LOGISTICS SOLUTIONS

FOOD SUPPLY CHAIN MANAGEMENT

OSIRIS TECHNICAL SYSTEMS

The Heartbeat of the Food Supply Chain

Within the vast, intricate network of food supply chain, a silent, powerful pulse is needed - a rhythm that connects farmers, processors, distributors, and retailers with unerring accuracy. This complex system strives to deliver fresh, safe products, but its very intricacy creates formidable challenges.

Traditional systems, reliant on manual data entry and line-of-sight barcode scanning, falter under the weight of human error, lack real-time insight, and break down during disruptions.

The consequences are severe. Food crises, from the BSE and dioxin crises of the 1990s to modern contamination events, have a massive impact - eroding consumer confidence and threatening both public and commercial health.

A 2000 UK Food Standard Agency survey showed that 75% of consumers are concerned about food safety, though more than two decades ago, the concerns persist to this day. The industry needs more than just a solution - it needs a revolution. It needs a heartbeat.

Enter RFID, the transformative force that breathes new life into every link of the chain, ensuring every beat is harmonized, efficient, and resilient.

Core Benefits for Food Logistics & Operations Management

Through the veins of commerce, pulses a silent yet powerful force transforming the landscape of food logistics and operations. It breathes life into every corner of the supply chain, turning sporadic, cumbersome data collection into a seamless flow of real-time insights.

With each RFID signal, businesses gain clarity and precision, allowing them to respond with agility and foresight. It's the heartbeat that ensures efficiency and reliability, connecting every link in the chain with a rhythm as steady as a heartbeat, echoing through the vast network of commerce.

Full traceability is no longer a luxury but a regulatory and consumer demand. RFID provides the ultimate foundation for a safe and transparent supply chain.

Farm-to-Fork Visibility: By associating each tagged case or pallet with production data (lot number, expiration date, origin), a complete digital history is created. This allows stakeholders to see the precise journey of every item as it moves through the supply chain.

Surgical Recalls: If a product recall is necessary, RFID data allows companies to instantly identify and locate only the affected batches, wherever they are in the supply chain. This avoids costly, over-broad recalls, protects brand reputation, and ensures consumer safety.

Regulatory Compliance: RFID helps automate compliance with regulations like the U.S. FDA's Food Safety Modernization Act (FSMA) Rule 204, which mandates enhanced traceability records for certain foods.

Drastically Improved Inventory Accuracy

Inventory accuracy is the bedrock of an efficient supply chain.

Elimination of Human Error: What you see in your system is what you actually have on the floor. Automated data capture removes the errors inherent in manual counting or barcode scanning.

Real-Time Visibility: Instead of relying on periodic cycle counts, RFID readers continuously update inventory status. This real-time knowledge prevents stock-outs, reduces safety stock levels, and minimizes carrying costs.

Accurate Financials: Perfect inventory visibility ensures that financial statements accurately reflect assets, eliminating write-offs due to lost or expired stock.

Advanced Intelligence: The Cadence of Optimization

Beyond tracking, the true power of RFID lies in the wealth of data it generates. Every tag read is a data point that, when aggregated, provides unprecedented operational insight.

Automated FIFO/FEFO Management: The system can automatically identify products with the nearest expiration dates (First-Expire, First-Out) or the oldest arrival dates (First-In, First-Out). The WMS can then direct pickers to the exact pallets that must ship first, drastically minimizing waste from expired goods.

Cold Chain Monitoring: RFID tags equipped with sensors can continuously monitor and record the temperature of perishable goods, creating an unbroken, auditable log that prevents spoilage and guarantees quality.

Predictive Analytics: By feeding this real-time data stream into analytics platforms, managers can identify bottlenecks, optimize warehouse layouts, improve labor planning, and use historical data to more accurately forecast demand and anticipate disruptions.

> The food supply chain of the future will be defined by its ability to deliver safe, high-quality products with absolute transparency.

A Strategic Vision: Implementing the Heartbeat

RFID adopting is a strategic investment in the future of your operation. A successful strategy involves a phased rollout, allowing for a clear return on ROI at each stage. A focused approach to RFID implementation incurs much less risk.

Pilot Project: Start with a single, high-impact use case like automating shipping and receiving at dock doors to demonstrate immediate gains in accuracy and speed.

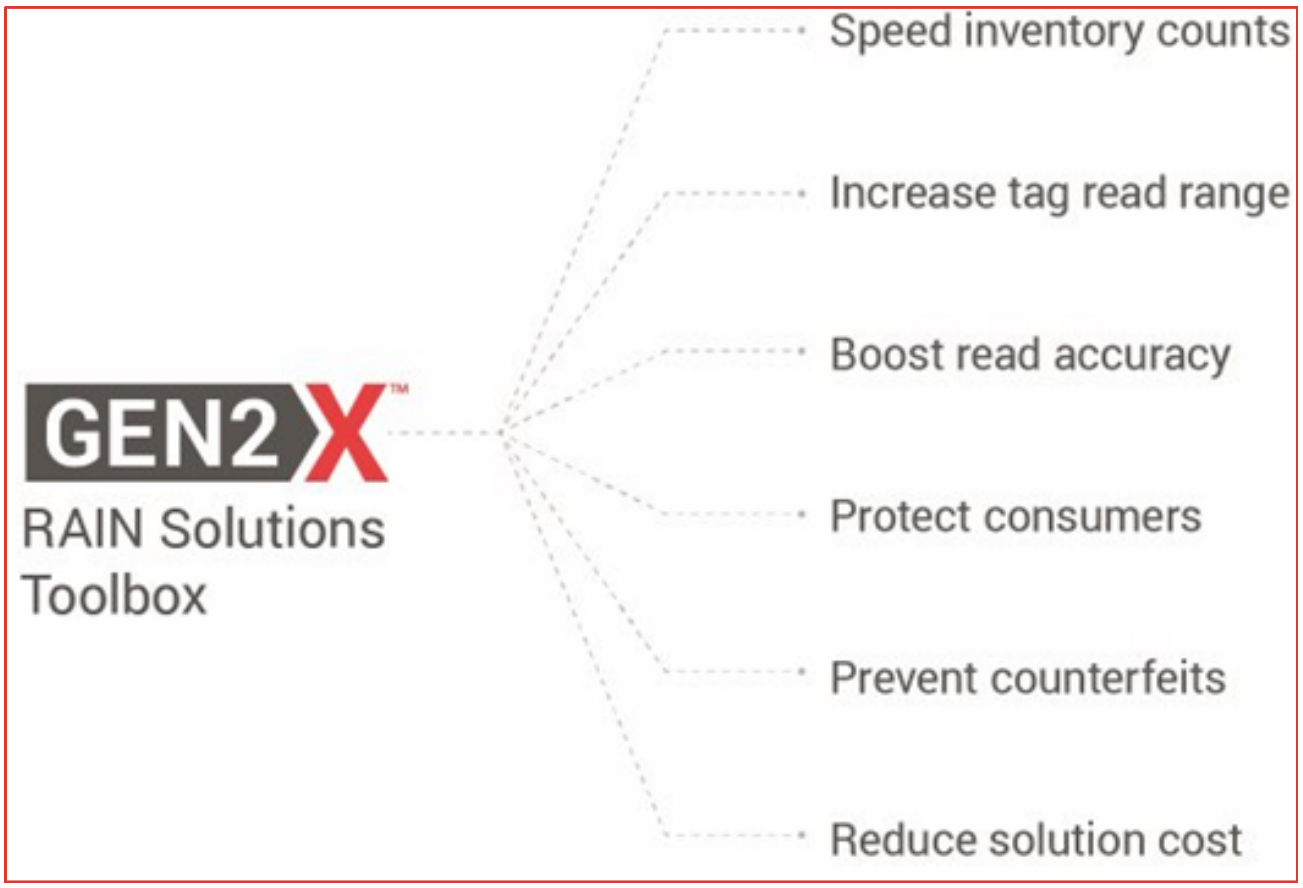
Expand Internally: Extend the solution to internal checkpoints, such as automated pallet build verification, to eliminate shipping errors and improve order accuracy.

Full-Scale Rollout: Leverage the infrastructure for advanced applications like total inventory management, cold chain monitoring, and asset tracking.

For Small and Medium Enterprises (SMEs), which produce most of the world's food, a cost-effective infrastructure is key. A hybrid architecture, combining on-site RFID readers with a centralized information system, can make traceability feasible for partners of all sizes with minimal investment.

Further Possibilities with RFID Technology

The same RFID infrastructure can be leveraged for a multitude of other high-value applications:



Cold Chain Monitoring: By using RFID tags equipped with temperature sensors, companies can continuously monitor and record the temperature of perishable goods. This creates an unbroken, auditable temperature log from the distribution center to the retail store, preventing spoilage and ensuring quality.

Automated FIFO/FEFO Management: The system can automatically identify the location of products with the nearest expiration dates (First-Expire, First-Out) or oldest arrival dates (First-In, First-Out). When an order is generated, the WMS directs pickers to the exact pallets that must be shipped first, minimizing waste from expired products.

Returnable Transport Item (RTI) Management: Tagging reusable assets like plastic totes, crates, and pallets allows for effortless tracking. This improves asset utilization, reduces loss and theft, automates deposit-and-return programs, and ensures a sufficient supply of clean RTIs is available when needed.

Zone and Location Awareness: By strategically placing readers, you can know the precise location of every pallet in the facility, speeding up put-away and retrieval times for forklift operators.

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