Nishith Desai Associates
LEGAL AND TAX COUNSELING WORLDWIDE

MUMBAI SILICON VALLEY BENGALURU SINGAPORE NEW DELHI NEW YORK GIFT CITY

Research

Patent Blind Spots in India's Startup and MSME Landscape

Structural Barriers and Strategic Remedies

October 2025

ippro

Research

Patent Blind Spots in India's Startup and MSME Landscape

Structural Barriers and Strategic Remedies

October 2025

DMS Code: 138273.2

ip pro

is an associate firm of

Nishith Desai Associates
LEGAL AND TAX COUNSELING WORLDWIDE

FT INNOVATIVE LAWYERS 2019
FINANCIAL TIMES
ASIA-PACIFIC WINNER

Ranked as the 'Most Innovative Indian Law Firm' in the prestigious FT Innovative Lawyers Asia Pacific Awards for multiple years. Also ranked amongst the 'Most Innovative Asia Pacific Law Firm' in these elite Financial Times Innovation rankings.

Chambers AND PARTNERS

IFLR1000

The LEGAL 500

BENCHMARK LITIGATION

asialaw

WWL

ASIAN LEGAL BUSINESS

INDIA BUSINESS LAW JOURNAL

INDIA BUSINESS LAW JOURNAL THE A LIST 2023 2024 LAW ASIA

INDIA BUSINESS LAW JOURNAL DEALMAKER 2023 LAW ASIA

Mergermarket An Acuris company

ITR WORLD TAX

iel ELITE

BUSINESS TODAY

THE NATIONAL LAW REVIEW

equalFi

IDEX LEGAL AWARDS

LEGAL ERA BY THE PEOPLE. FOR THE PEOPLE. OF THE PEOPLE

LawWiser .com

About IPpro

IPpro is a specialized firm dedicated to helping clients create, manage, and monetize their patent portfolios. With a seasoned team of patent agents, attorneys, engineers, pharmacists, biotechnologists, and IP consultants from premier institutions in India and the United States, we bring a unique blend of legal, technical, and industry expertise to every engagement.

Our research-driven and industry-focused approach ensures that we not only protect intellectual assets but also maximize their commercial value. We work closely with clients to identify and analyze their core IP assets, evaluate their lifespan and market coverage, and build tailored, future-ready patent portfolios.

By leveraging the diverse backgrounds of our professionals, we provide end-to-end support through every stage of patenting, from drafting and filing to prosecution, portfolio management, and enforcement. This holistic approach, coupled with robust systems and processes, enables us to deliver cost-effective, comprehensive, and high-quality patent solutions that empower our clients to focus on innovation.

Headquartered in Bangalore, with offices in Mumbai and Silicon Valley, IPpro serves a truly global clientele. Founded in 2005 by internationally acclaimed attorney Nishith Desai, we continue to be a trusted partner for organizations seeking to safeguard and unlock the potential of their innovations.

IPpro is an Associate firm of Nishith Desai Associates.

Disclaimer

Contact

For any help or assistance please email us on **concierge@nishithdesai.com**
or visit us at **www.nishithdesai.com**.

Acknowledgements

IPpro Team

Varun Kumar
varun.kumar@ipproinc.com

Varun, with 14 years of experience, leads the patent analytics services at IPpro. He is an electrical engineer from Mumbai University and certified product manager, specializing in patent research, invalidity searches, and technology scouting across multiple domains.

Priyadarsini Shanmugam
priyadarsini.s@ipproinc.com

Priya leads IPpro's Lifesciences domain with 17 years of IP experience. She holds a biotechnology degree and master's in law from UC Berkeley School of Law. She has extensive experience with patent firms, multinational companies, and global pharmaceutical in-house IP teams.

Abhay Porwal
abhay.porwal@ipproinc.com

Abhay leads overall operations at IPpro with over 20 years of IP industry experience. He is a registered patent agent with the IPO and holds a degree in electrical engineering from IIT Bombay.

Contents

List of Abbreviations

Abbreviation	Description
MSME	Micro, Small and Medium Enterprises
GDP	Gross Domestic Product
IPR	Intellectual Property Rights
GOI	Government of India
SIDBI	Small Industries Development Bank of India
NIPAM	National Intellectual Property Awareness Mission
DPIIT	The Department for Promotion of Industry and Internal Trade
SaaS	Software as a Service
Deep tech	Deep Technology
Agritech	Technology in Agriculture
Fintech	Financial technology
Healthtech	Healthcare Technology
SME	Small and Medium Enterprises
TRIPs	Trade-Related Aspects of Intellectual Property Rights
NMCP	National Manufacturing Competitiveness Programme
CDSCO	Central Drugs Standard Control Organization
WIPO	World Intellectual Property Organization
ADR	Arbitration & Dispute Resolution
AIM	Atal Innovation Mission
NASSCOM	National Association of Software and Service Companies
IIGP	Indian Innovation Growth Program
DST	Department of Science & Technology
SIP-EIT	Support for International Patent Protection in Electronics and IT
MeitY	Ministry of Electronics and Information Technology
E&IT	Electronics and Information Technology
KIPA	Korea Invention Promotion Association
MSS	Ministry of SMEs and Startups

Executive Summary

India's innovation economy faces a critical vulnerability: its most dynamic sectors remain largely disconnected from intellectual property protection.[1] While the country has achieved a remarkable 44% surge in total IP filings over five years, driven by 180% growth in patents and 266% increase in designs, startups and MSMEs together account for less than 10% of annual patent applications.[2] This gap represents more than administrative oversight; it exposes millions of innovations to competitive appropriation and constrains India's ability to monetize its creative capacity.

The disconnect stems from structural misalignments rather than simple awareness deficits. Despite government schemes offering substantial financial support, including reimbursements up to INR 1 lakh for domestic patents and INR 10,000 for trademarks, utilization remains disappointingly low.[3] A 2025 SIDBI survey reveals that 35% of micro-enterprises avoid government portals entirely, citing fear of regulatory scrutiny and lack of knowledge about benefits. This behavioral pattern reflects deeper systemic issues: only 9% of MSMEs[4] demonstrate thorough understanding of regulatory frameworks, indicating fundamental capability gaps that extend well beyond IP literacy.

The challenge is compounded by sector-specific constraints. Manufacturing MSMEs prefer trade secrets over public disclosure. Deep-tech startups struggle with demonstrating global novelty in rapidly evolving fields. Biotech firms navigate dual compliance requirements across patent and regulatory approval systems. Software companies face uncertainty around patentable subject matter despite recent clarifications in examination guidelines.

Current government interventions, while well-intentioned, operate largely in isolation. The National Intellectual Property Awareness Mission has successfully reached 2.5 million students and faculty, representing significant long-term investment in IP culture.[5] However, these broad-based initiatives fail to address the specific procedural, financial, and strategic barriers that prevent immediate engagement by existing enterprises.

The solution requires systematic integration rather than standalone programs. Success depends on embedding IP capabilities seamlessly into existing business ecosystems, making protection automatic rather than optional. This involves transforming incubators into IP hubs, enabling universities to accept equity stakes in lieu of licensing fees, creating IP-backed financial products, and establishing accessible dispute resolution mechanisms specifically designed for small enterprises.

1 Ministry of Micro, Small and Medium Enterprises, Annual Report 2024-25; SIDBI, "Understanding Indian MSME Sector: Progress and Challenges," 2025.

2 PIB Press Releases: Press Information Bureau, Ministry of Commerce & Industry, various releases 2024-2025 on IP filing statistics and NIPAM achievements.

3 innovative.msme.gov.in - MSME Innovative Scheme.

4 Ministry of Micro, Small and Medium Enterprises, Annual Report 2024-25; SIDBI, "Understanding Indian MSME Sector: Progress and Challenges," 2025.

5 Press Information Bureau, Ministry of Commerce & Industry, various releases 2024-2025 on IP filing statistics and NIPAM achievements.

The stakes extend beyond individual company protection. In an increasingly knowledge-driven global economy, countries with weak patent cultures risk permanent relegation to low-value segments of international value chains. India's demonstrated innovation capacity, from frugal space programs to revolutionary mobile payment systems, could become a source of sustainable competitive advantage rather than commoditized knowledge available to competitors.

The window for transformation is narrowing as technological change accelerates, and global IP competition intensifies. India must move decisively from awareness-building to capability-building, creating institutional frameworks that convert entrepreneurial energy into protected intellectual assets. The prize is an innovation economy where ideas become valuable assets, small companies compete globally on technological merit, and India's creative capacity translates directly into economic power.

Abstract

India's innovation economy is undergoing rapid expansion, powered by a thriving startup ecosystem and an extensive micro, small, and medium enterprise (MSME) sector. Despite their pivotal contributions to GDP, exports, and employment, the participation of these entities in the patent system remains disproportionately low. This underutilization exposes innovations to risks of misappropriation and constrains the nation's ability to monetize intellectual property effectively.

Through policy analysis, sectoral mapping, and comparative international observations, this research identifies systemic weaknesses spanning capability gaps, structural constraints, and missed opportunity pathways. Key barriers include prohibitive costs, procedural complexities, limited awareness, and sector-specific exclusions. The paper proposes strategic reforms aimed at embedding IP capability within entrepreneurial ecosystems, reducing procedural friction, enabling effective enforcement, and creating viable monetization channels. Strengthening patent engagement emerges as a critical lever for enhancing India's technology sovereignty, global competitiveness, and long-term innovation resilience.

Introduction

Over the last decade, India has transitioned from a services-driven economy to one where innovation-led enterprises are assuming a central role.[1] As of mid-2025, more than 1.7 lakh DPIIT-recognized startups operate in India,[2] spanning diverse verticals such as SaaS, Deep tech, Agritech, Fintech, and Healthtech. This growth mirrors global trends where entrepreneurial ecosystems function as hubs for disruptive technologies and niche market solutions. Alongside, the MSME sector in India comprising over 63 million units and employing over 110 million people, remains the economic backbone, manufacturing 7500 products, generating approximately 30% of GDP.[3] Further, MSME exports have grown from ₹3.95 lakh crore during 2020-21 to ₹12.39 lakh crore during 2024-2025, accounting for 45.79% of total exports as of May 2024.[4]

Yet, in the face of such vibrancy, participation in the patent system remains marginal: startups and MSMEs together account for less than 10% of the total annual Patent filings.[5] This gap is more than an administrative issue; it represents a systemic vulnerability. Without adequate IP protection, Indian-origin innovations risk premature commoditization, market capture by foreign entities, and erosion of competitive advantage. In Europe, only 10% of SMEs report that they own registered IPRs, and 93 % of SMEs that have registered IPRs have seen a positive impact resulting from that registration.[6] This correlates the key interrelationship between MSME's with IP assets and its economic significance.

The present paper aims to identify the structural, legal, and capability-related factors underpinning this significance, while outlining a roadmap for targeted reform.

1 Ministry of Commerce & Industry - Fifth Edition of National Startup Awards Opens for Applications on 14 July 2025.

2 Ministry of Micro, Small and Medium Enterprises – Annual Report 2024-25.

3 Id.

4 Saurabh Barnwal, Startups and MSMEs: How Legal Frameworks Can Foster Innovation and Growth in India, 8 Int'l J. L. Mgmt. & Human. 458, 458–468 (2025).

5 Controller General of Patents, Designs and Trademarks, Annual Report 2023-24; Indian Patent Office examination guidelines and statistics.

6 European DIGITAL SME Alliance. (2023, November 30). Intellectual Property Awareness to Empower SMEs: Navigating Opportunities for Innovation and Sustainable Growth.

Literature Context and Conceptual Framework

Global research on SME patent participation consistently points to three recurring inhibitors such as inadequate IP literacy, prohibitive transaction and enforcement costs, and legal uncertainties surrounding subject matter eligibility. In India, these challenges are amplified by structural inefficiencies and a regulatory landscape that, while aiming to prevent monopolistic overreach, inadvertently discourages filings in emerging technology domains.

This study adopts a three-dimensional analytical framework examining capability gaps, structural and legal constraints, and opportunity pathways.

I. Capability Gaps

India presents a unique innovation landscape that needs to assess IP awareness among its innovators especially with the burgeoning start-up ecosystem. The post-TRIPs India had faced challenges in IP awareness around complex IP laws and regulations due to its requirement for harmonization. This coupled with challenging access to legal resources further amplified the hurdles faced by innovators in protecting their Intellectual assets.

In May of 2010, the Government of India's launched the National Manufacturing Competitiveness Programme (NMCP) to enhance global competitiveness of MSME's by supporting technology capability including Intellectual Property awareness[1]. The scheme acknowledged in its guidelines "***that while majority of the countries have adopted strategies for implementing strong IPR protection for strengthening their industries and trades, Indian industries, particularly the MSME are lagging behind in recognizing the importance of IPR and adopting IPR as a business strategy for enhancing competitiveness***".[2] The scheme promoted establishment of governmental and quasi-governmental institutions with financial support to conduct training, workshops, national and international exchange programs.

Policy makers do recognize that technology is a key differentiator for the MSME sector to remain globally competitive, and IP protection aids in the competitive edge in the complex and ever shifting global trade.

The key challenges this industry faces include but are not limited to absence of institutionalized IP mentorship, lack of integration of patent strategy into business planning, and limited access to specialized legal expertise.

II. Structural and Legal Constraints

The patenting process for an Indian MSME is complex and cumbersome. It adds an additional level of structural barrier in addition to manufacturing, regulatory and marketing challenges specific to this sector. Typically, due to the size of the companies in this industry most of the MSME's do not have any in-house IP departments. They tend to depend on external firms or experts for filing IP protections and faces challenges when formulating effective IP strategy in comparison to other large capital organizations.

1 https://www.dcmsme.gov.in/schemes/ipr10.pdf.

2 https://www.dcmsme.gov.in/schemes/guidelines-uk.pdf.

The multi-step process starting from Patent search, Patent drafting, filing the specification with jurisdiction specific Patent office and prosecution requires diligence and strategy et every step to maximize the IP investment.

Further, delayed examination processes typically place an unpredictable burden on MSME's. As of early 2023, the average patent pendency (***i.e., the time from application to final disposal***) in India was reduced to 53 months from 64 months in 2017.[3] In 2020, number of patents granted in India was 26, 361, merely 5% of China where 5.3 lakh patents were granted and 7.5% of US where 3.5 lakh patents were granted in the same year.[4] Many MSMEs hold off on enforcing their patents against any allegedly infringing products or competitors during this time. This long waiting period can make patent technology obsolete or allow larger competitors to enter the market with similar products

Secondly, while patent law is generally applicable, the nuances of what is patentable in certain fields, such as software, or traditional knowledge, can create additional hurdles for MSMEs operating within these industries. Some sectors such as software innovations, pharmaceuticals and agricultural sectors face additional challenges to novelty and inventiveness criteria for grant of patents.

Thirdly, the costs associated with patent filing, including official fees and professional fees can be substantial for an MSME. While government schemes have reduced some of these costs, they still represent a significant investment with no guarantee of successfully prosecuting the IP.

A combination of these and more make Start-up's and MSMEs which often lack the resources to enforce their intellectual property rights in legal proceedings, hesitant to fully exercise their IP Rights.

III. Opportunity Pathways

Recognizing these challenges, the government of India had introduced various schemes to assist MSMEs both financially and techno-legally. The NIPAM Mission was launched with the ambitious goal of fostering a robust intellectual property (IP) culture across India[5].

Other schemes introduced by the Government of India include MSME Innovation Scheme[6] designed to enhance the IP culture in India and IP-Yatra[7] are the few. Despite its noble intentions and dedicated efforts, NIPAM and MSME innovation, like many large-scale awareness programs, faces inherent challenges in fully realizing its objectives within the diverse and geographically spread-out MSME landscape.

One primary hurdle is the sheer scale of the MSME sector. With millions of enterprises, many operating in remote or semi-urban areas, reaching every potential beneficiary is an enormous logistical task. Limited access to technology, coupled with language barriers in some regions, can further complicate the dissemination of information.

3 https://timesofindia.indiatimes.com/business/india-business/at-over-90k-patent-filings-highest-in-2-decades/articleshow/107272341.cms.

4 https://eacpm.gov.in/wp-content/uploads/2023/07/1-Patenting-Ecosystem.pdf.

5 National Intellectual Property Awareness Mission (NIPAM) (India, 2021) Press Information Bureau, Government of India, 11 Aug. 2022.

6 https://innovative.msme.gov.in.

7 Ministry of Micro, Small & Medium Enterprises. (2023). National IP Yatra 2023 Report.

Yet another significant challenge is perceived relevance. Many MSME owners, particularly those engaged in traditional manufacturing or services, may not immediately grasp the direct impact of IP on their day-to-day operations or long-term growth. They might prioritize immediate operational concerns over what they perceive as abstract techno-legal concepts. This necessitates a more tailored approach, demonstrating tangible benefits and relatable case studies to illustrate the value of IP protection.

Furthermore, fear of regulatory scrutiny and a general lack of knowledge about government portals and schemes are deeply ingrained behavioral trends among some MSMEs.[8] This reluctance to engage with formal government initiatives, even beneficial ones, can inadvertently hinder the adoption of offerings by these schemes. While NIPAM aims to simplify IP, the initial hesitancy to interact with government-led programs could be a barrier.

The way forward in addressing these schemes should be hyper-localized awareness sessions along with financial and procedural reforms capable of catalyzing patent engagements.

8 Kapoor et al., Inst. for Competitiveness for NITI Aayog, Enhancing Competitiveness in MSMEs in India (May 2, 2025).

Barriers to Patent Engagement

I. Financial and Resource Barriers

Patent protection, especially across multiple jurisdictions, is cost intensive. While domestic filings may be subsidized for startups, the high costs of PCT filings, renewals, infringement monitoring, and litigation remain prohibitive.[1] India's financial ecosystem offers few IP-backed credit products, leaving patents as dormant assets rather than active instruments of capitalization.

Direct financial costs present the most prominent barrier to IP rights acquisition and maintenance.

Application and Filing Fees: Registering patents, trademarks, and design rights involves substantial fees at various stages – filing, examination, and grant. For an MSME operating on tight margins, these upfront costs can be expensive.

Legal and Consultancy charges: Navigating the complex world of IP law often requires expert guidance. Engaging IP attorneys, agents, and consultants for searches, drafting applications, and responding to office actions adds another layer of significant expense.

Foreign Filings & Consultancy charges: These professional fees can quickly escalate, especially for international protection, as there are jurisdictional barriers for Indian attorney's or agents to file and prosecute in foreign jurisdictions. MSME's tend to face tough challenges in technological innovation from other countries, to whom they export their products. It is imperative to protect their innovations in these geographies. However, owing to higher costs, these filings are prohibitive. This may lead to competitive products from other geographies being launched into these export markets eventually forcing the MSME's to be phased out from these export markets.

Maintenance Fees: IP rights, particularly Patents require periodic renewal or maintenance fees to keep them in force. These recurring costs can become a long-term burden, forcing some MSMEs to abandon their protected IP prematurely if they cannot sustain the payments.

Enforcement costs: Should an MSME's IP be infringed, the cost of litigation to enforce their rights can be astronomical. The entire purpose of filing IP protection is to protect the innovation and prevent infringement. These higher costs dissuade MSME's from filing IP as they do not translate into cost effective enforcements.

While the government has implemented substantial fee reductions for MSMEs and startups,[2] the perception of high costs remains a deterrent. For a small business with limited financial and human resources, the costs associated with IPR go far beyond the official filing fees.

The perception of IPR as a costly and inaccessible endeavor creates a psychological barrier that may prevent MSMEs from exploring the very government schemes designed to help them. This creates a dichotomy where the actual, subsidized cost is not the primary barrier; rather, it is the perception of an out-of-reach financial undertaking.

1 Pranav Zunjarrao, Barriers to Innovation in Indian MSMEs, BUS.WISE (Nov. 25, 2020).

2 https://ipindia.gov.in/writereaddata/Portal/News/885_1_approved_SIPP_scheme.pdf.

II. Awareness and Strategic Misalignment

In many early-stage firms, speed to market eclipses the perceived necessity of patent protection. A reactive rather than proactive approach to IP leads to filing decisions driven by investor mandates rather than strategic market positioning. Also, misunderstandings about patentable subject matter - particularly in algorithm-based software, AI solutions, and hybrid innovations, result in missed opportunities.

In the fast-paced startup environment, the primary focus is often on product development and securing a user base. The complex, time-consuming, and seemingly abstract process of filing for a patent is frequently viewed as a cumbersome detour. This is a critical strategic misalignment. Companies may pour significant resources into creating unique solutions, yet fail to protect these very innovations, leaving their most valuable assets vulnerable to competitors.

A common scenario is when a patent filing decision is not a result of a deliberate business strategy but is instead driven by investor mandates. As firms seek funding, investors, savvy about the value of IP as a de-risking tool and a marker of innovation, demand patent applications. While this prompts action, it's a reactive measure. The timing, scope, and nature of the patent application are often rushed to meet a funding deadline, rather than being carefully planned to align with the company's long-term market strategy, competitive landscape, and future product roadmap. This can result in poorly drafted applications, weak claims, and ultimately, a less defensible patent portfolio.

By moving from a reactive to a proactive IP posture, MSMEs can transform their intellectual assets from a hidden vulnerability into a powerful engine for sustainable growth and a key differentiator in a competitive market.

III. Legal and Procedural Bottlenecks

Sections 3(k) and 3(d) of the Patents Act[3] limit protection in software and pharmaceuticals, creating uncertainty in sectors such as AI health diagnostics or computational biology.

A significant barrier to proactive IP engagement is a fundamental misunderstanding of the patentable subject matter. This is particularly true for firms operating in cutting-edge fields like:

Algorithm-based Software: Many entrepreneurs mistakenly believe that software cannot be patented, or they are unaware of how to draft claims to protect a specific technical solution embodied in their code.

AI Solutions: The black-box nature of many AI models and the complex interplay of algorithms and data can create confusion. Firms may not realize that a novel application of an AI model or a new method for training can be patentable.

Hybrid Innovations: As the line blurs between physical and digital products (e.g., IoT devices, smart hardware), companies may fail to protect the entire innovation - from the physical hardware to the underlying software and cloud-based services.

3 https://ipindia.gov.in/writereaddata/Portal/IPOAct/1_113_1_The_Patents_Act__1970___incorporating_all_amendments_till_1-08-2024.pdf.

Pharmaceutical Innovations: While the end product, a drug is a tangible good, the innovation often lies in complex, non-obvious processes and discoveries that are easily misinterpreted as unpatentable. The complexities extend to hybrid innovations in the pharmaceutical sector, such as drug delivery systems that combine a chemical compound with a medical device or a software-driven diagnostic tool.

Further, patent examination backlogs and inconsistent prosecution outcomes further disincentivize engagement. In 2025, the Patent Office of India released the Computer Related Inventions (CRI Guidelines) for Patent examiners working on Software related applications. The guidelines now provide more guidance for these inventions than earlier. There has been at least one instance, where a Patent application for a blockchain-based state-machine validation system that was rejected by the Indian Patent Office (IPO), could have received a grant state under this new guideline[4].

Further, even when an MSME successfully secures an IPR, the journey is far from over. The legal framework for enforcement presents a new set of daunting challenges. The process is often time-consuming and expensive, making litigation an unviable option for many small businesses with limited financial staying power. The rise of online platforms has exacerbated this issue, amplifying the risks of digital piracy and counterfeiting. Enforcing IPR in this new landscape is complicated by the anonymity and global reach of infringers who often operate across multiple jurisdictions, exploiting regulatory gaps and inconsistencies in national IP laws. For a small business, this high-risk, high-cost environment can make the IPR a shield without a sword, a valuable asset that cannot be effectively defended, thereby undermining its very purpose and utility.

IV. Ownership and Contractual Ambiguity

Ownership and contractual ambiguity create significant disputes over intellectual property (IP), particularly in collaborations and during exits. This is exacerbated by the lack of standardized legal frameworks in incubators and accelerators.

Disputes over who owns what, be it a patent, a trademark, or a piece of code, are a common and destructive challenge, particularly in co-founder exits, academic collaborations, or outsourced development projects. The root of this problem is often a lack of clarity, or a fundamental contractual ambiguity.

In the fast-paced world of startups, formal agreements are sometimes postponed in favor of speed and trust. Founders, operating on verbal agreements or vague understandings, may not explicitly define who owns the IP created during their partnership. This becomes a critical issue during the founders' exit. Did the departing co-founder retain rights to the code they wrote? What about the innovative idea they contributed? Without a clear founder's agreement or IP assignment clause, these questions can lead to costly legal battles and cripple the company's ability to attract investment or commercialize its product.

Similar ambiguities plague in both the incubators and accelerators, and academic collaborations. This absence of a clear, third-party vetted framework such as work-for-hire contracts and collaborative research agreements leaves startups vulnerable to future disputes.

For startups to safeguard their most valuable intellectual property (IP) assets and avoid costly disputes, it's essential that they address contractual ambiguity early in their growth. Resolving these issues from the beginning provides a solid foundation for sustainable growth.

4 Dina Susan & Abhay Porwal, "Wrong Time, Wrong Place" — How India's Evolving ComputerRelated Invention (CRI) Guidelines 2025 Could Now Patent a BlockchainBased StateMachine Validation System, Lexology (Sept. 29, 2025).

V. Sector-Specific Constraints

The challenges surrounding intellectual property (IP) for Micro, Small, and Medium Enterprises (MSMEs) are not uniform. They vary significantly across different sectors, each facing unique constraints that complicate the adoption and strategic use of IP. Understanding these sector-specific hurdles is key to designing effective support systems.

Manufacturing MSMEs: For a vast number of manufacturing MSMEs, IP engagement is often at odds with a deep-seated business culture. Many of these firms operate on trade secrets and know-how passed down through generations. They prefer to maintain a competitive edge through secrecy rather than public disclosure. The very act of filing a patent requires a detailed public description of the invention. This transparency is seen as a risk, as it could allow competitors to reverse-engineer the technology once the patent expires or to challenge it in court. This cultural preference for confidentiality over formal protection is a significant barrier to patenting, leaving valuable innovations unprotected.

Deep-Tech Startups: Especially those in software, AI, and data analytics face a unique and challenging constraint demonstrating global novelty. The rapid, iterative, and global nature of software development means that a seemingly novel idea may already exist or be in development elsewhere. This is particularly true for AI innovations, where the "novelty" may lie in an algorithm's unique application or a new data-driven process. Proving that such an innovation is non-obvious and globally unique can be an uphill battle, especially in jurisdictions like India with strict patentability criteria for software and business methods. This uncertainty and the high cost of international patent searches deter many deep-tech firms from pursuing IP protection.

Biotech/Pharma: This sector grapples with a formidable dual-compliance requirement. Before a new drug or therapeutic method can be commercialized, it must navigate two separate, often lengthy, and costly processes, viz., securing a patent and obtaining regulatory approval from bodies like the Central Drugs Standard Control Organization (CDSCO) in India. These parallel regimes operate on different timelines and have different requirements. The need to satisfy both patentability standards and rigorous clinical trial protocols slows down the time-to-market, making it a capital-intensive and high-risk endeavor for MSMEs. This dual burden creates a significant operational constraint that can be a major barrier to entry for smaller firms.

AgriTech/HealthTech: A unique tension exists between the conventional IP frameworks and a growing trend of community-driven models in these specific sectors. Many innovations in these fields are designed to be low-cost, open-source, and accessible to a broad user base, such as small farmers or rural clinics. The goal is to maximize societal benefit and widespread adoption. However, this ethos often clashes with the exclusive rights granted by a patent. For example, a patented farming technique or a low-cost medical device may be more effective, but the patent could restrict its use and dissemination, thereby limiting its social impact. This operational dilemma forces AgriTech and HealthTech MSMEs to choose between a business model based on intellectual property protection and one focused on widespread community benefit.

Having identified the multifaceted barriers preventing MSME patent engagement, the focus shifts to practical interventions that can systematically address these challenges. The following strategic approaches recognize that isolated solutions cannot solve interconnected problems, instead requiring coordinated reforms across institutional, financial, and procedural dimensions.

Strategic Interventions and Institutional Designs

I. Institutional IP Capability

Building institutional IP capability means embedding IP literacy and support directly into the systems that nurture MSMEs and startups. This is far more effective than relying on standalone awareness campaigns. By making IP a core part of the support framework and integrating with innovative ecosystem, it becomes a natural and accessible part of the entrepreneurial journey.

Incubators and accelerators should be uniquely positioned to serve as local IP hubs. They could be designed to offer a "one-stop shop" for IP services, providing everything from initial IP landscaping and prior art searches to hands-on assistance with drafting applications. For a small fee or as part of their incubation services, they can help early-stage companies avoid common pitfalls like contractual ambiguities and ownership disputes. Instances include, NASSCOM's Centre of Excellence (COE)[1] provides mentorship and guidance on IP processes through its accelerator programme, Atal Innovation Mission (AIM) strategic partnership with WIPO[2] and the IIGP tri-party program by the DST, TATA Trust and Lockheed Martin.[3] Programmes such as Lab32, T-Hub and RubriX equip early-stage start-ups and SMEs with the guidance and tools necessary for scaling their businesses and safeguarding their intellectual assets.[4]

Also, University-led IP centers are emerging as crucial support systems. In Karnataka, the Governor highlighted the need for IP centers in universities to bolster patent awareness and commercialization capacity.[5] By establishing these dedicated IP centers, academic institutions can not only manage and monetize the IP generated by their own research but also offer support services to the local community.

Integrating patent strategy into early-stage funding and mentorship programs can transform the reactive IP strategy to a proactive IP strategy for start-up and MSME's. VCs and angel investors often conduct IP due diligence, scrutinizing a startup's IP ownership and the defensibility of its claims. Integrating this focus into IP early in the funding process forces startups to think strategically about their patents from day one. Also, mentorship programs can guide founders on how to build a strategic patent roadmap that aligns with their business milestones and enhance long-term competitive advantage at early stage for the MSME's.

II. Filing Facilitation & Subsidies

Governments and institutional bodies are implementing strategic interventions to help MSMEs and startups overcome IP-related challenges. These include streamlining the filing process and offering financial support to make IP protection more accessible

1 https://www.coe-iot.com/.

2 https://www.pib.gov.in/PressReleasePage.aspx?PRID=2034912.

3 https://www.pib.gov.in/PressReleasePage.aspx?PRID=1772013.

4 https://t-hub.co/.

5 Prathikaa Shastry, Establish intellectual property centres in varsities: Governor, Times of India (June 29, 2025).

The Indian Patent Office offers expedited examination for various categories of applicants, including startups, small entities (MSMEs), and female inventors.[6] This allows them to get their patent application reviewed much faster than the standard process, helping them gain a competitive edge in the marketplace. The GOI could also Extend the expedited examination to export-ready MSMEs, facilitating faster IP ready products for the market.

Co-funding international filings, particularly for high-growth potential technologies could build trust amongst the MSME's and enable them in filing international Patent or trademark applications to gain market advantage and monopoly in foreign jurisdictions. For instance, the "Support for International Patent Protection in Electronics and IT" (SIP-EIT) scheme offers financial reimbursement of up to ₹15 lakhs for international patent filing and processing costs for eligible MSMEs in the E&IT sector.[7] Additionally, state-specific schemes, such as the "Aatmanirbhar Gujarat Scheme for MSMEs"[8] offer co-funding for international patents.

The government's focus on these initiatives shows a clear intent to move beyond awareness campaigns to tangible support, helping MSMEs transform their intellectual assets into sustainable business advantages.

III. Enforcement Infrastructure

Enforcement of intellectual property (IP) rights is a significant challenge for MSMEs. To address this, strategic interventions are needed to create a more accessible and efficient IP enforcement infrastructure.

Establishing SME-focused IP dispute resolution forums: Traditional litigation can be a nightmare for MSMEs. It's prohibitively expensive, lengthy, and can divert critical resources away from core business operations. A key strategic intervention is to establish SME-focused IP dispute resolution forums. These forums could be specialized mediation or arbitration centers designed to handle IP disputes in a more cost-effective and time-efficient manner.

Unlike a formal court, which follows a rigid and often slow process, these forums would use alternative dispute resolution (ADR) mechanisms. For instance, the WIPO Arbitration and Mediation Center offer services at reduced fees for small and medium-sized enterprises.[9] This model provides a neutral forum where disputes can be resolved confidentially and with the help of a subject-matter expert, avoiding the public and adversarial nature of court proceedings.[10] By creating similar localized or national forums, governments can provide a much-needed avenue for MSMEs to enforce their rights without financial ruin.

Encouraging pooled litigation models to share enforcement costs: Enforcing a single IP right is already costly, but for MSMEs, the thought of taking on a large corporation for infringement is often impossible. Pooled litigation models offer a solution by allowing multiple IP holders to share the costs and risks of enforcement. These models work by bringing together several small businesses that have similar IP infringement claims against a common defendant or a group of defendants. By pooling their financial resources, the MSMEs can collectively afford the legal fees and expert services required to pursue litigation. This approach effectively levels the playing field, making it feasible for small entities to challenge large firms.

---

6 Controller General of Patents, Designs & Trade Marks. (n.d.). Rule 24C — Expedited examination of applications. The Patents Rules, 2003.

7 India Science & Technology. (n.d.). Support for International Patent Protection — Electronics & Information Technology (SIPEIT).

8 MyScheme, AGM SME Aata,: https://www.myscheme.gov.in/schemes/agmsmeata.

9 WIPO, WIPO's Arbitration and Mediation Center Launches New Effort to Support SMEs,: https://www.wipo.int/amc/en/news/2021/news_0003.html (June 22, 2021).

10 WIPO, WIPO ADR Stories: How do SMEs benefit from mediation to resolve their IP disputes?,: https://www.wipo.int/amc/en/center/specific-sectors/smes/mediation/index.html.

While these models are more common in industries with a high density of similar IP, such as certain technology or biotechnology sectors, they can be adapted to other areas as well. This collective enforcement strategy not only reduces the individual financial burden but also sends a stronger message to potential infringers, acting as a powerful deterrent.

IV. IP Monetization and Financial Mechanisms

Monetizing intellectual property (IP) is a crucial step for MSMEs to turn their innovations into tangible business value. However, many MSMEs lack the financial mechanisms and platforms to effectively do so. Strategic interventions focused on financial products and digital marketplaces are vital to unlocking this potential.

Launching IP-backed loan schemes and risk insurance products: For MSMEs, IP assets like patents, trademarks, and copyrights are often treated as intangible and therefore cannot be used to secure financing. By launching IP-backed loan schemes, governments and financial institutions can change this. These schemes would allow MSMEs to use their IP as collateral, enabling them to secure loans for business expansion, R&D, or working capital. The valuation of the IP would be a key factor in determining the loan amount, making a strong IP portfolio a genuine asset on a balance sheet. While many financial institutions in India, like SIDBI, offer loans to MSMEs, a specific focus on IP as collateral is still an emerging concept.

To complement this, IP risk insurance products are essential. IP litigation, whether for defense or enforcement, is a major financial risk for MSMEs. Insurance products can cover legal fees, damages, and settlement costs related to IP disputes. This financial safety net allows MSMEs to be more proactive in protecting their IP and more confident in entering new markets without the fear of being bankrupted by a lawsuit.

Creating digital IP marketplaces and patent pooling platforms for collaborative licensing: A major barrier to IP monetization is the lack of a transparent and accessible market. Many MSMEs don't know who might be interested in licensing their technology or how to connect with potential partners.

Digital IP marketplaces act as online platforms that connect IP owners with potential buyers and licensees. These platforms can host a company's IP portfolio and facilitate licensing agreements. They streamline the process by providing search functionalities, clear licensing terms, and a secure environment for transactions. For example, some international platforms like Yet2.com[11] have been in this space for a while.

Furthermore, Patent pooling platforms enable collaborative licensing. This is particularly useful in industries where a new product or standard requires access to patents from multiple owners. By participating in a patent pool, MSMEs can share the costs and risks of licensing, gain access to essential technology, and collectively defend against infringement. While the concept of patent pooling is still emerging in India, it holds significant potential for sectors like biotech and electronics where a complex web of patents often slows down innovation.

11 https://www.yet2.com/.

V. Academia–Industry IP Models

To boost innovation, academia and industry must bridge the gap between groundbreaking research and commercial viability. This requires strategic interventions that streamline IP collaboration. Two key models are crucial: standardized co-ownership frameworks and allowing universities to accept equity in lieu of licensing fees.

To solve, a crucial problem in the MSME and start-ups on ownership issues, adopting standardized co-ownership and fast-track licensing frameworks is crucial. These are pre-negotiated, simplified agreements that clearly define IP ownership from the outset. They establish a clear process for how IP will be jointly owned, managed, and commercialized. This removes the need for lengthy and costly legal negotiations for every new collaboration. The frameworks can also include "fast-track" licensing provisions that allow MSMEs to quickly license the technology, accelerating its transition from the lab to the market. These models create a predictable and trustworthy environment, encouraging more frequent and productive collaborations. By reducing legal complexity, they allow both academics and entrepreneurs to focus on what they do best: innovating.

Allowing universities to accept equity stakes in lieu of licensing fees for startups solves multiple issues in technology transfer between innovators and manufacturers. This strategic intervention aligns the interests of both the university and the startup. The university gains a direct stake in the startup's success, benefiting from its growth and future value, while the startup gets to use the IP without an initial financial burden. This model is a win-win: the startup can conserve its capital for development and operations, while the university's IP portfolio becomes more valuable as its equity stakes appreciate. This also encourages universities to play a more active role in the startup ecosystem, as the success of their spin-offs directly impacts their financial returns.

These intervention strategies, while promising individually, must be evaluated against international experiences and adapted to India's unique economic and institutional context.

Discussion

The MSME patent engagement challenge cannot be solved through isolated interventions. Financial subsidies without awareness-building leave schemes underutilized. Awareness campaigns without accessible filing mechanisms create informed frustration. Simplified procedures without enforcement capabilities produce worthless rights. The interconnected nature of these barriers demands coordinated reform across regulatory, institutional, and financial dimensions.

International experiences offer instructive contrasts while highlighting the need for context-sensitive adaptation. South Korea's approach through the Korea Invention Promotion Association (KIPA) demonstrates how government-funded international patent support can work at scale. The Ministry of SMEs and Startups provide comprehensive assistance across multiple programs, recognizing that patent strategy requires sustained institutional backing rather than project-based interventions. Germany's enforcement support funds address a critical gap by helping SMEs defend their rights against larger competitors, fundamentally altering the cost-benefit calculation of patent filing.

However, direct transplantation of these models would face significant adaptation challenges in India. The country's industrial diversity spans everything from traditional textile clusters to cutting-edge biotechnology, requiring flexible approaches that can accommodate vastly different technological sophistication levels. Cost sensitivity remains extreme among Indian MSMEs, making even subsidized programs feel prohibitive without dramatic fee reductions. Perhaps most critically, India's legal and enforcement infrastructure, while improving, lacks the predictability that makes patent investment feel secure to small enterprises.

The European Union's 2025 SME Fund represents another relevant model, providing targeted support for IP management across diverse member economies. This approach recognizes that effective IP policy requires both financial support and capability building, embedded within existing business development frameworks.

India's path forward must therefore be distinctly Indian, building on the country's demonstrated strengths in frugal innovation, digital infrastructure, and institutional adaptability. The challenge lies not in choosing between international models but in creating hybrid approaches that leverage global best practices while addressing local constraints. This requires moving beyond policy borrowing toward institutional innovation that reflects India's unique position as both a developing economy with sophisticated technological capabilities and a diverse market with varying levels of industrial maturity.

Conclusion

The fundamental insight from this analysis is clear: India's patent engagement challenge is about redesigning the interface between innovation and protection. The current system assumes entrepreneurs will adapt to patent processes, but the evidence shows this approach hasn't yielded optimized results. Success requires embedding IP capabilities so seamlessly into existing business ecosystems that protection becomes automatic rather than optional.

The stakes are higher than individual company vulnerabilities. As global competition increasingly centers on technological ownership rather than manufacturing efficiency, countries with weak patent cultures risk permanent relegation to the periphery of value chains. India's remarkable innovation capacity could become its greatest unrealized asset if the patent gap persists.

The path forward demands institutional courage from all the stakeholders – the policymakers, the ecosystem builders, and the entrepreneurs. Rather than launching more awareness campaigns or tweaking fee structures, stakeholders must commit to fundamental system redesign. The need is to create stealth integration mechanisms that convert entrepreneurial energy into IP assets without forcing innovators to become patent experts.

The prize is substantial: an innovation economy where ideas become assets, where small companies can compete globally on technological merit, and where India's creative capacity translates directly into economic power. The path is clear. The moment is now.

About NDA

At Nishith Desai Associates, we have earned the reputation of being Asia's most Innovative Law Firm — and the go-to specialists for companies around the world, looking to conduct businesses in India and for Indian companies considering business expansion abroad. In fact, we have conceptualized and created a state-of-the-art Blue Sky Thinking and Research Campus, Imaginarium Aligunjan, an international institution dedicated to designing a premeditated future with an embedded strategic foresight capability.

We are a research and strategy driven international firm with offices in Mumbai, Palo Alto (Silicon Valley), Bengaluru, Singapore, New Delhi, Munich, and New York. Our team comprises of specialists who provide strategic advice on legal, regulatory, and tax related matters in an integrated manner basis key insights carefully culled from the allied industries.

As an active participant in shaping India's regulatory environment, we at NDA, have the expertise and more importantly — the VISION — to navigate its complexities. Our ongoing endeavors in conducting and facilitating original research in emerging areas of law has helped us develop unparalleled proficiency to anticipate legal obstacles, mitigate potential risks and identify new opportunities for our clients on a global scale. Simply put, for conglomerates looking to conduct business in the subcontinent, NDA takes the uncertainty out of new frontiers.

As a firm of doyens, we pride ourselves in working with select clients within select verticals on complex matters. Our forte lies in providing innovative and strategic advice in futuristic areas of law such as those relating to Blockchain and virtual currencies, Internet of Things (IOT), Aviation, Artificial Intelligence, Privatization of Outer Space, Drones, Robotics, Virtual Reality, Ed-Tech, Med-Tech and Medical Devices and Nanotechnology with our key clientele comprising of marquee Fortune 500 corporations.

The firm has been consistently ranked as one of the Most Innovative Law Firms, across the globe. In fact, NDA has been the proud recipient of the Financial Times – RSG award 4 times in a row, (2014-2017) as the Most Innovative Indian Law Firm.

We are a trust based, non-hierarchical, democratic organization that leverages research and knowledge to deliver extraordinary value to our clients. Datum, our unique employer proposition has been developed into a global case study, aptly titled '**Management by Trust in a Democratic Enterprise**,' published by John Wiley & Sons, USA.

Research@NDA

Research is the DNA of NDA. In early 1980s, our firm emerged from an extensive, and then pioneering, research by Nishith M. Desai on the taxation of cross-border transactions. The research book written by him provided the foundation for our international tax practice. Since then, we have relied upon research to be the cornerstone of our practice development. Today, research is fully ingrained in the firm's culture.

Over the years, we have produced some outstanding research papers, reports and articles. Almost on a daily basis, we analyze and offer our perspective on latest legal developments through our "Hotlines". These Hotlines provide immediate awareness and quick reference, and have been eagerly received. We also provide expanded commentary on issues through detailed articles for publication in newspapers and periodicals for dissemination to wider audience. Our NDA Labs dissect and analyze a published, distinctive legal transaction using multiple lenses and offer various perspectives, including some even overlooked by the executors of the transaction. We regularly write extensive research papers and disseminate them through our website. Our ThinkTank discourses on Taxation of eCommerce, Arbitration, and Direct Tax Code have been widely acknowledged.

As we continue to grow through our research-based approach, we now have established an exclusive four-acre, state-of-the-art research center, just a 45-minute ferry ride from Mumbai but in the middle of verdant hills of reclusive Alibaug-Raigadh district. Imaginarium AliGunjan is a platform for creative thinking; an apolitical ecosystem that connects multi-disciplinary threads of ideas, innovation and imagination. Designed to inspire 'blue sky' thinking, research, exploration and synthesis, reflections and communication, it aims to bring in wholeness — that leads to answers to the biggest challenges of our time and beyond. It seeks to be a bridge that connects the futuristic advancements of diverse disciplines. It offers a space, both virtually and literally, for integration and synthesis of knowhow and innovation from various streams and serves as a dais to internationally renowned professionals to share their expertise and experience with our associates and select clients.

We would love to hear from you about any suggestions you may have on our research publications. Please feel free to contact us at **research@nishithdesai.com**.

Recent Research Papers

Extensive knowledge gained through our original research is a source of our expertise.

April 2025

Fintech

Legal, Regulatory and Tax Considerations – Compendium

April 2025

Medical Device Industry in India

Regulatory, Legal and Tax Issues

April 2025

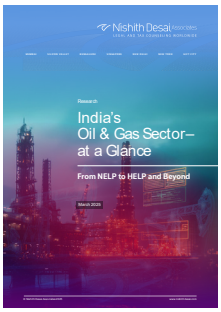
Clinical Trials and Biomedical Research in India

Legal and Regulatory Framework

March 2025

Structuring Platform Investments in India For Foreign Investors

Legal, Regulatory and Tax Considerations



March 2025

India's Oil & Gas Sector– at a Glance

From NELP to HELP and Beyond

March 2025

Artificial Intelligence in Healthcare

Navigating Regulatory Frontiers in India

For more research papers **click here**.

Nishith Desai Associates
LEGAL AND TAX COUNSELING WORLDWIDE

INDIA OFFICES

MUMBAI

93 B, Mittal Court, Nariman Point
Mumbai 400 021, India

Tel +91 22 6669 5000

MUMBAI BKC

3, North Avenue, Maker Maxity
Bandra–Kurla Complex
Mumbai 400 051, India

Tel +91 22 6159 5000

BENGALURU

Prestige Loka, G01, 7/1 Brunton Rd
Bengaluru 560 025, India

Tel +91 80 6693 5000

NEW DELHI

13-H, Hansalaya Building, 15
Barakhamba Road, Connaught Place
New Delhi 110 001, India

Tel +91 11 4906 5000

GIFT CITY

408, 4th Floor, Pragya Towers
GIFT City, Gandhinagar
Gujarat 382 355, India

FOREIGN OFFICES

NEW YORK

1185 6th Avenue, Suite 326
New York, NY 10036, USA

Tel +1 212 464 7050

SILICON VALLEY

220 S California Ave., Suite 201
Palo Alto, California 94306, USA

Tel +1 650 325 7100

SINGAPORE

Level 24, CapitaGreen
138 Market St
Singapore 048 946

Tel +65 6550 9855

Patent Blind Spots in India's Startup and MSME Landscape
Structural Barriers and Strategic Remedies

concierge@nishithdesai.com