The ROI of real-time supply chain visibility

— Real-time Insights

Real-time visibility for the temperature-controlled supply chain is universally desired by enterprises, customers, shippers, and carriers, but its bottom-line dollar value is less often discussed. That means it often remains a nice-to-have rather than a must-have. You know that complete visibility over the entire supply chain is likely to have a good effect on business, but the tendency is to regard it as an ineffable benefit that either cannot adequately be measured or that is considered too expensive or complicated as an investment.

This is an antiquated mode of thinking and it is largely inaccurate. Allowing a belief that it isn't possible to put hard figures against the benefits of a real-time supply chain visibility program to prevent your business from implementing one is likely to put you at a significant disadvantage, both from a competitive standpoint and a business standpoint. Data can now demonstrate that having complete visibility and control over the entire supply chain can lead to exponential cost savings and ROI. Improved visibility reduces both product and operational waste. It illuminates the dark spots in the supply chain, enabling businesses to focus only on what

matters, and helps drive continuous efficiency and improvement. Further, real-time visibility is tied directly to better customer service, one of the strongest competitive differentiators available.

Heads of supply chain logistics and quality managers now have a far stronger argument than ever before when it comes to convincing C-level executives to green-light buying and installing a real-time visibility solution. Through data, they can now clearly demonstrate why the short-term operational disruption involved in making the most of today's visibility technologies can be justified.

How waste happens

For producers handling perishable and sensitive goods, one of the most significant challenges is maintaining products at the optimum temperatures—temperature monitoring is mission critical. This is made more challenging as products make their way through various stages of the supply chain. At each step, a slight variation in temperature conditions can lead to unsafe conditions that impact quality and integrity. The product may have

been left out of refrigeration, left to sit in the sun or in a holding area for too long, or placed within a truck without palettes to optimize the airflow inside.

Each lane of travel—air, road, or sea—requires different types of handoff points and each poses different risks. As the global cold chain is increasingly more complex, there has been a growing need for a trusted, secure way to document temperature and product movement end-to-end in a traceable format that can satisfy the reporting requirements and data shared with stakeholders.

Supply chain resilience is becoming increasingly important because the frequency, magnitude, and costs of disruptions are increasing. Within the cold chain, problems typically happen at multiple handoff points. Today, temperature excursions account for nearly 80 percent of supply chain problems. Climate change, increasing transportation costs, driver shortages, and other supply chain disruptions are forcing greater efficiency, not only to prevent spoilage but to maximize profitability.

Embracing real-time visibility

Businesses at every step of the supply chain are rethinking spoilage and waste of their temperature-controlled and perishable products, not simply for their high-value goods. Real-time monitoring and product location traceability solutions using Internet of Things (IoT) technology that sends data to a connected cloud platform can identify more problems in cold chains than ever before. Next-generation technology offers new opportunities to deploy multiple sensors, track a variety of parameters in real-time, gain access to predictive data, and make logistics more efficient.

Previously, monitoring of the cold chain was two-fold, and consisted of placing temperature monitoring data loggers in trucks and shipping containers to ensure quality temperature handling. Upon arrival at their destination, the loggers were collected and data was downloaded and read. However, there wasn't always sufficient time in the receiving window to fully assess the temperature history before shipments are accepted or rejected.

Controlant's smart IoT and sensor technology is changing the uncertainty, integrating the entire global cold chain, and improving transparency, because the technology travels with the goods and provides quality information in real-time while products are in transit or in storage.

Real-time data can be accessed immediately through a centralized software platform and utilized to facilitate corrective action, prevent waste, redirect shipments, and keep customers and partners apprised of shipment statuses. Temperature notifications and alerts keep stakeholders updated regarding deviations so that corrective response can be taken before product integrity is compromised.

"Real-time data on its own is necessary but not sufficient. You have to do something with it." — Gisli Herjolfsson, Co-founder and CEO

Services matter

Access to real-time supply chain visibility data is only one piece of the efficiency puzzle. Enterprises need to collect the right types of data and effectively leverage it. This is where services fit in. A business that is managing tens of thousands of annual shipments would need to hire an entire team to manage excursion alerts as well as the IoT logger pool, train and support stakeholders, and assist with the processes needed to successfully implement the solution. Controlant delivers these professional and managed services, partnering with supply chain teams to automate the process.

The ROI of moving from "old-time" to real-time

To maximize ROI, there are direct and indirect costs to consider, including recurring savings and per-disruption savings that can directly impact a brand's reputation, marketshare, and growth. A basic formula to calculate ROI is:

ROI = an aggregate of Recurring Savings + Per Disruption Savings

where

- **Recurring Savings** = Manual Resources Savings + Insurance Savings + Procurement Savings
- **Per Disruption Savings** = Crisis Containment + Inventory Cost

Recurring savings includes the costs of manual entry that arises in the supply chain, as well as the costs of human error. A data logger that requires manual handling, such as pressing a Start or Stop button, or

that requires that data be manually retrieved from the device, increases time and costs spent, which can otherwise be spent elsewhere.

For every load lost, another must be sourced. Who pays for it? Automating the supply chain through real-time data means that businesses can avoid having some of those difficult discussions with their logistics partners, carriers, and insurers. The data simply speaks for itself.

The ROI of switching from "old-time" to real-time adds up:

- **Protecting brand integrity:** Product quality, safety, and freshness impact customer loyalty, brand reputation, and a business's bottom line.
- **Reducing temperature excursions:** Real-time visibility enables businesses to proactively prevent product waste and the downstream effects of a stock outage.
- **Limiting time spent on quality review:** With an automated supply chain, data is available earlier on. Quality teams need only to focus their time on the problem shipments.
- **Improving supply chain efficiency and performance:** Complete visibility over the entire cold chain drives better decision making. Businesses focus only on what matters.
- **Preserving shareholder value:** Every disruption results in lost shareholder value. How long that loss lasts for depends on the severity. Real-time visibility helps prevent it altogether.
- **Improving margins and growth:** Over time, the direct and indirect savings deliver exponential ROI, enabling enterprises to focus their resources on innovation and growth.

Consider a global pharmaceutical enterprise shipping several reefers full of pharmaceuticals—collectively, worth tens of millions of dollars—from a European site to South America. As the containers are loaded onto the ship, temperatures inside the containers start to deviate. Alerts are immediately sent to internal stakeholders and the company's logistics provider, who contacts the loading team at the port. The reefer's door wasn't properly closed, causing cool air to escape. The door is properly closed, temperatures drop within normal boundaries, and precious cargo is saved. If a real-time solution had not been implemented, the deviation might not have been discovered until the freighter arrived at its destination, at which point

the products would have spoiled. Substantial time would have been spent investigating the shipment to determine what happened.

How to save $7m in year one

Over time, the cost savings resulting from real-time supply chain increases, moving it from a cost center to a competitive differentiator.

"Old-time"	Real-time
Devices thrown away **40,000**	Devices recycked **5,400**
Excursion rate (10%) **3,000 shipments**	Excursion rate (5%) **1,500 shipments**
Waste (1%) **300 shipments**	Waste (0%) **0 shipments**
Hours for investigation **72,000**	Hours for investigation **6,000**
24/7 monitoring **No**	24/7 monitoring **Yes**

That which is measured improves

The adage "That which is measured can be improved," holds true for businesses operating in the cold chain. Linking analytics to operations and ongoing measurement is the key to maximizing ROI. As organizations look beyond optimizing their short-term processes, further efficiencies will be gained by expanding their view for the longer-term. It is here that data analytics for supply chain management become important as a key competitive strategy. Services are also key to making the most out of leveraging the data.

To forward-thinking businesses, regardless of their size, a proactive approach to achieving greater supply chain efficiency and efficacy provides an opportunity to distinguish based on product quality, customer loyalty, and brand integrity, which means more dollars that can be invested on future innovation. Controlant is helping global brands achieve greater agility, cost reduction, and ROI.

Get more out of your supply chain today.

About Controlant

Controlant is an ISO 9001 company, headquartered in Reykjavik, Iceland with operations in San Francisco, US, and Dublin, Ireland. Working with global pharmaceutical and food & beverage enterprises, we deliver product quality, compliance, and stakeholder value through our unique services-based cold chain solutions.

For more information, please visit: controlant.com.

USA +1-833-299-9284
Worldwide +354 517 0630
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