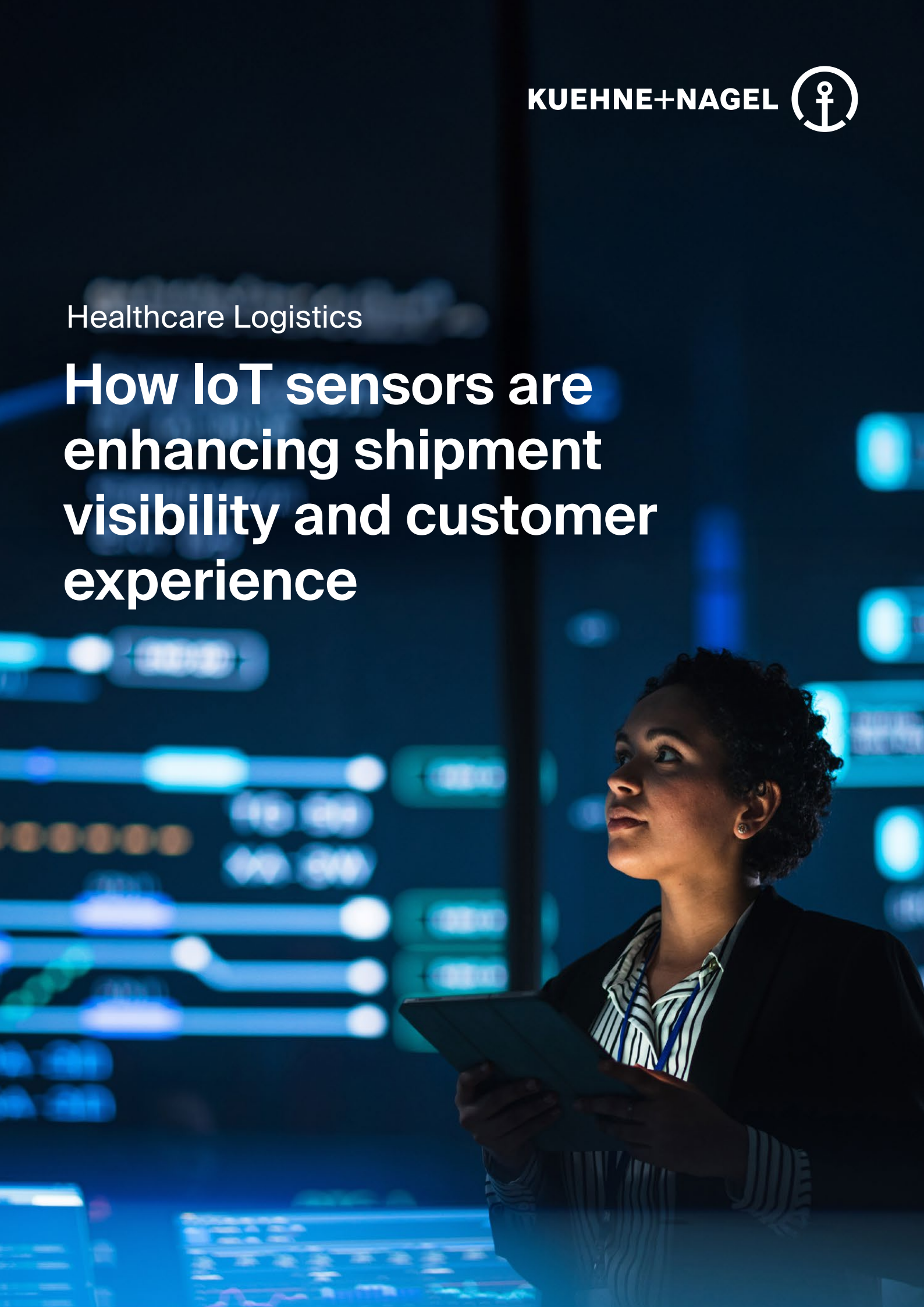
KUEHNE+NAGEL

Healthcare Logistics

How IoT sensors are enhancing shipment visibility and customer experience



Smart tracking: a game changer

From the control desk
of Gricel Bernal,
Global Healthcare,
HyperCare Team Manager

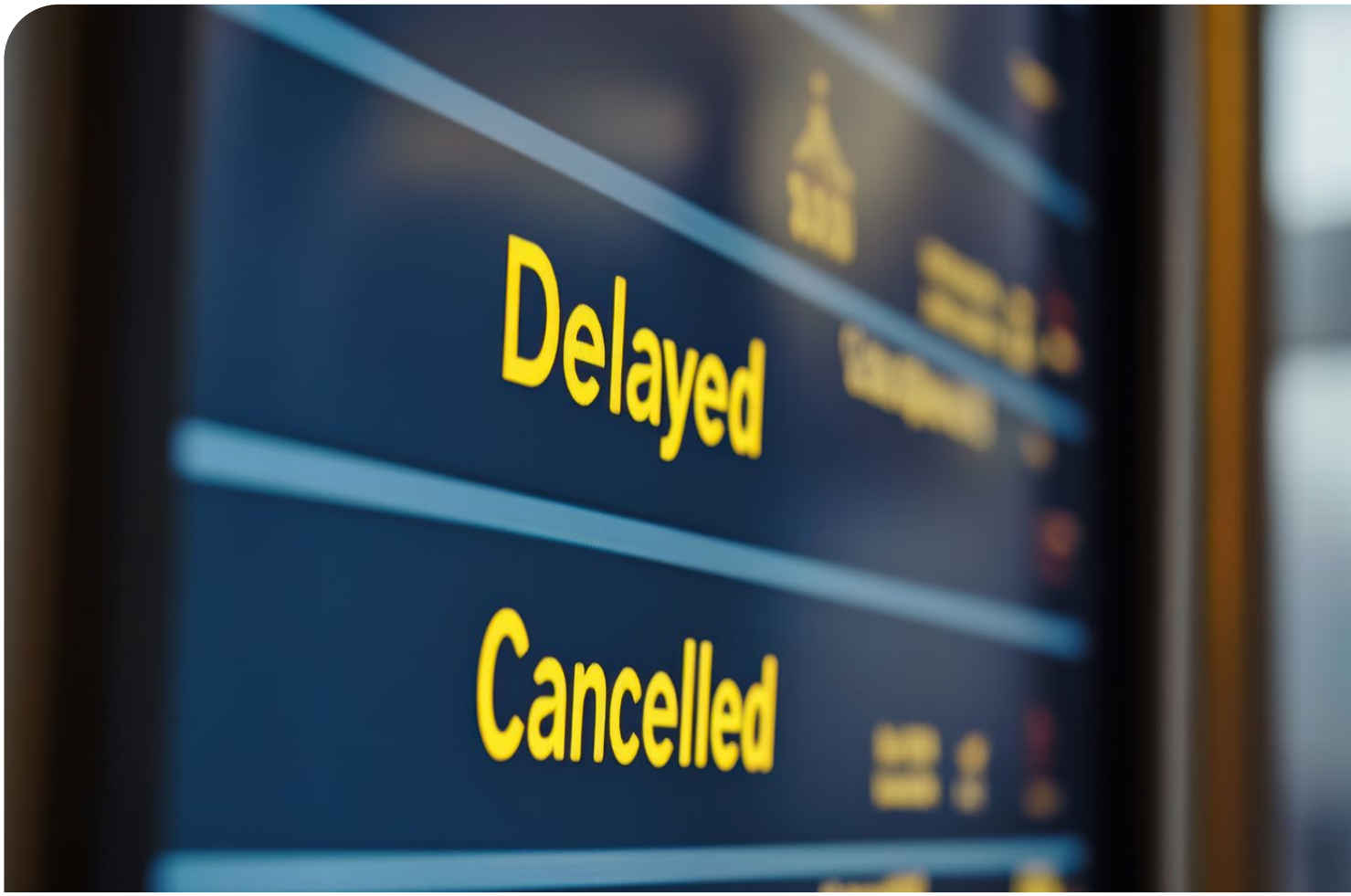
In this age of just-in-time supply chains enhanced visibility and real-time data are the key to success in the quest to optimise healthcare logistics, leading to reduced costs and enhanced customer satisfaction.

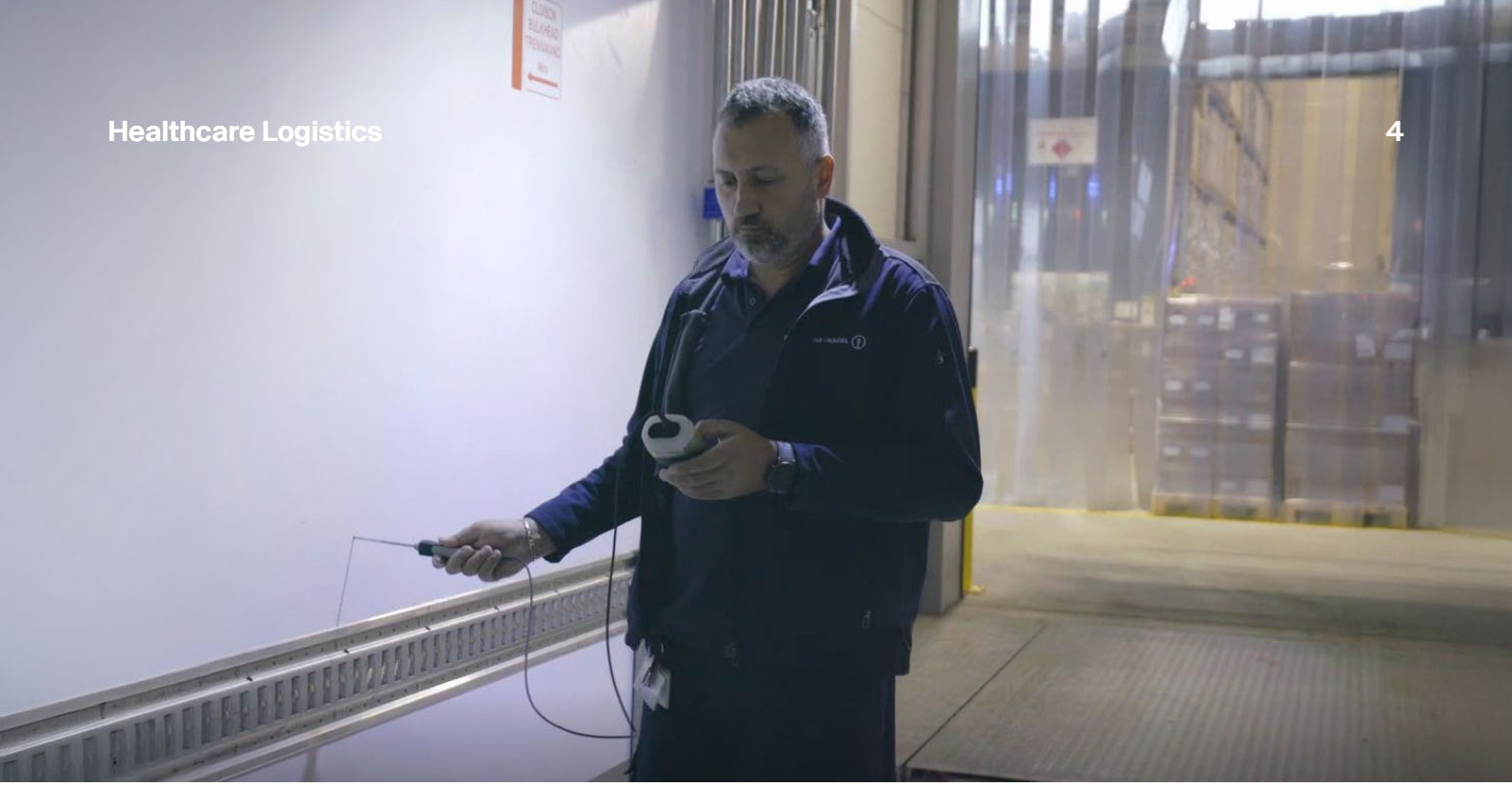
IoT (Internet of Things) sensors are transforming the way shipments are tracked and monitored, ensuring goods arrive at the right place, at the right time, and in the right condition.

The need for smarter shipment tracking

Traditional shipment tracking methods rely on periodic updates from carriers, barcode scans at checkpoints, and estimated arrival times. While these systems provide a level of oversight, they often lack real-time accuracy and transparency. Delays, theft, or environmental conditions affecting goods often go unnoticed until it's too late, leading to costly disruptions.

IoT sensors address these challenges by enabling continuous monitoring, offering a granular view of a shipment's location, condition, and security status. From healthcare products requiring strict temperature control to high-value medical devices susceptible to damage, IoT sensors provide healthcare firms with the data they need to mitigate risks and optimise operations.





The advantage of IoT sensors

GPS-enabled IoT sensors provide real-time tracking, eliminating uncertainty about a shipment's location. This is particularly valuable for just-in-time supply chains, where any delay can lead to production stoppages or stockouts. For the healthcare industry maintaining proper product conditions is non-negotiable.
IoT sensors can measure:

Temperature
Ensuring vaccines, biologics, or pharmaceutical products remain within required temperature ranges.

Humidity
Preventing mould growth in sensitive shipments.

Shock and vibration
Alerting stakeholders if fragile items, such as sensitive medical devices experience rough handling.

If a threshold is exceeded, instant alerts can trigger corrective action, preventing spoilage or damage before it becomes a loss.

Theft and tampering detection

IoT sensors can detect unauthorised access, such as a container door being opened unexpectedly. Some devices use geofencing, sending alerts if a shipment deviates from its planned route. This proactive security reduces the risk of cargo theft—an industry problem that costs billions annually.

Predictive analytics and automation

With AI-powered analytics, it is possible anticipate risks, such as weather disruptions, port congestion, or strikes, and take proactive measures. Additionally, automated alerts and responses can help logistics teams intervene before small issues escalate into costly problems.

HyperCare: Kuehne+Nagel's monitoring service

HyperCare active monitoring is an end-to-end solution that provides regular updates on the status of shipments. The HyperCare team sends notifications when pre-agreed touchpoints are reached, anticipates potential threats, and proactively intervenes to minimise shipment risks.

The HyperCare team accompanies shipments right from the pre-shipment stage, they need to know everything about the shipment, the desired timelines, the type of packaging being used, which milestones a customer wants to be notified about, and how quickly action must be taken in the event of a deviation and who needs to be contacted.

The Kuehne+Nagel HyperCare process

- The process begins with the team meticulously cross-checking all paperwork to verify that there are no discrepancies between the products shipping requirements and the service that has been booked. with the carrier (air, sea or road).
- Next, the HyperCare team pre-alerts the predefined Kuehe+Nagel colleague and carrier partners about the upcoming healthcare shipment, so that everyone is prepared for its arrival and the actions they need to take.
- The cargo is closely monitored by our dedicated 24/7 Hyper-Care team from its origin to its destination. Every status update is recorded meticulously to provide the necessary visibility of all events on the myKN portal.
- While the cargo is in the hands of the carrier, whether at the origin, during transit, or at the destination point, the HyperCare team confirms that the correct temperature is maintained at all times.
- All parties are kept informed about any changes in the schedule, so that contingency plans can be put into operation if necessary.
- Temperature deviations are immediately analysed by the team using the Kuehne+Nagel DataWiz tool to determine if the deviation poses a risk. This analysis helps identify if the deviation is related to loading or unloading the cargo or if it occurs unexpectedly, for example when the cargo is supposed to be plugged at the terminal. This allows the team to escalate issues as needed to prevent any damage to the cargo.

The Kuehne+Nagel difference: How do we keep track of all the data?

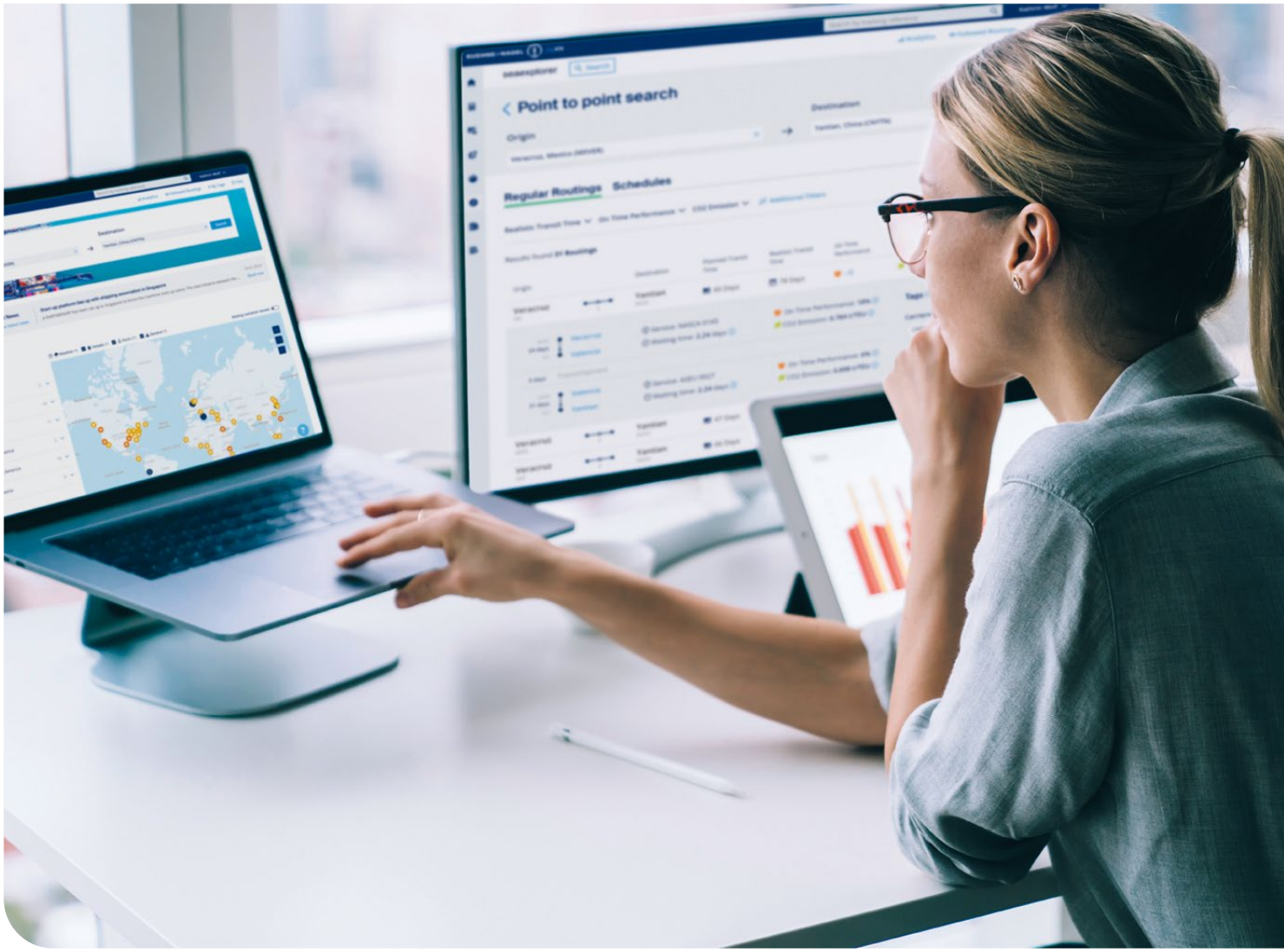
The Kuehne+Nagel IT hub in Hamburg, working with the HyperCare team created ASTRO, a technology system that consolidates multiple stand-alone tools into one cohesive platform. This has enhanced the HyperCare team's efficiency by eliminating the need to switch between multiple different systems, thus ensuring reliable and effective shipment monitoring.

The HyperCare Team can quickly view planned milestones alongside the current progress of shipments, the weather forecast, and potential PESTLE* risks. Additionally, ASTRO provides access to a selection of key shipment information to support their monitoring process e.g. data on historic shipment location, physical transport conditions, customer documentation, SOPs and hyperlinks to carriers' tracking systems.

How do you keep track of your shipments?

The HyperCare team will keep you informed about the status of your shipment with proactive notifications, and on the myKN platform you can check the status of your shipments, receive notifications, and enjoy quick access to your shipment documentation.

* Political, economic, sociological, technological, legal and environmental



The future of IoT in shipment tracking

As 5G networks expand and sensor technology improves, IoT shipment tracking will become even more sophisticated.

In an era where visibility, security, and efficiency define supply chain success, IoT sensors are no longer a luxury—they are a necessity. Businesses that leverage this technology will be better equipped to navigate logistics challenges, reduce costs, and deliver exceptional service in an increasingly complex global marketplace.

About us

With approximately 80,000 employees at almost 1,300 sites in close to 100 countries, the Kuehne+Nagel Group is one of the world's leading logistics providers. Headquartered in Switzerland, Kuehne+Nagel is listed in the Swiss blue-chip stock market index, the SMI. The Group is the global number one in air and sea logistics and has strong market positions in road and contract logistics.

Kuehne+Nagel is the logistics partner of choice for 400,000 customers worldwide. Using its global network, logistics expertise and data-based insights, the Group provides end-to-end supply chain solutions for global companies and industries. As a member of the Science Based Target Initiative (SBTi), Kuehne+Nagel is committed to sustainable logistics by reducing its own environmental footprint and by supporting its customers with low-carbon logistics solutions.

→ kuehne-nagel.com

KUEHNE+NAGEL