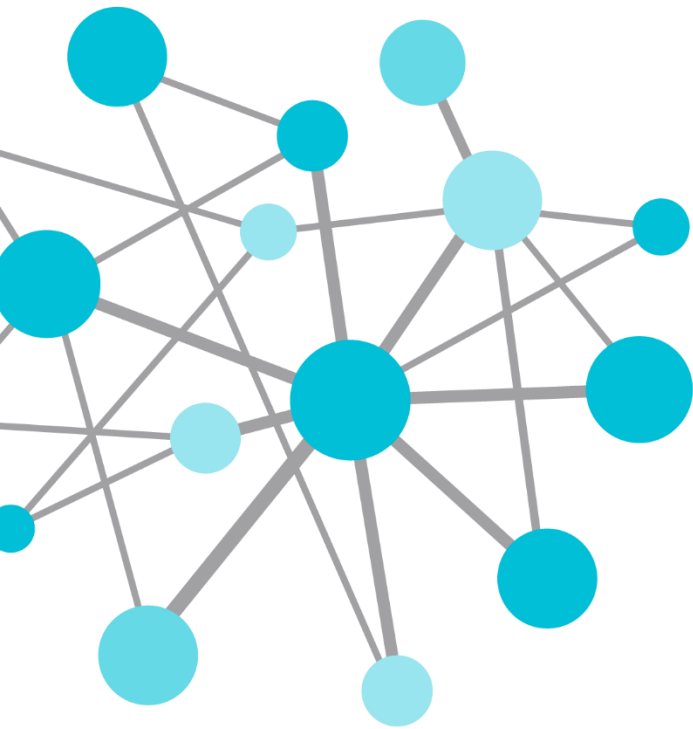


OSIsoft®

REGIONAL SEMINAR 2014

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

DECISION READY IN REAL-TIME



Information on the Spot

Presented by **Kevin Geneva, Field Service Engineer**
Kgeneva@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**

Others need tools to build heads up
displays, dashboards, and KPIs



*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**

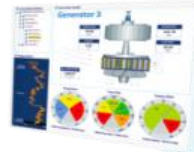
Unlimited Access to Your Data

- 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 WebParts



PI Coresight



PI ProcessBook



PI Manual Logger



PI DataLink



I need to:

Provide self service BI for my users



I need to:

Enter data from my mobile device



I need to:

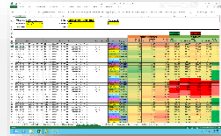
Respond to notifications and identify problems



I need to: Access process data anytime, anywhere

I need to:

Report against process and event data



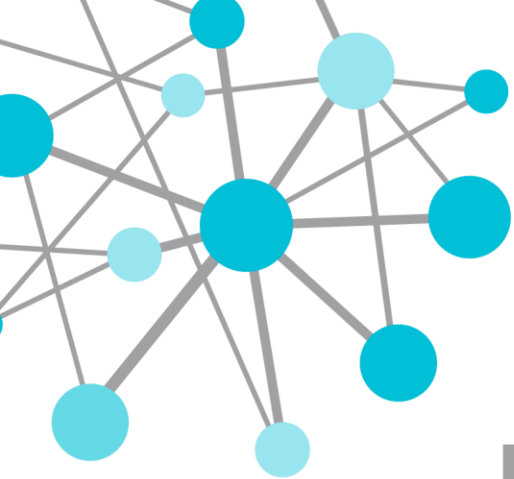
I need to:

Enter data from my mobile device



PI Manual Logger using a smart phone





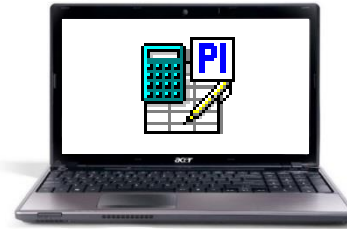
DEMO

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

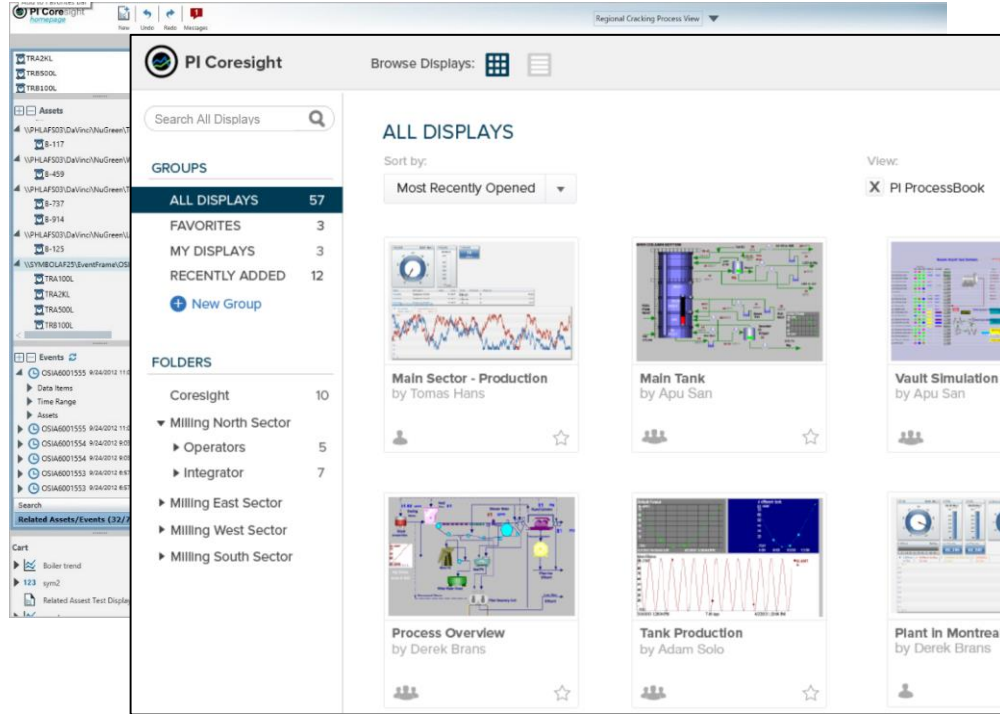


I need to:

Respond to notifications and identify problems

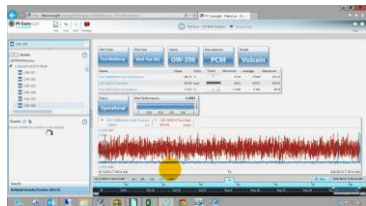


Notification-driven investigation using PI ProcessBook and PI Coresight



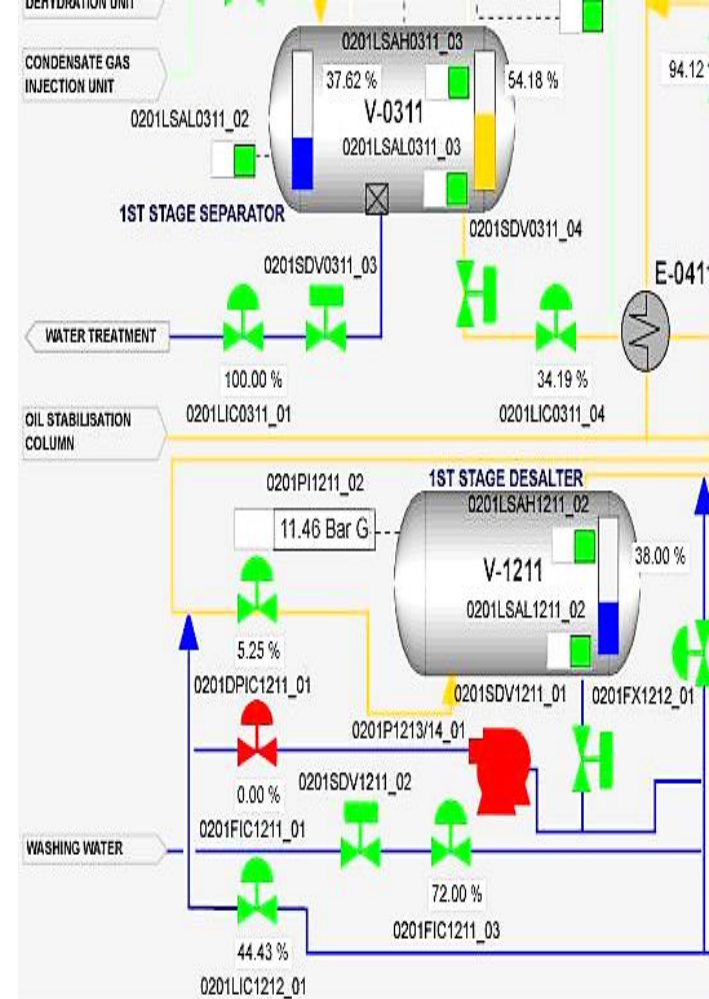


DEMO



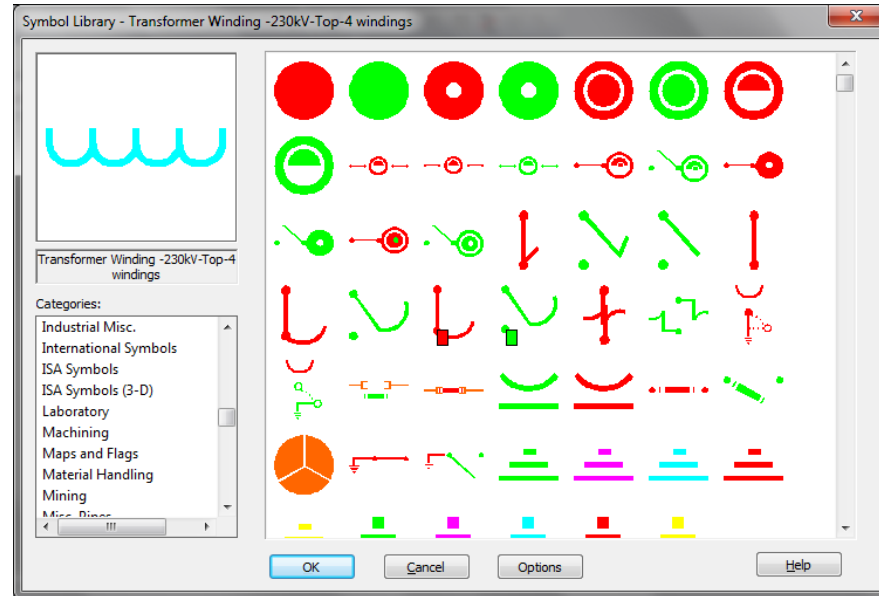
PI ProcessBook

- 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



Demo: Assign Displays to PI AF Elements

The screenshot shows the PI ProcessBook interface for a 'Tank Farm' project. The main workspace displays a 3D tank model labeled 'AwesomeTank1' with two data displays: '69.6918 psi' and '200 cm3'. The left-hand 'AF Browser' pane shows a tree view of the project structure, including 'AwesomeTank1' and 'AwesomeTank2'. The bottom pane shows the 'General' properties for 'AwesomeTank1', including its name, description, template, and categories.

AF Browser Elements:

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

Property Sheet for AwesomeTank1:

Property	Value
Name	AwesomeTank1
Description	
Template	AwesomeTankTemplate
Categories	
Default Attribute	<None>

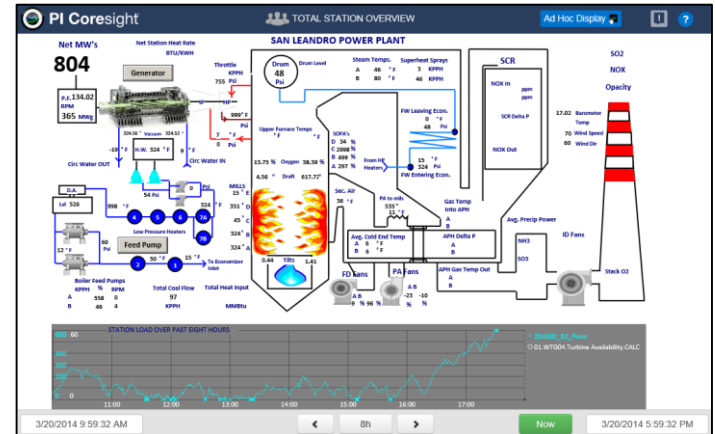
What Can I Do with PI Coresight?

- 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

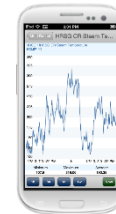




DEMO

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

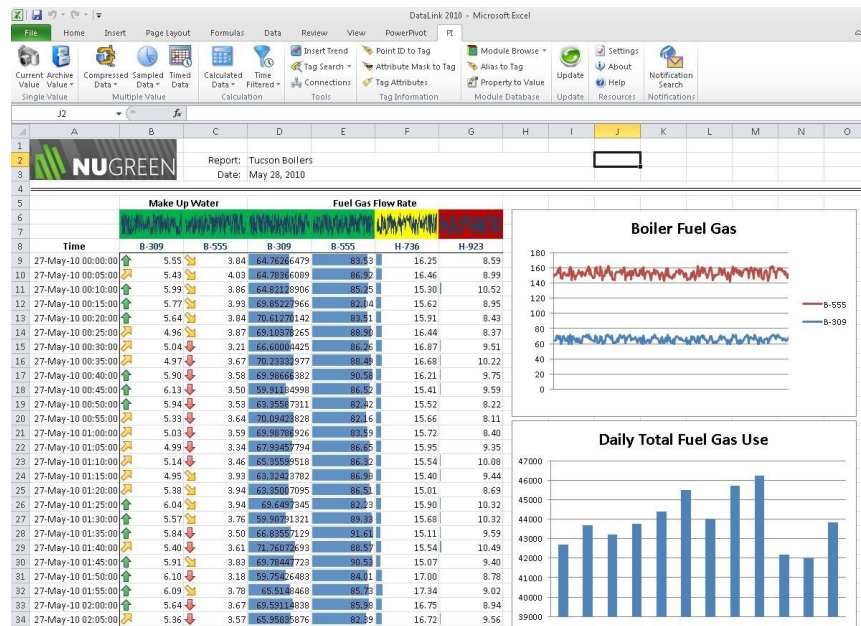


I need to:

Report against process and event data



Events reporting in Excel using PI DataLink





DEMO

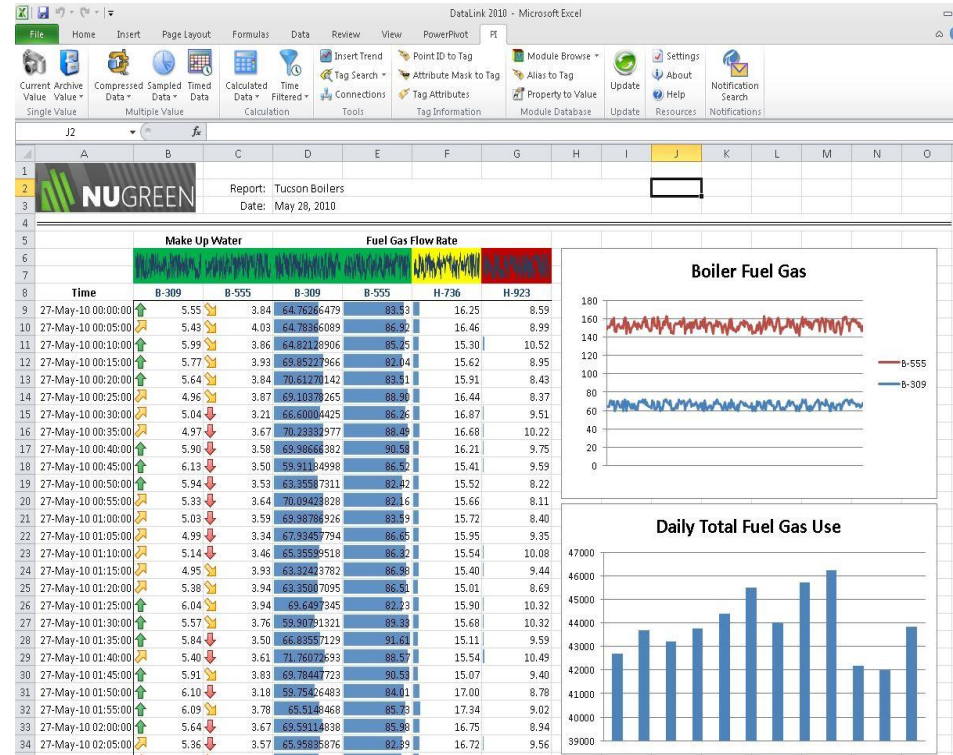


PI DataLink

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: [=PIEFdat[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
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	383.05	548.17	377.83	513.15	581
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
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	562
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	565
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	562
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	562
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
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
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
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
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
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
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	571.86	581
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	634
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	1.39	1.52	581
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	1.39	1.48	581
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
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	1.39	1.50	581
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	1.39	1.49	581
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	1.39	1.50	581
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
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
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
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
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
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
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	43.56	53.49	584.43	584.13	496.15	575.45	581
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
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
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
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

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

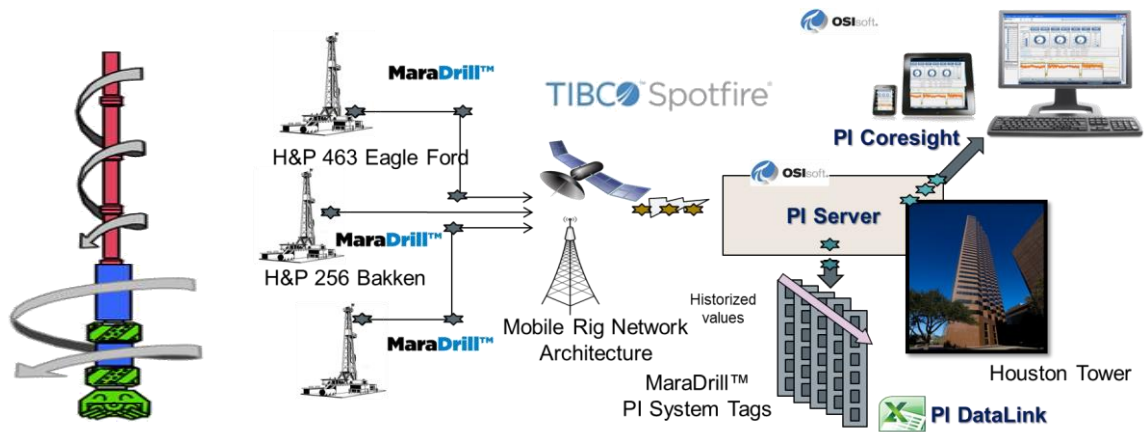
Daily Events

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(TM) PI-based Optimization Solution

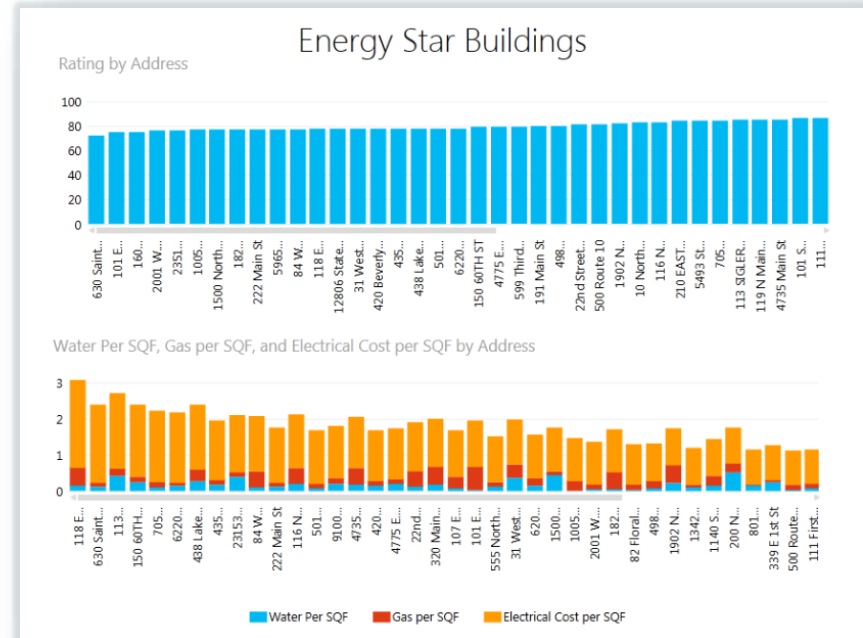
Ken Startz
Marathon Oil

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

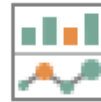
Power Query

Power Pivot

Power View



Excel

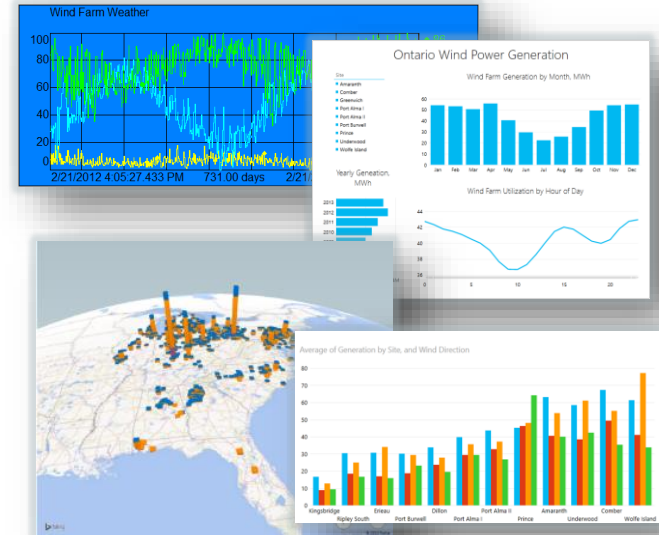


Access to data

PI Web API



Data

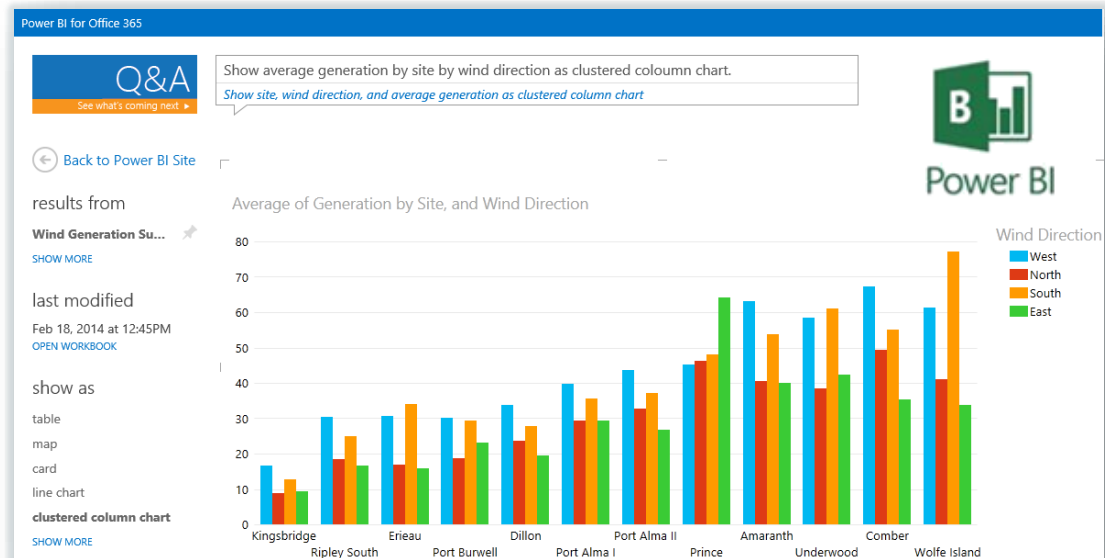


“Decision Ready” Data

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”



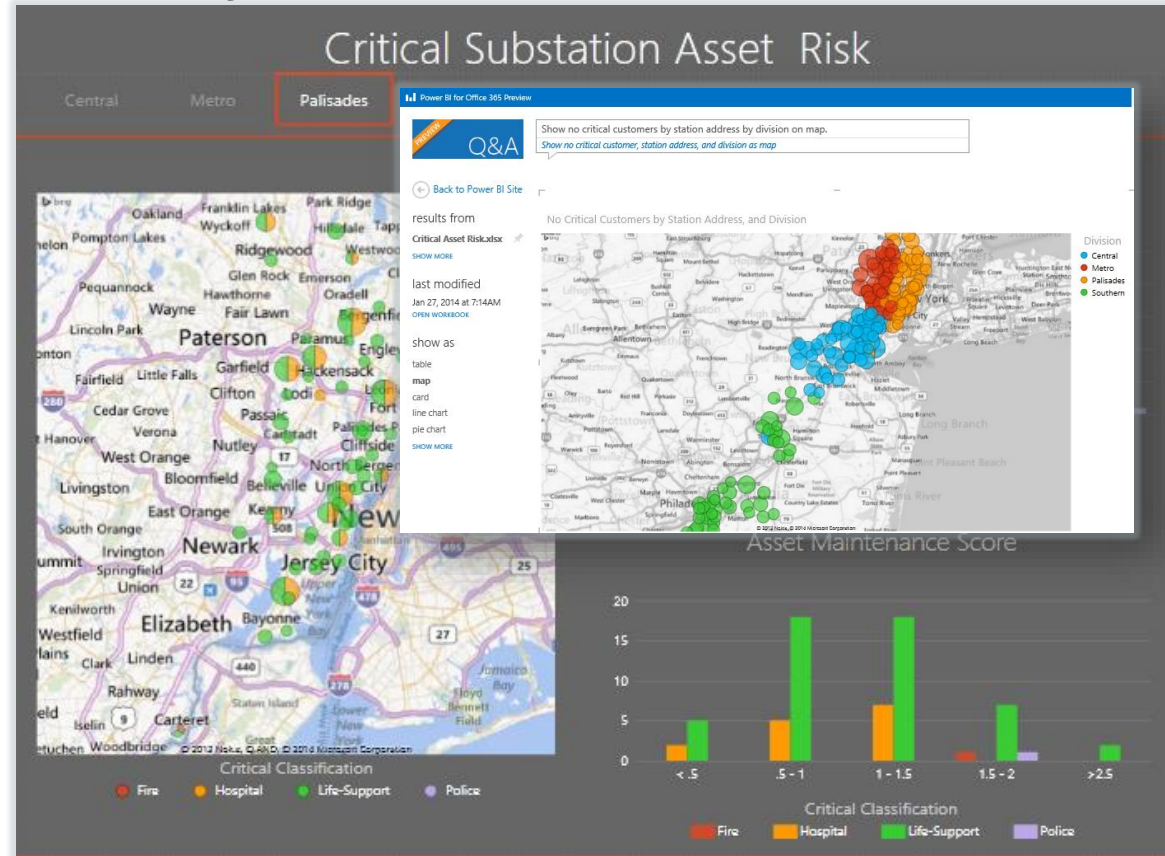
Making Decision-Ready Accessible

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

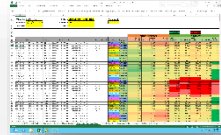


I need to: Access process data anytime, anywhere



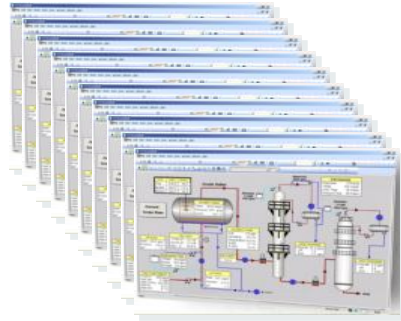
I need to:

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

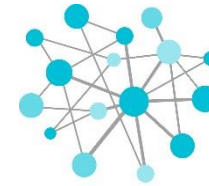
The **PI Visualization Suite** and **PI System Access**

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

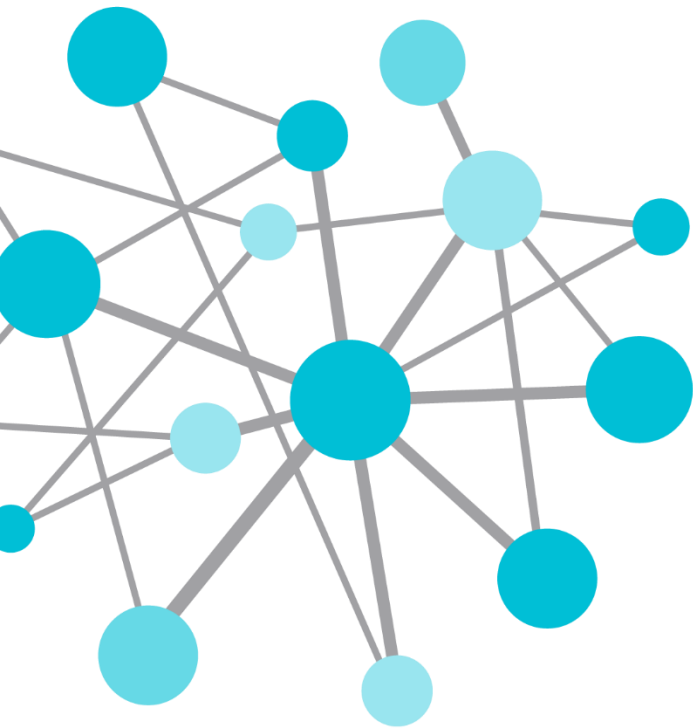


Experience the value of the information on the spot with **unlimited access to the PI System**

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



**Information
on the Spot**

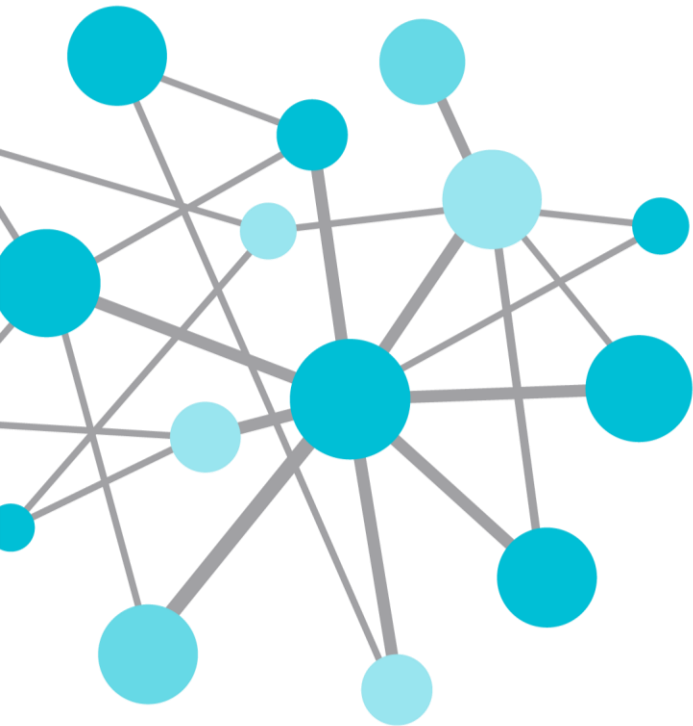


Questions

Please wait for the microphone before asking your question



Please state your name and your company



THANK
YOU

Brought to you by  **OSIsoft.**

Kevin Geneva

Field Service Engineer

Kgeneva@osisoft.com

OSIsoft, LLC