

# THE INDIAN ER&D GCC ADVANTAGE: LEVERAGING TALENT AND TECHNOLOGY FOR INNOVATION

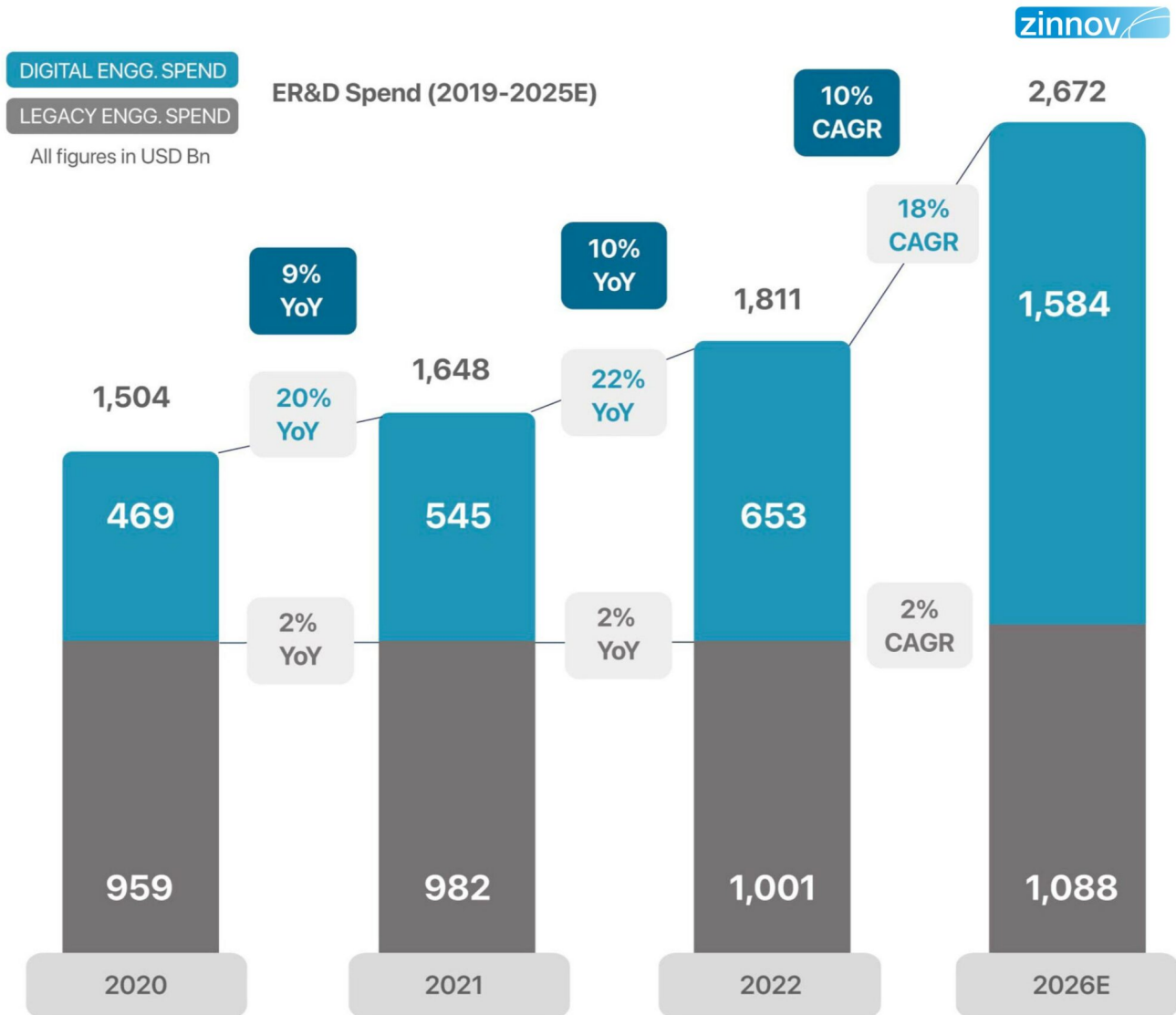
In the face of mounting geopolitical tensions, global economic challenges, government protectionism, and persistent supply chain disruptions, the global [Engineering Research & Development \(ER&D\) sector](#) has defied all odds. Its resilience and unwavering growth are perhaps most strikingly demonstrated by the substantial increase in ER&D expenditure. From USD 1,564 Bn in 2020 to an impressive USD 1,811 Bn in 2022, this upward trajectory is a testament to the sector's ability to weather the storm and thrive amid market volatility, contrary to IT and BPM functions that have seen relatively flat growth over the last few years.

## **A Paradigm Shift Towards Digital Engineering**

The global ER&D landscape is dynamically evolving. Digital Engineering (DE), is a specialized subset falling under the umbrella of ER&D, where traditional engineering research, development, and design intersect with technology, leveraging digital tools to enhance the entire engineering process from concept to production.

Till recently, spends on legacy programs disproportionately outnumbered spends on Digital Engineering. However, in the

contemporary business environment and with rapid digitization, there has been a clear preference for DE. DE spending has been skyrocketing, with an impressive average growth rate of 20% Year-on-Year (YoY), as compared to legacy spends of 2% YoY CAGR.



This shift reflects the evolving priorities within the industry, where the focus is more on harnessing digital tools and technologies to streamline engineering processes. There is a burgeoning demand for digital solutions and services and companies are increasingly recognizing the value of DE.

As this trend continues to reshape the engineering landscape, there is a growing need for skilled talent, robust infrastructure, and unwavering institutional support, in the Digital Engineering domain. The demand for professionals well-versed in cutting-edge technologies like Data Analytics, AI/ML, and Cloud Computing is on the rise and shows no signs of slowing down. Organizations need a thriving IT ecosystem, and a vast pool of highly skilled engineers to meet the demands and drive innovation.

India, with its rich talent pool, well-established [Global Capability Center \(GCC\)](#) ecosystem, flourishing partner economy, and robust government support, provides an unrivaled environment for organizations looking to thrive in the DE domain. The success of these ER&D centers is evident in the products and services that they have developed. For example, Google's ER&D centers in India have developed new features for its search engine, such as the ability to understand natural language queries. Microsoft's ER&D centers in India have developed new security features for its Cloud Computing platform, Azure. Amazon's ER&D centers in India have developed new ways to make shopping on its website more convenient and efficient.

### **Driving Digital Engineering Through ER&D GCCs in India**

There are over 1440 ER&D GCCs in India, with 3 Mn skilled engineers already operational in the country ranging from [Industrial](#), [Software](#), [BFSI](#), and [Automotive](#) industries, making India a hotspot for global organizations looking to build new products and services. These

centers are operating at mid to high levels of maturity, based on [Zinnov's proprietary maturity model and insights](#).

Looking at Digital Engineering specifically, Indian GCCs are [driving innovation](#) across various sectors. In the automotive industry, they're advancing technologies like Advanced Driver Assistance Systems (ADAS) and Infotainment systems. In semiconductors, they're making breakthroughs in AI accelerators and on-chip memory. Retail benefits from AI-based optimization, Healthcare sees progress in medical imaging and molecular testing, and manufacturing adopts smart factories and 3D printing. Moreover, technologies like Cloud Computing, AI, Intelligent Automation, and Cybersecurity are impacting all sectors, positioning India as an innovation hub. These innovations have the potential to reshape India's economy.

Organizations eyeing India's ER&D ecosystem can tap into a wealth of talent in Digital Engineering, boasting over 180,000 AI/ML experts. Here, recruiting and [retaining top talent](#), offering competitive compensation, and fostering growth-friendly environments are key. India's thriving AI startup landscape, complemented by 600 dedicated AI researchers, offers a fertile ground for innovation, encouraging collaborations and R&D investments.

### **Key Considerations When Setting Up ER&D GCCs in India**

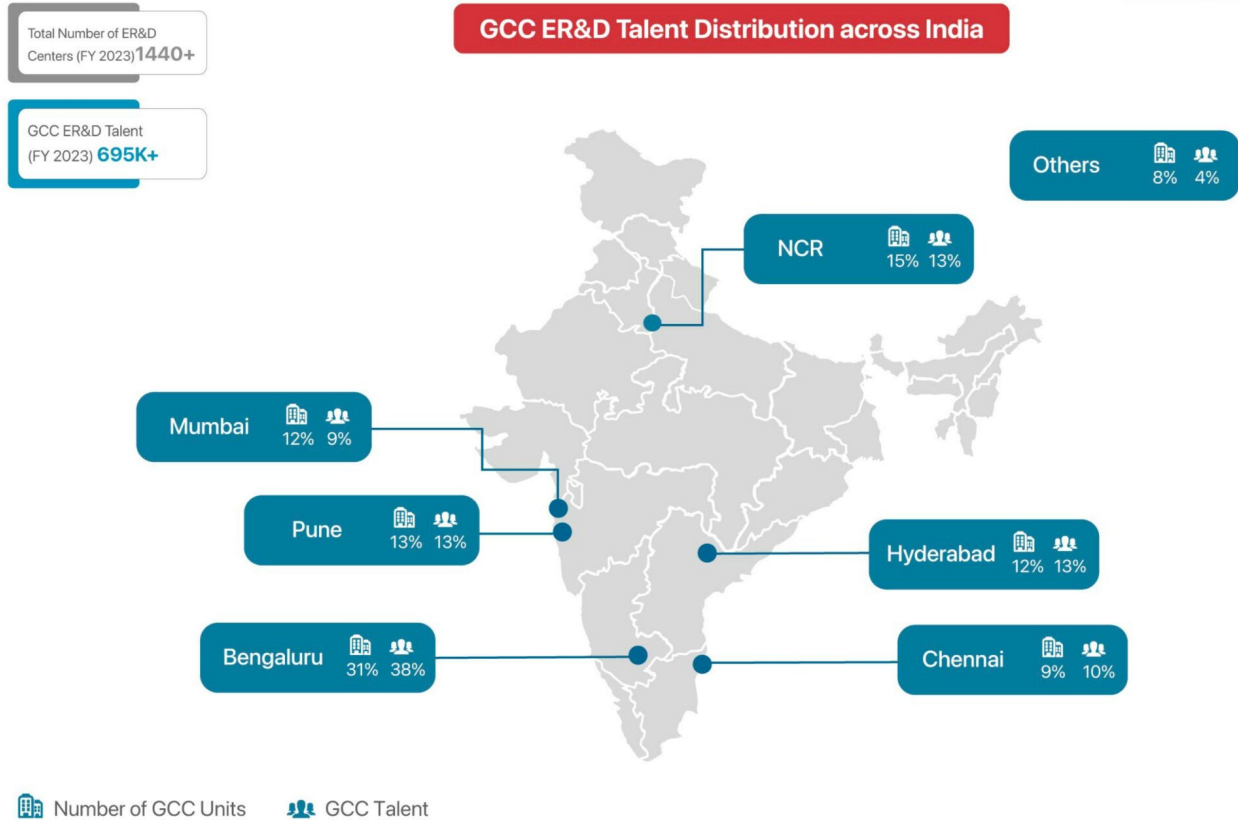
As India's Digital Engineering ecosystem continues to expand and evolve, companies seeking to capitalize on this dynamic environment must adopt strategic approaches that align with the country's diverse

centers of excellence. Here are some of the key strategies an organization should consider before setting up their ER&D GCCs in India:

- ***Flexibility in Location Selection***

India's ER&D talent isn't confined to a single city. With a diverse array of locations and a large English-speaking population, India provides flexibility for organizations to align their location choices with budgetary and operational objectives.

Bengaluru boasts ~38% of the total ER&D talent present in India. Companies like Bosch, Cargill, Microsoft, and Intel have already recognized the city's potential and set up significant operations here. Pune and Hyderabad, together host 26% of this dynamic workforce, are a compelling alternative location for expansion. Hyderabad's business-friendly environment and digital talent pool, coupled with Pune's thriving ecosystem featuring prominent GCCs like Skoda Auto, Siemens, and Amdocs, present compelling alternatives. The National Capital Region (NCR) contributes around 13% of India's ER&D talent, adding to the nationwide landscape of innovation and growth.



Beyond these metropolitan cities, Tier-II and Tier-III cities like Ahmedabad, Coimbatore, Thiruvananthapuram, and Vadodara are gaining prominence, contributing approximately 5% of India's ER&D talent, and provide capability at lower costs.

- ***Recruit and Retain Top Talent***

India boasts a vast pool of highly skilled engineers, but competition for talent is fierce. Companies should focus on recruiting the best talent and creating a workplace culture that retains these professionals. Offering competitive compensation packages, career growth opportunities, and a supportive work environment can help attract and retain top talent.

- ***Government Support and Collaboration***

India's government plays a crucial role in fostering innovation and research through initiatives like [AI Centers of Excellence](#) and national programs. To fully leverage these opportunities, companies should actively engage with government-backed initiatives and explore collaboration possibilities.

- ***Adopt Agile Practices***

Agile development methodologies are increasingly popular in India's ER&D landscape. Companies should consider adopting agile practices to accelerate product development and improve responsiveness to changing market demands. Agile teams can efficiently collaborate and deliver high-quality results.

- ***Crafting Unique Value Propositions and Partnerships***

To stand out in the competitive ER&D landscape, companies must craft unique value propositions that showcase India's strengths. Forming local partnerships, both with industry players and educational institutions, can provide valuable insights, enhance innovation, and accelerate growth.

- ***Integrate with Global Operations***

For multinational companies, seamless integration between India-based ER&D operations and global operations is crucial. Developing streamlined communication and project management processes ensures that work is coordinated efficiently across different regions.

- ***Stay Updated with Regulatory Changes***

The regulatory environment in India may evolve. Staying informed about regulatory changes, intellectual property protection, and compliance requirements is essential for companies operating in the ER&D sector.

### **Looking at the Future**

In today's ever-evolving global landscape, the choice for Global Capability Centers (GCCs) is abundantly clear – India stands as an unparalleled destination for investments in ER&D and Digital Engineering. Organizations should actively identify these areas of potential, whether they reside within emerging technologies, unmet market demands, or through novel collaborative endeavors. These white spaces, if successfully explored and harnessed, have the potential to yield innovations that will redefine industries.

In tandem with seizing opportunities, it is equally essential to remain vigilant of potential pitfalls. Amidst the pursuit of growth, the prudent management of challenges such as talent retention, adapting to evolving regulations, and navigating market disruptions is imperative. A proactive approach to addressing these challenges will be instrumental in ensuring sustained success.

As we cast our gaze towards the ER&D GCCs in India of 2030, envision an intricately interconnected, innovation-driven ecosystem. It would be an era where cutting-edge technologies seamlessly merge with human expertise, fostering a culture of perpetual growth and evolution. In this



envisioned future, India's Digital Engineering landscape ascends to become a global epicenter of innovation, beckoning top talent, nurturing collaborations, and propelling groundbreaking advancements.

The question to ask yourself: Is your organization ready to seize the boundless opportunities that India's Digital Engineering landscape offers for innovation, growth, and global competitiveness?

Ready to unlock the potential of India's ER&D ecosystem? Get in touch with us at [info@zinnov.com](mailto:info@zinnov.com) to establish your ER&D center in India today!

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