



G R E I F
V E L L O X

SMARTER PACKAGING. SMARTER BUSINESS

HOW TO LEVERAGE AI
TO IMPROVE YOUR PACKAGING

GREIF-VELOX

WORLDWIDE



+150 Employees

Working for GREIF-VELOX
around the world



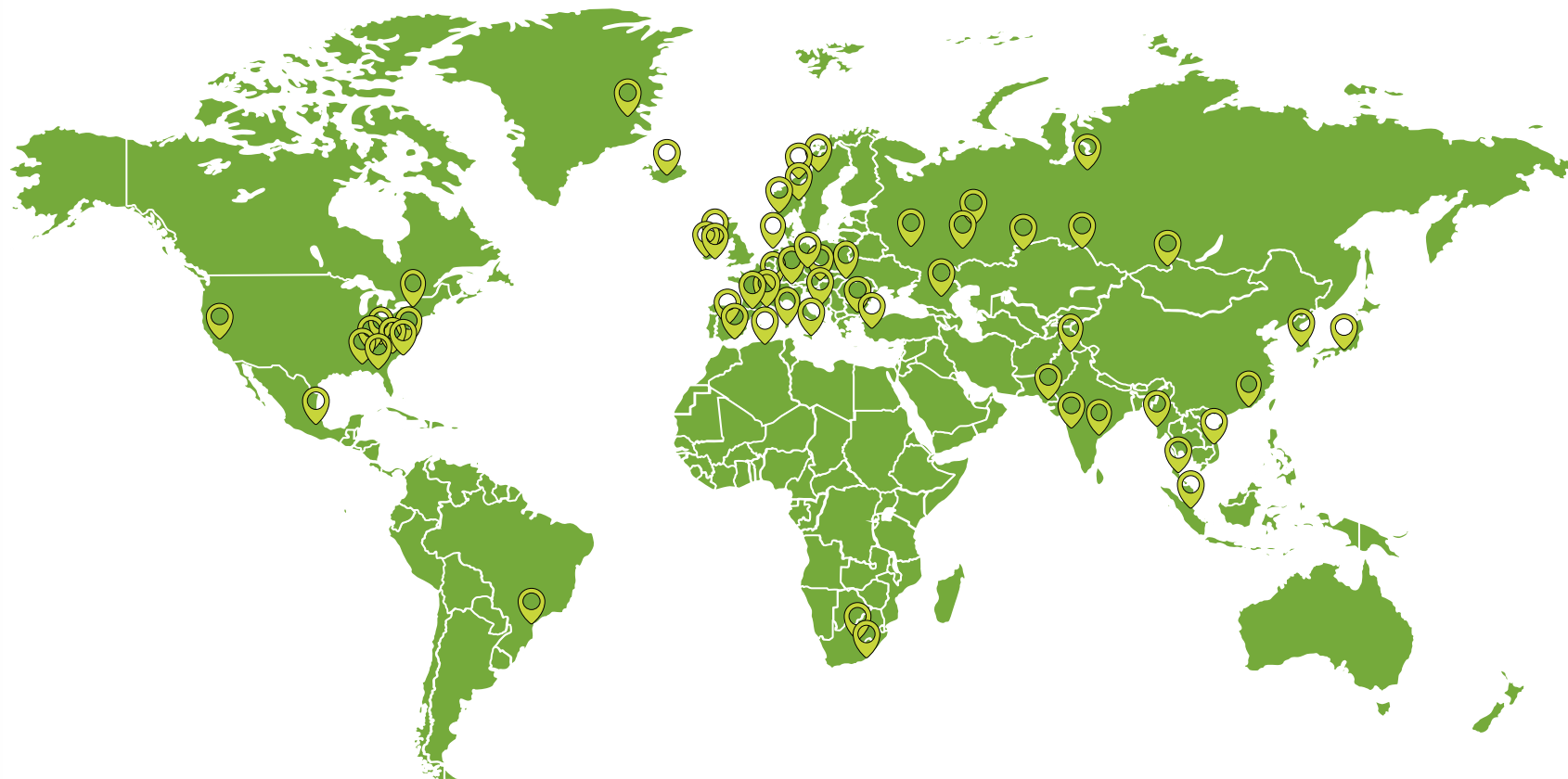
89 Countries

Supplied by us to date. A
number that keeps growing



+4,000 Projects

Completed to date

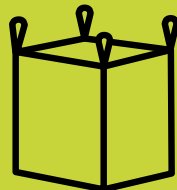


SOLID FILLING SYSTEMS FOR:

LIQUID FILLING PLANTS FOR:



VALVE BAGS



FIBC



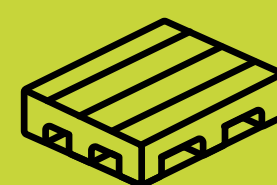
JERRYCANS



DRUMS



IBC



PALLETS

AGENDA

- **AI Trends**
- IoT
- Predictive Maintenance
- Maintenance Analytics
- Future Developments
- Summary



MY PERSONAL VIEW ON AI

1. AI itself is not the next industrial revolution
2. AI will enable the next industrial revolution
3. There has been no „iphone“ moment for AI, yet
4. Everybody is using AI, and will keep doing so
5. AI will not go away, we need to deal with it and early adoptors will win the race
6. AI will make a greate impact on how we work and how we can create efficiency
7. We will not change the way how AI is affecting us, we need to change our way of working



HOW TO LEVERAGE AI TO IMPROVE YOUR PACKAGING



WHERE DO WE SEE THE BIGGEST MOMENTUM FOR LEVARAGING AI TO IMPROVE YOUR PACKAGING?

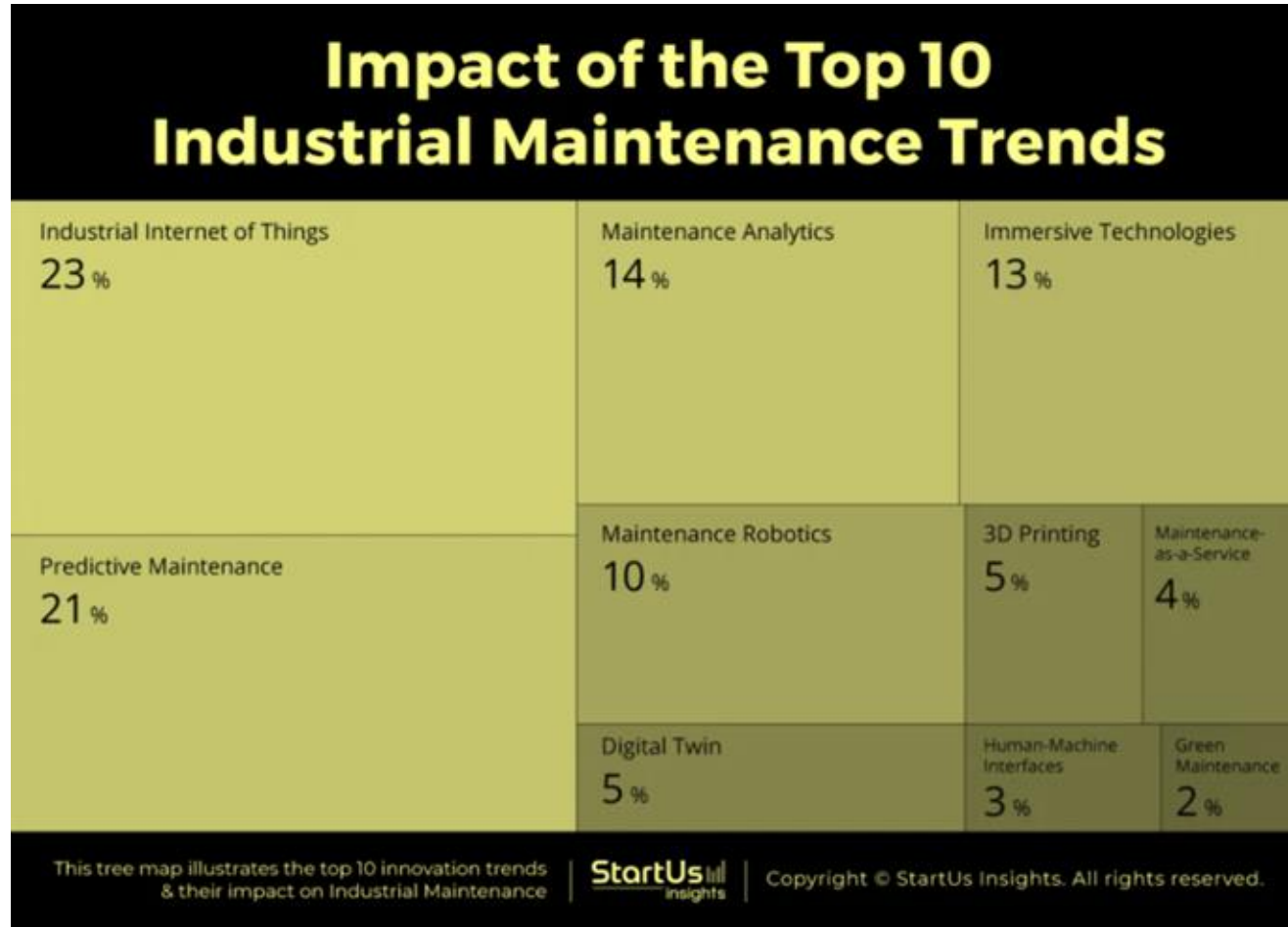
CONDITION MONITORING | Monitoring equipment condition to ensure proper operation and detect malfunctions

PREVENTIVE MAINTENANCE | Runtime based maintenance and replacement of critical parts based on usage statistics

PREDICTIVE MAINTENANCE | Replacement of critical parts based on condition monitoring data

OEE MONITORING & OPTIMIZATION | Leveraging production data to improve OEE

DATA DRIVEN PROCESS OPTIMIZATION | Identification of the most critical equipment and parts to drive continuous process improvement



According to leading industry experts

- IoT
- Predictive Maintenance
- Maintenance Analytics

are shaping the future of industrial maintenance.

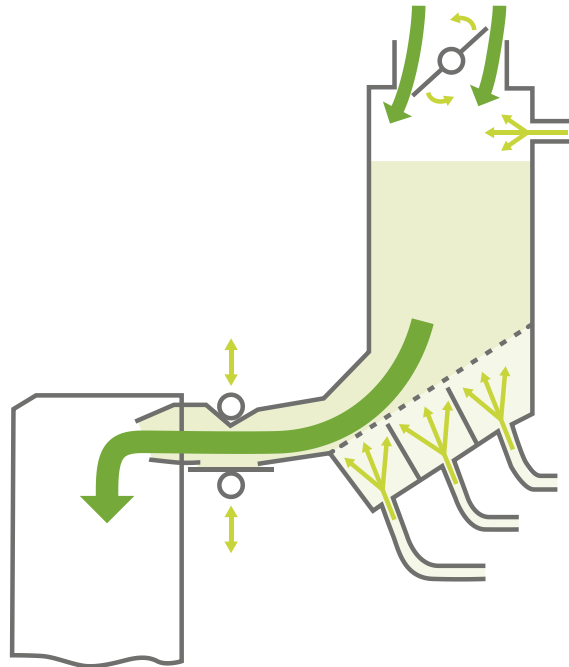
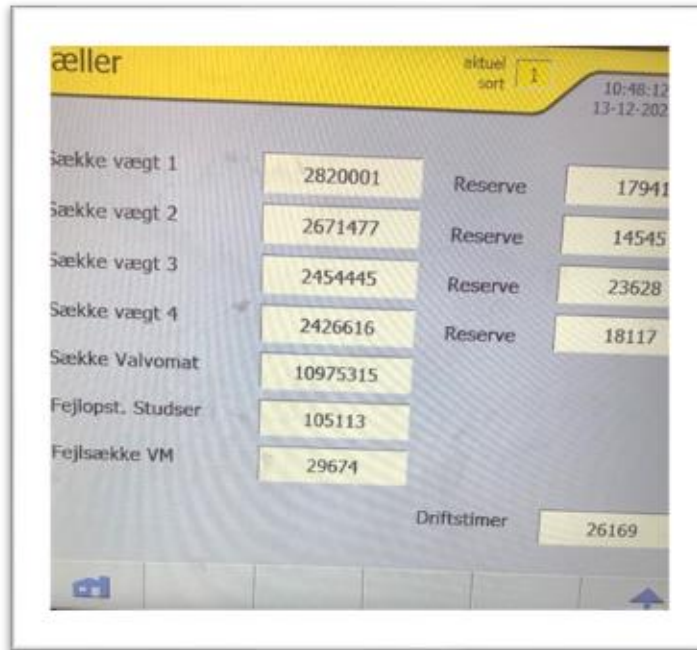
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IoT EXAMPLE

BAG QUALITY CHECK



Continuous measurement of filling pressure at the filling spout enables early detection of defective bags preventing product spills from bursting bags — supported by real-time data recognized across the industry.

REMOTE SERVICE Advantage

On-Site Service

Technician on site
Response time: within 1–5 days

LEVEL

3

5%

Assisted Service

Customer supports the REMOTE SERVICE or on-site technician
Expert support within 1-24 hours

LEVEL

2

15%

REMOTE SERVICE

Support via remote maintenance expert
Response time: within 1-24 hours

LEVEL

1

80%



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BENEFITS OF AI IN PREDICTIVE MAINTENANCE



REDUCED DOWNTIME | AI ensures early detection of failures, preventing unexpected breakdowns.

COST EFFICIENCY | AI in maintenance reduces operational costs by eliminating unnecessary maintenance checks.

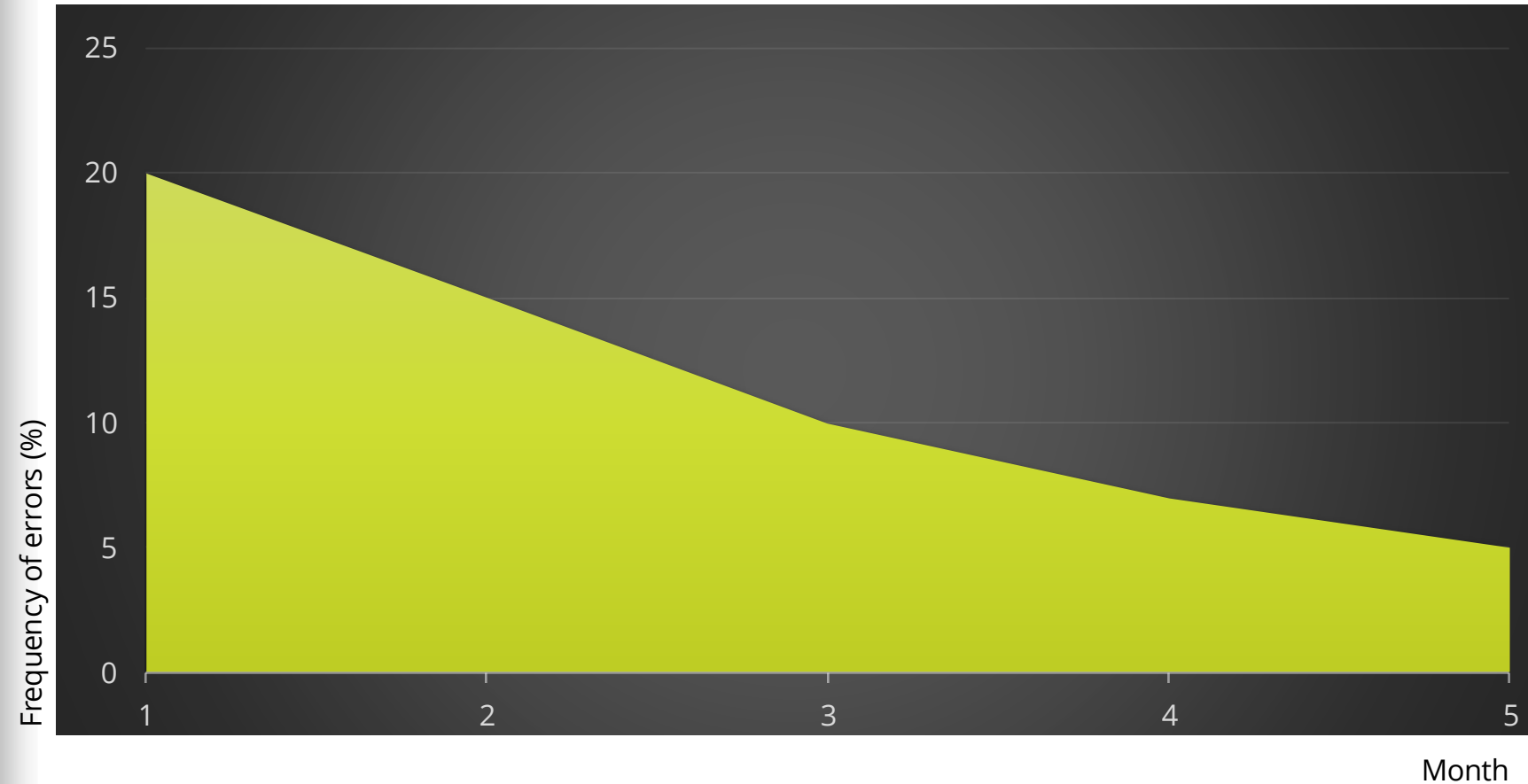
ENHANCED RELIABILITY | AI-driven machine health monitoring ensures that critical assets operate at peak performance.

AUTOMATED WORKFLOWS | AI enables smart scheduling through CMMS maintenance management software.

OPTIMIZED MAINTENANCE STRATEGIES | AI-driven predictive maintenance technologies lead to efficient asset utilization and resource allocation

**WITHIN JUST 5 MONTHS AI-BASED PREDICTIVE MAINTENANCE
CAN REDUCE COMMON ERRORS BY UP TO 75%**

AI-BASED IMPROVEMENT ON **PREDICTIVE MAINTENANCE**



PREDICTIVE MAINTENANCE
EXAMPLE

SELF-TEST FUNCTION



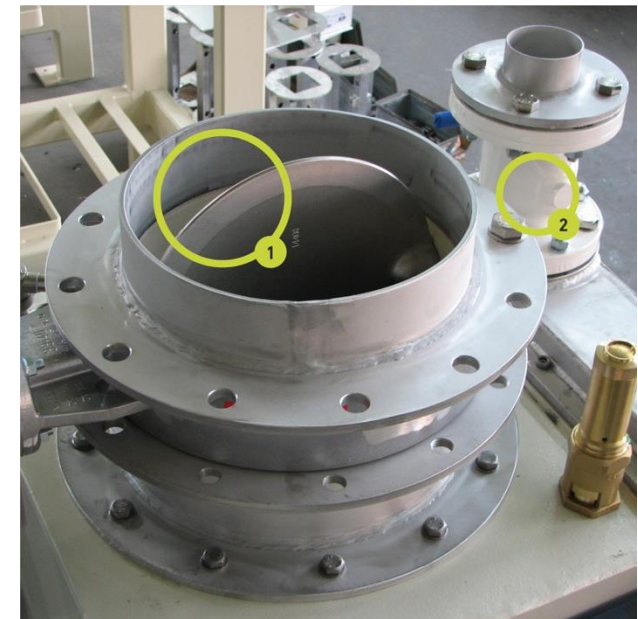
WEAR MONITORING FOR PNEUMATICALLY OPERATED SHUT-OFF UNITS

The system gains added reliability through continuous automatic checks for the most common causes of system failures:

- Eliminates lengthy troubleshooting by technical departments
- Ensures stable production without unplanned downtime
- Improves planning for scheduled component replacement
- Direct wear & tear notifications on the system's HMI

No downtime due to wear & tear:

The product inlet flap **(1)** and the venting function/tank venting mechanism **(2)** are now constantly monitored.

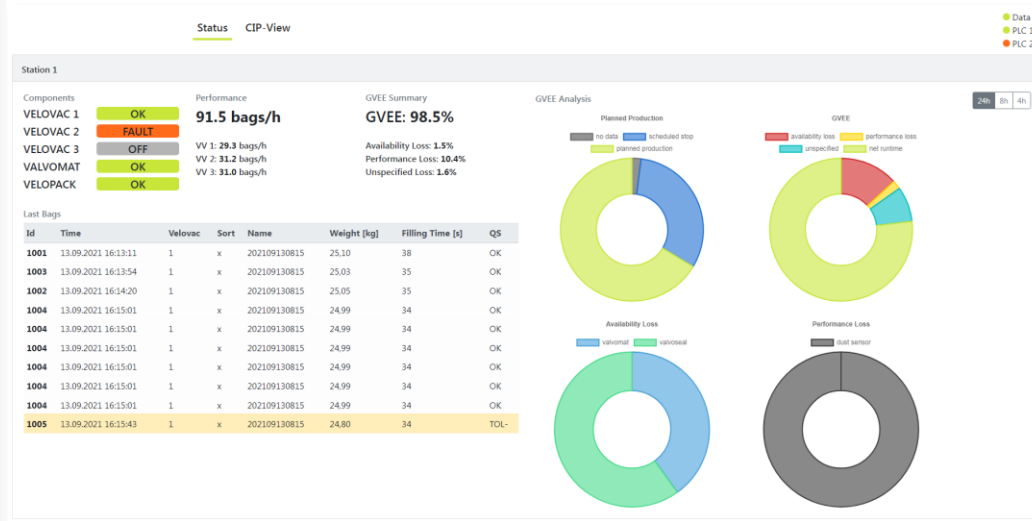


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OEE EXAMPLE DASHBOARD MONITORING



Continuous OEE monitoring to identify critical process parameters and drive continuous improvement initiatives.



→ Using AI to find patterns is already available and no future technology anymore.

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FUTURE DEVELOPMENTS

HISTORICAL PROJECT DATA



AI-POWERED KNOWLEDGE DATABASE
Analysis of past offers, projects, and error reports to generate performance data for new inquiries.

BENEFITS:

- Leverage existing knowledge
- Evaluate real project data
- Drive continuous improvement
- Avoid repeating mistakes



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HOW TO GET STARTED WITH YOUR AI-BASED **IMPROVEMENT**

1. Enable your organization to allow IoT and AI to improve the way how we are working
2. Identify the most critical process parameters
3. Start collecting process data
4. Establish secure data transmission to share process data with the equipment manufacturer
5. Continuously train AI with process data

→ The journey has just started - and we will see big steps in the near future.





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SMARTER PACKAGING. SMARTER BUSINESS

Thank you!