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How AI Innovations at GCCs Solidifying Indiaâ??s Position in Global Life Sciences Industry

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India's life sciences sector is undergoing a major transformation, led by the expansion of Global Capability Centres (GCCs). These centres, which serve as strategic hubs for multinational companies in pharmaceuticals, biotechnology, and healthcare, are strengthening India's role in the global life sciences landscape. Currently, there are over 95 life sciences GCCs in India, employing approximately 280,000 professionals. By 2030, this number is projected to reach 160 GCCs and around 420,000 employees. Advancements in artificial intelligence (AI) are central to this transformation, driving innovation across drug discovery and clinical research. India's life sciences GCCs have evolved from operational support centres to world-class R&D engines, leveraging Indiaâ??s robust talent pool, advanced technology adoption, and cost advantages. These GCCs are driving the future of AI-powered drug discovery and clinical research. Letâ??s explore further.



The Indian government has launched several initiatives to support the expansion of GCCs in the life sciences sector. Programmes like the "Make in India" initiative encourage foreign investment in pharmaceutical manufacturing and R&D. The National Health Policy aims to boost healthcare solutions, with a focus on local innovation, driving life sciences companies to establish R&D-focused GCCs.

In AI, the $1.25 billion IndiaAI Mission strengthens the country’s AI ecosystem, helping GCCs adopt AI for faster drug development and efficient clinical trials. The Ayushman Bharat Digital Mission connects 500 million people to digital healthcare services, enhancing India’s healthcare system. Additionally, Special Economic Zones (SEZs) and Biotechnology Parks provide critical infrastructure and tax incentives, facilitating the growth of life sciences GCCs aligning with India’s broader vision to lead in pharmaceutical R&D innovation.

State-Level Leadership: Karnataka and Telangana

Among Indian states, Karnataka and Telangana stand out as key locations for the development of life sciences GCCs. Both states have created strong ecosystems that attract global investment and skilled professionals, enhancing the growth of the sector.

Karnataka, particularly the city of Bengaluru, accounts for nearly 32 per cent of all life sciences GCCs in India. Karnataka’s GCC Policy 2024-29 is a cornerstone of its strategy to attract and expand GCCs. The policy offers a variety of incentives and provisions like targeted financial incentives such as rent coverage, tax breaks and reimbursements. The state's vision is to double the number of GCC from 500 to 1000 by 2029. Bengaluru has become a favoured destination for companies setting up GCCs due to its vast talent pool in AI, data analytics, and bioinformatics. The state government has also established Centers of Excellence for research and development, offering crucial support for startups and larger firms alike.

Telangana, with Hyderabad as its epicentre, has made significant strides in establishing itself as a global hub for life sciences. Genome Valley, located in Hyderabad, is India's largest biotech and pharmaceutical cluster, home to over 200 companies involved in R&D. In 2024 alone, Telangana attracted more than $850 million in investment to bolster its life sciences capabilities.

A major recent development in Telangana is the creation of the Life Sciences GCC Consortium, which has been in the spotlight. This consortium brings together the Hyderabad-based life sciences GCCs. Its primary aim is to boost collaboration, share knowledge, and address challenges in drug development and digital transformation. The consortium is expected to strengthen Telangana’s reputation as a leader in life sciences by facilitating partnerships between GCCs, academic institutions, and the government.

Telangana is home to leading R&D centres like Novartis Biome, Hyderabad's first innovation hub, which focuses on integrating AI into pharmaceutical research. It collaborates with startups, researchers, and academic institutions to drive advancements in drug discovery and clinical trials. Similarly, Bristol Myers Squibb has invested $100 million to establish a GCC in Hyderabad, employing 1,500 professionals and utilising AI to accelerate drug discovery.

Driving AI Adoption

Artificial intelligence (AI) is playing a vital role in streamlining operations in life sciences GCCs, particularly in drug discovery, clinical trials, and supply chain management. With the average cost of bringing a new drug to market exceeding $2 billion and development timelines stretching to 10-12 years, AI is addressing these challenges by reducing costs and accelerating the process. AI-driven solutions can cut drug development costs by up to 70 per cent and shorten timelines by 40 per cent, making it indispensable for the future of pharmaceutical research.

For instance, AI has made a significant impact on protein modelling, where tools like AlphaFold can model proteins in hours instead of months. This allows companies like GSK and Sanofi to speed up R&D by 30-40 per cent, enabling faster identification of drug targets. Indian GCCs are increasingly adopting these AI technologies to improve early-stage drug discovery and contribute to global pharma innovation.

In the realm of clinical trials, AI-powered platforms optimise trial protocols, improve patient recruitment, and predict trial outcomes with greater accuracy. Pfizer, for example, has used AI to streamline clinical trial design, reducing costs and improving timelines. Indian GCCs play a critical role in these efforts, using AI-driven platforms to manage clinical trials more efficiently.

AI is also helping GCCs with regulatory compliance, where automation has reduced the time required for submissions by 30 per cent while increasing accuracy. Indian GCCs have implemented AI tools that make the regulatory process faster and more reliable, keeping up with global standards.

Implementing AI at scale requires overcoming challenges like data fragmentation and aligning strategies with parent organisations. GCCs are excelling by overcoming data fragmentation through structured management frameworks, leveraging India’s AI expertise, and aligning with global compliance standards. By utilising effective data aggregation, cleansing, and integration methods, these centres enable seamless AI deployment and innovation.

Future Prospects and AI Integration

The future of life sciences GCCs in India looks promising, particularly with the growing integration of AI technologies. At its peak, AI is expected to save the global pharmaceutical industry around $26 billion annually, revolutionising how drugs are developed, trials are conducted, and patient care is managed. As more pharmaceutical companies recognise India’s strengths, the number of GCCs is expected to increase, with these centres becoming key players in advancing AI-driven healthcare innovation.

India’s deep talent pool, including 3.3 million software engineers and 446,000 AI/ML specialists, is a major asset that positions the country as a leader in AI-driven life sciences R&D. With scalable infrastructure, lower operating costs, and strong government backing through programmes like the IndiaAI Mission, India is poised to continue its rise as a global hub for life sciences.

As regulatory frameworks evolve to support AI technologies, India’s position in the global life sciences industry is expected to strengthen further. Collaboration between government initiatives and private sector innovation will be crucial to maintaining this momentum. Life sciences GCCs will continue to lead in addressing global healthcare challenges, using AI to deliver faster, more effective solutions.

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