IoT tracking technology is keeping the cargo airline industry flying. Here's how

According to the International Air Transport Association (IATA), air cargo transports over $6t worth of goods, accounts for approximately 35% of world trade by value, creates millions of jobs, and contributes to global economic development. Yet, despite the industry's enormous contribution, customers don't always know where their cargo is when it's in transit.

Image source: Gallo/Getty

This is because most shipment information still relies on paper-based processes, often resulting in a lack of visibility of shipments and leaving cargo vulnerable to unforeseen incidents.

Customers now prefer having access to tracking at all times, and producers of perishable goods and pharmaceuticals need to know how their shipments are being handled through the airport-to-airport leg of the air-cargo journey. Cargo airlines, therefore, must have capabilities to track shipments, especially considering how the sector has evolved during the pandemic.

Global trade during the pandemic

Recent air cargo demand data, released by IATA, shows that Africa's cargo tonne-kilometres (CTKs) was down 2.6% in 2020, compared to the previous year's levels. Global volumes fell 6.6% in November, compared to 2019, and international cargo was down a comparative 7.7%.

However, despite these declining numbers, the distribution of Covid-19 vaccines and the rise of cross-border e-commerce during the pandemic has placed cargo airlines at the forefront of the airline industry's recovery. Globally, lockdowns gave rise to the accelerated adoption of e-commerce, with predictions pointing to cross-border e-commerce accounting for 20% of global air cargo shipments by 2022, doubling its market share since 2017.

This is evident in South Africa, where a Mastercard study showed that 68% of consumers in the country were increasing their online shopping habits during the lockdown. Multiple developments such as increase in cross-border trade, can present a silver lining for the industry. However, to fully take advantage of the opportunities offered by this spike, the industry needs to adopt technological advancements.

Meeting the demand for end-to-end visibility

The demand for end-to-end shipment visibility is exploding with the growth of e-commerce and increasing quantities of essential shipments, such as life-saving vaccines and perishable goods. Tracking technology that utilises the Internet of Things (IoT) has a proven track record of meeting this growing demand.

For online retailers, suppliers sending pharmaceutical, perishable or such sensitive shipments, require complete visibility as to where their shipments are at any given time.

Cathay Pacific Cargo, for example, developed Ultra Track – an IoT application with remote-connection capabilities, which is enabled by Descartes Core Bluetooth Low Energy (BLE) tags and readers, has become widely used by the airline to transport sensitive shipments.

The multidimensional tracking and data-logging system, for instance, is aligned with IATA's Cargo IQ initiative and utilises a Bluetooth transmitter to transmit GPS positions, temperature, vibration, and humidity in real-time, making it ideal for temperature-sensitive and fragile shipments. Using this technology minimises the risk of damaged, delayed, or even lost shipments. Instead, by using piece level tracking, cargo operators can support logistics firms by providing them with the whereabouts of their packages at all times.

Most importantly, end-to-end visibility of the shipment journey allows air cargo operators to view broken links in the shipment process, assist the airline to take damage-prevention steps as well as a service-recovery process all in one go. This can further strengthen reputation among customers, assuring them of a credible and reliable service experience.

While Cathay Pacific Cargo begins rolling out Ultra Track to 25 ports across its network, the airline and the cargo industry needs to also prepare for the next phase of digital cargo, which is the implementation of IATA One Record. This initiative aims to create an end-to-end digital logistics and transport supply chain where data is easily and transparently exchanged in a digital ecosystem.

Customer demand for increased visibility of their air cargo is growing. Through digitisation and IoT, customers gain end-to-end visibility of their shipments in near-real-time, and the air cargo industry can act before an emergency occurs during transit.