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Asia's Biopharma resilience to become the next global biotech hub

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Asia has positioned itself as the world's premier biomanufacturing hub, leveraging cutting-edge research and production infrastructure to propel its biomedical sector as one of the key drivers of economic growth. Over the past two decades, the APAC biotechnology sector has flourished rapidly by adopting and diffusing the evolving disruptive technologies. In addition, lower labour and manufacturing costs relative to North America and Europe, make APAC the preferred expansion market for Contract Development and Manufacturing Organisations (CDMOs), investors and entrepreneurs. Furthermore, APAC has emerged as the second-largest region to conduct Advanced Therapy Medicinal Product (ATMP) trials, underscoring its

heightened significance in the global biotech landscape. The question that now arises is whether Asia is remarkably on the precipice of becoming the world's preeminent biotech hub after its recent developments. **Dennis Chau, Asia Pacific Commercial General Manager of the Discovery business at Cytiva** shares more insights in this regard.

Is Asia poised to become the next global biotech hub? How can APAC build a resilient biopharmaceutical landscape?

Asia is driven to be the next global biotech hub, against global uncertainties for two reasons. Firstly, effective medical treatments are critical for improving the quality of life across Asia, especially for infectious diseases, potential new pandemics, and cancer, where Asia accounts for nearly half of the world's cases. As we know, with the last pandemic, many countries globally and in our region have recognised the importance of localising supply chains and on shoring manufacturing.

Secondly, innovations in genomic medicine, such as CAR T for cancer and mRNA for infectious diseases, are set to be the next engine of growth in biopharma. Cell therapies have proven to be effective for patients with blood cancers and are expected to bring major improvements to many other cancer treatments over the next decade. These pursuits are resource-intensive. Nonetheless, bright spots in biotech innovation have emerged across Asia.

In addition, quality, speed, and adaptability are critical in biomanufacturing today as we see increasing molecular diversity. This means that there's a greater need for production platforms to be flexible to cope with current and future demand and products. These facilities also require skilled workers to optimise productivity. These, on top of determining product demand, production capacity, and delivery timeline are key for success and faster time to market.

Was Asia successful in bridging the gap between CDMOs and product innovators, allowing the biologics market to expand globally?

In short, yes. Besides the cost advantages in Asia, our region can bridge the gap between CDMOs and product innovators for two reasons.

Firstly, the anticipated increase in demand for contract manufacturing services shows no sign of slowing as the demand for various therapeutics continues to surge, with increasing clinical trials and faster drug approvals Hence, companies and startups working across the full range of therapeutic modalities will continue to seek external capacity for the manufacture of their products, both during clinical development and post-approval.

Secondly, we know it's expensive for biotech startups to invest in equipment and infrastructure, yet investors want to see potential for scalable manufacturing from startups. We observe that many small startups in Asia, particularly in Southeast Asia, need more support when it comes to scalability and connecting them to the appropriate service providers. This is an area where Cytiva can make a difference.

How is APAC performing across five key pillars of the biopharma industry? What are Cytiva's recent Biopharma Resilience Index recommendations to foster Asia's potential?

As outlined in Cytiva's 2023 Global Biopharma Resilience Index, APAC economies such as Singapore, South Korea, Japan and Australia, show industry resilience across most of the five pillars of the Index - manufacturing agility, R&D ecosystem, talent pool, supply chain resilience and government policy and regulation. These in turn lay the foundation for favourable ecosystems for biotechs to set up, develop therapies and scale up manufacturing.

These countries' contributions have made Asia Pacific the second-largest region for Advanced Therapy Medicinal Product (ATMP) trials, surpassing Europe. Most other countries within the region are at an earlier developmental stage in their journey to nurture innovation – but that doesn't mean there aren't bright spots in the region like Thailand, where the first GMP-certified cell therapy facility was installed last year.

Consistent with global results, talent resilience has declined in Asia Pacific to 5.34 points in 2023. Biotech advances are continuing to create surges in demand for highly qualified staff. However, nearly 24 per cent of pharma executives in APAC report that it's a substantial challenge to find and retain manufacturing talent who are capable of working in GMP-certified facilities. The data from biopharma leaders show that the top three most difficult skills to attract, find and retain are manufacturing talent for GMP-certified or equivalent facilities, R&D talent, and digital/technology talent.

To help address the need for training and education, Cytiva developed the Fast Trak Education and Training Program, which is available at six centres globally – three of which are in APAC. For example, both Songdo and Shanghai centres can train

more than 300 people every year. The India Centre collaborates with Bangalore BioInnovation Centre (BBC) to set up a world-class incubation centre and provide bioprocessing training programmes to support the startup ecosystem.

To bridge the talent gap between industry and academia in Southeast Asia, we offer training at?Cytiva Experience Learning Lab (CELL), and our Nanyang Poly?Centre?of Excellence. To date, we've conducted more than 100 training programmes with academic and research institutes?on the latest bioprocessing and production techniques.?

Globally, supply chain resilience has improved slightly since 2021, growing from 6.72 in 2021 to 6.84 in 2023. In APAC, Singapore (7.52), India (7.30) and China (7.15) scored well above the 2023 global average. This is in part due to the industry-wide efforts to balance the benefits of a global supply chain with the risk of shortages following the disruption of the pandemic. To deliver for our customers, we've injected an investment of $1.5 billion in 2021 to expand our capacity globally – the latest of which includes our Fast Trak centre in Shanghai and manufacturing facility and experience centre in Pune, India.

The manufacturing agility pillar has also improved from 6.50 in 2021 to 6.65 in 2023 globally. Advanced digital technologies such as AI, robotics, and automation have the potential to help manufacturers scale up or down on demand. While 33 per cent of respondents say that it has become more affordable to manufacture biopharmaceuticals, 35 per cent say it's easier to access the specialist talent required.

In Asia Pacific, the enhanced infrastructure, funding from both private investors and governments and an improving regulatory environment are attracting US and UK-based companies to build and expand their presence in the region. According to Singapore's Economic Development Boards, Singapore has more than 80 pharmaceutical and medical device manufacturing plants with a total of 24,000 employees.

What transformative shifts can we anticipate in the worldwide pharmaceutical landscape if and when Asia solidifies its position as the global biotech hub?

If Asia solidifies its position as the global biotech hub, I look forward to two shifts. Firstly, there will be an increasing focus on cultivating global talent through tertiary and continuing education, as well as on-the-job training within Asia. Secondly, future technology solutions will sit at the intersection of many disciplines including biology, chemistry, material sciences, and engineering. At Cytiva, we recognise the potential and wealth of discoveries within the scientific community and we're excited to scale technological solutions to address customer needs, from fundamental biological research to developing new diagnostics, vaccines, biologic drugs, and novel cell and gene therapies.

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