Addressing Business Initiatives with the PI System

Sam Clark, Systems Engineer

September 28th, 2016

Business Impacts: Delivering Value at Enterprise Scale

Safety & Security	Energy Utilization	Process Efficiency	Asset Health	Quality	Regulatory Performance
PETRONAS	Microsoft	Columbia Pipeline Group	Power Stream	Maynilad	Wheelabrator Technologies Inc. A Waste Management Company
Eliminated **5 unplanned** shutdowns in a year	Reduced facilities energy costs by over **$2M**	Over **$2.8M** in savings from event prevention	Prevented unit failure, avoided expense of up to **$2M**	Recovered **640M** liters of treated water	**$300k** in savings Water temperature permit compliance

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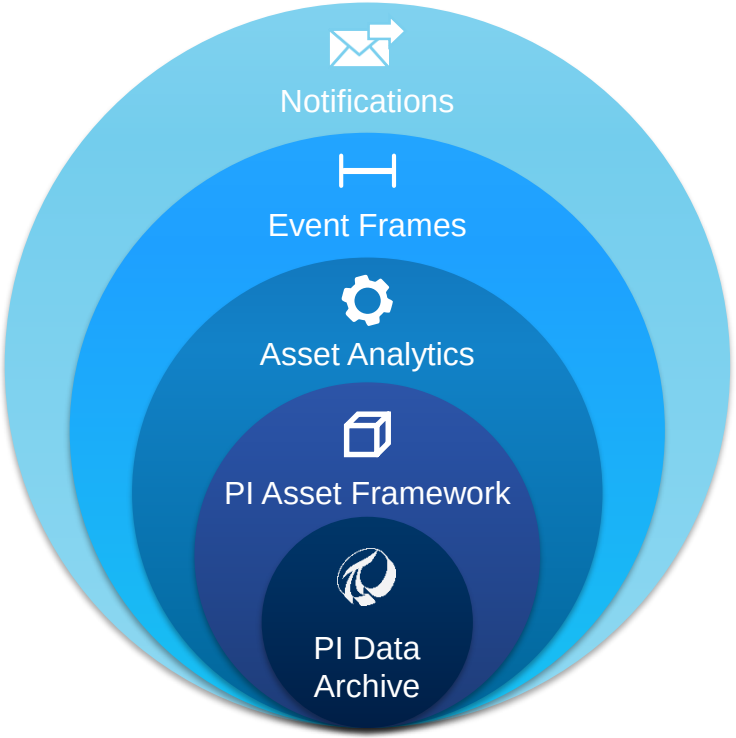
How do these come together in the PI System?

Modern PI Server: Data in context of assets & events



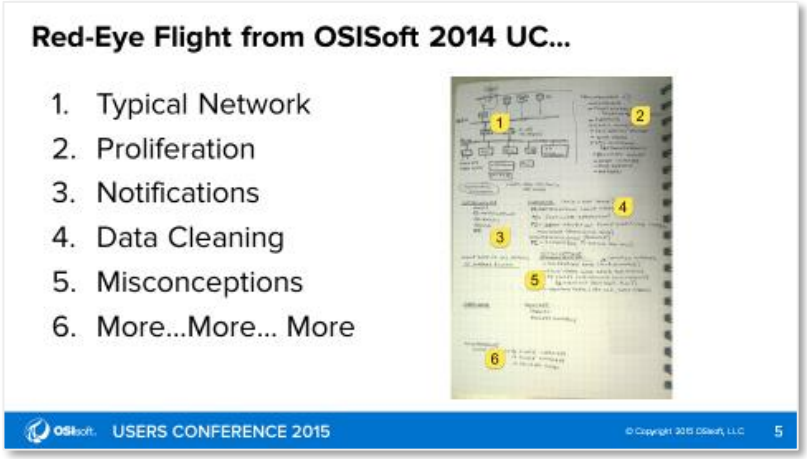
PI Server

PMP27.EF.PV 54.6

Pump #27

- 54.6 % Efficiency
- Cold Lake
- Run hours
- Last maintenance

Power of planning: From simple notes to real impact



- Reliable production estimates
- 35% reduction in energy usage
- Simplified reporting: days to minutes

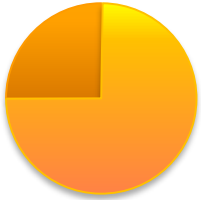
Hear Rick's story on YouTube
Mapping Organizational Goals to PI AF

But how do you actually get started?

Where you want to be

Myth

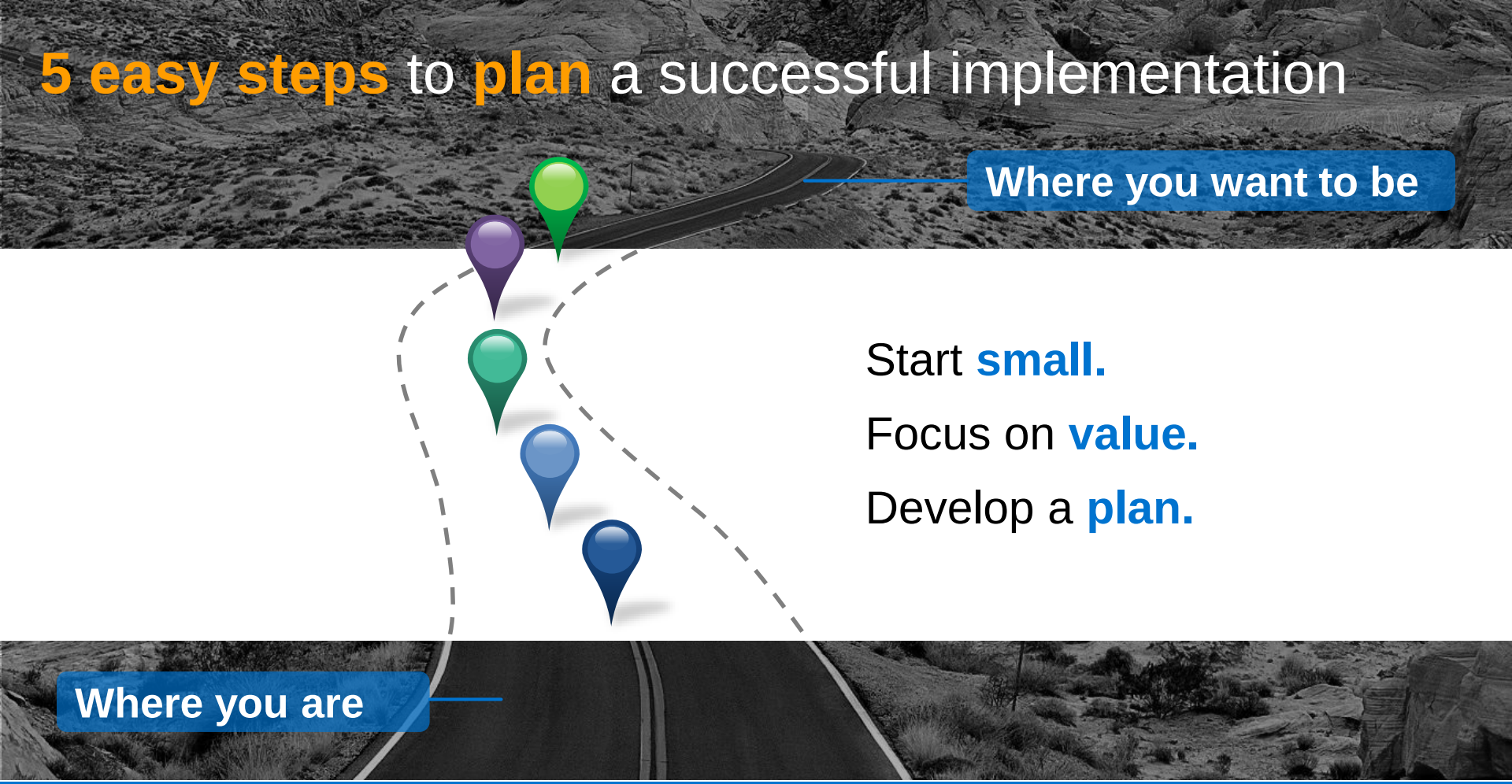
Get it 100% right



Run into organizational challenges

Where you are

5 easy steps to plan a successful implementation



Start **small.**

Focus on **value.**

Develop a **plan.**

Imagine

What do I want?

Performance improvement, Reduced energy use

Detect anomalies

Reduce reaction time

Increase efficiency

Simplify reporting

Lower costs

Focus

Where is the easiest or biggest ROI opportunity?

Problematic equipment, High-value process

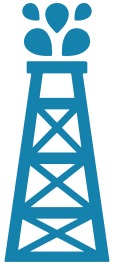
Detect anomalies

Transformer voltage variation

Reduce reaction time

Shorten vacuum phase

Increase efficiency



Improve rig drilling

Simplify reporting

Monthly EPA spreadsheet

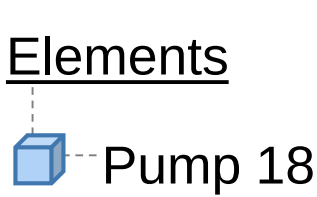
Lower costs

Reduce pump maintenance

Lower costs: Reduce pump maintenance

Imagine

Focus



Lower costs: Reduce pump maintenance

Imagine

Focus

Elements

Pump 18

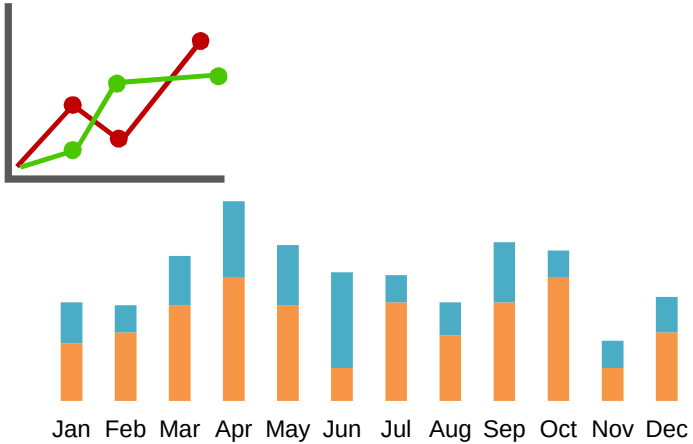
“What does that asset look like?”

“What tags do I have?”

What do I want for my focused initiative?

Pro-tip

Specify the final visualization, then **reverse engineer** needed data.

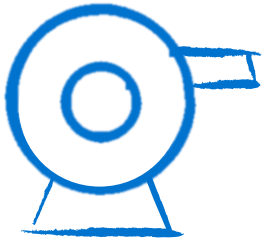


$$[E_f] = \frac{[E_0] - [ES](1 + \frac{[I_f]}{K_I})}{(1 + \frac{[I_f]}{K_I})}$$

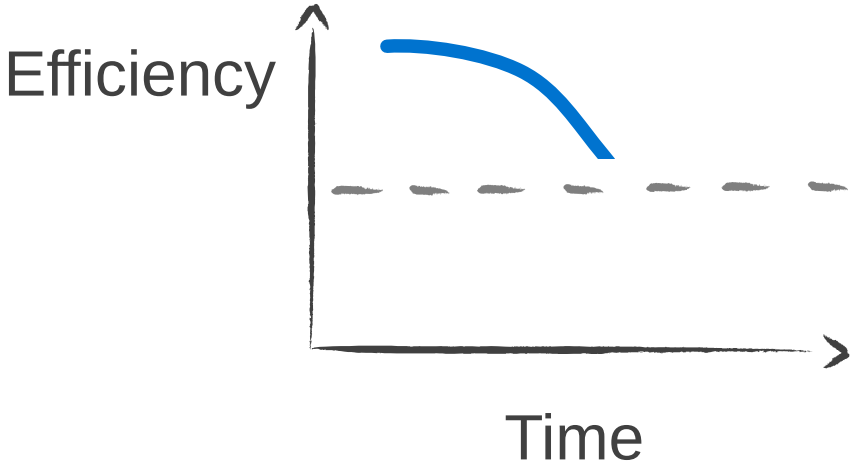
Specify

What information do I want to see, and how?

Specific readings, Aggregate metrics, Trends, Reports



Type: Discharge pump



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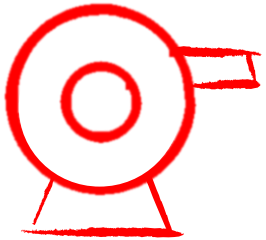

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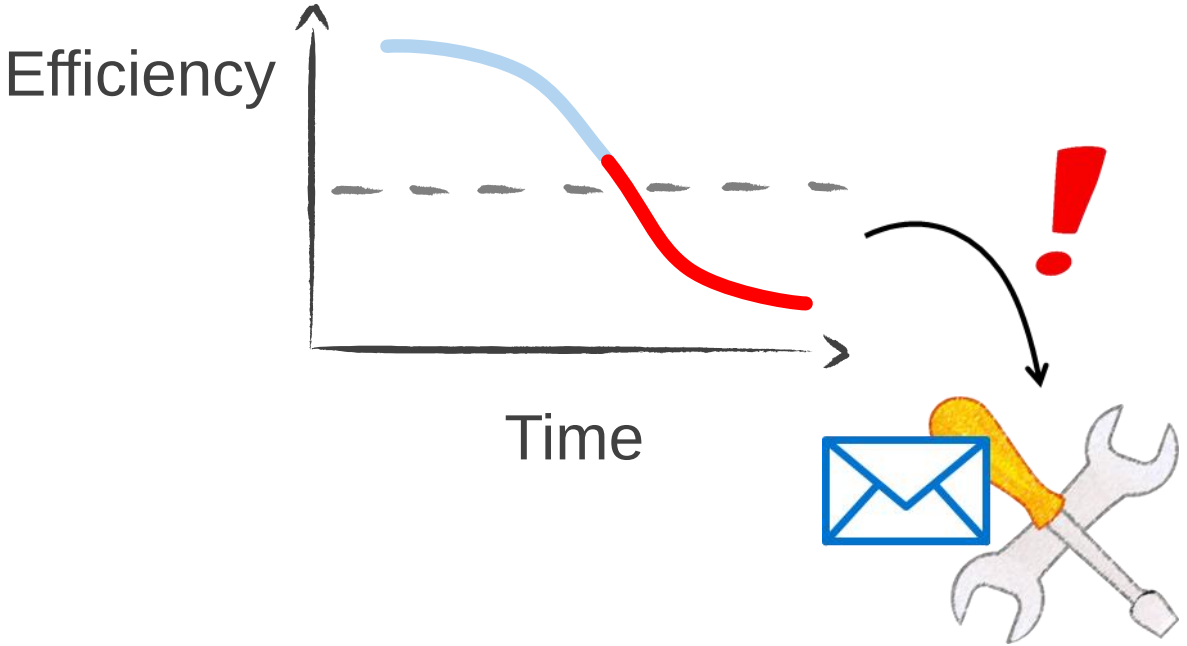

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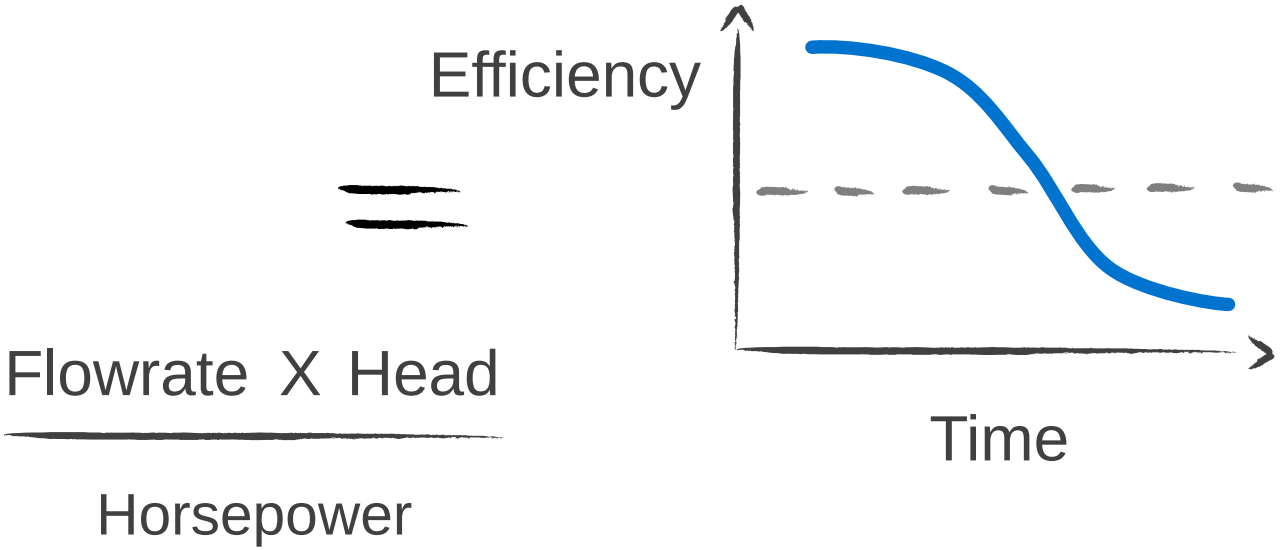

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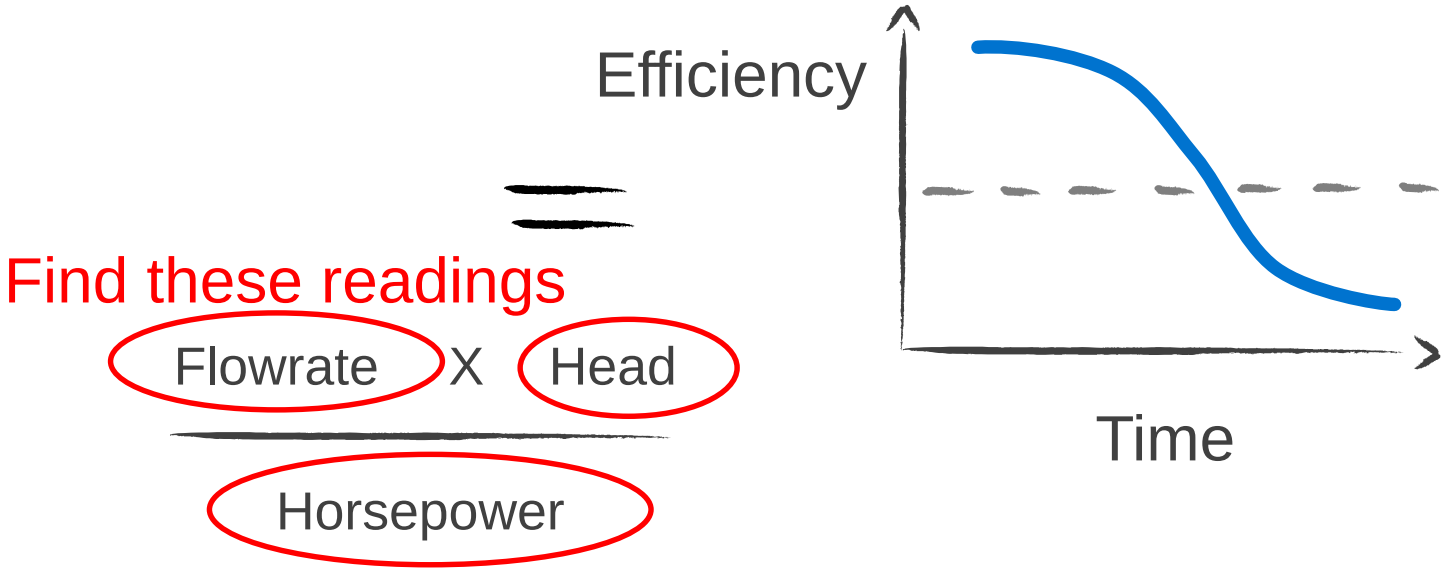


Map

Where does the data come from?

Data sources, Particular assets or processes

Pump operation:

- Flowrate
- Head
- Other indicators

Pump specifications:

- Horsepower
- Theoretical efficiency

Design

What should I consider when designing templates?

Making comparisons, preserving simplicity, re-use

Do I have other similar pieces of equipment that I want to compare?

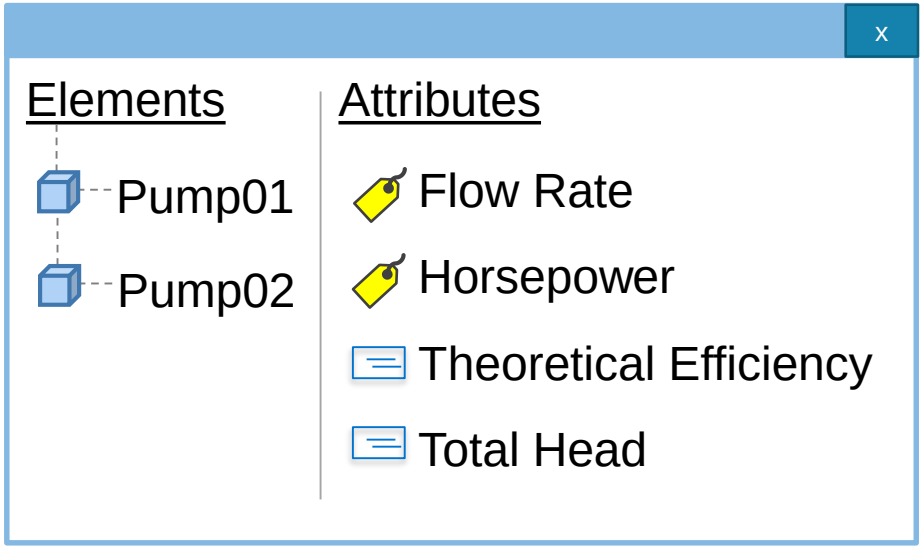
Are there components that I want to compare separately?

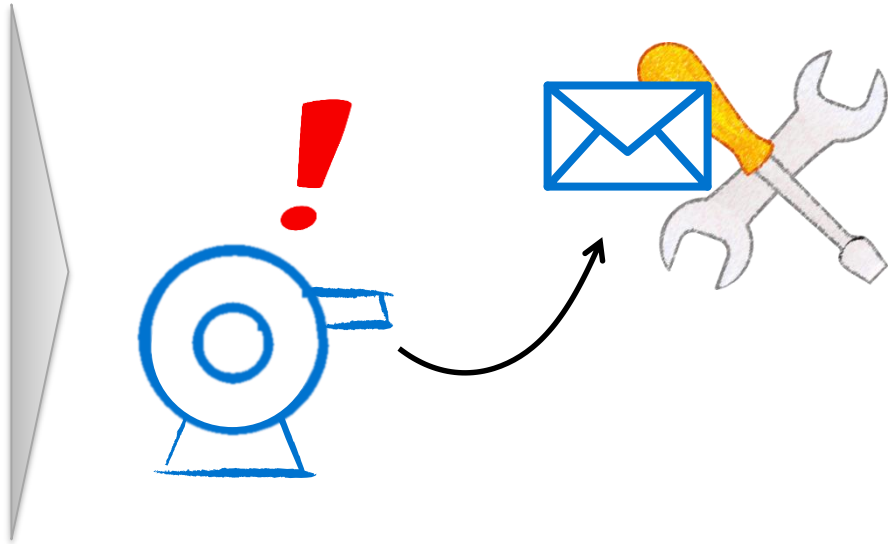
Do I look at a tire without the truck?

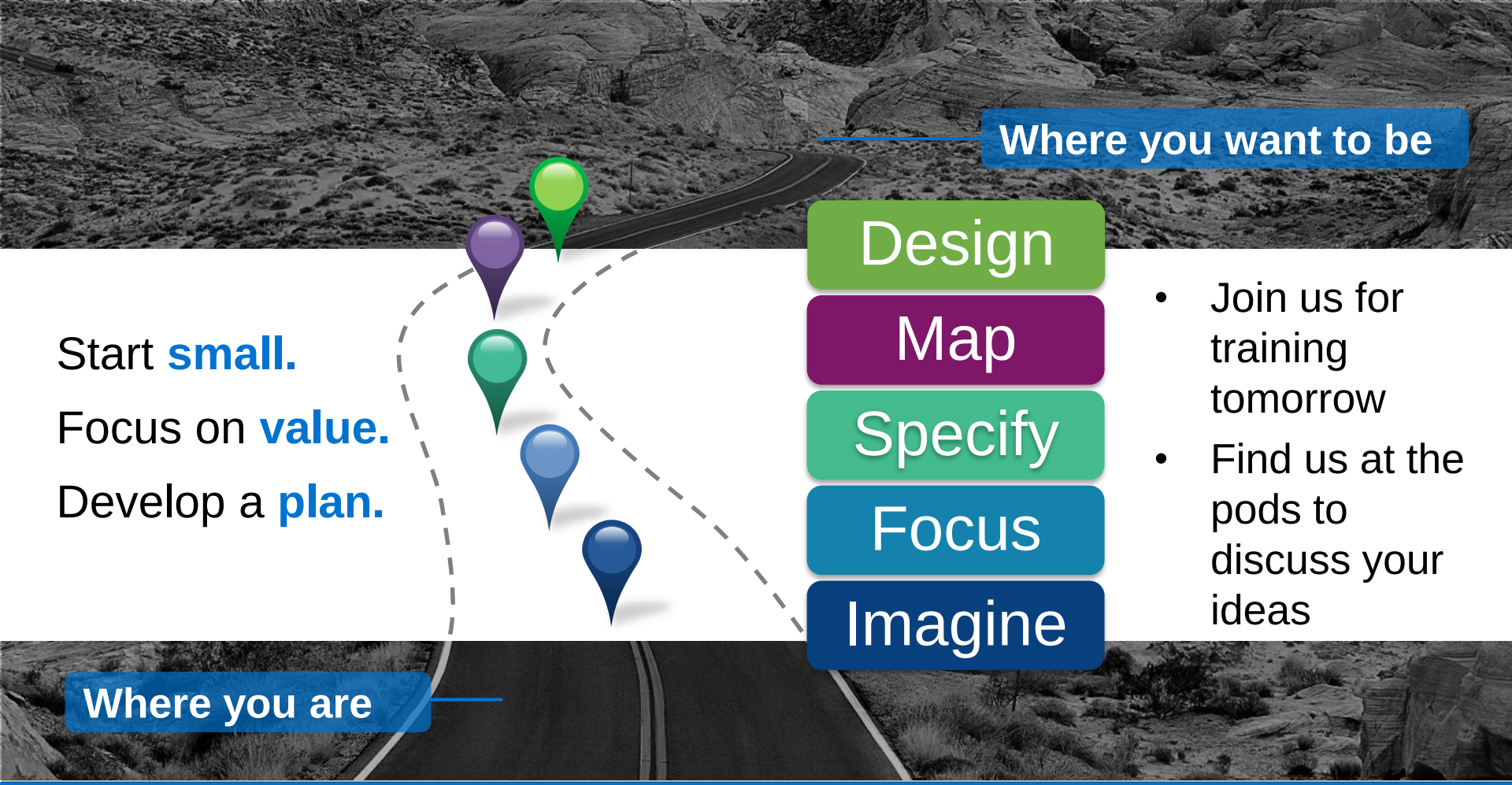
Do I look at a valve without the tank?

Pulling it all together

4 simple attributes is all you need to start CBM







Start **small.**

Focus on **value.**

Develop a **plan.**

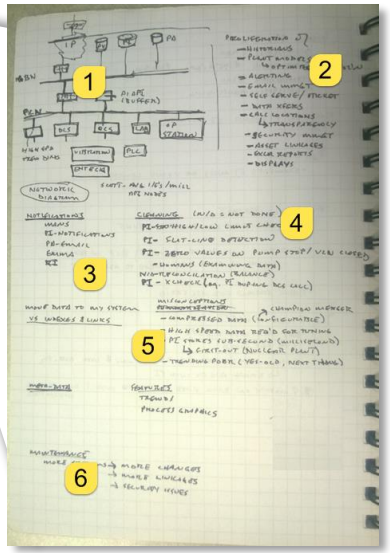
- Join us for training tomorrow
- Find us at the pods to discuss your ideas

Power of planning: From simple notes to real impact

Red-Eye Flight from OSISoft 2014 UC...

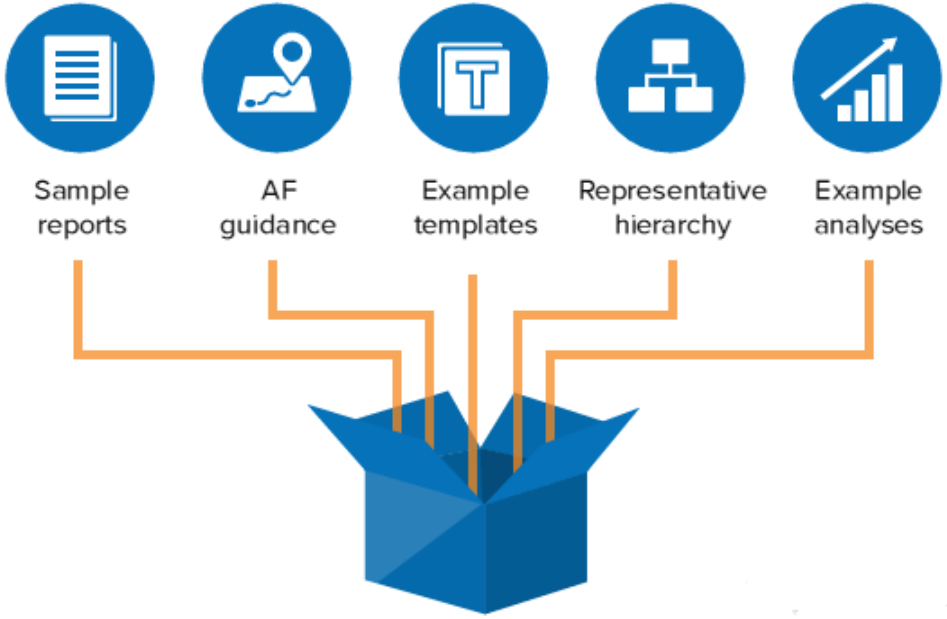
1. Typical Network
2. Proliferation
3. Notifications
4. Data Cleaning
5. Misconceptions
6. More...More... More

OSIsoft. USERS CONFERENCE 2015



Asset Based PI Example Kits

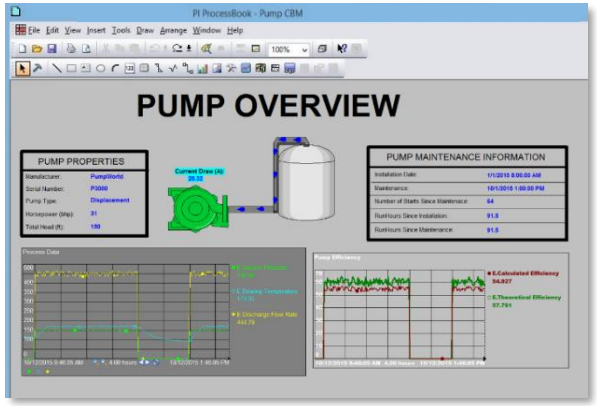
Explore how business initiatives take shape.

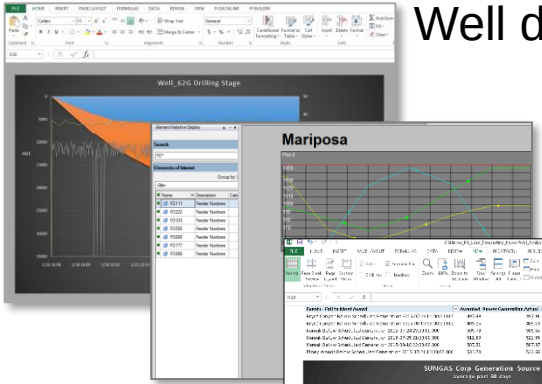


- Learning tool
- Starting point
- Available to everyone on PI Square

See examples of what's possible with this process

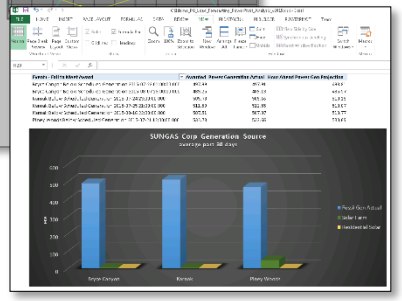
CBM for pumps





Well drilling

Voltage monitoring



Load forecasting

…and more!

Asset Based PI Example Kits are available to everyone on PI Square.

- Search www.pisquare.com > "example kit"

Looking for more coaching?
Workshops to fit your needs

PI Discovery Workshop

Learn | Educate | Explore

PI Innovation Workshop

Enable | Execute

Contact your account manager for details

On-site workshops (up to 3 days), targeted at your business use case(s) with your experts and ours, and using your data and your PI System.

Contact Information

Sam Clark
sclark@osisoft.com
Systems Engineer
OSIsoft, LLC

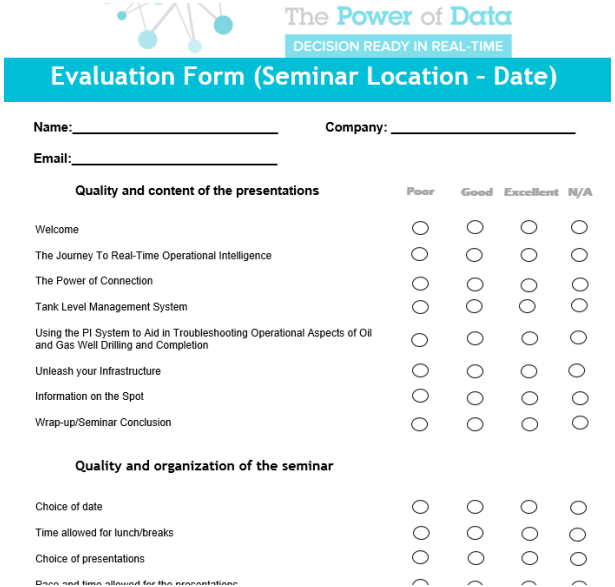
Questions

Please wait for the **microphone** before asking your questions

State your **name & company**

Please remember to…

Complete the Survey for this session



The Power of Data

DECISION READY IN REAL-TIME

Evaluation Form (Seminar Location - Date)

Name:_____ Company: _____

Email:_____

Quality and content of the presentations	Poor	Good	Excellent	N/A
Welcome	○	○	○	○
The Journey To Real-Time Operational Intelligence	○	○	○	○
The Power of Connection	○	○	○	○
Tank Level Management System	○	○	○	○
Using the PI System to Aid in Troubleshooting Operational Aspects of Oil and Gas Well Drilling and Completion	○	○	○	○
Unleash your Infrastructure	○	○	○	○
Information on the Spot	○	○	○	○
Wrap-up/Seminar Conclusion	○	○	○	○

Quality and organization of the seminar				
Choice of date	○	○	○	○
Time allowed for lunch/breaks	○	○	○	○
Choice of presentations	○	○	○	○
Pace and time allowed for the presentations	○	○	○	○

Thank You