

Nippon Express: forwarding the future of pharma

As the global pharmaceutical trade booms, the need for more stringent quality control throughout its supply chains is increasing. Nippon Express, the world's fourth largest logistics provider, is committed to building an IoT-based logistics platform which promises to be a boon for the industry.

Challenges to pharma distribution

The global pharmaceutical market is booming. Global spending on pharma topped USD 1.2 trillion in 2018, having grown at a compound annual growth rate above 6 per cent in the past five years. The figure is set to reach USD 1.5 trillion by 2023. As medicines crisscross the world, ensuring their secure delivery has become ever trickier.

Temperature-sensitive medicines, such as the new class of biological drugs, need to be kept in precisely controlled conditions throughout every step of delivery. Longer supply chains and extreme temperatures brought about by climate change are making this task more difficult.

Globalised trade has also heightened the risks of counterfeit medicines. The deplorable practice is estimated to affect as much as 2.5 per cent of global drug trade and kill some 200,000 people a year. Theft, too, is a concern. When medicines are lost, companies have had to recall and dispose of the whole production lot for safety reasons at tremendous cost.

Preparing for GDP

"Currently, the global pharmaceutical logistics market is facing a sea-change," says Takaaki Ishii, Chief Operating Officer of Nippon Express, Japan's top logistics company.

"A global standard requiring stringent quality controls over the distribution of pharmaceuticals is emerging. And we view this timing as a business chance."

In December last year, Japan's health ministry published guidelines for Japanese pharma makers to comply with GDP (Good Distribution Practices). GDP is already recognised in each region and country. And that standard requires companies involved in pharma distribution to maintain pharma integrity.



TempSure is a temperature-managed service for transporting pharmaceuticals by air.



The new pharma logistics facilities will be linked to a state-of-the-art hub facility opened at Narita International Airport in 2017 offering strict temperature control for international air cargo.



Takaaki Ishii
Chief Operating Officer
Nippon Express

"We are developing a platform to provide GDP-compliant logistics which may not be easily achieved by individual pharma companies on their own," says Ishii.

His company, Asia's largest and the world's number four logistics provider by revenue, is well-resourced and experienced for this ambitious task. Its global network, among the largest in the world, comprises over 70,000 employees across 48 countries. Annual revenues marked a record JPY 2.13 trillion (USD 19 billion) for the year ended March 2019.

Although the approximately JPY 27 billion (USD 240 million) revenue last year from the pharma logistics business only represents a small slice of the company's total, Nippon Express has over the decades provided a number of vital services in the industry. These include delivering diagnostic/test pharmaceuticals in dedicated vehicles and providing storage facilities overseen by on-site pharmacists. In 2010, Nippon Express developed its "TempSure" series of temperature-controlled parcels in various sizes used for the international air-freight of medicines.

Building a platform

So far, the largest unresolved challenge for the pharma industry has been the inability to go beyond the "spatial management" of monitoring goods separately at warehouses and in cargo spaces. What is needed, as GDP standards require, is "dynamic management" in which the condition of goods

"The global pharmaceutical logistics market is facing a sea-change."

can be tracked end-to-end in real-time through the supply chain.

Recent advances in IoT, however, are making this goal possible. Nippon Express has partnered with Intel K.K. which has developed a device that can collect and upload real-time data on freight so owners can check its status when necessary. These devices are being used in the Global Cargo Watcher Advance (GCWA) (see column) service launched earlier this year. The service promises to revolutionise pharma distribution with its tracking and data-recording functions, helping makers achieve GDP-compliance.

While expanding coverage of the GCWA system, Nippon Express is investing heavily in infrastructure.

"We are planning a vertical-startup by earmarking JPY 100 billion (USD 890 million) in investments up to 2021 for building the platform, out of a total of JPY 450 billion planned for all our businesses in the coming five years," explains Ishii. "We see this as very significant."

Of this amount, JPY 50 billion (USD 440 million) will be spent constructing four new pharma logistics facilities to cover all of Japan. These facilities will complement a state-of-the-art hub facility opened at Narita International Airport in 2017

offering strict temperature control for international air cargo. Another JPY 50 billion will be spent, among other things, to acquire customised trucks with temperature-controlled and cloud-linked cargo holds.

Containing costs

"It's quite costly for pharma companies to respond individually to stricter quality controls for the distribution of each of their products," says Ishii. "But by providing a platform which can be shared by multiple companies, we believe we can free our clients from these logistics worries."

Nippon Express, in fact, has been at the forefront of providing shared-logistics services where industry competitors use the same warehousing and transport. Such schemes are in greater demand due to a shortage of truck drivers and the need to reduce the carbon footprint of transport in Japan.

The experience of shared transport in other sectors, such as in beverages, has given the Japanese forwarder valuable know-how in setting up operations to keep sensitive information confidential between rival companies.

"Our know-how of providing shared logistics services will be effectively adapted to the pharmaceuticals sector and generate considerable savings," Ishii says.

Keeping prices low would also be welcomed by governments, in Japan and elsewhere, seeking to contain mounting public healthcare fees.

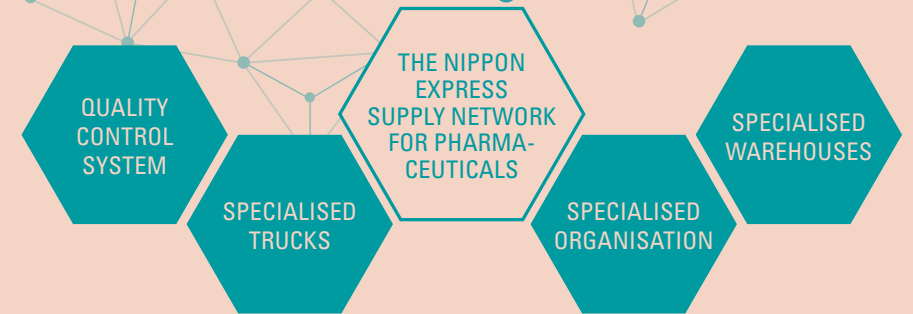
Contributing as a global forwarder

In terms of its overseas strategy, Nippon Express plans to target both new and generic pharma trade flows globally. After consolidating its domestic pharma logistic services in Japan, it will focus on exports of new drugs from Europe and North America to the Japanese market. The company is currently setting up gateway readers in its key international facilities and transport trucks to extend its GCWA service.

The next stage will be generic drug exports from India to Europe and North America. The company says it already has experience of working with more than half of the top ten Indian pharma makers, giving it an advantage in the growing export market.

Although the size of the global pharmaceutical logistics market is hard to estimate, even conservative guesses—calculating that logistics spending amount to a few per cent of the total traded value—make it a market worth hundreds of billions of dollars. Nippon Express plans to initially triple its overall revenues in the sector to JPY 76 billion (USD 670 million) by 2023, but this is still only a fraction of the vast potential total.

"Developing these new services for pharmaceuticals is key to raising our presence as a global logistics company," says Ishii. "Profitability is important, but equally significant is what kind of social contributions we choose to make. Contributing to the future of pharma is vital in our vision."



Watching the cargo in the cloud

Central to Nippon Express' plans to build a global logistics platform for pharmaceuticals is a device slightly larger than a pack of playing cards. Around 10 cm tall, 6.3 cm wide, 1 cm thick, and 45 g in weight,

these electronic tags have sensors which can log temperature, humidity, light, shock, tilt and location. When cargo affixed with these tags passes through reader gateways installed in trucks and

warehouses, the data is uploaded to a cloud. Customers will then be able to "watch" in real-time where and in what condition their cargo is without waiting for its arrival.

The company's Global Cargo Watcher Advance system uses these tags utilizing Intel technology.

Ray Zhang, Executive Director in Intel K.K., says, "Intel works with leading enterprises to accelerate technology transformation across industries. Intel has therefore worked closely with Nippon Express, a leading logistics company, to increase service levels and provide leading capabilities to meet customer demands. GCWA—based on Intel's Connected Logistics Platform—provides wider scalability, cost effectiveness, proactive monitoring and strong security."

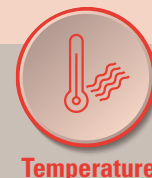
Launched this year, GCWA promises to substantially improve logistics

operations for highly sensitive freight (such as pharmaceuticals, semiconductor making equipment, and precision machinery) which require end-to-end traceability.

Previously, logging devices on cargo had to be shipped back to the point of departure for analysis, delaying the discovery of costly irregularities during transport. Moreover, the smaller size and lower unit costs of the new tags mean they can be affixed not only on containers or cargo-hold walls, but also placed in individual parcels. All of these features enable greater precision in monitoring product conditions and real-time visualisation throughout its delivery.

Working together with Intel, Nippon Express hopes to make GCWA the global standard in the logistics industry.

"I believe the development capabilities shared by our two companies allow us to continuously upgrade and advance the service as market needs evolve, contributing to a global standard," says Ishii.



Temperature



Humidity



Light



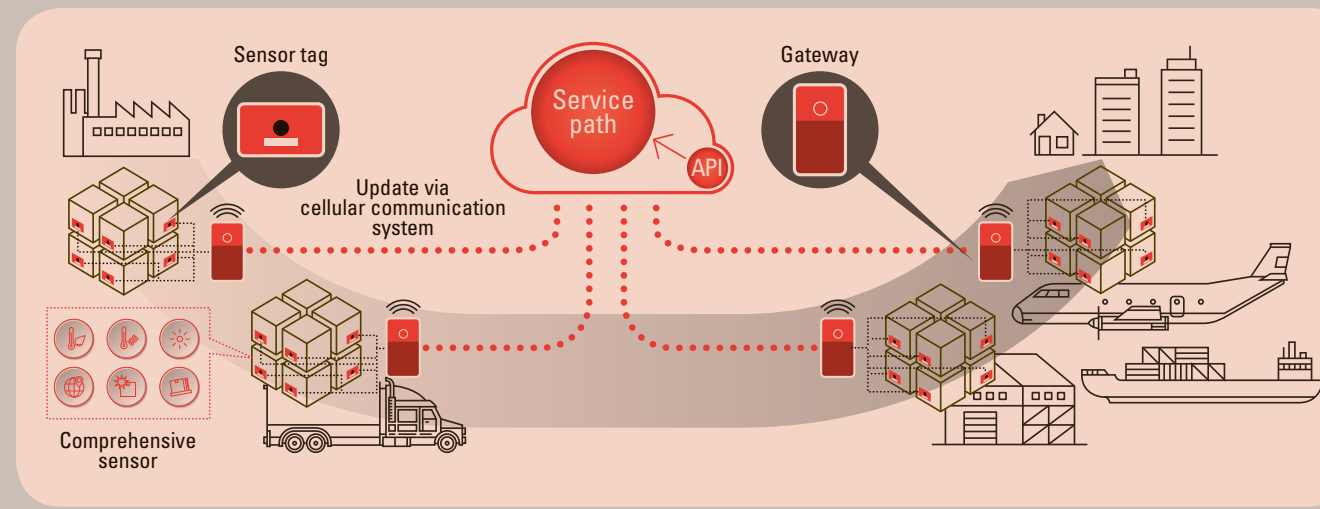
Shock



Tilt



Location



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