Food & Beverage Production Case Study:

Improving Production Capacity with Automated Root Cause Analysis

How a global food manufacturing company implemented Artificial Intelligence tools to reduce downtime & quality issues and improve production capacity by 4.7%

About the company

The company is a privately-held manufacturer of baked goods founded in 1945. It has developed from a single product to a global manufacturer with offerings that delight consumers in more than 100 countries.

Industry:
Food & Beverage

Employees:
Over 1,300

Company turnover in 2017:
Over €500M

The Challenge

The company initially investigated a repetitive problem of broken wafers, which related to underlying quality and downtime issues. The manual root cause analysis (RCA) concluded with a recommendation to bake wafers at a lower temperature, leading to a longer retention time, extra overtime for workers, and reduced production capacity.

The company was looking to meet three primary goals:
1. Return to its former production capacity (+4.7%)
2. Identify the root cause of the issue quickly and accurately
3. Reduce costs through a reduction in overtime hours

The Opportunity

The company decided to look for tools to both solve this specific problem and prevent future production issues. They turned to Industry 4.0 and predictive analytics for a solution that would do the following:
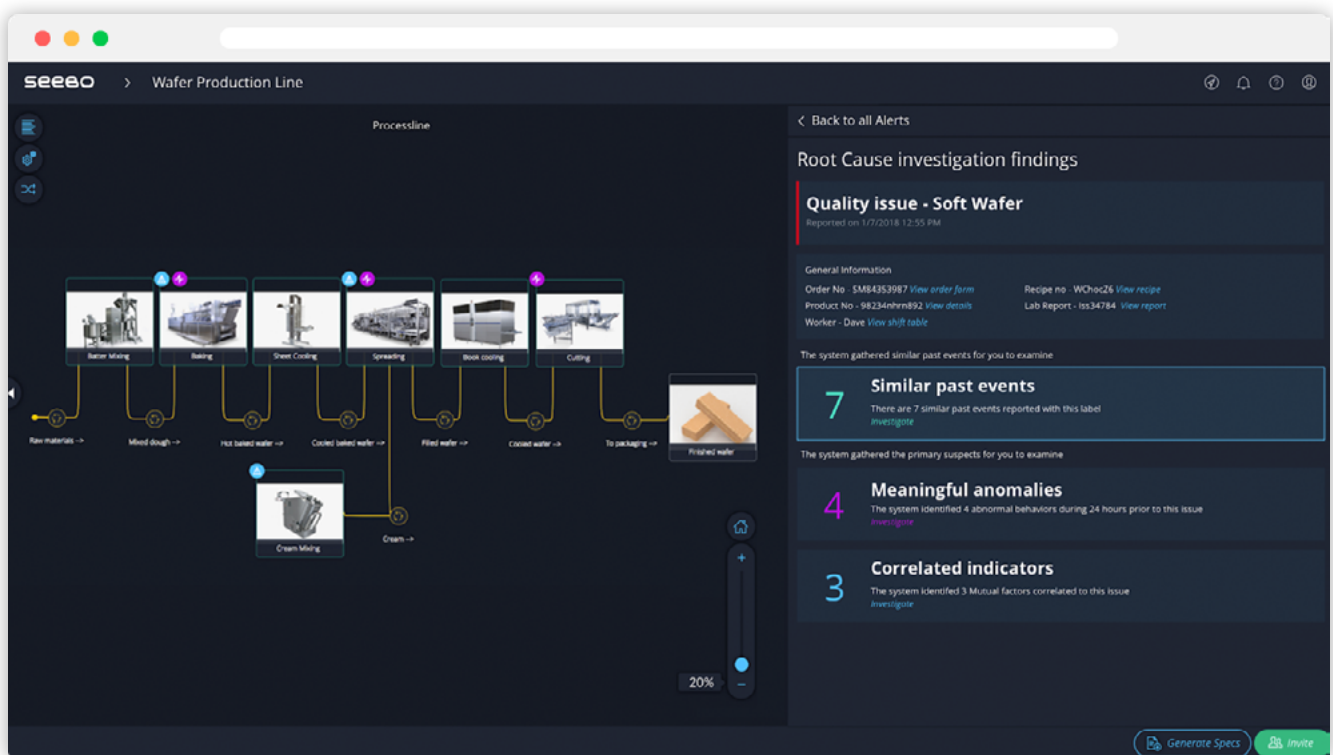1. Incorporate their manufacturing expertise within data analytics and machine learning
2. Provide simple and accurate insights to the operational team
3. Deliver automated root cause analysis and predictive analytics for quality and downtime events, in a single solution

The Solution

Automated, simple, accurate Root Cause Analysis with the Seebo Solution

Seebo analyzed live and historical data from the wafer production line and identified correlations between statistical deviations in temperature and statistical deviations in the speed of the cooling conveyor belt.

After only six hours of investigation using Seebo Solution, the company's operational team was able to confirm that these deviations were the source of the broken wafers.

Example of the Seebo Automatic Root Cause Analysis investigation screen

> *"My intuition told me the root cause of failure was the oven temperature; it was actually something I never would have guessed, and that would have taken me ages to find, if at all. Using Seebo, the team quickly reached the actual root cause. It made our work a lot easier."*
> *– Shift Manager*

Root Cause Analysis - Comparison

	Traditional Root Cause Analysis	Seebo Automated Root Cause Analysis
Team members involved	7	3
Investigation time in hours	67.5	6
Primary suspect	Oven temperature	Oven temperature + conveyor speed
How primary suspects were identified	Manually, based on best guestimate	Automatically, based on advanced analytics
Problem resolution	No solution - workaround	Problem solved
Production line capacity	-4.7% per week	Kept at optimum

Summary

As a result of the Seebo Solution, the factory returned to expected production capacity and the factory team was able to pinpoint the right schedule of predictive maintenance.

50% of the manpower

10% of the time required

100% more accurate

+4.7% production capacity

"After deploying Seebo, we ended up increasing the capacity of the production lines by using the ability to predict and prevent quality and downtime events. We are now expanding the use of the solution to more factories in the group."

- Plant Manager

SEEBO®

Seebo is a pioneer in Model-based Industrial AI for manufacturers. Our solutions combine code-free tools for predictive analytics, automated root cause analysis, and digital twin analytics to predict and prevent disruptions in quality and downtime.

Using a visual Modeler, we infuse the customer's manufacturing expertise, together with data from OT and IT systems, into machine learning - without requiring the customer to master data science.

Manufacturers across industries – including Grundfos, Stanley, Procter & Gamble, Ralph Lauren, and many more – use Seebo to increase overall equipment effectiveness (OEE), minimize maintenance costs, and continually improve quality.

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