



AVEVAWORLD

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# Operations on-ramp to AI and advanced industrial analytics

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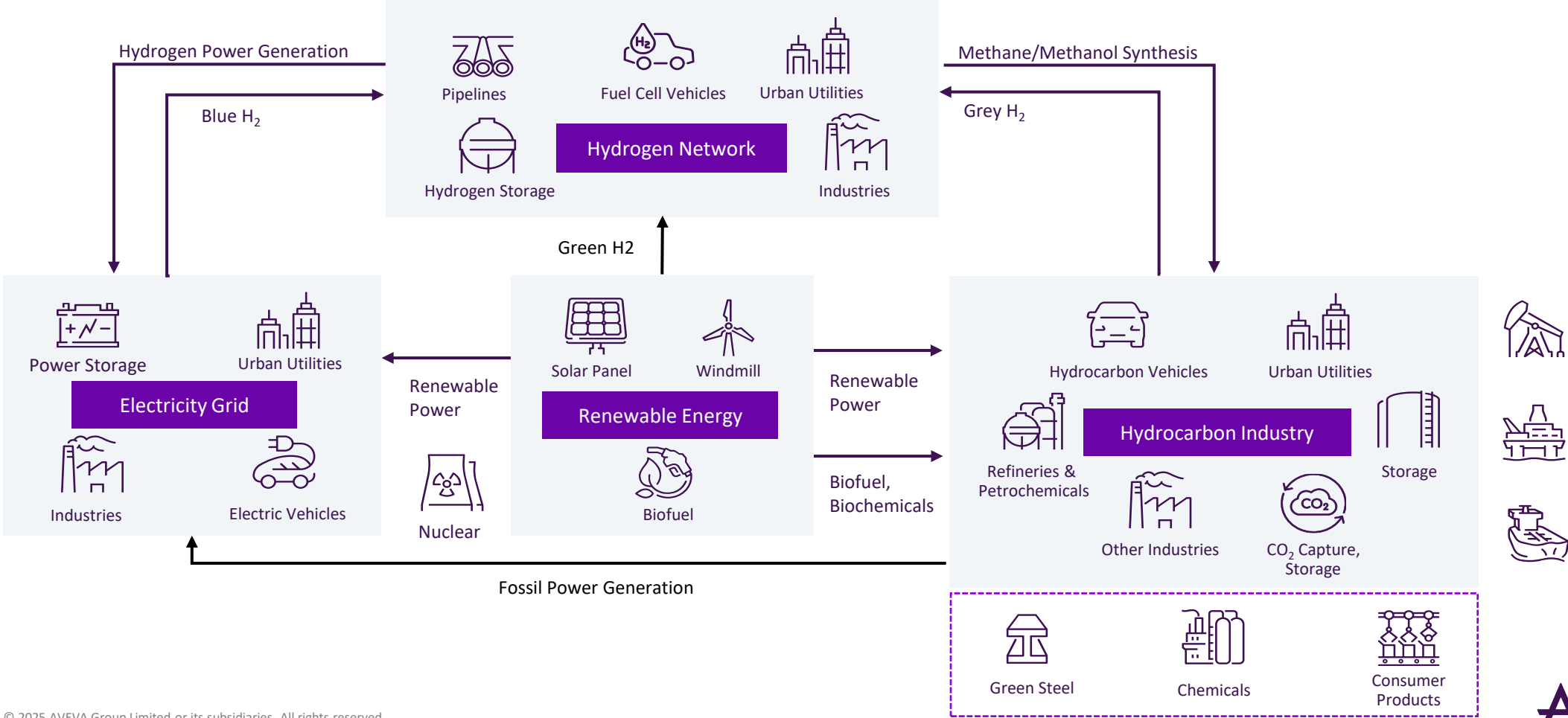
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# The industrial landscape is reshaping

“ Fewer than 10% of enterprises are advanced in their insights-driven capabilities. [Forrester](#) ”



# ...in this context, what can AI do for me?



1. Predictive maintenance



2. Process optimization



3. Energy management



4. Quality assurance



5. Supply chain optimization



6. Waste reduction and recycling



7. Automation and robotics



8. Data-driven decision-making

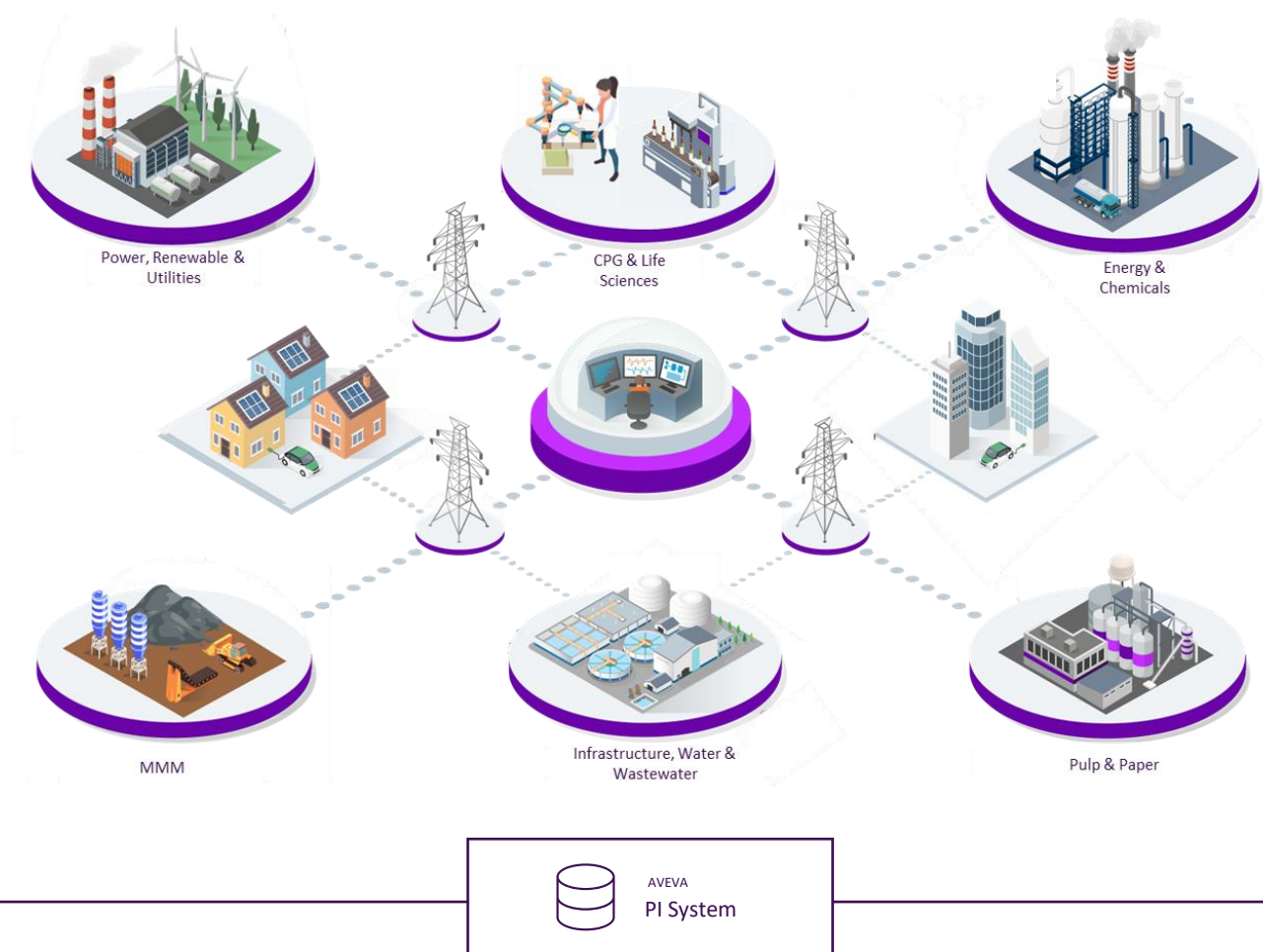


9. Process safety and risk management



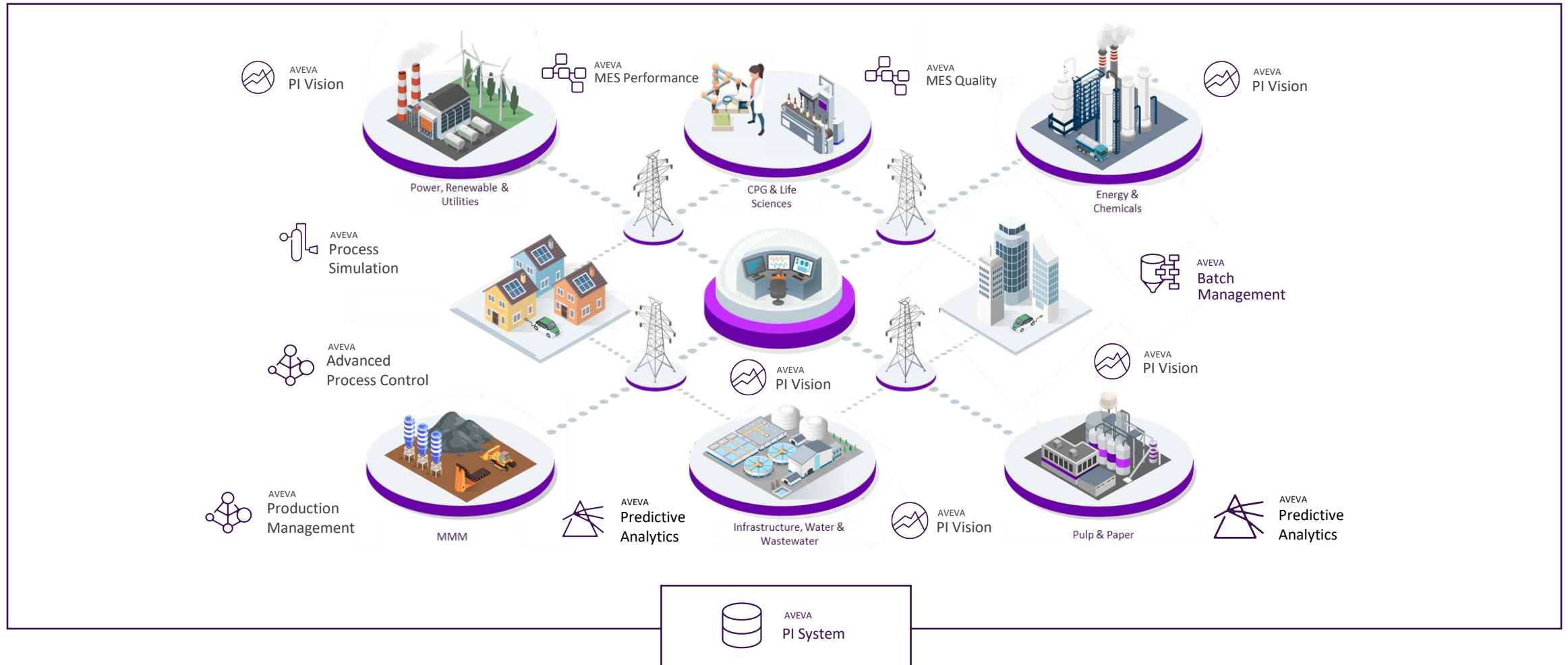
10. Environmental & regulatory compliance

# ... AVEVA PI System is the foundation for cutting-edge data intelligence...

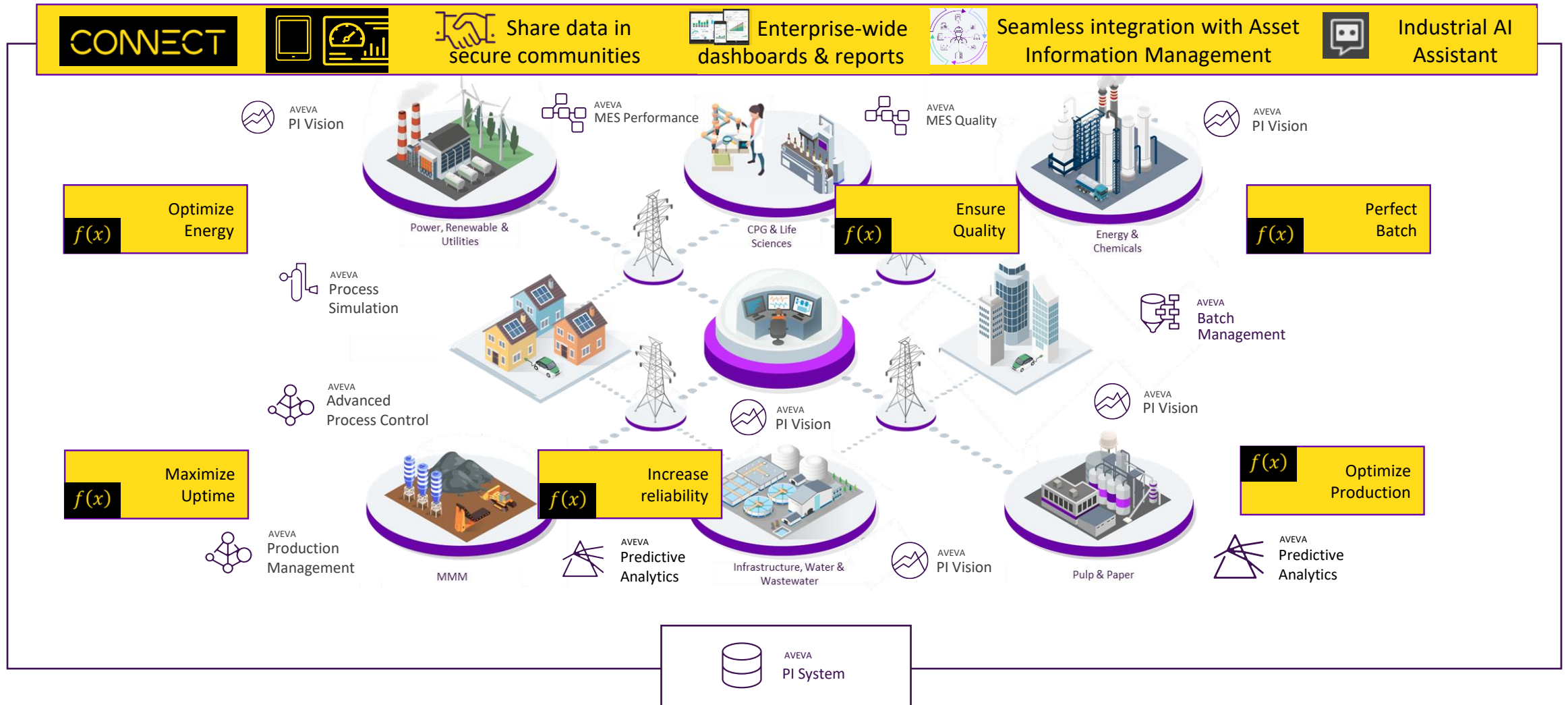




# ...to unlock additional value from new use cases...

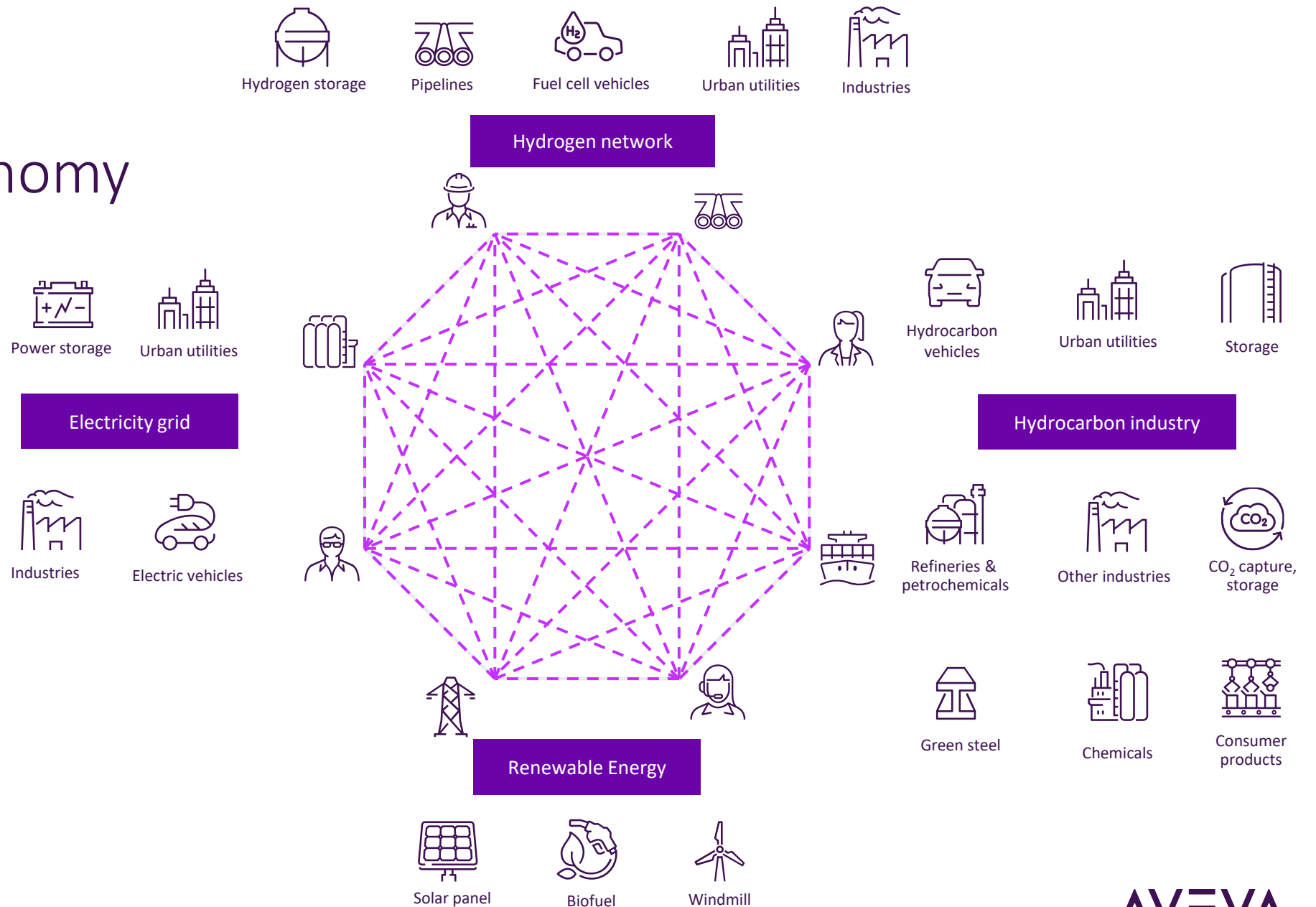


# ...and accelerate the power of AI on a seamless experience...





# ...enabling a connected industrial economy



# Asset-specific solutions driven by industrial information

Leverage AVEVA PI System to accelerate AI outcomes

AVEVA Predictive Analytics



Integration with 3<sup>rd</sup>-party solutions like Apollo Energy Analytics



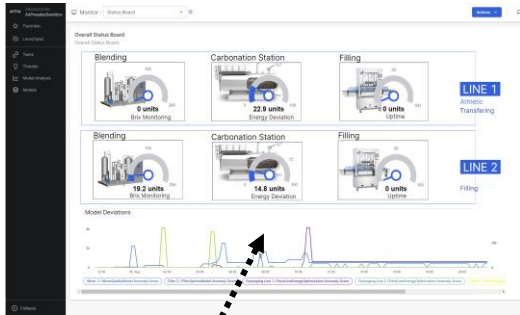
CONNECT including Industrial AI Assistant



AVEVA PI Vision dashboards for real-time operations



AVEVA Advanced Analytics on CONNECT platform

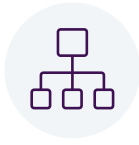


AVEVA PI System data

# ... AVEVA PI System is the operations on-ramp to Industrial Analytics...



Speak to your data sources



Organize and contextualize your data



Enable rapid AI model deployment



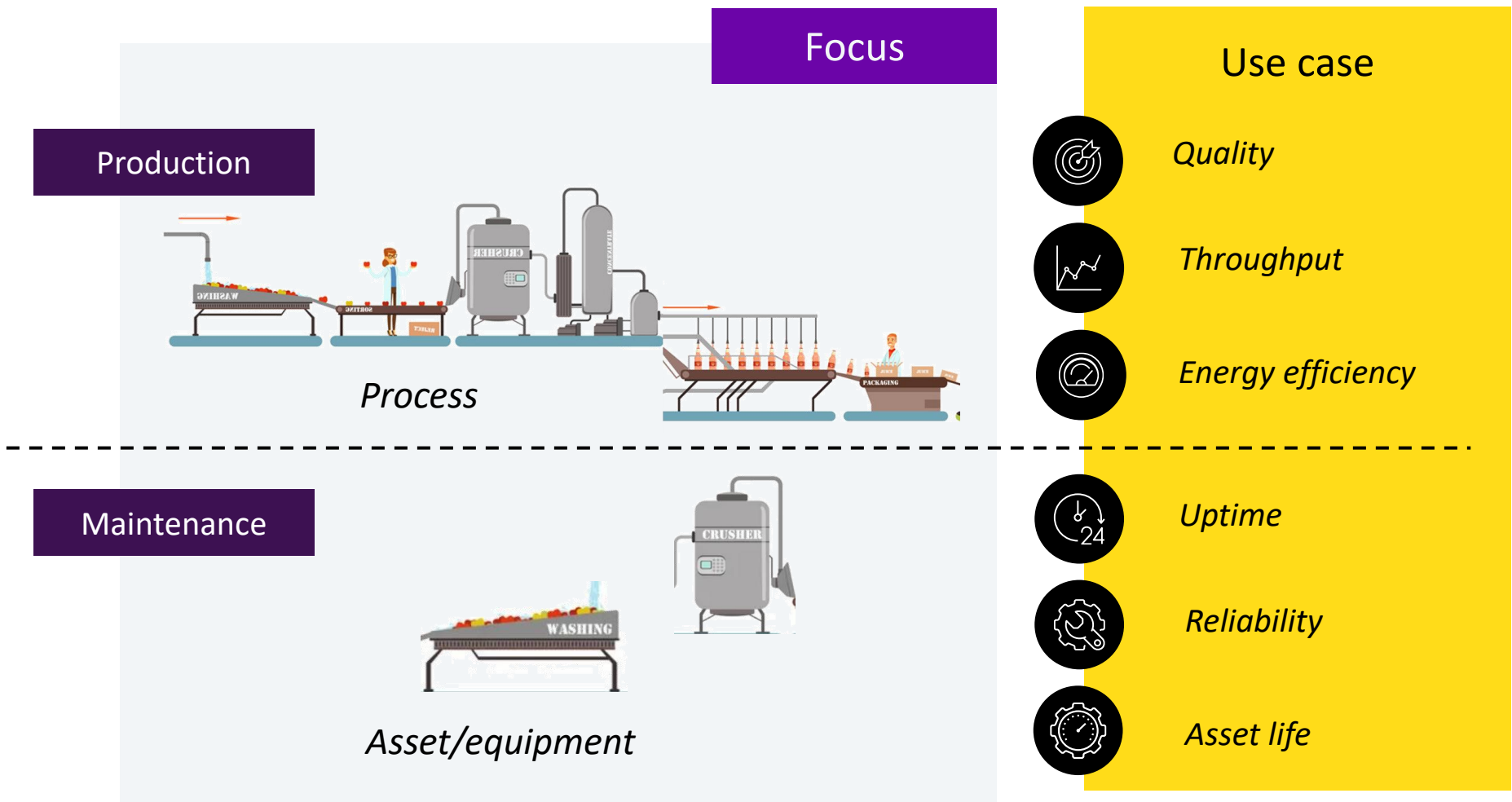
Visualize and alert on data-driven outcomes



Drive action



# AVEVA's AI solutions bring improvements across the enterprise







What were the signs  
this might happen?

How much will it cost  
your organization?

Take action before the  
next failure.

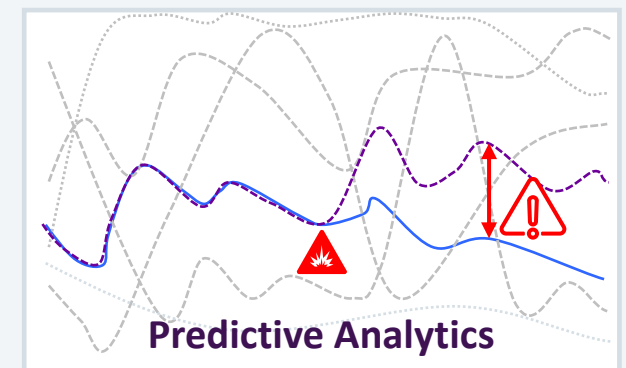
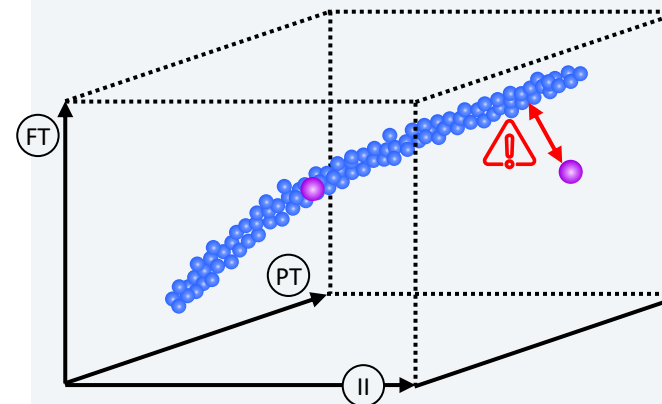
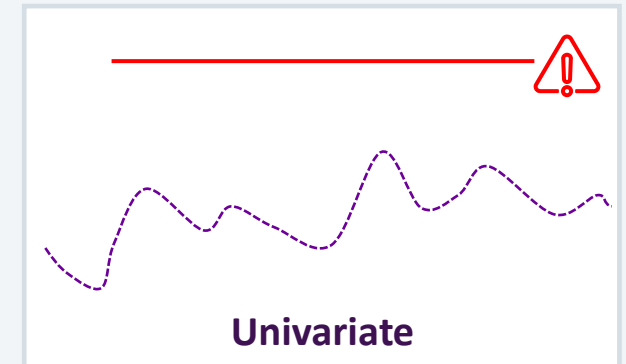
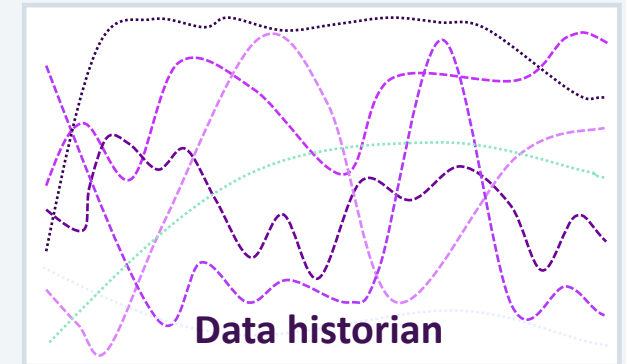
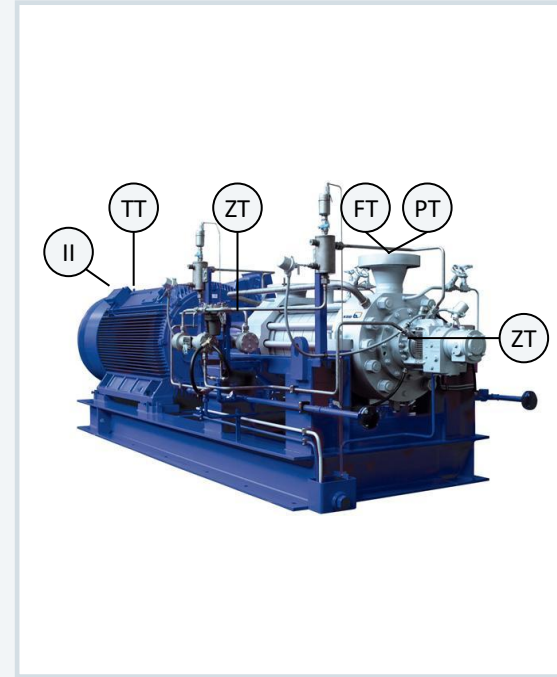


# Solution: AI-driven analytics and risk mitigation

## Predictive failure detection for business-critical equipment

- No code AI and machine learning
- Advanced alert and case management for knowledge capture and reporting
- Templates accelerate configuration, deployment and scale-up

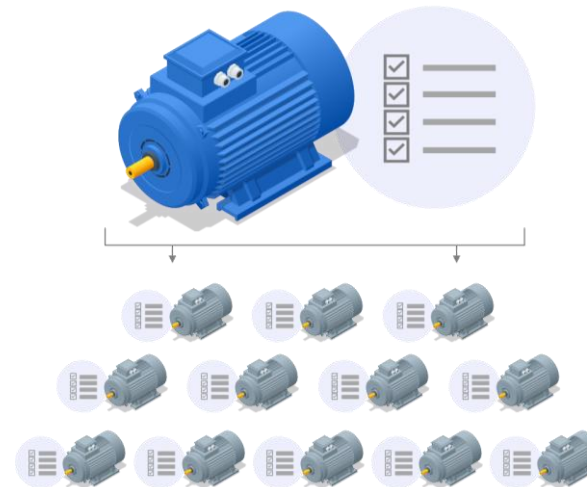
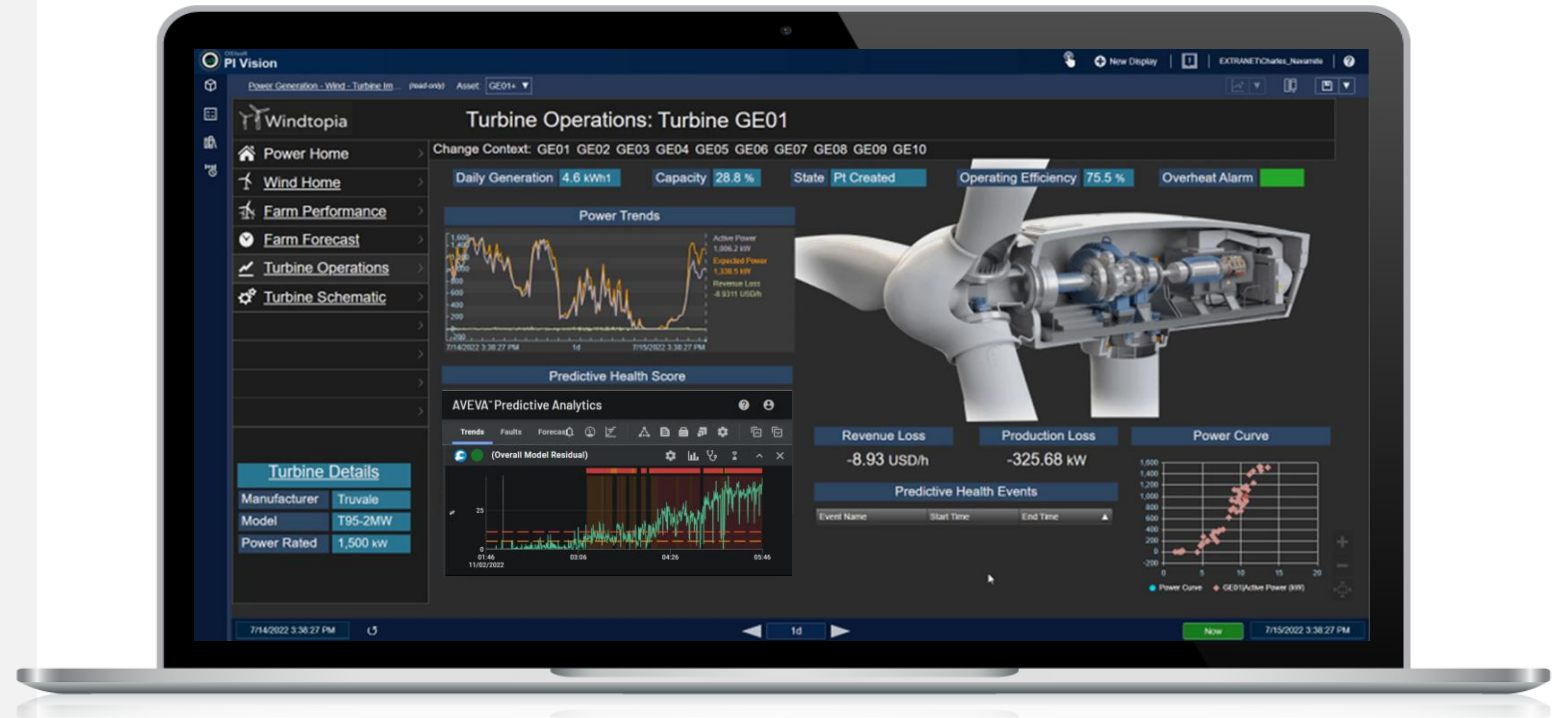
**It's the way you operationalize and scale AI for industrial operations**



**AVEVA**



# Deep integration to AVEVA PI System for contextualized insights





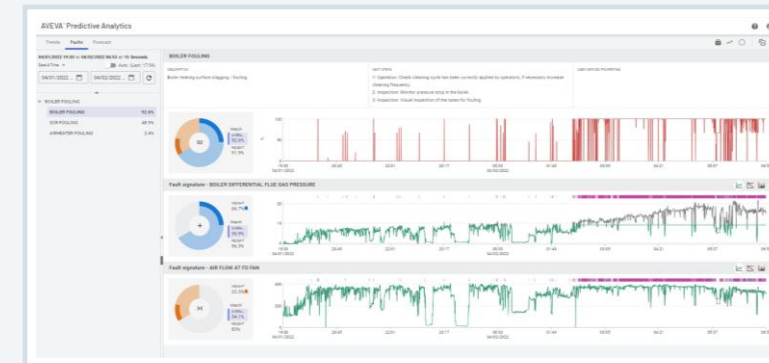
- Native AVEVA PI Server integration
  - PI Data Archive & PI Asset Framework
- Bulk model building
- Contextualised through AVEVA PI Vision



# Solution: AI-driven analytics and risk mitigation

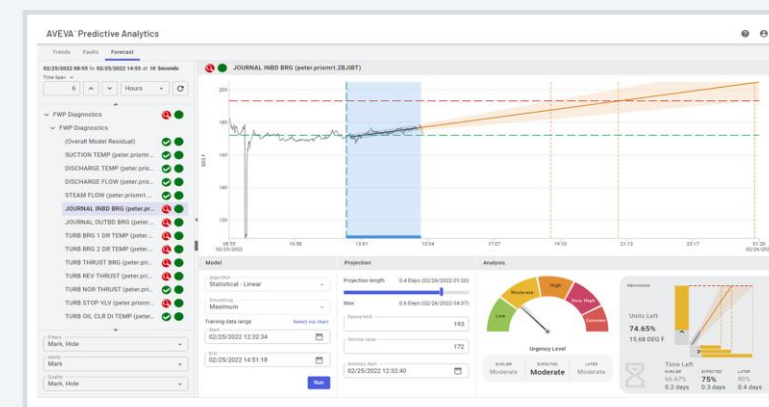
- Monitor health in real time – early identification of anomalies via anomaly index and drill-down to contributing signals
- Rank and diagnose faults based on anomaly deviation signature
- Obtain prescriptive guidance for remediation
- Forecast and track burndown of time until failure



-  Anomaly index
-  Sensor contributions

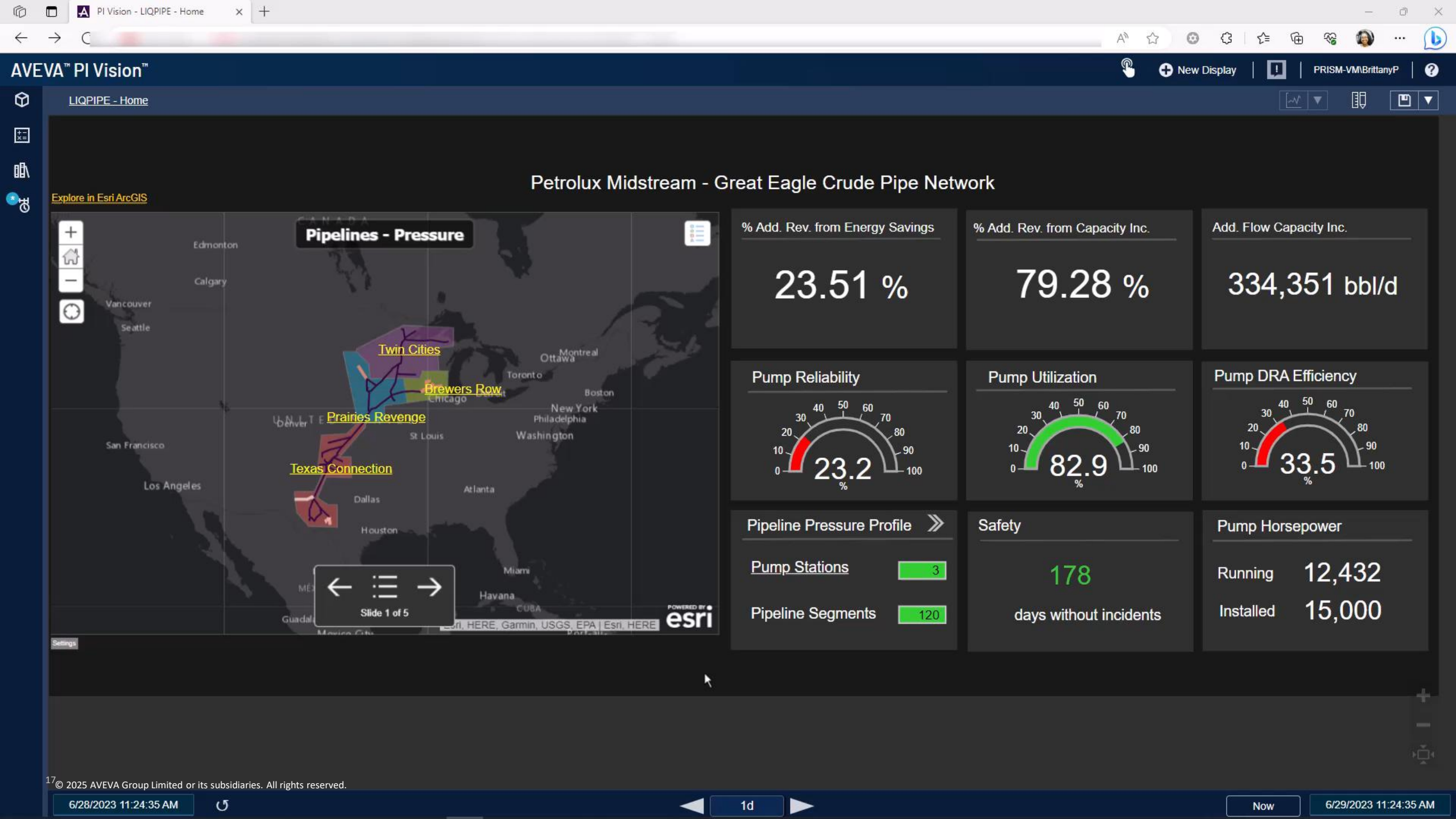


-  Fault diagnostics
-  Prescriptive actions

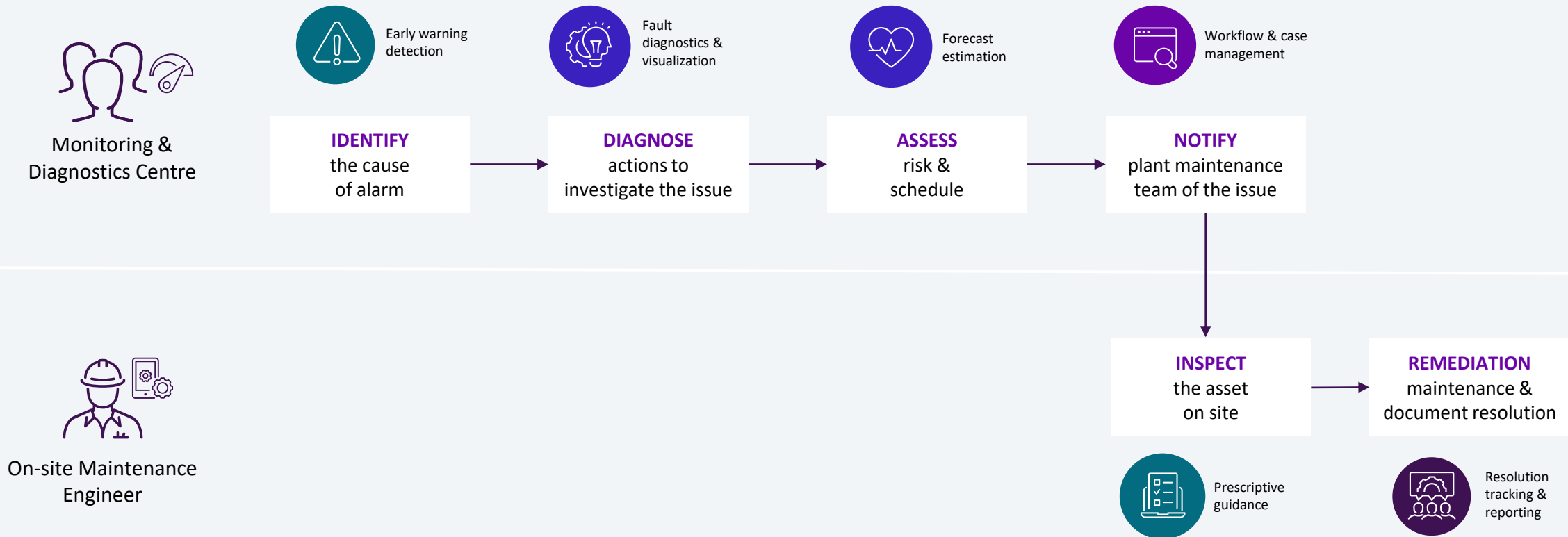


-  Forecast

-  Case management
-  First principles
-  Transient analysis
-  AVEVA PI System integration
-  Custom algorithms
-  Model Templates



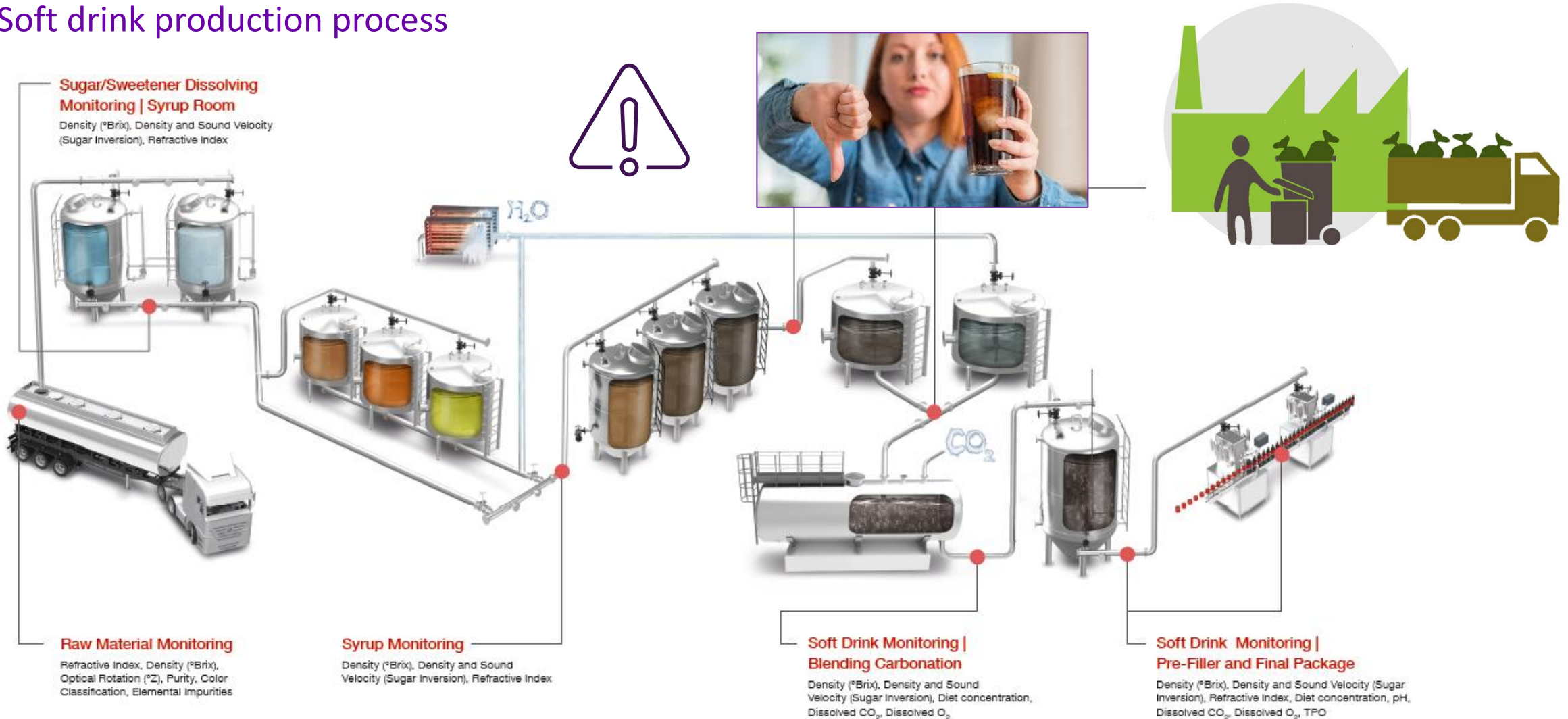
# Demonstration: AI guided predictive maintenance with PI System and Predictive Analytics





# What happens upon asset performance/reliability deviation?

## Soft drink production process







# Information must be delivered faster

**AVEVA**  
We'll take you there™

# AI-enabled optimizations for faster and smarter decisions



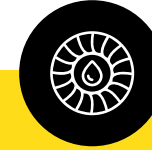
Increase  
productivity



Improve quality &  
compliance



Minimize environmental  
footprint



Waste and losses  
reduction

**Equipment  
optimization**

**Production  
management**

“Increased production by  
**33%**. Decreased downtime  
by more than **50%**”

**Production  
execution**

**Compliance**

“Product consistency,  
quality and delivery  
improved by **125%**.”

**Energy  
management**

**Transparency and  
traceability**

“**9%** reduction  
of energy usage.”

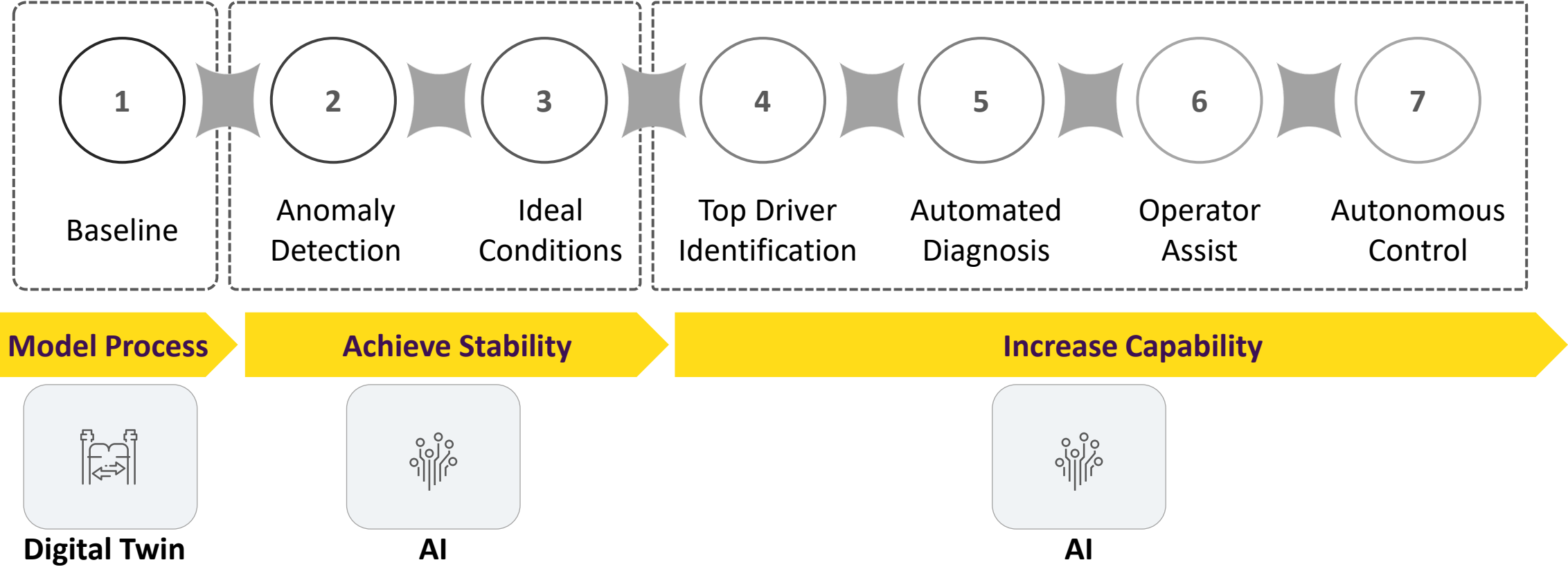
**Increase asset  
performance**

**Reduce operational and  
environmental risk**

“**Improved**  
waste reduction.”

# Digital Twin + AI transform your supply chain

The journey towards autonomous operations



Delete Archive Report Reply Reply all Forward Read / Unread Categorize Flag / Unflag Assign policy Print

Anomaly Score detected



no-reply@twinthread.com

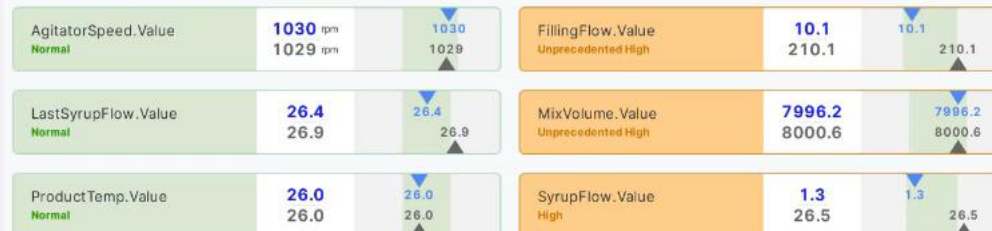
To: Charles Navarrete



Mon 8/21/2023 9:19 AM

**CAUTION - This message originated outside AVEVA**

Anomaly Score detected on Mixer1Demo.









# Demonstration:

# AI driven predictive quality monitoring with Advanced Analytics



Operations team

**NOTIFY**  
on predictive quality  
issue on Mixer

**IDENTIFY &  
INVESTIGATE**  
the cause of predictive  
sugar quality deviation

**COMMUNICATE**  
on recommendations  
of process set-points

**UPDATE**  
production process or  
scrap



Data in  
context



Operator

**TAKE ACTION**  
on appropriate  
process adjustment



Workforce  
connectivity

# Customer achievement with AVEVA analytics

Typical deployments enjoy 10x ROI on subscription investment

↑ 12%  
Improvement in line  
performance

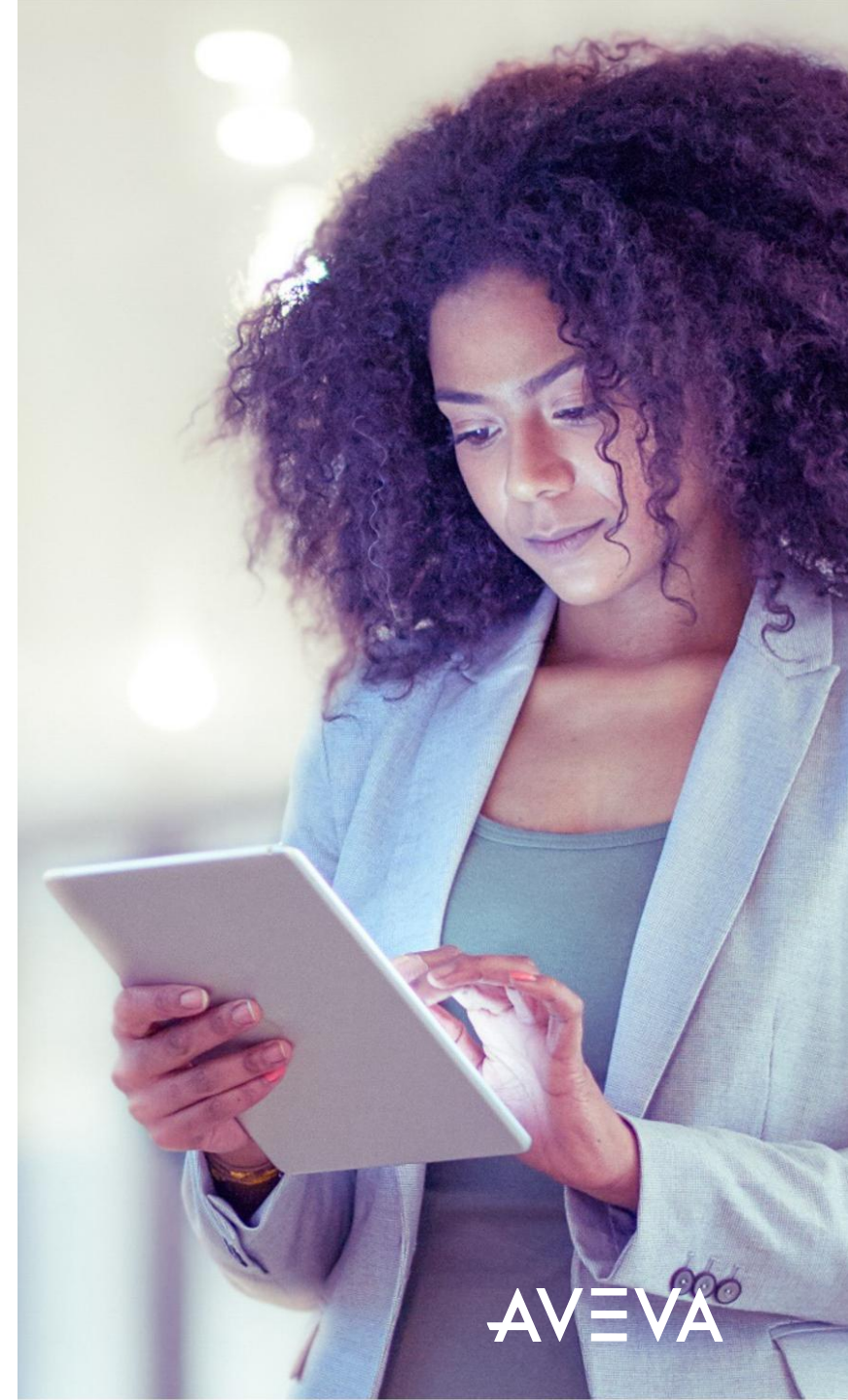
↑ 100%  
First-pass quality

↑ 30%  
Reduction in  
maintenance costs

↓ 4%  
Reduction in  
energy costs

↓ 90%  
Reduction in hardware,  
development, and  
consulting costs

↓ 25%  
Reduction in in  
unplanned downtime



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# Is it only my challenge? Absolutely not. It is a journey.



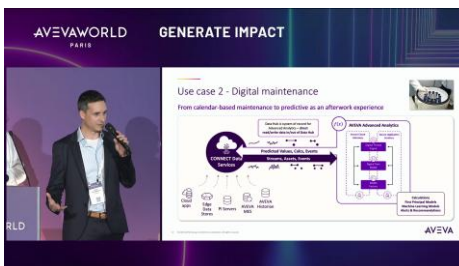
**2024 - AVEVA World – Paris**  
[ACCIONA: The great collaboration](#)



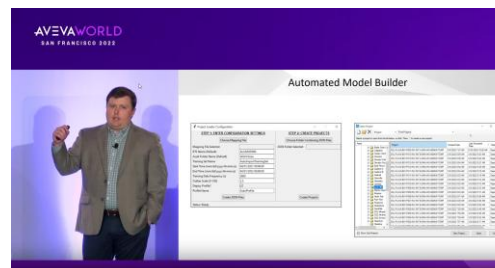
**2023 - AVEVA World San Francisco**  
[ASARCO: Digital transformation at Ray Mine using AVEVA PI System™ and AVEVA Predictive Analytics](#)



**2022 - AVEVA PI World Amsterdam - Chemicals**  
[How SCG Chemicals Digital Reliability Platform harnesses AI-infused APM to prevent unplanned downtime](#)



**2024 - AVEVA World - Paris**  
[CONNECT data services for a data analytics platform at F. Hoffmann-La Roche](#)



**2022 - AVEVA World San Francisco**  
[Renewables monitoring with the PI System and Predictive Analytics at Southern Company](#)



**2022 - AVEVA World San Francisco - Industrial AI**  
[PETRONAS Carigali Iraq & PETRONAS PROTEAN: Enabling digital transformation for operational excellence](#)



# Conclusions

“Operationalizing artificial intelligence at scale is the difference between success and failure.”

Start small  
and think big



Keep in mind your final  
goal and vision

Preparing your **data** for accelerating  
**successful scale deployment** starts  
with how you handle them.

Start digital transformation with your  
**future** in mind.

Prioritize PI system use  
cases for quick ROI



Drive quick time  
to value

for equipment & processes having  
easy to understand patterns through  
**CBM, OEE and KPIs visibility**

Leverage calculations easy to  
configure and deploy at scale to start  
**reducing operational & maintenance  
expenditure**

Industrial analytics  
accelerate reliability  
and sustainability



Artificial  
intelligence

is not just a trend for technology's  
sake, it can help you **solve complex  
problems** that are not easy to identify  
by knowing behaviours.

Keep in mind: **easy to use tools** are  
those your experts will adopt

Your data can drive  
efficient and agile work



Close the asset  
strategy loop

An optimized asset strategy  
enhanced by **AI** intelligence should  
also be **actionable**.

Connecting your data to **proven  
remediations** will empower efficient  
and agile **connected workers** with  
insightful information



# Questions?

Please wait for the microphone.  
State your name and company.



# Thank you!

# Please remember to...

Navigate to this session in the mobile app to complete the survey.



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AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

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