Case Study

WITTE SPEZIALITATEN
Improves Quality Control with Environmental Monitoring

Founded in 1935, Witte Spezialitäten is a renowned manufacturer of Nuremberg traditional gingerbread and German bakery specialties. Standing for handmade delicacies and fine craftsmanship, Witte offers products that are widely recognized for their unique taste and pristine quality. With increasing competition, the family-run business understands the need to embrace digital transformation to stay on top of quality control and cost reduction.

The Challenge

The seasonal nature of the business is a major operational challenge for Witte Spezialitäten. The Nuremberg gingerbread ("Lebkuchen") – its main product line and pivotal source of revenue – is mainly purchased during the Christmas season. As such, this short period of time has a significant impact on the company's revenue throughout the year.

"The most important thing for our business is to maintain a high-quality standard. Since we're selling a seasonal product, we cannot risk producing mediocre goods." – Michael Witte, CEO, Witte Spezialitäten

Maintaining desirable temperature and humidity throughout storage and distribution is central to ensuring optimal product quality and shelf-life. A high ambient temperature can melt down the chocolate layer of the Lebkuchen, while unfavorably cold conditions can harden the texture and spoil the taste. Likewise, high humidity facilitates mold and bacteria growth, while an overly arid atmosphere threatens to dry out final products.

Though strict monitoring of the cold chain is critical to reduce rejected goods and avoid "out-of-stock" during high seasons, Witte previously took a reactive approach to control important environmental parameters. The company depended on the HVAC system to ensure optimal

storage conditions and management had no visibility into the actual temperature and humidity at their facilities.

The Solution

To help Witte stay on top of its cold chain and quality assurance, its technology partner Pixel Mechanics selected MIOTY™ by BTI for a pilot project to collect environmental data across the company's storage and sales locations in Germany. A MIOTY Starter Kit with one base station and four sensors was implemented at each facility. The installation was successfully completed within one day.

> *"We were looking for a connectivity solution that could provide the reliability, coverage, and sensor data we needed and that was also easy to install and maintain. MIOTY delivers all of these qualities."* – Michael Rohrmueller, CEO & Founder, PixelMechanics

Temperature and humidity data in storage and shop rooms is captured and transmitted over the MIOTY network every 75 seconds to the PixelMechanics IoT Platform. Incoming data is then visualized as actionable insights on a user-friendly dashboard. Alerts are instantly issued if any values deviate from the optimal range for proactive responses.

MIOTY Sensors   MIOTY Base Station   PixelMechanics IoT Platform
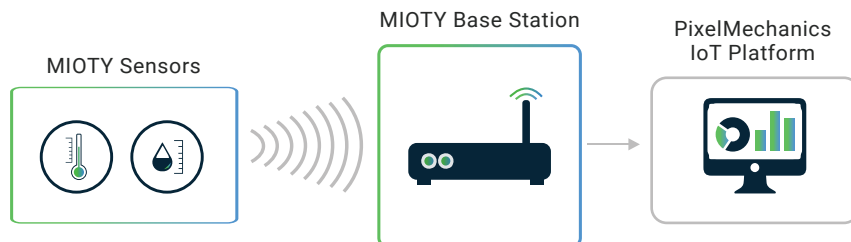
The Results and Outlook

Test results have proven MIOTY's deep penetration capability and consistently reliable connection at all locations. With MIOTY networks in place, PixelMechanics can leverage real-time trends in temperature and humidity to advise Witte on cold chain improvements and how to avoid conditions that spur bacteria growth. Influential factors like the opening/closing of doors and shopping traffic can also be analyzed to enable proactive, data-driven decision-making. This is expected to minimize the amount of wasted goods which will have an immediate impact on cost savings.

Following the success of this pilot, MIOTY has also been implemented on Witte's main production line to collect vibration and temperature data of manufacturing equipment. This data will enable further steps towards other Industrial IoT applications including condition-based monitoring and predictive maintenance.

> *"MIOTY's excellent performance has demonstrated its technical viability in a real-world commercial environment. Having MIOTY as a robust, cost-effective and easy-to-deploy communications infrastructure, we can empower our clients with game-changing IIoT applications in the future."* – Michael Rohrmueller, CEO and founder, PixelMechanics

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