

Introduction to Seebo

Predict & Prevent Losses
in Production Yield and Quality

seebo® 



Process-driven production losses are costly...



Quality failures,
waste, and
rework



Yield and
throughput



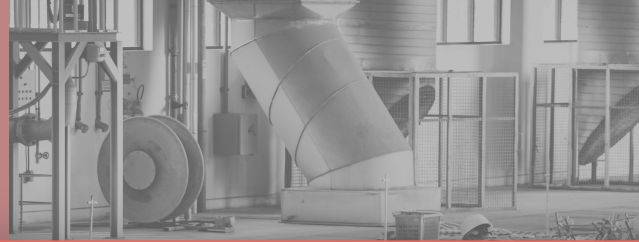
Unplanned
stoppages



... and have a significant impact on the bottom line



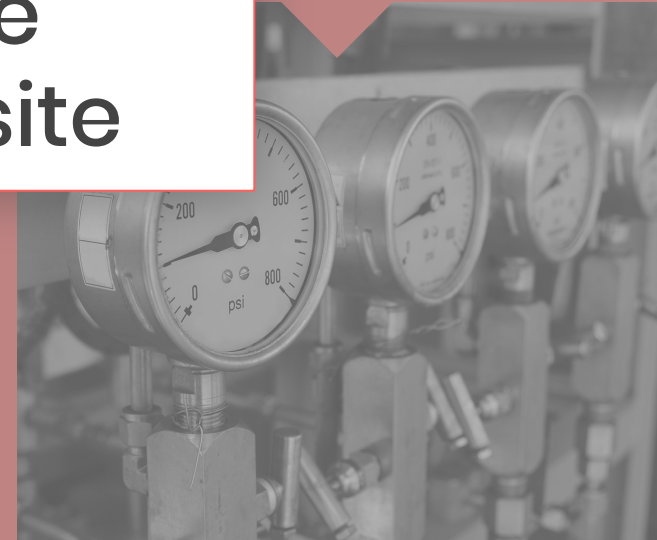
Waste and
Rework



Performance
Loss

€ 500K – € 5MM
yearly damage
to margins, per site

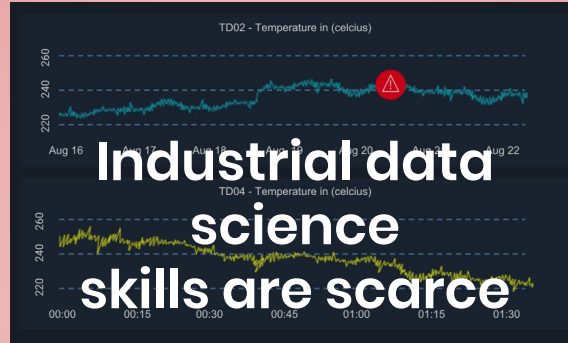
Unplanned
stoppages



Lots of data, but hard to make sense of it



Huge volumes of
production line data from
1000s of sensors



Industrial AI requires
experienced data scientists
with deep process
engineering expertise



Context is needed in the data!
Products, recipes,
batches, process flows,
raw materials,...



**Seebo
Process-based
Industrial AI**

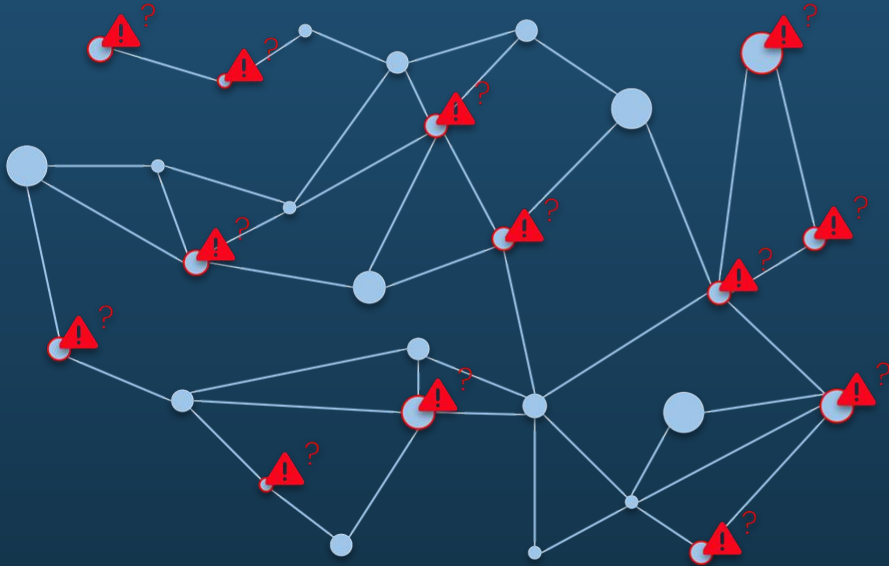
**Pinpointed & actionable
insights**

**No data scientists
required**

**Rapid implementation,
quick ROI**

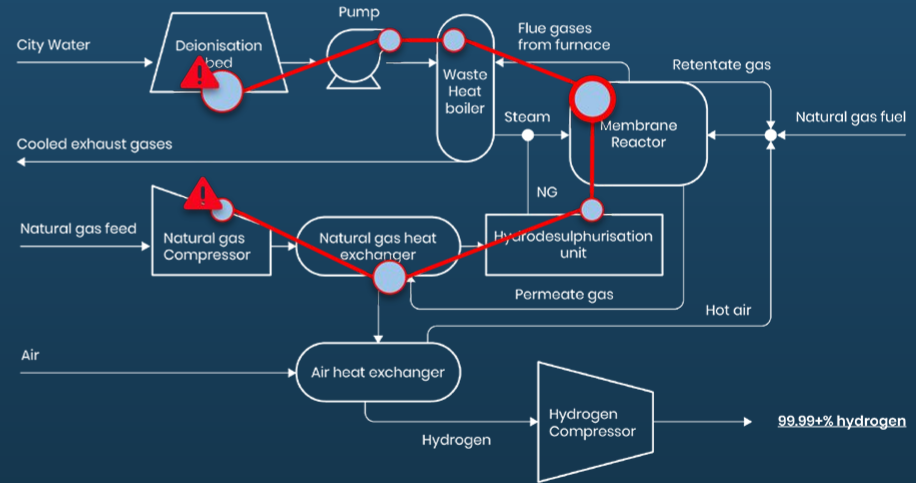
**Incremental,
ongoing value**

Traditional AI



Flood of alerts, many false-positives

Seebo Process-Based Industrial AI



Pinpointed, actionable insights



WHEN

Predict WHEN production losses will happen

↳ Process-Based Predictive Analytics



WHY

Pinpoint WHY they will happen

↳ Automatic Root Cause Analysis



HOW

Determine HOW to prevent them from happening

↳ Predictive Simulation

Process-Based Digital Twin

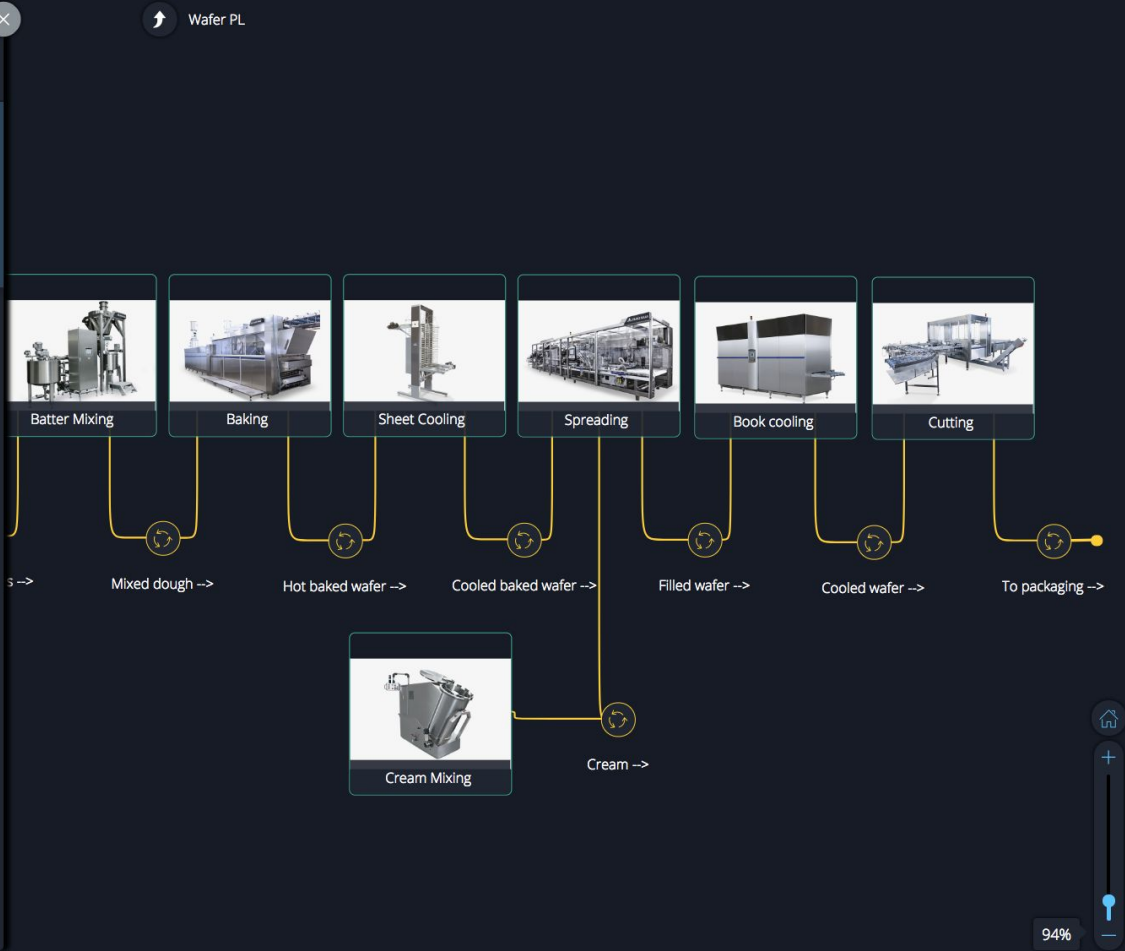
- System Overview
- Seebo Cloud
- ERP
- Users
- Wafer PL
 - Sheet Cooling
 - Cream Mixing
 - Hot baked wafer -->
 - Cream -->
 - Spreading
 - Filled wafer -->
 - Cooled wafer -->
 - Cutting
 - Mixed dough -->
 - Batter Mixing
 - Baking
 - Raw materials -->
 - Cooled baked wafer -->
 - Book cooling
 - To packaging -->
- Digital Twin Dashboards
- Sensor report
- Machine monitoring rep...
 - Sensor 2 raw data tre...
 - Sensor 1 raw data tre...
 - Context filter
 - Sensor 3 raw data tre...

Search by component name

Filter components by Types Library Tags

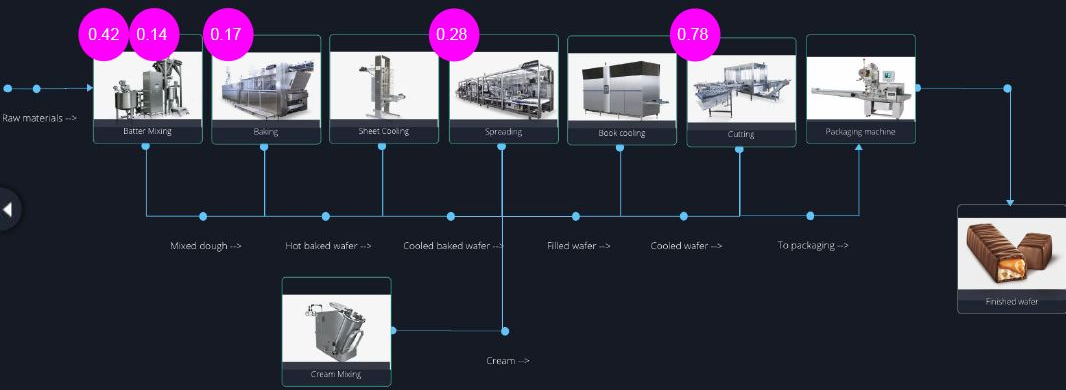
- Device
- Web App
- Mobile App
- Tablet App
- Screen
- Chart
- Voice App
- Voice Command
- Hot spot
- Embedded Software
- Cloud
- Cloud Service
- Connectivity
- Gateway
- Persona
- Gateway Service
- Machine Learning
- Process
- Custom

Air quality sensor	Alcohol detector	Allen Bradley PLC
Altitude measurement	Atmospheric pressure	Barcode scanner
Battery	Brightness sensor	Button
Camera	Chessel PLC	Clock synchronizer



Production-line Digital Twin Modeling - easy to use, drag & drop user experience

Processline



< Back to Alerts

Prediction Investigation findings

Bar low weight (>15/h)

Reported on 8:32 AM

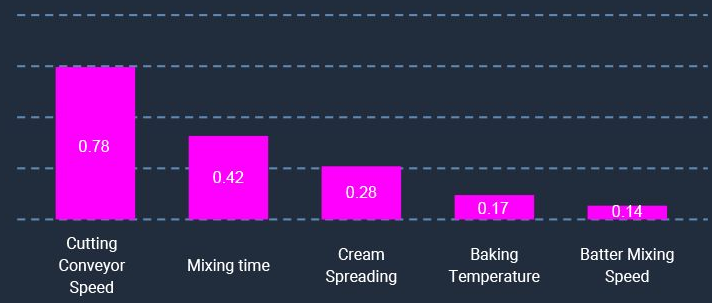
45min
To failure

76%
Confidence

5 Event primary suspects

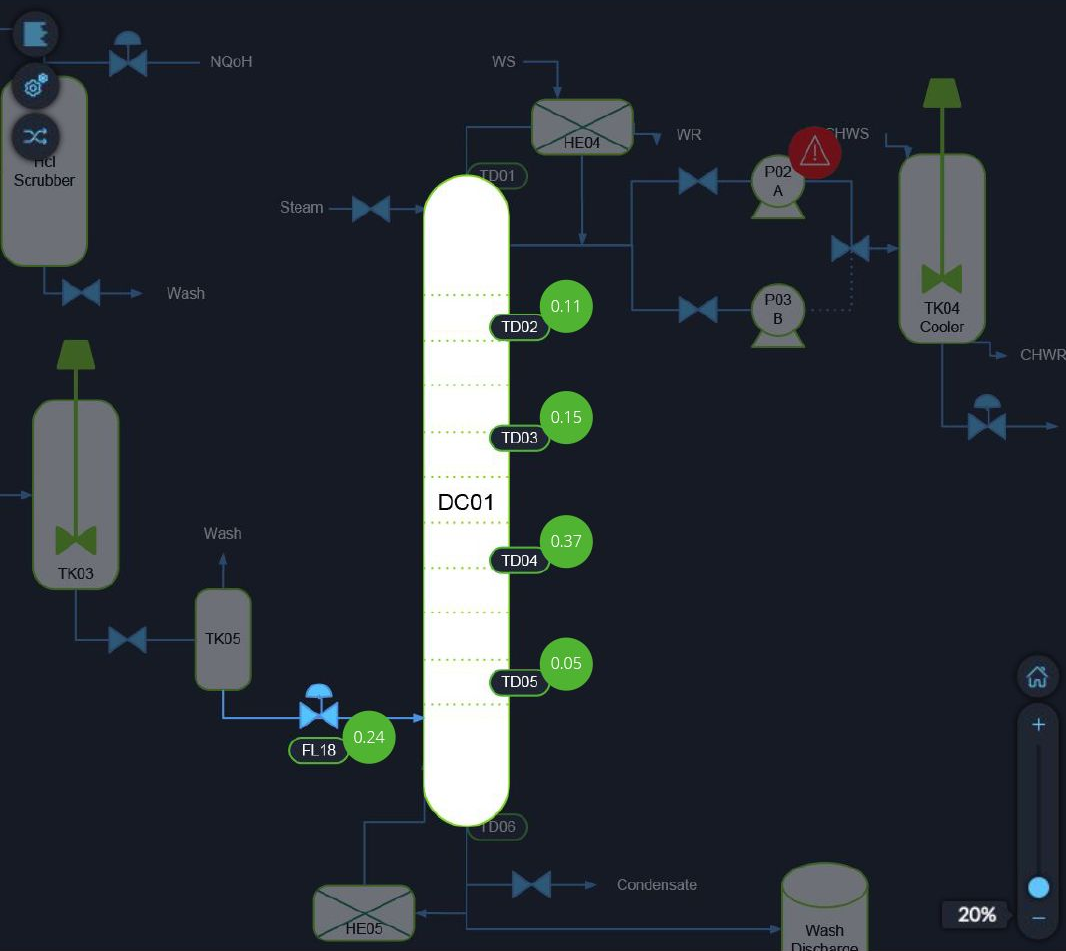
The system identified 5 indicators which are identified as the root cause to this event

Mutual primary suspects



SOP

20%



< Back to Alerts

Issue Investigation findings

High Pressure

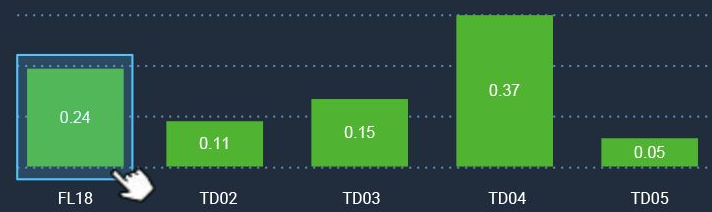
Reported on 8:32 AM

3d To failure
76% Probability

5 Primary suspects

The system identified 5 indicators as the root cause to this event group

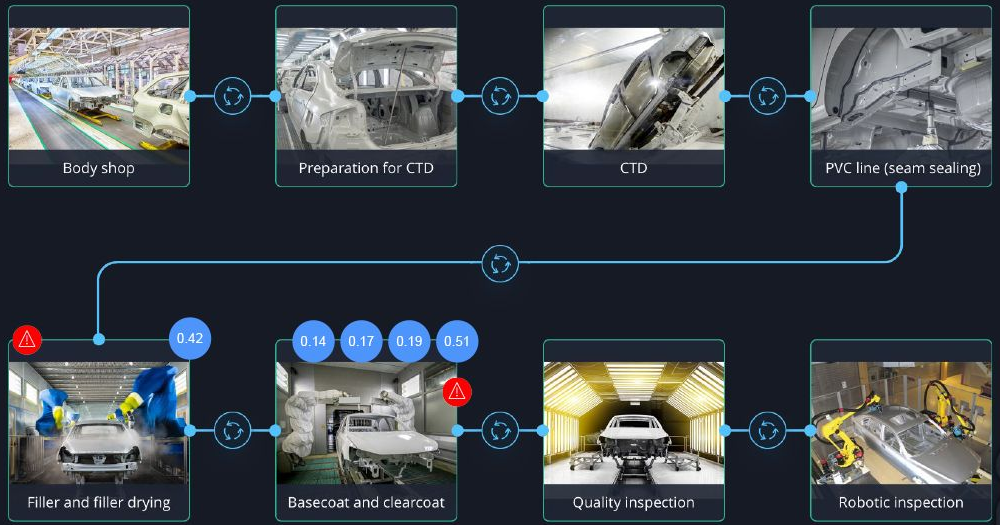
Mutual primary suspects



- [Investigate suspects](#)
- [What If](#)
- [Set Rule](#)

Predictive Alerts for Quality Issues in Pesticide Manufacturing

Processline



< Back to pareto of Quality Issues

Paint quality Issue Investigation findings

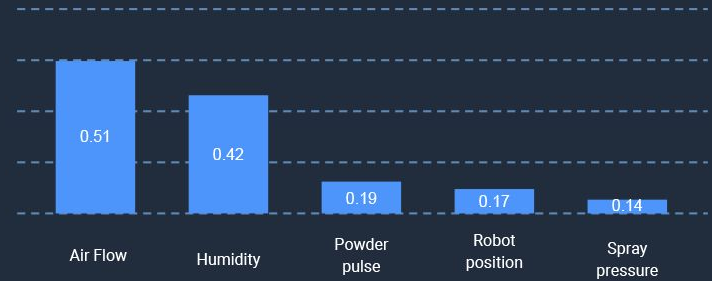
Orange Peel (>15/d) - Issue Type

Reported quality issues

5 Event type primary suspects

The system identified 5 indicators which are identified as the root cause to this event group

Mutual primary suspects



Select an event to further investigate its root cause findings

20 Specific events

The system gathered 20 events of this type to investigate

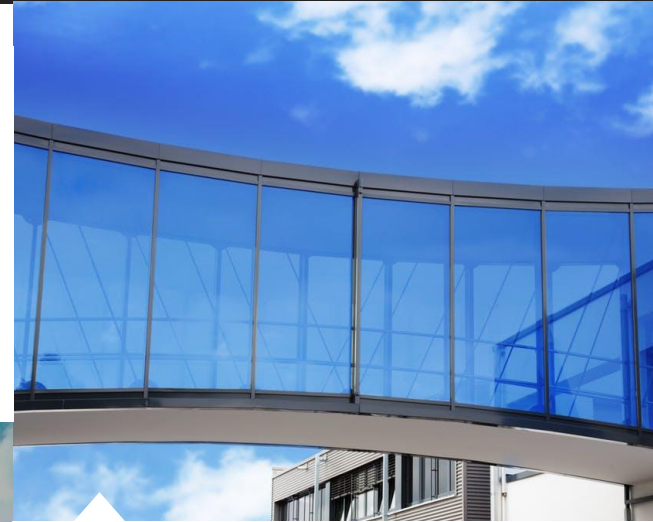
Type	Trigger	Event	Time
Quality	Reported	Orange Peel (>15/d)	00:30 AM 05/01/2018
Quality	Reported	Orange Peel (>15/d)	02:01 AM 05/01/2018

Seebo: fast growing, proven execution



Gartner Cool Vendor

*“Seebo is cool because it enables a **fast and easy** way for organizations to develop IoT solutions.”*



Gartner
Cool
Vendor

- | Exceptional R&D, Data Scientists, Customer Success
- | Backed by Tier-1 VCs
- | Focus industries: CPG, Chemicals, Automotive

CHEMCHINA

