



Reinventing the cold chain

Controlant solutions reduce spoilage
of food and pharma products,
with Vodafone Iceland.

The future is exciting.

Ready?



Controlant tackles multi-billion food and pharma waste, with the Vodafone IoT Platform

The cold chain market is estimated to be worth \$13.4 billion¹ globally. However the industry is not without its problems. As much as 35%² of vaccines shipped are wasted due to changes in temperature across the supply chain and 33%³ of food produced for human consumption globally is either lost or wasted.

Controlant is an Icelandic tech-firm looking to change this and reinvent the cold chain. Using the Vodafone Managed IoT Connectivity Platform, its solutions deliver real-time data on inventory, temperature, location and humidity. It transforms the supply chain from cost centre to a key competitive differentiator.

The challenge

Preventing spoilage

“In the middle of difficulty lies opportunity.” The quote is attributed to Albert Einstein, but it could be a mantra for entrepreneurs worldwide. It certainly applies to the five founders of Controlant.

The group founded their business in 2007 in Iceland, developing wireless solutions to monitor water, voltage and pressure. It wasn't until the global outbreak of the H1N1 virus, in 2009, that opportunity knocked.

The Icelandic government had quickly stockpiled large quantities of the H1N1 vaccine. Acquiring the vaccine was the easy part, storing it safely was the problem. Held at several facilities across the country, before moving to local clinics when needed, the temperature-sensitive vaccine was at risk of spoiling. The government needed a monitoring solution to keep track of the vaccine's temperature throughout the supply chain.

“ We've been very happy with our partnership and Vodafone's services. Vodafone will continue to be a key component of our work going forwards. ”

Gisli Herjolfsson
CEO
Controlant

Cold Chain as a Service

Controlant stepped in and implemented a solution within two weeks. The company has since grown to become a global solutions provider in the cold chain. Its aim is to increase consumer and patient safety, increase collaboration, and reduce waste through every step of the supply chain.

“Temperature variations in transit are responsible for the degradation of up to 35 per cent of the world's vaccines,” says Jessie VanderVeen, VP Marketing & Communications at Controlant.

Controlant's monitoring devices can be placed in trucks, either in the cab or directly in pallets. In facilities, monitoring devices connect to a central transceiver within a warehouse. These devices then transmit data on a range of conditions back to the Controlant data centre.

Controlant calls the solution Cold-Chain-as-a-Service (CHaaS), an entirely new market category for cold chain monitoring solutions. The business aims to be an extension of its customers' supply chain logistics team. Customers don't have to pay for hardware upfront, instead they pay as they go for the use of devices and platform.

For all this to work, and for Controlant to expand from Iceland to the world, several elements of the solution needed to be addressed. Controlant wanted a platform on which to manage connectivity, data and devices, it needed transparency on data costs, and a partner with which to work on a global basis.

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Jessie VanderVeen, VP Marketing & Communications, Controlant

The solution

Real-time data to reduce spoilage

The Controlant solution is based on the Vodafone Managed IoT Connectivity Platform, with Vodafone IoT Global SIMs in every device. This allows Controlant to ship devices to anywhere in the world, and activate (or deactivate) when required.

“We have worked in close partnership with Vodafone Iceland and their IoT service offering, which we feel surpasses the competition,” says Controlant CEO, Gisli Herjolfsson. “They were eager to work with us when we were a small start-up, while offering global pricing, one SIM card, and a pricing model that would suit us as we grow internationally.”

The Vodafone Managed IoT Connectivity Platform gives Controlant the flexibility and ability to scale in a secure and managed way. All SIMs are delivered to their manufacturer ready for use, the manufacturer tests all devices and configures them before they are delivered to clients.

While the Vodafone Managed IoT Connectivity Platform handles all information regarding device connections, Controlant’s platforms maintain all information relating to the assets it is monitoring. Controlant has already opened discussion to integrate Vodafone’s Managed IoT Connectivity Platform capabilities into their own platform with use of ready-made API’s. Today there are around 8,000 SIMs managed via the Vodafone platform. Herjolfsson expects this number to grow to more than 20,000 within a year.

Customers include some of the biggest names in the food and pharmaceutical industry. One customer, an international chain of mid-market restaurants with food safety issues in its past, relies on Controlant to track and monitor all shipments in the United States. It also alerts drivers to potential issues when they’re on the road.

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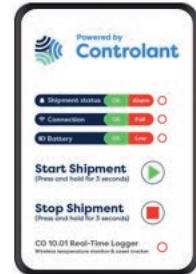
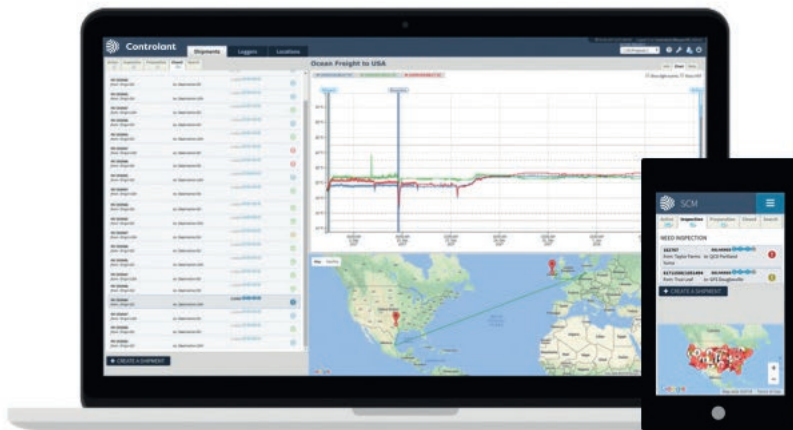
VanderVeen says collaboration is a key focus for the supply chain: “Our solutions connect stakeholders across the supply chain.”

For example, through the Controlant platform, pharmaceutical enterprises can share data with one another to benchmark how they’re doing and further optimise their supply chain. Food providers can track their produce and have real-time access to environmental conditions and locations. The distribution centre who are awaiting receipt of produce can also track from their end: being aware of potential issues and estimated time of arrival (ETA) for shipment arrivals. Even the end-restaurant, awaiting food shipments, can track incoming deliveries.

¹ Daniel Associates: Global Cold Chain Monitoring Market - Trend and Forecast to 2022: <http://www.danielassociate.com/portfolio/global-cold-chain-monitoring-market/>

² National Institute of Standards and Technology: Reliable Vaccine Storage <https://www.nist.gov/industry-impacts/reliable-vaccine-storage>

³ UN Food & Agriculture Organization: Global Initiative on Food Loss and Waste Reduction: <http://www.fao.org/save-food/resources/keyfindings/en/>



“This allows for schedules and processes to be aligned and optimised,” continues VanderVeen. It shifts the perception of supply chain monitoring from a cost-centre to a key competitive differentiator.”

The service is essential. The more efficient and agile the business, the more profitable and sustainable it becomes. And there is also the issue of compliance.

“Businesses in the food chain and pharmaceutical supply chain as well as their logistics partners are heavily driven by regulatory compliance initiatives,” says VanderVeen. “For the U.S. food market, for example, companies are driven by the FDA Food Safety Modernization Act (FSMA) as well as the Food Safety Verification Programs requirement (FSVP) for businesses importing certain foods. For pharma, it’s 21 CFR Part 11, the Drug Supply Chain Security Act (DSCSA), the EU Falsified Medicines Directive (FMD), as well as Good Distribution Practices (GDP) and Good Manufacturing Processes (GMP).”

The future

Machine learning, smarter data

Europe, North and South America have so far been the growth regions for Controlant. The next area of focus is Africa, with a pilot project to track vaccines in Kenya and Nigeria planned. Beyond geography, the next challenge for Controlant is to maximise the value of the data.

“We’re exploring the machine learning aspect and producing more meaningful reports based on statistical data,” says VanderVeen. “The next step is to create predictive and prescriptive analytics for instance, identifying optimal transport routes based on historical data on shipment routes, for example. This approach will allow our customers to optimise delivery before shipments have even left the warehouse.”

“We’ve been very happy with our partnership and Vodafone’s services,” says Controlant CEO, Gisli Herjolfsson. “Vodafone will continue to be a key component of our work going forwards.”

The bottom line

- Simplifies management of devices, managed from a single platform
- Delivers the scale to support global expansion, enabling operations worldwide, with the number of devices expected to increase from 8,000 to 20,000 within a year
- Ensures transparency of cost, helping businesses plan their growth
- Automates logistics as a provider of professional and managed services

About Controlant

- Tech firm specialising in solutions for cold chain monitoring
- Based in Iceland, with operations across Europe and Americas
- Pilot projects planned for Kenya, Nigeria and Ethiopia
- www.controlant.com

[vodafone.com/business/loT](https://www.vodafone.com/business/loT)

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