-dependent paradigms to knowledge-driven structures has repositioned Intellectual Property (IP) governance from a specialized legal domain to a core pillar of macroeconomic policy. In India, this evolution reflects a complex socio-legal journey balancing stringent international mandates like the TRIPS Agreement with profound domestic socio-economic imperatives. This paper analyzes how India's IP governance framework catalyzes or constrains innovation-driven development and economic transformation. Utilizing an interdisciplinary socio-legal methodology, this study examines the historical trajectory of Indian IP law, culminating in the National IPR Policy of 2016, and its subsequent integration into digital ecosystems, emerging technologies, and knowledge-based industries. It investigates the critical tension between fostering private incentives for research and development (R&D) and safeguarding public public goods, specifically concerning access to affordable healthcare, digital inclusion, and the protection of traditional knowledge. The findings indicate that while legislative and administrative modernizations have significantly boosted India's position on the Global Innovation Index, institutional bottlenecks, high compliance costs for micro, small, and medium enterprises (MSMEs), and enforcement delays persist as structural inhibitors. The paper concludes that for India to fully realize an inclusive "innovation economy," its governance paradigm must transition from a compliance-driven model to a strategic development-oriented framework that harmonizes robust enforcement with public interest flexibilities.

***Keywords:*** *Intellectual Property Governance, Innovation-Driven Development, Economic Transformation, TRIPS Agreement, National IPR Policy, Socio-Legal Analysis.*

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## Introduction

In the 21st century, the world economy has shifted towards a more intangible asset-based structure, rather than relying on more traditional forms of physical wealth. This has placed knowledge as the main force behind both how nations create, register, trade and protect their ideas and the economic position of each nation in relation to the world. In the past, countries developed primarily through manufacturing, labor arbitrage, and the extraction of natural resources. However, today, countries will primarily develop their economies through technological innovation, proprietary computing systems, advanced pharmaceuticals and new types of factory designs. Consequently, Intellectual Property Rights (IPR) are no longer simply a way for companies to protect their inventions; they are now also means by which countries manage their economies, encourage R&D in their own countries, assist with the global transfer of technology, and manage the risk of large-scale failures in creative and scientific sectors of their economies.[1]

Because of the rapid rate at which India has developed and its numerous complex demographics, creating an effective IP system in India is more than just finding the proper words for new laws. It is one of the most difficult socio-legal issues of our time. The social commitments contained within the Indian Constitution that are designed to achieve socio-economic equality, distributive justice, and public health are often at odds with the global demand for commercial compliance with the rules imposed by the world's major trading nations. Nonetheless, for several decades after independence, the laws and policies in India intentionally avoided establishing strict, western-style IP monopolies, which was especially reflected in the Patents Act of 1970, which only permitted the granting of process patents for new chemical and pharmaceutical products.[2] The primary purpose of making this strategic choice was to establish a robust domestic generic manufacturing base that provides for an adequate supply of critical public goods for a population primarily composed of the poor.

India underwent radical transformation as a result of the structural adjustment policies implemented with 1991's economic reform agenda and India's entry into the World Trade Organization (WTO).[3] India was required, through the mandatory harmonization of its domestic laws with the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), to institute stringent regimes for product patenting, to provide stronger protection for copyright, and to mandatorily create legal mechanisms for enforcing intellectual property (IP) rights.[4] This critical juncture in India's history raises the fundamental research question for this research: In the context of a developing, post-colonial nation, how does a developing nation design a framework for governing intellectual property that, on the one hand, promotes

[1] World Intellectual Property Organization (WIPO), *World Intellectual Property Report 2022: The Direction of Innovation* (WIPO, Geneva, 2022) 15-18, available at: WIPO World Intellectual Property Report 2022 (last visited June 18, 2026).

[2] Shamnad Basheer and Prashant Reddy, *Create, Copy, Disrupt: India's Intellectual Property Dilemmas* (Oxford University Press, New Delhi, 2017) 24–35.

[3] Government of India, *Economic Reforms: Two Years after and the Task Ahead* (Ministry of Finance, New Delhi, 1993) 1–12; Jagdish Bhagwati and Arvind Panagariya, *India's Tryst with Destiny: Debunking Myths that Undermine Progress and Addressing New Challenges* (Collins Business, New Delhi, 2012) 45–58.

[4] Agreement on Trade-Related Aspects of Intellectual Property Rights, arts. 27, 28, 41–61, Annex 1C to the Marrakesh Agreement Establishing the World Trade Organization, 1869 UNTS 299 (1994); Daniel J. Gervais, *The TRIPS Agreement: Drafting History and Analysis* (5th edn., Sweet & Maxwell, London, 2021) 201–215.

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private sector investment and, on the other, supports the development of new and innovative technologies whilst ensuring that the socio-economic rights of the most disadvantaged? Of the population, and how will the nation ensure public health for its entire population, as well as maintain the public domain?

This research is increasingly necessary given that various national initiatives (e.g. Make in India, Digital India, and Startup India) endorse and promote an "innovation-led growth" model. To successfully implement these initiatives, the country requires a stable, sophisticated and efficient IP regime to attract foreign direct investment (FDI) and to foster domestic innovation[5]; yet, due to the enormous social and legal problems that India faces (a large informal economy, ongoing public health challenges, inadequate resources for the judiciary and IP registration system, and a large number of vulnerable and traditional knowledge holders), there will be consistent tensions between the established (pro-monopolistic) and standardized IP regime and the social/legal contexts in which they exist in India.

To accomplish the above, this research will present five research objectives:

1) To analyse the theoretical and conceptual foundations (and their philosophical basis) of the relationship between the governance of IP and structural economic change, with reference to developing countries;
2) To effectively trace the historical and legal development of India's IP regime, and assess how global political forces, and domestic economic reality have impacted the evolving shape of the contemporary Indian IP System;
3) To undertake meaningful and systematic empirical evaluations of India's current IP governance regime, including the extent to which the regime has created R&D, facilitated the transfer of technology and stimulated the commercialization of innovation;
4) To identify and examine the social and legal tensions inherent in the Indian IP system as they relate to the dichotomous nature of private property and public goods; and
5) To formulate a comprehensive legal and policy framework for future reform of India's IP regime that is inclusive and pro-development.

The methodology for this research will be socio-legal and interdisciplinary, combining doctrinal legal analysis pertaining to statutes, case law and global treaties with qualitative analyses of both policy and institutional critiques. The research incorporates legal text and the empirical realities of the application of those laws in India and will help to identify the structural forces that are bringing India closer to its goal of becoming a global knowledge-based economy. This research will be focused on the primary types of IP patents, copyrights, trademarks, geographical indications, and trade secrets and examine their respective post-TRIPS periods as well as the implementation of the National Policy on Intellectual Property Rights (2016).[6] This study will not consider localized INSTI practices unless they demonstrate an impact on systemic/overall implementation.

[5] Government of India, *National Intellectual Property Rights Policy, 2016* (Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, New Delhi, 2016) 3–7; Government of India, *Startup India Action Plan* (Department for Promotion of Industry and Internal Trade, New Delhi, 2016) 6–15.

[6] Government of India, *National Intellectual Property Rights Policy, 2016* (Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, New Delhi, 2016) 3–7.

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## Conceptual and Theoretical Foundations of Intellectual Property Governance

In order to examine how intellectual property relates to national economic change or transformation, it is necessary to first dissect the conceptual nature of intellectual property as both a legal institution and an economic institution. From an economic standpoint, knowledge assets exhibit the traits of non-rivalry and non-excludability (i.e., public goods), which means that they can be consumed by numerous people simultaneously without any effect on others, and that the inability to legally prevent others from using that knowledge makes it difficult for others to take advantage of the knowledge. Because of this, there is a classical market failure that arises if innovators are unable to prevent others from using their inventions free of charge (i.e., `free riders') and are therefore unable to recoup their fixed costs associated with R&D, This means that there is an underinvestment in inventive activity as a matter of course.[7]

The legal institution of intellectual property corrects this market failure through the creation of artificial conditions by the state. It provides an artificially created situation of exclusion, whereby non-rivalrous knowledge is then granted the status of becoming an excludable private asset for a limited time period.

A number of different theoretical frameworks exist that provide justification (theoretical) for the monopolistic power granted by the government (state) to an inventor through their patent or copyright. The most widely used theoretical framework is based on the work of Bentham and Mill (utilitarian paradigm), and is heavily utilized in modern law and economics to justify the use of IP as tools to improve the overall societal welfare. The short-term socialised cost to society due to monopoly pricing is justified, by the long-term benefit to society of an increased supply of innovative technology and creative products.The labor theory by John Locke offers a moral justification for the natural right that an individual has over the fruits of his own intellectual efforts when mixing those efforts with the world's common resources ?[8]

In terms of developing nations, this is mirrored by Joseph Schumpeter's theory of development through "creative destruction." Schumpeter states that macroeconomic growth occurs as a result of dynamic innovation competition, rather than static price-based competition, resulting in newer technology, products, and organizational forms being systematically displacing obsolete ones.[9] As such, intellectual property serves as the institutional incubator for creative destruction by providing innovators with the temporary monopolistic rents necessary to justify the high-risk nature of their disruptive R&D.

During the application of economic theories to developing countries, typical theories do not, as a rule, operate in a developing state without modification. For example, Douglas North's principles of institutional economics state that the institutional matrix of any economy establishes how well or

[7] William M. Landes and Richard A. Posner, *The Economic Structure of Intellectual Property Law* (Harvard University Press, Cambridge, Massachusetts, 2003) 11–22.

[8] William M. Landes and Richard A. Posner, *The Economic Structure of Intellectual Property Law* (Harvard University Press, Cambridge, Massachusetts, 2003) 16–24; Jeremy Bentham, *A Manual of Political Economy* (E. Dumont ed., Henry G. Bohn, London, 1843) 71–73.

[9] Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (3rd edn., Harper & Brothers, New York, 1950) 81–86.

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poorly that economy is performing.[10] The institutional matrix consists of the formal rules and informal constraints of behavior that direct the interaction between humans and/or businesses in the economy. Thus, in the developing world, an intellectual property system cannot exist as an isolated legal silo; it functions only as one part of a larger, extremely disparate, socio-legal governance ecosystem.

Further complicating this issue is the fact that the regulatory and institutional frameworks regarding the regulation of knowledge assets involve a variety of different stakeholders, including transnational corporations, state regulatory agencies, domestic academic research institutions, and civil society and indigenous communities, all of whom have the common goal of trying to coordinate the distribution of knowledge wealth.

The socio-legal dimension of an intellectual property regime exposes a continuing conflict between formal, globally standardized legal frameworks and the socio-economic realities of developing countries. Scholars who practice critical legal theory and TWAIL argue that the standards for intellectual property across the globe have been routinely implemented in a way that leads to an unequal distribution of wealth, transferring wealth from developing nations that are importing technology to developed nations that are exporting technology.[11]

As a result of the above, a successful domestic governance framework for intellectual property must contain a balancing mechanism that determines the proper scope, duration, and enforcement of intellectual property rights to meet the needs of each stage of the development of the national economy and to ensure the legal rights granted to private innovators do not inhibit the public domain, stifle local capacity building through learning by doing, or prevent downstream, secondary innovation.

**Intellectual Property Governance and Innovation-Driven Development**

Today, the main goal of IP governance is to take all that research done elsewhere by countries and turn them into commercialised products that will create economic opportunity for their citizens. The theory is that a strong, transparent IP system will encourage innovation because the creators will have an assured, stable and predictable legal right allowing them to take the financial risk associated with doing exploratory R&D. The Indian research and innovation system shows evidence of this theory being valid. For example, as seen in the development of research institutions like the Council of Scientific and Industrial Research (CSIR), Indian Institutes of Technology (IIT), and Indian Council of Agricultural Research (ICAR), for decades the focus of these institutions has been on publishing research results in academic journals and conducting basic research, without any institutional support to pursue patent protection for their discoveries.[12]

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[10] Douglass C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge University Press, Cambridge, 1990) 3–12.

[11] Peter Drahos and John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (Earthscan Publications, London, 2002) 7–18, 61–84.

[12] National Knowledge Commission, *Report to the Nation 2006–2009* (Government of India, New Delhi, 2009) 165–173; D. Harinarayana, 'Intellectual Property Rights and Publicly Funded Research in India' (2004) 9(1) Journal of Intellectual Property Rights 28, 28–36.

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Since the establishment of modern institutional IP cells, institutional support for formal patent protection, and performance metrics that align with the acquisition of patents, this has changed. Today, Indian colleges and universities and publicly funded research organizations are no longer strictly academic institutions, but rather they have begun to act as breeding grounds for patents and new companies through technology incubation.[13]

Filing a patent is the first step, but the real measure of an innovation economy is how well technology is transferred between publicly-funded research and private sector entities and how quickly and effectively knowledge assets are commercialized. To date, the technology transfer process between the public and private sectors in India has been hampered by a number of structural impediments. Innovations funded by public money are often not utilized by universities because of bureaucratic barriers, uncertainty about who owns them, and a lack of an equivalent to the US Bayh-Dole Act.

To overcome these obstacles, the current Indian intellectual property governance system is utilizing dedicated institutional intermediaries, such as the National Research Development Corporation (NRDC) and Technology Innovation Support Centres (TISCs) linked to universities.[14] They specialise in assessing the commercial potential of research products, supporting licensing negotiations/agreements, and facilitating the execution of collaborative public-private research agreements.

The interaction between the formal institutional intellectual property framework and the rapidly expanding Indian startup and entrepreneurship ecosystem is dynamic. An IP portfolio that is tightly defined and controlled is often crucial for technology startups that want to secure venture capital, angel investment and partnerships across international boundaries. In response, the government developed the Start-ups Intellectual Property Protection (SIPP) scheme, which includes multiple innovative regulatory approaches to alleviate the financial barriers that frequently prevent startups from accessing formal intellectual property protection.[15] Through the SIPP program, startups have access to empanelled intellectual property facilitators, expedited examination processes, and an 80% rebate on patent filing fees. Subsequently, the number of patents being filed domestically has increased dramatically in India and has resulted in transformation of the larger entrepreneurial ecosystem from "copycat" business models to "deep-tech" and software-as-a-service (SaaS) innovation.

[13] Government of India, *National Intellectual Property Rights Policy, 2016* (Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, New Delhi, 2016) 15–20; National Institution for Transforming India (NITI Aayog), *Atal Innovation Mission: Annual Report* (Government of India, New Delhi, 2022) 12–18.

[14] National Research Development Corporation, *WIPO–Technology Innovation Support Centre (TISC): IP Facilitation and Technology Transfer Services* (NRDC, New Delhi, 2025); World Intellectual Property Organization, *Technology and Innovation Support Centers (TISCs): Bridging Innovators from Mind to Market* (WIPO, Geneva, 2025).

[15] Department for Promotion of Industry and Internal Trade, Government of India, *Scheme for Facilitating Startups Intellectual Property Protection (SIPP)* (Ministry of Commerce and Industry, New Delhi, 2023) 1–5.

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As a result of the rapid growth of new technologies and digital creativity, including artificial intelligence (AI), quantum computing, blockchain technology, and the internet of things (IoT), evolving issues put pressure on the conventional interpretations of statutes governing intellectual property rights.[16] For example, Section 3(k) of the Indian Patents Act prohibits the patenting of software and mathematical methods without regard to whether the innovations are foundational software technologies or not.[17] This restriction is intended to prevent monopolies on the foundational logic of computer software.

With software and AI-based innovations placed at the centre of today's economy, reforming India's intellectual property governance system responsive to these industries has become imperative. The Controller General of Patents, Designs and Trademarks (CGPDTM) has published revised Guidelines for the Examination of Computer Related Inventions (CRIs) clarifying that if a CRI is related to a hardware component or demonstrates a clear and substantial "technical effect", it is patentable.[18]

This has also coincided with an ongoing intellectual property and copyright debate surrounding the rapid growth of generative AI systems being built on vast private datasets, the creation of "fair use" exceptions for text and data mining (TDM), and the contentious legal basis of non-human autonomous AI systems as inventors or authors under Indian law.

**Intellectual Property Governance and Economic Transformation in India**

Economic transformation requires surplus labor in lower-productivity sectors (e.g., subsistence agriculture) to move into higher-productivity knowledge-intensive sectors. A proper framework for managing intellectual property is essential for supporting industrial competitiveness, FDI inflows, and higher-value knowledge-based sectors, as it provides an infrastructure asset for multinational companies to establish advanced R&D centers and higher-value assembly operations in India instead of limiting themselves to lower-value assembly operations.[19] Empirical legal studies show that when foreign investors allocate capital, their assessment of the strength of a host country's IP enforcement system is critical; if there are weak trade secret protections or the enforcement of IP is uncertain, a country runs the risk of being excluded from global advanced technology supply chains.[20]

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[16] World Intellectual Property Organization, *World Intellectual Property Report 2026: Technology on the Move* (WIPO, Geneva, 2026) 98–105.

[17] The Patents Act, 1970, s. 3(k); Office of the Controller General of Patents, Designs and Trade Marks, *Revised Guidelines for Examination of Computer Related Inventions (CRIs), 2017* (Government of India, New Delhi, 2017) 5–12.

[18] Office of the Controller General of Patents, Designs and Trade Marks, *Revised Guidelines for Examination of Computer Related Inventions (CRIs), 2017* (Department for Promotion of Industry and Internal Trade, Government of India, New Delhi, 2017) 5–7.

[19] Keith E. Maskus, *Intellectual Property Rights in the Global Economy* (Institute for International Economics, Washington DC, 2000) 109–135; Government of India, *National Intellectual Property Rights Policy, 2016* (Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, New Delhi, 2016) 3–7.

[20] Keith E. Maskus, *Intellectual Property Rights in the Global Economy* (Institute for International Economics, Washington DC, 2000) 135–168; Keith E. Maskus, 'The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer' (2000) 9(1) Duke Journal of Comparative and International Law 109, 109–161.

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By improving regulatory transparency and expediting processing timelines, IP governance reforms in India have improved the country's position as a key hub for high-value knowledge-based industries. In particular, with the transition to a TRIPS-compliant product patent system, India's leading domestic generic drug manufacturers are transforming their business strategies from 100% reverse-engineering of products to becoming global competitors investing heavily in original drug discovery and development of biosimilars and novel drug delivery systems (NDDS).

The same transition is occurring in India's IT/software services sector; many companies previously engaged in only service outsourcing are now utilizing copyright, patent, and trade secret law to develop their own proprietary global software products, automation platforms, and cloud architectures.

The changing nature of IP governance also demonstrates the increasing role that IP governance will have on sustainable economic growth. Climate change will necessitate the rapid deployment of green technologies, such as advanced solar photovoltaics, localized wind energy systems, and large-scale grid energy storage products.[21] These changes present a trade-off between ensuring adequate patent protection to attract private investment in green R&D and providing developing countries with the opportunities to deploy and use these technologies for their necessary carbon reductions efforts.

The global contribution of IP governance to the innovation-based economy of India is consistent with international measures of innovation. The rapid growth of India in the World Intellectual Property Organization's (WIPO) Global Innovation Index (GII) from 81st place in 2015 to now being among the 40 highest-ranked economies in the world can be attributable to the enhancements within IP governance.[22]

India has made significant improvements to eliminate long-standing administrative delays associated with multi-year backlogs for trademark examination and patent application processing. These improvements have occurred through the use of extensive digitization, implementation of AI-based workflow tracking tools, and recruitment of large numbers of qualified patent examiners who are formally trained and capable of performing IP examinations. IP governance has moved from the periphery of regulatory administration to a core driver of India's macroeconomic strategy through its ability to convert intangible capital into legally binding and tradeable assets.

## Socio-Legal Challenges in Intellectual Property Governance

In spite of advancements in administrative systems of IP governance, the socio-legal problems confronting India's current IP governance structure are extensive. These conflicts stem primarily from the IP monopoly's private and exclusionary nature compared with the public law obligations of a developing country such as India, to provide equal and reasonably priced access to necessary community resources, protect the Human Rights of its citizens and maintain access to the public domain.[23]

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[21] World Intellectual Property Organization, *Green Technology Book: Solutions for Climate Change Mitigation* (WIPO, Geneva, 2023) 1–15; World Intellectual Property Organization, *Green Technology Book 2022: Solutions for Climate Change Adaptation* (WIPO, Geneva, 2022) 3–5.

[22] World Intellectual Property Organization, *Global Innovation Index 2024: India Economy Profile* (WIPO, Geneva, 2024), available at: WIPO India GII 2024 Profile (last visited June 18, 2026).

[23] Arul George Scaria, *The Indian Intellectual Property Regime and Public Interest* (LexisNexis, New Delhi, 2020) 25–44; Shamnad Basheer and Prashant Reddy, *Create, Copy, Disrupt: India's Intellectual Property Dilemmas* (Oxford University Press, New Delhi, 2017) 53–72.

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The most significant area of tension between patent governance and the public's right to health care occurs at the interface of patent governance and the right to health care. On one hand, product patents provide the financial incentive for drug companies to develop pharmaceuticals; however, on the other hand, they also give rightsholders the market power to set monopoly prices. Thus, in a country such as India where health care expenditures tend to involve a high level of out-of-pocket payments and where many individuals will not have enough money to purchase a life saving product that is sold at monopoly price, there is an immediate risk that patent monopolies will prevent individuals from accessing medicines that are required for their health and life.

Therefore, Indian IP governance has established certain types of statutory flexibility (i.e.: Compulsory Licensing). As established under Section 84 of the Patents Act, the state has the ability to issue a licence to a third-party to create a generic equivalent of a patented pharmaceutical product without the consent of the patent holder if the pharmaceutical product is not being provided at a reasonable price or if the pharmaceutical product does not meet the reasonable needs of the community. The Intellectual Property Appellate Board approved a mandatory license for the anti-cancer drug Sorafenib Tosylate at Bayer Corporation, which reduced the price of the drug to less than 3% of its original monthly price to patients.

The Supreme Court in India, through the Novartis AG v. Union of India case, upheld the constitutional validity and goal of serving the public interest of Section 3(d) despite there not being sufficient evidence that minor changes made to an existing chemical compound would produce any increase in the compound’s ability to treat a disease (i.e., no measurable increase in pharmacologic efficacy claimed).[24] Therefore, minor changes to existing chemical compounds will not entitle the creator to receive a new patent monopoly for a period of 20 years because there is no new invention involved. This rationale serves as important precedent to combat the ongoing challenges created by corporations’ attempts to extend the duration of patent monopolies through the act of evergreening.

Another major challenge is protecting traditional knowledge and indigenous innovation from biopiracy and unauthorized exploitation of indigenous resources by foreign actors. Historically, transnational companies sought to have patents issued by various international jurisdictions for products that are utilized in traditional Indian medicine and agricultural practice, such as the neem tree, turmeric, and basmati rice.[25]

India has sought to address this vulnerability through its Traditional Knowledge Digital Library (TKDL) – a unique socio-legal resource that compiles (i.e., digitally records, translates and organizes) traditional Indian medicinal formulations into a searchable electronic database maintained by the Government of India. The TKDL enables patent examiners at major international patent offices throughout the world to access prior documentation regarding existing inventions by way of the traditional knowledge, thereby supporting their need to reject fraudulent non-novel patent

[24] *Novartis AG v Union of India* (2013) 6 SCC 1, paras 180–191; Shamnad Basheer and Prashant Reddy, *Create, Copy, Disrupt: India's Intellectual Property Dilemmas* (Oxford University Press, New Delhi, 2017) 97–109.

[25] Deepa Varadarajan, ‘A Trade Secret Approach to Traditional Knowledge Protection’ (2011) 36(2) Yale Journal of International Law 371, 374–379; N. S. Gopalakrishnan and T. G. Agitha, *Principles of Intellectual Property* (Eastern Book Company, Lucknow, 2014) 347–360.

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applications. In addition, the Biological Diversity Act of 2002 establishes an institutional Mechanism for Access to and Benefit-sharing (ABS) of Biological Resources (Biological Diversity Act) with the requirements that corporations using indigenous biological resources must obtain prior informed consent from the National Biodiversity Authority (NBA) prior to the use of the indigenous knowledge as well as share a portion of their revenues with the indigenous communities from which the resources were derived; this represents a significant legal basis for the preservation of traditional knowledge in India.

In the context of digital IP control, there is an ongoing requirement for digital copyright owners and users to arrive at a balance of copyright enforcement with providing Freedom of Expression/Access to Knowledge. The commercialization of digital technologies has created an environment in which copyright infringement is completely effortless for users (e.g., via copying (digital) media already owned by copyright owner), thus leading to a push from corporations who hold copyrights to have direct liability applied to those who serve as intermediaries in online copyright infringement as well as for courts to prevent unidentified users from accessing copyright-protected material through broad judicial orders to block the URLs of such copyright-protected works at the domain level.[26] In response to this challenge, Indian courts have developed creative forms of remedy for rightsholders, such as dynamic injunctions and related remedies that allow rightsholders to obtain an order from the court requiring the identification and blocking of all "mirror" or "clones" of websites that were previously ordered blocked by the court, thereby facilitating the ongoing protection of copyrighted works against Copyright infringement.

Nevertheless, in supporting the IP rights of copyright owners, it is imperative that there also be consideration for how to protect the "safe harbor" protections available to digital cataloging and copyright infringement-disseminating platforms under Section 79 of the Information Technology Act, 2000. Section 79 provides that digital platform providers will not be liable for copyright liability for User-generated content unless they remove infringing materials promptly after receiving written notice from a court providing evidence of copyright infringement.[27]

Finally, in Chancellor, Masters and Scholars of the University of Oxford v. Rameshwari Photocopy Service, the Delhi High Court held that when copyright-protected academic work is compiled into course packs to be used for educational purposes, this is a bona fide application of the educational fair use exception to copyright, thereby prioritizing access to education over unlimited enforcement of copyright holders' IP rights.[28]

[26] *UTV Software Communication Ltd v 1337X.to* 2019 SCC OnLine Del 8002, paras 82–105; Copyright Act, 1957, ss. 51 and 52; Arul George Scaria, *Copyright Law in India: A Reader* (Oxford University Press, New Delhi, 2014) 215–230.

[27] Information Technology Act, 2000, s. 79; *Shreya Singhal v Union of India* (2015) 5 SCC 1, paras 117–118; *MySpace Inc v Super Cassettes Industries Ltd* 2016 SCC OnLine Del 6382.

[28] *The Chancellor, Masters and Scholars of the University of Oxford v Rameshwari Photocopy Services* 2016 SCC OnLine Del 6229, paras 71–94; Copyright Act, 1957, s. 52(1)(i).

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**Towards an Inclusive and Innovation-Oriented Intellectual Property Governance Framework**

India is in need of a restructuring of the way in which it administers and governs its intellectual property (IP) to better facilitate economic growth through innovation. The current approach taken by the Indian government for governing IP is primarily reactive and focused on enforcement of laws and procedures. Therefore, as India continues its transition to an innovation-based economy, it is critical that the government support and create a new governance paradigm where IP functions in a proactive manner to ensure that it contributes to creating an inclusive economy.

The first step in transforming the governance model is to develop the requisite institutional capacity within the entire IP administrative registry system. The Indian government has made significant investments in modernizing and increasing the number of personnel employed by the IP offices, but the volume of patent, trademark, and design applications continues to exceed available administrative resources, resulting in lengthy pendency periods, which put a strain on the limited funds available to call to market early-stage start-ups. Therefore, to address this issue, the government must increase investments over a sustained period of time to increase the number of highly trained and technologically specialized examiners, particularly in complex, rapidly changing areas of innovation such as synthetic biology, quantum computing, and neural-network software design.

The abolition of the Intellectual Property Appellate Board (IPAB) by the 2021 Tribunals Reforms Act and return of IP adjudication to the High Court system will place additional pressure on the traditional courts to deal with IP disputes, which could result in a backlog of IP litigation and create barriers to innovation through the courts. One method to alleviate this threat to the growth of innovative commercial ventures is for other jurisdictions in India to model their IP adjudication procedures after those established by the Delhi High Court, which established an Intellectual Property Division (IPD), where judges and technical experts are panel members.

In addition, India must develop its domestic innovation ecosystem by building collaborative relationships between its publicly funded research universities, privately owned businesses, and venture capital providers through the establishment of a transparent, national technology transfer system that provides for the following: clarity of ownership rights, uniform non-exclusive licensing standards for products produced with public funding, and the ability of academic researchers to share in the commercial profits derived from their inventions.

Importantly, an inclusive governance system must provide for increased access to formal IP systems for historically excluded economic actors including MSMEs, traditional artisans, and grassroots rural innovators. Elite corporate entities have little trouble navigating formal/IP processes, but small businesses experience numerous challenges in doing so as the costs of navigating the IP process are greater than they can afford to pay, the bureaucratic process is unnecessarily complicated, and they generally lack an understanding of the value of their intangible assets as a potential source of revenue. By using tools such as targeted PR campaigns, pro bono legal clinics, and simplified fees to promote increased participation in the formal IP system for all economic actors, India can create an equitable legal and social framework that balances the need for strong commercial enforcement with the ability to adapt the legal system to protect the public interest while promoting inclusive and sustainable economic development.

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## Conclusion

A dynamic and highly debated institution has developed in the area of intellectual property governance in India, with the institution undergoing considerable transformation from its beginnings in post-colonial India as a system very suspicious of monopolies of a Western style, into a credible and TRIPS-compliant IP architecture providing an important part of the national strategy to transition to an innovation economy. This progression illustrates that compliance with international law and meeting the significant domestic development goals of developing nations can go hand-in-hand. By utilising the treaty's flexibilities, implementing strategic statutory safeguards such as Section 3(d), and creating defensive databases such as the TKDL, India has developed an IP governance initiative that provides for protecting the essential public interest in public health, the right of educational people to access educational materials, and the preservation of biodiversity, while at the same time providing powerful legal economic incentives to the private sector for continued development of new products and services through innovation.

The creation of an advanced digital technology-enabled, globally integrated environment is creating challenges to traditional legal concepts and doctrines and regularly require the adaptation of law and the application of high-level judicial resources to deal with such advancements as automated AI-based technologies and products and complicated biopharmaceuticals. Institutional resource constraints create structural challenges and need for implementing a specialized commercial courts system following the dissolution of the IPAB and establish the groundwork necessary to provide formal access to commercial IP systems for micro, small and medium enterprises (MSMEs) and grassroots innovators points out that India continues to advance through its structural transformation with progress continuing to be made within regard to such transformation.

Ultimately, the success of India's ability to support an inclusive innovative economy will depend upon the maintenance of the necessary calibrations in its governing IP system of laws. Lawmakers and regulators will need to resist the urge to see absolute and unlimited monopolistic expansion as an end in of itself. Rather, the legal construct will require ongoing improvements as a broad-based and flexible policy instrument to make certain that the protection provided for private intellectual wealth is consistent with its larger public policy goal of driving national social and economic transformation.

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