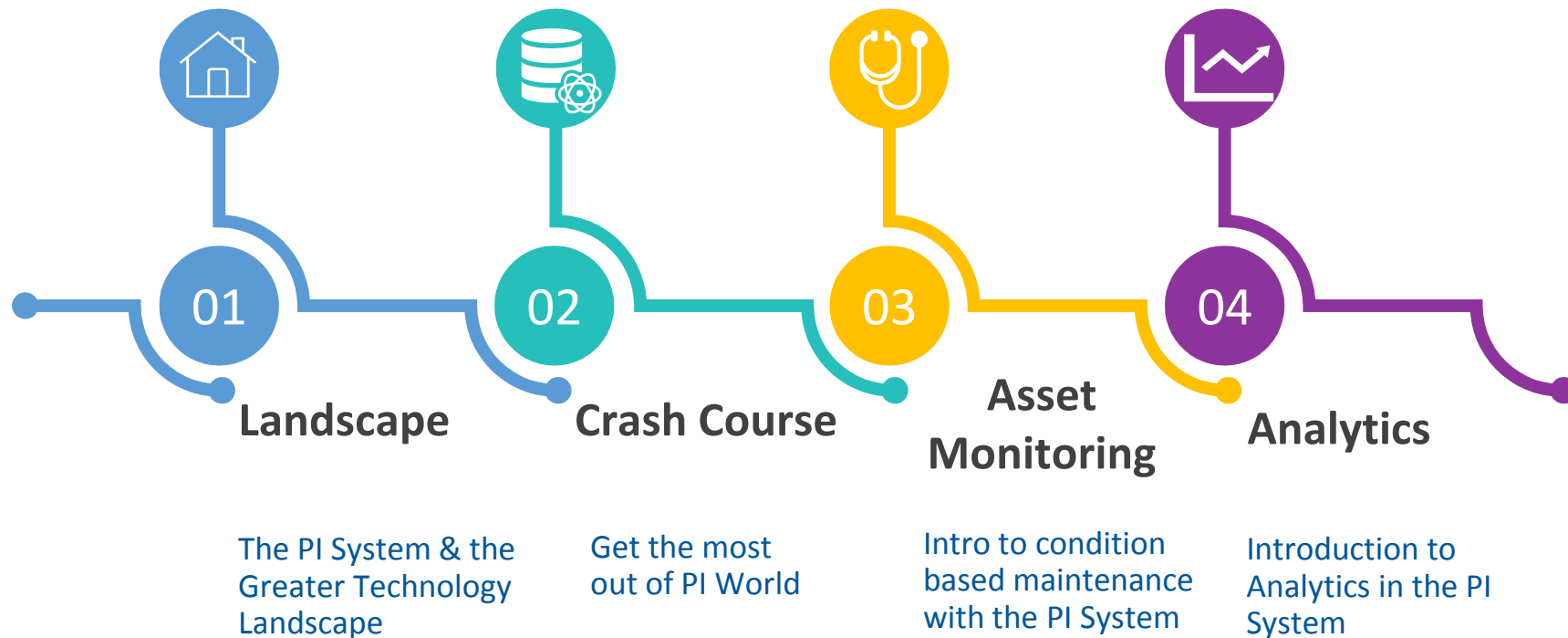


Introduction to Asset Monitoring and Condition-based Maintenance with the PI System

Jeremy Korman – Product Marketing Manager



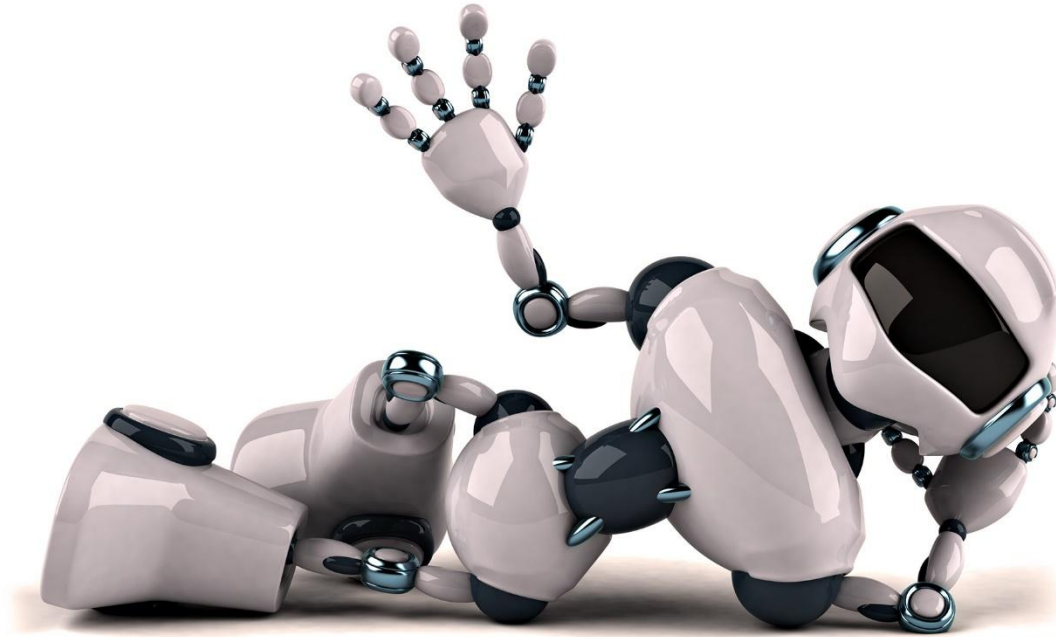
Where are we in our PI 101 Journey



Before & After?



Put your robot to use



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



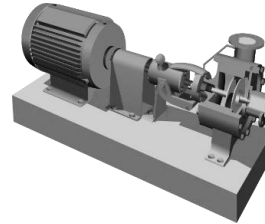
Preventative

Calendar-based



Condition Based

Repair based on insight



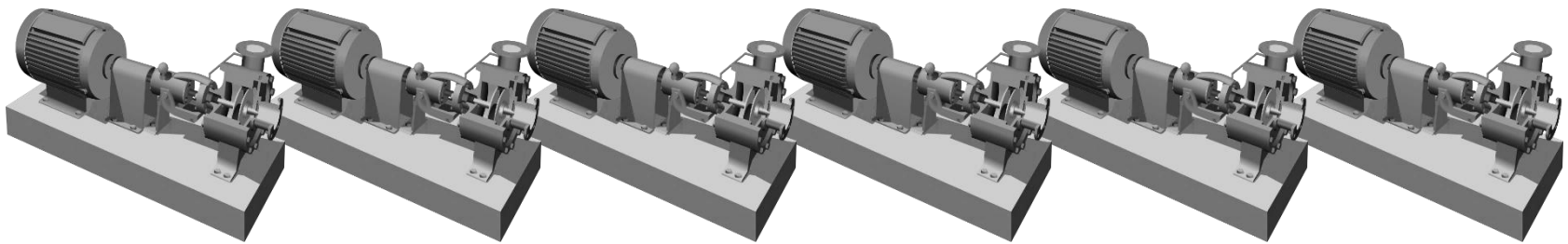
Predictive

Advanced Pattern
Recognition

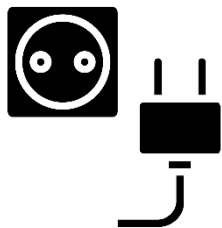


A Framework for CBM

Are all of my pumps healthy today?



5 Steps of CBM



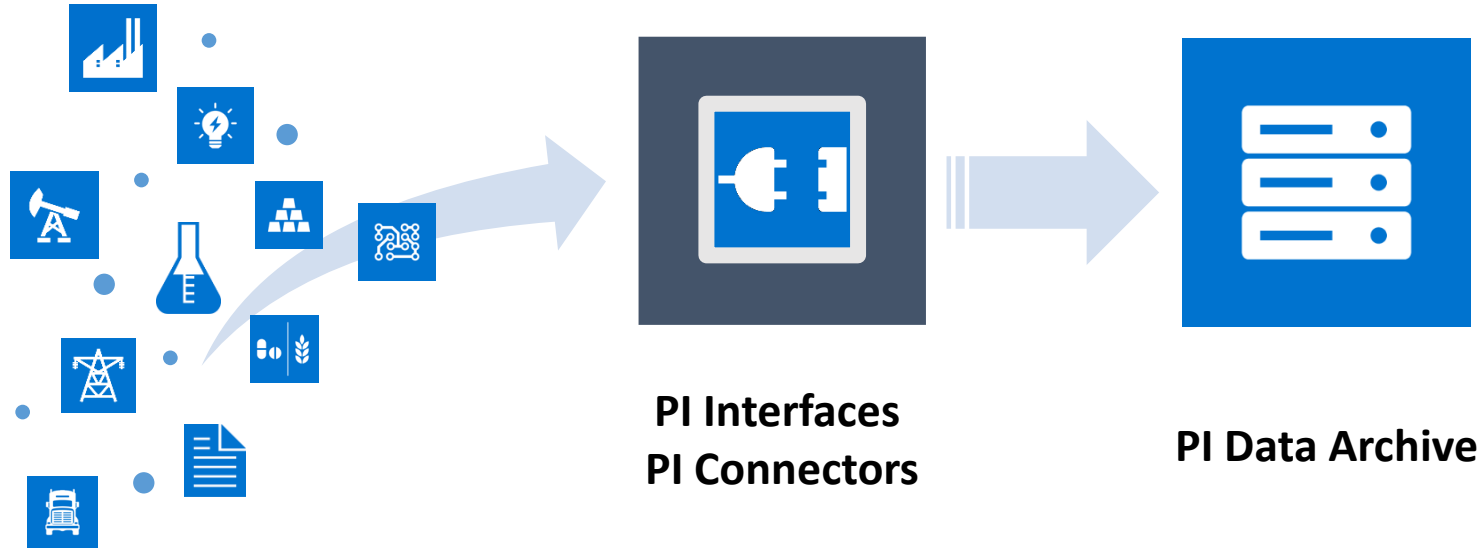
Connect
Collect & Store

Assign Context

Execute Condition
Logic

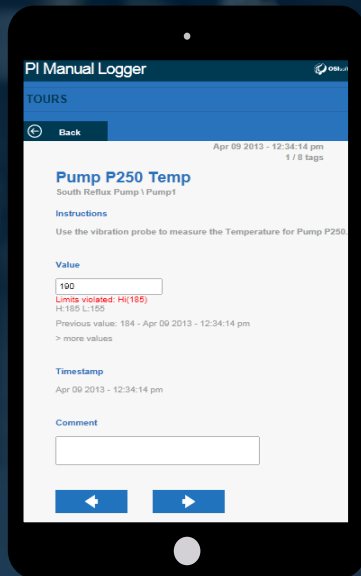
Alert and Notify

Visualize

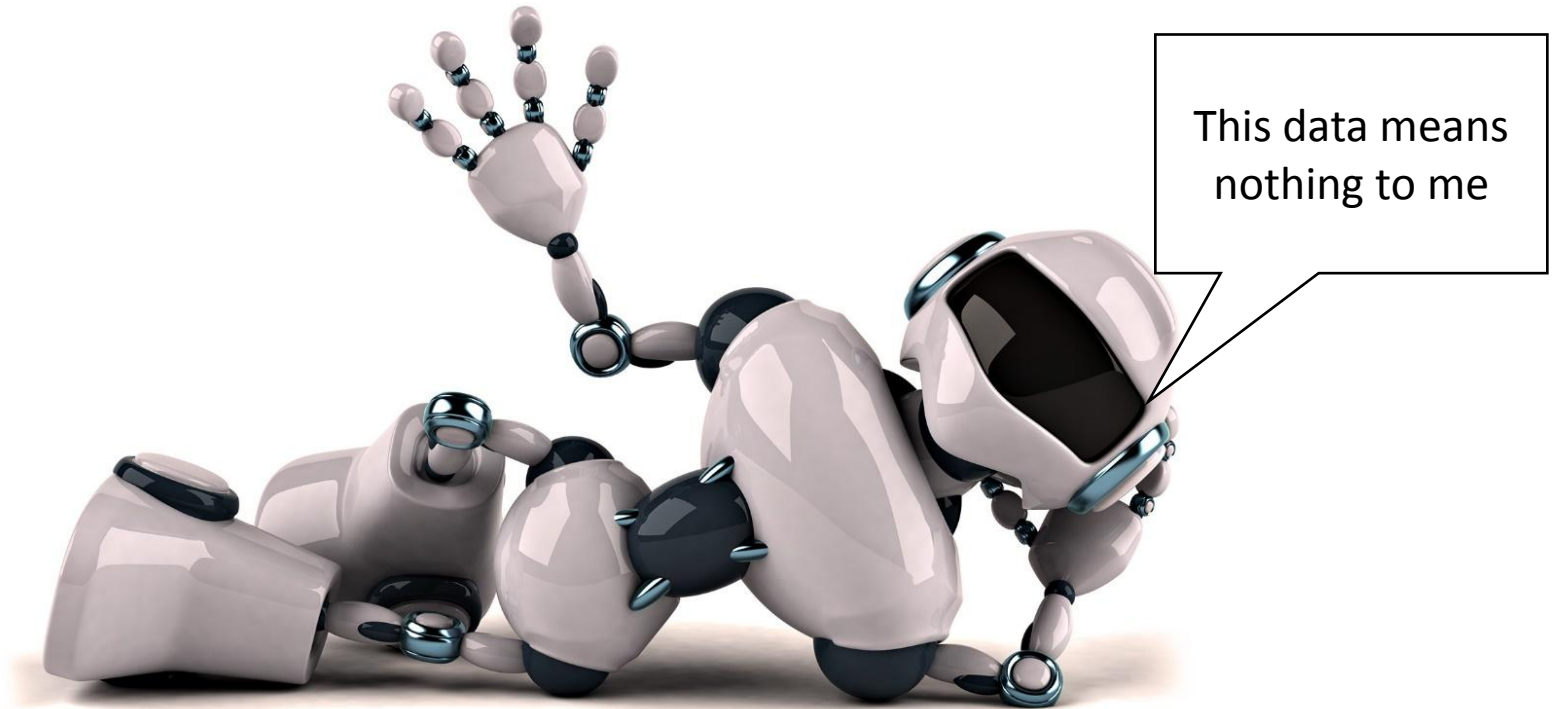


Options to add to data set:

- PI Interfaces & PI Connectors
- PI Manual Logger



Robot Status Check



Connect
Collect & Store

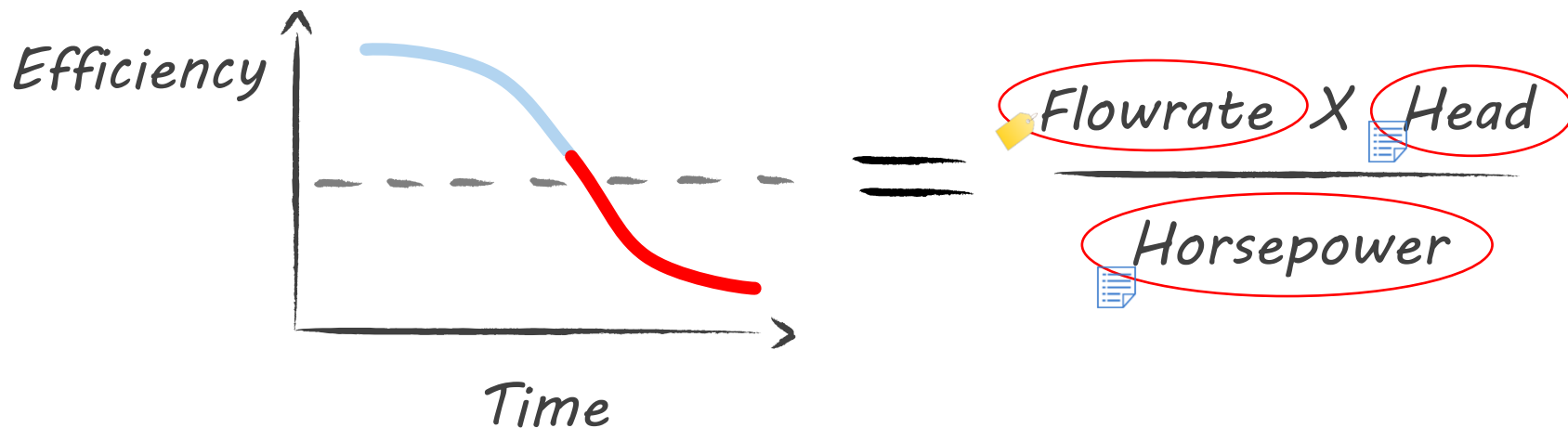
Assign Context

Execute Condition
Logic

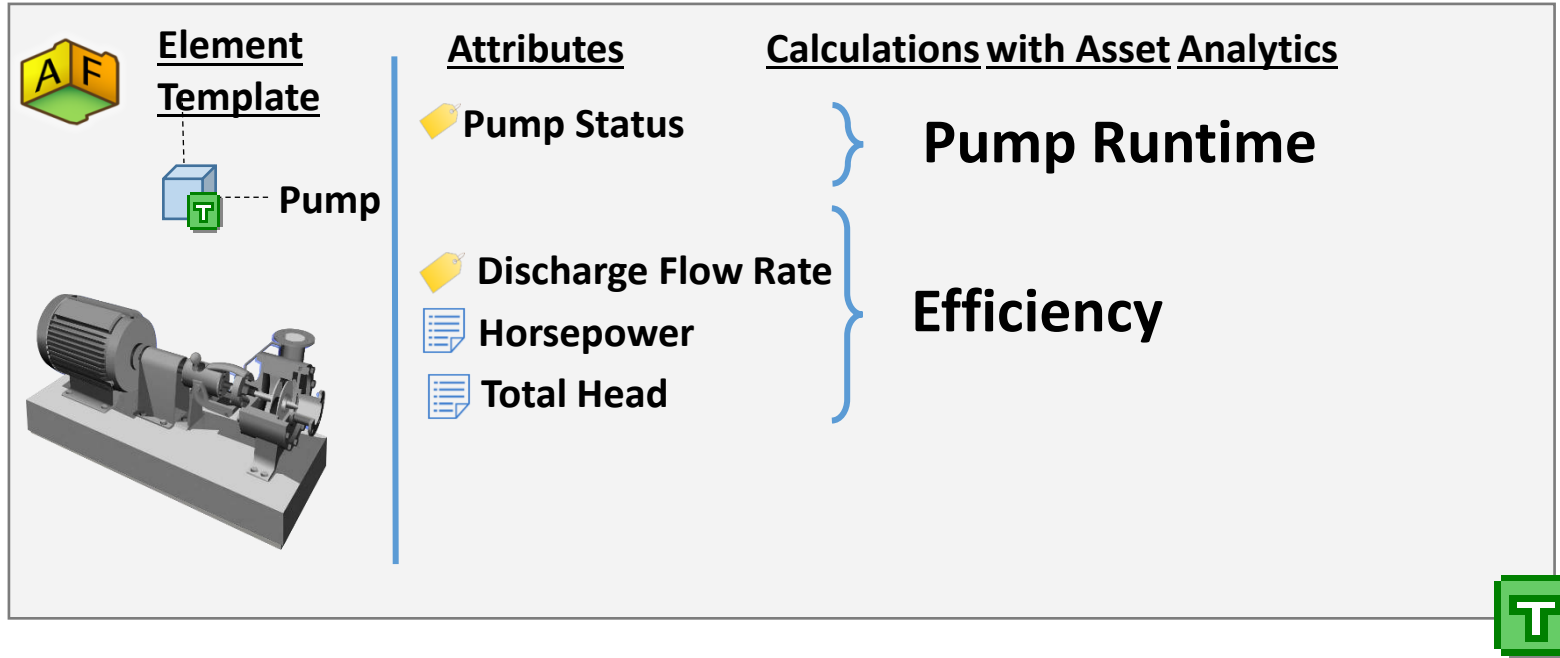
Alert and Notify

Visualize

Building a Digital Model – Start Small



Build a Template





OPERATIONS

Temperature
Pressure
Voltage
...



UNIFIED DATA

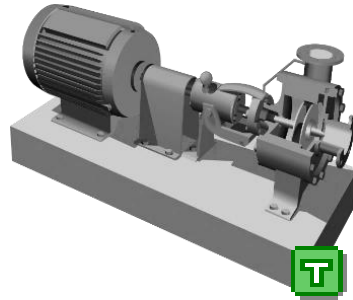
Smarter operation
Improved KPIs
In-context decisions



MAINTENANCE

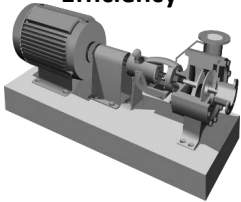
Date of Last Service
Motor Horse Power
Vibration Analysis
...

Reuse Your Template

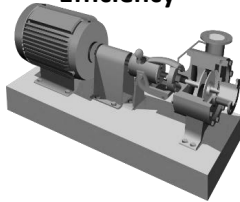


Pump Runtime
Efficiency 

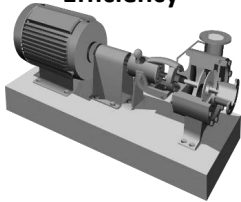

Pump Runtime
Efficiency



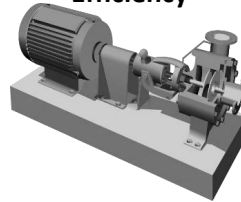
Pump Runtime
Efficiency



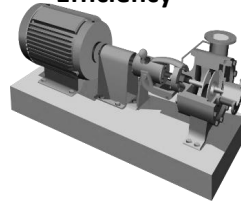
Pump Runtime
Efficiency



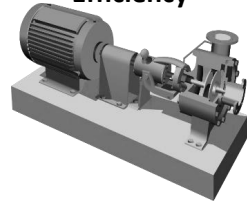
Pump Runtime
Efficiency



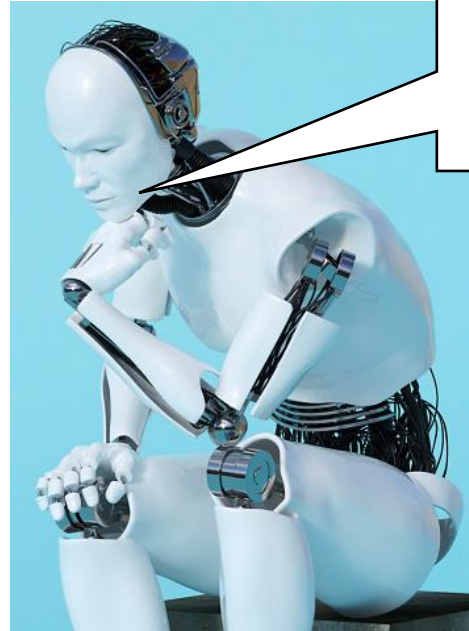
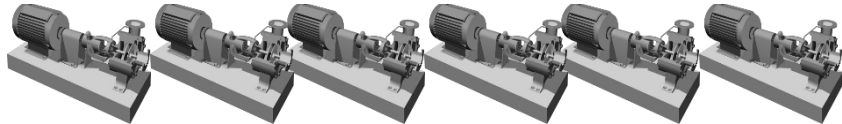
Pump Runtime
Efficiency



Pump Runtime
Efficiency



Robot Status Check



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

Connect
Collect & Store

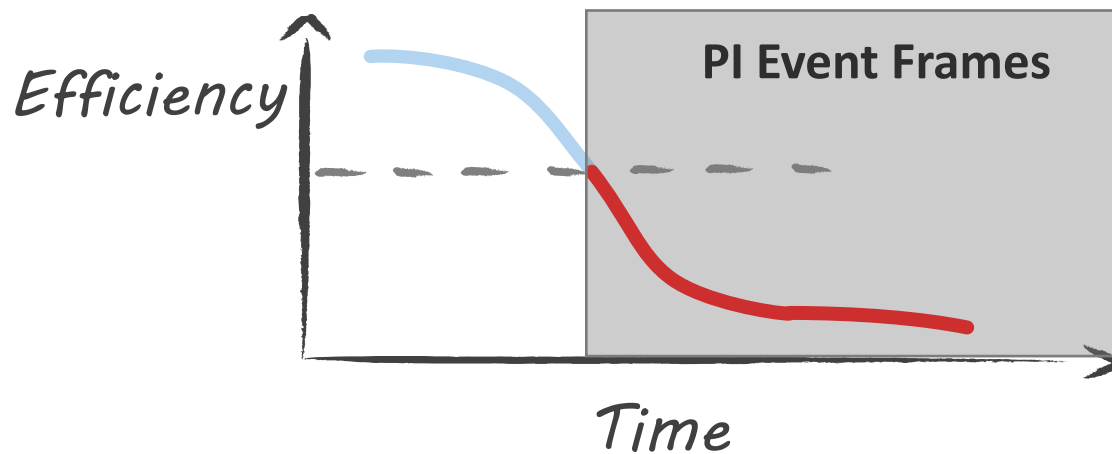
Assign Context

Execute Condition
Logic

Alert and Notify

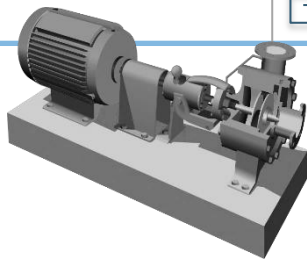
Visualize

Pump
Efficiency < 75%



Writing Logic is Simple

<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 ▼

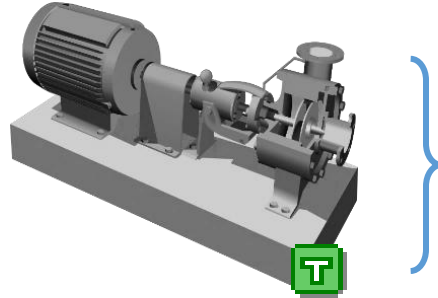
Expression

'Pump Efficiency' < '75'

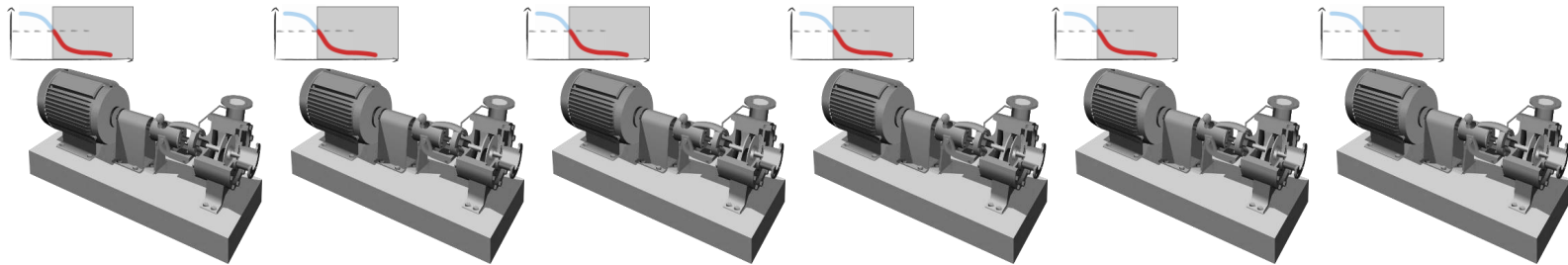
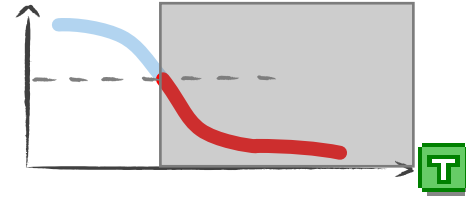
True for

10 min

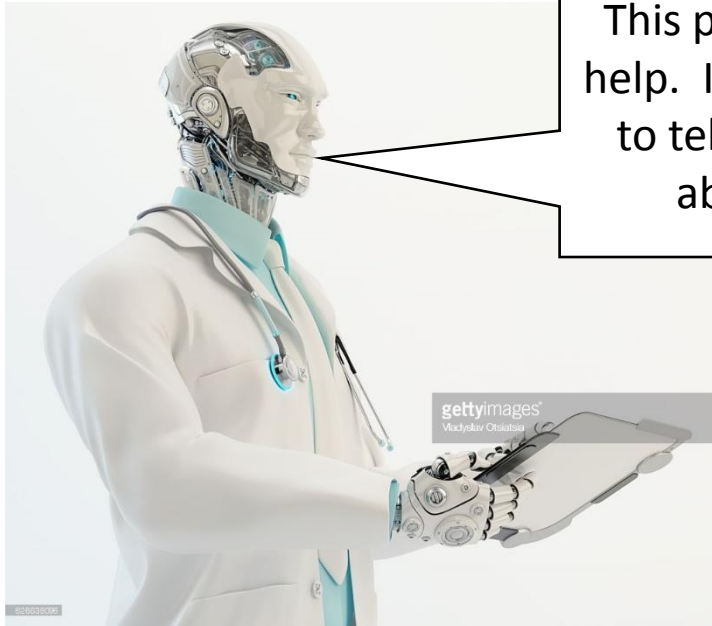
Reuse Your Template



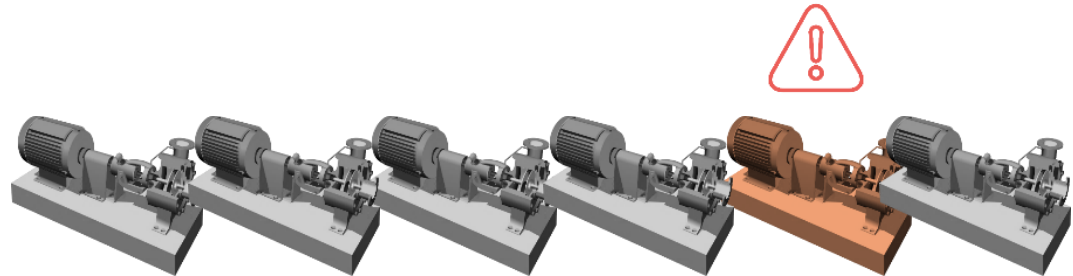
Low Efficiency Event Frame



Robot Status Check



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



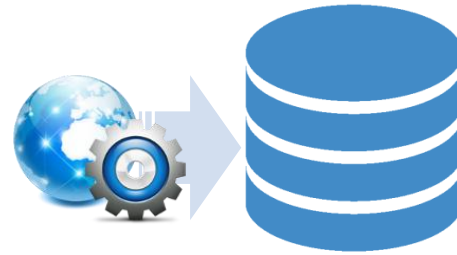
Connect
Collect & Store

Assign Context

Execute Condition
Logic

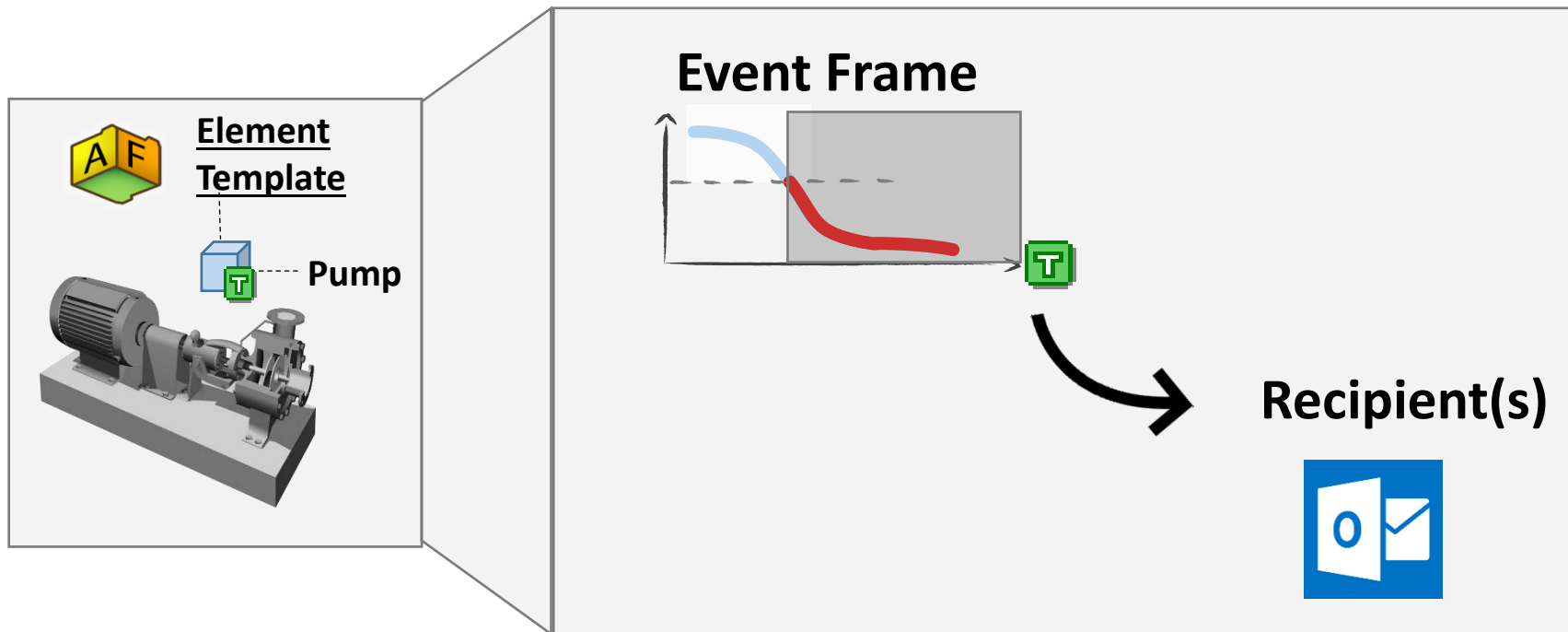
Alert and Notify

Visualize

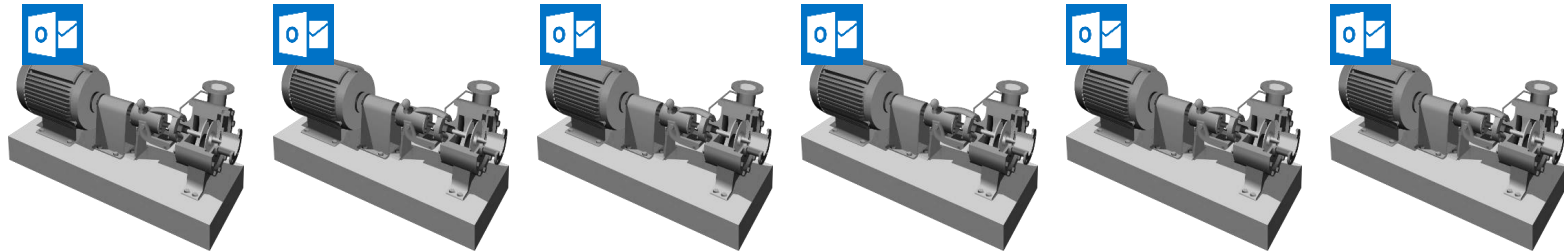
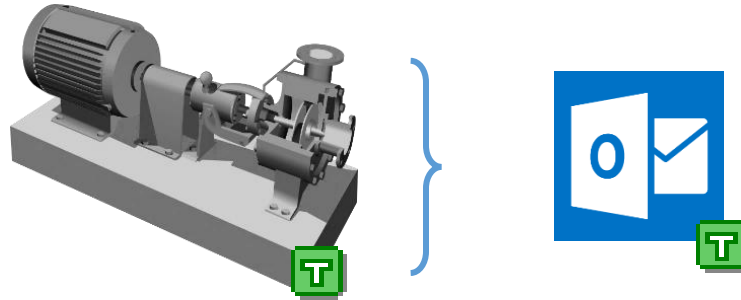


Alert and Notify

PI Notification

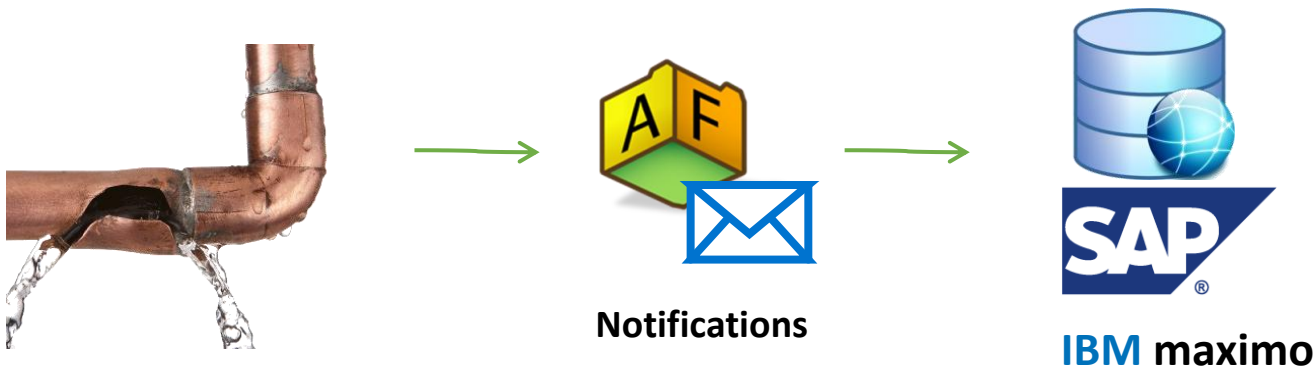


Reuse Your Template



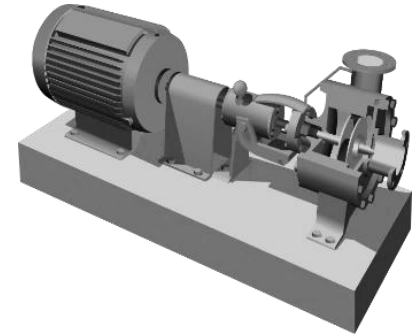
Beyond basics: Notifications to a CMMS

(Computerized Maintenance Management System)



Robot Status Check

Pump #5 is having issues.



Connect
Collect & Store

Assign Context

Execute Condition
Logic

Alert and Notify

Visualize



PI Vision



PI DataLink

Pump Station Overview



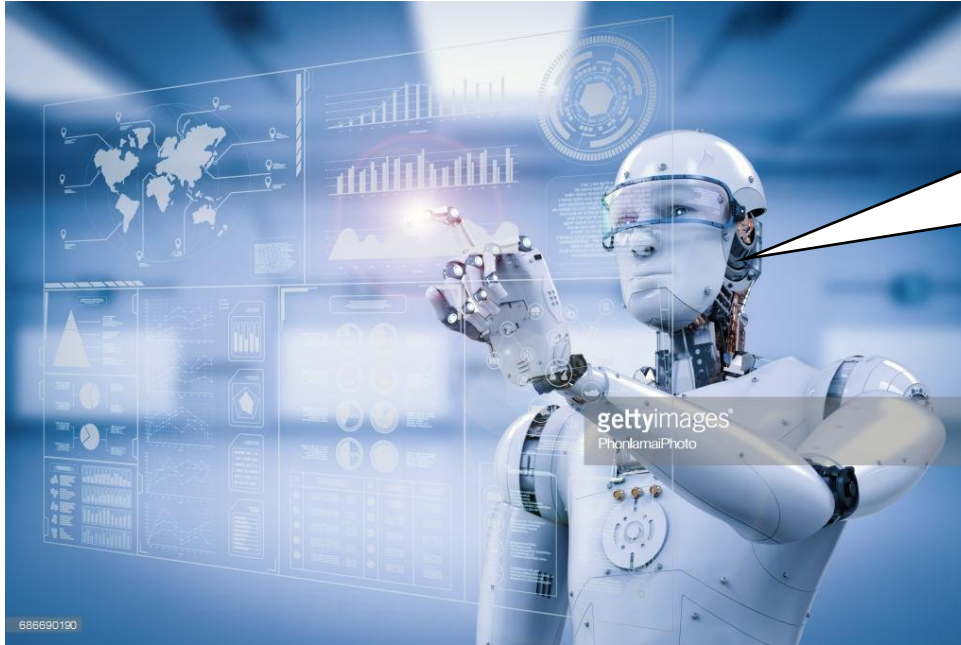
3/1/2017 11:14:01 PM

1h

Now

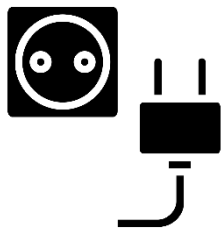
3

Robot Status Check



I'll keep an eye on everything!

5 Steps of CBM



Resources to Help you Succeed



PI Square

The OSIsoft Community



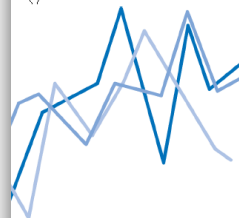
All Places > All Things PI - Ask, Discuss, Connect

Asset Based PI Example Kits



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

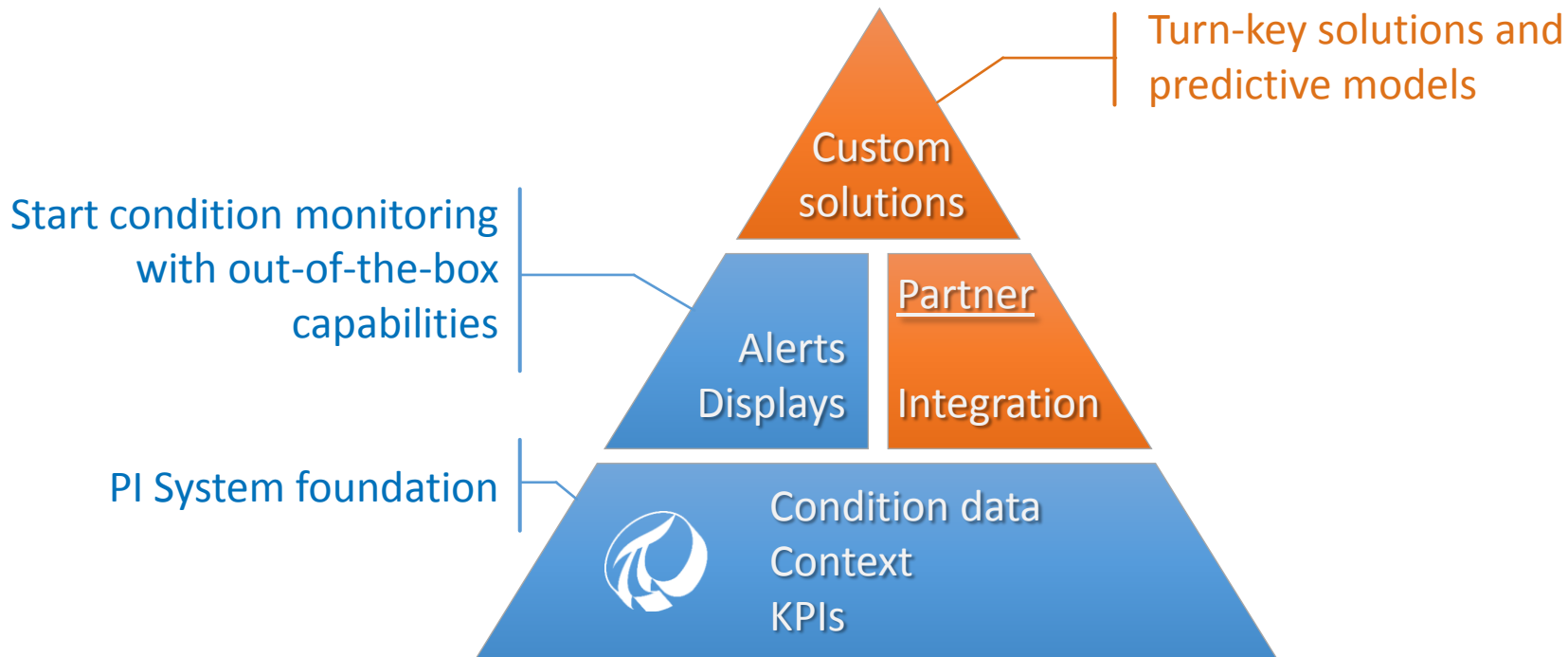
A practical guide to getting more value from real-time data by
supporting effective asset management strategies



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

eBook

Partners Are Here to Help



Customer Examples



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[Mining, Metallurgy & Materials](#)



[Oil & Gas](#)



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[Pulp & Paper](#)



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Questions

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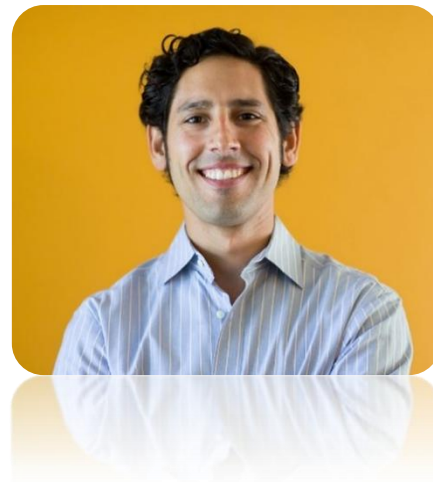
<http://bit.ly/uc2017-app>

Contact Information

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jkorman@osisoft.com

Product Marketing Manager
OSIsoft LLC



감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado