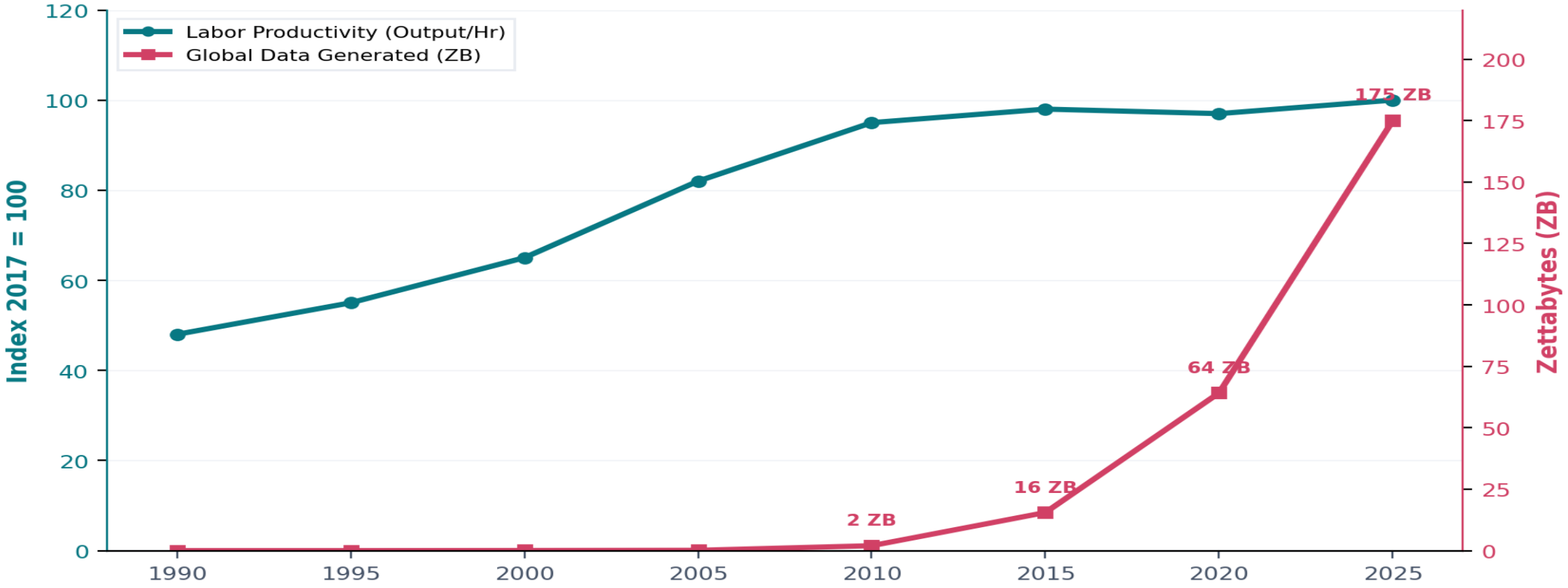
ODEN TECHNOLOGIES

Operational AI for Manufacturing

Labor Productivity is Flat & Data Has Exploded

Manufacturing Labor Productivity (Output/Hr) vs. Global Data Generated (ZB)



Sources: U.S. Bureau of Labor Statistics (FRED), IDC Global DataSphere, Statista, Hilbert & López (2011)

Front-Line Challenges

- 1CADD? 9H: =LO==F =PH=JA=F;=< GH=J9LGJK9F< F=O @A=Kج
- - HLAE ARAF? DAF= KH==< 9F< =¬ AAAF; Q J=DA=KGF ?MLAFKLAF; Lج
- &AKLGJA9DCFGOD=<?= AKDGKLO@=F KCADD=< GH=J9LGJKD=9N=ج
- &A?@=JGFL-DAF=;@MJF=I M9DK;GFKL9FL GF: G9J<AF? 9F< LJ9AFAF?ج

Source: LNS Research

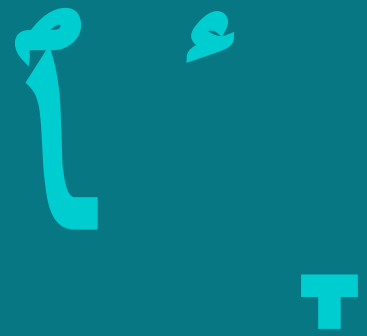
Humans Alone Don’t Have the Capacity to Leverage Massive, Dirty Manufacturing Data

Disorganized

Siloed

Inaccurate

Stuck in the past



of manufacturers are **maintaining or increasing investment** in industrial transformation (IX)

of IX leaders are **investing in AI/ML**

how much more likely **industry leaders are to be investing in real-time data for the front line** vs. laggards

Introducing Oden.io

The Input

Scattered Data Silos

Existing PLCs & Sensors

Unused Historian Data

Manual Paper Logs

The Bridge

Detect

AI spots deviations as they happen.

Decide

Decision engine weighs tradeoff effects.

Deliver

Operator immediately receives specific guidance.

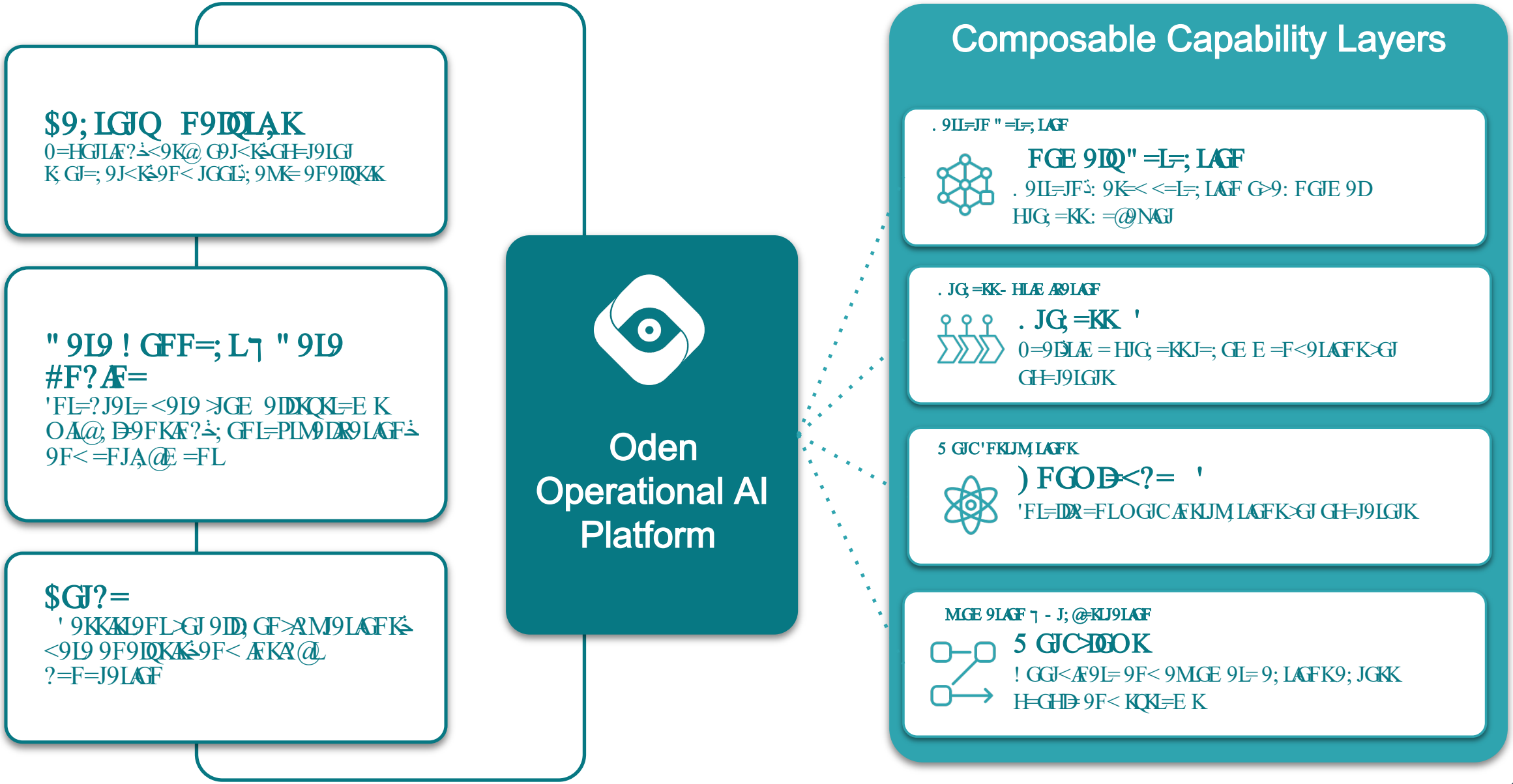
The Output

Predictable Excellence

The "Golden Run" on every shift.

Zero Waste / Lower Scrap.

Consistent performance, regardless of operator experience.

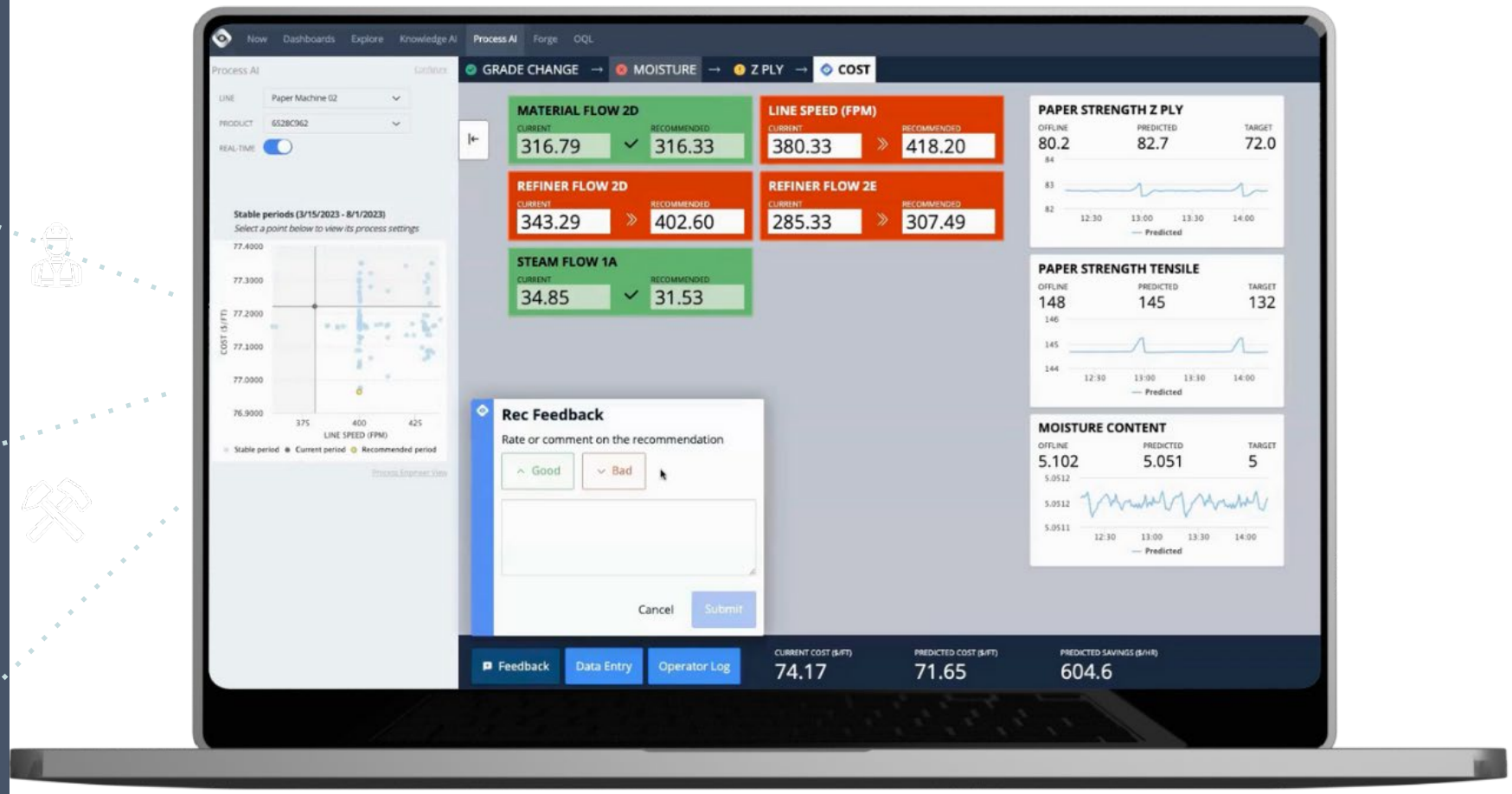


Live Visibility

Dynamic Guidance

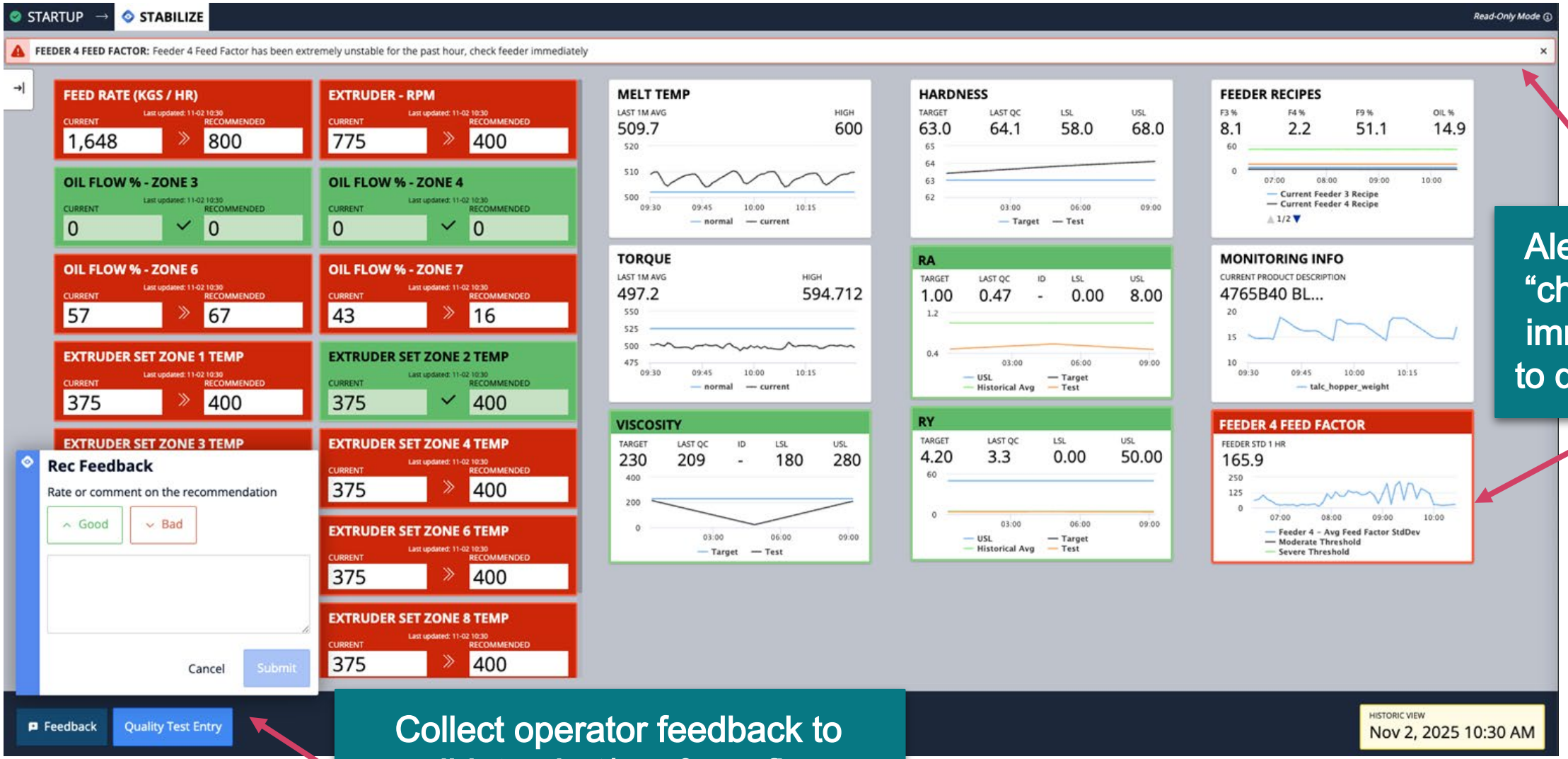
Predicted Outcomes

$JGFL5*AF=$G;MK



Process AI: Real-Time & Predictive Optimization

Anomaly Detection + Process Recommendations

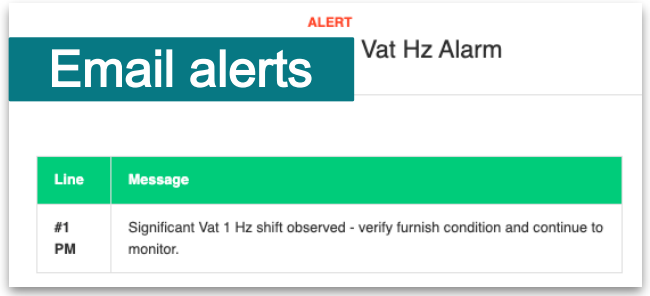


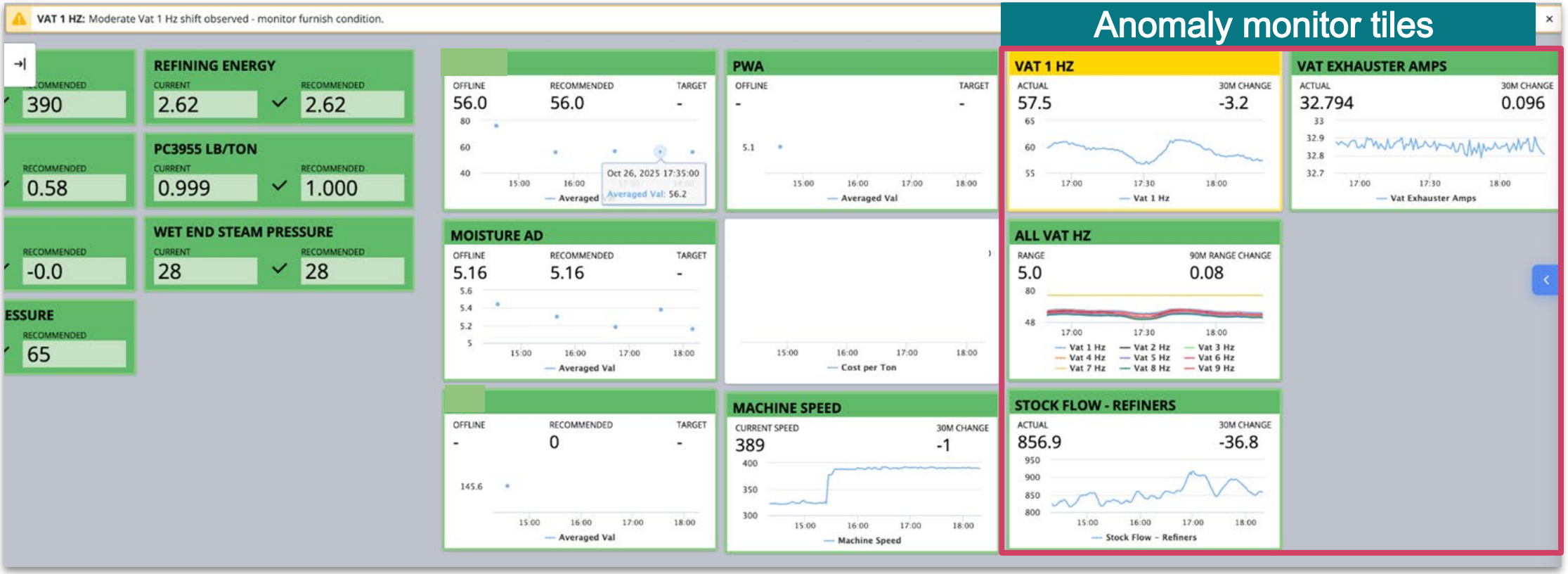
Alert message "check feeder immediately" to direct action

Collect operator feedback to validate alert/rec & confirm action

Anomaly Detection + Process Recommendations

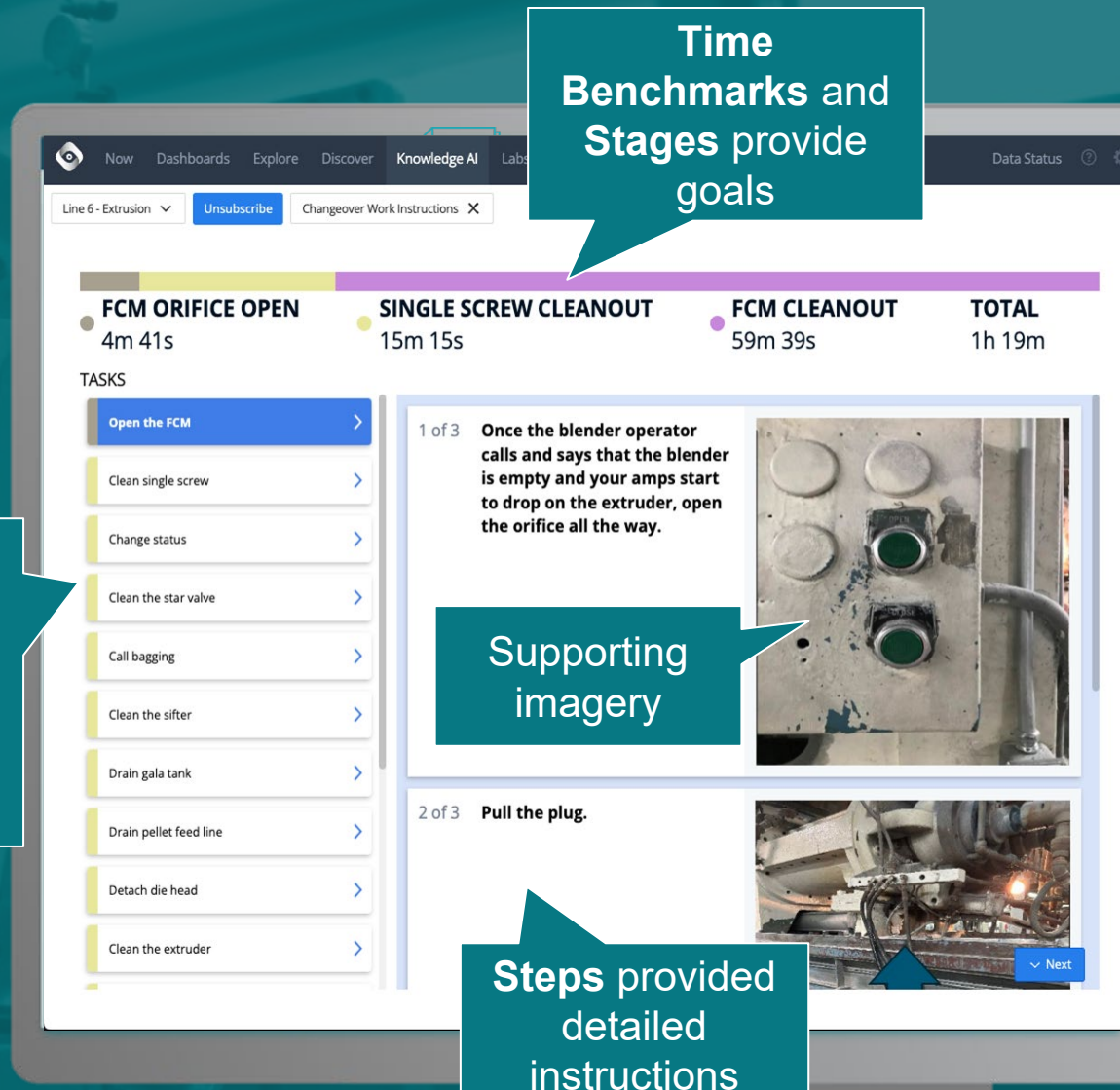
Alert message “Monitor Furnish Conditions” to direct action





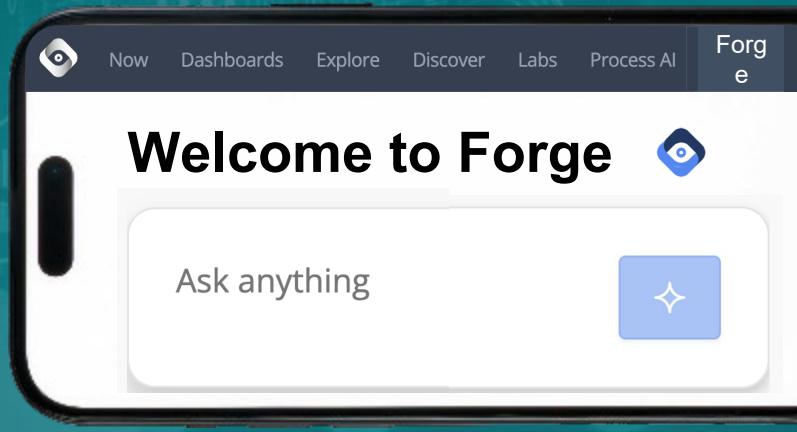
AI-Driven Work Instructions

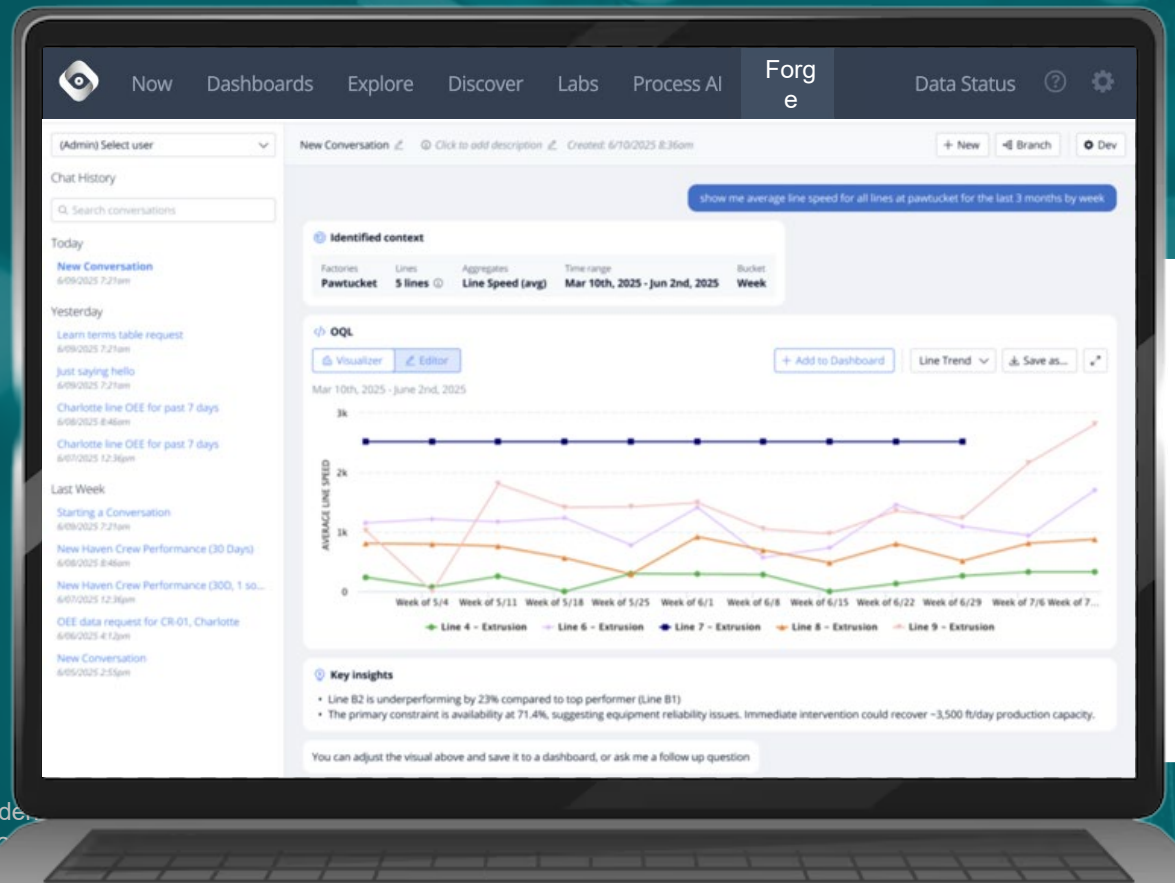
Deliver **dynamic how-to instructions to operators**, empowering anyone to have the domain knowledge of a 30-year veteran.



Forge

Agent-driven interface to perform data analysis, dashboarding, & complex data queries in seconds





Native Access

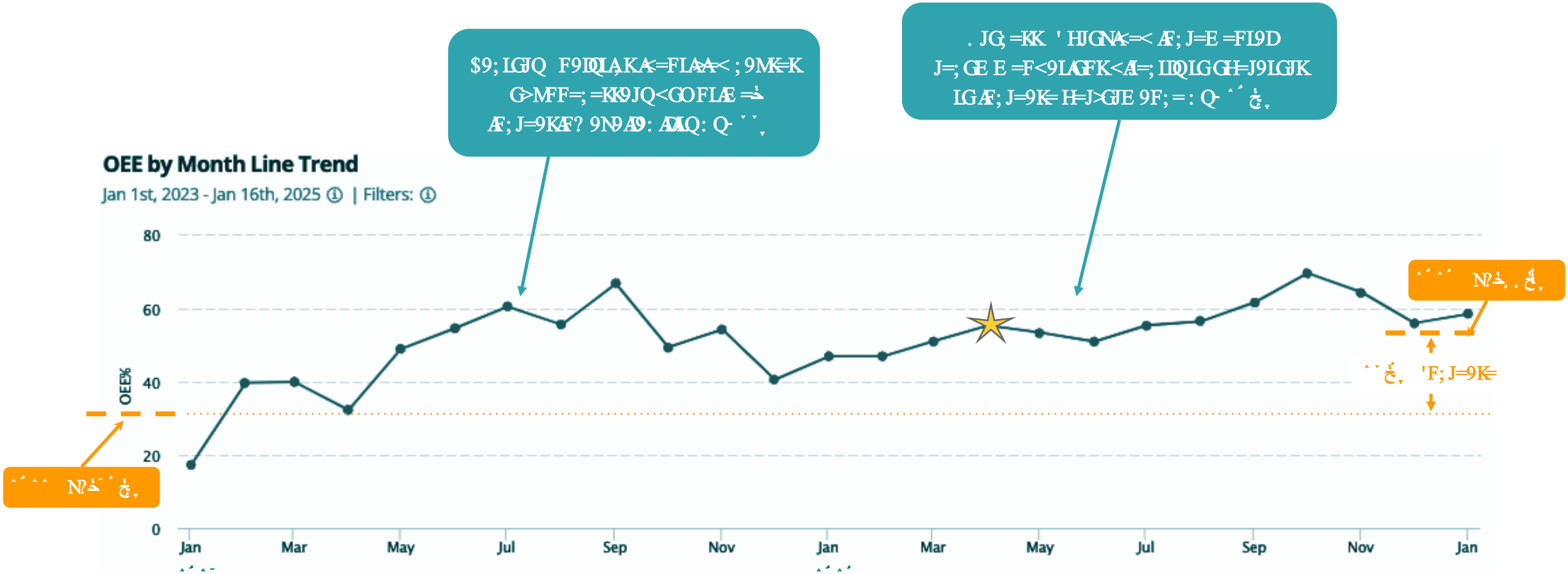
Forge is native to the Oden platform, allowing you to quickly add new analysis to existing dashboards and reports in a single click

Seamless Setup

Forge supports customer led configuration, allowing you to add new lines, recognize and label patterns, and adjust rule sets

+21.4% Increased OEE

Ink & Chemicals PAI Case Study



Production Line of the Future

Automation | AI | Change Management

Partnership Impact

- ##

. JG<M, LAGF 1; @=<MD=

*: K <<=<

0=L=FLAGF 09L=

#N=FL- N=JNA=O

What

- Behind the scenes plant tour, demos, and thought leadership discussions

Why

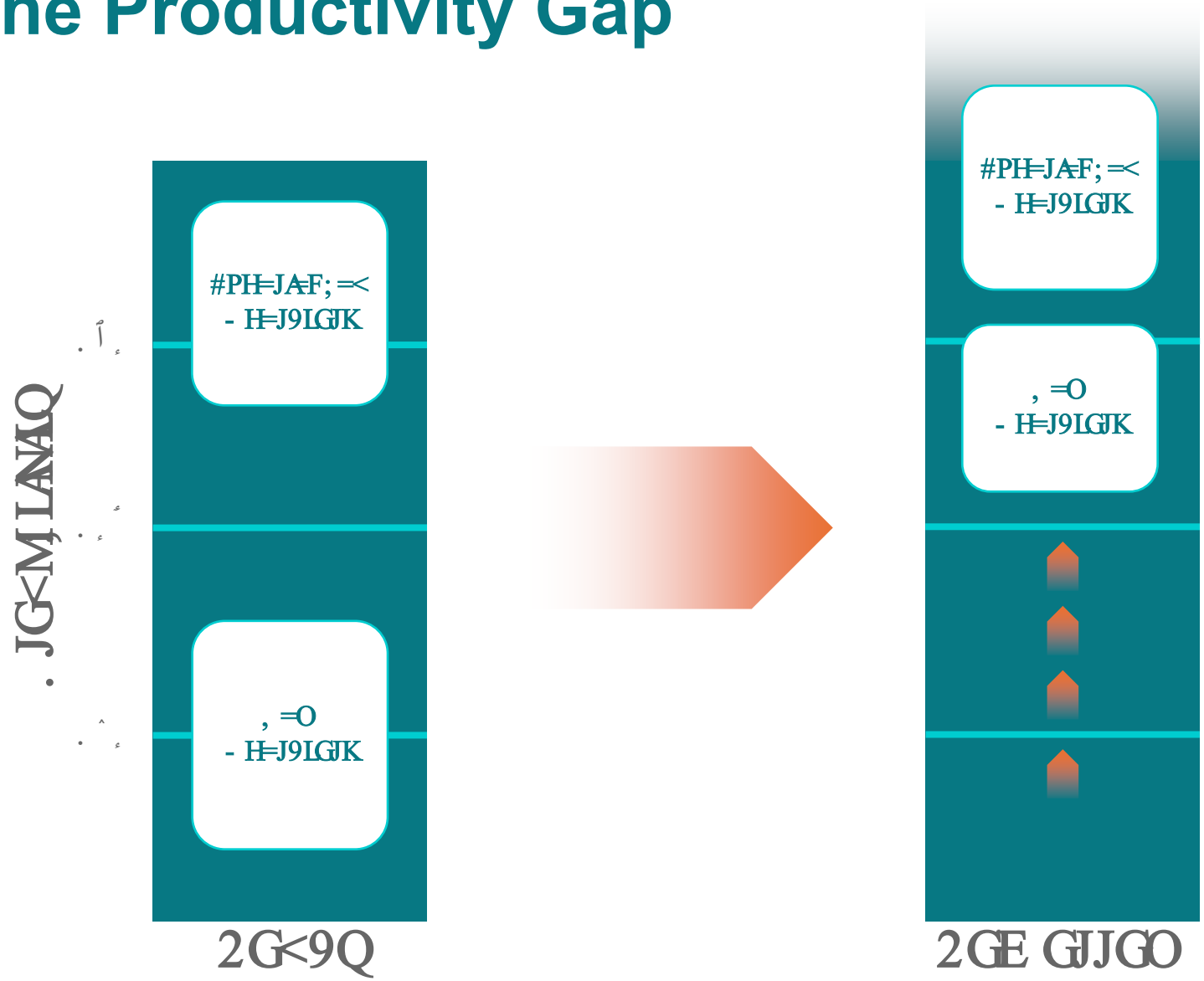
- See Industry 4.0 & AI-driven solutions in action

Learn

- Approaches and best practices to drive change management from the plant floor to the C-Suite

April 8th and 9th | Charlotte, NC

Bridging the Productivity Gap



Why Oden

$G; MK=< GF L@= $JGFL*ÆF=

- H=J9LGJKJ=; =ÆN= <QF9E Ą, J=; GE E =F<9LÆGFKÆF L@= E GE =FLخ

'E E =<ÆQL= Æ HJGN=E =FLK@9HH=F E Æ<ذK@Æ;خ

2MJFC=Q" 9L9 #F?ÆF=

" 9L9 <G=KFخL@9N=LG: = LÆ<QGJ GJ?9FÆR=<خ

" 9L9 >JGE 9DDKQKL=E KÆK MFÆÆ<خ; Dذ9F=<خ9F< KLJ=9E DÆF=<خ

2ÆE =ذLGذ49DM=

, GE GJ= LÆE =ذ 9F< J=KGMJ; =ذ; GFKME ÆF? HÆOGLKخ

" =HDOQE =FL<=DÆN=JKN9DM= OÆ@ÆF أ <9QKخ

Labeled, Contextualized Data as the Trusted Foundation

2ÆE =K=JA=K" 9L9 ÆKFGL=FGM?@

- 5 @=L@=J E =LJA; : =@9NAGJ ÆKFGJE 9DGJ FGLÆK; G<=H=F<=FLOÆ@GL@=J N9JA9: D=K9F< ; GFL=PLK9L=

'FL=?J9L=< ; GFL=PL>JGE GL@=J KQKL=E K ÆKHJGF= LGE ÆK9DÆFE =FL

- 0=I MÆ=E =FLLG9DÆF ; GFL=PLLGÆF; J=9K= 9; ; MJ9; Q

1LADE ÆKKÆF? ; GFL=PL: =; 9MK= FGL=N=JQL@ÆF? ÆK; 9HLMJ=<

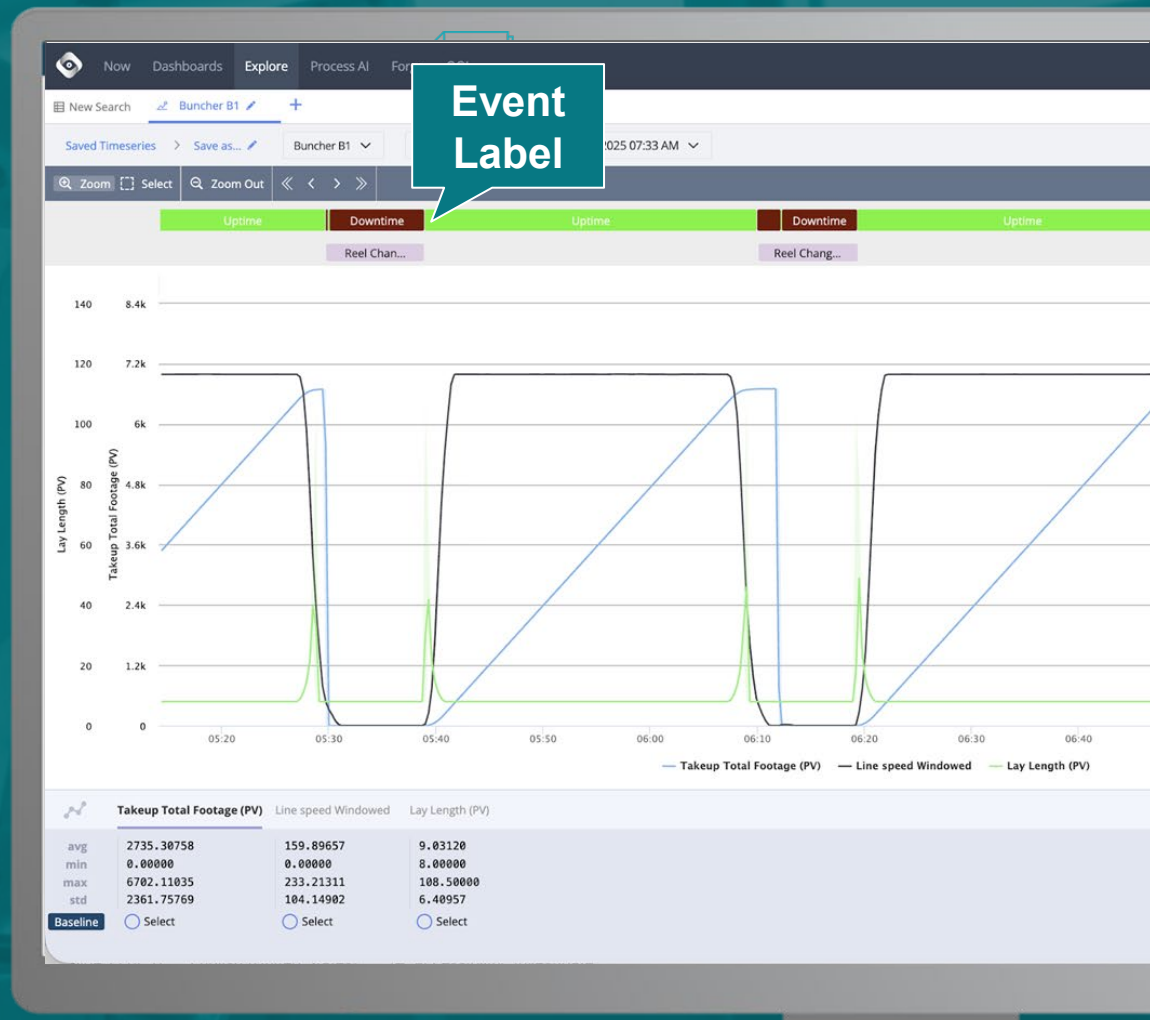
- " 9L9 *9: =DÆF? ÆK; JÆA9D9<<ÆGF LGÆE HJGN= ; GFL=PL9; ; MJ9; Q9F< @=DH- H=J9LGJK

Rules-Based

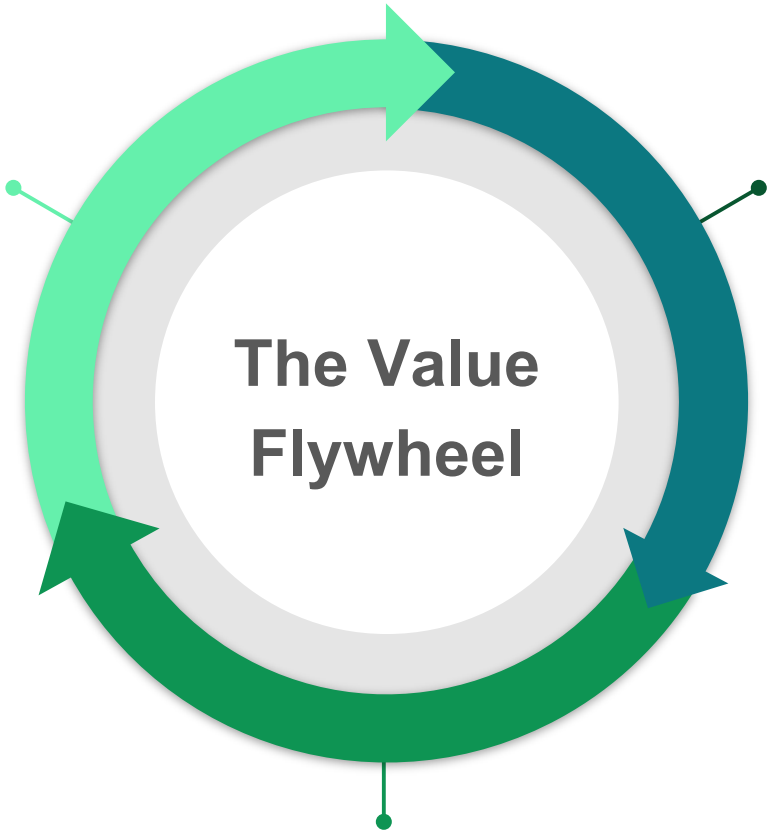
Simple & Complex Harmonic Patterns

Anomalies

Supervised Models



Give Data a Purpose, Then Start the Flywheel



INTEGRATION
Expand Dataset
Improve Data Quality
Upgrade Assets

USAGE
Realize ROI
Expand Operational Visibility
Involve More People

DISCOVERY
Uncover New Bottlenecks
Find New Use Cases
Expand Process Understanding