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Navigating Biopharma Logistics Challenges in Asia

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"Cold chain management is expected to grow at a compound annual growth rate (CAGR) of 15.1% from 2021 to2028, reaching $647.47 billion by 2028 " explains Salil Chari, Senior Vice President, Marketing and Customer Experience, Asia Pacific, FedEx

The pharmaceutical industry has had to absorb the impact of recent pandemic events on its supply chain operations. Throughout the pandemic, pharma supply chain has been in the forefront of the public health battle to deliver vaccines and antivirals working closely with governments, regulators and key stakeholders. Biopharma shipments have embraced novel and AI-driven pharma shipment technology and applications to build resilience in global healthcare. Current trends have witnessed increased localization of supply chains with greater emphasis to build self-reliance healthcare ecosystems, and the APAC region is not behind the race. With the increasing globalization of pharma supply chains, global leaders in the sector, FedEx Healthcare Solutions is striving to build proactive monitoring and real-time intervention while shipping life saving drugs and therapeutics molecules in real-time. **Salil Chari, Senior Vice President, Marketing and Customer Experience, Asia Pacific, FedEx** shared deep insights in building APAC healthcare resilience.

- **Recent statistics indicate study rise in clinical research in Asia. Can pharma-logistic companies capitalise on this trend and make a vital impact in driving R&D in the region?**

Indeed, the biopharmaceutical industry has seen a significant increase in the number of clinical trials being conducted in Asia in recent years. According to GlobalData, Asia Pacific led in clinical trials for 2023, with a large number of Phase II trials. This rapid growth in clinical trials in Asia has been driven by several key factors - first, many Asian countries have large, diverse patient populations that provide a rich pool of potential clinical trial participants, allowing pharmaceutical companies to more quickly enroll and complete studies. Second, the cost of conducting clinical trials in Asia can be significantly lower compared to other western markets, making it an attractive option for cost-conscious pharmaceutical companies.

Another important set of drivers are the regulatory incentives implemented by some Asian governments, such as streamlined approval processes and tax benefits, to attract more clinical research. Furthermore, cities across Asia, like Shanghai, Singapore, and Seoul, are emerging as major hubs for biopharmaceutical R&D, with world-class research facilities and talent pools.

FedEx is supporting pharmaceutical companies conducting clinical trials in Asia, such as kit assembly, dedicated customs clearance, investigational medicinal product storage, distribution, and transportation service for biological samples from sites across Asia Pacific to labs worldwide for testing. Another key area is ensuring the integrity of temperature-sensitive biopharmaceuticals, which require specialized equipment, processes, and expertise to maintain the cold chain throughout the supply chain. It is also important that SMEs select a logistics firm that can demonstrate flexibility to follow customer-specific standard operating procedures while maintaining multiple levels of security. FedEx has four Life Science Centers in Japan, South Korea, Singapore, and Mumbai, and these facilities are supported by dedicated Healthcare Quality teams, which ensure process standardization, audits, certification support and other customer requirements related to Quality Assurance.

Sourcing and logistics processes can change as a business grows and expands into new markets. Accordingly, FedEx global network is stretched across the healthcare continuum to align with the industry trajectories.

- **What are the key challenges a SME in the Asia region encounters while shipping vital temperature sensitive biopharmaceutical products across the globe?**

As the biopharmaceutical industry continues to expand, particularly in Asia, navigating the complexities of international logistics has become increasingly crucial. Transporting biopharma products from Asia to global destinations requires meticulous planning and execution to maintain the integrity and safety of these sensitive materials. SMEs should keep in mind several factors, including maintaining the cold chain, ensuring regulatory compliance, mitigating supply chain disruptions, and managing cost.

Ensuring the cold chain is maintained throughout the entire supply chain is critical but can be challenging, especially for SMEs with limited resources across Asia. SMEs must also navigate the highly regulated environment for transporting pharmaceutical products, complying with requirements from various jurisdictions around packaging, labeling, documentation, and handling.

FedEx has been working with healthcare experts across the value chain for decades, sharing our expertise in global logistics and processing healthcare shipments, which require specific technical and regulatory know-how, as well as investments in facilities and talent over a long period of time.

The healthcare industry is always focused on flexing for the future – the next innovation, technology, or solution. Protecting temperature-sensitive shipments in unexpected circumstances has long been a challenge faced by logistics providers. Tagged as priority items, temperature-sensitive shipments are normally precleared, so they can be unloaded from a plane and transferred to vehicles for immediate delivery. However, in the event of any delay, it is essential that facilities equipped with ultra-low-temperature freezers and refrigerated rooms are available for temporary storage as needed before the shipments are delivered. To tackle such challenges, even in FedEx we have built more than 90 temporary storage rooms across five continents, including Life Sciences Centers in key Asian locations including India, Japan, South Korea, and Singapore.

- **Technology is driving all business verticals, how has logistics kept pace?**

Rising demand for cell and gene therapy, vaccines, and other products in the biopharmaceutical sector has propelled Biopharma companies to seek advanced technologies. Their logistics providers provide insights that enhance operational

efficiency and visibility across the supply chain.

Some key technologies in demand include cold chain management, which is expected to grow at a compound annual growth rate (CAGR) of 15.1% from 2021 to 2028, reaching $647.47 billion by 2028. Logistics companies are also increasingly investing in automation and digital technologies to revolutionize their supply chains and logistics operations. The global logistics automation market, valued at $30.90 billion in 2022, is expected to reach $118.12 Billion in 2032.

At FedEx, we are applying our data-driven technologies – as well as advancements in machine learning and AI – to further bolster our specialized healthcare solutions. For example: Precision sensor-based logistics help customers gauge light exposure and other critical conditions that may affect materials. We are using our inventory logistics, priority shipping, and FedEx SenseAware (real-time) tracking technology capabilities to manage a clinical trial's integrity and ensure alignment with government regulations.

Furthermore temperature-controlled packaging, transportation, and real-time monitoring ensures safe shipment of critical life-saving materials with visibility and precision.

- **How do you foresee APAC biopharma logistics prospects to remain resilient for tackling future market demands? How do you perceive opportunities to unfold for SMEs?**

The biopharmaceutical market is expected to continue to grow rapidly, driven by factors including the rise in chronic diseases, aging demographics, and advancements in treatments. The Asia-Pacific biopharmaceuticals market has been steadily growing in recent years, with its value estimated at a substantial $44.3 billion in 2023. Projections indicate that the region is poised to continue its upward trajectory, with a forecasted CAGR of 10.05% from 2024 to 2029. This robust growth is expected to propel the market's worth to $78.69 billion by the year 2029, up from $48.75 billion in 2024. This creates significant opportunities for SMEs in Asia Pacific to develop innovative biopharmaceutical products that can help address many of the world's healthcare challenges.

While the future of SMEs in the biopharmaceutical sector looks promising, navigating the complex logistics and regulatory landscape can be a significant challenge, especially since the regulations vary across different countries in the Asia Pacific region. By partnering with a global logistics company that has extensive experience not only in Asia but also across the world, SMEs can overcome many of these hurdles and leverage the growing demand for innovative biopharmaceutical products both within Asia and beyond.

Moving shipments efficiently across the globe is vital, but safeguarding them during the journey, where slight changes in temperature can compromise its integrity, is even more crucial. That makes establishing comprehensive cold chains, capable of preventing sensitive items from freezing while keeping others well below zero, an essential part of healthcare logistics.

FedEx has been using its cold chain network and dedicated healthcare team to ship vaccines, biologics, and medical aid worldwide for decades. During the pandemic, FedEx leveraged its fleet to ship millions of vaccines across the globe. FedEx Clinical Care, an end-to-end solution for time and temperature-sensitive bio-samples, kits, and the investigation of medicinal products has always been compliant with industry standards.

As AI and machine learning technologies become mainstream, the combination of connectivity and intelligence promises to open even more possibilities. For instance, technologies that leverage predicative tools are now enabling logistics service providers to intervene before delays occur.

At FedEx, we continue to invest and grow with our data-focused solutions that support various stages of biopharma product movement, including clinical trials, as well as labs and diagnostics. Our focus remains on building robust solutions for our customers and innovating alongside them.