USING DATA TO REDUCE DOWNTIME AND WASTE

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AGENDA

1 REALITY CHECK – LEVERAGING DATA

2 GOALS VS. SYSTEMS

3 UNDERSTANDING YOUR OPPORTUNITIES

THE DATA OPPORTUNITY

01

Industrial processes generate **huge amounts of data**, most of which disappears within moments after being created.

02

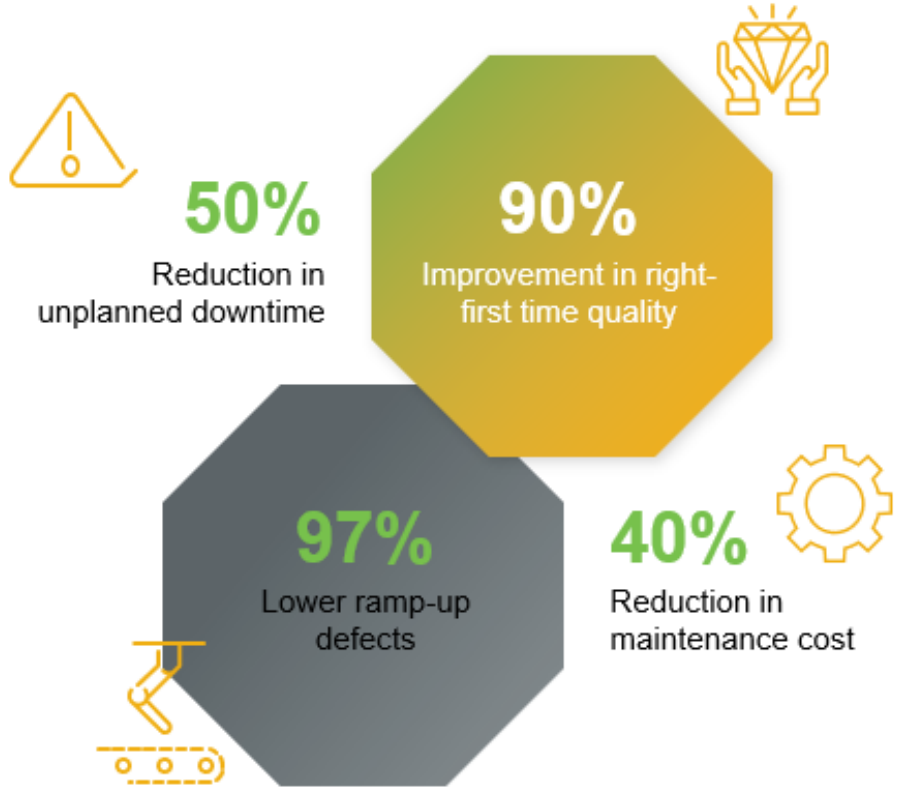
Only some of that data is collected and stored, and some of what's stored is accessible, and some of what's accessible is used.

03

Without a **well-established plan**, the act of collecting, storing, accessing, and using data can be complicated and expensive.

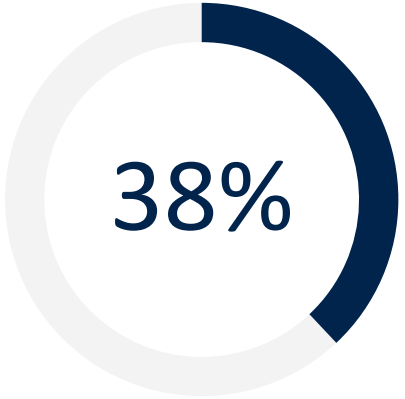
04

The benefits of using data effectively can unlock **new business value** across the organization.

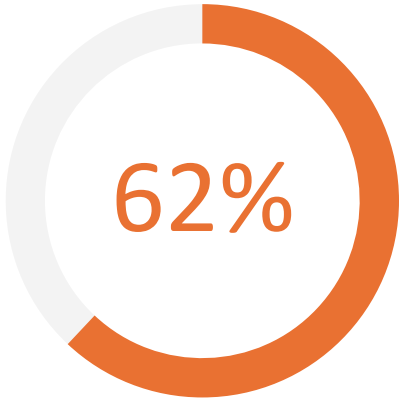


REALITY CHECK

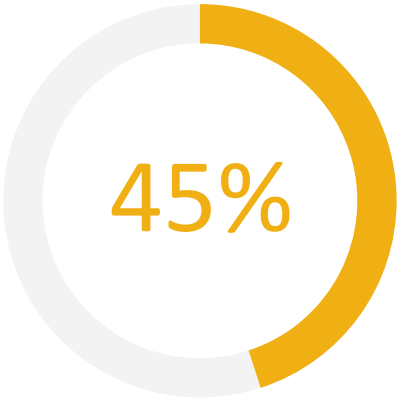
WHY FOCUS ON DATA AND SPECIFIC USE CASES?



Manufacturers with less than $500M in annual revenue use only 38% of their data effectively. (**)



Manufacturers who collect production data at least partially on paper/manually. (*)



Improving quality was the leading use case of AI/ML among the respondents. (**)

**Digital Systems Survey 2023 – Hanover/Van Meter (145 respondents in MN/WI/IA)*

***Source: 9th Annual State of Smart Manufacturing Report (1500+ global manufacturers polled)*

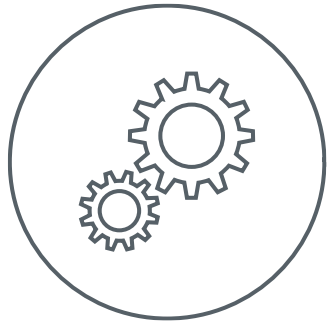
WHAT DO THESE NUMBER REPRESENT?

$100M

Grow our business 40% in 10 years or less.

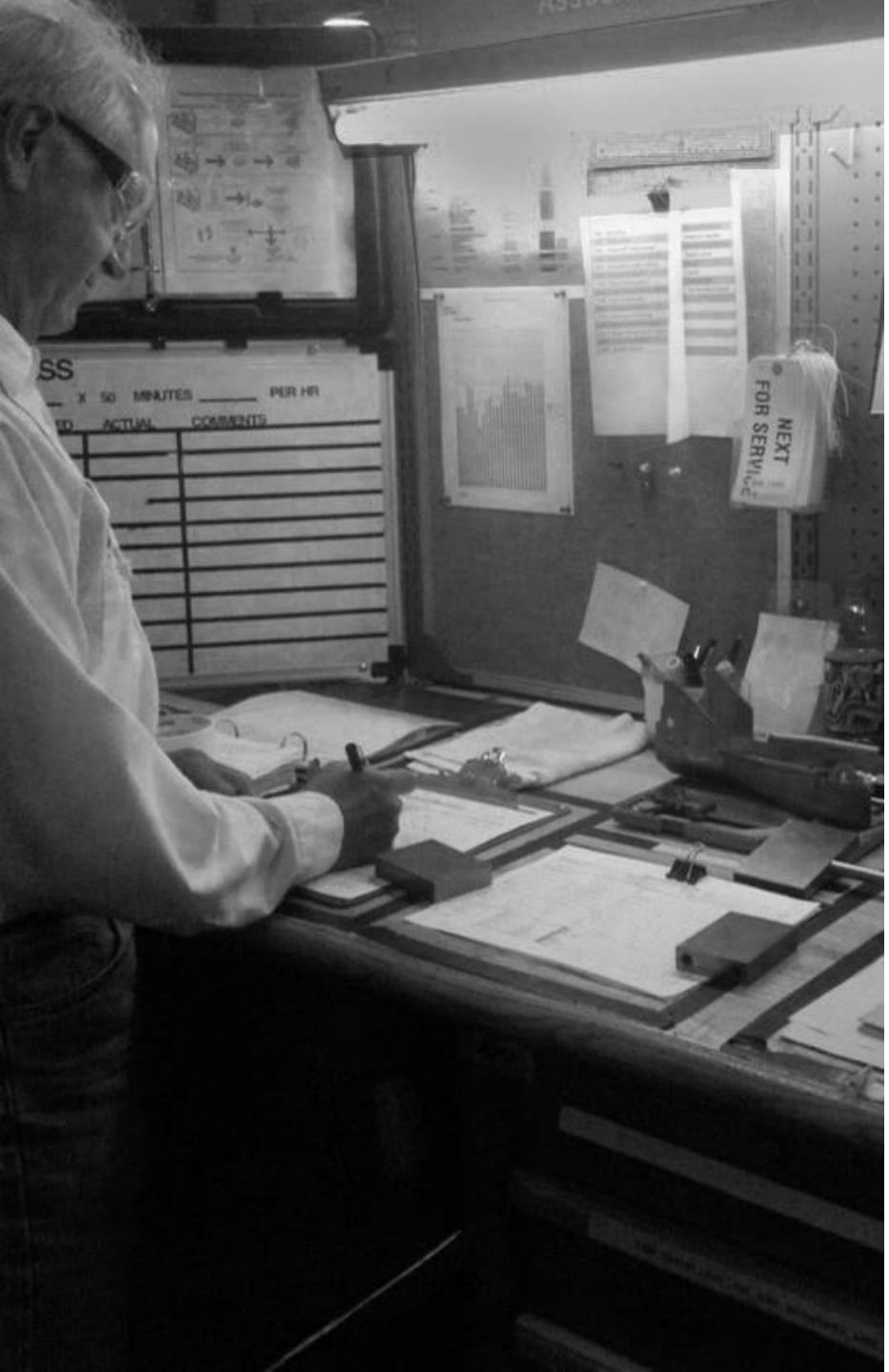
1.5%

Reduce our scrap/waste percentage by half.



20%

Increase the capacity across the factory.



TODAY'S CHALLENGES

Equipment Reliability:

- 40 hours Unplanned Downtime per week
- No mechanism to measure machine health
- ~ 10% of available production time lost
- ~ $33k per week or ~ $ 1.7M per year

Quality

- Manual Quality Practices
- Cannot satisfy evolving customers' demands & Quality requirements (ie: SPC)
- Recalls; difficult to catch and contain bad product.
- ~3% Scrap
- Up to $1.2M annually in scrap/waste
- Rework costs exceeding $2M annually

YOUR TOP PRIORITIES

PRODUCTION MONITORING (OEE)

Limit your bottlenecks to increase your capacity.

Alignment to Initiatives	■■□
Value Impact	■■■
Complexity	■□□

RELIABILITY MANAGEMENT

Bring better visibility of assets, standardize processes and transparency across the factory.

Alignment to Initiatives	■■□
Value Impact	■■■
Complexity	■■■

QUALITY MANAGEMENT

Ditch the paper and create digital quality practice.

Alignment to Initiatives	■■□
Value Impact	■■■
Complexity	■■□

USE CASE #1: PRODUCTION MONITORING
AKA: OEE

*www.leanproduction.com

40-60%

TYPICAL OEE

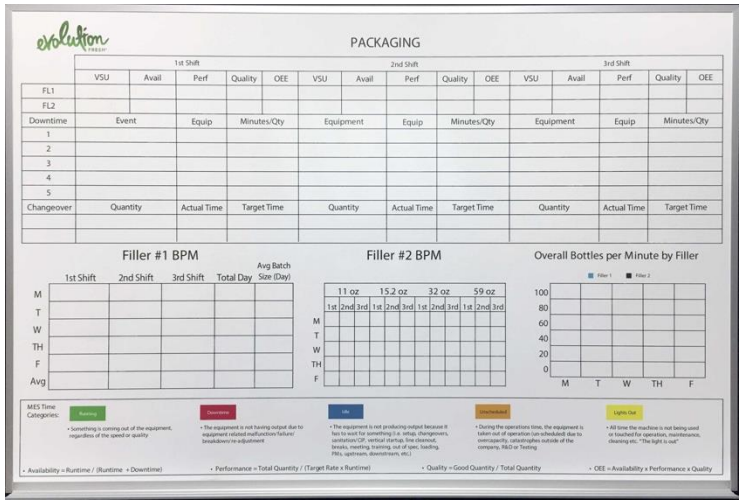
85%

BEST IN CLASS OEE

SYSTEMS OF YESTERDAY

- **Manual tracking and transfer of data**
- Comparing ‘scores’ across dissimilar processes

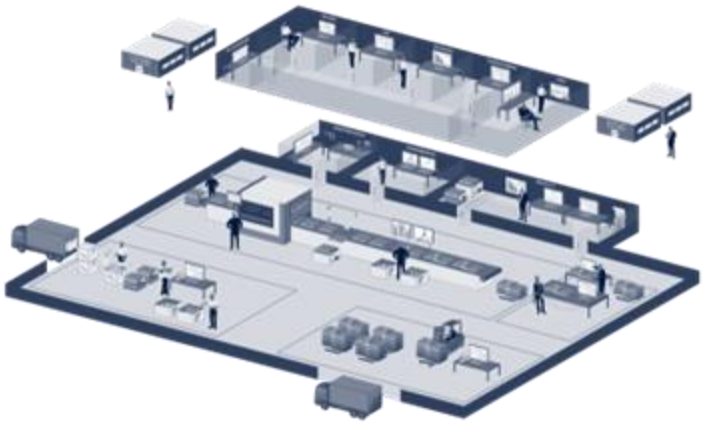
- **Lack of context and granularity**
- Implementing without the right data available.
- Setting OEE goal for 100%
- Assuming OEE doesn’t apply in process



- **DIY**
- No Continuous Improvement

PRODUCTION MONITORING: BEST PRACTICES

CONNECT



VISUALIZE

IMPROVE

Performance Data

- Production
- Scrap
- Machine Status

Analytics

- OEE
- Performance
- Quality
- Availability
- Etc.

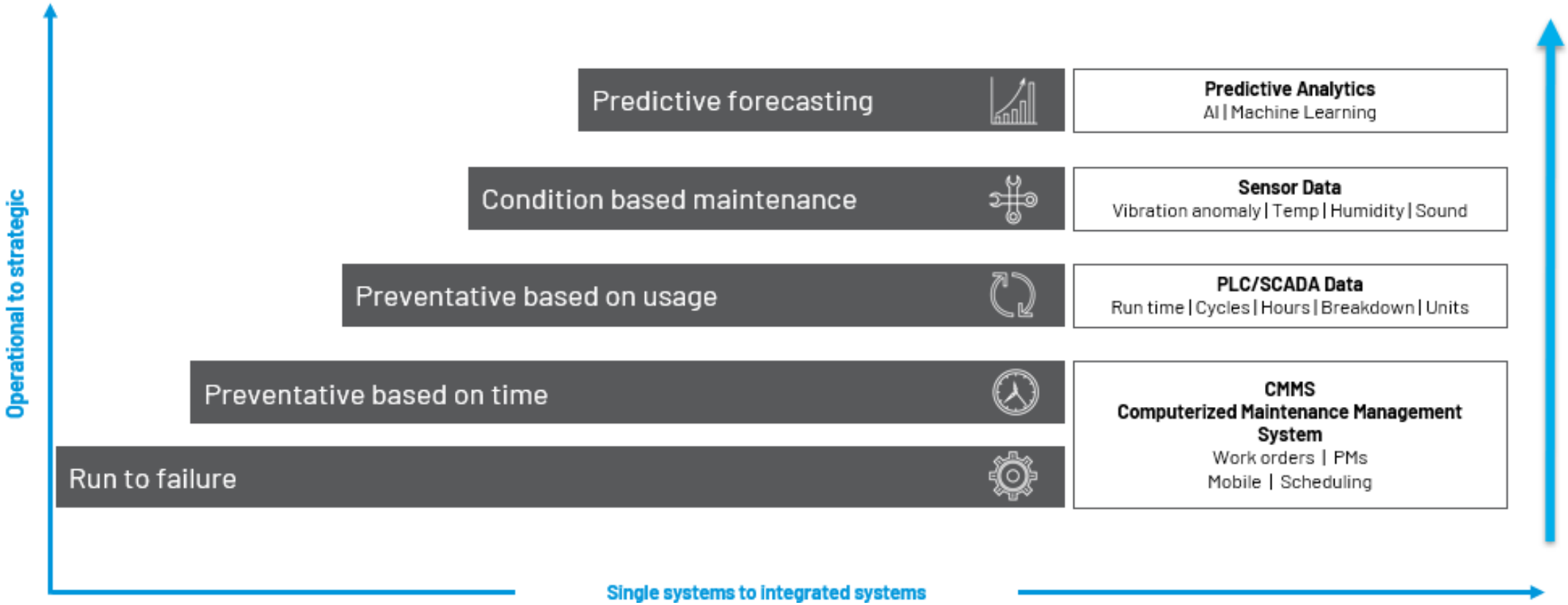
Continuous Improvement

- Operator Notes
- Suggestions
- Workflow
- CI Activity

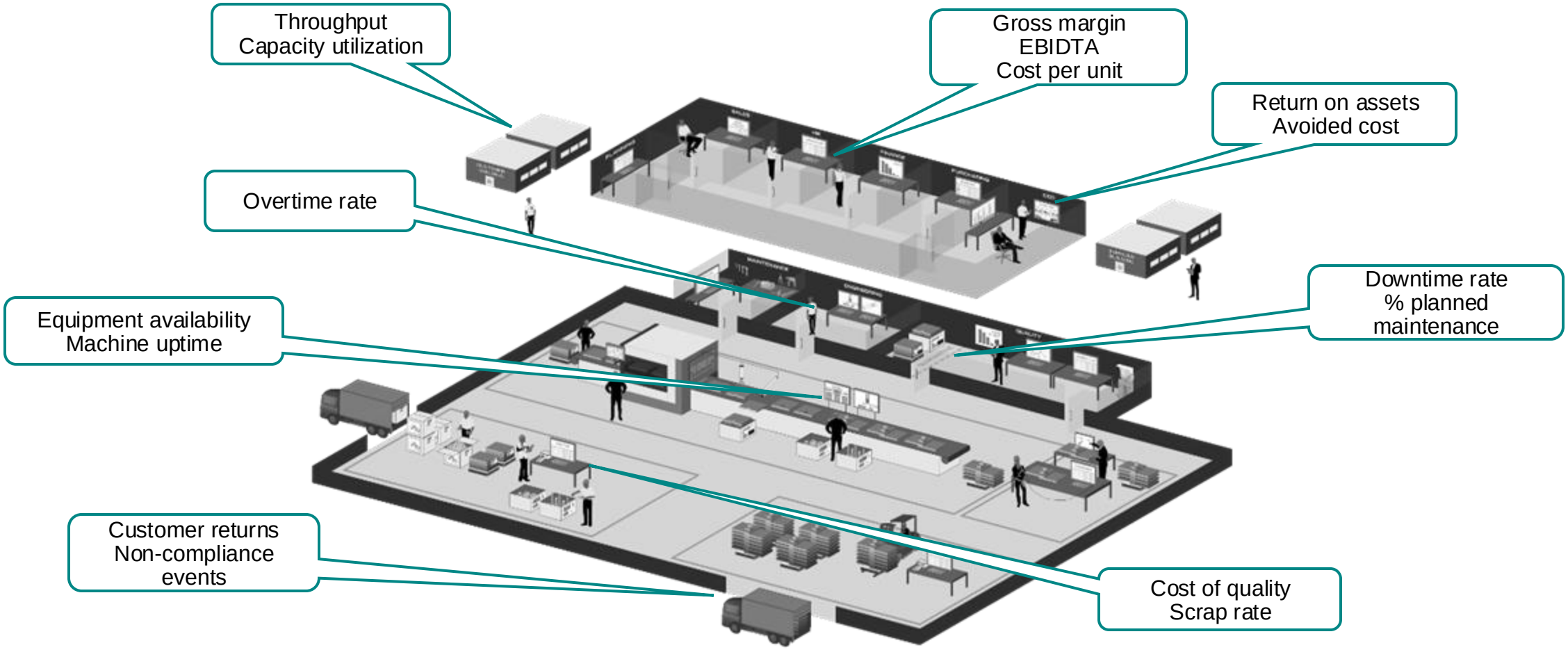
EDGE

CLOUD

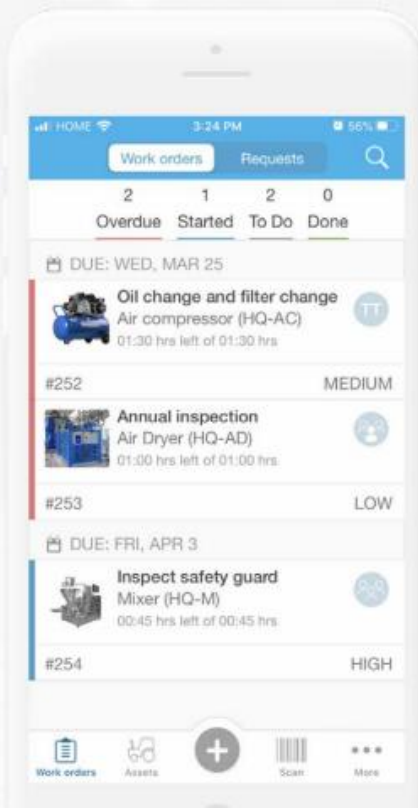
USE CASE #2: RELIABILITY MANAGEMENT

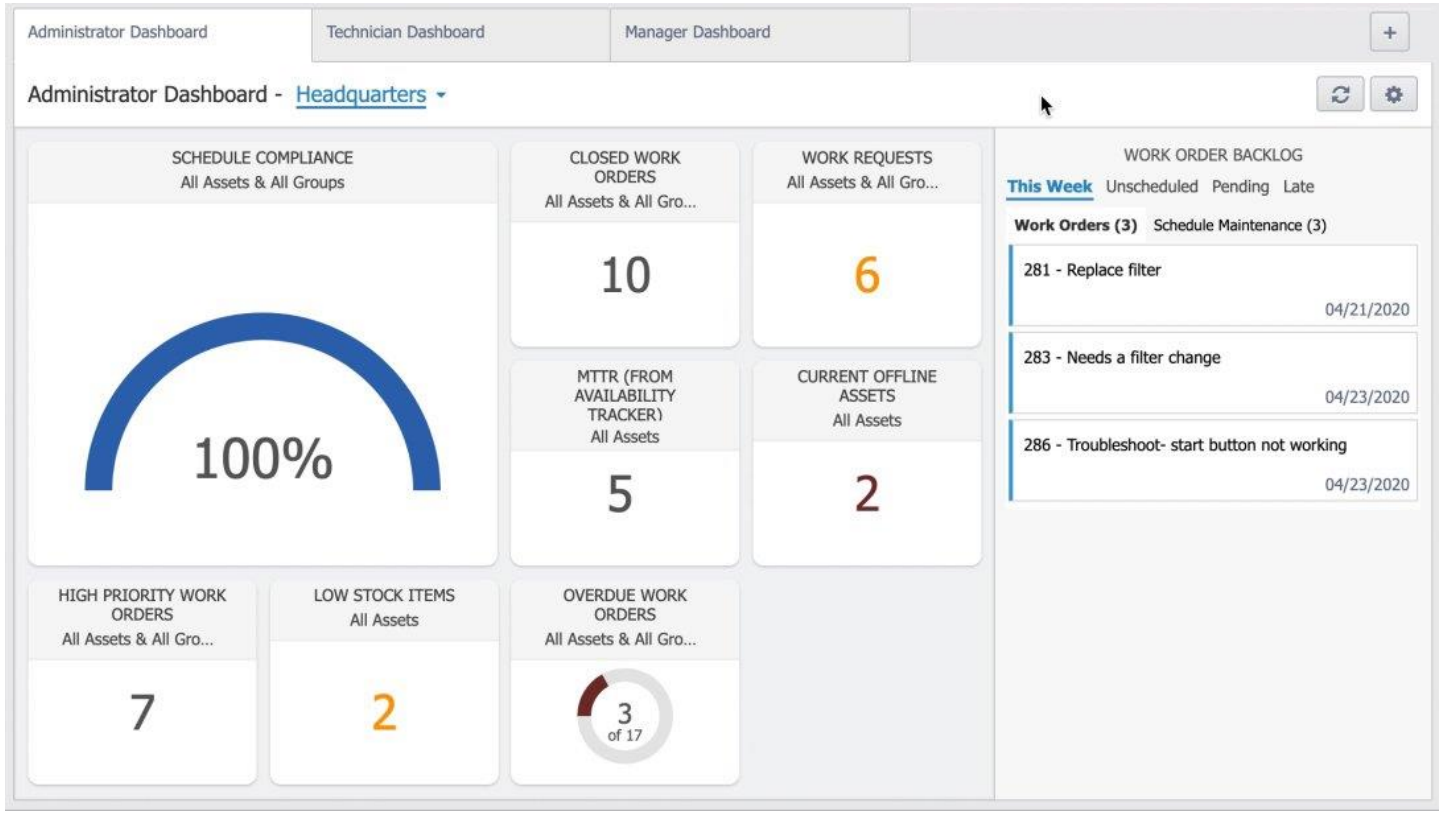


USE CASE #2: RELIABILITY MANAGEMENT



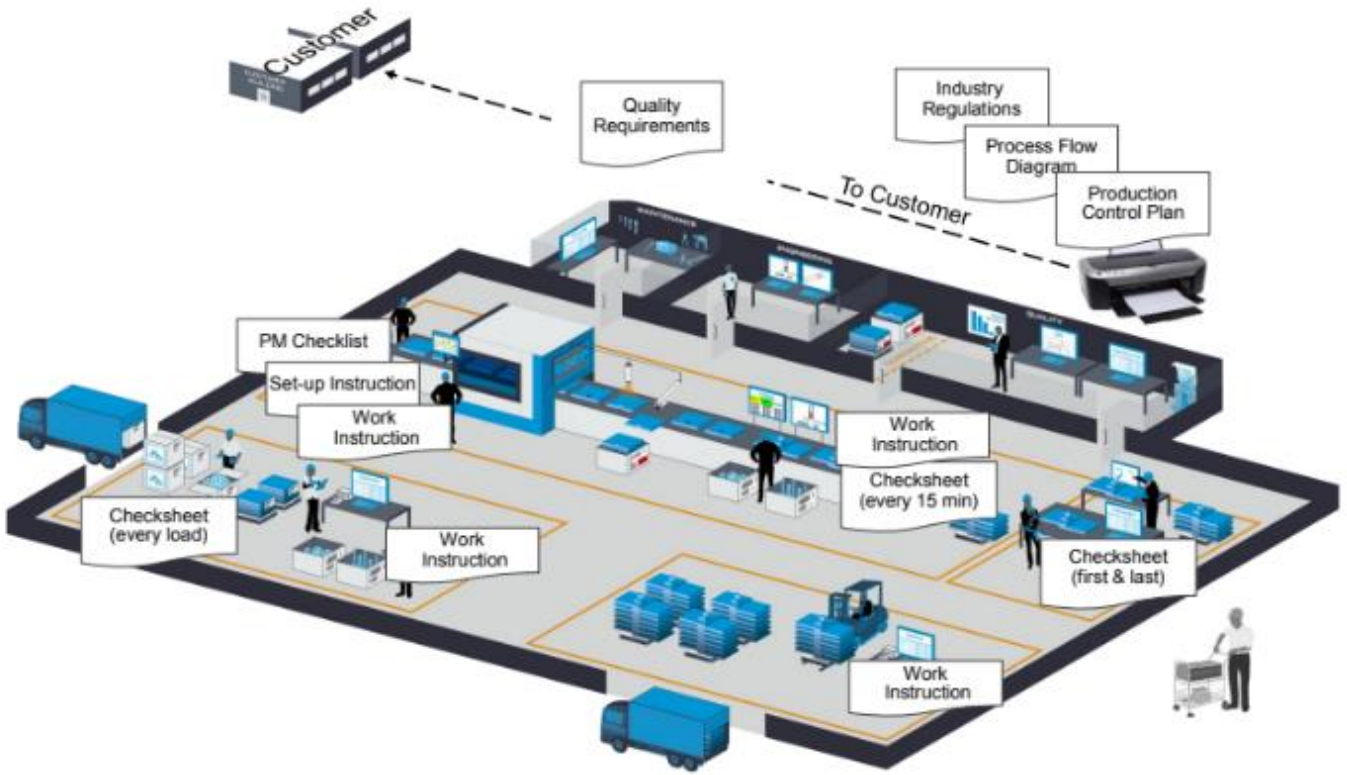
RELABILITY MANAGEMENT: BEST PRACTICES





USE CASE #3: QUALITY MANAGEMENT

Paper-Based & Disintegrated Quality: Follows the Process



35M

CARS HAD OPEN RECALLS IN 2021

NHTSA 2021 SAFETY RECALLS

15M LBS

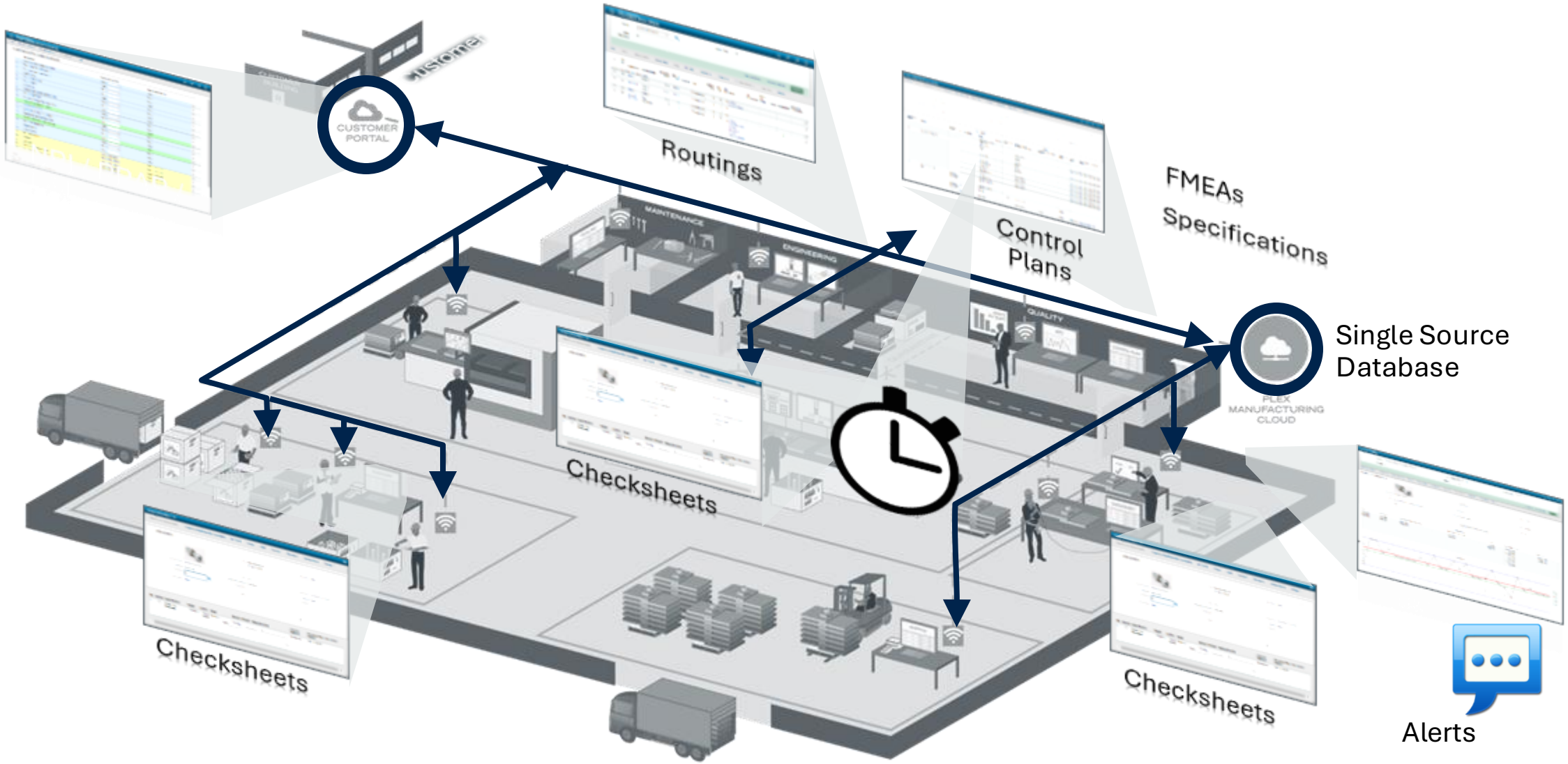
FOOD RECALLED IN THE US – 2021

US FOOD RECALLS 2021 (USDA)

QUALITY MANAGEMENT: THE BAD AND THE UGLY

- Paper…everywhere!
- **Inconsistent quality control checks.**
- Audit prep takes weeks.
- **No digital batch records or process tracking.**
- Too much time to release product.
- **Corrective action takes too long.**
- Quality metrics based on customer complaints.

QUALITY MANAGEMENT: BEST PRACTICES
HOLISTIC, DIGITAL, INTEGRATED



RESULTS: SYSTEMS DONE RIGHT

"Based on what we've seen of ROI so far, we expect a 30% reduction in unplanned downtime cost, about a 10% reduction of plant maintenance, about 10% reduction in job transition time."

Bob Bierwagen – CIO, MPI Corporation

"With Plex, our quality control staff can finally focus on inspecting products and keeping our quality high, rather than doing paperwork and finding the right technician to help them with a machine," said Hankamp. "That's a big part of the reason our scrap rate has gone from nearly 3 percent to 1.5 percent."

Scott Hankamp – Operations Manager, A&K Finishing

20%

REDUCTION IN MTTR*

50%

REDUCTION IN SCRAP RATES

10%

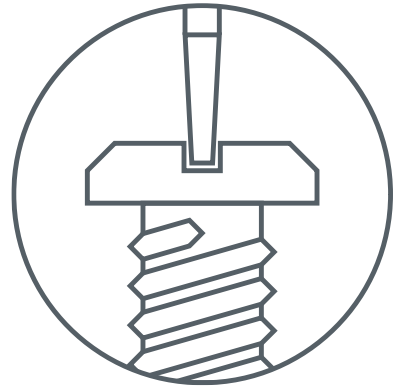
INCREASE IN PRODUCTION EFFICIENCY ACROSS PLANT FLOOR

*Source: IDC

NEXT STEPS

CROSS FUNCTIONAL TEAM

AGREE ON OBJECTIVES



BUILD YOUR SYSTEMS

QUESTIONS

VAN METER

ABOUT JOSH

Josh Reitz is a Smart Manufacturing Business Consultant who has been with Van Meter for 11 years. Much of his time at Van Meter has been spent working with industrial manufacturers, helping them understand and find value in improving their manufacturing processes and systems. Josh's expertise in smart manufacturing has been instrumental in driving efficiency gains, energy savings, and enhanced maintenance operations for his customers.

THANK YOU