



BUILDING BRIDGES, NOT WALLS: A NEW BLUEPRINT FOR INDIAN INDUSTRY-ACADEMIA AI R&D COLLABORATION

In the frame: the GCC story so far

Almost thirty years ago we had a new entrant knocking our doors – the advent of Global Capability Centers (GCCs). The ‘ready to consume’ spice mix this time constituted the wide pool of STEM talent and the cost at which it was served, earning India a title of ‘cost arbitrage center’ back then. Little did we know, three decades later, this transformative force would redefine India’s global standing and make it ‘world’s capital for the GCCs’. This proliferation was massive, and world witnessed the ‘GCC Law of Mitosis’ with India as conducive ‘culture’ mainly through three stages. **Explosive growth in numbers and scale**- India has witnessed an exponential increase in the number of GCCs, from a handful in the early days to over 1,700+ today, with projections of reaching 2,500 by 2030. With trial and error, a successful mantra got formulated. This sets the right stage for the second wave - the **replication of best practices and operating models**. The “genetic material” of the successful models is being actively replicated across GCCs, ensuring efficient scaling and consistent quality. Third, **the emergence of specialized “organs” (Centers of Excellence)** evolving into highly specialized CoEs, GCCs are creating deeper expertise and higher value, vital for the entire ecosystem’s efficiency. The next step in the **line of evolution** involves positioning the CoEs as engines of talent development, customer-centric innovation, and leadership cultivation in the making.

With a robust R&D ability, these GCCs can evolve into strategic “second HQs” for their parent organizations for which a skillful navigation through hurdles in leveraging the full potential of academia is nonnegotiable. This paper, therefore, moves beyond merely identifying the **systemic challenges within industry-academia collaboration** in India’s R&D landscape to present a comprehensive set of, actionable solutions, offering a close to holistic perspective that guides the path from diagnosis to tangible innovation.



Why India? the strategic drive of MNCs

India's growing status as a global innovation hub is driven by its diverse talent pool, robust government support, unique market for testing products, and strategic value for multinational corporations seeking resilient R&D capabilities.

1. Mitigate geopolitical risks

One of the pivotal strategic moves for many MNCs is the mitigation of geopolitical risks by establishing R&D centers in India. Given the global uncertainties and regional instabilities that can affect business continuity, having a robust R&D presence in India acts as a hedge against such risks. India's stable political environment, technical advancement, geographical diversity and economic resilience offer a safeguard against regional disturbances elsewhere, ensuring that innovation and development processes remain uninterrupted. By leveraging India's strengths, MNCs not only bolster their global R&D capabilities but also create a strategic buffer that enhances their resilience and adaptability in a volatile global landscape. This foresighted approach underscores the importance of diversifying R&D operations, allowing companies maintain steady progress and seize new opportunities, even amid global uncertainties.

2. Proactive government support

The Indian government is firmly dedicated to transforming its R&D sector into a world-class hub for innovation and self-reliance. This dedication is evident through proactive policies, substantial financial investments, and the establishment of key institutions like the **National Research Foundation (NRF)** and **National Language Initiative (NLI)**. The Indian government is proactively encouraging multinational corporations (MNCs) to establish their R&D units in India through a multi-pronged strategy. Initiatives like **"Ease of Doing R&D"** fast-track approvals for labs and data access, while financial incentives such as tax benefits and **Production-Linked Incentive (PLI)** schemes in key sectors attract investment. Complementing these are **IPR reforms** that ensure faster patent processing and stronger protection. By offering these regulatory and financial incentives, the government aims to attract not just manufacturing, but the core R&D facilities of MNCs, embedding them within India's growing innovation landscape. This synchronized effort, coupled with a decade of political stability and the "Vikshit Bharat" 2047 vision, positions Indian government a not just as a facilitator, but a proactive partner as a secure and reliable investment destination for global R&D.

3. Strategic data landscape: Global product enhancement and testbed

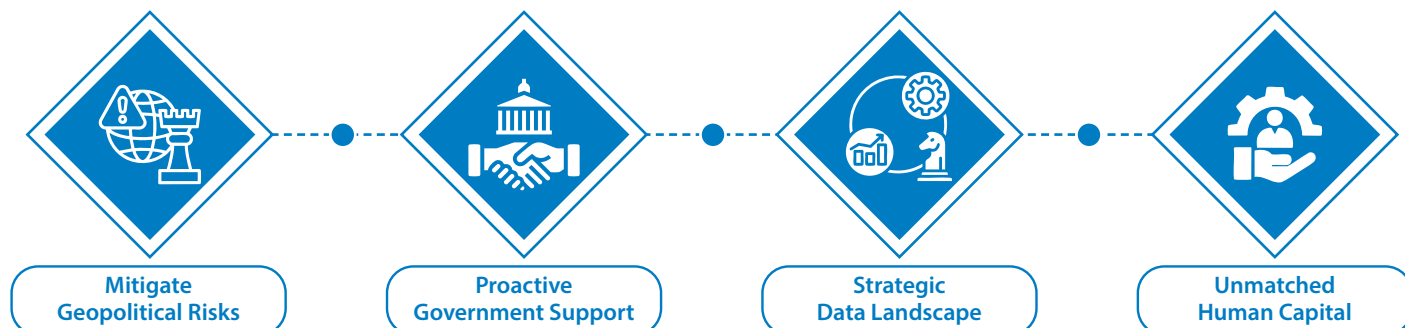
India had been rightly called as a **'melting pot of ethnicities'**- a landscape of boundless potential, where the immense linguistic, cultural, and socio-economic diversity of India is not just a demographic trait but a **strategic goldmine** for R&D. The country's diverse user base, spanning varied socio-economic strata, geographical conditions, and challenging operating environments, provides invaluable real-world feedback on **product performance, usability, and market fit**.

This unparalleled diversity allows for the development of robust, resilient, and globally scalable solutions that can withstand a wide array of conditions and cater to heterogeneous consumer demands - making India an ideal **"testbed"** for creating AI models that are resilient and globally applicable. The ambitious Project Vaani, and the pioneering platform, AIKosh, are few examples poised to revolutionize data accessibility for the AI ecosystem. On top of this, India has a well-established track record of **"frugal innovation"**. India's research and development thrives on a **"jugaad mindset,"** translating into innovative and cost-effective products. India consistently demonstrates a **"value-for-money"** proposition across the entire innovation lifecycle.

One of our respondents highlighted that if a product gains widespread adoption in the Indian market even with one month subscription, it inherently demonstrates significant value and global viability, often negating the need for further extensive testing. This makes India a critical market validation ground, where products are **"stress-tested against real-world complexities"** before global deployment, ensuring their robustness and market readiness.

4. Unmatched human capital

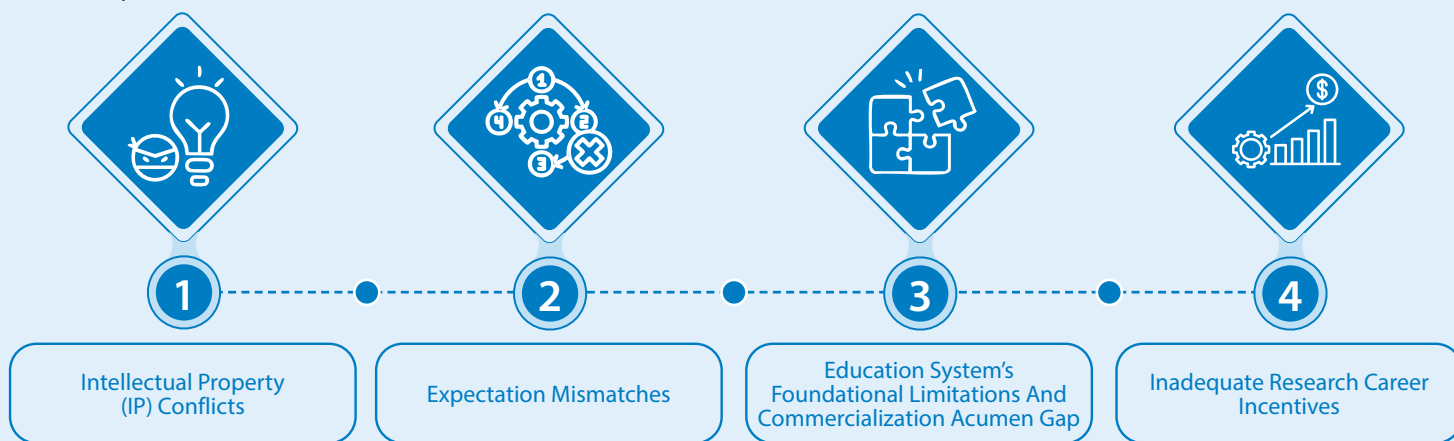
India's demographic dividend is arguably its most significant and enduring asset in the global R&D arena. Annually, the nation produces approximately **1+million** engineering graduates. The **continuous influx** of fresh talent ensures a sustainable supply of skilled individuals capable of being trained and integrated into cutting-edge R&D and tackling highly complex problems at scale, often with a unique blend of theoretical knowledge, practical adaptability, and an inherent drive for innovation. On top of this, Indian talent is increasingly asserting leading positions in global tech and R&D, proving the high quality of India's human capital firmly establishing itself as a **proactive co-creator** of advanced solutions



Academic - Industry disjunction challenge: Navigating from lecture hall to boardroom

Academic R&D is a fundamental driver of innovation, providing the foundational knowledge and skilled workforce that fuels economic growth. While private industry often focuses on applied research for commercial products, universities and research institutions are the primary engines of basic research, laying the groundwork for future breakthroughs. This is particularly evident in India, where academic institutions are a growing force in the country's scientific output. The IITs, NITs, IISCs, IIITs and other universities have been driving research into bigger social good. The total enrollment in PhD programs in India was over **2.12 lakh** in 2021-22, with a significant proportion science and technology. This burgeoning talent pool contributes to India's position as the **third-largest publisher of scientific and technical journal articles globally**, with over **207,000** articles published in 2022. This synergy between academic training and research output creates a powerful spillover effect that contributes significantly to national innovation and technological advancement.

The numbers clearly state that there is an immense potential in India's research landscape. However, its full realization is hampered by a significant disjunction between academia and industry. This collaboration, while promising on paper, faces serious, unaddressed challenges that need to be tackled head-on rather than brushing things under the carpet. The incredible R&D potential is held back by mismatched expectations, IP clashes, and a system that prizes memorization over innovation - but with the right tweaks, it could become a global research powerhouse.



1. Intellectual Property (IP) conflicts

A significant friction point arises from fundamental differences in IP ownership philosophies. Academic institutions, particularly those that are government-funded, often face mandates to open-source research and disseminate knowledge widely, which directly clashes with corporate needs for proprietary solutions, commercialization rights, and competitive advantage. This lack of clear, mutually beneficial IP sharing frameworks deters deeper, long-term collaboration.

2. Expectation mismatches

Industry typically operates on tight deadlines, short product cycles, and seeks immediate, market-ready deliverables. In contrast, academic research often involves longer timelines, periods of examinations and semester breaks, deeper exploration work, and a focus on fundamental understanding (e.g., PhD durations of 4-5 years) and publishing papers. This inherent mismatch in expectations regarding timelines, deliverables, and outcomes often leads to frustration, perceived inefficiency, and disengagement from both sides.

3. Education system's foundational flaw and commercialization acumen gap

India's education system, from primary school to university,

heavily emphasizes rote learning and exam performance over critical thinking and creative problem-solving. This approach inadvertently hinders the development of an innovative mindset.

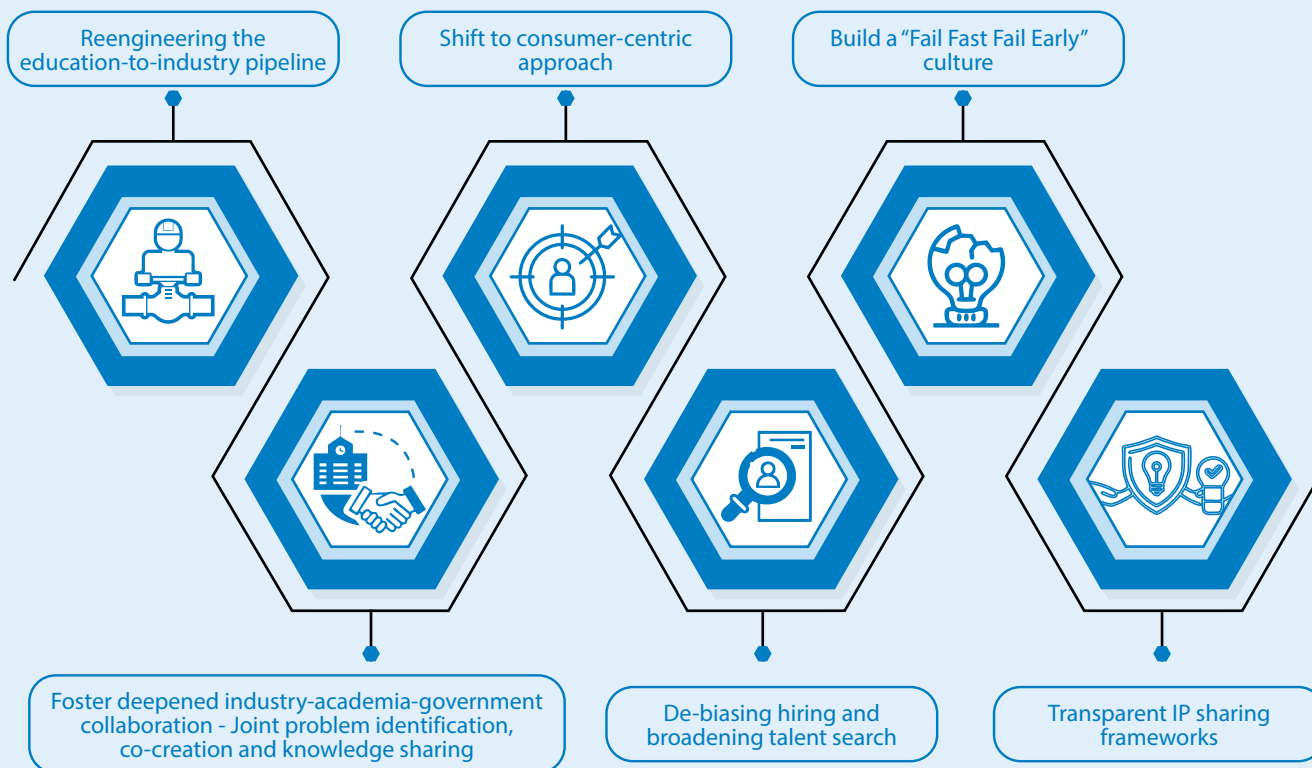
Indian researchers often possess strong theoretical knowledge and technical skills, but they sometimes lack "deep picture thinking"—the ability to translate complex research into marketable products. This deficiency often manifests as a struggle to identify genuine market needs, understand user experience, and add the crucial "bells and whistles" that differentiate a product in a competitive marketplace. As a result, many innovative ideas fail to achieve commercial success, contributing to a high startup failure rate despite a lively entrepreneurial ecosystem.

4. Inadequate research career incentives

A significant deterrent for attracting and retaining top research talent is the lack of competitive compensation and attractive career paths compared to industry. The lucrative financial rewards, faster career progression, and more immediate impact of corporate roles often lead to a "brain drain," where promising individuals choose industry over academia. This disparity, coupled with limited private sector funding for long-term research, diminishes the nation's core research capacity and hinders the development of a robust, self-sustaining research ecosystem.

Overcoming challenges: The law of symbiosis (mutualism and interdependence)

India's ambitious journey to becoming a global R&D powerhouse is fundamentally a collaborative endeavor, requiring concerted and sustained effort from all stakeholders: government, industry, and academia. The ultimate outcome hinges on fostering a truly symbiotic relationship among these entities, moving beyond mere discussions to concrete, actionable initiatives and measurable progress.



1. Reengineering the education-to-industry pipeline

To address the disconnect between academia and industry, we must champion curriculum reforms from early schooling to higher education to expand practical exposure of students. These reforms should prioritize critical thinking, creative problem-solving, and project-based learning over rote memorization, with an emphasis on real-world case studies and interdisciplinary approaches. Organizations must also diversify their offerings with programs like internships, "**predoc researcher programs**," and "**professors of practice**" roles. These initiatives provide invaluable hands-on experience and immerse students in real industry challenges, producing "industry-ready," deployable graduates.

2. Foster deepened industry-academia-government collaboration - Joint problem identification, co-creation and knowledge sharing

We must establish dynamic, ongoing partnerships where research problems are collaboratively defined from inception. This ensures academic research is not just theoretically robust but also directly aligned with real-world challenges. A novel approach to cultivating future talent involves offering **specialized elective courses** to colleges jointly designed by industry experts and faculties. Top-performing students from these courses would subsequently earn internships with the potential of culminating into full-time employment.

Furthermore, we should facilitate robust and regular exchange programs. In these programs, industry experts would deliver specialized courses or guest lectures in academic settings, while academics would undertake industry sabbaticals or short-term consulting projects. Such exchanges are crucial for **bridging the practical and theoretical divide**, fostering a shared understanding, **cross-pollination of ideas**, and a more **application-oriented mindset** within academia.

3. Shift to consumer-centric approach

Actively encourage and facilitate a transition from a "service mindset" to a "customer-centric mindset" within R&D teams. This involves focusing on end-user experience, understanding customer needs, continuous product differentiation, adding "gimmicks and gadgets," and ensuring market acceptance from the outset of the R&D process. This moves beyond simply fulfilling requirements to creating value. Value creation is enhanced when organizations invest in understanding and appreciating diverse global cultures, while also cultivating empathy within cross-cultural R&D teams. This approach is vital for facilitating effective international collaboration, harnessing varied perspectives, and ensuring seamless integration of R&D efforts across different regions, ultimately resulting in more robust and globally relevant solutions.

4. De-biasing hiring and broadening talent search

It's high time that we need to debias our search for talent. True potential is not limited by a college stamp; it is a nation's responsibility to find and nurture talent from every corner. Due to recent geopolitical mandates, it is anticipated that a huge number of skilled talented will return to the homeland for various personal and political reasons. Further by offering **competitive compensation** and creating attractive career pathways, organizations can help retain top researchers and combat "brain drain."

The need of the hour is to leverage advanced AI and analytics to discover exceptional individuals based on their real-world project experiences, research acumen, achievements, and innovative solutions, rather than just their academic records.

5. Build a "Fail Fast Fail Early" culture

Encourage R&D teams to truly embrace experimentation, take risks, and "fail fast fail early" philosophy by adopting agile

methodologies and shorter projects. The organisations could form cross-domain squads comprising of the product and integration lead to identify and tackling innovative challenges head-on. Understand that many experimental projects may not succeed, which is a natural part of the innovation process. Leaders must support research scientists by fostering an environment where career growth is tied to the lessons learned from these experiments and the ability to adapt swiftly, rather than just the immediate deliverables. This cultural transformation requires a rethinking of appraisal and performance management systems to celebrate learning and innovation over mere outputs.

6. Transparent IP sharing frameworks

Developing a clear, transparent, and mutually beneficial intellectual property (IP) sharing frameworks would encourage collaboration by outlining fair terms for IP ownership, licensing, and commercialization, without compromising the proprietary interests of either industry partners or academic institutions. This builds trust and encourages joint ventures.



A collaborative path to global R&D Leadership

India's journey to becoming a global R&D powerhouse is a collaborative effort, hinging on a tripartite relationship between government, industry, and academia. By strategically leveraging the nation's immense and diverse talent pool, its capacity for **frugal innovation**, and its rich data landscape, organizations can not only drive their own innovation agendas but also pioneer solutions for the **Global South**. This positions India as a leader in creating inclusive innovations that can be replicated across developing regions, while also contributing to the vision of a "**Vikshit Bharat**" by 2047. This future R&D powerhouse will be defined by a few key pillars: **sustained investment** in both fundamental and applied research, a culture of **bold thinking** that encourages risk-taking and a shift from a service- to a product-oriented mindset; a commitment to **build ethical and responsible AI** prioritizing inclusivity, transparency and fairness; and a continuous pipeline of **nurtured talent** supported by attractive career paths. Ultimately, a **thriving ecosystem** of seamless industry-academia collaboration, streamlined regulations, and interdisciplinary research will be key to translating India's vast potential into tangible, globally recognized innovations. The path is complex, but the rewards are immense, positioning India as a pivotal player in the future of global innovation.



About the Authors



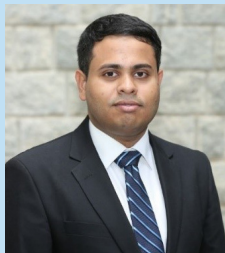
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Supriya Pandey is an experienced anthropologist and researcher with a passion for leveraging qualitative research methodologies and behavioral understanding to drive successful AI Transformation initiatives. Demonstrating exceptional academic prowess, she is a dual university gold medalist at both the undergraduate and postgraduate levels, further recognized by the American Anthropological Association with their esteemed Outstanding Undergraduate Student Award.

In Infosys consulting she has been instrumental in driving AI adoption and change management and has published whitepapers and point of views on various customer-centric frameworks focusing on improving consumer experience of generative AI solutions. As an AI enthusiast, she expresses her experiences by writing about them and is passionate about collaborating with different sectors to foster excellence.



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Shatam is a seasoned transformation leader with over 13+ years of experience across BFSI, FMCG, and manufacturing industries. He has successfully led strategic programs in more than 30 countries, including the UK, USA, Australia, several European, Latin American, Asian, and African nations. His expertise spans business and technology transformation, operating model design, and AI-led process innovation.

He specializes in conducting process and technology maturity assessments to shape business strategy and build compelling transformation roadmaps. He has designed and managed large-scale transformation programs, set up and operated BI, data, and analytics Centers of Excellence, and helped organizations reimagine core business processes to unlock AI-driven value. His work also includes developing multi-year business strategies and actionable business plans that drive measurable outcomes.



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Seasoned business consultant with 11+ years of experience in augmenting value to organizations by leveraging AI to transform processes.

Tanushree has an eclectic mix of experience spanning across multiple disciplines like BFSI, retail, shared services, hospitality, life sciences and healthcare. She has helped clients design transformation programs and envision the future. Her inclination to strategize process transformation using AI is also driven by the fact that she is a veteran data scientist who has built intelligent products and solutions to maximize organizational value.

Tanushree is a highly motivated individual who believes in an outcome-driven approach which can be easily validated through her contributions across organizations.

She has worked with many clients across geographies – US, UK, Middle East, Australia and India and has travelled extensively to drive the engagements including her stint at 'city of the future - NEOM' to transform their shared services organization.



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For more information, contact askus@infosys.com

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