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USERS CONFERENCE 2016

April 4-8, 2016 | San Francisco

TRANSFORM
YOURWORLD



Driving Transformational Changes in your Organization by Integrating Global IT Trends with the PI System

Presented by **Norton Green**, Executive Briefing Program Director
Curt Hertler, Global Solutions Architect



IT Trends



IT Trends.... Demystified

Business Drivers

Process Efficiency

Energy Resources

Asset Health

Safety Security

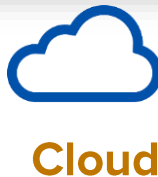
Regulatory

Quality

 The
PI System



Megatrends





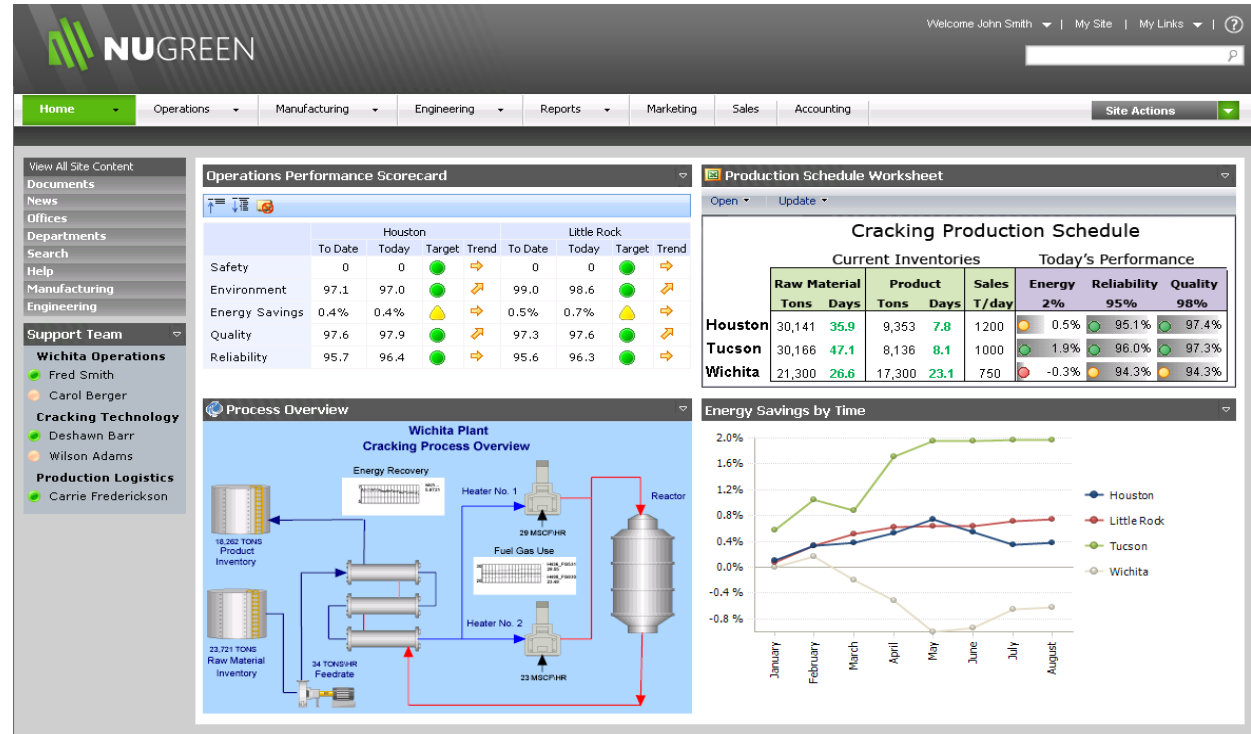
We believe **People** with **Data** can **Transform** their world



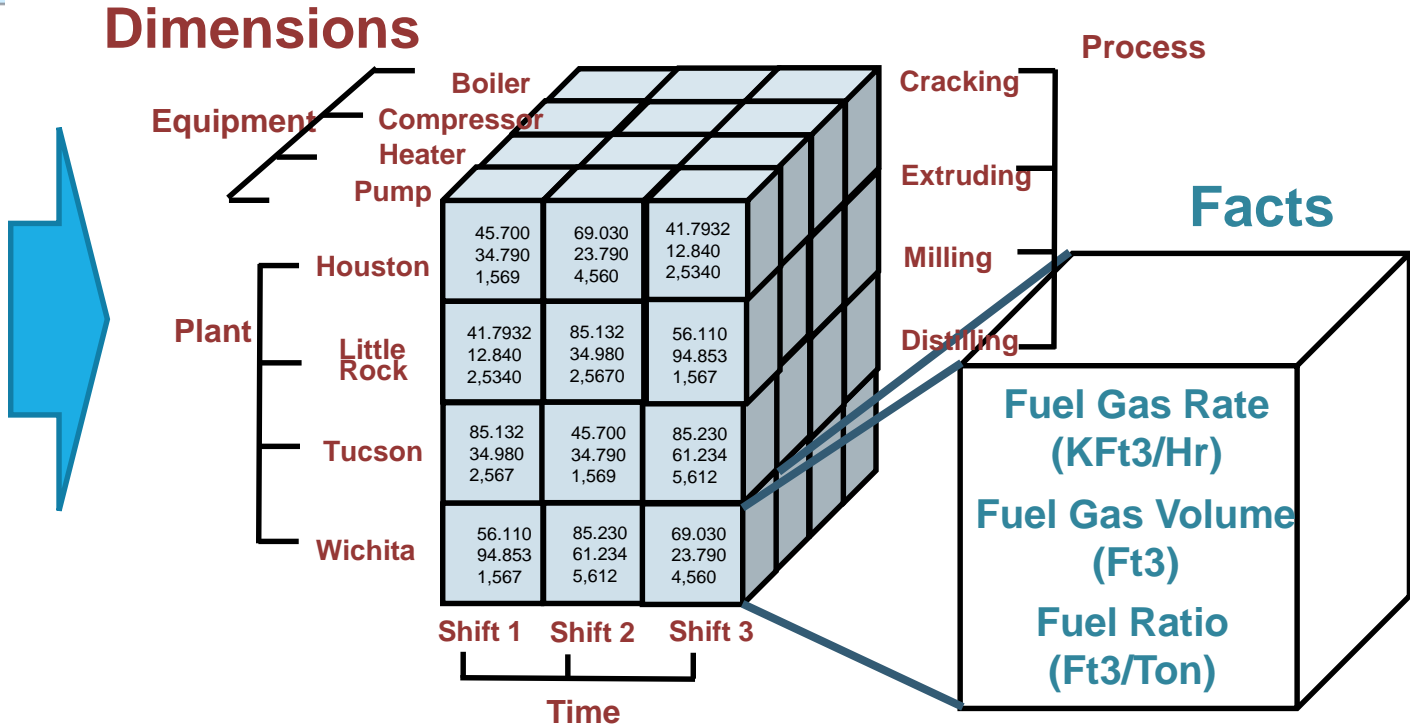
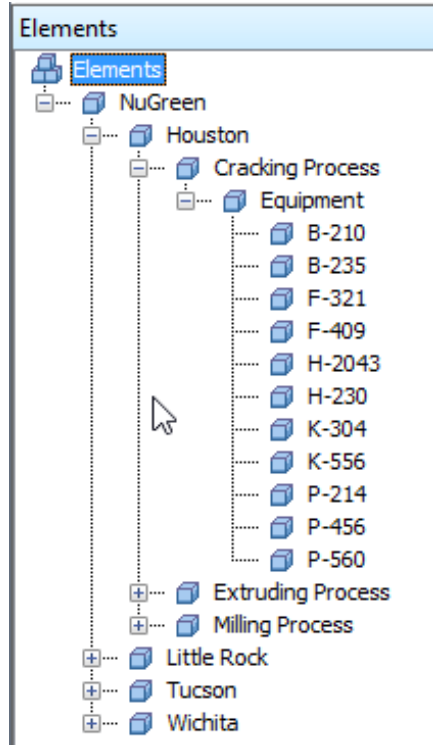
The OSIsoft BI Journey

2009: Does BI have value to Operations?

- PoC using Microsoft PerformancePoint
- Hired third-party consultant
- Custom application written to create dataset with Asset Framework (AF) context

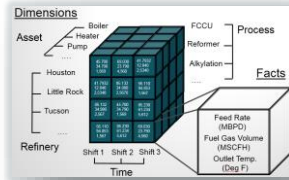


2009: We learned AF context is important ?

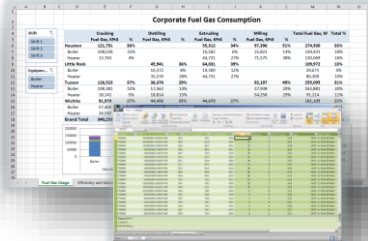


Tools became more accessible and easier to use.

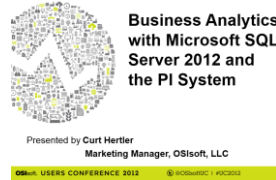
2010



2011



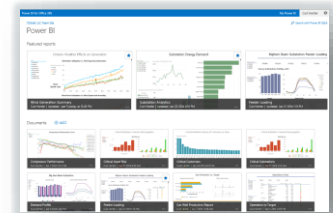
2012



2013



2014



Power BI



PowerPivot Gallery

Power View



PowerPivot

Power View

Power Query



PI OLEDB Enterprise

PI Web API

However, we needed a new data access tools.



System of Record

- Guaranteed Delivery & Storage
- Full Fidelity of Sensor
- Optimized for Real-Time
- Backup/Restore
- HA
- Security

Needs:

Cleanse

Augment

Shape

Transmit

Visual Analytics



Statistical Analytics

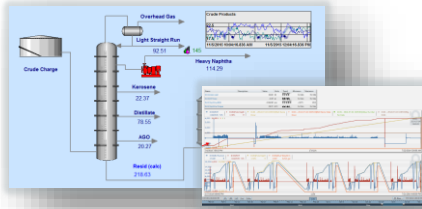


Analytics Packages

- Designed to Analyze Large Sets
- Expects that the Data Exists
- Problem Defines Data Shape
- Typically Evenly Spaced in Time

The PI Infrastructure Extended

Real-Time Decision Analysis



Time and Event
Trending & Awareness

Specialized Models
Simulation & Optimization

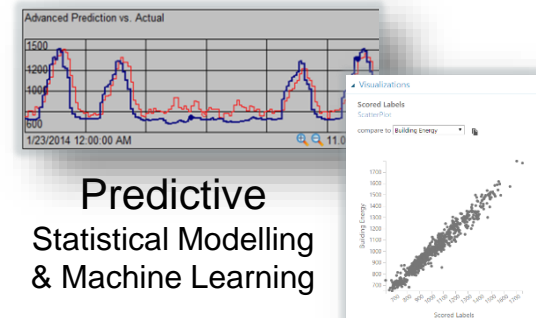
$$Q = \frac{\Delta P_{DD} * kh}{141.2 \mu B_0 \left\{ \ln \frac{r_e}{r_w} - \frac{3}{4} + S \right\}}$$

Descriptive
Performance
& Condition

Retrospective & Predictive Analysis

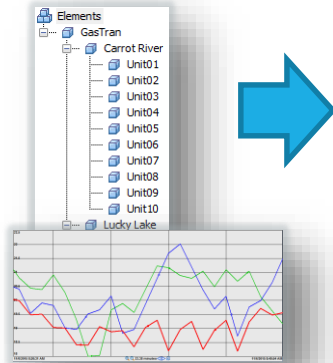


Multidimensional
Business Intelligence
& Dashboards

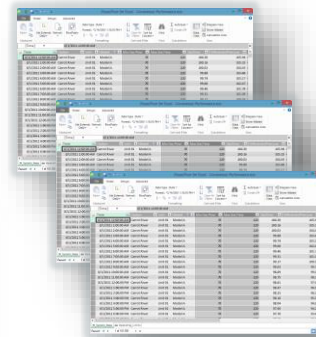


Predictive
Statistical Modelling
& Machine Learning

PI Integrator for Business Analytics
&
SAP HANA IoT Connector by OSIsoft

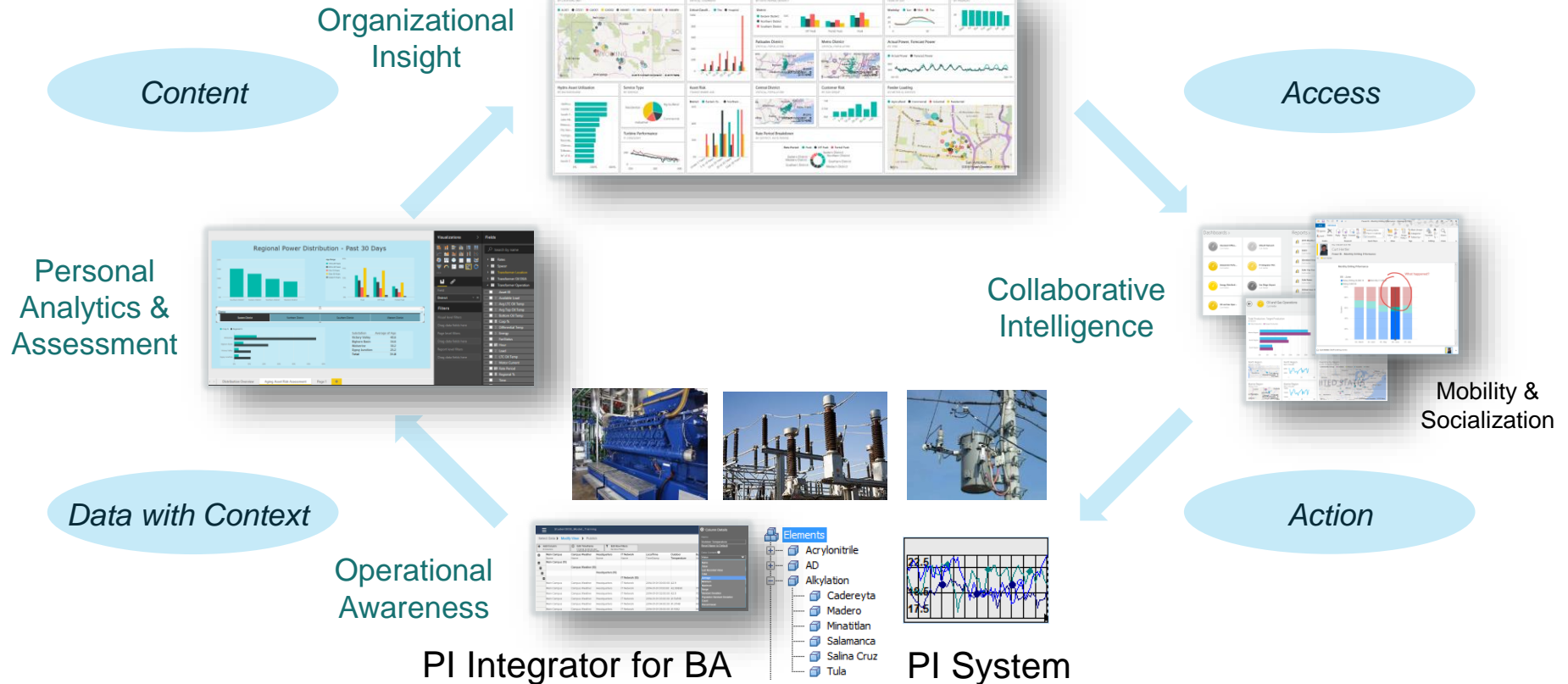


Time, Event
and Asset
Context



Tabular
Context

New ways to socialize performance.



Predictive Modelling & Machine Learning

- Complex systems where first principles equations interact or don't exist
- Empirical or “fitted” models generated from time, event and asset data in tabular context
- Predicts outcome, e.g. equipment failure, unmeasured or forecasted quantities
- Model continuously improves or “learns” with additional data

Linear Regression

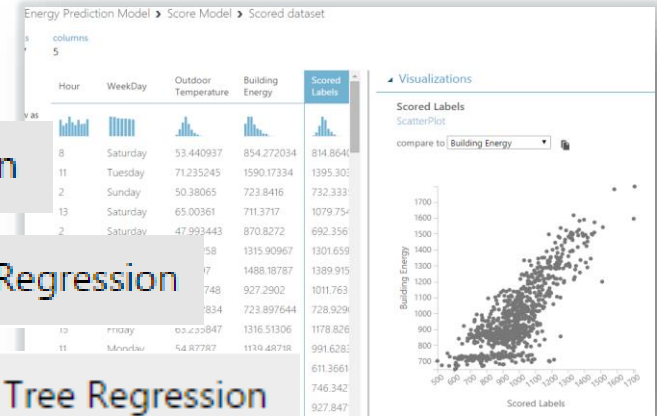
Neural Network Regression

Boosted Decision Tree Regression

Two-Class Decision Forest

Multiclass Decision Jungle

Microsoft Azure Machine Learning



Agenda

9:00am-9:30am	Driving Transformational Changes in your Organization by Integrating Global IT Trends with the PI System Speakers: Norton Green, Curt Hertler
9:30am-9:45am	Transfer Time
9:45am-10:15am	How the Industrial Internet of Things is Changing Operations – ARC Advisory Group Speaker: Peter Reynolds
10:15am-10:30am	Transfer Time
10:30am-11:00am	Digitization and Innovation: Explore how OSIsoft's Infrastructure and the SAP HANA Platform help customers in their Digital Transformation Journey - SAP Speaker: Bala Ram
11:00am-11:15am	Transfer Time
11:15am-12:00pm	Shorten Time to Analytical Insights with PI System Data – Barrick Gold and Element Analytics Speakers: Iain Allen, Sameer Kalwani
12:00pm-2:00pm	LUNCH - Grand Ballroom, Grand Ballroom Level
2:00pm-2:30pm	Management of Remote Assets with the PI System and Ominor – Quarcum Technologies Speaker: Luigino Rigitano
2:30pm-2:45pm	Transfer Time
2:45pm-3:15pm	Cyber Security for Industrial IT – Exploring Partnership for Effective Incident Response - OSIsoft Speakers: Bryan Owen, Ryan Cheff
3:15pm-3:30pm	Transfer Time
3:30pm-4:15pm	Utilizing PI Cloud Connect to Optimize the Collection and Transformation of Process Data for Power Plants – Strategic Power Systems Speaker: Robert Steele
4:15pm-4:45pm	Panel Discussion: Achieving Operational Agility As You Transform Your World with Disruptive Technologies – OSIsoft Speaker: Moderator - Daniel Lopresti

Contact Information

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Questions

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

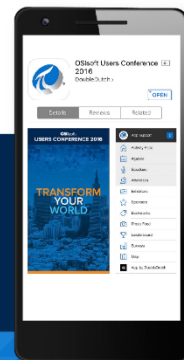


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감사합니다

谢谢

Danke

Merci

Gracias

Thank You

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Спасибо

Obrigado

Industrial IT PI User Groups

Join to discuss best practices, white papers, share news, and exchange ideas.

Objectives:

- Identify Best Practices
- Share knowledge and ideas across our industry
- Foster communication with OSIsoft regarding our industry needs

This is NOT an avenue for sales presentations or marketing

Customer run,
customer led,
OSIsoft assisted

Want to opt in?

<https://pisquare.osisoft.com/groups/industryIT>
<https://pisquare.osisoft.com/groups/data-centers>

Or contact jsirois@osisoft.com



Have questions?

- jsirois@osisoft.com
- ngreen@osisoft.com – Industrial IT
- glagro@osisoft.com – Data Centers Group
- Visit the PI Square Booth



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