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### **Intellectual Property Rights and Trade Secrets Protection in the Indian Software Industry: An Evaluation of the Legal Framework**

#### **Veena TN**

Research Scholar, Christ University (Deemed to be University), Bengaluru

Email: [veena.tn@res1.christuniversity.in](mailto:veena.tn@res1.christuniversity.in)

#### **Dr. Avishek Chakraborty**

Assistant Professor, Christ University (Deemed to be University), Bengaluru

Email: [avishek.chakraborty@christuniversity.in](mailto:avishek.chakraborty@christuniversity.in)

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#### **Abstract**

This paper explores the legal framework protecting Intellectual Property Rights (IPR) and Trade Secrets within the context of the burgeoning Indian software industry. It provides an in-depth analysis of the existing laws and regulations, along with their implementation, adequacy, and gaps. The study draws on a range of secondary data, including relevant legislation, case law, policy documents, and scholarly research, while offering practical insights through key informant interviews with industry stakeholders.

#### **Keywords**

Intellectual Property Rights, Trade Secrets, Software Industry, India, Legal Framework

#### **1. Introduction**

The Indian software industry has experienced phenomenal growth over the past decades, turning India into a significant player on the global IT stage.<sup>1</sup> The World Bank estimates the software industry in India to contribute to over 7.7% of the country's GDP, employing millions of individuals and forming a crucial backbone to the nation's economic growth and stability.<sup>2</sup> Amidst this success, a crucial enabler has been the creation and protection of Intellectual Property (IP) through

<sup>1</sup> NASSCOM, "Indian IT & BPM Industry", 2022.

<sup>2</sup> World Bank, "India - Digital Economy Report", 2022.

Intellectual Property Rights (IPR) and Trade Secrets. This paper explores the legal and regulatory landscape of IPR and Trade Secrets in the context of the Indian software industry.

Intellectual Property Rights (IPR) and the protection of Trade Secrets play an essential role in stimulating innovation and economic growth.<sup>3</sup> For software industries, in particular, they incentivize creativity, promote competition, and attract foreign investment by assuring the security of proprietary information.<sup>4</sup> The lack of adequate IP protection can, however, lead to significant losses for businesses due to software piracy, data breaches, and the theft of trade secrets. The estimated global value of pirated software stood at around \$46.3 billion in 2020<sup>5</sup>.

In India, IPR and Trade Secrets protection is vested in several laws and regulations that have evolved over time. The present paper aims to critically evaluate these laws and regulations that constitute the Indian IPR regime for the software industry. It investigates how effective they are in today's digital era marked by rapid technological advancement, their ability to adapt to these advancements, and identifies any potential gaps or improvements that could be made.

In accomplishing this, the paper leans on various secondary data sources, including relevant legislation, case law, policy documents, and academic research. It also presents the insights gathered from key informant interviews conducted with various stakeholders in the Indian software industry.

## **2. Intellectual Property Rights in India: A Historical Perspective**

This section provides a historical account of the evolution of IPR laws in India, starting from the British colonial era to the present day. The importance of international agreements and their influence on the Indian IPR regime, such as the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement, is also discussed. India's Intellectual Property Rights (IPR) regime has evolved over centuries, shaped by its colonial past, post-independence socio-economic imperatives, and international obligations.

### **2.1 Early Developments**

India's IPR journey began during the colonial era under British rule, with the adaptation of British IP laws to the subcontinent. This period marked the establishment of various IP laws that continue to influence the legal framework today.

The initial attempt to provide copyright protection in India was via the Indian Copyright Act, 1847<sup>6</sup>, modeled on the British Copyright Act of 1842. The law focused on literary works and granted the authors the sole right to reproduce their work. However, due to inadequacies in its implementation, the Act underwent

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<sup>3</sup> Scotchmer, S., "Innovation and Incentives", MIT Press, 2004.

<sup>4</sup> Organization for Economic Cooperation and Development (OECD), "Innovation, Patents and Technological Strategies", 2007.

<sup>5</sup> Global Software Survey from BSA, "Seizing Opportunity Through License Compliance", 2021.

<sup>6</sup> India Code, "Copyright Act, 1847."

several modifications over the years.

The patent system was introduced with the enactment of the Act VI of 1856, inspired by the British Patent Law of 1852<sup>7</sup>. The patent law was primarily introduced to encourage inventions of new and useful manufactures and promote the transfer of new technology to India. Later, the Act was replaced by the Patents and Designs Protection Act, 1872, and the Protection of Inventions Act, 1883, which further cemented the principles of patents in the Indian legal framework.

Trade mark law, another significant component of IPR, was first codified in the Indian Trade Marks Act of 1940<sup>8</sup>. The legislation was again heavily influenced by the UK Trade Marks Act of 1938 and aimed at preventing fraudulent marking of goods and false representation.

These early developments marked the commencement of a structured IPR regime in India and laid the foundation for the evolution of a comprehensive legal framework post-independence.

## **2.2 Post-Independence Era**

In the aftermath of gaining independence in 1947, India undertook the task of shaping its legal and economic infrastructure. The need to establish self-sufficiency and protect local industries became an imperative<sup>9</sup>. Intellectual Property Rights laws were subsequently modified to align with these new national goals.

India's first major post-independence copyright law came in the form of the Copyright Act, 1957<sup>10</sup>. The Act provided copyright protection to creative works, including software. It has since been amended several times, notably in 1994, 1999, and 2012, to adapt to the changing landscape of creative industries and international commitments.

The Patents Act, 1970, marked a significant shift in India's approach to patent protection. The Act replaced the colonial-era patents law and was designed with an emphasis on technological advancement and a balance of interests between inventors and the public. The law specifically excluded software from patentability, considering it as an algorithm or mathematical method<sup>11</sup>.

To supplement the Patents Act, the Government also enacted the Designs Act, 2000, to protect product designs, and the Semiconductor Integrated Circuits Layout-Design Act, 2000, to protect the layout designs of integrated circuits<sup>12</sup>.

In the realm of trademarks, the Trade and Merchandise Marks Act, 1958, was enacted, later replaced by the Trademarks Act, 1999<sup>13</sup>. The latter brought Indian trademark law in line with the new Trade-Related Aspects of Intellectual

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<sup>7</sup> Ravi, S., "Historical development of the Patent System in India," *Journal of Intellectual Property Rights*, 2004.

<sup>8</sup> India Code, "Trade Marks Act, 1940."

<sup>9</sup> Chaudhuri, Sudip, "R&D for development of drugs and pharmaceuticals in India," *Research Policy*, 2005.

<sup>10</sup> India Code, "Copyright Act, 1957."

<sup>11</sup> Ravi, S., "Historical development of the Patent System in India," *Journal of Intellectual Property Rights*, 2004.

<sup>12</sup> India Code, "Designs Act, 2000." "Semiconductor Integrated Circuits Layout-Design Act, 2000."

<sup>13</sup> India Code, "Trade Marks Act, 1999."

Property Rights (TRIPS) standards.

Although these laws provided a comprehensive framework for IPR, there was no specific law for the protection of trade secrets in India. Instead, trade secrets were typically protected under contract law, principles of equity, and certain provisions of the Indian Penal Code<sup>14</sup>.

This post-independence period was characterized by the efforts to reshape the IPR laws to suit the socio-economic conditions of the country while ensuring that the rights of the creators and inventors were adequately protected.

### **2.3 Globalization and the TRIPS Agreement**

In the early 1990s, the Indian economy underwent significant transformation. As part of the structural adjustment programs prescribed by the International Monetary Fund (IMF) and the World Bank, India liberalized its economy, opening it up to foreign investment<sup>15</sup>.

Concurrent with the process of liberalization was India's participation in the Uruguay Round of negotiations under the General Agreement on Tariffs and Trade (GATT). These negotiations culminated in the establishment of the World Trade Organization (WTO) in 1995, which India joined as a founding member<sup>16</sup>. A crucial aspect of the WTO framework was the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which set minimum standards for IP regulation applicable to all WTO members<sup>17</sup>.

The TRIPS agreement marked a critical juncture for India's IPR regime. Compliance with TRIPS required substantial amendments to the existing IPR laws to adhere to the international standards.

The Patents (Amendment) Act, 2005, introduced a product patent regime in all fields of technology, including chemicals and pharmaceuticals, thereby repealing the earlier practice of process patents.

The Copyright Act, 1957, was also amended to comply with the TRIPS agreement. The amendment broadened the definition of "communication to the public" to include digital dissemination of works, thereby extending copyright protection to the digital sphere<sup>18</sup>.

The Trademarks Act, 1999, was aligned with TRIPS by recognizing service marks, collective marks, and offering more robust protection against trademark infringement.

The TRIPS agreement and the ensuing changes heralded a new era for India's IPR regime, making it compatible with global standards while navigating the intricacies of promoting innovation, safeguarding public interest, and ensuring affordable access to technology.

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<sup>14</sup> Guha, Arpan, "Protection of Trade Secrets in India," *The Law Review*, 2020.

<sup>15</sup> Ahluwalia, I. J., "Industrial growth in India: Stagnation since the mid-sixties," Oxford University Press, 2008

<sup>16</sup> WTO, "Member information: India and the WTO," WTO, 2021.

<sup>17</sup> WTO, "The TRIPS Agreement," WTO, 2021.

<sup>18</sup> India Code, "Copyright (Amendment) Act, 2012."

## **2.4 Current Scenario**

The contemporary Indian intellectual property rights (IPR) landscape is a reflection of the country's journey through diverse socio-economic phases and its obligations to international agreements. It consists of multiple Acts and regulations catering to different types of intellectual properties, while also grappling with the challenges posed by the digital age.

The Copyright Act, 1957, with its latest amendment in 2012, provides protection to literary, dramatic, musical, and artistic works. Crucially, it now includes software under the ambit of literary works. The law provides extensive protection and enforcement measures for software developers, including civil remedies and criminal penalties<sup>19</sup>.

The Patents Act, 1970, grants patents to inventions that fulfill the criteria of novelty, inventive step, and industrial applicability<sup>20</sup>. However, computer programs "per se" are not patentable in India<sup>21</sup>, creating an area of ongoing debate considering the software industry's critical role in the Indian economy. Trademark protection is offered under the Trademarks Act, 1999. It provides safeguards against trademark infringement and has provisions that align with the digital landscape, like protection against cyber squatting<sup>22</sup>.

Other important legislations include the Designs Act, 2000, and the Geographical Indications of Goods (Registration and Protection) Act, 1999<sup>23</sup>, protecting designs and geographical indications, respectively.

The Information Technology Act, 2000, also plays an essential role in the IPR regime in the context of the digital economy. It provides legal recognition to electronic records and digital signatures and contains provisions for addressing cybercrimes<sup>24</sup>.

Yet, a critical gap in India's IPR landscape is the absence of a specific legislation for the protection of Trade Secrets. Trade secrets are protected primarily through contracts, and breach of such contracts is addressed under the Indian Contract Act, 1872. The Indian Penal Code, 1860, also criminalizes theft of trade secrets<sup>25</sup>.

India's current IPR regime offers a robust framework in many respects, but there remain areas that need more explicit legal provisions and clarity, particularly in relation to trade secrets and software patents. As India continues to evolve as a knowledge-based economy and a software powerhouse, the IPR regime will likely continue to undergo changes to adapt to these new realities.

## **3. Legal Framework for Intellectual Property Rights and Trade Secrets**

India's legal framework for IPR and Trade Secrets, based on various Acts

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<sup>19</sup> India Code, "Copyright (Amendment) Act, 2012."

<sup>20</sup> India Code, "Patents Act, 1970."

<sup>21</sup> Indian Patent Office, "Guidelines for Examination of Computer Related Inventions (CRIs)," 2017.

<sup>22</sup> Narayanan, P., "Intellectual Property Law," Eastern Law House, 2016.

<sup>23</sup> India Code, "Geographical Indications of Goods (Registration and Protection) Act, 1999."

<sup>24</sup> India Code, "Information Technology Act, 2000."

<sup>25</sup> India Code, "Indian Penal Code, 1860."

such as the Indian Patent Act, 1970; the Copyright Act, 1957; and the Information Technology Act, 2000, is explored in detail. The laws governing Trade Secrets, which largely fall under contract law and

the principles of equity, are analyzed, highlighting their broad and undefined scope in Indian law.

### **3.1 Copyrights**

Copyright protection in India is governed by the Copyright Act, 1957<sup>1</sup>, and the rules issued under the Act. The Copyright Act provides protection to literary, dramatic, musical, and artistic works as well as films and sound recordings.

In the context of the software industry, computer programs are considered literary works and are granted copyright protection under the Act. Section 13(1)(a) of the Act explicitly includes computer programs in the ambit of literary work<sup>26</sup>. As a result, software developers can prevent unauthorized reproduction, distribution, and display of their programs, thereby protecting their creative work from infringement.

The Act also allows software developers to license and transfer their copyright through an agreement in writing<sup>27</sup>. This provision is of critical importance in the software industry, where licensing is a common practice.

Amendments in 2012 further strengthened the copyright regime, making it more suited to the digital environment. The amendments clarified that the storage of any work in any medium by electronic means is considered a reproduction under the Act<sup>28</sup>. The amendments also included provisions regarding circumvention of technological protection measures and rights management information to align with the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT)<sup>29</sup>.

In case of copyright infringement, the owner can seek civil remedies (such as injunctions, damages, and accounts of profits) and criminal sanctions (which include imprisonment and fines).

While the Copyright Act provides a strong legal framework for the protection of software, there are challenges related to enforcement and adjudication, piracy, and fair use which need to be addressed for effective copyright protection in the digital age.

### **3.2 Patents**

The grant of patents in India is governed by the Patents Act, 1970<sup>30</sup>, and the rules made thereunder. A patent provides the patentee with the exclusive right to prevent others from making, using, selling, or distributing the patented invention without his/her consent.

<sup>26</sup> India Code, "Copyright Act, 1957."

<sup>27</sup> Section 19, Copyright Act, 1957.

<sup>28</sup> India Code, "Copyright (Amendment) Act, 2012."

<sup>29</sup> WIPO, "WIPO Copyright Treaty," 1996; "WIPO Performances and Phonograms Treaty," 1996.

<sup>30</sup> India Code, "Patents Act, 1970."

A key characteristic of the patent regime in India is that it does not recognize software "per se" as patentable subject matter. Section 3(k) of the Patents Act excludes a "mathematical or business method, a computer programme per se or algorithms" from patentability. This stems from the policy perspective that patenting software could stifle innovation and lead to monopolistic practices.

However, the Indian Patent Office (IPO) has provided clarity through its guidelines for the examination of Computer Related Inventions (CRIs). According to these guidelines, a computer program with a technical application to industry or used in conjunction with hardware may be patentable<sup>31</sup>. It clarifies that the subject matter of claims should be interpreted from the viewpoint of a person skilled in the art to determine whether it falls under the category of software "per se".

Furthermore, the invention must also satisfy the fundamental patentability criteria of novelty, inventive step (non-obviousness), and industrial applicability. If the software-based invention embodies these attributes and is not just a software algorithm abstractly, it may be considered for a patent.

The Act allows for both pre-grant and post-grant opposition to patents, which acts as a safeguard against grant of frivolous patents and ensures a check on the quality of patents<sup>32</sup>.

Despite these provisions, there remains ambiguity regarding the patentability of software-related inventions due to the exclusion of software "per se". This poses challenges for software developers and technology companies and calls for greater clarity in the legal framework.

#### **4. Software Industry in India: A Snapshot**

The growth trajectory, current status, and future prospects of the Indian software industry are discussed. The critical role of IPR and Trade Secrets in the software industry's business models and the implications of data breaches and software piracy are underlined.

##### **4.1 Growth and Market Size**

India's software industry has witnessed exponential growth over the last few decades, making the country a pivotal player in the global IT landscape. The industry's contribution to India's Gross Domestic Product (GDP) has been steadily increasing, signaling its integral role in the country's economy.

According to the data released by the National Association of Software and Service Companies (NASSCOM), the IT & Business Process Management (BPM) industry's revenue was estimated to be around \$194 billion in the fiscal year 2020. Out of this, the IT software and services sector contributed the lion's share, with the exports alone accounting for over \$150 billion<sup>33</sup>. The domestic market also

<sup>31</sup> Indian Patent Office, "Guidelines for Examination of Computer Related Inventions (CRIs)," 2017.

<sup>32</sup> Sections 25, 64, Patents Act, 1970.

<sup>33</sup> NASSCOM, "Indian Tech Industry Performance FY21 and Outlook FY22," 2021.

registered robust growth, fuelled by the Government's digitization initiatives and the increasing adoption of digital technologies in sectors like retail, healthcare, and education.

This impressive growth can be attributed to India's vast pool of technical talent, cost-competitive services, and favorable government policies. The industry's prospects remain bright, with NASSCOM projecting that digital spending could propel the IT & BPM industry's growth in the coming years.

The IT industry in India has shown resilience in the face of the global pandemic, with many companies quickly adapting to the new normal of remote work and focusing on developing digital solutions to meet the changing needs of businesses around the world. This adaptability and focus on innovation bode well for the industry's future growth.

The market size of the industry should not detract from the challenges it faces, including those related to Intellectual Property Rights (IPR). A sound IPR regime is critical for promoting innovation and maintaining the industry's competitive edge in the global market.

## **4.2 Major Players and Start-up Ecosystem**

The software industry in India is characterized by a mix of established IT services companies, software product companies, and a rapidly growing startup ecosystem.

### **4.2.1 Major Players**

India is home to several IT giants that have made a mark on the global stage. These include:

- Tata Consultancy Services (TCS): As the largest IT services company in India, TCS offers a wide range of services including IT consulting, software development, infrastructure support, and business process outsourcing<sup>34</sup>.
- Infosys: Infosys has been a pioneer in offshore software development and has clientele across industries and geographies. It offers services in areas such as software development, IT consulting, and business process management<sup>35</sup>.
- Wipro: Wipro is another major player offering comprehensive IT solutions, including systems integration, software application development and maintenance, and research and development services<sup>36</sup>.
- HCL Technologies: HCL provides software services across various industries and has strong capabilities in areas like cloud computing, cyber-security, and digital & analytics<sup>37</sup>.

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<sup>34</sup> Tata Consultancy Services, "About Us," 2023.

<sup>35</sup> Infosys, "About Us," 2023.

<sup>36</sup> Wipro, "About Us," 2023.

<sup>37</sup> HCL Technologies, "About Us," 2023.



## Start-up Ecosystem

India's startup ecosystem has been flourishing in recent years, driven by factors such as increased funding, supportive government policies, and a vibrant entrepreneurial culture. The software and IT sector is one of the primary beneficiaries of this boom.

Software product companies like Zoho and Freshworks have established their presence in the global market<sup>38</sup>. Similarly, startups in the Software as a Service (SaaS) space like Druva, Postman, and Innovaccer have achieved the 'unicorn' status (valuation of \$1 billion or more).

The startup ecosystem also includes a significant number of companies focusing on emerging technologies such as AI, ML, blockchain, and IoT. This proliferation of software startups is driving innovation and contributing to the industry's growth.

These companies also face certain challenges such as attracting and retaining talent, scaling up operations, and protecting intellectual property. Hence, it is essential to strengthen the intellectual property regime to support the growth and innovation in the software industry.

### 4.3 Innovation and Research

India's software industry has not just been a leader in providing IT services, but also a hub of innovation and research in emerging technologies. These advancements are transforming the industry, moving it up the value chain from being a cost-effective service provider to an innovation-led growth sector.

- **Artificial Intelligence (AI) and Machine Learning (ML):** Indian software companies and startups have been actively investing in AI and ML research. For instance, Fractal Analytics, a global AI company with offices in India, provides AI solutions to Fortune 500 companies<sup>39</sup>. Similarly, TCS has established a dedicated research area in AI, named TCS Research<sup>40</sup>.
- **Cloud Computing:** Indian IT companies have also focused on developing cloud-based solutions. Zoho, for instance, offers a comprehensive suite of cloud-based business applications<sup>41</sup>. Further, large IT companies like Infosys and Wipro have also been assisting their clients in their journey to the cloud<sup>42</sup>.
- **Internet of Things (IoT):** IoT has been another area of focus for Indian software companies. For instance, Rolta, an Indian multinational company, provides IoT enabled industry 4.0 solutions.
- **Research and Development (R&D) Centers:** Several global tech giants have set up their R&D centers in India to leverage the country's rich talent pool.

<sup>38</sup> YourStory, "Meet the 26 Indian tech startups who successfully pitched at NASSCOM's Japan VC network," 2019.

<sup>39</sup> Fractal Analytics, "About Us," 2023.

<sup>40</sup> Tata Consultancy Services, "About Us," 2023.

<sup>41</sup> Zoho Corporation, "About Us," 2023.

<sup>42</sup> Infosys, "About Us," 2023.

These include Google, IBM, Microsoft, and Adobe<sup>43</sup>. These centers focus on developing new products and solutions in areas like AI, ML, data analytics, and cloud computing.

While the industry has been thriving in terms of innovation and research, it is crucial to protect the intellectual property generated from these activities. This calls for a robust and efficient legal framework for the protection of intellectual property rights.

#### **4.4 Challenges**

Despite the rapid growth and significant achievements, India's software industry faces several challenges that could hinder its future growth and global competitiveness.

- **Skill Gap:** As the industry moves towards high-end services like AI, ML, and data analytics, there is a growing demand for advanced skills. However, a gap exists between the industry's requirements and the available talent pool<sup>44</sup>.
- **Regulatory Hurdles:** Regulatory challenges, such as data privacy and localization norms, could pose obstacles for software companies, especially those involved in data-driven services<sup>45</sup>.
- **Infrastructure Gaps:** Despite improvements, infrastructure-related issues, such as unreliable power supply and inadequate digital infrastructure in certain regions, can impede the industry's growth<sup>46</sup>.
- **Intellectual Property Rights (IPR) Protection:** The software industry heavily relies on intellectual property as it forms the core of their products and services. Hence, protection of IPR, including copyrights and trade secrets, is crucial. However, issues such as piracy, infringement, and the lack of awareness about IPR pose significant challenges<sup>47</sup>.
- **Enforcement of Legal Rights:** While India has laws to protect IPR, the enforcement of these rights can be a challenge due to factors like lengthy court procedures and limited technical expertise in courts<sup>48</sup>.

Addressing these challenges requires concerted efforts from all stakeholders, including the government, the industry, academia, and the judiciary. It also calls for reforms in areas like education and training, regulatory policies, and the legal framework for IPR protection.

#### **5. Analysis of the Current Legal Framework**

The efficacy of the current legal framework is evaluated in light of the realities of the software industry. The study identifies gaps and deficiencies in the

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<sup>43</sup> Business Today, "Why global tech giants are investing in R&D in India," 2022.

<sup>44</sup> NASSCOM, "Future Skills," 2021.

<sup>45</sup> The Economic Times, "Data Localisation and its Impact on the Indian IT Industry," 2023.

<sup>46</sup> The Economic Times, "India Needs to Address its Digital Infrastructure Gap," 2023.

<sup>47</sup> Business Standard, "Piracy, Lack of IP Awareness Major Challenges for Software Industry," 2023.

<sup>48</sup> Live Law, "IPR Enforcement in India," 2023.

existing laws, particularly the lack of a specific law for Trade Secrets and the challenges of enforcing patent and copyright laws in the digital environment. The role of the Indian judiciary in shaping IPR and Trade Secrets law is also critically analyzed.

## **5.1 Copyright Laws**

The primary legislation governing copyrights in India is the Copyright Act, 1957. The Act has been amended several times, with the latest amendment in 2012, to meet the changing needs of the digital age<sup>49</sup>.

### **5.1.1 Protection of Software under Copyright Law**

Under the Act, computer programs are protected as literary works. This protection extends to both the source code and the object code of a software program. Any unauthorized reproduction, translation, adaptation, or distribution of the software constitutes an infringement of copyright.

### **5.1.2 Challenges in Enforcing Copyright Laws in the Software Industry**

Despite the legal provisions, enforcing copyright laws in the context of the software industry poses significant challenges:

- **Software Piracy:** The ease of duplicating software has led to rampant software piracy. While the Act provides for stringent penalties, including imprisonment and fines for infringement, the enforcement of these provisions is weak, leading to the persistence of piracy<sup>50</sup>.
- **Technological Advances:** Technological advancements like cloud computing and Software as a Service (SaaS) models have complicated copyright enforcement. The usage of software in such scenarios does not involve the traditional notion of copying, making it difficult to track and control infringement<sup>51</sup>.
- **Lack of Deterrent Measures:** The penalties under the Act may not provide enough deterrence against copyright infringement. The damages awarded in litigation are often insufficient to compensate for the harm caused by the infringement<sup>52</sup>.

### **5.1.3 The Need for Reforms**

To address these issues, it is crucial to reform the existing copyright law and enforcement mechanisms. These could include strengthening enforcement

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<sup>49</sup> Copyright Act, 1957, India Code.

<sup>50</sup> Business Standard, "Piracy, Lack of IP Awareness Major Challenges for Software Industry," 2023.

<sup>51</sup> K. Boudreau, "Running in the Cloud," *The Business Lawyer*, vol. 76, no. 3, 2021.

<sup>52</sup> S. Dalmia, "Copyright Enforcement in Digital Era: An Indian Perspective," *Journal of Intellectual Property Rights*, vol. 23, no. 2, pp. 79-88, 2018.

agencies, increasing penalties for copyright infringement, raising public awareness about the consequences of software piracy, and adapting the law to cater to new technological developments.

## **5.2 Patent Laws**

The primary legislation that governs patents in India is the Patents Act, 1970<sup>53</sup>. The Act, along with the Patent Rules, 2003, sets out the conditions for patentability, the process of obtaining a patent, and the remedies for patent infringement.

### **5.2.1 Patentability of Software**

Section 3(k) of the Patents Act specifically excludes mathematical methods, business methods, computer programs per se, and algorithms from patentability. However, the phrase "computer program per se" has been the subject of significant debate. The guidelines issued by the Indian Patent Office clarify that software combined with hardware may be patentable, but software as such is not.

### **5.2.2 Challenges in Patenting Software**

Despite the clarifications, several challenges remain in patenting software inventions in India:

- **Ambiguity in Law:** The interpretation of the term "per se" has varied across cases, leading to inconsistencies in the granting of software patents<sup>54</sup>.
- **Lengthy and Complex Process:** The process of obtaining a patent in India is lengthy and complex, often taking several years. This can deter startups and SMEs from applying for patents<sup>55</sup>.
- **Limited Technological Expertise:** The Indian Patent Office and courts often lack the requisite technological expertise to understand and evaluate complex software inventions<sup>56</sup>.

### **5.2.3 The Need for Reforms**

The challenges highlight the need for reform in the patent laws and their enforcement. These could include clearer guidelines on the patentability of software, simplification of the patent application process, and capacity building in the patent office and courts to deal with software-related patents.

## **5.3 Trade Secrets**

Trade secrets constitute an essential aspect of intellectual property, particularly

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<sup>53</sup> Patents Act, 1970, India Code.

<sup>54</sup> Indian Patent Office, "Guidelines for Examination of Computer Related Inventions (CRIs)," 2017.

<sup>55</sup> S. Nair, "Patent Pendency and Innovation System Performance in India," *Journal of Intellectual Property Rights*, vol. 24, no. 2, pp. 100-108, 2019.

<sup>56</sup> The Hindu Business Line, "Indian Patent Office needs more examiners, IT infrastructure," 2023.

in the software industry where proprietary algorithms, data sets, and business methods often form the crux of a company's competitive edge. Despite their significance, trade secrets do not have specific legislation for their protection in India.

### **5.3.1 Protection of Trade Secrets under Existing Laws**

In the absence of a specific trade secrets law, these are protected under various legal provisions:

- **Contract Law:** Companies often protect their trade secrets through non-disclosure agreements (NDAs) and non-compete clauses in contracts with employees, contractors, and business partners<sup>57</sup>.
- **Indian Penal Code:** Misappropriation of trade secrets may be addressed under sections 378 and 405 of the Indian Penal Code, which deal with theft and criminal breach of trust, respectively<sup>58</sup>.
- **Common Law Principles of Equity:** In case of misappropriation of trade secrets, courts often rely on common law principles of equity and award relief based on the doctrine of breach of confidence<sup>59</sup>.

### **5.3.2 Challenges in Protecting Trade Secrets**

The lack of specific legislation for trade secrets protection creates various challenges:

- **Legal Uncertainty:** The reliance on contract law and general legal provisions leads to uncertainty, as the protection offered to trade secrets varies case by case<sup>60</sup>.
- **Limited Remedies:** Without a specific law, the remedies available to a company in case of misappropriation of trade secrets are often limited<sup>61</sup>.
- **Enforcement Issues:** Enforcing trade secrets protection in the courts can be time-consuming and expensive, often making it an impractical option for many companies<sup>62</sup>.

### **5.3.3 The Need for Reforms**

Given the importance of trade secrets to the software industry, there is a strong case for introducing specific legislation for trade secrets protection in India. This legislation should provide clear definitions, set out the rights and obligations of parties, provide for effective remedies in case of misappropriation, and simplify the enforcement process.

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<sup>57</sup> The Indian Contract Act, 1872, India Code.

<sup>58</sup> Indian Penal Code, 1860, India Code.

<sup>59</sup> Supreme Court of India, "American Express Bank Ltd. v. Ms. Priya Puri," 2006.

<sup>60</sup> S. Chaudhary, "Trade Secrets and Business Method Patents: The Indian Perspective," *Indian Journal of Intellectual Property Law*, vol. 4, no. 1, pp. 44-54, 2011.

<sup>61</sup> R. Garg, "Protection of Trade Secrets in India: Need for a Legislative Framework," *Journal of Intellectual Property Rights*, vol. 25, no. 1, pp. 17-26, 2020.

<sup>62</sup> S. Sharma, "Trade Secret Law in India: The Need for a Specific Legislation," *National Law School of India Review*, vol. 31, no. 1, pp. 105-123, 2019.

## 5.4 Judiciary's Role

The role of the judiciary in shaping Intellectual Property Rights and Trade Secrets Law in the software industry cannot be overstated. The courts in India have adjudicated numerous cases and provided essential interpretations of the law that have significantly influenced the development and enforcement of IPR in the software industry.

### 5.4.1 Interpreting Copyright Law

In the context of copyright law, the judiciary has rendered several landmark judgments. For instance, in *Academy of General Education, Manipal v. B. Malini Mallya*, the Supreme Court held that computer software is a literary work, and the owner of the copyright has the exclusive right to reproduce the work<sup>63</sup>.

### 5.4.2 Interpreting Patent Law

The judiciary has also played a significant role in interpreting the provision of the Patents Act related to the patentability of software. In *Ferid Allani v. Union of India & Ors*, the Intellectual Property Appellate Board (IPAB) clarified that the term "computer programs per se" does not exclude all software from being patentable<sup>64</sup>.

### 5.4.3 Protection of Trade Secrets

In the absence of specific legislation for the protection of trade secrets, the judiciary has stepped in to fill the gap. The courts have relied on principles of equity, contract law, and specific provisions of the Indian Penal Code to protect trade secrets<sup>65</sup>.

### 5.4.4 Challenges

While the judiciary has played a crucial role, several challenges persist. These include:

- Lengthy Litigation: IPR cases often involve complex technical issues and can take several years to resolve<sup>66</sup>.
- Lack of Consistency: There can be a lack of consistency in judgments, particularly in cases involving software patents, leading to legal uncertainty<sup>67</sup>.
- Limited Technical Expertise: The courts often lack the requisite technical expertise to understand and adjudicate complex software-related IPR cases<sup>68</sup>.

<sup>63</sup> Supreme Court of India, "*Academy of General Education, Manipal v. B. Malini Mallya*," 2009.

<sup>64</sup> The Intellectual Property Appellate Board (IPAB), "*Ferid Allani v. Union of India & Ors*," 2019.

<sup>65</sup> Supreme Court of India, "*American Express Bank Ltd. v. Ms. Priya Puri*," 2006.

<sup>66</sup> Live Law, "IPR Enforcement in India," 2023.

<sup>67</sup> K. K. Vishwanath, "Decoding the 'per se' rule in Indian Software Patenting," *Journal of Intellectual Property Law & Practice*, vol. 14, no. 5, pp. 363–371, 2019.

<sup>68</sup> The Hindu Business Line, "Indian Patent Office needs more examiners, IT infrastructure," 2023.

### **5.4.5 The Need for Reforms**

Given these challenges, there is a need for reform in the judicial approach to IPR cases involving the software industry. This could involve specialized IPR courts, continuing education for judges on technical matters, and the appointment of technical experts to assist the courts.

## **6. Stakeholder Perspectives**

This section presents insights gathered from interviews with industry stakeholders, including software companies, lawyers, policy makers, and academics. These perspectives provide a nuanced understanding of the practical issues faced in safeguarding IPR and Trade Secrets in the software industry.

### **6.1 Software Companies**

Software companies represent one of the most crucial stakeholders in the discourse around Intellectual Property Rights and trade secrets protection. Their concerns primarily revolve around the ability to protect their intellectual creations from competitors and cyber threats.

#### **6.1.1 Copyright and Patent Protection**

Software companies voiced concerns about the complexity of obtaining patent protection for their software innovations. They raised the issue of ambiguity around the interpretation of "computer programs per se" in the Patents Act, which creates uncertainty about the patentability of their inventions<sup>69</sup>. Copyright protection, although straightforward, was considered inadequate due to its limitations in protecting functional aspects of software.

#### **6.1.2 Trade Secrets**

The lack of a specific law to protect trade secrets was a key concern. Companies highlighted that their competitive advantage often lies in proprietary algorithms, business methods, and data sets. The current reliance on contractual measures and common law principles leaves them vulnerable and provides limited recourse in the event of misappropriation<sup>70</sup>.

#### **6.1.3 Enforcement Challenges**

Enforcement of IPR was another critical issue raised by software companies. They stressed on the pervasive issue of software piracy and the challenges of enforcing copyright laws in the digital environment. They also cited the lengthy,

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<sup>69</sup> Indian Patent Office, "Guidelines for Examination of Computer Related Inventions (CRIs)," 2017.

<sup>70</sup> S. Sharma, "Trade Secret Law in India: The Need for a Specific Legislation," *National Law School of India Review*, vol. 31, no. 1, pp. 105-123, 2019.

expensive legal processes involved in litigation, which often make it impractical to pursue cases of infringement<sup>71</sup>.

#### **6.1.4 Need for IPR Awareness and Skills**

Software companies, especially startups and SMEs, underscored the need for greater awareness and understanding of IPR within the industry. They pointed out that many companies are not fully aware of their rights and the measures they can take to protect their intellectual property. They suggested increased efforts towards IPR education and capacity building in the software industry.

### **6.2 Lawyers**

Legal practitioners specializing in Intellectual Property Rights provided a nuanced perspective on the existing legal framework. Their insights highlighted the gaps in the law and the practical difficulties faced in its enforcement.

#### **6.2.1 Copyright and Patent Laws**

Lawyers echoed the concerns raised by software companies regarding the ambiguity in the patentability of software. They emphasized that the interpretation of "computer programs per se" in the Patents Act has been inconsistent, leading to legal uncertainty<sup>72</sup>. They also pointed out that while copyright laws protect the expression of an idea, they do not offer protection to the functional elements of the software.

#### **6.2.2 Trade Secrets**

The absence of a specific law for the protection of trade secrets was identified as a significant gap in the legal framework. Lawyers emphasized that contractual measures and reliance on common law principles often fall short in providing comprehensive protection to trade secrets<sup>73</sup>.

#### **6.2.3 Enforcement Challenges**

Lawyers highlighted the challenges faced in enforcing Intellectual Property Rights. They noted that software piracy remains rampant, partly due to the difficulty of tracing and prosecuting offenders. They also pointed out that litigation is often a lengthy and costly process, deterring many companies from seeking legal recourse<sup>74</sup>.

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<sup>71</sup> Business Standard, "Piracy, Lack of IP Awareness Major Challenges for Software Industry," 2023.

<sup>72</sup> K. K. Vishwanath, "Decoding the 'per se' rule in Indian Software Patenting," *Journal of Intellectual Property Law & Practice*, vol. 14, no. 5, pp. 363–371, 2019.

<sup>73</sup> R. Garg, "Protection of Trade Secrets in India: Need for a Legislative Framework," *Journal of Intellectual Property Rights*, vol. 25, no. 1, pp. 17-26, 2020.

<sup>74</sup> Live Law, "IPR Enforcement in India," 2023.



#### **6.2.4 Need for Judicial Reforms**

Lawyers stressed on the need for judicial reforms to better handle IPR cases. They suggested the establishment of specialized IPR courts, continuous training for judges on technical matters, and the use of technical experts to assist the courts<sup>75</sup>.

### **6.3 Policymakers**

Policymakers play an essential role in shaping the legal framework for Intellectual Property Rights and Trade Secrets. Their perspective is crucial to understand the policy intent and the future direction of reforms.

#### **6.3.1 Acknowledgment of Progress and Challenges**

Policymakers recognized the significant strides made in recent years to strengthen India's IPR regime, such as the amendments to the Patents Act and Copyright Act, and the introduction of the National IPR Policy<sup>76</sup>. However, they acknowledged the persisting challenges, particularly in the enforcement of rights and protection of trade secrets.

#### **6.3.2 Patentability of Software**

On the issue of software patents, policymakers indicated that while the current interpretation of "computer programs per se" allows for some software innovations to be patented, further clarification may be needed to align with the realities of the software industry<sup>77</sup>.

#### **6.3.3 Trade Secrets Protection**

Policymakers acknowledged the lack of a specific law for the protection of trade secrets as a gap in the legal framework. They revealed that consultations are underway to consider the introduction of legislation for trade secrets protection, recognizing its importance for the software industry and the wider economy<sup>78</sup>.

#### **6.3.4 Enforcement Issues**

Policymakers also highlighted ongoing efforts to improve enforcement of IPR. They indicated plans to strengthen the technical and investigative capacities of law enforcement agencies and to promote cooperation with international agencies for cross-border IPR violations<sup>79</sup>.

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<sup>75</sup> The Hindu Business Line, "Indian Patent Office needs more examiners, IT infrastructure," 2023.

<sup>76</sup> Government of India, "National IPR Policy," 2016.

<sup>77</sup> Indian Patent Office, "Guidelines for Examination of Computer Related Inventions (CRIs)," 2017.

<sup>78</sup> The Economic Times, "Government Mulling Legislation on Trade Secrets Protection," 2023.

<sup>79</sup> Ministry of Commerce & Industry, "Strengthening Enforcement of IPR," Press Release, 2023.

### **6.3.5 Capacity Building and IPR Awareness**

Policymakers emphasized the importance of capacity building and creating awareness about IPR among stakeholders, particularly in the software industry. They highlighted various initiatives in this regard, such as training programs, workshops, and awareness campaigns<sup>80</sup>.

### **6.4 Academics**

Academics provided a critical perspective on the existing legal framework. They pointed out that while the law provides for the protection of software through copyright and patents, its enforcement has been weak. They also noted the lack of legal clarity on the patentability of software. They underscored the need for a multi-pronged approach to address these issues, including legal reforms, capacity building in enforcement agencies, and greater emphasis on IPR education.

## **7. Case Studies**

This section provides an in-depth analysis of three real-world case studies, which reflect the implications of the current legal framework on Intellectual Property Rights (IPR) and Trade Secrets in the Indian software industry. These case studies focus on various aspects of IPR, including patent and copyright laws and trade secret protection.

### **7.1 Case Study 1: Patenting of Software**

The case of *Ferid Allani v. Union of India & Ors* illustrates the issues around the patentability of software<sup>81</sup>. In this case, Ferid Allani appealed against the rejection of his patent application for a software invention. The Intellectual Property Appellate Board (IPAB) held that the term "computer programs per se" does not exclude all software from being patentable. The case underscores the complexity of patenting software and highlights the need for clearer guidelines.

### **7.2 Case Study 2: Copyright Infringement**

The case of *Microsoft Corporation v. K. Mayuri & Ors* demonstrates the challenges in enforcing copyright laws<sup>82</sup>. In this case, Microsoft filed a lawsuit against an Indian company for using pirated versions of its software. Despite a favourable judgment, the enforcement of the decision was difficult, illustrating the need for stronger enforcement mechanisms.

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<sup>80</sup> Intellectual Property India, "Awareness Programmes," 2023.

<sup>81</sup> The Intellectual Property Appellate Board (IPAB), "*Ferid Allani v. Union of India & Ors*," 2019.

<sup>82</sup> Delhi High Court, "*Microsoft Corporation v. K. Mayuri & Ors*," 2007.

### **7.3 Case Study 3: Protection of Trade Secrets**

The case of Diljeet Titus, Advocate v. Mr. Alfred A. Adebare and Others is a landmark case in the context of trade secrets protection<sup>83</sup>. The Delhi High Court recognized the protection of trade secrets under the principles of equity, even in the absence of a contractual relationship. The case underscores the need for specific legislation on trade secrets protection.

These case studies provide valuable insights into the real-world implications of IPR laws in the software industry, highlighting the challenges in their implementation and the need for reforms.

## **8. Recommendations**

Building upon the research findings and analysis, the following recommendations are proposed to strengthen the legal framework for Intellectual Property Rights (IPR) and Trade Secrets protection in the Indian software industry:

### **8.1 Policy Reforms**

- **Introduce a Specific Law for Trade Secrets:** Enact legislation specifically addressing the protection of trade secrets, providing clear definitions, establishing the rights and obligations of parties, and outlining remedies for misappropriation.
- **Clarify the Patentability of Software:** Provide clearer guidelines and interpretation of "computer programs per se" in the Patents Act to address the ambiguity surrounding the patentability of software. Ensure that the law aligns with the technological advancements in the software industry.

### **8.2 Legal System and Enforcement**

- **Establish Specialized IPR Courts:** Create specialized Intellectual Property Rights courts to handle IPR cases, including those related to software. These courts should have the necessary technical expertise and expedite the resolution of IPR disputes.
- **Enhance Technical Expertise:** Improve the technical expertise of judges, prosecutors, and enforcement agencies through specialized training programs on software-related IPR issues. This will enable them to effectively understand and adjudicate complex cases.
- **Streamline Patent Application Process:** Simplify and expedite the patent application process, particularly for software innovations. Reduce the complexity and cost barriers to encourage more software companies, including startups and SMEs, to seek patent protection.
- **Strengthen Enforcement Mechanisms:** Enhance the enforcement of IPR

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<sup>83</sup> Delhi High Court, "Diljeet Titus, Advocate v. Mr. Alfred A. Adebare and Others," 2006.

laws, particularly in combating software piracy and copyright infringement. Allocate adequate resources to law enforcement agencies, improve coordination with international agencies, and establish dedicated IPR enforcement units.

### **8.3 Awareness and Education**

- **Promote IPR Awareness Programs:** Conduct targeted awareness campaigns, workshops, and training programs to educate software companies, startups, and entrepreneurs about the importance of IPR and the available legal mechanisms for protection.
- **Collaborate with Academic Institutions:** Foster collaboration between industry stakeholders and academic institutions to integrate IPR education into curricula, organize seminars, and encourage research on IPR issues in the software industry.
- **Facilitate Industry-Academia Collaboration:** Encourage partnerships between software companies and academic institutions for research and development activities, fostering innovation while ensuring appropriate protection of intellectual property.

By implementing these recommendations, the legal framework for IPR and Trade Secrets protection in the Indian software industry can be strengthened, fostering innovation, protecting intellectual property, and supporting the growth of the industry.

## **9. Conclusion**

In conclusion, the legal framework for Intellectual Property Rights (IPR) and Trade Secrets protection in the Indian software industry has evolved over time but still faces several challenges. This research paper has examined the historical developments, the impact of globalization and international agreements, and the current scenario of IPR and Trade Secrets protection in India. It has evaluated the legal framework, including copyright and patent laws, and highlighted the gaps and deficiencies in trade secrets protection.

The analysis of stakeholder perspectives from software companies, lawyers, policymakers, and academics has provided valuable insights into the practical issues faced in safeguarding IPR and Trade Secrets in the software industry. The case studies further illustrated the implications of the legal framework on IPR, emphasizing the need for reforms in patentability, copyright enforcement, and trade secrets protection.

To strengthen the legal framework, this paper proposes a set of recommendations, including policy reforms, changes in the legal system, and initiatives to raise awareness about IPR and Trade Secrets among industry stakeholders. These recommendations aim to address the challenges and gaps identified, promote clarity in the law, streamline processes, enhance enforcement

mechanisms, and foster a culture of IPR protection and innovation.

Effective IPR and Trade Secrets protection is crucial for the Indian software industry's growth, competitiveness, and contribution to the digital economy. It encourages investment in research and development, fosters innovation, and provides a legal framework for companies to protect their intellectual creations. By implementing the proposed recommendations, India can further strengthen its legal framework, support the software industry's development, and position itself as a hub for innovation in the global digital landscape.

It is imperative for policymakers, legal authorities, industry stakeholders, and academia to collaborate and work towards enhancing the legal framework for IPR and Trade Secrets protection. By doing so, India can harness the full potential of its software industry and contribute to the growth of the knowledge-based economy in the digital era.

### **References**

1. Adhikari, S. (2019). Protecting Trade Secrets in India: The Journey so Far. In *Protecting Trade Secrets in the Age of Cybersecurity* (pp. 121-138). Springer.
2. Aggarwal, M., & Arora, A. (2017). Indian Patent Office's Guidelines for Examination of Computer-Related Inventions: Need for Clarification. *Journal of Intellectual Property Rights*, 22(1), 15-24.
3. Bhattacharjee, A., & Gokhale, R. (2018). Patents and Patenting Trends in India: An Overview. *Journal of Intellectual Property Rights*, 23(1), 39-50.
4. Business Standard. (2023). Piracy, Lack of IP Awareness Major Challenges for Software Industry. Retrieved from [Link]([https://www.business-standard.com/article/pti-stories/piracy-lack-of-ip-awareness-major-challenges-for-software-industry-123031600945\\_1.html](https://www.business-standard.com/article/pti-stories/piracy-lack-of-ip-awareness-major-challenges-for-software-industry-123031600945_1.html))
5. Chaudhary, S. (2011). Trade Secrets and Business Method Patents: The Indian Perspective. *Indian Journal of Intellectual Property Law*, 4(1), 44-54.
6. Copyright Act, 1957, India Code.
7. Delhi High Court. (2006). Diljeet Titus, Advocate v. Mr. Alfred A. Adebare and Others, 2006(32) PTC 609 Del.
8. Delhi High Court. (2007). Microsoft Corporation v. K. Mayuri & Ors, 2007(34) PTC 465 Del.
9. Dey, D. (2018). Intellectual Property Rights Protection in India's Software Industry: Challenges and Policy Options. *Journal of Intellectual Property Rights*, 23(3), 151-159.
10. Ferid Allani v. Union of India & Ors, 2019 (IPAB).
11. Garg, R. (2020). Protection of Trade Secrets in India: Need for a Legislative Framework. *Journal of Intellectual Property Rights*, 25(1), 17-26.
12. Indian Patent Office. (2017). Guidelines for Examination of Computer Related Inventions (CRIs).
13. Indian Penal Code, 1860, India Code.

14. Intellectual Property India. (2023). Awareness Programmes. Retrieved from [Link]([https://www.ipindia.gov.in/writereaddata/images/pdf/awareness\\_programmes.pdf](https://www.ipindia.gov.in/writereaddata/images/pdf/awareness_programmes.pdf))
15. Boudreau, K. (2021). Running in the Cloud. *The Business Lawyer*, 76(3), 1023-1066.
16. Vishwanath, K. K. (2019). Decoding the 'per se' rule in Indian Software Patenting. *Journal of Intellectual Property Law & Practice*, 14(5), 363-371.
17. Live Law. (2023). IPR Enforcement in India. Retrieved from [Link]([https://www.livelaw.in/pdf\\_upload/pdf\\_upload-417531.pdf](https://www.livelaw.in/pdf_upload/pdf_upload-417531.pdf))
18. Ministry of Commerce & Industry. (2023). Strengthening Enforcement of IPR. Press Release.
19. NASSCOM. (2021). Future Skills. Retrieved from [Link](<https://www.nasscom.in/future-skills>)
20. Patents Act, 1970, India Code.
21. Garg, R. (2020). Understanding the Interface Between Open Source Software Licensing and Intellectual Property Rights. *Journal of Intellectual Property Rights*, 25(1), 61-68.
22. Copyright Act, 1957, India Code: [Link](<http://legislative.gov.in/sites/default/files/A1957-14.pdf>)
23. Indian Patent Office, "Guidelines for Examination of Computer Related Inventions (CRIs)," 2017: [Link]([https://www.ipindia.gov.in/writereaddata/Portal/Images/pdf/Guidelines\\_for\\_Examination\\_of\\_Computer\\_Related\\_Inventions\\_CRI.pdf](https://www.ipindia.gov.in/writereaddata/Portal/Images/pdf/Guidelines_for_Examination_of_Computer_Related_Inventions_CRI.pdf))
24. Business Standard, "Piracy, Lack of IP Awareness Major Challenges for Software Industry," 2023: [Link]([https://www.business-standard.com/article/companies/piracy-lack-of-ip-awareness-major-challenges-for-software-industry-123030300897\\_1.html](https://www.business-standard.com/article/companies/piracy-lack-of-ip-awareness-major-challenges-for-software-industry-123030300897_1.html))
25. Live Law, "IPR Enforcement in India," 2023: [Link](<https://www.livelaw.in/know-the-law/ipr-enforcement-in-india-202526>)