



# Measuring the ROI of innovative food supply chain technology

— Real-time Insights

Supply chain visibility is all about knowing where your product inventory is at any given time and the quality and safety conditions through real-time temperature monitoring. Its significance can be appreciated when visibility is removed from the equation. Imagine a food supply chain without a network of shared information. We would be blind regarding what might have happened when, and unable to make informed decisions to prevent excursions and safety risks from happening again. Food quality and safety are paramount for food brands. A single incident or scare can measurably devastate your business for years to come.

With a greater focus on investing in innovation and advancements in technology, companies relying on and operating in the supply chain have come to expect easier access to information and faster communication and response. But rising demand and globalization have made attaining clear visibility difficult. Fortunately, technology today provides both high-level and granular, farm-to-fork transparency and connects the entire supply chain.

Below, we provide insights into what you need to benefit from supply chain visibility, how technology

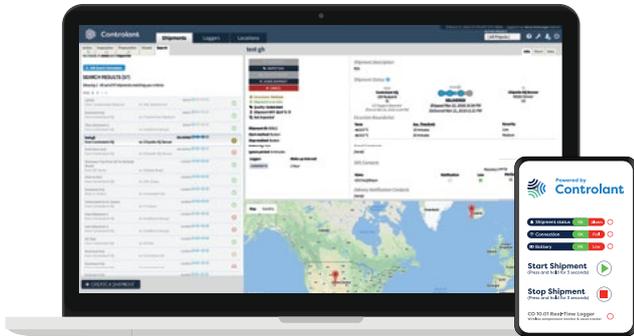
is linking supply chain visibility and collaboration, and how your business can measurably think about the ROI of a real-time temperature monitoring and visibility investment.

## What you need to benefit from supply chain visibility

Maintaining the quality and safety of perishable and temperature-sensitive food products is one of the greatest challenges in the supply chain. Temperature greatly impacts food safety, making real-time temperature monitoring mission-critical. This is more challenging as products make their way through various stages of the supply chain. Each lane of travel requires different types of handoff points and each poses different risks. At each step, a slight variation in temperature conditions can lead to unsafe conditions that impact food integrity and place public safety and health at risk.

To gain deeper insights into the supply chain, process and technology-based processes must be integrated. Real-time temperature monitoring technology is bringing together all necessary

players—suppliers, carriers, warehouses, hubs, and service providers—along with the language barriers, various transportation modes, and various IT systems—together to help you create a cohesive, meaningful overview of your supply chain.



Controlant's Internet of Things (IoT) data loggers collect and send mission-critical supply chain data, connecting time, temperature, and location data together, to a cloud-enabled software platform for products as they move through the supply chain. Data for a single shipment or the entire supply chain can be viewed on-demand. Operational services, including 24/7 monitoring and response, provide control-tower visibility and proactive response to your temperature alerts. IoT logger management services help reduce costs and ensure the technology program can successfully scale across your supply chain.

Having key players in the supply chain working together through a centralized platform results in greater flexibility in how data is accessed. Data is no longer available to an upstream or downstream partner at the end of a shipment, but instead, is available at any time to anyone who needs it. When everyone works together to build and use supply chain data, the quality of that data improves, and the industry improves altogether.



To maximize transparency, process and technology need to be transferred across the supply chain. Internet of Things (IoT) technology today can move with products as they travel throughout the supply chain, sending data in real-time to a cloud-enabled software platform. To implement this visibility technology, organizations must work with and understand the logistical processes of upstream and downstream partners to establish uniformity through the standardization of these processes.

It is important in this context to have well-defined role concepts that are backed by rights and responsibilities. This ensures that all parties have access to the data they should have access to, rather than to information they do not need to see.

By defining rules and automated process monitoring of these rules, we shift the supply chain from a reactive one to a proactive one. The result is a more reliable and safer supply chain, where the collective data provides insights on supply chain performance, including points of interest (airports, harbors, lanes), and supplier and logistics partner performance, and stakeholders can drive continuous improvement. Data can provide useful insights on the best way to ship products during a particular time of the year in order to prevent risk, reduce delivery time, and improve shelf life.

## The link between real-time supply chain visibility and collaboration

You cannot have collaboration without supply chain visibility, but visibility depends on collaboration. The interdependency of these two elements of successful supply chain management is obvious: efficient collaboration yields better results and information. Data can be provided to mitigate risk and drive continuous improvement throughout the supply chain.

By adding data to a centralized platform, you make it possible for stakeholders to view data, identify and mitigate risk, and take the appropriate actions based on the data. This, in turn, enables more efficient personnel and processes at loading docks or cross-functioning facilities, for example.

Visibility and the ability to proactively respond to supply chain risk identified through data prevents stock outages and their downstream effects. Bit by

bit, as the process unfolds, the data is continually augmented and validated by the system. This generates a reliable pool of data that offers maximum supply chain efficiency and risk reduction.

## Lessons learned from the pharmaceutical supply chain

The food supply chain can take heed from the pharmaceutical supply chain, where, for decades, regulations have required strict temperature control and reporting of drugs and vaccine products, around 80 percent of the total biopharmaceutical supply chain.

Pharmaceutical manufacturers are realizing an annualized return on investment in the tens of millions of dollars, when factoring the reduction in product and operational waste, in addition to reduced insurance costs and overall efficiency improvements. Operational costs have been reported to range from \$3,000 to \$10,000 for each investigation, at a per-incident average of approximately \$6,500. Those operational costs add up to several tens of millions of dollars annually for a single enterprise.

Through real-time temperature monitoring, enterprises are able to reduce load rejections to zero, substantially decrease the number of excursions that require investigation, and manage their shipments by exception. Time, temperature, and location data aids in root cause analyses to determine what happened and where so that corrective action can be taken.

Real-time temperature monitoring and visibility technology provide demonstrable benefits for logistics and procurement, quality teams, suppliers, logistics partners, and insurers. The aggregated benefits add up on the business level, where the tens of millions of dollars saved can be invested in innovation and other growth initiatives.

### Calculating the benefits of real-time — ROI in the tens of \$ millions within the first 1-2 years.

#### Logistics

- No stockouts
- Decrease in storage costs with shorter release times
- Decrease in spending on packaging material

#### Quality

- Decrease in excursions and complete visibility
- Decrease in investigation time
- Full compliance and enhanced patient safety

#### Insurance

- Decrease in risk = decrease in insurance premiums

#### Supply chain

- Improvements based on data
- Standardized KPI's for vendor performance

#### Wastage

- 70% decrease in product waste

## Measuring the ROI of real-time technology

Real-time temperature monitoring solutions offer similar benefits to the food industry. To consider the return on investment in a real-time temperature monitoring program, there are direct and indirect costs to consider. Both recurring savings and per-disruption savings can directly impact a brand's reputation, market share, and growth potential.

A basic ROI formula 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 include the costs of manual entry that arise 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, increase time and costs spent, which can otherwise be spent elsewhere. Manual temperature loggers provide limited visibility, which means less actionable data to leverage to proactively protect and control the supply chain.

For every load lost, another must be sourced. Who pays for it? Having access to 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 real-time temperature monitoring 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.

## Cold chain, the Internet of Things, and supply chain visibility of tomorrow

The strength of your brand and business depends on the strength of your supply chain. The greater you can see into your supply chain, the greater your ability to proactively protect your customers and business, make the right decisions, and improve margins by driving down costs in the supply chain. Innovating your brand extends to your supply chain. Through the digitization of cold chain logistics, we

are creating a world that will bring together end-to-end supply chain data, including from trucks, warehouses, distribution centers, and onsite cooling storage units.

Today, much of your supply chain data is likely unstructured and difficult to leverage. Your business may be using track-and-trace software technology in addition to a quality management system, enterprise resource planning tool, and other technology. How do you feed all of this data together in a way that makes sense?

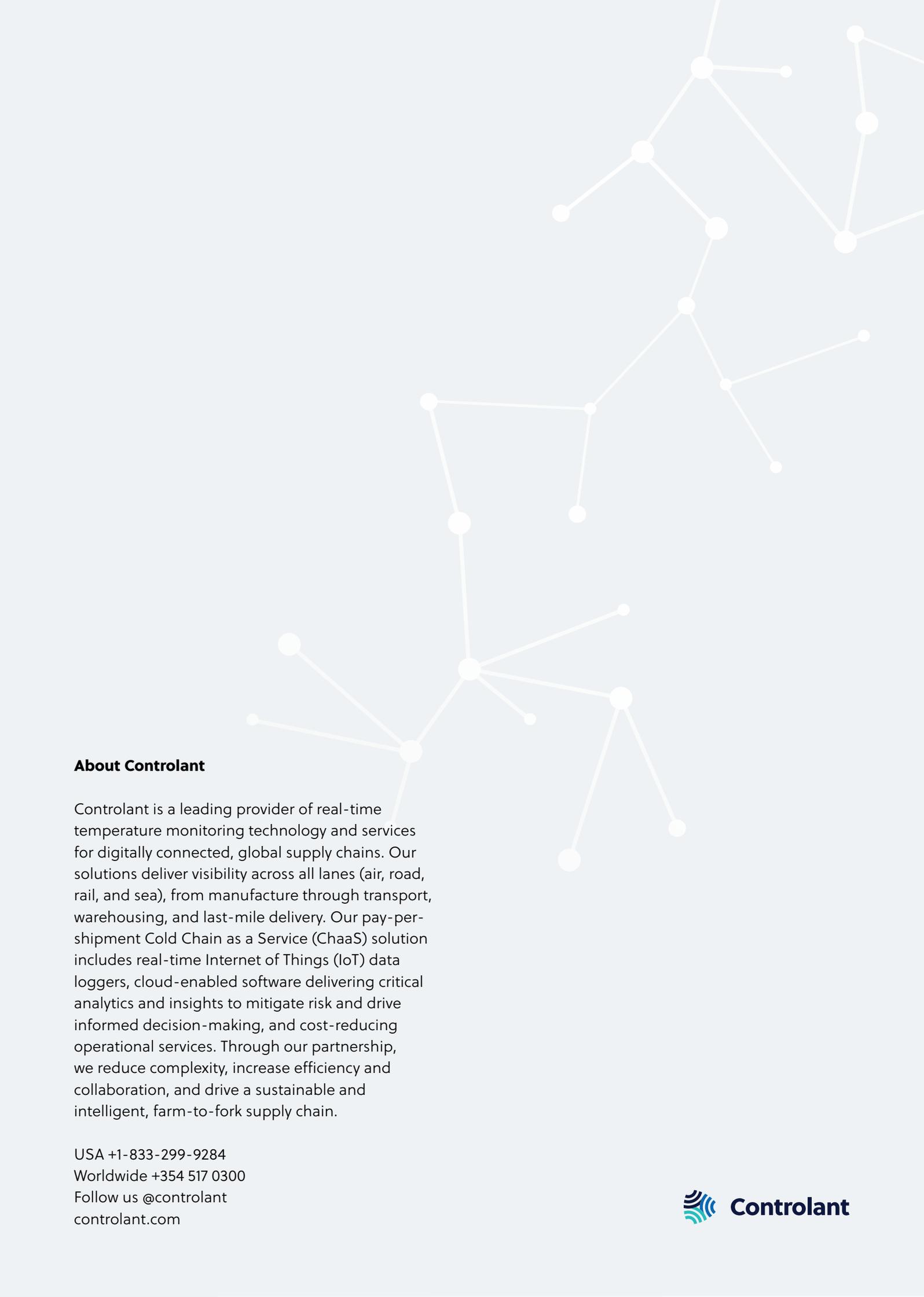
By collecting your sources of data into a centralized platform, your business can gain control tower-like visibility over your supply chain, with real-time, actionable data and insights that can facilitate direct improvements.

Your business model may, first and foremost, focus on customer service, but your supply chain is the backbone of your business. Innovation shouldn't be limited to the four walls of your operations.

## Try a pilot

Contact us to learn more or to get started with a custom pilot tailored to your business objectives. We would be happy to walk you through our solutions. [contact@controlant.com](mailto:contact@controlant.com)





## About Controlant

Controlant is a leading provider of real-time temperature monitoring technology and services for digitally connected, global supply chains. Our solutions deliver visibility across all lanes (air, road, rail, and sea), from manufacture through transport, warehousing, and last-mile delivery. Our pay-per-shipment Cold Chain as a Service (ChaaS) solution includes real-time Internet of Things (IoT) data loggers, cloud-enabled software delivering critical analytics and insights to mitigate risk and drive informed decision-making, and cost-reducing operational services. Through our partnership, we reduce complexity, increase efficiency and collaboration, and drive a sustainable and intelligent, farm-to-fork supply chain.

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