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Advancing MedTech Packaging Innovation in Asia-Pacific

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Aldin Velic, Vice President and General Manager, Asia Pacific, Nelipak Healthcare PackagingÂ Pharmaceutical and medical device companies can adopt a holistic sterile barrier system design instead of fragmented components, accelerating the product development process and launch.

The medical device and healthcare packaging industry is experiencing significant growth in the Asia-Pacific region, driven by the region's emergence as a key hub for innovation, manufacturing, and consumption. Singapore, in particular, has positioned itself as a strategic center for the medtech and biomedical sectors, leveraging its strong global connectivity, advanced research capabilities, and robust healthcare manufacturing ecosystem. This dynamic environment supports the development of integrated technical solutions that address the needs of a rapidly expanding market, from early-stage concept validation to scalable production-ready designs. The region's focus on accelerating time to market while maintaining safety, compliance, and performance aligns with global demands for efficient and collaborative development processes.

Trends indicate that investments in localized technical and innovation facilities are enhancing the ability of manufacturers' tailored medtech solutions required for Asia-Pacific markets and beyond. A broader industry trend in the MedTech sector is addressing challenges such as sterilization, regulatory changes, and supply chain resilience by focusing on integrating flexible and rigid packaging design, co-developing and validating sterile barrier systems, and streamlining iteration cycles. These initiatives strengthen Singapore's position as a key regional center for driving medtech innovation and supporting the global healthcare industry.

Recently, Nelipak® Healthcare Packaging, a leading global provider of healthcare packaging solutions unveiled its new Asia-Pacific Technical Development Center in Singapore. Bringing together its flexible and rigid sterile barrier packaging design and innovation capabilities under one roof, Nelipak integrates technical development capability for the Asia-Pacific region. **Aldin Velic, Vice President and General Manager, Asia Pacific, Nelipak Healthcare Packaging** shared exclusive insights with Biospectrum Asia at the launch site.

- **Sterile barrier approaches are described as a crucial yet often overlooked component of innovation. How do you perceive the role of these solutions in ensuring the safety and efficacy of pharmaceutical and medical device products?**

Sterile barrier systems play a critical role in ensuring the safety, quality and efficacy of pharmaceutical and medical device products. Even though they have traditionally been thought of as a last step before products are submitted for regulatory approval, healthcare packaging is incredibly crucial as it needs to be designed and manufactured to maintain sterility from the point of manufacturing until the point of care.

Having a reliable sterile barrier means ensuring patient safety and regulatory compliance, reducing the risk of recalls, product failures and harm to patients. This also ensures product sterility during storage, transportation and handling.They are an essential component of healthcare innovation and are indispensable in the pharmaceutical and medical device industries.

- **How significant is the establishment of an Asia-Pacific integrated technical development center for sterile barrier packaging in Singapore, and how does this align with the global healthcare packaging industry's strategy to solve current challenges?**

This is a major milestone for us as it combines our flexible and rigid sterile barrier packaging design and innovation capabilities under one roof.

Singapore is a strategic location as it offers a launchpad to the region’s medtech and biomedical industries, enabling us to support pharmaceutical and medical device companies across Asia-Pacific. This means that packaging solutions developed in this region are globally scalable and production-ready.

We have a stronger presence in Asia through our footprint in Europe and the Americas. However, the Asia-Pacific Technical Development Center brings broader global capabilities and local support with its location, and capabilities to streamline the design, development and testing process to get products to market more quickly and safely.

The facility enables users to engage directly with technical experts in order to co-create and validate bespoke sterile barrier solutions, and to access a variety of packaging solutions that can streamline iteration cycles, simplify regulatory approvals, and accelerate the process of time to market.

The last number of years has revealed vulnerabilities in the global healthcare supply chain, and establishment of an integrated, technical development center in Asia-Pacific aids in building resiliency in sterile barriers and packaging innovation in the region.

- **Since the Asia-Pacific region is projected to be a key driver of medical device innovation by 2034, how does the new center position Nelipak to meet the region's increasing demand for medical devices?**

The medical device industry is projected to grow significantly in the next few years, which means that medical device stakeholders are under immense pressure to move quickly without compromising safety, compliance and performance.

With the new center, pharmaceutical and medical device companies can resolve their packaging challenges and have a clear path to development, validation and commercialization. The new center provides access to the full range of packaging and sterile barrier solutions, encouraging co-development and validation of these solutions through rigorous testing in a collaborative environment.

Instead of going through extensive and complex processes across multiple regions, a concept can be developed within one week with a validated packaging design and physical samples – which greatly accelerates time to market. The center is

therefore poised to meet the rapid innovation that is taking place within the Asia-Pacific medical device market.

- **What is the impact of the new center on the growing demand for pharmaceutical and medical device companies who are designing, manufacturing, and launching products for global markets? Does integrating flexible and rigid sterile barrier packaging capabilities under one roof address current challenges in pharmaceutical and medical device innovation?**

The center is equipped to support early-stage concept development, line extensions, material transitions, and risk mitigation projects, including changes driven by sterilization modality, regulatory requirements, or supply chain resilience.

This means that pharmaceutical and medical device companies can adopt a holistic and optimized sterile barrier system design, rather than having the individual components isolated and fragmented, which means that the product development process and launch can be accelerated.

Moreover, the center is also equipped to support companies at various stages of development – including start-ups that may still be in the prototyping phase, and well-established multinational corporations looking for more rigorous sterile barrier systems for their products.

Having access to our global R&D network also means that customers will have both the global support of our established innovation and manufacturing capabilities, and the local support they need closer to ground.

- **How does Singapore's role as a growing biomedical hub and source of bioengineering talent align with Nelipak's goals, and what specific opportunities does this center create for regional talent development?**

Many pharmaceutical and medical device companies have headquarters and research capabilities in Singapore, so we saw strong synergies in setting up a center here to help our customers simplify and accelerate packaging design and speed to market. The market is also an innovation-driven and trusted hub for biopharma players, with a base of highly-skilled talent.

This is in close alignment with our plans in the region, and as we continue to scale up our operations we will look at hiring across various roles and functions such as biomedical engineers and other highly-skilled professionals.

- **In the current volatile global scenario of trade disruptions, supply chain issues, and manufacturing regionalization, how does Nelipak envision localized sterile barrier solutions enhancing healthcare resilience? How is this center positioned to address future trends and challenges in the medical device and pharmaceutical packaging industries?**

Healthcare supply chains are global by nature, but the center in Singapore will enable us to serve this region more efficiently, while leveraging the capabilities of our teams across borders in North America and Europe. This means personalized, real-time collaboration with Nelipak’s global manufacturing and innovation network to ensure that the packaging solutions developed in this region are globally scalable and production ready.

By getting a head start on the packaging development process in the R&D process, we will collaborate closely with pharmaceutical and medical device companies to develop robust sterile barrier solutions. This reduces iteration cycles, minimizes late-stage design changes and accelerates time to market.

Having a strong sterile barrier system also means that medical device and pharmaceutical manufacturers can mitigate any risks resulting from storage, transportation and handling as their products are shipped across global supply chains to the patients who need them. We strive to remain relevant even amidst ever-evolving challenges in space.

Hithaishi Bhaskar