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Innovation and Patents Policy for *Viksit Bharat 2047*

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IIT-Indore & ISID Policy Roundtable
Innovation and Future-Ready Patent Policy for Viksit Bharat

IIT-Indore and ISID jointly organised the policy roundtable on Innovation and Future-Ready Patent Policy to mark the World Intellectual Property Day 2026 on April 24, 2026 in Indore. It brought together policy makers, academicians, industry leaders, and legal experts. Moderated by **Prof Ruchi Sharma**, DPIIT IPR Chair Professor, IIT Indore, the Roundtable was addressed by **Prof Nagesh Kumar**, Director, ISID, New Delhi, **Dr Akhilesh Gupta**, Distinguished Visiting, Professor, IIT Indore and a former Adviser, Department of Science & Technology, Government of India; **Prof Rupinder Tewari**, Mentor, DST-Technology Enabling Centre, Panjab University, Chandigarh; **Adv Alvin Antony**, Chief Compliance Officer, GovernAI; **Mr Janak Nabar**, Chief Executive Officer, CTIER, Pune; and **Dr Ajay Thakur**, Deputy Controller of Patents, IP Office, Ahmedabad. The discussions covered the trends and patterns in the innovative activity in India in a global comparative perspective, insights into the relative underperformance of the country and the role that the intellectual property ecosystem plays in the context of emerging technologies such as artificial intelligence, digital innovation, and clean energy. The YouTube link of the roundtable is https://youtu.be/YLnzpGEP9H0?t=60

India's aspiration to become a developed nation by 2047 rests heavily on its ability to generate, protect, and commercialize new technologies. Innovation drives productivity, competitiveness, and manufacturing-led employment, and the patent system is a key institution shaping the incentives to invest in it. Over the past years, India's innovation system has become markedly more dynamic: the private sector, startups, and universities have been more active in research, and resident patent filings now exceed those of non-residents. Yet a wide gap persists between invention and its commercial use, investment in research and development (R&D) remains low by international standards, and emerging technologies such as artificial intelligence (AI) are raising new questions for intellectual property (IP) law and administration. How can India move from a system that generates more patents to one that converts innovation into economic value and global technological leadership? What would a future-ready innovation and patent policy look like?

This policy brief summarizes the key issues and recommendations that emerged from the Policy Roundtable on "Innovation and Future-Ready Patent Policy for *Viksit Bharat*", organized on the occasion of World Intellectual Property Day 2026 at IIT Indore. The roundtable was conceived as a policy-oriented exercise to examine how India's innovation and patent ecosystem can propel the vision of *Viksit Bharat 2047*. It brought together insights from academia, industry, the patent administration, and policy institutions. This brief distils their inputs into a practical policy toolkit for strengthening innovation outcomes in the Indian context.

Stylized Facts on India's Innovation System

India's innovation landscape has undergone a notable transformation in recent years. Several broad trends characterize this evolution. First, there is clear dynamism in innovation activities. The private sector is increasingly contributing to research and development, with

firms investing more actively in innovation ecosystems, technology development, and commercialization efforts. Startups have emerged as key drivers of disruptive and agile innovation, while academic institutions and incubators are playing a growing role as hubs of knowledge creation and early-stage technological development. Additionally, India's demographic profile, with a large and increasingly entrepreneurial youth population, has created a strong foundation for innovation-led growth. Second, patenting activity has expanded significantly, particularly among resident applicants. Patent applications by domestic entities have risen sharply over the past decade, with resident filings increasing more rapidly than non-resident filings. This shift signals a gradual strengthening of indigenous innovation capacity and marks an important structural change in India's patent ecosystem. Third, startups are becoming increasingly visible within the patent system, with both applications and grants rising over time, indicating growing engagement of new firms in formal innovation processes. At the same time, patenting activity remains concentrated among a relatively small group of firms and institutions, suggesting uneven distribution of innovation capabilities. Fourth, from an institutional perspective, India's patent regime has undergone a major transformation since the 2005 Trade-Related Aspects of Intellectual Property Rights (TRIPS)-compliant reforms. Over time, the system has evolved into a digitally enabled, process-driven regime, characterized by e-filing and full digitalization of patent processes, automated and centralized examination systems, faster timelines, expedited examination mechanisms, and increasing alignment with global patent standards through the Patent Cooperation Treaty (PCT) participation. These reforms have significantly improved administrative efficiency, transparency, and accessibility of the patent system.

The Core Policy Problem

Despite these achievements, a central challenge remains: India's innovation system is increasingly active, but not yet sufficiently effective in translating innovation into economic and technological outcomes. In particular, growth in patent filings has not been matched by proportional improvements in commercialization and market deployment. Innovation activity remains fragmented and uneven, both across sectors and regions. There is limited alignment between firm-level innovation strategies, business strategies, and patent strategies. Institutional linkages between industry and academia remain weak, constraining translational research. Emerging technologies such as artificial intelligence are creating new legal and administrative challenges for the patent system. Thus, the policy challenge is no longer simply to increase innovation inputs (such as R&D) or patent filings), but to ensure effective innovation outcomes, including commercialization, competitiveness, and global technological leadership. In line with this problem framing, the following forward-looking policy questions become important:

India's innovation system changed markedly as the private sector takes a more active role with startups emerging as key drivers of agile and disruptive innovations

1. How can India support translational, product-driven research across industry and academia?
2. How can policy move from encouraging patent filing to enabling commercialization and value creation?
3. How should firms align business, technology, and patent strategies to enhance innovation outcomes?
4. How can the patent system respond to AI-driven innovations and related legal complexities?
5. How can AI tools be leveraged to improve patent search, classification, and administrative efficiency?

The insights emerged during the deliberations on the above questions are divided into following four areas.

Propelling Private Sector Research and Development

A central theme emerging from the discussion is that India's official R&D expenditure[1] is around 0.7 percent of GDP, far below the global average of around 1.9 percent and significantly lower than countries such as South Korea and China. Another concern was that much of India's R&D expenditure is concentrated in public-funded institutions, with business R&D accounting for only around 0.3 percent of GDP, where innovation could more directly feed into production and commercialization. Private R&D is also concentrated in a few sectors, particularly pharmaceuticals and automobiles, and is highly dependent on firm size.

There is a case of market failure: since firms cannot fully appropriate the benefits of innovation, governments across the world provide subsidies and incentives for R&D. In this context, the importance of fiscal incentives such as weighted tax deductions and R&D subsidies highlighted. The underlying condition they described is one where firms possess the financial capacity to invest but lack sufficient incentives due to uncertainty, risk, and incomplete appropriability of innovation returns. The proposed tool, specifically weighted tax deductions for R&D expenditure, operates by reducing the effective cost of undertaking research activities. When firms are allowed to deduct more than the actual expenditure (as previously with the case of 200 percent weighted tax deductions in India), the after-tax cost of R&D declines, making such investments more attractive relative to other uses of capital. It is further observed that the rollback of such incentives was associated with a decline in R&D intensity in certain sectors, suggesting that firms are responsive to these policy instruments. The mechanism, therefore, lies in altering the cost-benefit calculus of firms, encouraging them to allocate more resources toward innovation. The expected impact is not only an increase in firm-level R&D but also broader improvements in productivity, competitiveness, and manufacturing growth.

A related recommendation focused on the introduction of secondary-tier intellectual property rights, such as petty patents, also known as utility models, to better accommodate the nature of innovation in India's industrial structure. The underlying issue is that a large share of innovation, particularly among MSMEs and in the informal sector, is incremental, adaptive, and engineering-based, rather than radical, frontier or science-based innovation. Such improvements often fail to meet the strict novelty and inventive step requirements of standard patents, leaving them unprotected and reducing firms' incentives to formalize or scale these innovations. Secondary-tier IPRs address this gap by offering simpler, faster, and lower-cost protection with a lower threshold of inventiveness and shorter duration. Experiences from East Asian economies such as Japan, South Korea, Taiwan, and China suggest that utility models can play an important role in building early-stage innovation capabilities and supporting industrial upgrading.

The role of mission-oriented public R&D programs, particularly in strategic sectors such as electric vehicles, green hydrogen, batteries, and artificial intelligence, is also emphasized. For example, some successful programs in this regard include the green revolution, atomic energy, vaccines, space programs, and India Stack (UPI[++]). While India has strong public research institutions, their contribution to industrial innovation and commercialization remains limited. Bringing the private sector through partnerships and subcontracting can increase commercialization as well as generate greater spillover and capacity building. The proposed tool involves designing large-scale, mission-mode programs that align public research efforts with national industrial priorities. Such programs function by directing resources toward areas with high

Fiscal incentives can reduce the risk of innovation and raise appropriability of its returns while utility models help build early-stage innovation capabilities and support industrial upgradation

spillover potential and coordinating multiple actors within the national innovation system. The mechanism operates through targeted investment and coordination, ensuring that research outputs are aligned with industrial needs. The resulting impact is expected to be the development of technological capabilities in critical sectors, thereby strengthening India's long-term industrial competitiveness.

Another important issue raised concerns the limited spillovers from Global Capability Centers (GCCs) of Multinational Corporations (MNCs) operating in India. There are more than 1,800 GCCs in India, and the bulk of them engage in Engineering and R&D activities. Although these centers employ skilled workers and contribute significantly to R&D activity, they often function as enclaves with weak linkages to the domestic economy. The policy tool suggested involves creating mechanisms that enhance knowledge diffusion from GCCs to domestic firms and startups, such as encouraging entrepreneurial spin-offs and fostering collaboration networks. The mechanism here is based on labour mobility and knowledge transfer, where skills and technological expertise acquired within GCCs are disseminated into the broader economy. The expected impact is the transformation of foreign-led R&D activity into a source of domestic innovation capability.

Finally, there is a need for sector-specific innovation policies. The condition underlying this recommendation is that different industries face distinct technological and institutional constraints, making uniform policy approaches ineffective. The proposed tool involves designing tailored interventions for each sector, such as regulatory reforms in pharmaceuticals or ecosystem development in semiconductors. The mechanism operates through targeted problem-solving, ensuring that policy instruments address the specific bottlenecks faced by each industry. The impact is a more efficient allocation of resources and a higher likelihood of successful innovation outcomes across sectors.

Policy tools should provide supportive mechanisms that enhance knowledge diffusion from global capability centre (GCCs), alongside designing sector specific innovation policies

Industry-Academia Collaboration: Bridging the Translation Gap

A recurring theme across the discussion is the persistent gap between academic research and industrial application. The core condition identified is that universities often generate knowledge in isolation, without sufficient engagement with industry, resulting in technologies that remain at early stages of development and fail to reach commercialization. A classic example of technology transfer and diffusion failure.

To address this, the early involvement of industry in academic research is necessary. The tool here involves integrating industry stakeholders into the research process from the outset, rather than at the final stages. This approach ensures that research problems are defined in alignment with real-world industrial needs. The mechanism operates by incorporating practical feedback during the research phase, thereby reducing the likelihood of technological mismatch. The proposed tools also encompass the provision of travel grants to faculty members, enabling them to engage in direct dialogue with industry stakeholders. In addition, outreach to industries through active participation in commercial fairs, exhibitions, and professional conventions will strengthen academia–industry linkages and foster collaborative opportunities for technology transfer and commercialization.

Another key policy tool is the establishment of robust and professionally managed Technology Transfer Offices (TTOs). The condition necessitating this intervention is the lack of institutional infrastructure to facilitate the transition from research to market. TTOs function as intermediaries that manage intellectual property, evaluate technologies,

and connect researchers with industry partners. The urgent need of the hour is to cultivate a cadre of professionals skilled in the licensing of technologies from academia to industry, encompassing identification, liaison, and contract execution. Establishing structured training programs for such professionals, and embedding their recruitment within universities, will create a sustainable pipeline of expertise. Over time, this is expected to drive a significant acceleration in the commercialization of academic research.

A key policy tool introduced is the Patent Trust System, inspired by international models. The underlying issue is that many patents generated within academic institutions remain unused due to the absence of mechanisms for identifying potential industrial users. The proposed tool involves creating centralized agencies that manage patent portfolios and facilitate licensing. The mechanism works by aggregating patents and matching them with firms, thereby improving utilization rates. The impact is enhanced monetization of intellectual property and greater diffusion of innovation. Furthermore, the issue of exclusivity in technology licensing persists. Industry often seeks exclusive rights over technologies, whereas universities and governments may prefer broader access. There is a need for a middle path in the form of "limited exclusive rights", where industries could initially receive exclusivity for a fixed period, after which technologies could become accessible to other users as well.

University-industry links can be strengthened through early involvement of industry, incentives for faculty, closer connect via commercial fairs and exhibitions and a third-party technology validation system

Additionally, the lack of trust between industry and academia was identified as a major barrier. To address this, introduce third-party technology validation systems. The condition here is that firms are often hesitant to adopt academic technologies due to uncertainty regarding their reliability. Finally, there is a need to reform academic incentive structures that reward industry-oriented research and technology transfer activities.

Promoting the Patent Ecosystem: Design and Efficiency

Digitization and procedural simplification: The discussion on patent systems highlighted that while India has made significant progress in increasing patent filings, systemic inefficiencies continue to hinder innovation outcomes. A major concern is the delay in patent examination and grant processes. The policy tool proposed involves leveraging digital technologies and artificial intelligence to streamline patent administration. The mechanism operates by reducing processing time and improving examination efficiency. The impact is a more predictable and responsive patent system, which strengthens incentives for innovation.

Also highlighted was the need to revisit India's Patent Box Regime. An important policy recommendation is to introduce a concessional tax regime on income derived from patents developed and registered in India as part of its innovation policy reforms. It is acknowledged that the scheme applies only to patented inventions and excludes several important forms of intellectual property, such as trademarks, designs, trade secrets, and non-patented innovations. Therefore, India should redesign and broaden the regime to include a wider range of IP assets so that it can more effectively incentivize innovation and commercialization. The expected impact is greater private-sector engagement in innovation activities.

The lack of strategic use of intellectual property within firms is highlighted. Many firms treat patents merely as protective tools after commercialization, rather than as strategic assets. The policy tool involves promoting awareness and capacity-building around IP strategy. The mechanism encourages firms

to integrate patenting into their innovation processes from an early stage. The impact is improved competitiveness and increased participation in global markets.

Another issue raised is the geographical concentration of innovation activity. The condition is that a small number of states dominate patenting and R&D activity. The proposed tool involves strengthening innovation ecosystems in less-developed regions through investments in universities and institutions. The mechanism expands the base of innovation activity. The impact is more inclusive and geographically balanced innovation growth.

Finally, there is a need to put emphasis on training, institutional capacity building, and large-scale awareness programs, which reflect an effort to strengthen the broader innovation ecosystem. Initiatives led by institutions such as the *Rajiv Gandhi National Institute of Intellectual Property Management* aim to enhance the capabilities of patent examiners, legal professionals, industry participants, and other stakeholders. Such efforts are critical for ensuring that the IP system can adapt to increasingly complex and technically sophisticated innovation landscapes.

New Technologies, Emerging Challenges and Opportunities

The final set of discussions focused on emerging technological challenges and opportunities, and the intensifying global technological competition. The proposed tool involves strategic investment in emerging sectors such as artificial intelligence, biotechnology, and green technologies. The mechanism aligns national innovation policy with industrial strategy, enabling focused capability development.

An important policy tool involves the use of artificial intelligence in patent administration. The underlying challenge and opportunity are the growing complexity and volume of patent applications. The mechanism involves automating parts of the examination process, improving both speed and accuracy.

A central policy priority is the need to adapt intellectual property frameworks to account for AI-driven innovation. The discussion highlights the limitations of the current "natural person" requirement for inventorship, as reflected in cases such as the *DABUS patent application*. Rather than immediately recognizing AI as an inventor, the more pressing policy need is to establish clear doctrinal standards, particularly around "significant human contribution", for AI-assisted inventions. This would ensure legal certainty while preserving incentives for innovation by aligning patentability criteria with the evolving nature of technological production.

AI governance cannot be separated from the material conditions of innovation, so effective policy must also extend to include investment in foundational infrastructure that AI depends upon

AI raises overlapping regulatory questions across patent law, copyright, data governance, and sector-specific regulation. The absence of coordination across these domains creates uncertainty that may deter innovation. Therefore, there is a need for regulatory alignment and coherence across institutions, alongside the adoption of a *techno-legal approach* that integrates technical expertise into legal and policy design. Importantly, it cautions against transplanting external models such as the European Union AI Act, advocating instead for a context-specific governance framework tailored to India's innovation ecosystem and developmental priorities.

A key policy insight is that AI governance cannot be separated from the material conditions of innovation. Effective policy must therefore extend beyond intellectual property rules to include investment in foundational infrastructure such as compute capacity, energy systems, data architecture, and mechanisms that facilitate commercialization and industry linkages. At the same time, the address underscores the importance of

embedding inclusivity, particularly through greater participation of underrepresented groups, in AI development. This integrated approach ensures that AI innovation is not only technologically advanced but also economically viable and socially aligned.

Finally, there is a need to address the availability of skilled researchers and engineers in key sectors. The policy tool needs to strengthen higher education and skill development systems. This mechanism increases the supply of human capital required for innovation. The impact is a sustained increase in innovation capacity and long-term economic growth.

Envisage innovation with inclusiveness to ensure its efficiency, wider diffusion and relevance, giving India the potential to assume a position of global leadership

Conclusion

Towards an Integrated Policy Toolkit

Taken together, the discussion underscored that innovation policy must be viewed as a coordinated system of interventions rather than a set of isolated measures. Fiscal incentives can stimulate R&D investment, but their effectiveness depends on complementary institutions such as TTOs and strong industry-academia linkages. Similarly, improvements in patent systems must be accompanied by efforts to enhance commercialization and strategic use of intellectual property. The overarching insight is that India's challenge is not merely to increase innovation activity but to improve its efficiency, diffusion, and global relevance.

Endnotes

1 It is pointed out that India's official R&D figures may underestimate actual innovation activity because they do not fully capture informal R&D, startup-led innovation, and R&D activities conducted through GCCs. According to ISID estimates discussed in the address, India's real R&D intensity may be closer to 1.25 percent of GDP, though still below the global average, see ISID (2025), India's Industrial Development Report 2024–25.

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