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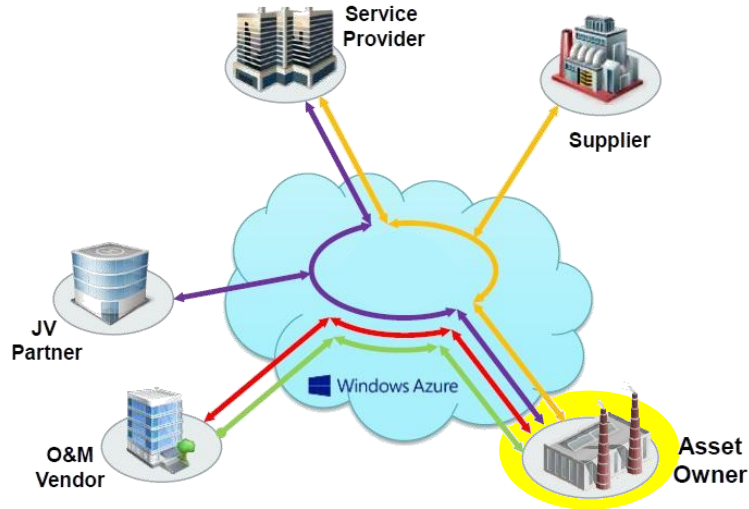
Asset Insight: Using Data & Analytics to Effectively Manage a Power Plant's Capital Equipment

Presented by **S.A. DellaVilla Jr., CEO**
Edward Fuselier, Director – Asset Mgmt

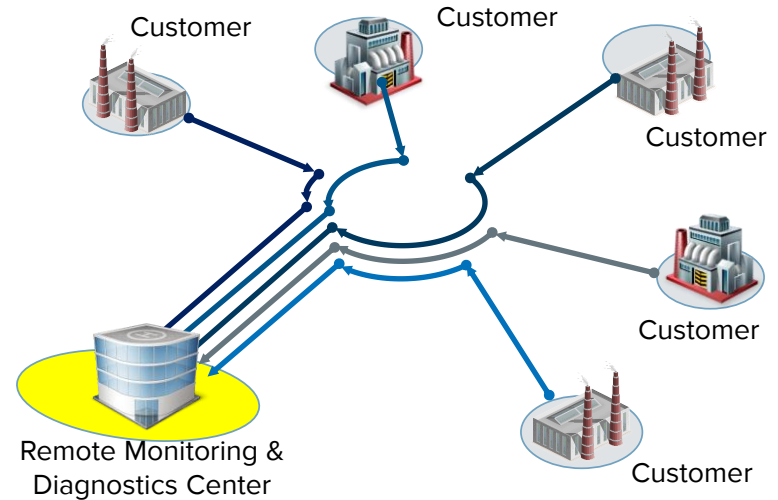


Connected Services focuses on Service Providers

Asset Owners view



Service Provider view



A simple, secure technical and commercial framework for key service providers to obtain the data they need to drive aftermarket service excellence.

Kindle Energy – Formerly Lonestar Generation



- Ed Fuselier – Director, Asset Management
- Kindle Energy, LLC – Asset Management Division of Blackstone Investment Group
- Lonestar Generation
 - 3 Combined Cycle Power Generation Plants in TX
 - Gas Turbines – GE Technology
 - Steam Turbines – ALSTOM Technology



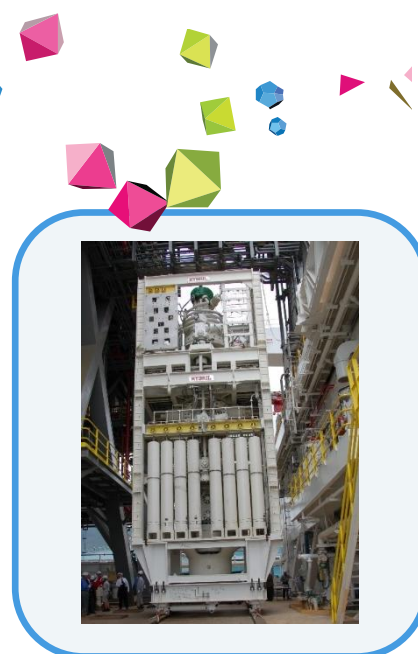
SPS – Data First



Power, Platforms, Pipelines



Renewables...Wind & PV



Deep sea Drilling... BOP

ORAP® - A Global Database

RAM Data for Large-Scale Capital Equipment

Power, Platforms,
Pipelines

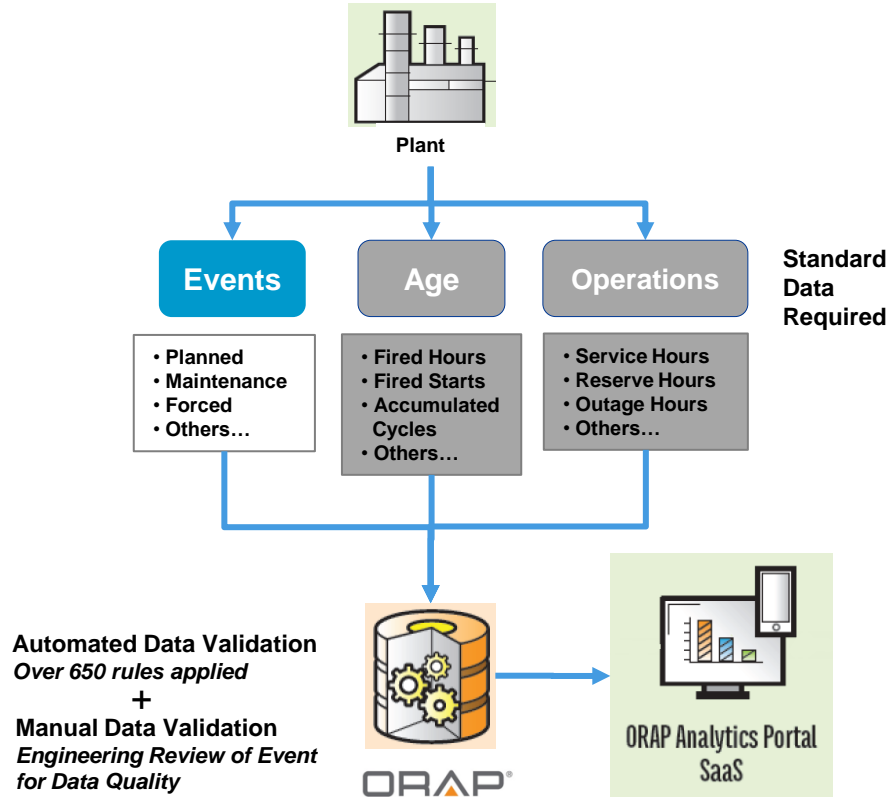
Data Since

1987



A Global Customer Base

ORAP Process



ORAP Benefits

- Standardization across fleets
 - Data Input
 - RAM KPIs
- Benchmarking
 - RAM KPI's
 - Inspections
 - Events
- Summary of Outage Duration and Causes
- Fleet event details
- Communication with OEM

The Challenge

- Reduce Manual Input
- Improve Data Fidelity & Quality
- Improve Timeliness

Optimize Data Collection and Reduce Requirements on Plant Staff

Kindle Energy

- Three Distinct Plants
- Multiple Processes, Calculations, and Report Formats
 - Took approximately 1 person week to gather and document
- Reporting Was Difficult “Second Job” for Plant Operators
- Results Often Questioned and Modified
- No Benchmarking Available

Building a Partnership... 5 Years in the Making

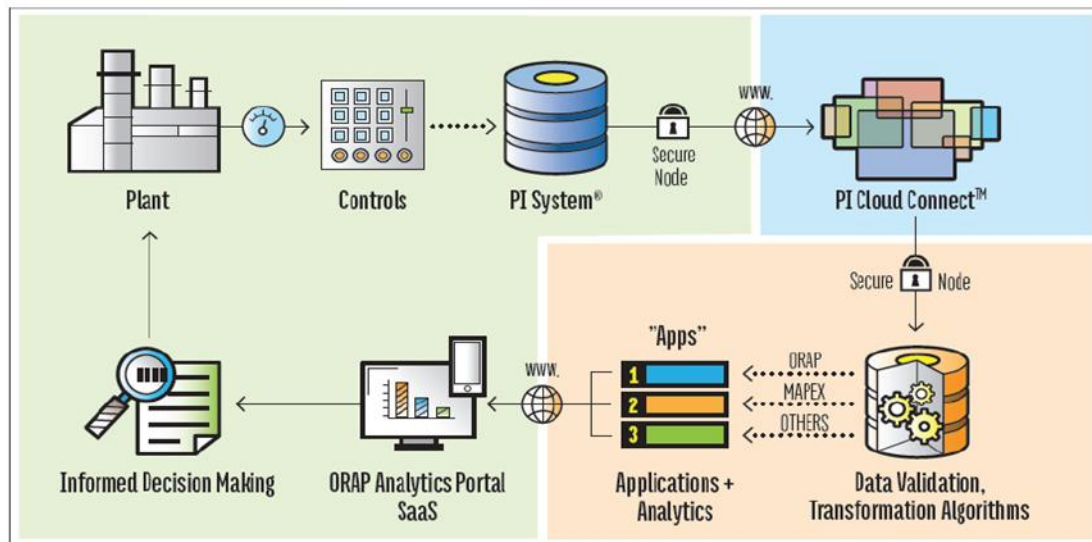
- First Proof of Concept 1994
- Began Discussions in 2011
- Goal to Merge Technologies
 - Directly send PI System data into ORAP
 - Enable Scalability & Reach
- Hurdles Existed in Accessibility of Data
- PI Cloud Connect and Asset Framework Changed Everything
- Connected Services Partnership Signed in August 2015



The Kindle Energy Solution

ORAP® ASSET INSIGHT™

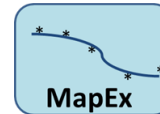
Data First. Data Fast. Data Fidelity.



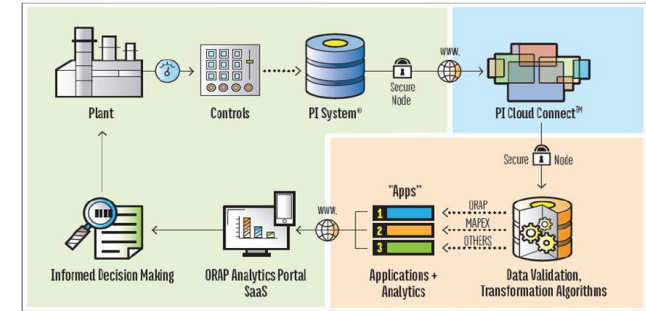
- Streamlined Process
- Data flows securely through PI Cloud Connect
- Scalable & maintainable
- Reduced cost and logistical issues
- Leverage customers existing PI System infrastructure

How Kindle Uses the Data

- Weekly Production Reporting Requirements
- Accurate Understanding of Each Mission
 - Completed successfully and profitably
- Operational Planning and Risk Management
- Benchmarking versus Peer Fleet
- Key Performance Indicators (KPIs)
- NERC GADS Regulatory Reporting
- Tracking Cumulative Life and Repair Cycles of Critical Parts
- Thermal Performance Monitoring - MapEx



ORAP® ASSET INSIGHT™
Data First. Data Fast. Data Fidelity.



Leveraging Strengths



- Expertise in real-time data capture
- >70% of North American Energy Market
- Interface to almost any database platform
- PI Cloud Connect
- Scalable & Maintainable



- 30+ Years of Reliability Engineering Experience
- Global Database of Power Plant Performance Analytics
- Sophisticated Total Plant Data Validation Process
- Built In Transformation Algorithms Focused on Specific Technologies

Cohesive Vision...Kindle Energy

OSIsoft's Real-Time Data
Capture Expertise



SPS' Data Validation &
Transformation Algorithms



Helping Power Plant Owner/Operators Make Data-Driven Decisions
“Run Your Plants, Not Reports”

Connected Services – Benefit for Kindle Energy

COMPANY and GOAL

Kindle Energy, operating 3 power plants in TX, had the goal of optimizing their plant operations while ensuring “best in class” availability, reliability, and Thermal Performance metrics relative to corporate pro forma and market expectations.



Strategic Power Systems, Inc.



CHALLENGE

Three separate plants, with varying reporting requirements and different processes and personnel need to streamline and standardize their reporting

- Data would come in different formats with varying data quality
- Reporting burden on already busy power plant staff
- Process not scalable

SOLUTION

Leverage OSIsoft's expertise and PI Cloud Connect technology combined with SPS' data validation and transformation algorithms to help streamline reporting

- Already utilizing PI System Infrastructure
- Secure process with imbedded layers of security
- Scalable and maintainable

RESULTS

Allows Kindle Energy to “Run their Plants, not Reports”

- Reduce data reporting requirement by 85% for plant staff – engineers can focus on decision-making
- Access to both the PI System and ORAP applications – added benefit

Contact Information

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Director – Asset Management

Kindle Energy, LLC



Questions

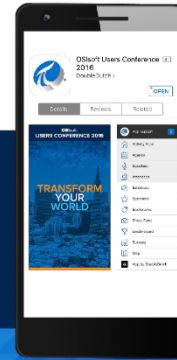
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State your **name & company**

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감사합니다

谢谢

Danke

Merci

Gracias

Thank You

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Спасибо

Obrigado

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