

From warehouse to delivery: how IoT is transforming cross-border logistics

The interconnectedness of Internet of Things (IoT) technologies drives a monumental transformation in the logistics industry. By seamlessly connecting physical assets with digital systems, IoT is enhancing efficiency, reducing costs, and significantly improving customer satisfaction on a global scale.



With a robust **compound annual growth rate (CAGR) of 14.43%**, the logistics market is anticipated to reach approximately **\$119.68 billion** by 2030.¹



Effective routing can cut driver hours by **nearly 25%**. IoT devices help logistics operators streamline operations by identifying bottlenecks and automating tasks.²



Smart robots will revolutionise warehouses, with Gartner projecting **75% of organisations** will adopt robotic solutions by 2026.³

The business advantage of IoT for logistics⁴



Green logistics

Reduce carbon footprint and operational costs with sustainable practices.



Goods in transit tracking

Ensure timely deliveries and improve accountability with precise transit monitoring.



Predictive maintenance of assets

Extend asset lifespan and minimise downtime through predictive maintenance.



Autonomous vehicles and drones

Streamline deliveries and cut costs with autonomous vehicles and drones.



Real-time inventory monitoring

Maintain optimal inventory levels and reduce wastage with real-time insights.



Full transparency across shipping processes

Foster trust and collaboration with real-time shipping updates.



Smart warehousing solutions

The shift to smart warehousing is transforming logistics through IoT integration and automation. Sensors and robotics optimise operations, track inventory in real-time, and enhance connectivity, reducing expenses, errors, and navigation time⁵, and ensuring cross-border operational excellence.



Smart shelves: efficient inventory management

Sensors provide real-time tracking, updating stock levels automatically and reducing errors.



RFID tags: precise asset tracking

RFID tags enable accurate asset tracking and quick inventory audits, reducing losses and misplacements.



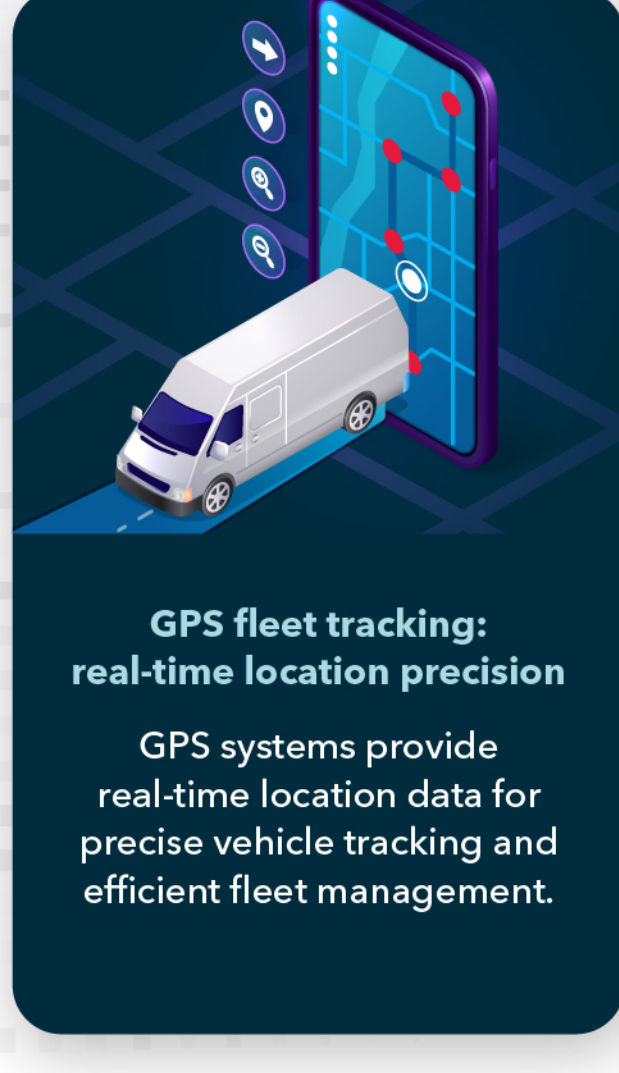
Robotic systems: improved productivity

Automated Guided Vehicles (AGVs) and robotic arms automate repetitive tasks, boosting productivity and letting humans focus on strategic operations.



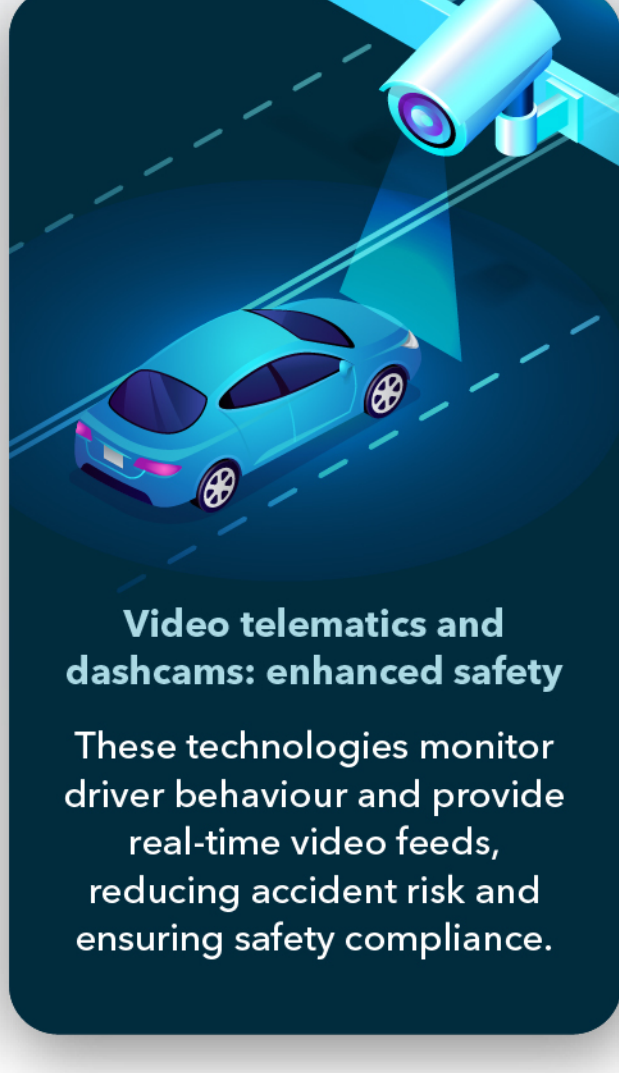
Empowering next-gen cross-border transportation

Next-gen IoT innovations boost transparency and decision-making in multi-domestic logistics, shaping a more efficient and secure future for global transportation.



GPS fleet tracking: real-time location precision

GPS systems provide real-time location data for precise vehicle tracking and efficient fleet management.



Video telematics and dashcams: enhanced safety

These technologies monitor driver behaviour and provide real-time video feeds, reducing accident risk and ensuring safety compliance.



Intelligent route planning: optimised efficiency

IoT-enabled route planning avoids traffic delays, reduces fuel consumption, and speeds up delivery times.

IoT's role in simplifying and ensuring secure deliveries

Integrating smart technologies enables robust security for shipments from warehouse to delivery. IoT enhances security with real-time tracking, controlled access, and environmental monitoring, building trust and reliability in the supply chain.

Smart locks: for reliable access control

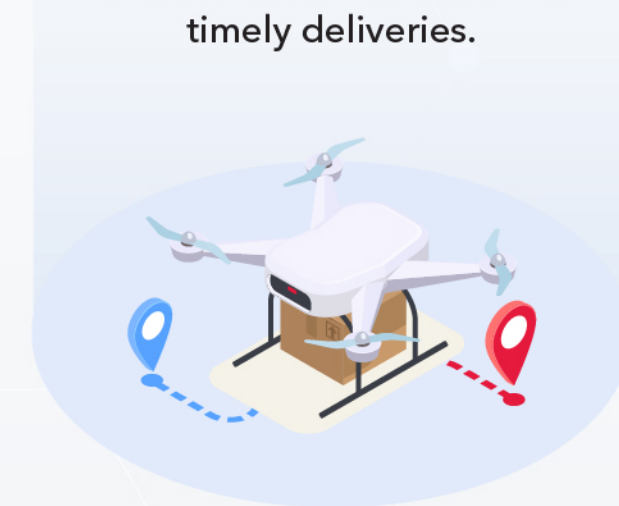
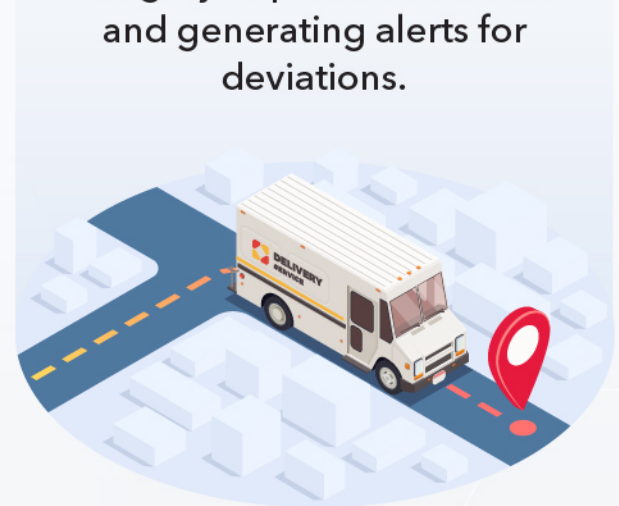
Smart locks allow remote entry to delivery locations with real-time monitoring and controlled access.

Sensors: precise condition monitoring

Sensors track cargo conditions like temperature and humidity, ensuring the integrity of perishable items and generating alerts for deviations.

Contactless delivery: convenience and safety

IoT-enabled contactless delivery methods enhance convenience, reduce physical contact, and ensure secure, timely deliveries.



Finding the right IoT connectivity partner for multi-country deployment

Choosing the right IoT connectivity partner for multi-domestic deployment requires navigating diverse markets with varying technology infrastructures and regulations.

Key considerations include:

- Ensuring seamless connectivity with eSIM solutions
- Understanding regional data privacy and hardware regulations
- Avoiding issues with multiple SIM cards and inconsistent SLAs

Partnering with a mobile network operator (MNO) that offers a unified approach to address these challenges and enable effective scaling in the APAC region.



Partnering with Singtel for cross-border excellence

Collaborating with Singtel for your cross-border logistics operations brings **significant advantages** through our **Multi-Domestic Connectivity solution**. With a single lead operator, **Singtel simplifies the complexities of regional connectivity**.

Our single master service agreement streamlines the management of multiple contracts and regulations, accelerating time to market. Additionally, Singtel ensures consistent service delivery with standard SLAs across local and multi-domestic connectivity, while centralised real-time management of eSIMs and subscriptions enhances operational efficiency.



Discover how Singtel can help you transform cross-border logistics with IoT.

[Start now](#)

References

¹ Acropolium, Embracing IoT in transportation and logistics to boost supply chain visibility, 2024

² Digital matter, Logistics management and the future of IoT devices, 2024

³ Gartner, Gartner predicts 25% of supply chain decisions will be made across intelligent edge ecosystems through 2025, 2022

⁴ Sumatsoft, 11 positive effects of the Internet of things in logistics, 2023

⁵ Acropolium, Embracing IoT in transportation and logistics to boost supply chain visibility, 2024