

# White Paper

## Executive Summary

Nowlog has built a **market disruptive** solution suitable for the global **food safety** and **healthcare compliance** market. The business model is B2B and nowlog sells its systems to cold chain monitoring companies globally.

Although IOT concepts have been around for the last decade, the ever promised market growth will only come as price points fall below the tipping points in the market. In general, customers will buy an IOT solution when they see their money back in 6-9 months. Nowlog have a developed core IOT technology which is simple to use and priced to give customers this early payback.

Cold chain monitoring companies sell their services using both capex and opex revenue models. Of these the opex (or ongoing service revenue) is the more valuable. The nowlog solution cuts costs both on the hardware side and importantly on the cost of ongoing services. Edge computing is employed to reduce cloud server costs and enhance security.

All products are tooled for volume manufacture and housed in custom injection molded enclosures. Hardware can be supplied directly and OEM packages are available for volume customers.

The Nowlog solution comprises temperature sensors, probes, a wireless network and a web portal for monitoring and reporting purposes. Technology innovations include a simplified longer-range network using LoRa and an edge computing platform for internet access.

Nowlog has built and tested a solution which more than halves the cost of manufacture and delivery when compared to traditional networks. Other direct benefits of Nowlog are the ability for end users to self-deploy the solution and an enhanced end user experience (UX).

## How the designs deliver cost benefits

**A summary by cost centre is given in the table below:**

<b>Cost centre</b>	<b>Impact statement</b>
Salesforce	with better UX and low price point sales are easier to close.
Equipment	low cost hardware self installed by end user.
Maintenance	monitoring is automated. Modular system allows end user to self service
Data	the computing power and data storage available in the local gateway is exploited to reduce cloud server costs.
Security	zero cloud service cost as data is retained by end user in their own gateway. Any backups sent for internet storage are encrypted.

### **Benefits classified by innovation:**

#### **LoRa wireless network.**

The biggest barrier to self install is the need for repeaters in a local wireless network. Repeaters are tied to a power point and are high maintenance items. Only a technology with the range of LoRa can eliminate this need. The LoRa network is a closed private island type and all communications are encrypted.

#### **Qi Charging**

Wireless charging allows the designs to be fully sealed, robust and hygienic.

#### **Ergonomics**

The DataHand temperature probe has been drop tested to ensure robustness. The DataPoint wireless loggers are sealed for life units.

#### **Edge Computing**

The DataCenter stores all data and has a user interface accessible both locally or from the internet. Alerts are sent directly from the DataCenter. API's are available to transfer data to customer servers or into encrypted online storage. The nowlog solution has a lean cloud footprint and allows easy integration.

#### **Local Device Support**

Tablets and handhelds are widely used to provide local interfaces. If the app runs on the tablet this means the devices must be supplied and are custom. The nowlog solution runs the apps in the DataCenter which then serves up the user interfaces. The tablet then only needs a WiFi connection and a browser. This allows the end users to own and maintain their own local interfaces in a flexible manner. The local interfaces typically cost more than the IOT components. This feature has a high cost reduction impact.