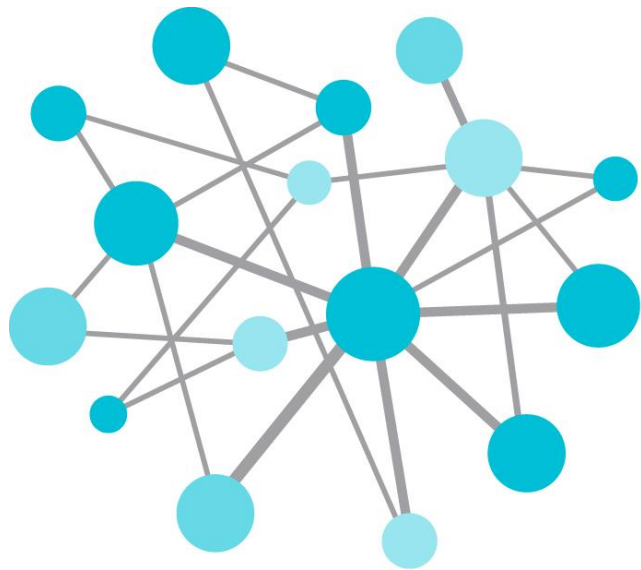


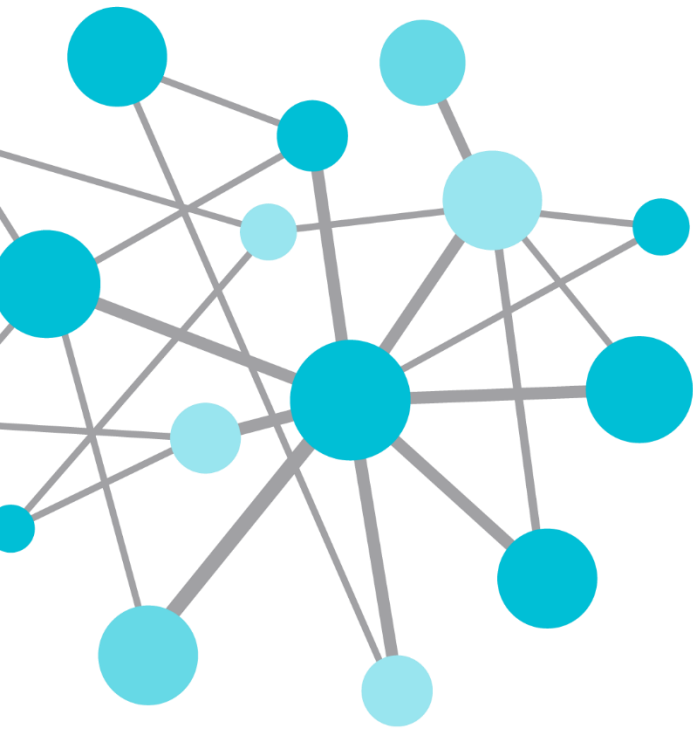


OSIsoft®

REGIONAL SEMINAR 2014

The **Power** of **Data**

DECISION READY IN REAL-TIME



Information on the Spot

Presented by **Sam Clark**, Field Service Engineer
sclark@osisoft.com



Different People Need Different Tools at Different Times



*Engineers and
Operators*

Some need tools for detailed **analysis**,
process **monitoring**, and ad hoc **exploration**



*Executive and
Management Teams*

Executives need data **in the office**
and **on the go**



*Maintenance and
Asset Management Teams*

While everyone needs to **build**, **share**, or **view** reports...
many want a **custom view** and the ability to **drill down**

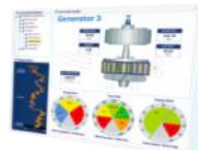
Unlimited Access to Your Data

- The PI Visualization Suite puts **every PI System visualization tool** at your fingertips



- Allows **everyone** to **collaborate** with data to **drive innovation** and for **data-driven decision making**
- The **PI Visualization Suite** unlocks PI System **data sharing** across your business to **empower your enterprise**

PI ActiveView



PI BatchView



PI Coresight



PI WebParts



PI ProcessBook



PI Manual Logger



PI Visualization Suite



PI DataLink



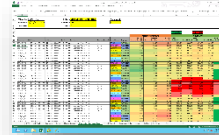
I need to:

Provide self service BI for my users



I need to:

Report against process and event data



I need to: Access process data anytime, anywhere



I need to:

Enter data from my mobile device



I need to:

Respond to notifications and identify problems



I need to:

Enter data from my mobile device



PI Manual Logger using a smart phone





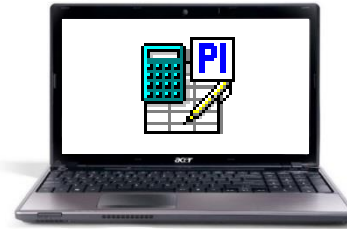
DEMO

PI Manual Logger 2014

Tour-based manual input data collection

- PI Manual Logger **PC**

- **Configure** tours
- Enter, review, edit, or **approve** the data



- PI Manual Logger **Web**

- **Collect** data from equipment with a **mobile device**
- **Barcode**/RFID to identify tags and/or enter data

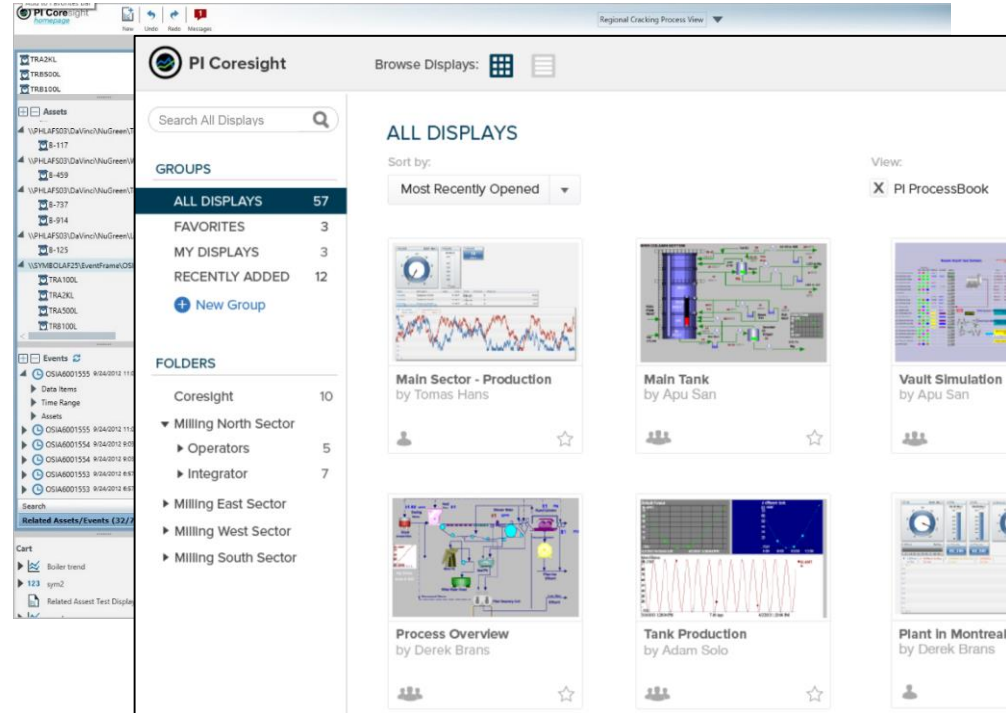


I need to:

Respond to notifications
and identify problems



Notification-driven
investigation using
PI ProcessBook
and PI Coresight



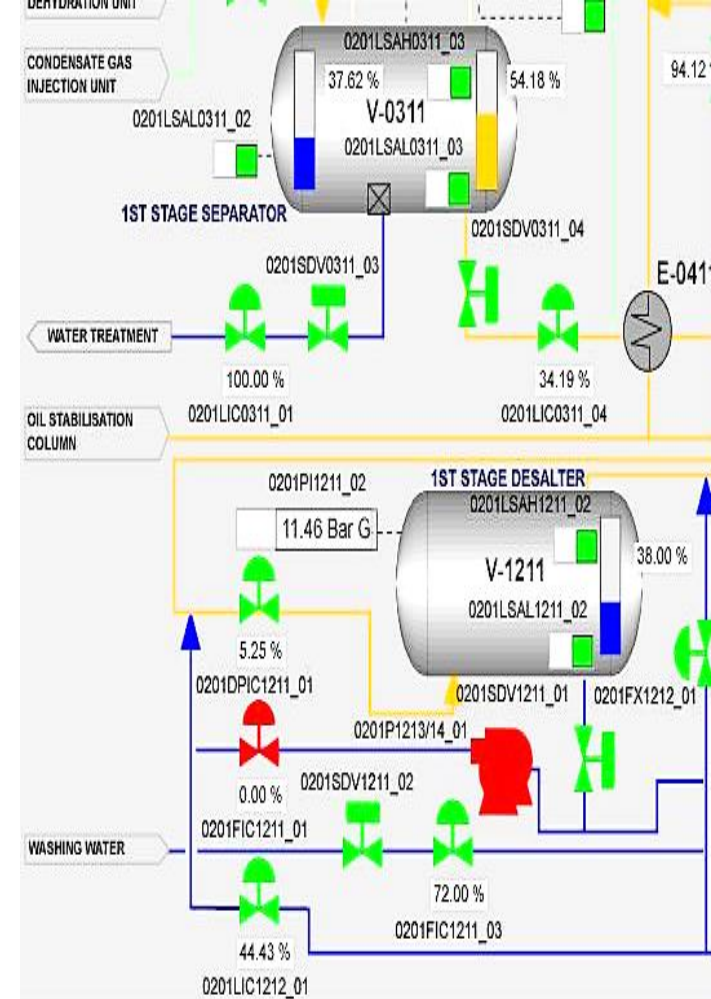


DEMO



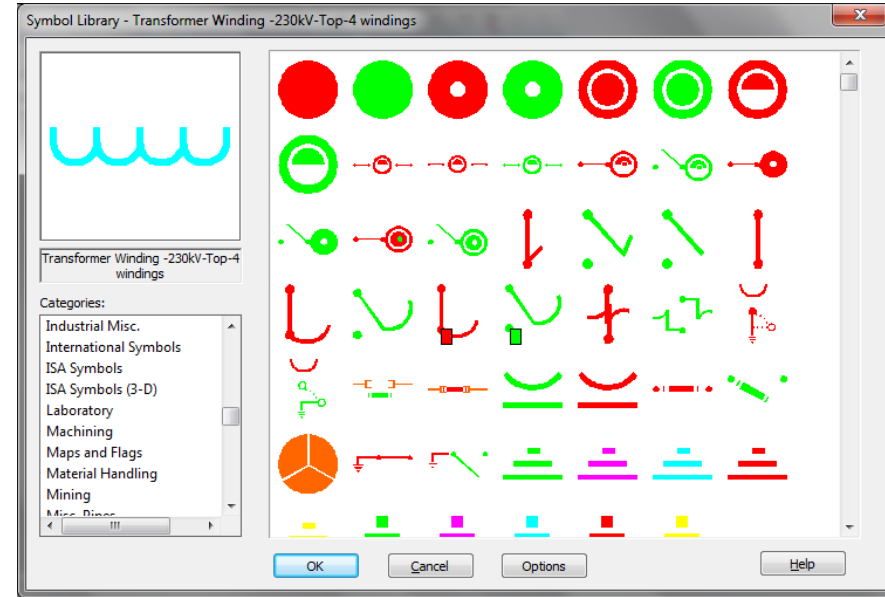
PI ProcessBook

- Display **real-time** and **historical** data
 - Process representation
 - **Trend** with traces
 - Context management with **PI AF**
 - **Replay** problematic events
 - **Drill-down** capabilities



PI ProcessBook 2014

- Launch ad hoc analysis in **PI Coresight**
- New Transmission and Distribution Symbols
- **Assign displays** to PI AF Elements and Templates



PI ProcessBook - [Tank Farm*]

File Edit View Insert Tools Draw Arrange Window Help

100%

Arial 10 B I U

1/8/2014 1/10/2014

AF Browser

Test

Elements

- AFDisplayBuilder
- DataTypes
- DHOLLEBEEK7600 ModuleDB
- Formulas
- Random
- Tank Farm
 - AwesomeTank1
 - AwesomeTank2
 - Tank1
 - Tank2
- TimeRangeMethods

69.6918 psi
200 cm3
AwesomeTank1

General Child Elements Attributes Ports Version

Name: AwesomeTank1

Description:

Template: AwesomeTankTemplate Type: None

Categories:

Default Attribute: <None>

Extended Properties

Server Time NUM

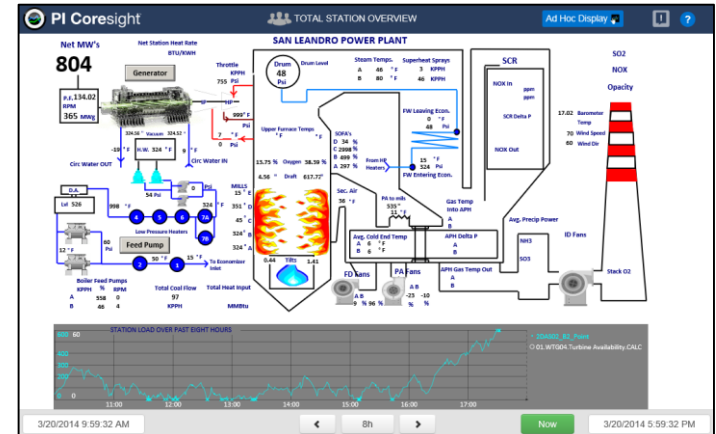
What Can I Do with PI Coresight?

- Not sure exactly what I am **looking for**...
- I found an **interesting event**, now I want to compare it to other time ranges or equipment
- I have an interesting display that I want to **share with others**



Introducing PI Coresight 2014

- Ad hoc analysis + authored displays



I need to:

Access operational data
anytime, anywhere



Real-time data on
your tablet using
PI Coresight





DEMO

PI Coresight on Mobile Devices

- Fast and easy access to PI System data
- View PI ProcessBook displays
- Designed for small screens
- Viewable on any device

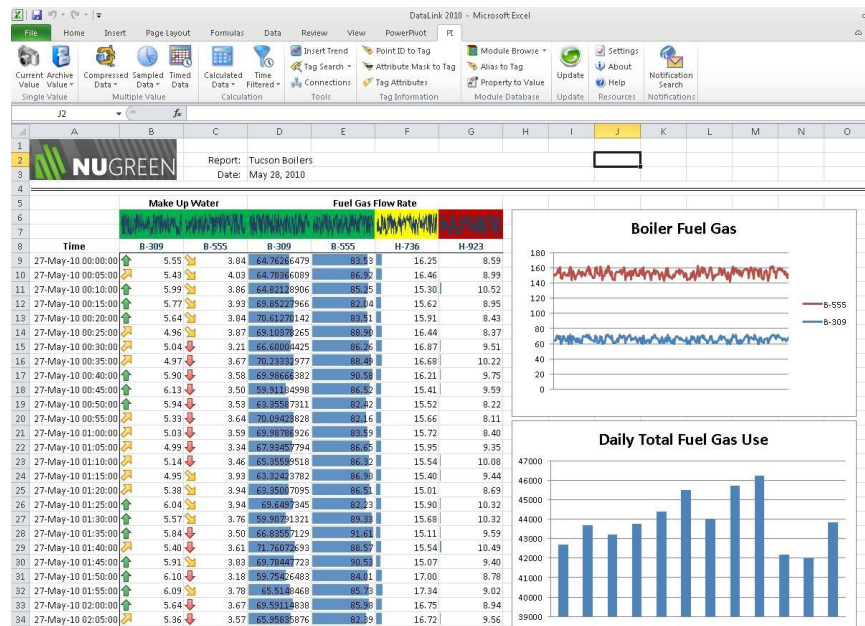


I need to:

Report against process and event data

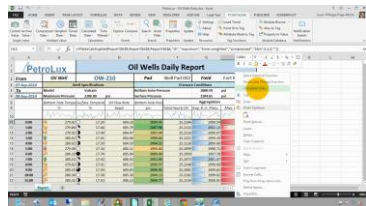


Events reporting in Excel using PI DataLink





DEMO

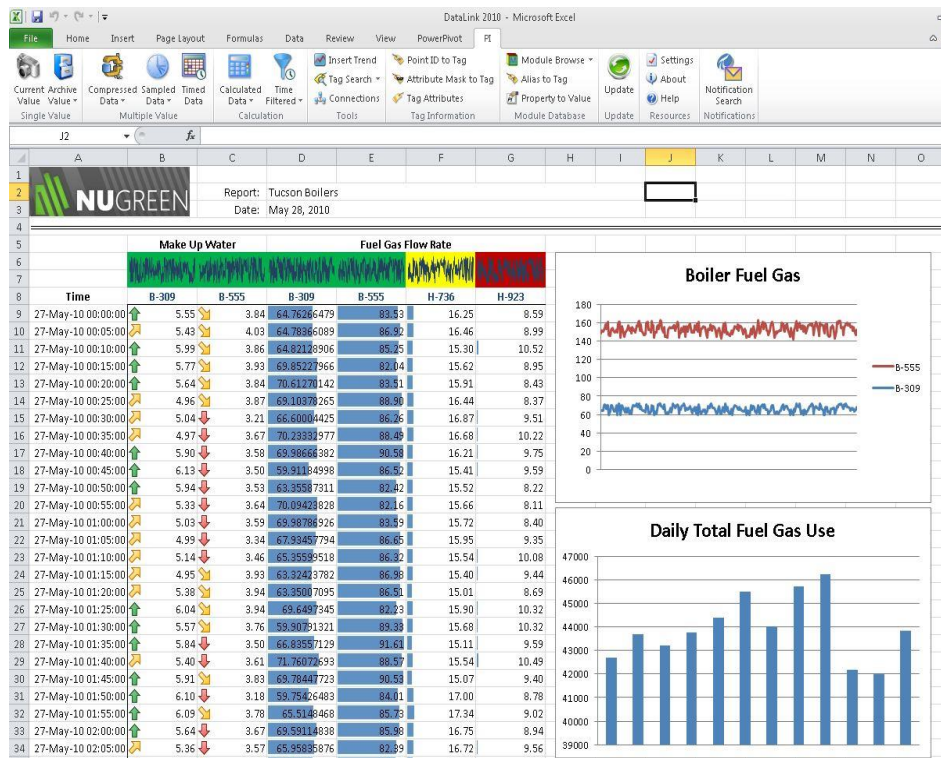


PI DataLink

Add-in to **Microsoft Excel**

- Create reports
- Apply calculations
- Retrieve data

OSIsoft's most popular product by installations



PI DataLink – Events Report Example

Copy of Copy of UC2014 Power Gen Reports - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ADD-INS PIDATALINK PI BUILDER Team

B21 : {=PIEDat(GLOBAL!\$B\$2,"Production Summary Report"!\$C\$3,"Production Summary Report"!\$C\$4,0,"Production Summary Report"!\$F\$4,"Unit.TIME.Day","Production Summary Report"!\$F\$3,"", "", "", "", "active in range","start time"}

EF Template Unit Time.Day
 Search Start 1/10/2014 0:00
 Search End *

Site Name San Leandro Power Plant
 Unit Name Unit 1
 EF Name *

Day of Week *

Top 10% Bottom 10%

Event name	Start time	End time	Duration	Site Name	Primary element	Day of Week	Day Type	AMBIENT TEMPERATURE			GROSS MW				
								Ambient Temperature.Min	Ambient Temperature.Avg	Ambient Temperature.Max	Gross MW.Start	Gross MW.End	Gross MW.Min	Gross MW.Avg	Gross MW.Max
2014_01_10	10-Jan-14 00:00:00	11-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	FRIDAY	WEEKDAY	39.38	53.15	62.12	389.42	383.05	371.63	392.90	401.58
21 2014_01_11	11-Jan-14 00:00:00	12-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SATURDAY	WEEKEND	42.95	51.00	58.65	393.05	548.17	377.83	513.15	581.58
22 2014_01_12	12-Jan-14 00:00:00	13-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SUNDAY	WEEKEND	36.49	39.77	42.97	548.17	557.14	532.21	554.91	564.58
23 2014_01_13	13-Jan-14 00:00:00	14-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	MONDAY	WEEKDAY	31.43	34.38	37.44	557.14	557.33	445.87	549.09	561.58
24 2014_01_14	14-Jan-14 00:00:00	15-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	TUESDAY	WEEKDAY	29.40	36.46	44.59	557.33	561.43	513.01	557.11	561.58
25 2014_01_15	15-Jan-14 00:00:00	16-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	WEDNESDAY	WEEKDAY	36.39	39.39	45.72	561.43	483.70	443.01	494.80	561.58
26 2014_01_16	16-Jan-14 00:00:00	17-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	THURSDAY	WEEKDAY	31.79	33.96	38.39	483.70	559.58	472.09	538.88	561.58
27 2014_01_17	17-Jan-14 00:00:00	18-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	FRIDAY	WEEKDAY	27.75	31.90	36.31	559.58	584.55	556.32	581.89	581.58
28 2014_01_18	18-Jan-14 00:00:00	19-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SATURDAY	WEEKEND	32.18	36.37	41.00	584.55	580.75	556.34	582.78	581.58
29 2014_01_19	19-Jan-14 00:00:00	20-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SUNDAY	WEEKEND	28.63	33.16	40.24	580.75	581.87	574.66	583.12	581.58
30 2014_01_20	20-Jan-14 00:00:00	21-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	MONDAY	WEEKDAY	25.36	30.89	33.64	581.87	585.70	517.12	564.85	581.58
31 2014_01_21	21-Jan-14 00:00:00	22-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	TUESDAY	WEEKDAY	21.31	29.28	36.49	585.70	586.95	578.56	583.84	581.58
32 2014_01_22	22-Jan-14 00:00:00	23-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	WEDNESDAY	WEEKDAY	31.02	36.55	43.74	586.95	582.22	543.00	574.07	581.58
33 2014_01_23	23-Jan-14 00:00:00	24-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	THURSDAY	WEEKDAY	30.67	35.83	39.71	582.22	584.35	550.66	557.36	581.58
34 2014_01_24	24-Jan-14 00:00:00	25-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	FRIDAY	WEEKDAY	34.48	36.28	38.73	584.35	1.57	1.57	497.81	631.58
35 2014_01_25	25-Jan-14 00:00:00	26-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SATURDAY	WEEKEND	33.30	36.73	40.87	1.57	1.41	1.35	1.52	581.58
36 2014_01_26	26-Jan-14 00:00:00	27-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SUNDAY	WEEKEND	37.34	41.12	46.49	1.41	1.57	1.35	1.48	581.58
37 2014_01_27	27-Jan-14 00:00:00	28-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	MONDAY	WEEKDAY	35.64	42.73	50.00	1.57	1.51	1.51	1.57	581.58
38 2014_01_28	28-Jan-14 00:00:00	29-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	TUESDAY	WEEKDAY	35.96	42.99	50.79	1.51	1.51	1.35	1.50	581.58
39 2014_01_29	29-Jan-14 00:00:00	30-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	WEDNESDAY	WEEKDAY	37.32	45.35	51.52	1.51	1.57	1.35	1.43	581.58
40 2014_01_30	30-Jan-14 00:00:00	31-Jan-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	THURSDAY	WEEKDAY	38.37	45.66	53.09	1.57	1.57	1.35	1.50	581.58
41 2014_01_31	31-Jan-14 00:00:00	01-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	FRIDAY	WEEKDAY	45.71	52.39	61.25	1.57	564.46	1.57	329.83	581.58
42 2014_02_01	01-Feb-14 00:00:00	02-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SATURDAY	WEEKEND	34.55	41.15	52.62	564.46	584.37	499.94	575.82	581.58
43 2014_02_02	02-Feb-14 00:00:00	03-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SUNDAY	WEEKEND	29.58	37.42	45.33	584.37	502.19	502.19	581.74	581.58
44 2014_02_03	03-Feb-14 00:00:00	04-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	MONDAY	WEEKDAY	31.52	38.18	47.16	502.19	581.26	502.19	580.03	581.58
45 2014_02_04	04-Feb-14 00:00:00	05-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	TUESDAY	WEEKDAY	41.13	41.29	41.45	581.26	582.85	581.26	582.05	581.58
46 2014_02_05	05-Feb-14 00:00:00	06-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	WEDNESDAY	WEEKDAY	40.82	40.97	41.13	582.85	584.43	582.85	583.64	581.58
47 2014_02_06	06-Feb-14 00:00:00	07-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	THURSDAY	WEEKDAY	40.68	43.95	53.49	584.43	584.13	496.15	575.45	581.58
48 2014_02_07	07-Feb-14 00:00:00	08-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	FRIDAY	WEEKDAY	48.62	57.47	60.77	584.13	585.30	405.41	473.67	581.58
49 2014_02_08	08-Feb-14 00:00:00	09-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SATURDAY	WEEKEND	43.24	51.08	67.00	585.30	581.77	557.08	583.15	581.58
50 2014_02_09	09-Feb-14 00:00:00	10-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	SUNDAY	WEEKEND	43.60	47.53	54.25	581.77	581.77	572.93	583.79	581.58
51 2014_02_10	10-Feb-14 00:00:00	11-Feb-14 00:00:00	1:00:00	San Leandro Power Plant	Unit 1	MONDAY	WEEKDAY	42.88	46.16	50.80	581.77	583.44	472.99	578.89	581.58

READY LIVE LIVE Root Cause Compare Boiler Feed Pump Relative Production Summary Report Hourly Report Daily Anomaly Investigation GLOBAL DAY Data

7:25 AM 4/1/2014

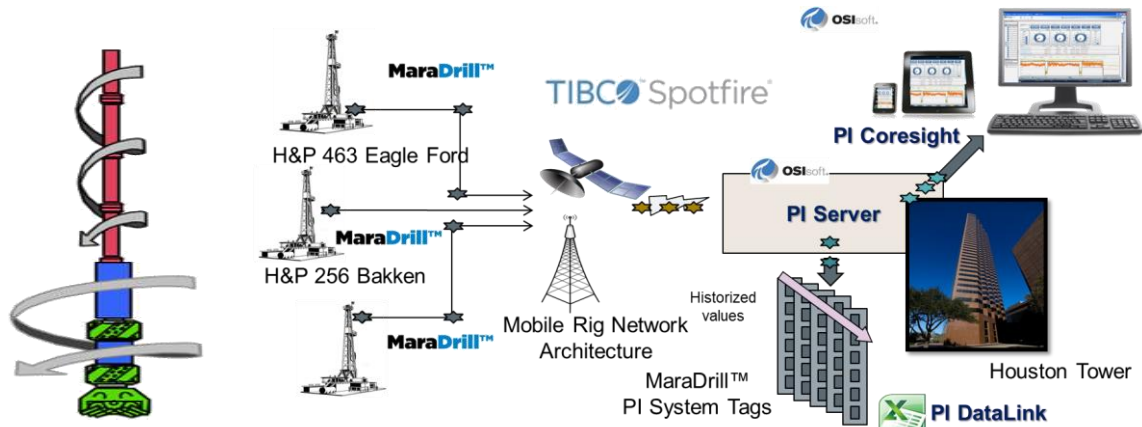
Daily Events

Unit Trip!

Real-Time Drilling Optimization



From stick-slip identification to stick-slip mitigation.



CHALLENGES

Lack of real-time drilling analytics and guidance capability **at the drill site**

Extended drill time and down hole **tool damage**

Increased use of **resources**

SOLUTION

Installation of the **PI System real-time integration and applications infrastructure**

Creation of drilling process **high fidelity real-time analytics and visualization** capabilities at the drill site

RESULTS

Drilling time and capital well cost savings due to reduction in resources

Reduced vibration and damage to downhole tools

Continuous optimization onsite and retrospective **post-well analysis**

Update on Marathon Oil's MaraDrill™ PI-Based Optimization Solution



Update on Marathon Oil's MaraDrill(TM) PI-based Optimization Solution

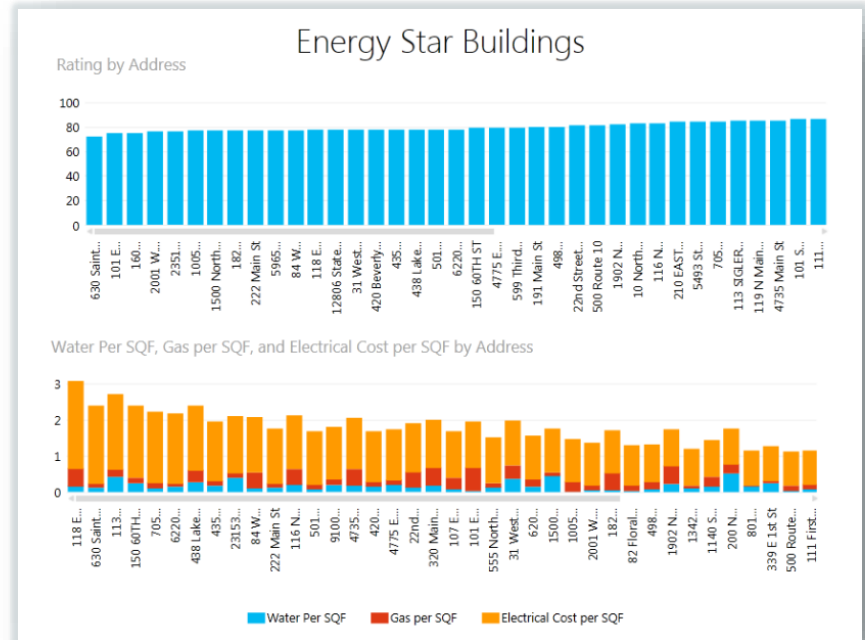
Ken Startz
Marathon Oil

I need to:

Provide self-service BI
for my users



Rich reports
in Microsoft
Power BI



From Data to Decision-Ready Data

Access to analytical tools

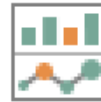
Power
Query

Power
Pivot

Power
View



Excel

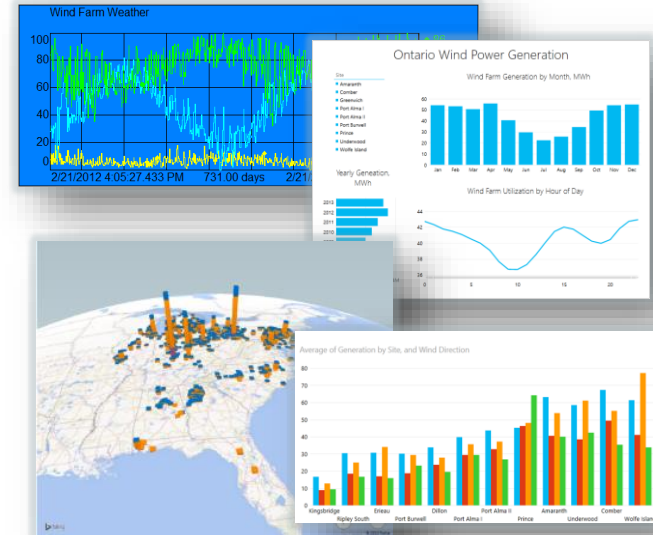


Access to data

PI Web API



Data

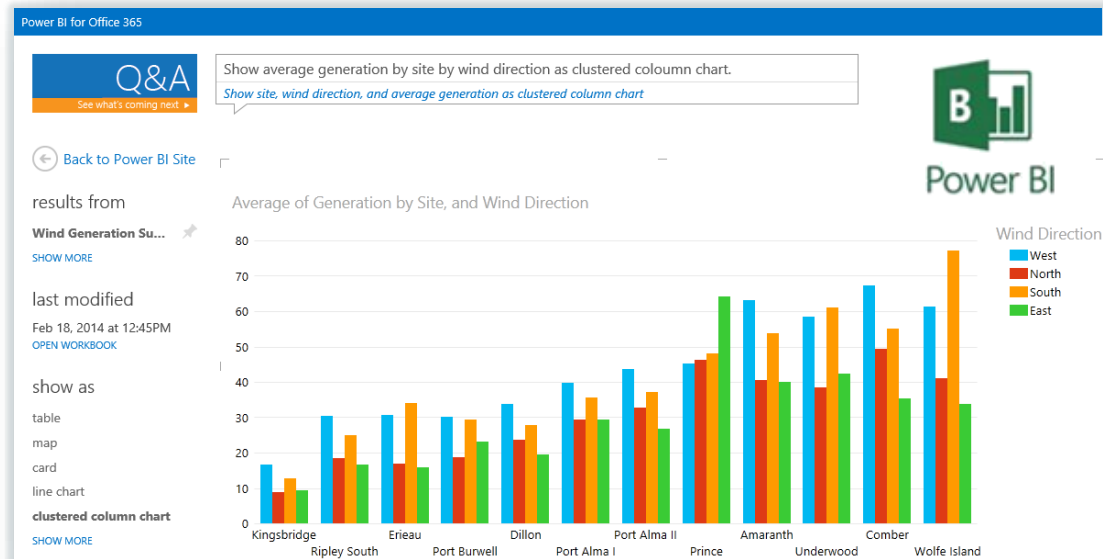


“Decision Ready” Data

Microsoft Power BI for Office 365

- Analysis anywhere with **Power BI Sites** and the **Power BI App**
- Ask and answer with **Power Q&A**
- Scheduled data **refresh**
- Benefit from the **latest updates**

“Show generation by site by wind direction as column chart”



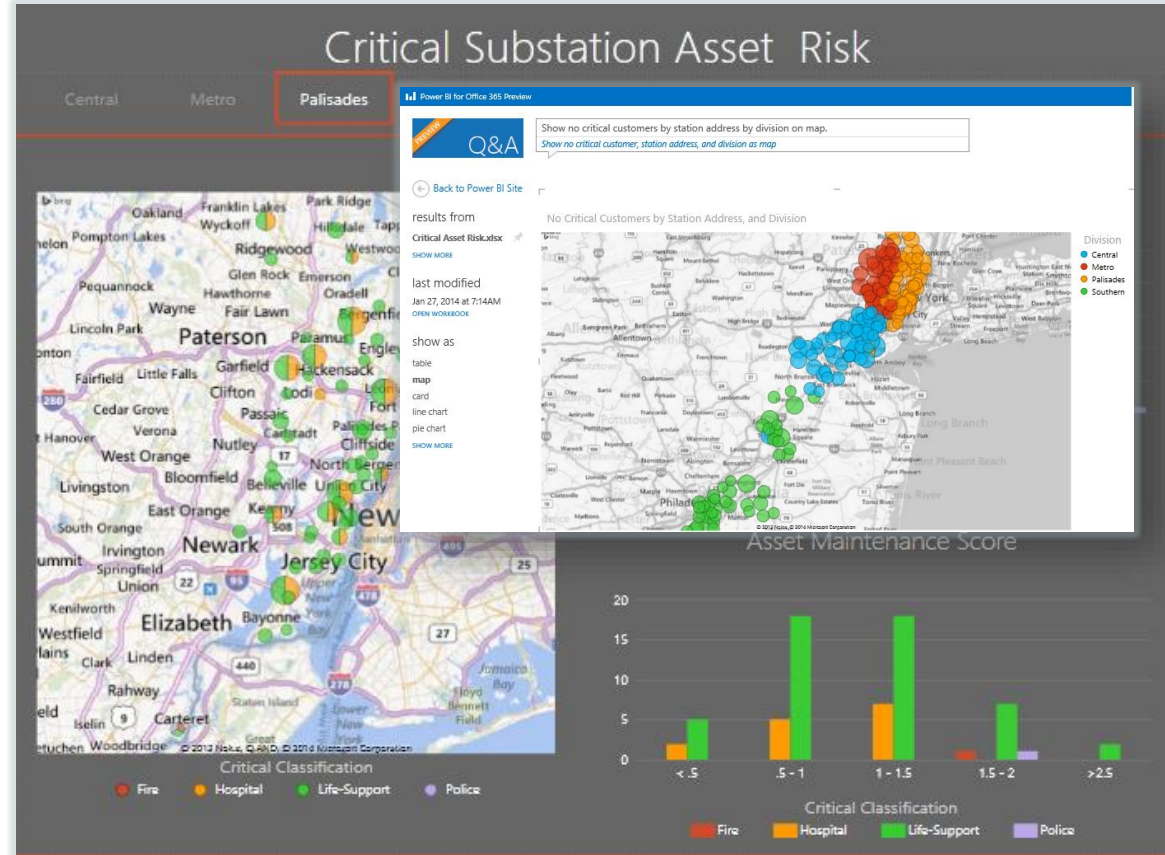
Making Decision-Ready Accessible

Objective

- Share a vision of making substation asset health analysis available to domain experts

Outcome

- Provision Office 365 users with Power BI and Excel



I need to:

Provide self service BI for my users



I need to:

Enter data from my mobile device



I need to:

Respond to notifications and identify problems

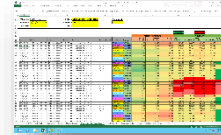


I need to: Access process data anytime, anywhere



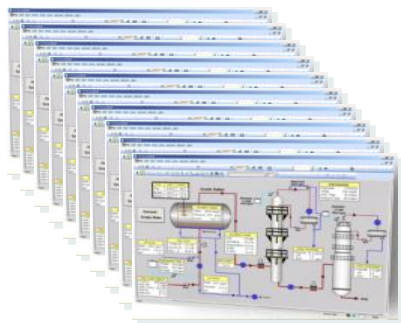
I need to:

Report against process and event data



What do Your Users Need?

The **PI Visualization Suite** and **PI System Access** gives you the optimal user experience



so PI System data can be **accessible** throughout your **entire business**, at **all times**.

Optimize Client License Management

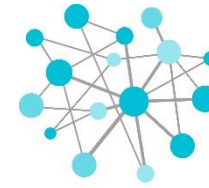
The **PI Visualization Suite** and **PI System Access**

optimize the management of your client licenses

One license providing access to all PI System visualization tools across the organization



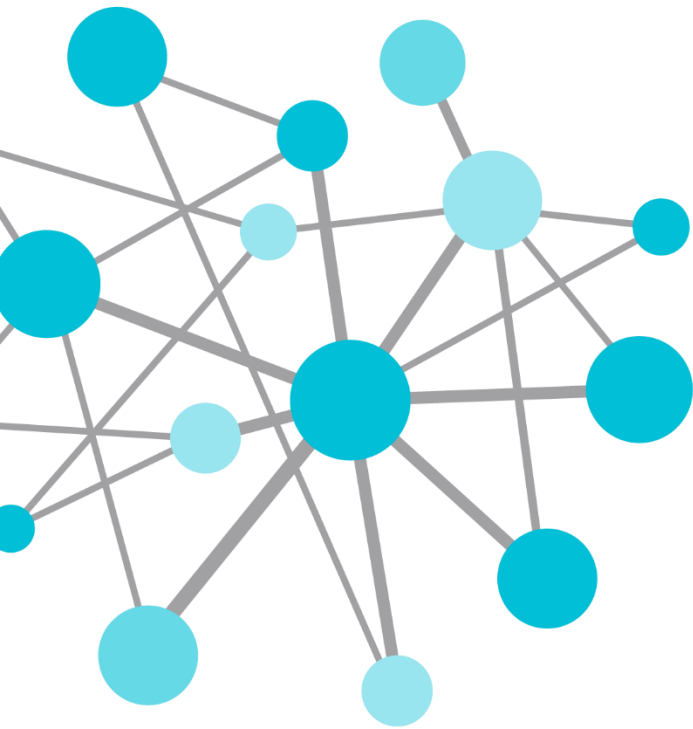
Key Points to Take Home



Experience the value of the information on the spot with **unlimited access to the PI System**

- Tools to answer all your users needs
- Access information anywhere, anytime, from any device
- Simplifies compliance and license management



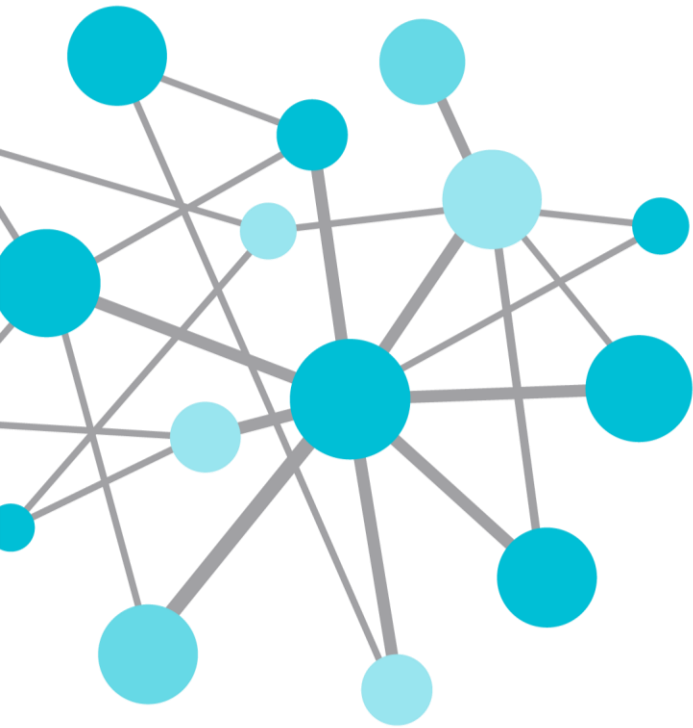


Questions

Please wait for the
microphone before
asking your question



Please state your name
and your company



THANK
YOU

Brought to you by  **OSI**soft.

Sam Clark

Field Service Engineer

sclark@osisoft.com

OSIsoft, LLC