TEMP SENSE

Cold chain monitoring
ITALIAN MEAT RESTAURANT CASE STUDY

Italian Meat Restaurant in Tallinn, Estonia, offers excellent food and service, they pride themselves on the quality of the ingredients and the food they serve. The equipment they use is of high quality and is well maintained. But sometimes it happened that the meat was not usable long before the best before date. While it wasn't a major issue, it still raised concerns as the quality of the food is paramount and nobody likes to waste it. The restaurant initially suspected the supplier but revisiting the supplier quality assurance processes convinced the restaurant that the problem has to be elsewhere. Food delivery and storage at the restaurant were reviewed next. The restaurant's staff chose the Temp-Sense system to identify the issues. Wireless Temp-Sense system is easy to adopt as it is simple to install, causes no interruptions and doesn't alter the work processes. The web-based user interface is simple enough for the restaurant's staff to keep tabs on their food transport and storage.

System setup is simple — wireless sensors are placed in display cases, refrigerators and delivery boxes. The collected data is presented in a web-based user interface that raises alerts and provides reports. All data is located at a cloud server and is accessible from anywhere. The gateway passes data from the sensors periodically to the cloud. The mobile sensors inside the delivery boxes buffer their data when out of range and upload it when back in the range of a gateway.

The mobile sensors can store readings for more than a month and the battery lasts for over a year.

SOLUTION AT A GLANCE

- Wireless battery-powered sensors placed in appliances and delivery boxes
- Data delivered seamlessly to the cloud
- Real-time and historic data available at a click of a button
- Configurable alerts notify of any issues

The temperature monitoring solution is based on Thinnect's field-proven technology, which has been used in Boarder Patrol and Intelligent Lighting applications across the globe. Thinnect's self-configuring technology and automated system management services ensure that all temperature sensors are able to report data from the moment they are powered and continue reliable operation for years.

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TEMP-SENSE IN ACTION

Thinnect sales staff advised the restaurant on the number and locations of sensors to be placed in the monitored areas. Useful results were delivered already within the first 24 hours — the cooler used for storing chilled meat wasn't maintaining its temperature in the upper front part of the compartment. Frequent door openings made the situation worse. Multiple reasons could cause such a situation: temperature sensor of the cooling unit being located too far from the front of the refrigerator, limited circulation of air in the refrigerator, and high turnover of product. The remedy was simply to lower the temperature setpoint of the refrigerator a few degrees, which yielded the desired result. Similar minor adjustments were made to two other refrigerators where the temperature rose to too high levels between cooler compressor cycles.

LOGISTICS

Measuring the temperature of food only at delivery, provides no information on how the product has been handled during transportation. Thinnect mobile sensing units record temperatures throughout the delivery, and the restaurant is now able to identify improper transport conditions upon occurrance. This benefits both, the retailer as well as the manufacturer, as both have better visibility into product handling conditions

RESULTS

- TempSense provides peace of mind to the staff — the whole cold chain is monitored now and everyone can rely on the quality of the product. The supplier knows that the product has still high quality when it reaches the retailer and the retailer can trust the quality of the product they receive.
- Less food waste is generated as all ingredients maintain their quality until the best-before date.
- The quality and safety of ingredients can be improved implementing only minor adjustments — having full real-time and historic visibility into actual storage conditions provides the input needed for adjusting the refrigerators for optimal storage conditions.

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