Cloud-Edge-IoT Success Stories

Use case story #5
Mobility & Logistics

Keywords:
#IoT #realtimevisibility,
#edgecomputing, #logistics
#mobility #supplychain

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From Vision to Impact

Optimising freight operations through IoT-enabled solutions

Background

In today's dynamic global marketplace, efficient logistics management is crucial for businesses striving to remain competitive and meet customer demands effectively. One critical component of streamlined logistics operations is container tracking solutions. These cutting-edge technologies utilise advanced tracking mechanisms, including GPS, real-time connectivity, and IoT sensors, to provide real-time visibility and insights into the movement, status, and productivity of freight within the intermodal supply chain.

The Company

WACKLER *Spedition & Logistik*

Wackler is a comprehensive transport and logistics company based in Germany, offering a wide range of services including warehousing, full-service logistics, and e-commerce solutions. As a member of the Cargoline alliance since 1993, Wackler specialises in both national and international logistics. Their services encompass land transport, air and sea freight, hazardous material storage, returns management, and in-house logistics. The company emphasises sustainability and quality, providing advanced tracking solutions and efficient supply chain management to ensure optimal performance and customer satisfaction.

The Challenge

Cargo transportation relies on a complex, intermodal network of roads, railways, air, and sea, frequently interacting with various stakeholders. Key challenges include operational inefficiencies, such as constantly calling drivers for their whereabouts, frequent inventory checks, and a lack of visibility in the value chain, particularly regarding the movements of goods.

The Needs

Wackler, a Cargoline company, faced significant challenges with shipment visibility. Issues included excessive standstill times, late arrivals, damage to temperature-sensitive goods, and resulting penalties. Shipments consisted of pallets in dry containers and reefer containers carrying time-critical items like chemicals.
Uncoordinated arrivals for unloading and loading caused traffic jams at the dock station, leading to delays. Supervisors had to call fleet drivers to get updates on shipment locations and conditions, resulting in poor dock management and inefficiencies.

The Solution

The main goal of the provided solution was to better manage Wackler's swap body inventory within the Cargoline network. MECOMO, a G+D company provided a solution to the company's challenges. In this instance, using the mecSOLAR GPS-tracking devices enabled short-cycle movement tracking and 24/7 monitoring through solar-charged self-sustaining devices with state-of-the-art global connectivity. The devices are Integrated with the mecFLEET platform, which allows for central management of location, status, Expected Time of Arrival (ETA), cargo safety, and customer visibility.

mecSOLAR devices are easily attached to swap body units and withstand harsh weather conditions, from the Arabian desert to snowy Scandinavia. They detect cargo conditions using sensor tags, monitor temperatures, and display data analytics in real time. Supply chain managers can access and export comprehensive reports within the mecFLEET platform. mecFLEET's features include setting up alert notifications and generating instant reports for individual units, enabling real-time responses to issues like temperature drops.

MECOMO solutions, specifically mecSOLAR IoT with wired temperature sensors and mecFLEET telematics portal, facilitate booking management, track entry/exit events, and generate ETA information for accurate yard and loading dock management. mecFLEET also registers damages, links them to liable parties, and generates reports on standstill times and temperature exceedances, all managed within the platform. For a complete user experience, in-field actions are supported via mobile phones, allowing fleet drivers to take photos and register damage en route. The mecTRACE app updates inspection dates and device pairings immediately in the mecFLEET platform.

The service provider

With decades of experience and technological leadership, Giesecke+Devrient (G+D) specialises in securing mobile connections, legal identities, and digital infrastructures. G+D serves as the trusted partner for governments, public authorities, and enterprises worldwide, safeguarding confidential systems, networks, data, and identities across physical, digital, and mobile environments. With the acquisition of MECOMO, a company specialising in tracking and tracing solutions, G+D is advancing its IoT product portfolio and providing comprehensive solutions from a single source. This strategic move involves targeted investments in specific verticals, such as the logistics industry, which is one of the largest and fastest-growing segments in the IoT market.

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Impact

Using mecSOLAR in combination with mecFLEET provided Wackler with real-time visibility and control. The integration of IoT devices with cloud platforms provided the necessary infrastructure for data processing, and actionable insights, enabling immediate action on incidents and resulting in significantly reduced costs and optimised asset allocation.

More precisely the following results were achieved:

1. Real-time data on the location and status of individual units, accessible through an interactive map in the mecFLEET platform, gave Wackler valuable insights into travel distances and times. This allowed quick reactions to unexpected standstill times, reducing the risk of cargo damage or theft. Daily inventory updates from mecSOLAR devices eliminated the need for semi-annual fleet inventories.

2. The need for phone calls to fleet drivers was eliminated, reducing their workload and enabling faster response to disruptions. Real-time visibility for stakeholders (operators/customers) via mecFLEET's shared link functionalities significantly reduced labour costs and validated on-time deliveries using GPS timestamps, avoiding potential penalties.

3. Yard management was streamlined by guiding incoming assets to the correct loading docks, thanks to tracking information on expected departure and arrival times and prioritising critical shipments. This capability allowed Wackler to make better-informed decisions, optimising supply chain management, saving costs, and increasing asset utilisation.

4. Additionally, using mecSOLAR devices enabled Cargoline to reduce its environmental footprint by optimising fleet deployment and maintaining solar-powered batteries, which last over 10 years. This sustainability measure is increasingly important in today's global climate.

Future developments

G+D is committed to continue investing in comprehensive sensor-based status recording devices for all transported goods, offering customers full-service solutions that include hardware, middleware, and front-end services. By leveraging the economies of scale offered and collaborating with distribution partners, G+D aims to expand its market reach and multiply growth and profitability.

Recommendations for policymaking

Based on the gathered information, policymakers should focus on integrating IoT, edge, and cloud technologies to enhance logistics efficiency, sustainability, and growth. The following recommendations outline key strategies to achieve these goals:

▶ **Provide dedicated funding**

Allocate funding to logistics companies for the deployment of IoT tracking devices, edge computing infrastructure, and cloud-based management platforms.

▶ **Develop industry standards and certification programmes**

Collaborate with industry stakeholders to establish standards for IoT device interoperability, data security, and real-time tracking protocols. Introduce certification programs to ensure logistics providers adhere to these standards, promoting consistency and reliability across the industry.

▶ **Incentivise sustainable logistics practices**

Provide incentives and subsidies for companies that invest in solar-powered IoT devices and other green technologies. Encourage the adoption of environmentally friendly practices by offering financial rewards for reducing carbon footprints and improving energy efficiency in logistics operations

▶ **Enhance workforce training and skill development**

Invest in training programs to equip the logistics workforce with the necessary skills for advanced technology management.

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🔗 More info on MECOMO IoT devices: **Smarter IoT devices: track and trace, enterprise logistics | G+D (gi-de.com)**

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