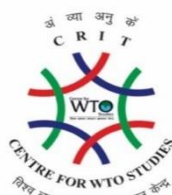


Closing India's Intellectual Property Monetization Gap

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Closing India's Intellectual Property Monetization Gap



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Executive Summary

Despite a world-class talent pool and growing innovation ecosystem, India continues to underperform in monetizing its intellectual property globally. The Critical and Emerging Technologies (CET) Index places India among the top ten countries in scientific resources and human capital. Yet, trade data from TISMOS shows that India earns negligible royalties and license fees from cross-border intellectual property (IP) services when compared to its global peers.

This mismatch between domestic innovation capacity and external earnings signals a deeper structural gap: India creates IP, but struggles to commercialize it internationally. This gap limits India's ascent in global value chains and undermines long-run economic returns on domestic research and development (R&D).

To address this, the Government of India has launched the 11.5 Billion USD Research Development and Innovation (RDI) Scheme and established the Anusandhan National Research Foundation (ANRF). These initiatives aim to unlock private R&D, support commercialization, and position India as a global innovation exporter.

This policy brief provides a data-driven analysis of India's IP trade underperformance, identifies barriers to IP commercialization, and proposes targeted policy interventions (from institutional reform to licensing incentives) that can help India transition from IP creation to global IP leadership.

Introduction

Under the World Trade Organization's General Agreement on Trade in Services (GATS) framework, Mode 1 intellectual property (IP) services refer to cross-border transactions involving royalties, license fees, software licensing, and patent payments, all conducted without the physical movement of service providers¹. These transactions are the primary channel through which countries monetize their intellectual assets internationally, and they serve as a vital proxy for technological competitiveness and innovation commercialization.

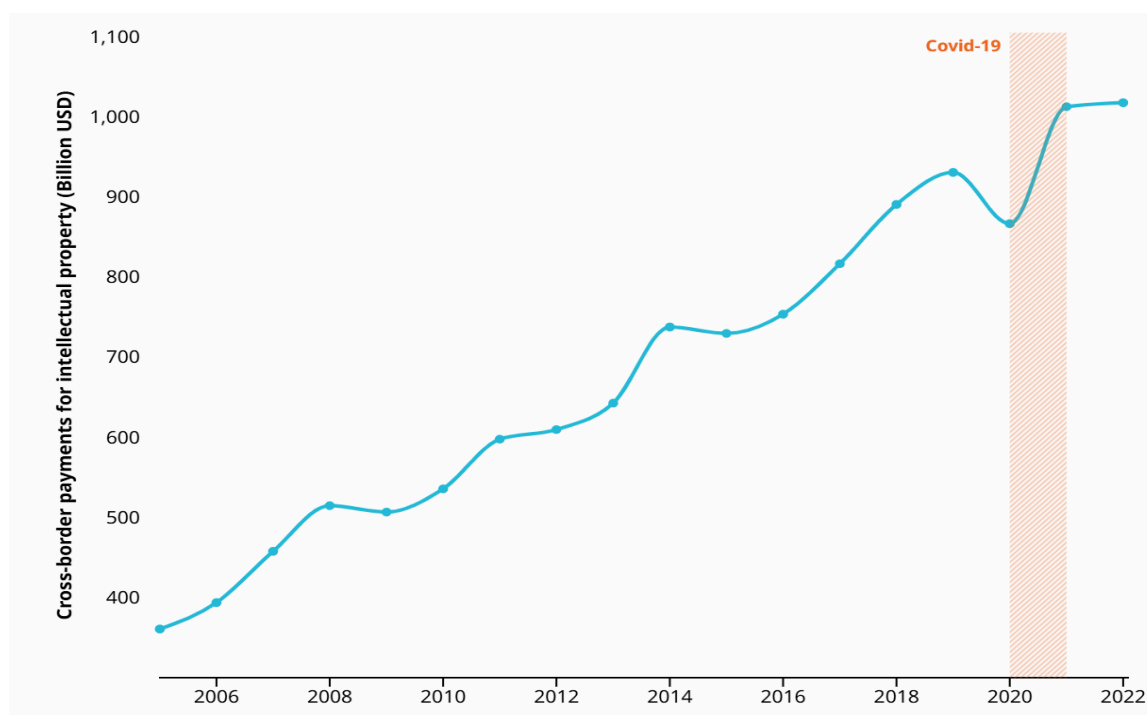


Fig. 1 Cross-border payments for the export and import of intellectual property, in USD, 2005-2022, TISMOS Dataset

¹ From the (World Trade Organization (WTO), n.d.) and their TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights)

Countries IP Exports	2022
Europe	224383.42
United States of America	127392.00
Germany	52973.61
Japan	46459.40
Netherlands	40411.90
United Kingdom	28284.18
France	14141.39
China	13539.24
Singapore	13217.92
Korea, Republic of	7925.50
Canada	7735.00
Italy	5285.46
Spain	4524.95
United Arab Emirates	3430.91
Australia	1221.79
India	1167.58
New Zealand	1099.40
Israel	861.00
Brazil	745.14
Russian Federation	744.39
Türkiye	234.00
Ukraine	51.00
Iran	10.97
Saudi Arabia, Kingdom of	0.00

Country IP Imports	2022
Europe	321502.04
United States of America	53241.00
China	44425.81
Netherlands	36939.89
Japan	27700.90
Germany	19901.57
United Kingdom	18036.45
Singapore	17700.80
Canada	16081.00
France	13411.63
Korea, Republic of	11676.50
India	10427.80
Brazil	7299.73
Spain	5830.73
Italy	5799.67
Russian Federation	4478.26
Australia	4027.80
United Arab Emirates	3160.28
Türkiye	2853.00
Israel	1400.46
New Zealand	1116.30
Ukraine	349.00
Iran	177.59
Saudi Arabia, Kingdom of	0.00

Fig. 2 Country-wise IP Import and Export Data in Million USD, TISMOS Dataset, Latest Data Available

In 2022, global payments for the use of IP crossed \$1 trillion USD setting a historic high. The United States led with \$130 billion in IP receipts, followed by Germany with \$53 billion. China, notably, rose from 22nd in 2010 to 9th place in 2022, becoming the only middle-income country in the global top ten.

By contrast, India ranked 26th, with just \$1.2 billion in IP export earnings, trailing behind are peer economies like Brazil (\$745 million) and Türkiye (\$234 million). While India's global innovation reputation is rising, its share of global IP earnings remains disproportionately low, highlighting a structural gap in international IP monetization.²

² WIPO's 2024 report on Mode 1 IP services using the TISMOS Dataset

India's IP Trade Deficit

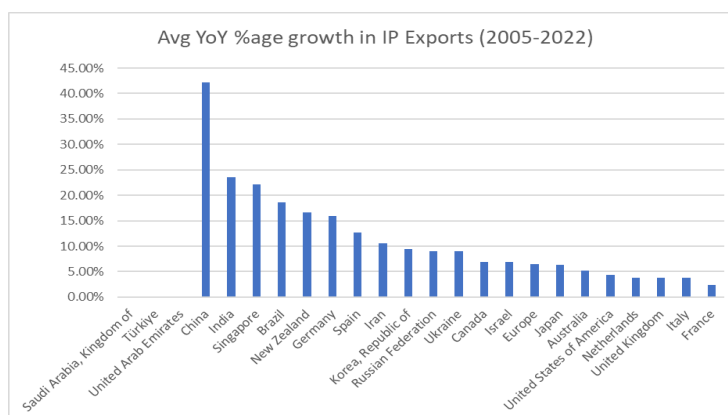
1. The Indian Scenario

India's innovation landscape is anchored by a robust tertiary education system, which produces over 2 million STEM graduates annually and is supported by globally recognized public research institutions in space science, biotechnology, and advanced computing. In 2023, India accounted for 9.2% of global AI research publications³, and ranked third worldwide in total scientific output. The World Intellectual Property Organization (WIPO) further reports that India recorded the fastest patent application growth among top economies at 15.7% year-on-year, underscoring its rising innovation capacity.

However, this growing intellectual output has not translated into meaningful returns from cross-border intellectual property (IP) commercialization which remain critically underdeveloped. Data from TISMOS reveals that India's IP receipts remain a fraction of those recorded by nations, including South Korea, Israel, and several smaller ASEAN economies.

From 2005 to 2022, India's IP payments (imports) surged from \$0.67 billion to \$10.4 billion, while IP receipts (exports) grew modestly from \$0.20 billion to \$1.16 billion. This yields an IP Payments to receipts ratio of just 0.112, meaning India earns only 11 cents for every dollar it spends on foreign IP.

Countries	Avg YoY %age growth in IP Exports (2005-2022)
Saudi Arabia, Kingdom of	#N/A
Türkiye	#N/A
United Arab Emirates	#N/A
China	42.20%
India	23.58%
Singapore	22.09%
Brazil	18.60%
New Zealand	16.61%
Germany	15.97%
Spain	12.67%
Iran	10.62%
Korea, Republic of	9.44%
Russian Federation	9.07%
Ukraine	9.03%
Canada	6.91%
Israel	6.91%
Europe	6.52%
Japan	6.32%
Australia	5.22%
United States of America	4.30%
Netherlands	3.86%
United Kingdom	3.77%
Italy	3.73%
France	2.39%



Countries	Avg YoY %age growth in IP Imports (2005-2022)
Saudi Arabia, Kingdom of	#N/A
India	18.31%
United Arab Emirates	16.07%
Türkiye	14.11%
China	13.77%
Brazil	11.61%
Spain	10.99%
Russian Federation	9.29%
Israel	8.95%
Europe	7.39%
Germany	7.15%
Korea, Republic of	6.05%
Iran	5.41%
New Zealand	5.35%
Canada	5.25%
United States of America	4.97%
Australia	4.82%
France	4.65%
Singapore	4.61%
Japan	4.35%
Netherlands	4.08%
Ukraine	3.97%
United Kingdom	3.87%
Italy	1.10%

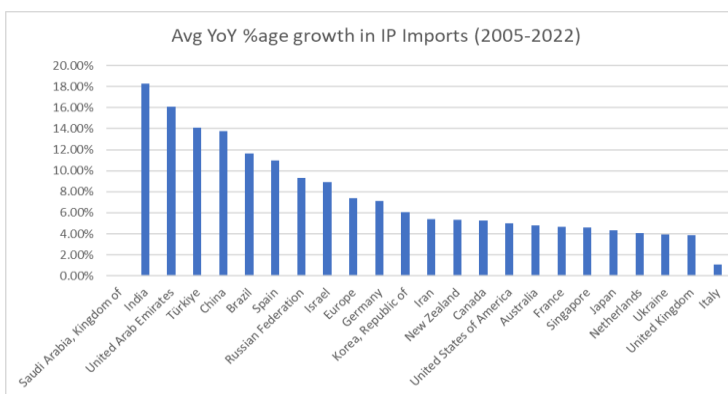


Fig. 3 Country-wise average annual percentage growth in IP imports and exports, TISMOS Dataset

³ According to the Stanford HAI Index published in 2024

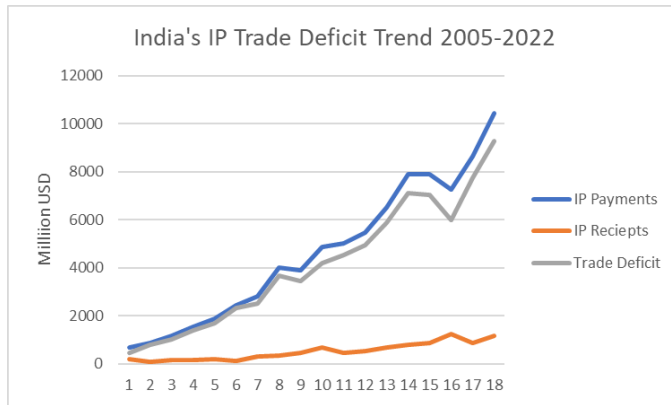


Fig. 4 India's IP trade deficit trend from 2005 to 2022, TISMOS

The magnitude of this imbalance is significant: India's \$9.21 billion IP trade deficit in 2022 amounts to approximately 0.14% of GDP, making it a macroeconomic issue and not just a sectoral one.

While it is true that both IP imports and exports are growing at 18.31% and 23.58% average annual growth rates respectively, the deficit itself is expanding at a concerning pace of 20.8% per year.

2. Comparative International Performance and Benchmarking

India's intellectual property trade underperformance becomes even more pronounced when viewed against international benchmarks. In 2022, the United States posted a massive \$74.15 billion surplus in IP services trade, reflecting its dominance in global innovation and licensing. Even China which is historically a net IP importer (still running a deficit of \$30.89 billion) now reports \$44.2 billion in IP receipts — up from just \$0.15 billion in 2005.

China has improved its IP Receipts to Payments ratio to 0.30, meaning it earns 30 cents for every dollar it spends on foreign IP, nearly three times India's ratio of 0.11.

South Korea, with a significantly smaller economy than India, maintains a receipts to payments ratio of 0.67 and a relatively modest IP trade deficit of \$3.7 billion.

These figures reflect more balanced and comprehensive managed engagement with the global IP economy, enabling these countries to increasingly export high-value innovation rather than solely import it.



Fig. 5 Country-wise data of IP exports as a %age of total trade, 2022, TISMOS and WTO

Moreover, when measured as a percentage of total trade⁴, India's IP receipts are notably lower than both advanced economies and middle-income peers. This suggests that India's innovation base is poorly integrated with global commercialization channels, limiting its role in the international technology marketplace.

3. Critical and Emerging Technology Index

India's chronic underperformance in IP monetization becomes particularly stark when analysed through the Critical and Emerging Technologies (CET) Index, developed by Harvard's Belfer Centre. The CET Index benchmarks 25 countries across five strategic technology domains—semiconductors, artificial intelligence, biotechnology, space, and quantum technologies—based on their resource capacity, institutional infrastructure, commercial strength, and geopolitical leverage.

Despite India's growing reputation as an innovation hub, its overall score of 15.2 out of 100 places it only 10th globally, far behind the United States (84.3), China (65.6), and South Korea (20.0). This ranking underscores the gap between India's R&D input strengths and its international commercialization outcomes.

The CET Index further reveals that India underperforms significantly in critical subsectors that dominate global IP revenue:

- **Semiconductors:** India scores only 8.9 on a 100-point scale, trailing the U.S. (85.2) and China (45.8). With semiconductors receiving 35% of the CET index weight, India's limited fabrication capacity and weak IP portfolio in chip design critically weaken its technology sovereignty.
- **Artificial Intelligence:** Despite India producing 9.2% of global AI publications and launching the 100 billion INR IndiaAI Mission in 2024, it scores 18.4, compared to the U.S. (78.5) and China (62.3). This discrepancy reflects India's inability to translate research into exportable platforms or global IP revenue streams.
- **Biotechnology:** While India is a leading vaccine producer and pharmaceutical manufacturer, its CET biotechnology score lags due to limited patenting of biologics and underdeveloped IP licensing channels.

These performance gaps directly correlate with India's limited ability to generate international IP revenues. Countries with higher CET Index scores such as The U.S., China, and South Korea consistently demonstrate superior IP export performance, as evidenced by the strong correlation between technological capabilities and cross-border IP receipts observed in leading economies.

⁴ See fig. 5.

India, in contrast, shows disparity between innovation capacity and global commercialization. While ranking in the top five globally for research output in 45 of 64 tracked technologies, it fails to convert these outputs into internationally licensed IP. India's low CET scores in semiconductors and AI—sectors with the highest weightings in the index help explain its low rank.

COUNTRY	ALGORI THMS	COMPU TING...	DATA	ECONO MIC...	GLOBAL PLAYER	HUMAN CAPITAL	REGULA TORY	ACCURA CY OF...	TOTAL
United States	15	15	8.7	20	2.5	17.1	2.5	10	90.8
China	3.7	9.8	15	7.5	0.7	20	0.3	1.1	58
Europe	4.2	9.1	9.4	2.9	1.1	17.6	0.6	1.4	46.3
Germany	1.2	3.4	8	0.8	1.3	3.6	0.3	0.3	18.9
United Kingdom	1	1.4	7.4	1.1	2.1	5	0.9	0	18.9
France	2	2.1	8.6	0.7	1.1	2	0.8	1.1	18.5
India	0	0.4	5.5	0.8	1	7.6	0.1	0	15.4
Canada	1	0.9	7.4	0.7	0.6	2.9	0.1	0.6	14.2
South Korea	0	1.1	7.9	0.8	0.5	2.6	1.2	0	14.1
Japan	0	3	6.7	0.5	0.9	1.9	0.2	0	13.2
Italy	0	1	5.9	0	0.5	2.6	1.1	0	11.2
Singapore	0.7	0.3	6	0.7	1.9	1.4	0	0	11.1
Australia	0	0.6	6	0.2	1.4	2.9	0	0	11
Spain	0	0.3	6.2	0.1	0.9	1.8	1.2	0	10.5
Netherlands	0	0.9	7.5	0.1	0.5	1.3	0	0	10.3
Saudi Arabia	0	0.7	6.4	0	0.2	1.7	0	0	8.9
U.A.E.	0.7	0.1	6.7	0	0.3	0.6	0.1	0.4	8.8
Israel	1	0.1	4.9	0.7	0.6	0.4	0	0.5	8.3
Taiwan	0	0.5	6.3	0	0	1.2	0	0	8
Russia	0	0.7	5	0	0.3	0.8	1.1	0	7.8
Brazil	0	0.8	4.8	0.1	0.4	0.9	0.1	0	7.3
New Zealand	0	0	6.3	0	0.4	0.3	0	0	7
Turkey	0	0	4.2	0	1.2	1.3	0	0	6.7
Iran	0	0	2.6	0	0	1.8	0	0	4.4
Ukraine	0	0	3.3	0	0.1	0.2	0	0	3.5
North Korea	0	0	0	0	0	0	0	0	0

COUNTRY	CHIP DESIGN...	MANU FACT...	ECONO MIC...	HUMA N...	EQUIP MENT	ASSEM BLY...	GLOBA L...	SPECIA LIZED...	REGUL ATORY	TOTAL
United States	32.5	4.2	7.7	17.5	7.5	0.3	2.5	0.8	2.5	75.4
China	3.7	10	20	20	0.5	2.5	2.3	1.6	2.5	63
Japan	5.4	7.1	4.9	4.2	4.1	0.5	0.4	1.1	2.5	30.1
Taiwan	4.9	7.5	5.1	3.8	0	2.3	0.3	2.5	2.5	28.8
South Korea	7.8	7.1	2	4.4	0.5	0.8	0.3	1.6	2.5	26.9
Europe	6.7	3.3	4	1.6	2.9	0.3	2.3	0.5	2.1	23.8
United Kingd...	5.9	0	0.3	1.3	0.2	0	0.6	0	2.5	10.8
Germany	0.8	1	1.5	2.4	1.4	0.1	0.6	0.4	2.5	10.7
Singapore	0	0	4	1	0	0	0	0	2.5	7.5
India	0	0	0.8	3.3	0	0	0.3	0	2.5	6.9
Netherlands	0	1	1	0.3	1.1	0.1	0.2	0	2.5	6.3
France	0	0.6	0.5	1	0.1	0.1	0.5	0.1	2.5	5.4
Italy	0	0.6	0.3	1.6	0	0.1	0.2	0	2.5	5.3
Brazil	0	0	1.8	0.3	0	0	0.1	0	2.5	4.8
Spain	0	0	0.4	1.1	0	0.1	0.1	0	2.5	4.2
Canada	0	0	0.5	1.1	0	0	0.1	0	2.5	4.2
Australia	0	0	0.2	0.6	0	0	0.1	0	2.5	3.4
Russia	0	0	0.5	0.1	0	0	0.1	0	2.5	3.2
Israel	0	0	0.1	0	0	0	0.1	0	2.5	2.8
U.A.E.	0	0	0	0.2	0	0	0	0	2.5	2.7
Iran	0	0	0	1	0	0	0	0	0	1
Saudi Arabia	0	0	0	0.2	0	0	0	0	0	0.2
Turkey	0	0	0.1	0.1	0	0	0	0	0	0.2
New Zealand	0	0	0	0	0	0	0	0	0	0.1
Ukraine	0	0	0	0	0	0	0	0	0	0
North Korea	0	0	0	0	0	0	0	0	0	0

Fig. 6 AI and Semiconductor Technology Dashboard Score CET Index

Root Causes of Monetization Gap:

Thus, while India is increasingly engaging with the global IP market, it is doing so as a net consumer rather than a value-generating contributor, pointing to a persistent structural disconnect between innovation inputs and commercial outputs using IP for monetization.

India's lagging performance is the result of structural inefficiencies across the commercialization pipeline, regulatory environment, and international engagement. The National IPR Policy 2016 has achieved notable administrative improvements, including reduced patent application pendency and increased filing rates, but has not addressed the fundamental commercialization gap.

There still exist several critical bottlenecks:

1. A Fragmented Innovation-to-Commercialization Pipeline:

While patent filings by Indian startups and MSMEs grew by 310%, from 1,492 in 2018–19 to 6,120 in 2023–24, commercialization rates remain critically low⁵. India's domestic patent filing success rate stands at just 10%, compared to 40% for Indian filings abroad, pointing to institutional weaknesses in supporting domestic IP development and protection.

This disconnect is particularly visible in India's public sector research ecosystem, which includes over 6,800 science and technology institutions. Despite this scale, technology transfer remains weak. The National Research Development Corporation (NRDC) has achieved an average of only 33.7 technology transfers per year, with less than 23% of its portfolio reaching industry partners.

Premier institutes in India have become primarily talent pipelines, supplying graduates to domestic and MNC firms, rather than innovation hubs focused on market-aligned R&D or IP monetization.

Despite global demand for novel formulations, such institutes lack incentive-based frameworks to pursue research tailored to export markets.

Further evidence from a 2021 study⁶ across 25 Indian universities shows that while Technology Transfer Offices (TTOs) formally exist, they “hardly channelize resources for socially useful innovation.”

⁵ As stated by Mr. N. Ramchander, Joint Controller, Controller General of Patents, Designs and Trademarks at the 3rd Global IP Leadership Conference Building a Robust IP Ecosystem for Viksit Bharat ASSOCHAM event.

⁶ Factors Affecting Technology Transfer and Commercialization of University Research in India: a Cross-sectional Study by Authors - Ramya Ravi and Manthan D. Janodia

2. Gaps in Technology Business Incubation

India hosts over 1,100 active incubators, but with a density of only 0.8 incubators per million people, it falls well behind the 8–10 per million seen in the U.S., U.K., and China.⁷

Only 8.2% of Indian startups undergo incubation, and only 10 percent of the incubators support 98 percent of these startups that are incubated, revealing a weak link between innovation and commercial scalability.

3. Underdeveloped IP Licensing Ecosystem and Weak Global Enforcement

India's IP monetization is also hampered by an underdeveloped licensing infrastructure and limited global enforceability. As per the 2021 study⁸, most research institutions and startups lack the institutional capacity to negotiate or monitor cross-border IP agreements, owing to insufficient legal expertise, weak valuation frameworks, and low inventor incentives.

This domestic gap is compounded by weak international enforcement. India remains on the U.S. Trade Representative's 2025 Priority Watch List which describes India as "one of the world's most challenging major economies" in IP enforcement. Its limited engagement in multilateral institutions such as WIPO-led forums and underrepresentation in standard-essential patent (SEP) ecosystems further undermines its ability to secure automatic licensing income tied to global technology standards.

4. Low National Industry Incentives for Licensing-Based Business Models

India's tech industry remains primarily oriented toward services and product exports, with limited emphasis on licensing-based revenue models which presents a significant structural barrier. In 2017–18, while Mode 1 services accounted for 81% of potential ICT-enabled exports, these were largely labor-intensive (e.g., BPO and data entry), not IP-driven.⁹

This pattern is also evident in pharmaceuticals, where majority of the Indian firms focus on exporting generic formulations and API's rather than monetizing proprietary molecules through licensing. While effective for short-term revenue, this model misses the long-term gains associated with royalty-based income that define leading pharmaceutical markets.¹⁰

⁷ According to the PIB Press Release on the Startup Incubation Ecosystem report by NSRCEL (IIM Bangalore) and CREST (IIT Madras)

⁸ See footnote 7

⁹ From India's Export of ICT-enabled Services – An All-India Survey for 2017-18 by DGCIS and Ministry of Commerce and Industry, GOI.

¹⁰ Verified at the meeting with stakeholders on 9th July, 2025 at Centre for WTO Studies, Delhi

5. Regulatory and Tax Disincentives

India's tax and regulatory framework imposes substantial burdens on IP exports. The Finance Act 2023 doubled the withholding tax on royalty and technical service fees from 10% to 20%, disproportionately affecting foreign licensors and creating disincentives for global IP deals.

Although FEMA restrictions on royalty payments were lifted in 2009, complex approval processes, ambiguous tax treatment, lack of regulatory clarity and absence of implementation support continue to affect outbound licensing and discourages adoption by potential licensors.

6. Lack of Dedicated Policy Support for Mode 1 IP Services Exports

India lacks a national policy framework dedicated to IP-based service exports. While recent efforts, such as the 2024 DST study on Technology Transfer Centres¹¹, recognize the need to strengthen TTOs, implementation remains limited.

This challenge is further compounded by the Global Capability Centres (GCCs) in India. These are operations set up by multinational companies in India to perform high-end functions such as R&D, software development, analytics, and engineering design. India hosts over 1,600 GCCs, employing more than 1.7 million people.

For example, a Korea-based semiconductor firm may operate a GCC in Bengaluru for advanced chip design. While the team in India develops a patentable architecture, the patent is filed under the Korean parent company, and any licensing revenue flows outside India's IP accounts. Thus, India becomes the location of creation, but not of commercialization.

While these centres contribute significantly to employment and skills development, they often do not localize intellectual property ownership. The IP generated within GCCs is typically registered, monetized, and legally held by the parent companies abroad, not by Indian entities or under Indian jurisdiction.

This structural model creates an illusion of innovation strength while masking a critical weakness: India's most advanced technical work often bypasses domestic IP systems entirely. Without coordinated governmental support for Mode 1 IP services, even India's strongest tech sectors remain disconnected from global IP markets.

¹¹ 'Technology Transfer Centres to increase commercialization of innovations in India Research' carried out by DST – Centre for Policy Research, Panjab University

7. Vulnerability to Imitation and Market Displacement

Even when Indian firms do successfully innovate, their products are increasingly vulnerable to imitation by lower-cost economies with advanced manufacturing and subsidy regimes. In the absence of robust international enforcement and brand protection, Indian innovations are frequently replicated and sold as cheaper substitutes, effectively displacing original IP holders from their own export markets and further reinforces its position as a net IP importer.

This dynamic is particularly acute in pharmaceuticals, electronics, and AI, where the costs of duplication are low and enforcement is weak. As mentioned before this is compounded by India's low rate of international patent filings, underrepresentation in standard-essential patent (SEP) consortia, and limited geopolitical leverage in IP dispute forums such as WIPO or WTO's DSU.



Why an overhaul is necessary

India's IP monetization deficit represents a strategic vulnerability that undermines the country's technological sovereignty and economic competitiveness. The persistent outflow of \$9.2 billion annually for foreign IP represents foregone revenue that could support domestic innovation ecosystems, research infrastructure, and technological capability development.

The geopolitical implications are equally significant. As the CET index states, countries that control valuable IP assets wield considerable influence over global technology standards, supply chains, and innovation trajectories. India's position as a net IP importer limits its ability to shape technological developments in critical sectors and reduces its leverage in international technology negotiations and standard-setting processes.

Furthermore, the current trajectory risks perpetuating India's position in lower-value segments of global value chains. Without successful IP monetization, Indian companies remain primarily engaged in contract manufacturing, services delivery, and technology adaptation rather than innovation leadership and IP licensing that generate higher margins and strategic control.¹²

We can look at Singapore's experience demonstrates the possibility of rapid transformation. Through focused policy incentives, IP enforcement reforms, and targeted international licensing strategies, it transitioned from a marginal IP player to a top-ten global IP exporter in under two decades. For India, this offers a clear precedent and a compelling reason to unlock its own IP monetization potential.

¹² Uses the Semiconductor Geopolitics - Past, Present, and Future by Shree Kumar

Government Response: The RDI Scheme and ANRF Framework

Having identified the critical policy gaps in India's IP monetization landscape, it is essential to assess recent government efforts aimed at bridging these divides.

The Government of India's recent approval of the ₹1-trillion Research Development and Innovation (RDI) Scheme, coupled with the establishment of the Anusandhan National Research Foundation (ANRF), represents the most ambitious government intervention in innovation financing since independence.

The RDI Scheme operates through a two-tier architecture designed to bridge the critical gap between research and commercialization that has historically plagued India's innovation ecosystem. At the first level, a Special Purpose Fund (SPF) established under the ANRF manages the entire ₹1-trillion corpus, providing strategic oversight and sectoral allocation guidance. At the second level, specialized fund managers deploy these resources through targeted interventions including long-tenure loans at minimal or zero interest rates, direct equity infusions in startups

Importantly, the scheme focuses on “sunrise sectors” such as deep-tech, artificial intelligence, and green technologies - precisely those areas where India exhibits robust research capacity but lags in global commercialization, as highlighted in the Critical and Emerging Technologies Index.

By aligning financial instruments with strategic innovation goals, the RDI Scheme and ANRF framework directly target many of the systemic barriers to IP monetization identified in this brief. Together, they offer a transformative opportunity to shift India's innovation ecosystem from one centered on research output to one that consistently delivers commercial returns, global licensing success, and competitive IP exports.

Policy Recommendations

India's intellectual property monetization deficit represents a critical structural challenge that demands coordinated government intervention across multiple dimensions.

The National IPR Policy (NIPRP) of 2016 laid indispensable administrative foundations for India's innovation system, yet today's data on patent working, licensing income, and cross-border Mode 1 IP receipts reveal a persistent monetization gap.

This comprehensive policy framework addresses the six fundamental barriers identified in India's innovation commercialization pipeline through evidence-based interventions modeled on successful countries that have implemented them, sorted by their priority.

1. National IP Commercialization Authority

While the 2016 National IPR Policy proposed a public platform—CIPAM (Cell for IPR Promotion and Management)—to connect creators with users and explore the feasibility of an IP exchange, no formal rules were implemented, and the platform was never launched. The National Research Development Corporation (NRDC) continues to facilitate fewer than 40 technology licenses per year, highlighting the lack of institutional capacity at scale.

Thus, India urgently needs a National IP Commercialization Authority under the Department of Science and Technology to serve as a centralized body coordinating IP commercialization across government research institutions, universities, and private sector interfaces. This authority should maintain a national database of commercialize-able IP assets, set royalty benchmarks, facilitate licensing transactions, and provide scaling-up with financing and global matchmaking support.

Internationally, models like South Korea's KIPO demonstrate the transformative impact of centralized coordination, where dedicated IP management bodies played a key role in transitioning the country from a technology importer to a net IP exporter. Evidence shows that technology transfer is most effective when supported by dedicated, professionalized offices embedded within the innovation ecosystem.

2. IP Monetization Fund

Bridging the gap between early-stage innovation and commercial application remains one of the most critical challenges in IP monetization. Research suggests that university and corporate R&D projects typically require 3–5 years to transition from proof-of-concept to market-ready technologies, while conventional financing models expect returns within 18–24 months. This misalignment discourages investment in IP-intensive ventures that need long term capital.

To address this, the government should establish a dedicated sovereign IP monetization fund that provides non-dilutive, long-tenure financing to patent-rich startups and SMEs. Such a fund would offer low-interest loans or equity investments, with milestone-based disbursements linked to international patent grants, licensing deals, or technology transfers.

The recently enacted Research Development and Innovation (RDI) Scheme takes a step in this direction. With its ₹1 trillion corpus, it surpasses the total venture capital investment in Indian startups over the past five years and provides unprecedented financial backing for innovation-led growth. By offering the low-cost, long-term capital through a Special Purpose Fund (SPF) managed by the Anusandhan National Research Foundation (ANRF)¹³, the scheme directly addresses the temporal mismatches. These funds are disbursed to projects via fund managers - including loans, equity, and other forms.

The Jai Anusandhan initiative under the 2024-25 budget also provides government-backed, interest-free loans to early-stage, IP-intensive startups, further reducing the risk burden for young entrepreneurs in deep-tech and strategic sectors.

India's approach aligns with successful global models such as Israel's Yozma Fund which catalyzed a thriving venture capital ecosystem that helped generate over \$3 billion in tech exports within a decade with only an initial \$100 million government commitment. Similarly, Singapore's Deep-Tech Funds have shown how early-stage public capital can de-risk private investment, especially in high-risk, high-impact technology areas, while still maintaining commercial incentives.

3. Tax Reform for IP Exports

According to academic literature, regulatory and tax frameworks significantly impact IP monetization decisions. Tax breaks on IP and Support for IP registration in overseas markets such as the US are critical policy tools for enhancing IP commercialization¹⁴.

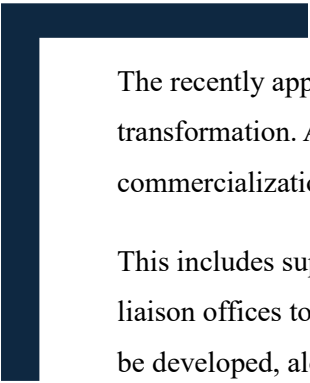
Implementing immediate tax incentives for IP exports, including reduction of withholding tax on royalty income down from 20% for IP exports, and establishment of IP export promotion zones with GST rebates will go a long way in promoting IP exports.

4. TTO Enhancement Program and University-Industry IP Bridge Initiatives

To strengthen India's innovation-to-market pipeline, the objective is to establish and upgrade Technology Transfer Offices (TTOs) in all major universities and public research institutions.

¹³ Approved by Union Cabinet in July 2025 and established under the DST.

¹⁴ The Past, Present, and Future of the U.S. Patent System, an Introduction to Transcripts of the International IP Commercialization Council's Annual Conference by Megan M. La Belle



The recently approved RDI Scheme and ANRF framework offer a timely opportunity to fund this transformation. A dedicated portion of the ₹1-trillion corpus should be ring-fenced for building commercialization infrastructure, including TTOs.

This includes support for hiring skilled staff, strengthening patent filing capabilities, and setting up liaison offices to connect with industry. A national certification program for TTO professionals should be developed, alongside the introduction of clear performance metrics tied to licensing revenues and technology transfer success rates.

In parallel, India must promote structured university–industry collaboration through joint research facilities, shared IP ownership models, and industry-sponsored research chairs with mandatory commercialization components.

International evidence supports this approach. For example, South Korea’s experience shows that coordinated knowledge transfer from public research organizations significantly boosts patenting activity, while global studies confirm that well-structured academia–industry partnerships substantially enhance technology transfer outcomes.

5. IP Valuation Framework Implementation

Research has indicated that strategic IP audits and valuations are critical for identifying hidden value and commercialization opportunities. OECD guidelines provide comprehensive methodologies for IP valuation, including cost, market, and income approaches¹⁵.

Develop and implement standardized IP valuation methodologies aligned with international best practices, establish certified IP valuation professionals, and create regulatory frameworks enabling IP assets to serve as collateral for business financing.

6. Strengthening Domestic IP Enforcement and Dispute Resolution

India’s international IP enforcement challenges are compounded by weaknesses in its domestic legal infrastructure. Research from WIPO and other global studies confirms that effective and timely dispute resolution mechanisms are critical for enhancing the credibility, marketability, and licensing potential of intellectual property.

To strengthen India’s IP ecosystem, the country should establish dedicated IP courts with judges trained in technology and commercial law, introduce fast-track litigation channels, and institutionalize specialized alternative dispute resolution (ADR) platforms for IP conflicts¹⁶. These measures would

¹⁵ Assessment of intellectual property management and technology commercialization in animal science research by Vikram Singh, Shiv Datt and Neeru Bhooshan.

¹⁶ WIPO Magazine - A closer look at specialized intellectual property courts – a report by Mr. Jacques de Werra

not only improve enforcement efficiency but also boost investor and licensee confidence in Indian-origin IP.

A relevant comparison is Singapore, which has emerged as a regional leader in IP dispute resolution. Its specialized IP courts have significantly accelerated case timelines, while the Singapore International Arbitration Centre (SIAC) hosts a dedicated panel of IP arbitrators, enabling faster, expert-led arbitration for complex IP cases¹⁷. India can draw from this model to build a more efficient, globally credible IP dispute resolution framework that supports both domestic innovation and international licensing ambitions.

7. Sector-Specific IP Strategies

To unlock India's IP monetization potential, the government should develop dedicated commercialization strategies for its areas of strength — artificial intelligence, biotechnology, pharmaceuticals, and software services.

These strategies should include sector-specific incentives, standard-essential patent (SEP) filing programs, and export-oriented licensing hubs. For instance, in the semiconductor industry, India could introduce a design-IP subsidy scheme and establish a pooled patent entity for fabless firms. In AI, the creation of a dedicated SEP task force and an export-focused SaaS licensing platform could drive global IP revenues and licensing opportunities.

South Korea's strategy offers a compelling example: by adopting sector-focused IP commercialization plans in semiconductors, AI, biotechnology, space, and quantum technologies, the Korean government achieved significant gains in technology transfer and outbound licensing¹⁸. India can similarly benefit from a targeted, sectoral IP policy architecture that matches innovation strengths with commercial opportunities.

8. Digital IP Exchange Platform

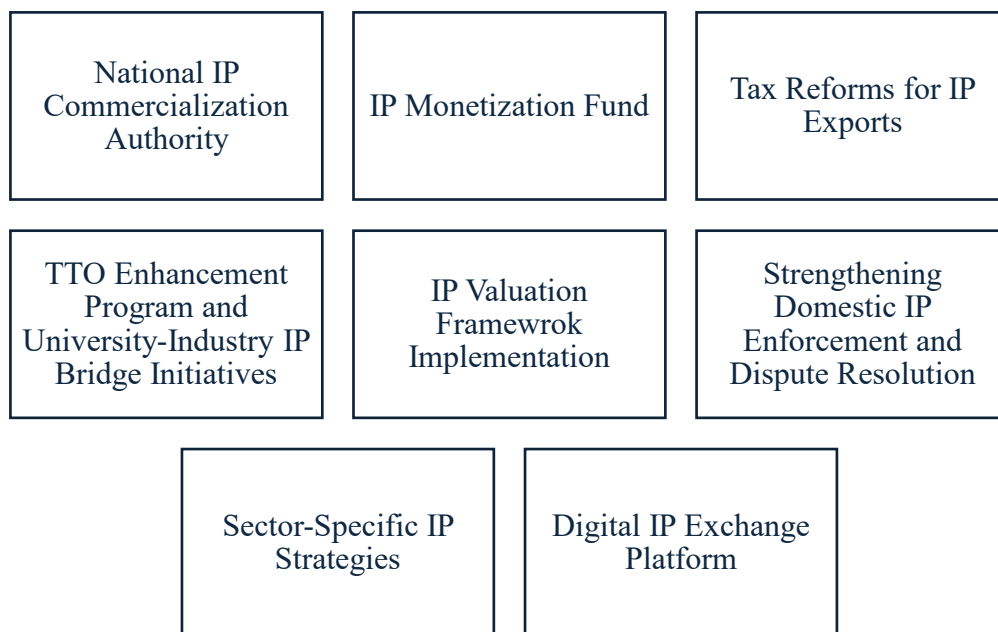
Current systems lack efficient mechanisms for matching IP supply with demand, leading to underutilization of valuable IP assets. There exists a huge information asymmetry in the IP market. Research by WIPO for IP Policies for Universities and Research Institutions demonstrates that digital platforms significantly improve IP licensing efficiency and transparency.

¹⁷ Handbook on IP Commercialisation - ASEAN-Australia-New Zealand Free Trade Area- Economic Cooperation Support Programme (ECSP)

¹⁸ FICCI IP Update – August 2023 Issue - Monetizing IP Rights to Drive Growth

As originally destined by the goals in CIPAM, there is a need to establish a digital marketplace for IP licensing, create automated matching systems connecting IP holders with potential licensees, and implement transparent pricing mechanisms with real-time royalty benchmarks

Korea's IP-Plug Platform, launched in 2015 provides a successful model for digital IP exchanges. It is a networking session that brings together diverse IP-related individuals and groups and connects those in need of technology with companies, universities, and public research institutions that have relevant technologies.



Conclusion - Implementation Framework and Monitoring

India's 2016 National IPR Policy established a foundation for intellectual property awareness and institutional development but did not sufficiently address the structural and operational barriers to monetizing IP. Key areas such as Mode 1 IP exports, international licensing, and enforcement remain underdeveloped. As this brief has outlined, the next phase of India's innovation strategy must go beyond promotion and protection, moving decisively toward monetization and integration into global value chains.

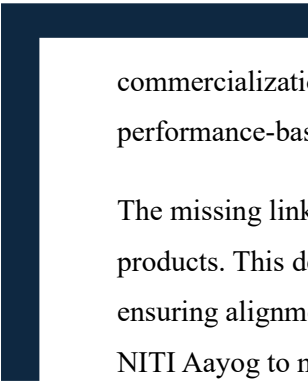
The policy interventions proposed here including the creation of a National IP Commercialization Authority, sector-specific IP monetization strategies, enhanced dispute resolution mechanisms, and targeted incentives for outbound licensing are designed to bridge the gap between innovation and economic value creation. This shift is imperative for converting India's expanding R&D capacity into tangible economic returns and strategic influence.

However, the transition from vision to execution is shaped by India's unique position as a developing, federal democracy faces some systemic challenges:

- Inconsistency in sticking to a policy pathway once adopted, and frequent shifts in leadership at both Union and State levels and pressures from competing interest groups disrupt long-term initiatives.
- India simply does not have the fiscal space for the kind of massive industrial policies or technology development programs being rolled out by the governments of the other big five economies, i.e., US, China, EU, and Japan. India's constraints will thus require smart, resource-efficient policy design that leverages public-private partnerships, industry co-funding, and targeted support for high-potential sectors like AI, semiconductors, biotechnology, and green tech from the outset.

The experience of leading innovation economies shows that the most effective IP strategies combine strong institutions, high-level policy alignment, and clear accountability for results.

International experience shows that successful IP strategies combine strong institutions, high-level policy alignment, and clear accountability for results. In India, this will require sustained cross-ministerial coordination and political commitment. Recent initiatives such as the ₹1-trillion RDI Scheme and the Anusandhan National Research Foundation offer unprecedented resources to bridge the research-commercialization gap. However, without an execution framework anchored in clear



commercialization mandates, professionalized Technology Transfer Offices, specialized IP courts, and performance-based monitoring, these resources risk diffusing without lasting impact.

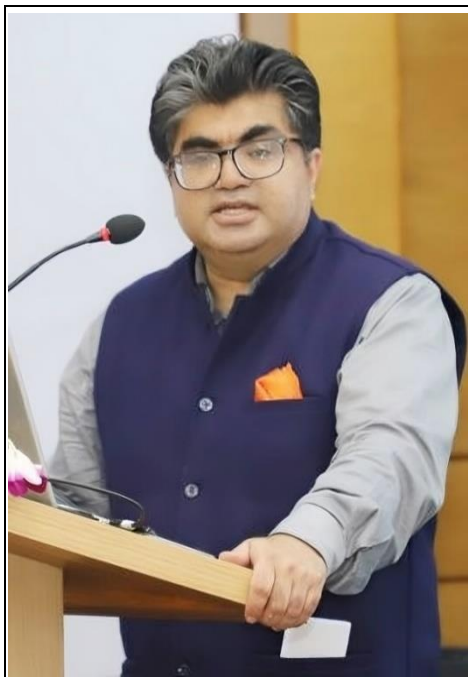
The missing link lies in execution—turning ideas into income, and patents into globally traded products. This demands breaking down silos between trade, industrial, and technology policy, ensuring alignment at the highest levels of government, and empowering independent bodies such as NITI Aayog to monitor progress, identify bottlenecks, and enforce accountability (ensuring that the Implementation should rest with domain ministries). A coordinated approach, ideally led from the Prime Minister’s Office, would integrate trade, industrial, and IP strategies into a unified policy architecture.

By achieving this “trifecta” of coordinated policymaking, efficient execution, and rigorous monitoring, India can move from being a major generator of IP to a global leader in IP commercialization—securing long-term economic gains, strengthening strategic resilience, and enhancing its position in the global innovation economy.

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About CRIT

India's Foreign Trade Policy (FTP) Statement 2015-20 suggested a need to create an institution at the global level that can provide a counter-narrative on key trade and investment issues from the perspective of developing countries like India. To fill this vacuum, a new institute, namely the Centre for Research on International Trade (CRIT), was set up in 2016. The vision and the objective of the CRIT were to significantly deepen existing research capabilities and widen them to encompass new and specialised areas amidst the growing complexity of the process of globalization and its spill-over effects in domestic policymaking. Secondly, enhancing the capacity of government officers and other stakeholders in India and other developing countries to deepen their understanding of trade and investment agreements.

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