



# Transforming Retail and Cold Chain Operations with Intelligent Asset Track & Trace



In an era defined by rising operational complexity, heightened customer expectations, and relentless pressure to deliver faster and smarter, industries reliant on distributed supply chains - retail, logistics, cold chain, manufacturing, and healthcare face a common challenge: lack of real-time visibility and control over their assets. With spoilage, shrinkage, compliance failures, and inefficient asset utilization costing businesses billions annually,

Asset Track & Trace (T&T) solutions have emerged as a strategic imperative. This POV outlines how intelligent, interoperable, and outcome-driven asset ecosystems are enabling global enterprises to integrate IoT, AI, cloud, and edge computing for complete supply chain visibility, resilience, and optimization.





## The Challenge: Operational Blind Spots and Rising Complexity

Asset-intensive industries are experiencing significant pain points:

- **Alarm overload and disjointed sensor systems:** Excessive, non-actionable alerts from fragmented systems overwhelm operations and dilute focus from actual threats.
- **Inaccurate inventory and loss of perishable goods:** Without real-time asset tracking, businesses struggle to maintain accuracy, leading to shrinkage, spoilage, and missed service levels.
- **Regulatory compliance gaps (FSMA, FDA, GDP):** Failure to meet evolving safety and handling regulations increases the risk of fines, recalls, and reputational damage.
- **Limited visibility across storage, transit, and store locations:** Siloed data restricts end-to-end monitoring, creating inefficiencies in decision-making and supply chain coordination.
- **High cost of manual interventions and fragmented technology stacks:** Disconnected systems and labor-intensive tracking methods increase operational costs and reduce scalability.

Retailers and cold chain operators are particularly vulnerable, where delays, temperature fluctuations, or stock inaccuracies can directly impact shelf availability, customer experience, and brand trust.



# Visibility is the New Infrastructure



The future of asset management lies in building interoperable, sensor-to-cloud ecosystems that consolidate operational data across logistics, storage, and retail endpoints. The goal is not merely to track but to proactively manage and optimize asset flows in real time.

Modern asset intelligence platforms combine IoT sensors, predictive analytics, and integration with enterprise systems like ERP, WMS, and TMS to enable true visibility and control. These solutions are designed to deliver more than operational oversight—they are catalysts for improved productivity, compliance, and customer satisfaction.

In today's supply chains, siloed tracking systems and delayed insights create friction across the asset lifecycle. Moving to connected, intelligent infrastructure helps organizations:

- Reduce asset downtime and spoilage
- Enhance compliance with safety and handling standards
- Improve customer experience through better product availability and freshness
- Enable data-driven, agile logistics and replenishment

Asset tracking is no longer a good-to-have initiative. It is an essential layer of the modern supply chain stack.



# Enabling Intelligent Asset Visibility: Sutherland's Differentiated Approach

Sutherland offers a holistic approach to intelligent asset visibility - designed to help businesses achieve not just transparency, but operational precision and strategic control. Our framework is built around five key pillars:

## 1. Consulting & Advisory:

We begin with a comprehensive maturity assessment to understand your current visibility posture. By mapping technology gaps, operational bottlenecks, and regulatory risks, we co-develop a transformation roadmap tailored to your industry context and business goals.

## 2. Solution Design & Architecture:

Our teams design sensor-enabled architectures that integrate IoT (temperature, shock, humidity), RFID, and GPS telemetry into a unified data layer. Real-time dashboards and edge-cloud architecture enable faster, more responsive decision-making, while blockchain is introduced where provenance and transparency are critical.

## 3. Deployment & Implementation:

From sourcing and onboarding hardware and software to integration with enterprise platforms like ERP, WMS, and TMS, we manage the end-to-end implementation lifecycle. This includes configuration, testing, stakeholder alignment, and rollout.

## 4. Quality Assurance & Handover:

We ensure the solution is robust and ready for scale through system validation, UAT, user training, and documentation. Our structured handover methodology ensures operational continuity and adoption across business units.

## 5. Operational Monitoring & Continuous Improvement:

Post deployment, our intelligent operations center acts as a control tower - providing 24x7 monitoring, predictive alerting, and incident triage. Insights from analytics dashboards support continuous optimization of asset utilization, uptime, and compliance performance..

---

This end-to-end approach transforms asset visibility into an operational advantage—enhancing decision intelligence, enabling proactive risk management, and delivering sustainable value across the supply chain.



# Emerging Technology Enablers



- **IoT Sensors & Telematics**  
These devices provide granular tracking of temperature, humidity, vibration, and location—critical for perishables and sensitive goods.
- **RFID & GPS Integration**  
Supports automated and continuous visibility of assets as they move through supply chains.
- **AI & Predictive Analytics**  
Enables early identification of risks such as spoilage, delays, or underutilized assets and supports better demand forecasting.
- **Blockchain for Provenance**  
Builds trust and transparency, particularly in regulated industries like pharmaceuticals and organic foods.
- **Cloud & Edge Computing**  
Ensures access to asset data in real time, even in low-connectivity environments, improving responsiveness.



# Real-World Applications

## Wiliot

Developed postage-stamp-sized, battery-free IoT tags that track freshness and fill levels of food in transit and on shelves.

## Maersk

Deployed over 400,000 connected refrigeration units, achieving complete visibility from port to store, enhanced by blockchain integration.

## Walmart & Amazon Fresh

Use RFID and predictive inventory systems to automate replenishment, reduce spoilage, and improve on-shelf availability.





# Outcomes That Matter

96%

reduction  
in false alarms:

Advanced alerting filters noise  
and prioritizes real risks.

20%

fewer technician  
dispatches:

Predictive analytics help avoid  
unnecessary interventions.

30%

decrease in  
spoilage costs:

End-to-end traceability ensures  
alignment with evolving  
regulations and ESG goals.

25%

improvement in asset  
utilization:

Better visibility leads to more  
efficient use of resources.

Greater compliance  
and sustainability:

Real-time monitoring helps  
maintain optimal conditions.



# Future Focus: From Visibility to Value

With the asset tracking market expected to grow from \$23.4B in 2024 to \$59.6B by 2032, and cold chain monitoring expanding even faster, organizations that treat visibility as a core capability will shape the future of operational excellence. The convergence of sensor technologies, predictive intelligence, and cloud infrastructure is creating an unprecedented opportunity for supply chain leaders to rethink how they manage, secure, and optimize their most critical assets.

Real-time asset visibility isn't just about knowing where things are, it's about unlocking new levels of resilience, efficiency, and customer trust.



Artificial Intelligence. Automation. Cloud Engineering. Advanced Analytics. For Enterprises, these are key factors of success. For us, they're our core expertise.

We work with global iconic brands. We bring them a unique value proposition through market-leading technologies and business process excellence. At the heart of it all is Digital Engineering – the foundation that powers rapid innovation and scalable business transformation.

We've created over 200 unique inventions under several patents across AI and other emerging technologies. Leveraging our advanced products and platforms, we drive digital transformation at scale, optimize critical business operations, reinvent experiences and pioneer new solutions, all provided through a seamless “as-a-service” model.

For each company, we provide new keys for their businesses, the people they work with, and the customers they serve. With proven strategies and agile execution, we don't just enable change – we engineer digital outcomes.

