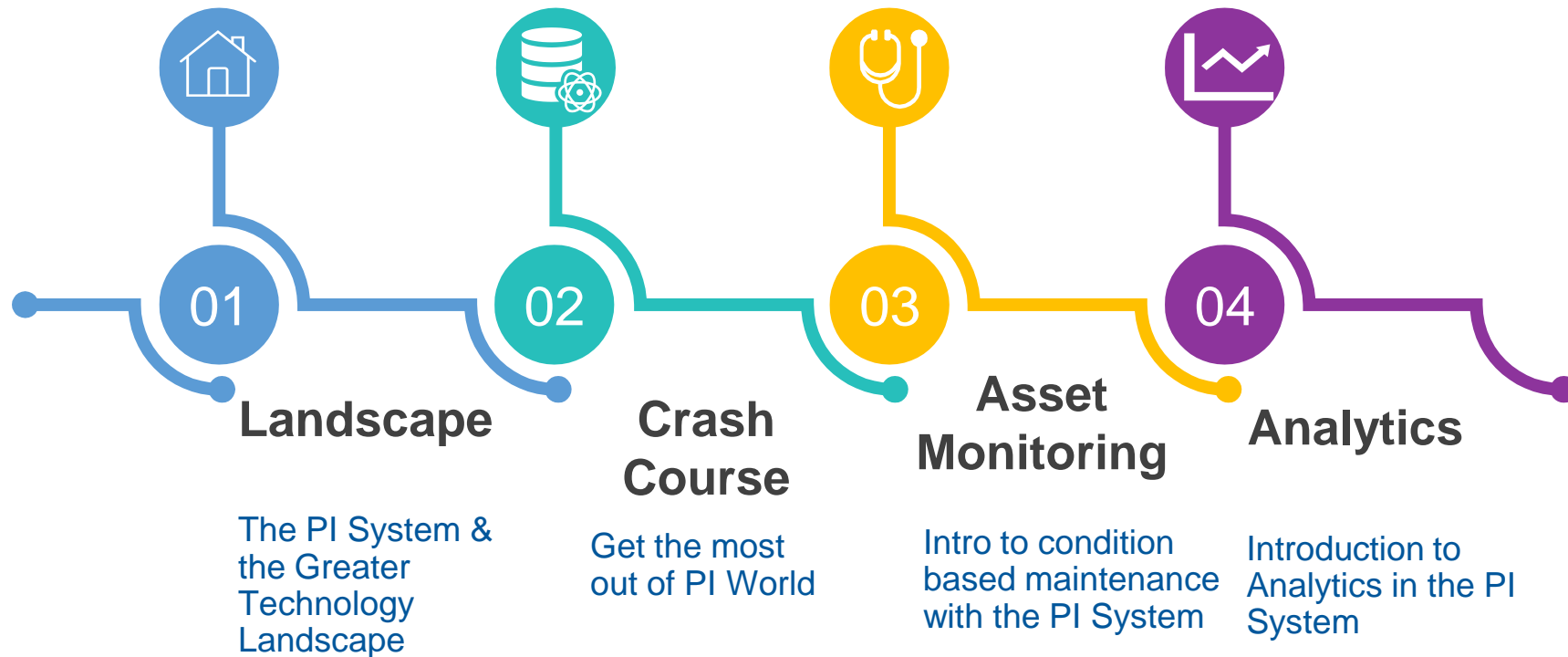


Introduction to Asset Monitoring and Condition-based Maintenance with the PI System

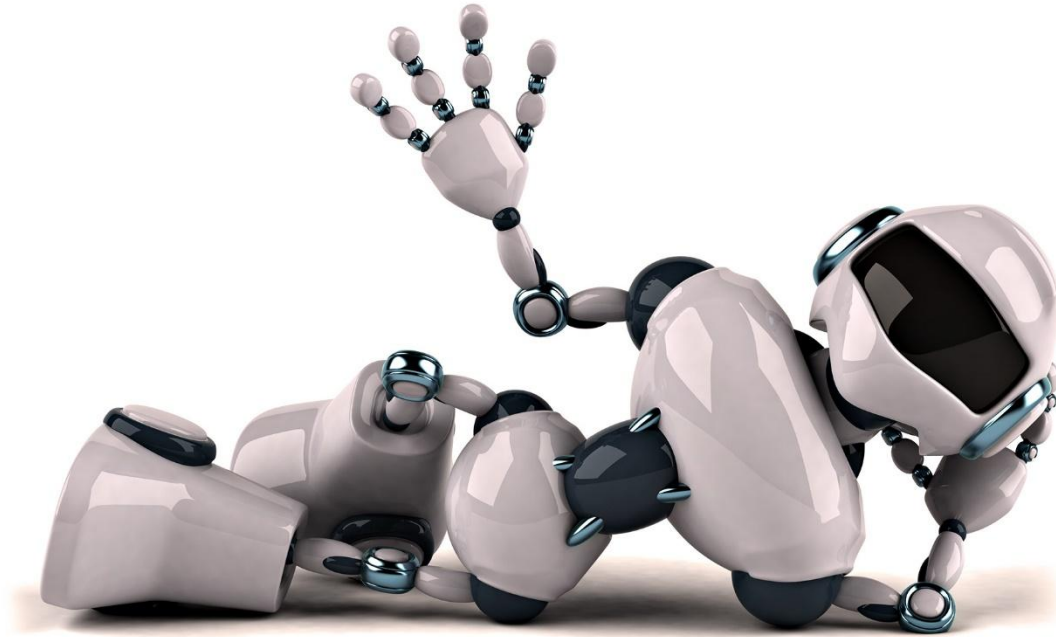
Jeremy Korman – Product Marketing Manager



Where are we in our PI Basics Journey



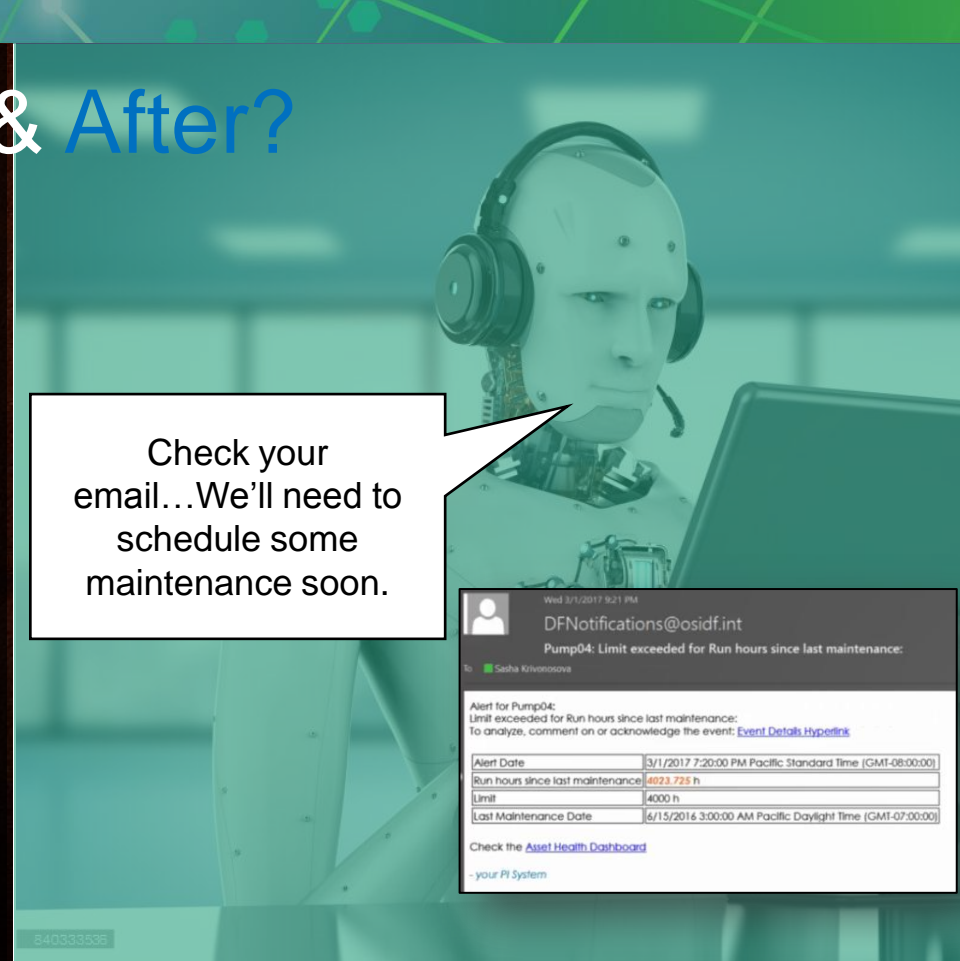
Put your robot to use



Before & After?



Pump #3 is down!
Hotshot a part out
here!



Check your
email... We'll need to
schedule some
maintenance soon.

Wed 3/1/2017 9:21 PM
DFNotifications@osidf.int
Pump04: Limit exceeded for Run hours since last maintenance:

To: Sashia Kilianova

Alert for Pump04:
Limit exceeded for Run hours since last maintenance:
To analyze, comment on or acknowledge the event: [Event Details Hyperlink](#)

Alert Date	3/1/2017 7:20:00 PM Pacific Standard Time (GMT-08:00:00)
Run hours since last maintenance	4023.725 h
Limit	4000 h
Last Maintenance Date	6/15/2016 3:00:00 AM Pacific Daylight Time (GMT-07:00:00)

Check the [Asset Health Dashboard](#)
- your PI System

Sections We'll Cover



1) Maintenance Options



2) A Framework for CBM



3) Additional Resources

Maintenance Options

What are our maintenance options?

Reactive

"Break-Fix"
Run to failure



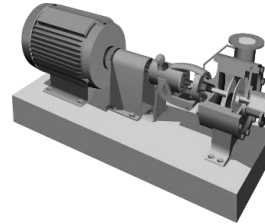
Preventative

Calendar-based



Condition Based

Repair based on insight



Predictive

Advanced Pattern
Recognition



CBM Is the Goldilocks Zone

Reactive

“Break-Fix”
Run to failure



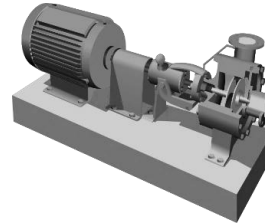
Preventative

Calendar-based



Condition Based

Repair based on insight

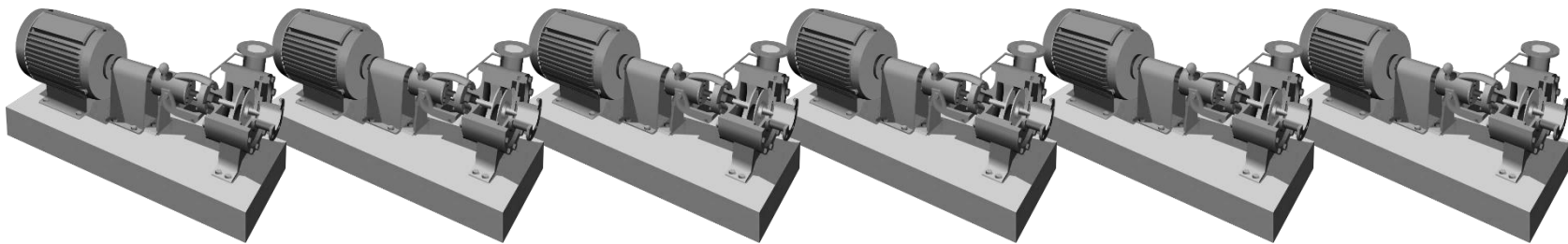


Predictive



A Framework for CBM

Are all of my pumps healthy today?



5 Steps of CBM

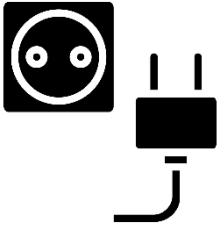
Connect
Collect & Store

Assign Context

Execute
Condition Logic

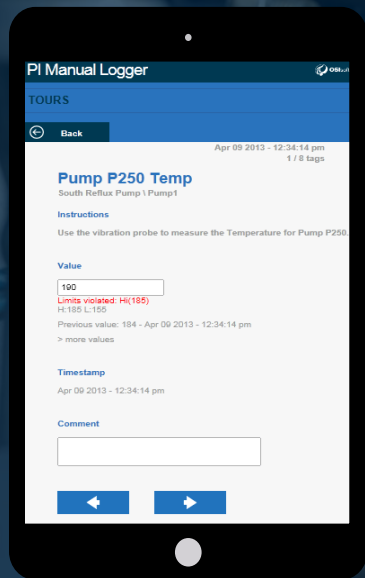
Alert and Notify

Visualize



Options to add to data set:

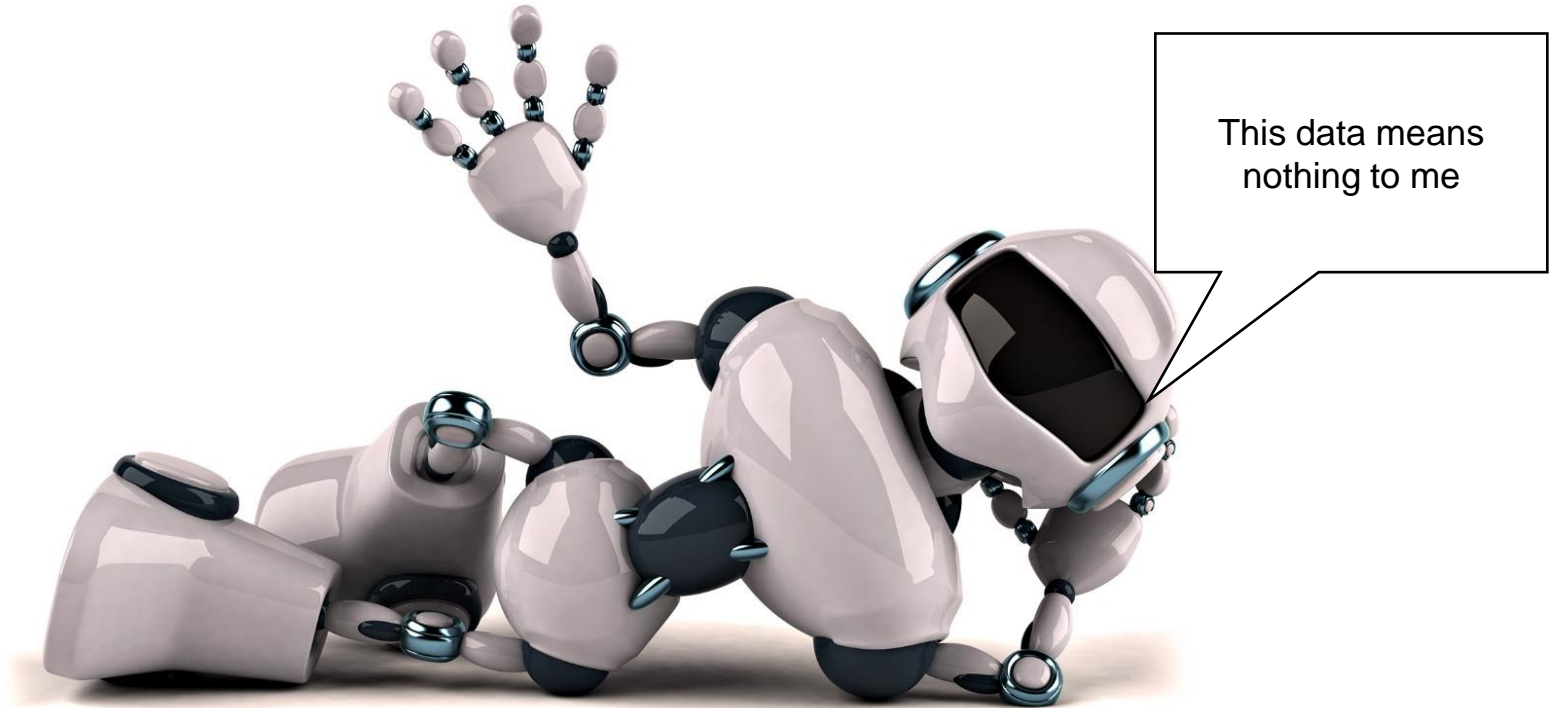
- PI Interfaces & PI Connectors
- PI Manual Logger



The screenshot shows the 'PI Manual Logger' app on a tablet. The interface includes a 'TOURS' section with a 'Back' button. The main entry is for 'Pump P250 Temp' at 'South Reflux Pump 1 Pump1'. It provides instructions to use a vibration probe to measure the temperature. A 'Value' input field contains '100', with a red warning 'Limits violated: H:(185)' and 'H:185 L:150'. It also shows the 'Previous value: 184 - Apr 09 2013 - 12:34:14 pm' and a link to '> more values'. A 'Timestamp' field shows 'Apr 09 2013 - 12:34:14 pm'. At the bottom, there is a 'Comment' text area and two navigation arrows.



Robot Status Check



Connect
Collect & Store

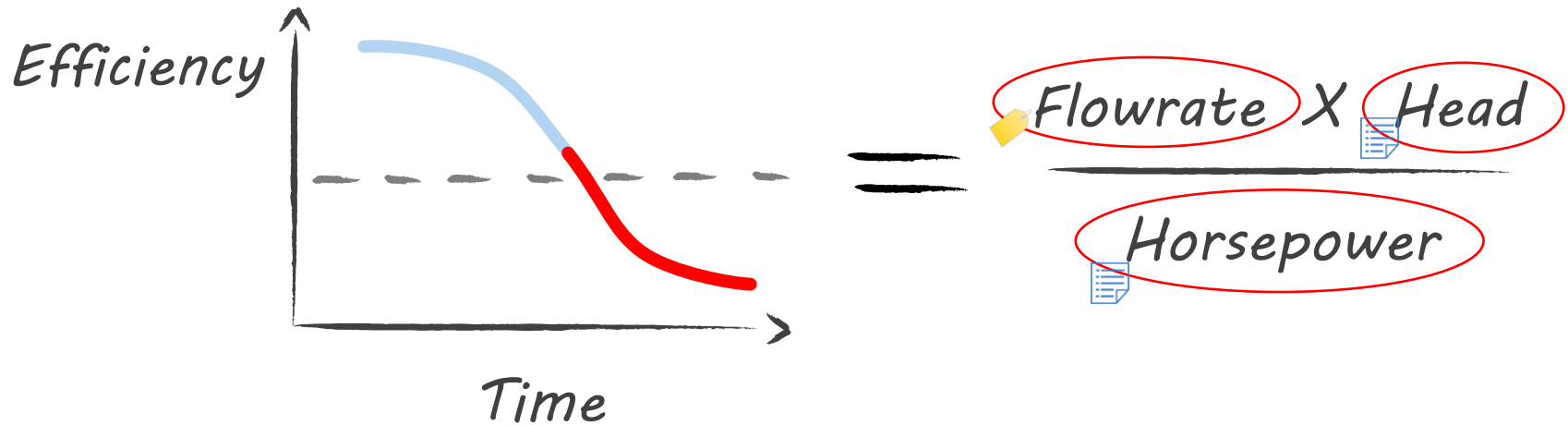
Assign Context

Execute
Condition Logic

Alert and Notify

Visualize

Building a Digital Model – Start Small





OPERATIONS

Temperature
Pressure
Voltage
...



UNIFIED DATA

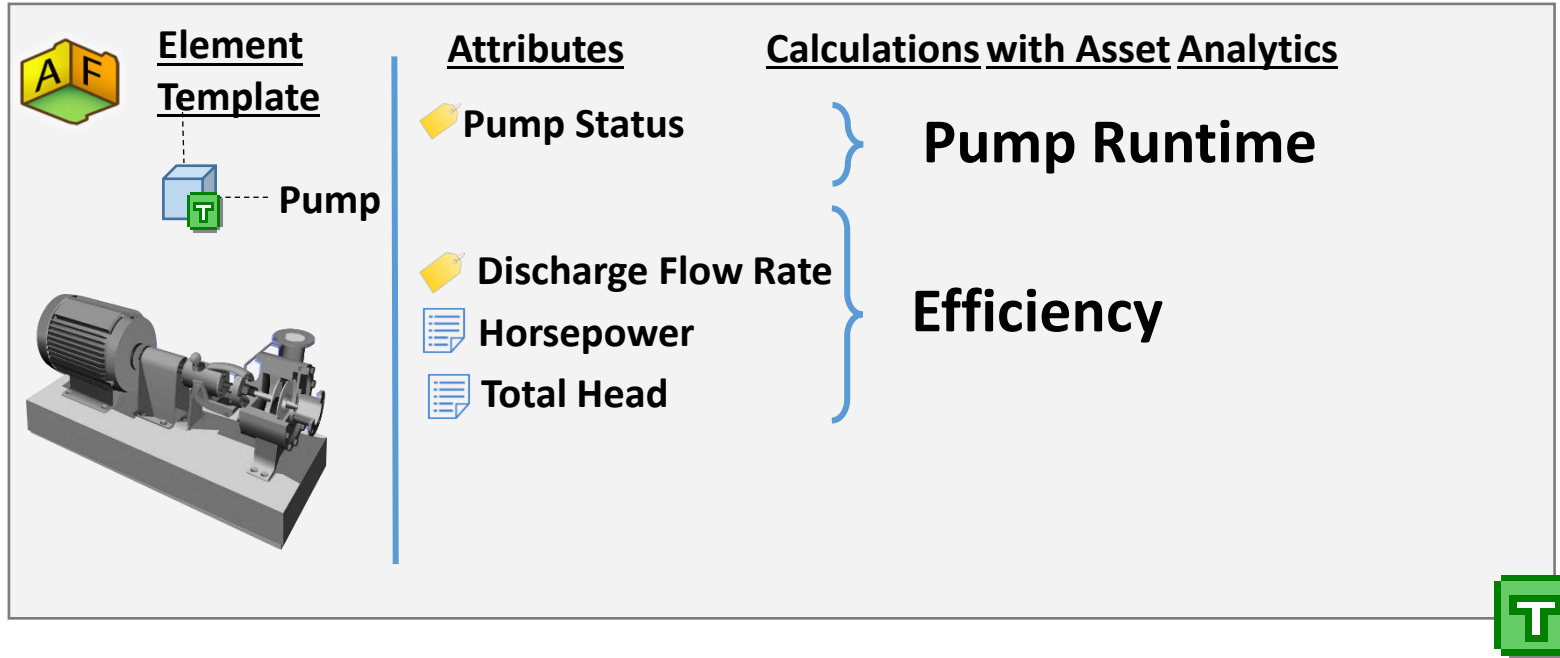
Smarter operation
Improved KPIs
In-context decisions



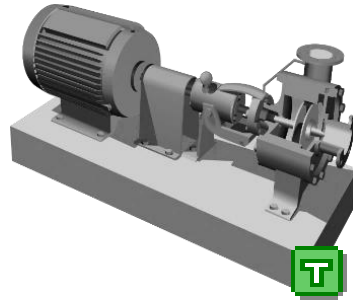
MAINTENANCE

Date of Last Service
Motor Horse Power
Vibration Analysis
...

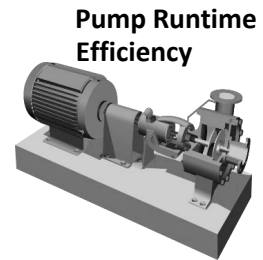
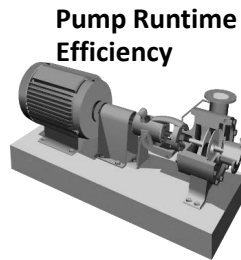
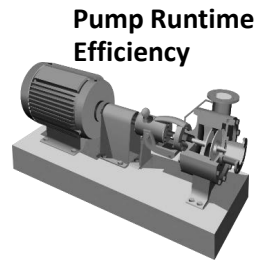
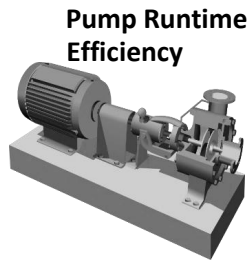
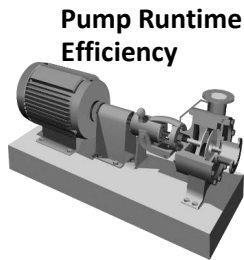
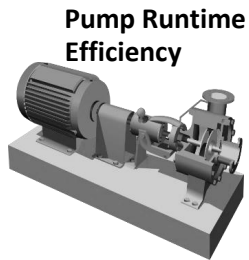
Build a Template



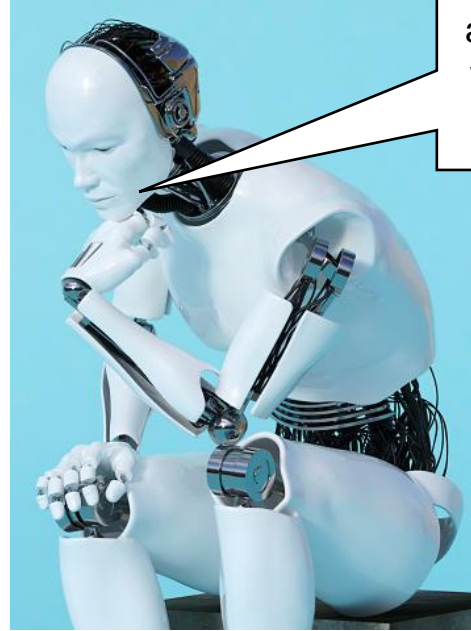
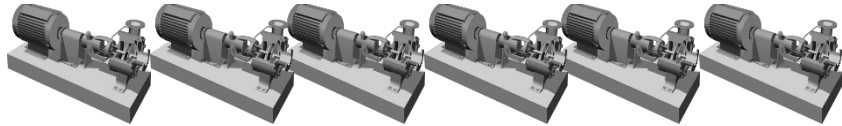
Reuse Your Template



Pump Runtime
Efficiency 

Robot Status Check



I see a bunch of assets. What do you want me to do about it?

Connect
Collect & Store

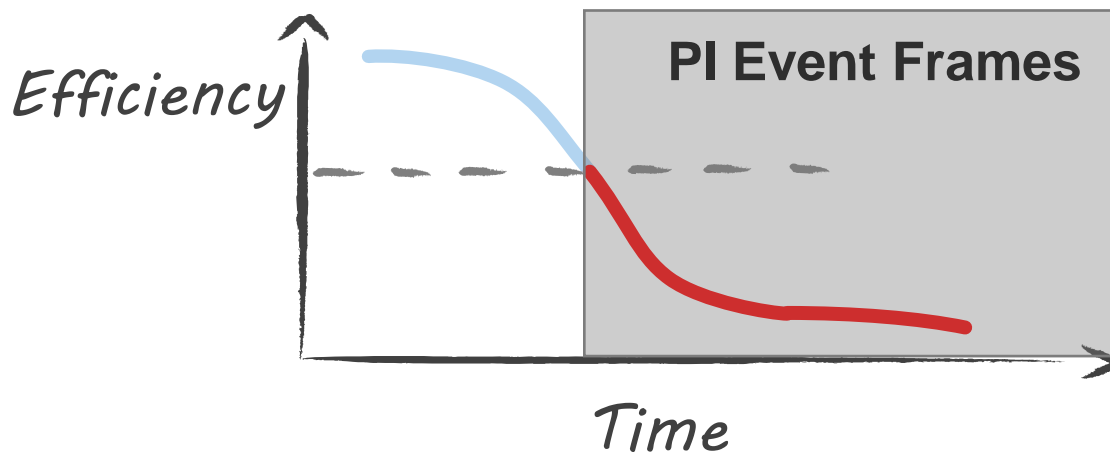
Assign Context

Execute
Condition Logic

Alert and Notify







Visualize

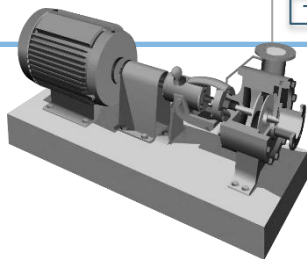
Pump
Efficiency < 75%




Writing Logic is Simple

X

<u>Elements</u>	<u>Attributes</u>	<u>Analytics</u>
 Pump01	 Pump Status  Flow Rate  Horsepower  Total Head 	Run Hours Pump Efficiency



 Maintenance event

Template: Pump maintenance ▼

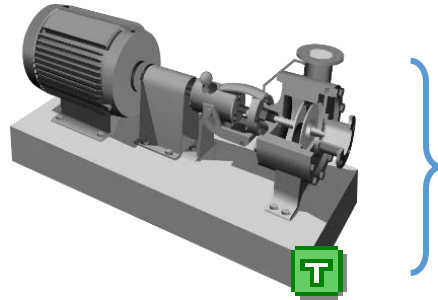
Expression

`'Pump Efficiency' < '75'`

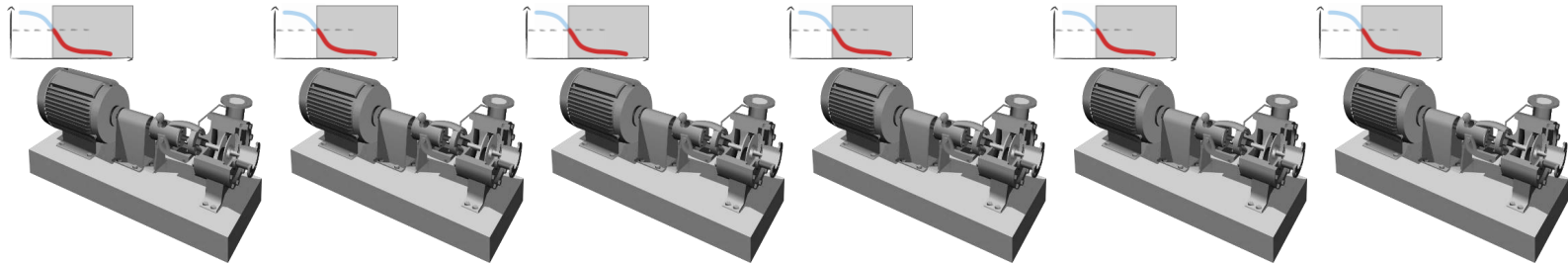
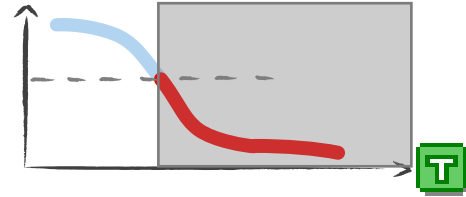
True for

`10 min`

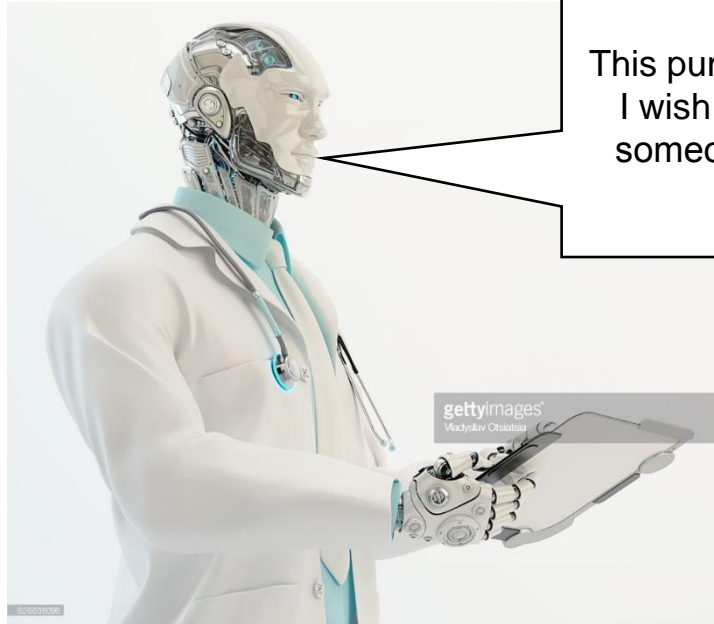
Reuse Your Template



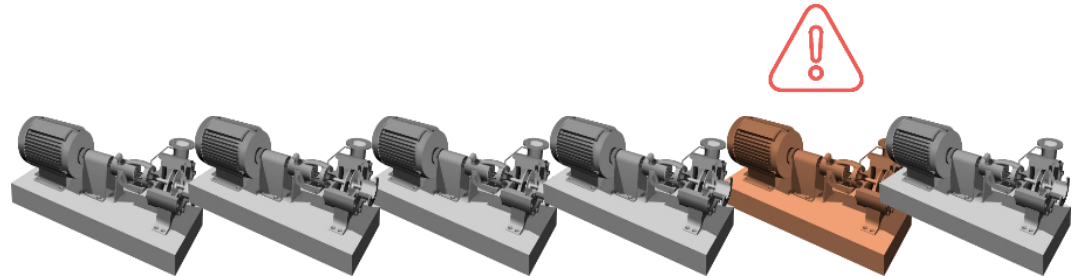
Low Efficiency Event Frame



Robot Status Check



This pump needs help.
I wish I could tell
someone about it...



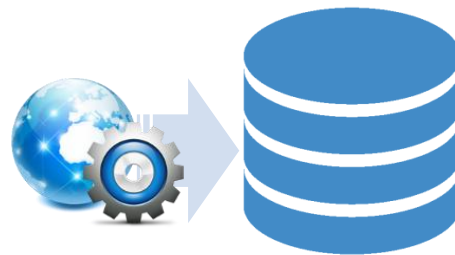
Connect
Collect & Store

Assign Context

Execute
Condition Logic

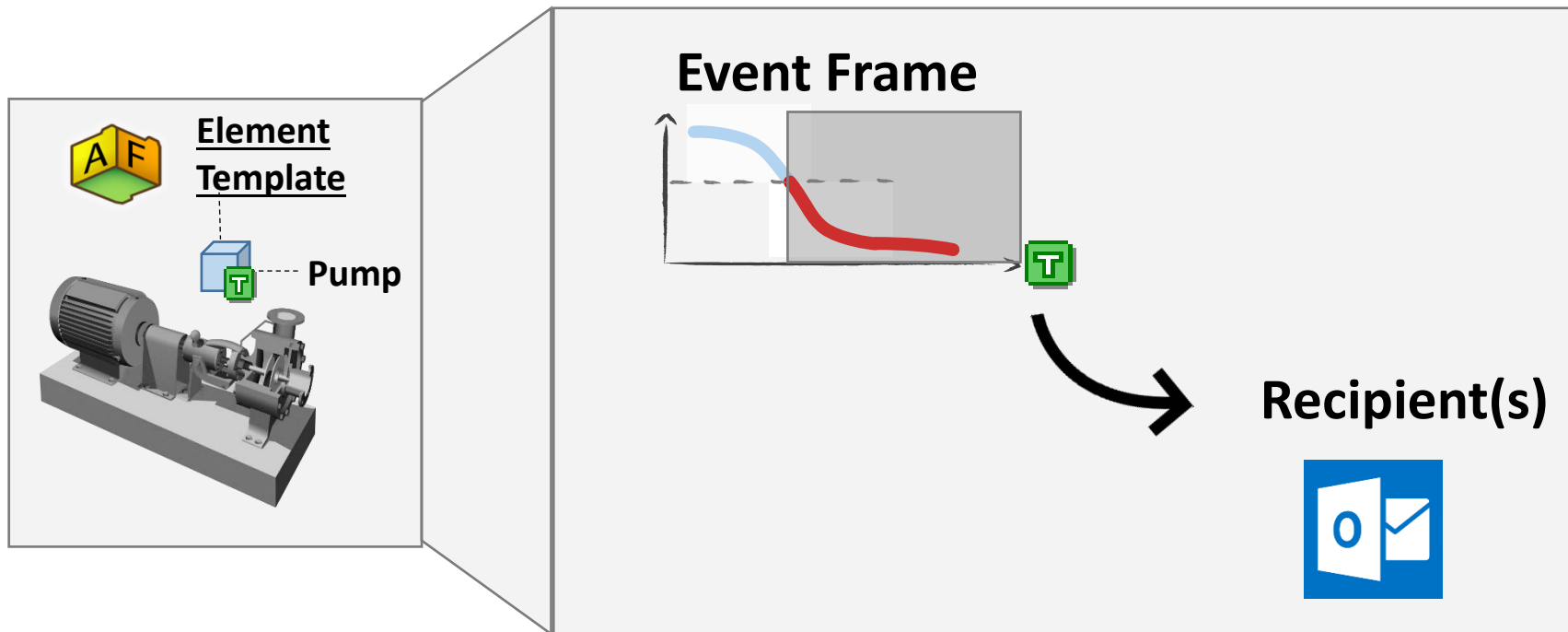
Alert and Notify

Visualize

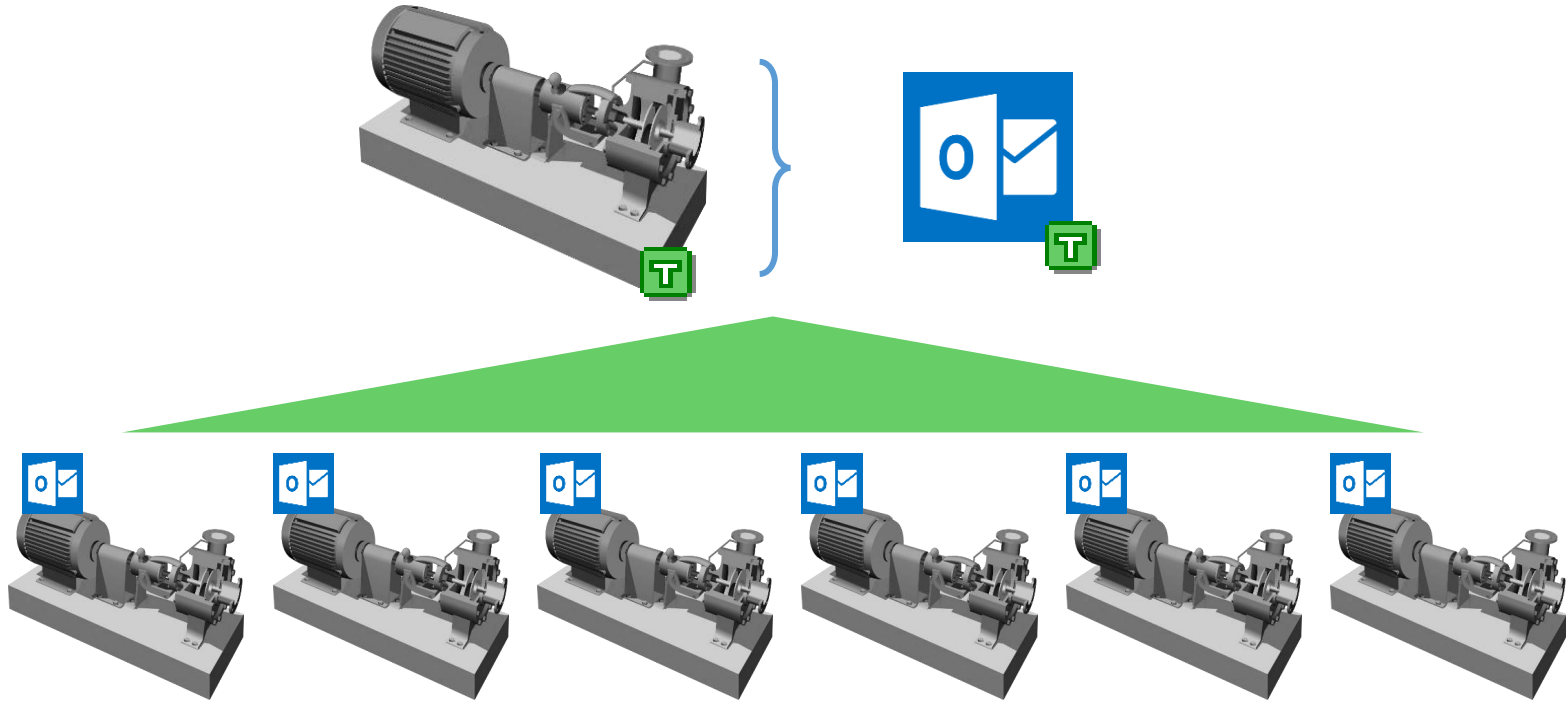


Alert and Notify

PI Notification

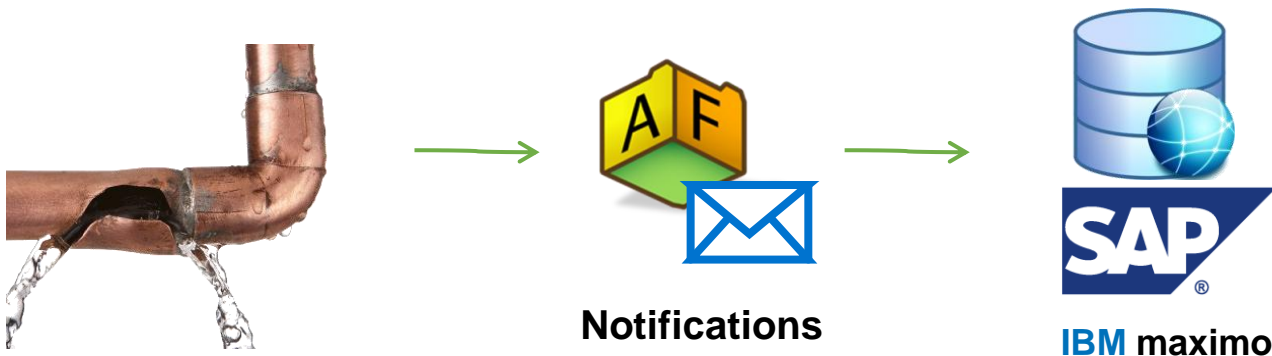


Reuse Your Template



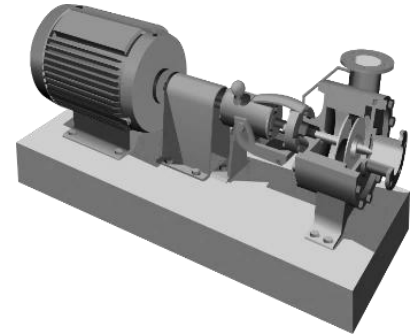
Beyond basics: Notifications to a CMMS

(Computerized Maintenance Management System)



Robot Status Check

Pump #5 is having issues.



5) Visualize



PI Vision



PI DataLink

Pump Station Overview



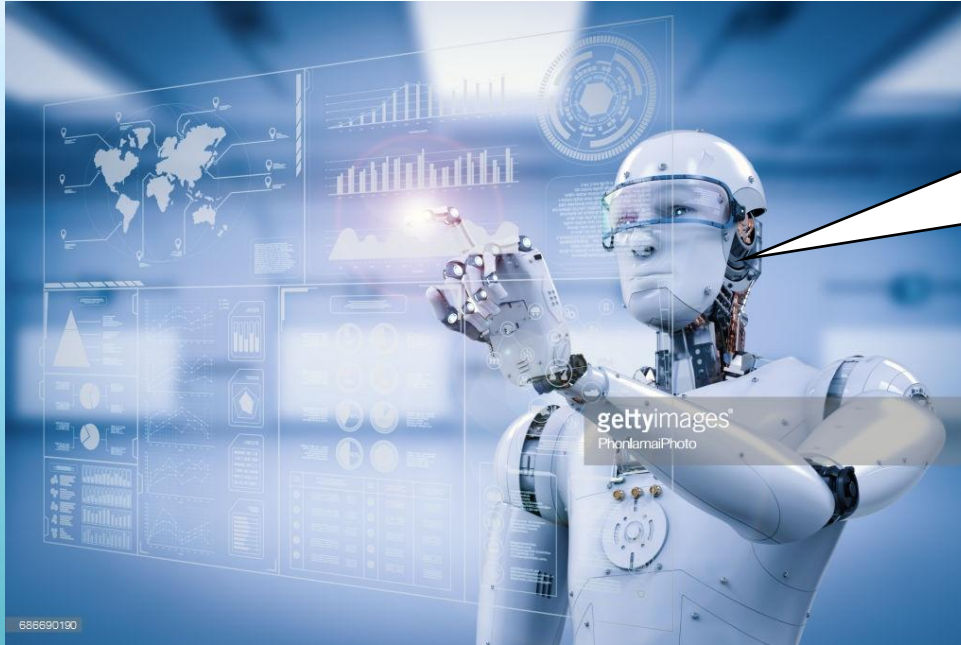
3/1/2017 11:14:01 PM

1h

Now

3

Robot Status Check



I'll keep an eye on everything!

5 Steps of CBM

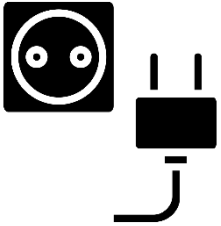
Connect
Collect & Store

Assign Context

Execute
Condition Logic

Alert and Notify

Visualize



Resources to Help you Succeed



PI Square

The OSIsoft Community



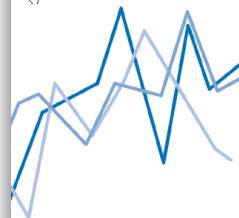
All Places > All Things PI - Ask, Discuss, Connect

Asset Based PI Example Kits



A Guidebook to Implementing Condition-Based Maintenance (CBM) Using Real-time Data

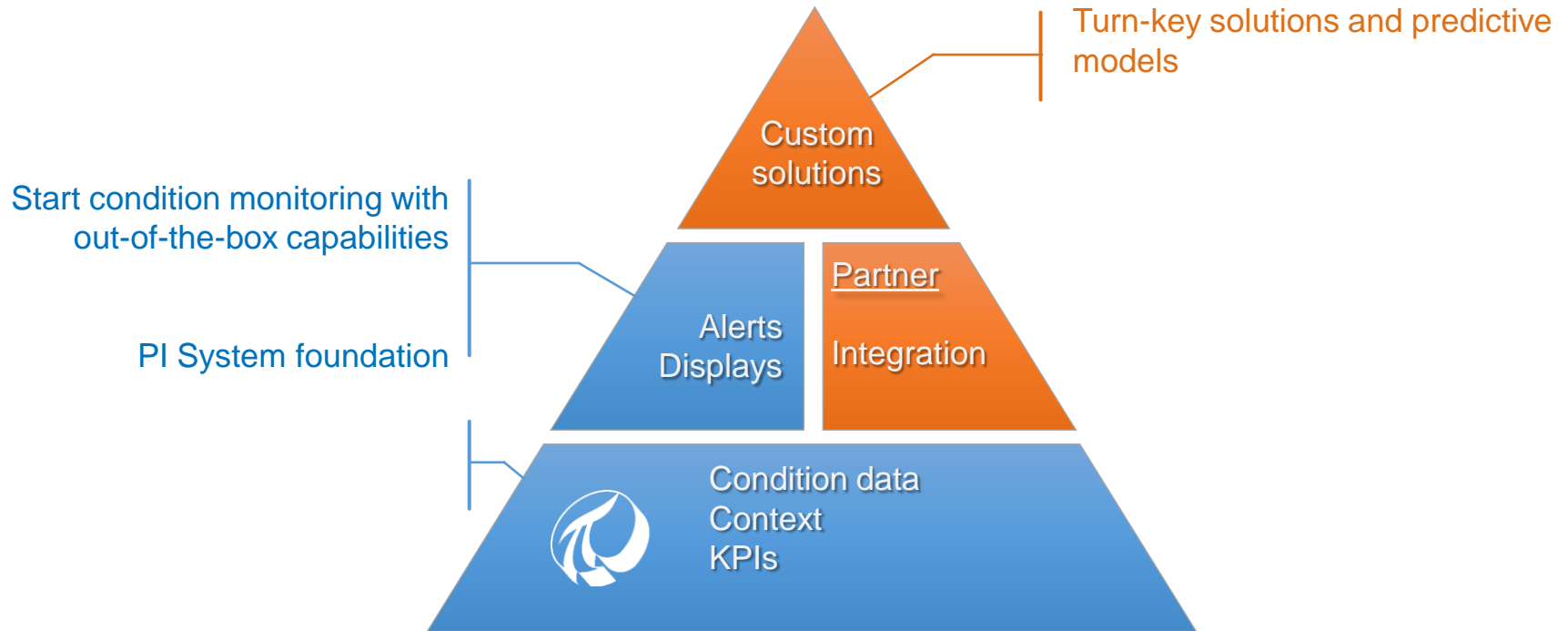
A practical guide to getting more value from real-time data by
supporting effective asset management strategies



- Condition Monitoring
- Condition-Based Maintenance
- Decision Support
- Enterprise Integration
- Business Intelligence

eBook

Partners Are Here to Help



Customer Examples



[Chemicals](#)



[Mining, Metallurgy & Materials](#)



[Oil & Gas](#)



[Pharmaceutical & Life Science](#)



[Pulp & Paper](#)



[Power Generation](#)



[Transmission & Distribution](#)



[Other](#)

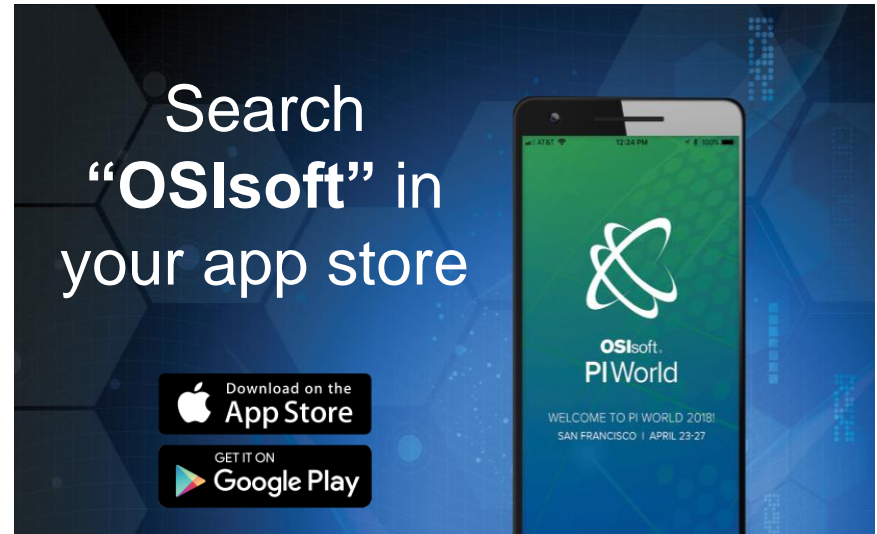
Questions?

Please wait for
the **microphone**

State your
name & company



Please rate this session in the mobile app!

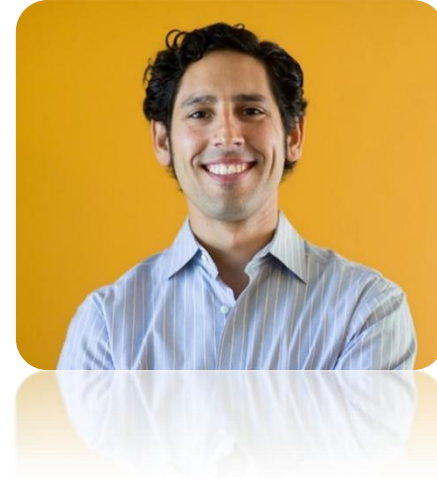


Contact Information

Jeremy Korman

jkorman@osisoft.com

Product Marketing Manager
OSIsoft LLC



謝謝 KEA LEBONA
 TAPADH LEIBH 고맙습니다
 БАЯРЛАЛАА MISAOTRA ANAO
 DZIĘKUJĘ CI NGIYABONGA TEŞEKKÜR EDERIM GRACIES
 OBRIGADO شڪرا SALAMAT
 DANKON TANK TAPADH LEAT
 DANKIE TERIMA KASIH
 KÖSZÖNÖM
 СПАСИБО
 PAKMET CIZGE
 GO RAIBH MAITH AGAT
 БЛАГОДАРЯ GRACIAS
 МАНАДСАНИД
 ТИ БЛАГОДАРАМ
 TAK DANKE
 RAHMAT
 HATUR NUHUN
 CẢM ƠN BẠN
 WAZVIITA
 FALEMINDERIT
 DANK JE
 AČIŮ SALAMAT MAHALO IĀ 'OE TAKK SKALDU HA
 GRAZZI PAKKA PĒR
 PAXMAT CAĞA
 TI БЛАГОДАРАМ
 СИПОС
 EΥΧΑΡΙΣΤΩ GRATIAS TIBI
 DI OU MÈSI
 ĐAKUJEM
 MATUR NUWUN
 UA TSAUG RAU KOJ
 TI БЛАГОДАРАМ
 СИПОС
 MULTUMESC
 FAAFETAI
 ESKERRIK ASKO
 HVALA ХВАЛА ВАМ
 TEŞEKKÜR EDERIM
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