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Intellectual Property Rights in the Digital Age

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Abstract

Digital technology has altered the economics and enforcement of intellectual property rights. Works, marks, data, software and inventions circulate through platforms that copy, index, recommend, transform and monetise intangible assets at scale. This paper examines intellectual property rights in the digital age with specific reference to India in 2025. It analyses copyright, intermediary liability, artificial intelligence, trademark use in online advertising, software and AI-assisted patents, trade secrets, data governance and personality rights. The paper argues that Indian IP law must move from a narrow ownership model to a governance model that balances incentives, access, free expression, privacy, competition and technological innovation. It supports calibrated reform: a transparent text-and-data-mining framework, clearer AI authorship and liability rules, accountable platform enforcement, protection against synthetic personality misuse, and stronger institutional capacity for digital evidence and licensing.

Keywords: Intellectual property; copyright; digital age; artificial intelligence; platforms; India; DPDP Act; trademarks; patents; personality rights

1. Introduction

Intellectual property law has always been a law of intangibles, but the digital age has changed what intangibility means. A book could be copied before the internet, yet the cost, speed and reach of copying were materially different. A trademark could be misused before search engines, but keyword advertising and platform ranking now make invisible uses commercially valuable. A performer's voice could be imitated before generative AI, but synthetic cloning now allows mass replication without physical proximity. By 2025, Indian intellectual property rights operate inside a dense technological environment of cloud storage, social media, streaming, app stores, online marketplaces, data analytics and machine learning. The central legal question is no longer merely who owns the work or mark. It is also who controls access, who has notice, who profits from circulation, and who bears responsibility when digital systems scale infringement or misappropriation.

Indian IP law continues to rest on familiar statutes: the Copyright Act, 1957, the Patents Act, 1970, the Trade Marks Act, 1999, the Designs Act, 2000, the Geographical Indications of Goods (Registration and Protection) Act, 1999, the Semiconductor Integrated Circuits Layout-Design Act, 2000 and related rules. The India Code describes the Copyright Act as a law to amend and consolidate the law relating to copyright, and the Patents Act as a law to amend and consolidate the law relating to patents.¹ These statutes remain essential, but they were not drafted for a world in which an AI model may be trained on millions of works, a platform may receive millions of takedown requests, or a voice clone may produce a new advertisement overnight. The digital age therefore does not abolish IP doctrine. It stretches doctrine until its assumptions become visible.

This paper argues that Indian IP law must shift from a purely exclusionary model to a governance model. Exclusive rights remain important; creators, inventors, brands and performers need incentives and protection against unfair appropriation. But digital enforcement can also suppress lawful speech, block access to knowledge, disadvantage small creators, entrench platform power and conflict with privacy. A governance model asks how rights should be administered in systems of scale. It requires due process in website blocking, transparency in AI

training, fair dealing that remains meaningful, platform safe harbours that are not blank cheques, and remedies that are effective without being excessive. In short, IP in the digital age is not only about property. It is about institutional design. That point is sometimes lost in doctrinal writing, and maybe it should not be.

2. The Digital Transformation of IP

Digital objects are non-rival and easily reproducible. When a physical book is stolen, the owner loses possession; when a digital file is copied, the owner retains a copy but may lose market value, control, attribution or privacy. This difference complicates the moral intuition behind property. The law still treats unauthorised copying as a wrong, but the wrong must be carefully specified. Is it loss of sale, loss of licensing opportunity, harm to reputation, breach of access control, unfair competition or violation of moral rights? Different answers justify different remedies. A teenager sharing a meme, a piracy website streaming a film, a research project mining text and a commercial AI system training on copyrighted material are not the same phenomenon. Digital IP law fails when it treats them as one undifferentiated category of theft.

The architecture of the internet also changes enforcement. Intermediaries host, transmit, index, cache and recommend content. They are not always primary infringers, yet their technical control makes them essential to remedies. Indian law therefore developed a relationship between IP statutes and the Information Technology Act safe-harbour framework. The MySpace litigation is a leading example: the Delhi High Court had to consider copyright claims against an intermediary platform and the conditions under which knowledge and control could justify liability.² The case reflects a persistent difficulty. If platforms are liable too easily, they will over-remove content and chill speech. If they are never liable, right holders face an impossible enforcement burden. The correct rule must distinguish general knowledge of infringement from specific, actionable notice and must require proportionate response.

Digital technology also makes rights overlap. A mobile app may involve copyright in code, patent claims over a technical process, trademark protection for the brand, design protection for interface elements, database value, trade secrets in algorithms and personal data regulated by privacy law. In 2025, the

¹ Copyright Act, 1957, Act 14 of 1957; Patents Act, 1970, Act 39 of 1970.

² MySpace Inc. v. Super Cassettes Industries Ltd., 236 (2017) DLT 478 (Del HC).

Digital Personal Data Protection Act, 2023 and the notified DPDP Rules added another governance layer over digital business models.³ Data is not intellectual property in the classic sense, but control over data can determine the value of IP. A streaming platform's recommendation data, a pharmaceutical dataset, or a labelled image corpus may be protected through contract, confidentiality, database access controls and data-protection obligations. The digital age therefore makes IP lawyers speak with privacy, competition and technology lawyers. Silos are getting expensive.

3. Copyright, Fair Dealing and Digital Uses

Copyright remains the most visible digital IP right because most online activity involves reproduction, communication to the public, adaptation or distribution of works. The Copyright Act protects literary, dramatic, musical and artistic works, cinematograph films and sound recordings, and confers economic as well as moral rights. Digital copies are legally significant even when they are technically temporary. Streaming, uploading, caching and cloud storage may implicate rights depending on the facts and statutory exceptions. The 2012 amendments introduced anti-circumvention and rights-management-information provisions, reflecting a world of technological protection measures.⁴ Yet copyright cannot be absolute. Education, research, criticism, review, reporting of current events, accessibility and transformative expression require room. In India this room is primarily provided by section 52 fair dealing and specific exceptions.

The digital age tests fair dealing because ordinary digital use often involves copying. A student downloading a judgment, a researcher creating a corpus, a journalist embedding a screenshot, a teacher sharing excerpts in an online class and a user making a parody may all create technical copies. A rigid reproduction-centred analysis would make everyday learning and speech precarious. Indian courts have sometimes been sensitive to access interests, especially in educational contexts. The wider policy issue is whether fair dealing is flexible enough for computational uses such as text and data mining. Where the output is knowledge, statistics or non-expressive analysis, the infringement claim should be approached with caution. Where the use substitutes for the original market or produces competing expressive

outputs, the right holder's claim becomes stronger. This line will not always be easy, but refusing to draw it would surrender research and innovation to licensing bottlenecks.

Website blocking and dynamic injunctions illustrate enforcement pressure. In UTV Software, the Delhi High Court recognised the problem of rogue websites and granted dynamic injunctions to address mirror and redirect sites that evade ordinary orders.⁵ Such remedies are attractive because piracy sites often reappear under new domains within hours. But dynamic injunctions must include safeguards: clear identification of infringing sites, opportunity for affected parties where feasible, periodic review, and avoidance of over-blocking. Blocking an entire domain may suppress lawful material. The problem is not imaginary. Digital enforcement has a blunt edge, and that edge often cuts speech and access. Courts should therefore insist on proportionality, technical specificity and transparent implementation. Effective copyright enforcement should not become invisible censorship.

4. Artificial Intelligence and Copyright

Artificial intelligence is the most disruptive digital IP issue in 2025. Generative AI systems can produce text, images, music, code and video that resemble human creativity. They also require training on enormous datasets, many of which contain copyrighted works. This raises at least four questions. First, is the training process itself an infringing reproduction or a fair/allowed computational use? Secondly, who owns an AI-generated output when human prompting is minimal? Thirdly, when an output resembles a protected work, who is liable: developer, deployer, user or platform? Fourthly, how should law protect attribution, moral rights and cultural labour in a system that can imitate style at scale? Indian statutes do not yet answer these questions directly. Courts and policymakers must therefore adapt existing doctrines carefully.

The ANI v. OpenAI litigation in the Delhi High Court has made these questions concrete in India. The news agency alleged unauthorised use of its content for training and outputs, while the defendants raised issues of jurisdiction, technological process and legal

³ Digital Personal Data Protection Act, 2023, Act 22 of 2023; Press Information Bureau, Ministry of Electronics and IT, "Government notifies DPDP Rules to empower citizens and protect privacy", November 14, 2025.

⁴ Copyright Act, 1957, ss. 14, 51, 52, 57, 65A and 65B.

⁵ UTV Software Communication Ltd. v. 1337X.to, 2019 SCC OnLine Del 8002.

responsibility.⁶ Whatever the final outcome, the dispute demonstrates that AI copyright is not a future problem. It is already a courtroom problem. Indian law should avoid two simplistic responses. One response would say that every training use requires permission, which may create impossible transaction costs and entrench large incumbents who can buy datasets. The other would say that training is always free, which may appropriate the labour of writers, journalists, photographers, artists and coders without negotiation. A calibrated solution is needed.

A possible Indian framework could combine transparency, opt-out or rights-reservation mechanisms, collective licensing for high-value corpora, exceptions for non-commercial research, and liability for infringing outputs that are substantially similar to protected works. The law should also consider record-keeping obligations for large model developers, at least in relation to broad categories of training data. This need not mean disclosure of trade secrets or source code. It means sufficient accountability so that creators can understand whether their works are part of commercial extraction. For authorship, India should be cautious about giving copyright to purely machine-generated output without human creative contribution. Copyright is a human and institutional incentive system; giving rights to machine output too easily could flood markets with protected material and reduce the public domain.

5. Trade Marks, Domain Names and Online Markets

Trade mark law in the digital age protects not only labels on goods but also search visibility, domain names, platform listings and consumer trust in online marketplaces. Passing off and infringement can occur through fake websites, counterfeit listings, misleading seller names, sponsored advertisements and domain squatting. Consumers may never inspect goods physically before purchase; they rely on search results, platform badges, reviews and payment interfaces. Confusion therefore operates differently. It can happen before the consumer reaches the product page. It can also be corrected later, but the click and data may already have value. Trade mark law must account for this pre-sale and initial-interest environment without giving brand owners excessive control over comparative advertising or lawful resale.

Keyword advertising has generated significant litigation. In *Google LLC v. DRS Logistics*, the Delhi High Court considered whether use of trade marks as keywords in advertising could amount to infringement and how intermediary safe harbour applies when the search platform sells or recommends keywords.⁷ The case shows the complexity of digital trade mark use. A mark may be invisible to consumers but commercially operative in the advertising auction. If the resulting advertisement causes confusion, the brand owner has a serious complaint. If the advertisement is comparative, descriptive or clearly unrelated, over-enforcement may harm competition. The solution again lies in context: nature of the keyword use, content of the advertisement, likelihood of confusion, platform role and available controls. Digital trade mark law is no longer simply about labels. It is about attention markets.

Online marketplaces also create problems of counterfeit goods and parallel imports. Platforms may host thousands of sellers, some genuine and some fraudulent. Brand owners want proactive filtering, while platforms resist becoming general monitors. Consumers want low prices and authenticity. Small sellers fear arbitrary takedowns. The law should require reasonable due diligence, repeat-infringer policies, seller verification in high-risk categories, prompt response to specific notices and transparent appeal mechanisms. But it should not convert every platform into an insurer of all third-party conduct. That would encourage excessive removal and raise entry barriers. A balanced model treats platforms as accountable governors of marketplace architecture, not as passive notice boards and not as strict guarantors. This middle position is untidy, but digital markets themselves are untidy.

6. Patents, Software and AI-Assisted Invention

Patent law faces a different digital challenge. Section 3(k) of the Patents Act excludes mathematical or business methods, computer programmes per se and algorithms from patentability.⁸ The phrase 'per se' has generated debate. Software as such should not be monopolised merely because it is useful, but computer-implemented inventions with a technical contribution may deserve protection. Indian Patent Office guidelines have attempted to navigate this distinction, and courts have increasingly looked for technical effect or technical contribution. The

⁶ ANI Media Private Limited v. OpenAI Inc., CS(COMM) 1028 of 2024, Delhi High Court, pending; see order dated November 19, 2024 and subsequent proceedings.

⁷ *Google LLC v. DRS Logistics (P) Ltd.*, 2023:DHC:5615-DB (Del HC).

⁸ Patents Act, 1970, s. 3(k).

difficulty is that digital innovation often lies in software, data structure, user interface, compression, security or machine-learning technique. Too strict an exclusion may under-protect genuine technical inventions; too loose an approach may create monopolies over abstract ideas and business practices. Patent law must protect engineering, not every clever commercial method written in code.

AI-assisted invention raises questions about inventorship and obviousness. If an AI system proposes a molecule, circuit design or optimisation pathway, who is the inventor? Most legal systems, including India's, assume human inventorship. That assumption should not be abandoned quickly. Patent rights are granted to encourage human disclosure and investment, not to reward machines. The more practical question is how AI tools affect the assessment of inventive step. If a skilled person using ordinary AI tools could generate many candidate solutions, the threshold of non-obviousness may shift. Patent offices will need technical expertise to evaluate such claims. Applicants may also need to disclose the role of AI assistance where it is material to enablement or inventorship. The problem is not science fiction. It will increasingly appear in pharmaceuticals, materials science, electronics and biotechnology.

Digital patents also interact with standards and competition. Telecommunications, codecs, encryption and platform technologies may involve standard-essential patents. Licensing on fair, reasonable and non-discriminatory terms becomes crucial because exclusionary enforcement can block entire markets. Indian courts have already encountered FRAND disputes in technology sectors. The digital age intensifies this issue because interoperability is central to innovation. Patent remedies should therefore be sensitive to proportionality. Injunctions may be appropriate against unwilling licensees, but damages or court-supervised licensing may sometimes better protect competition and consumers. A property right is not always vindicated best by exclusion; sometimes it is vindicated by fair access and remuneration. Patent law is slowly learning this digital lesson.

7. Data, Trade Secrets and Privacy

Data is often called the new oil, though the metaphor is overused and not entirely accurate. Data is non-rival, relational and often personal. It can be

copied without depletion, combined to create new insights and used to train models. Indian IP statutes do not create a general property right in raw data. Protection usually comes through copyright in original databases where creativity exists, contract, confidentiality, trade secret principles, technological access control and sectoral regulation. This patchwork is both useful and uncertain. A business may protect a curated dataset through confidentiality agreements; a researcher may seek access for public-interest analysis; an individual may object to personal data processing. These claims are not reducible to ownership. They involve privacy, competition and innovation.

The DPDP Act and DPDP Rules mark a major development in India's digital governance. Government material states that the notified Rules operationalise the DPDP Act and create obligations for Data Fiduciaries along with rights and duties for Data Principals.⁹ For IP law, this matters in at least three ways. First, datasets used in AI or analytics may contain personal data, so lawful processing cannot be ignored. Secondly, consent, purpose limitation and minimisation may affect how platforms collect and repurpose user-generated content. Thirdly, data breach obligations and security safeguards may protect commercially valuable information as well as personal privacy. The DPDP framework is not an IP statute, but in digital business it shapes the conditions under which IP assets are created, exploited and defended. Lawyers who treat privacy as someone else's subject will miss the structure of the market.

Trade secrets may become more important as formal IP struggles with AI and data. Source code, model weights, training methods, customer lists, business strategies and datasets may be protected through secrecy. Trade secret protection is flexible, but it has weaknesses: once secrecy is lost, protection may collapse; independent creation and reverse engineering may be lawful; and employees need mobility. India lacks a standalone trade secrets statute, relying largely on contract, equity, confidentiality and common-law principles. In the digital age, this may be insufficient for high-value data and AI systems. A carefully drafted trade secrets law could improve certainty, but it must preserve whistle-blowing, employee knowledge, cybersecurity research and public-interest disclosure. Not every secret deserves legal reverence. Some

⁹ Press Information Bureau, Ministry of Electronics and IT, "Government notifies DPDP Rules to empower citizens and protect privacy", November 14, 2025.

secrecy hides exploitation, discrimination or safety risks.

8. Personality Rights, Performers and Synthetic Media

Digital IP increasingly overlaps with personality. A celebrity's name, image, voice, signature, style and persona can be commercially valuable. Generative AI makes misappropriation easier. A fake endorsement can be produced without a studio, a mimicry track can be uploaded globally, and a performer's voice can be cloned into songs or advertisements. Indian courts have protected personality and publicity interests through passing off, privacy, constitutional dignity and interim injunctions. The difficulty is to protect against commercial misappropriation without creating a broad right to suppress parody, criticism, biography or political speech. Personality rights should be strong against false endorsement and exploitative cloning, but narrow enough to preserve democratic expression.

Recent Indian litigation involving well-known actors and singers shows the direction of travel. Courts have granted injunctions against unauthorised commercial use of personality attributes, including voice and persona, especially where AI tools enable replication. Such orders respond to a genuine problem: the market can appropriate the labour and identity of performers without consent. Performers' rights under copyright law also matter, including moral interests in attribution and integrity where applicable.¹⁰ The challenge is doctrinal coherence. Personality rights are developing through case law, but a statutory framework may be needed to define scope, exceptions, duration, transferability and remedies. Otherwise, protection may depend too much on celebrity status and ad-interim urgency.

Synthetic media also affects ordinary persons. A school teacher, local politician, student or journalist may be targeted by a fake sexual video or voice clip. This is not merely IP, but IP concepts can help where likeness, voice or performance is commercially or reputationally exploited. The broader legal response must combine privacy, defamation, sexual harassment, cyber crime and platform obligations. For celebrities, the injury may be market substitution; for ordinary women, it may be social destruction. The law should not reserve protection only for fame. A future personality-rights statute should include a dignitary

core applicable to all persons and a commercial publicity layer applicable where persona has market value. This two-layer approach would be fairer than treating personality only as a celebrity asset.

9. Access to Knowledge and the Public Domain

The digital age has made access to knowledge both easier and more contested. Libraries, archives, online education, open access journals and public repositories can democratise learning. At the same time, paywalls, digital locks, restrictive licences and aggressive enforcement can enclose knowledge. Indian IP policy must remember constitutional commitments to education, scientific temper and cultural participation. Copyright is not a natural monopoly over all use. It is a statutory bargain. The public domain, exceptions and limitations are not loopholes; they are part of the design. This point is especially important for students, researchers, persons with disabilities and institutions outside wealthy metropolitan centres. Digital access can reduce inequality, but only if law permits legitimate uses.

Open-source software and open licensing also complicate old assumptions. Many critical digital infrastructures are built on open-source components. The value lies not only in exclusion but in collaboration, reputation, service, interoperability and community governance. Indian companies and public agencies use open-source software extensively, yet legal understanding of licences is uneven. Compliance failures can create security and IP risk. Public procurement should include open-source compliance, software bill of materials and vulnerability disclosure norms. This is not glamorous, but it is practical. The digital age rewards institutions that understand licensing as infrastructure. A licence is not just a document in the drawer; it is a rule for participation in a technical community.

Traditional knowledge and cultural expressions raise another access problem. Digitisation can preserve and disseminate cultural material, but it can also enable appropriation. Databases such as traditional knowledge libraries can prevent wrongful patents by documenting prior art. Yet communities may want control over sacred, ecological or identity-based knowledge that does not fit ordinary IP categories. The digital age therefore intensifies an old critique: IP law is good at protecting individual marketable works and inventions, less good at protecting collective,

¹⁰ See *Amitabh Bachchan v. Rajat Nagi*, 2022 SCC OnLine Del 4110; *Arijit Singh v. Codible Ventures LLP*, Interim

Application (L) No. 23343 of 2024 in Commercial IP Suit (L) No. 23443 of 2024, order dated July 31, 2024 (Bom HC).

intergenerational and relational knowledge. Indian policy should combine defensive protection, benefit-sharing, geographical indications, cultural protocols and community consultation. Otherwise digitisation may become extraction with better metadata.

10. Reform Agenda for 2025 and Beyond

First, India should develop a clear text-and-data-mining policy. The framework should distinguish non-commercial research, public-interest uses, commercial model training and outputs that substitute for protected works. It should provide transparency obligations for large commercial AI systems, reasonable opt-out or rights-reservation mechanisms, and collective licensing where individual licensing is impracticable. A rigid permission-only model will favour large firms; a free-use model will unfairly appropriate creators. The middle path is institutionally difficult, but that is no reason to avoid it. Copyright law has always been a balance between incentive and access. AI simply makes the balance impossible to ignore.

Secondly, platform enforcement requires due process. Notice-and-takedown systems should require sufficiently specific notices, prompt action for clear infringements, counter-notice mechanisms, repeat-infringer policies and transparency reports. Dynamic injunctions should be carefully supervised. Online marketplaces should verify high-risk sellers and preserve transaction data for counterfeit investigations, subject to privacy law. Search platforms should maintain clear policies for trade mark keywords and sponsored results. These duties should be scalable; a small platform cannot be regulated exactly like a global platform. But scale should also bring responsibility. Platforms profit from organising attention and transactions. They cannot permanently claim to be neutral pipes while designing every visible pathway.

Thirdly, India should clarify personality rights and synthetic-media rules. The law should prohibit unauthorised commercial voice or likeness cloning, false endorsement, malicious intimate deepfakes and deceptive political impersonation, while preserving parody, satire, news reporting, research and artistic expression. Remedies should include takedown, injunction, damages and correction, but also safeguards against abusive claims by powerful persons. Fourthly, the patent system should update examination guidelines for AI-assisted inventions and computer-related inventions, focusing on technical contribution, disclosure and human inventorship. Fifthly, trade secret protection should be strengthened

through statute or model rules while preserving labour mobility, whistle-blowing and cybersecurity research. Reform should be modular; one grand digital IP code would probably become outdated before it is enacted.

Finally, institutions matter. India needs judges, patent examiners, copyright offices, police units and lawyers trained in digital evidence, source code, AI systems, data governance and platform economics. Specialised IP divisions in High Courts are a positive development, but capacity must reach beyond Delhi, Bombay, Madras and Karnataka. Small creators need affordable enforcement and advice. Start-ups need clarity. Universities need licensing offices and open-access policies. Enforcement agencies need forensic competence. The public needs digital literacy. IP law in the digital age will not be improved only by amending statutes. It will be improved by building institutions capable of applying flexible principles to fast-changing facts.

11. Conclusion

Intellectual property rights in the digital age face a paradox. Intangible assets are more valuable than ever, but the technologies that create value also make copying, transformation and distribution easier than ever. Indian law must protect creators, inventors, brands, performers and investors without allowing private rights to swallow education, research, competition, privacy and free expression. The old categories remain useful, but they need recalibration. Copyright must address AI training and platform enforcement; trade mark law must deal with search advertising and online marketplaces; patent law must distinguish technical invention from abstract software claims; data governance must interact with IP; personality rights must respond to synthetic media.

The best path is a governance model. It recognises exclusive rights, but insists that digital enforcement be transparent, proportionate and institutionally accountable. It supports innovation, but not extraction without responsibility. It protects creators, but not at the cost of a starving public domain. It allows platforms to operate, but not as lawless sovereignties. In 2025, India has an opportunity to build an IP framework suited to its digital economy and constitutional values. That framework should be technologically informed, socially grounded and doctrinally precise. It will have to tolerate uneven edges, because technology will keep moving. But law need not chase every novelty. It can build principled structures that remain steady while the tools change.

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