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Can Biotech Industry Hit $150B by Leveraging Technology, Innovation & Startups?

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The biotechnology industry is currently navigating a complex landscape. While revenues have normalised after the COVID's surge, the looming patent cliff and increased regulatory pressures pose significant challenges. Despite these obstacles, the industry's long-term potential remains strong, fuelled by a robust innovation pipeline and opportunities for operational efficiency. Biotech companies, according to a report by NoyMed CRO, can secure future growth and address market challenges by focusing on capital allocation, establishing beneficial partnerships, and leveraging technology. Though the path forward is complex, the future of the biotechnology industry remains bright in 2024 as India has set the target of reaching $150 billion by 2025 due to its inherent strengths and dedication to innovation.



On December 2, India witnessed the first-ever meeting of the Biotechnology Research and Innovation Council (BRIC) Society after its registration on November 10, wherein Dr Jitendra Singh, Union Minister of State (Independent Charge) Science & Technology, who chaired the meeting, said that time has come for defining "Bio-vision" for Bharat.

Describing BRIC meeting as a historical event in India's Biotech Ecosystem, where elite 14 institutions of Department of Biotechnology (DBT) are consolidating their efforts to impact the biotech R&D ecosystem, the minister said that BRIC will prospectively enrich India’s progress in every front including economy and employment.

Dr Jitendra Singh also pointed out that this is one of the first Departments in the Government of India to have successfully executed “Rationalisation of Autonomous Bodies” for process and performance enhancement of its Autonomous bodies. He said that Indian Bio-economy recorded 13 times increase in the last ten years.

It may be noted that in her Union Budget speech on February 1, Nirmala Sitaraman, Finance Minister, observed that joint Public and Private Medical research should be encouraged via select Indian Council of Medical Research (ICMR) labs for encouraging collaborative research and innovation. As a first step in that direction, DBT has formed BRIC Society.

As part of a slew of significant changes that will be actualised by BRIC, each of the 14 subsumed BRIC Institutions will maintain their distinct research mandates, governed by one Governing Body, at BRIC. Institutes would be allowed utilisation of institutional lab space, not exceeding one third, for researchers from outside DBT institutes and their collaborators (from industry or other institutes) to carry out R&D for startups emerging out of institutional research. Dr Jitendra Singh also underlined that BRIC and its institutes can engage in public-private research partnerships and receive endowments including funds from non-governmental resources for research-related activities. This will help in achieving “Minimum Government, Maximum Governance.”

As Global Centres of Research and Innovation

Besides, at the beginning of 2023, Dr Singh launched the “One Week One Lab" Campaign of Council of Scientific & Industrial Research (CSIR), at the 108th Indian Science Congress held in Nagpur on January 6. Each of the 37 CSIR Labs spread across the country is dedicated to a different exclusive area of work and the “One Week One Lab" campaign offered an opportunity to each one of them to showcase the work being done by it so that others can avail of it and stakeholders learn about it. Common India will be turned into Global Centres of Research and Innovation in their respective fields of Specialisation.

Started with 5 laboratories in 1942, in its eight decades of journey CSIR has grown into an organisation with 37 labs of 3521 scientists, supported by 4162 technical staff, 2612 administrative and other support staff and about 5500 young scholars, that addresses every facet of scientific development required in the country.

There is a plethora of technologies developed by the scientists and researchers of CSIR laboratories for the society, but many of them remain confined to the laboratories. There is a need to establish the resourceful connection of people (stakeholder/

entrepreneur/ student/ industry) to know more about the technologies for the advancement of the technology and the progress of the society.

Harnessing Technologies

The world is on the verge of ending the first quarter of the 21st century, said Dr Jitendra Singh, adding that the next few years will be an opportunity to vindicate that 21st century as India's century. Spelling out thrust areas for the year 2023 in the context of science, technology and innovation on January 8, the minister said "Future belongs to technology blended with innovation and creative startups sustained through evolving technologies and new ideas."

While inaugurating the 3rd Global Bio-India, mega international congregation on Biotechnology, on December 4, the minister said "Biotechnology will provide the "future value addition" to India's economy in the years to come. Biotechnology will be the key to Amrit Kaal economy and also for making India a frontline nation in the world."

India's bioeconomy experienced robust growth in 2022, surging by 29 per cent to reach a substantial value of $137.24 billion. Also, the year 2022 saw a rise in private equity and venture capital investments in the biotech industry, reaching a record-breaking $938.8 million, a 19 per cent growth compared to the previous year.

The Indian biotechnology industry is expected to reach $150 billion by 2025 and has the potential to reach $270-300 billion by the year 2030. By 2025, the contribution of the Indian biotechnology industry to the global biotechnology market is expected to grow to 19 per cent. The Indian biologics market is forecasted to reach $12 billion by 2025, at a CAGR of 22 per cent.

With just 55 startups in 2014 to over 6000 as of 2023, the entrepreneurial landscape of the biotech industry in India witnessed dynamic growth in the last couple of years. Startups are emerging as key drivers of bioeconomic development. The number of startups is expected to reach 10,000 by 2024. Maharashtra, Karnataka and Telangana led the way in 2022, a year which saw a total of 1391 startups getting registered, reflecting a substantial 23 per cent growth from the previous year's count of 1128.

India is boosting the biotechnology sector under various flagship programmes such as 'Production Linked Incentive (PLI) scheme', 'Make in India' and 'Startup India'. These government schemes and programmes coupled with the application of latest technologies such as Gene Editing and CRISPR, Cell and Gene Technology, Artificial Intelligence and Machine Learning, Tissue Engineering and Bioprinting, Big Data, and Real World Evidence Trials, biotechnology industry in 2024 hope to develop innovative solutions in the meeting the unmet healthcare needs of the nation.

Collaborative Synergy

In addition to launching the new biologicals in the coming year, the biotech industry continues to witness a double-digit growth in the year 2024 by adopting or following the many well-established business approaches such collaboration with Full-Service and Specialty Contract Research Organisations (CROs), Outsourcing between Biotechnology firms (Bio-to-Bio) and M&A deals.

According to NoyMed CRO, biotechnology sponsors in 2024 are poised to embrace a significant trend: increased collaboration with both biometrics and full-service CROs. This strategic alliance allows access to specialised expertise, cutting-edge resources, and streamlined processes crucial for efficient drug development. By leveraging the strengths of CROs, biotech firms optimise costs, accelerate research timelines, and enhance innovation. This collaborative synergy between biotechnology firms and CROs not only expedites market entry but also ensures adherence to regulatory standards while focusing on core competencies.

As the drug development landscape evolves, 2024 will mark the rise of a strategic paradigm shift: biotechnology companies will increasingly collaborate, forming synergistic partnerships. Driven by expertise in areas like gene editing, AI-powered discovery, and nanomedicine, these collaborations unlock significant advantages.

Efficiency grows as companies focus on their core strengths, accelerating development timelines and delivering life-saving therapies to patients faster. Resource optimisation takes centre stage, with shared expertise reducing overhead costs and fueling further advancements. Moreover, knowledge exchange thrives within these partnerships, fostering collaborative innovation and paving the way for groundbreaking solutions to intricate medical challenges. While challenges remain, such as intellectual property concerns and the crucial element of finding the right partners, the potential of this collaborative approach is undeniable.

In 2024, NoyMed CRO further noted that the “cautious optimism” of 2023 might turn into a strategic focus on mergers and acquisitions (M&A) within the biotech industry. Investors, staying cautious due to external challenges, will likely be picky, seeking deals that offer clear value and specific growth opportunities. There could be more consolidation, especially in areas like gene editing and AI-driven discovery, where specialised skills are highly valued. However, the potential for increased deals exists due to the interest in new technologies like mRNA vaccines.

Some companies aiming for a global presence might pursue M&A for market access, while others might surprise by acquiring promising research pipelines or startups. Navigating these uncertainties presents investment opportunities by identifying undervalued tech, anticipating regulatory changes, and predicting future successful treatments.

The biotechnology industry, according to a report by NoyMed CRO, is currently navigating a complex landscape. While revenues have normalised after the COVID's surge, the looming patent cliff and increased regulatory pressures pose significant challenges. Despite these obstacles, the industry's long-term potential remains strong, fuelled by a robust innovation pipeline and opportunities for operational efficiency. Biotech companies can secure future growth and address market challenges by focusing on capital allocation, establishing beneficial partnerships, and leveraging technology. In conclusion, though the path forward is complex, the future of the biotechnology industry remains bright in 2024 due to its inherent strengths and dedication to innovation. With this India is not too far from reaching the league of top-10 countries in Biotech's global ecosystem.

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