



Using Data Analytics and OSIsoft's Connected Services for Remote Monitoring and Diagnostics

Presented by Greg Tanck



OSIsoft.

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WE'RE BUILDING A WORLD OF DIFFERENCE. TOGETHER.

- Founded in 1915
- Global workforce of more than 10,000
- Employee-owned corporation
- \$3.0 billion in annual revenues in 2014
- More than 110 offices worldwide
- Completed projects in more than 100 countries

Black & Veatch conducts 7,000+ active projects globally at any one time

WHY ANALYTICS?

DATA ANALYTICS TRENDS

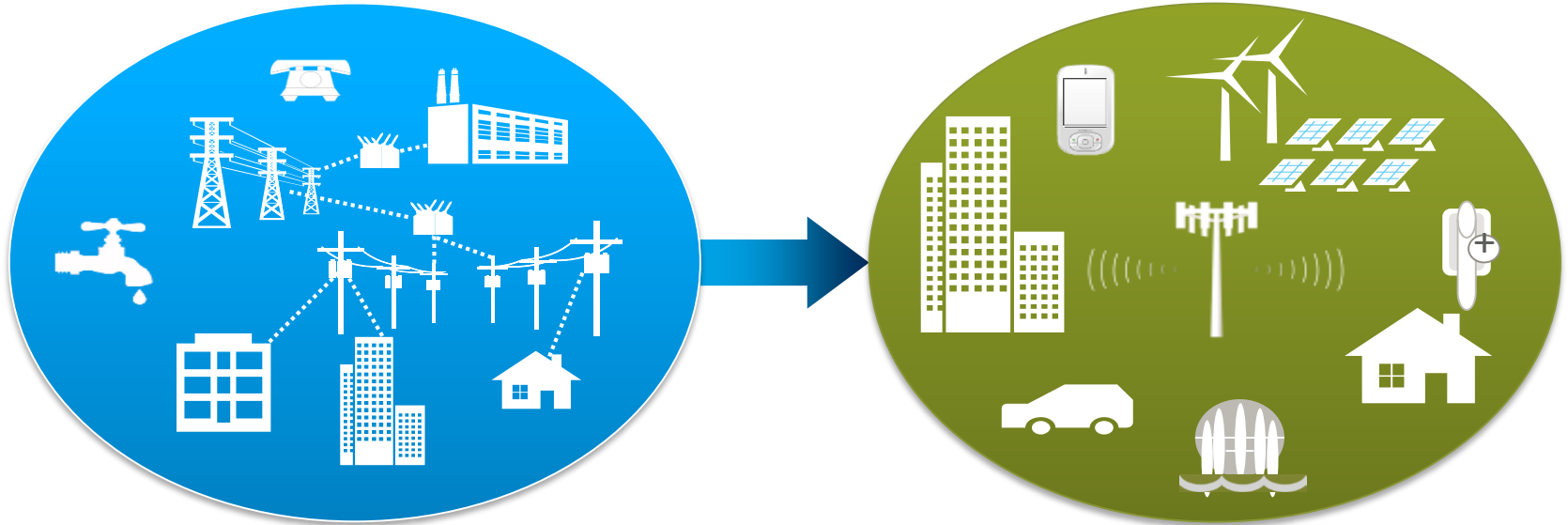
- Stronger focus on business value
- Transition from point solutions to enterprise focus
- Shift toward forward-looking, predictive analytics
- Deeper immersion of tools within processes, plan, and assets.

*“Whether breaking down business silos,
or integrating data and technologies,
these efforts scream for some sort of centralized effort
within a company to
coordinate the many groups involved.”*

(Utility Analytics Institute)

Begin with the end in mind

THE NEXT INFRASTRUCTURE FRONTIER IS DISTRIBUTED AND INTELLIGENT

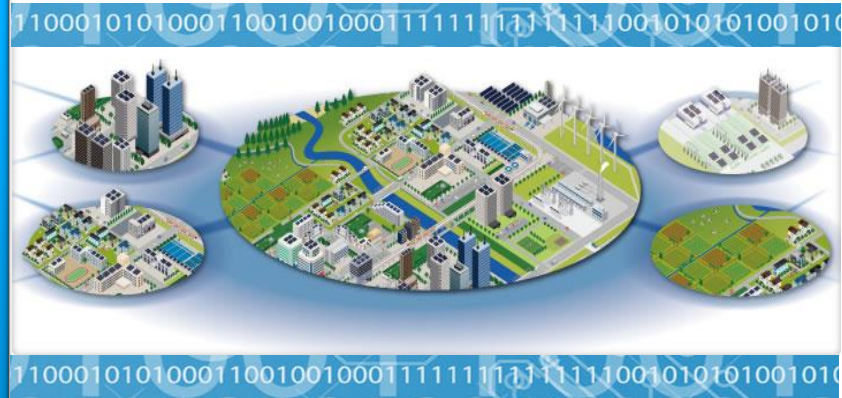


The *Internet of Everything* is enabling connectivity and coordination across distributed systems

BLACK & VEATCH SMART INTEGRATED INFRASTRUCTURE SERVICES DESIGNED TO CAPITALIZE ON THIS OPPORTUNITY

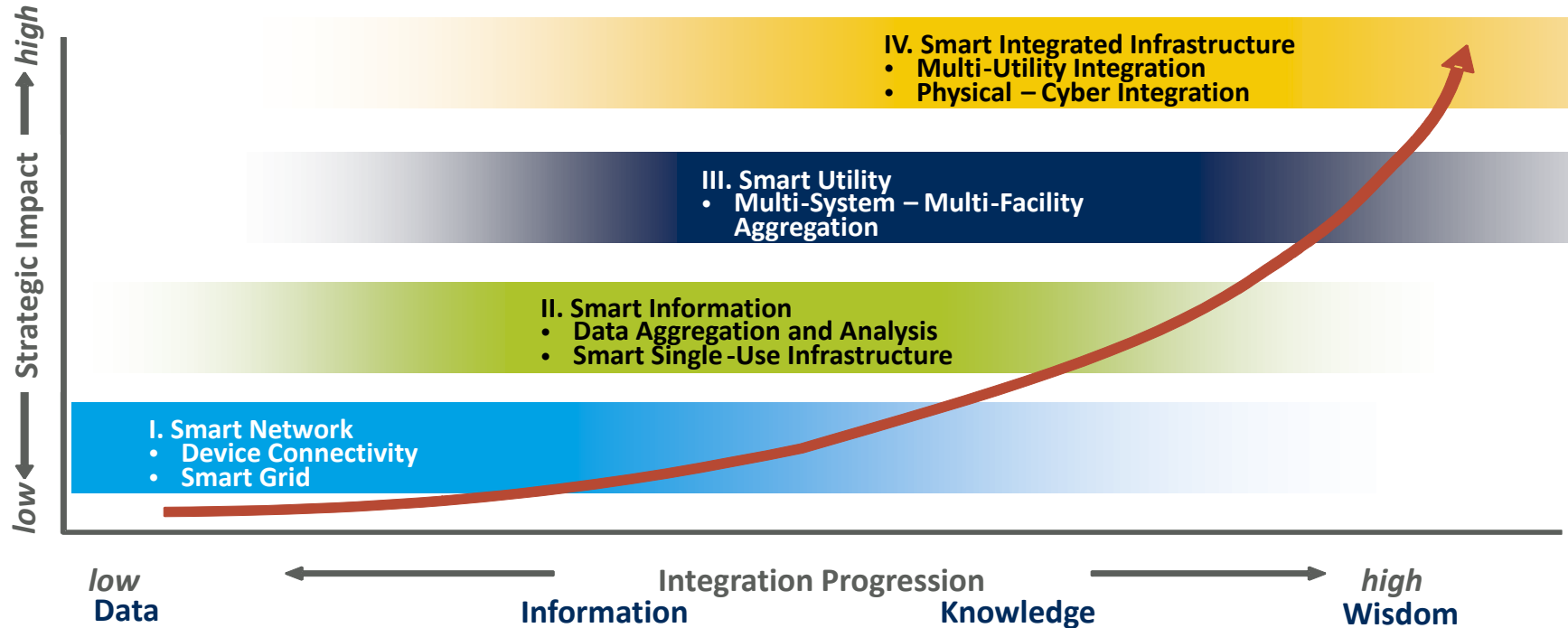
Smart Integrated Infrastructure (SII):

The convergence of physical infrastructure, communications and data analytics to enable system-wide synergies and value



Enabling more efficient, reliable, cost-effective and convenient delivery of essential services

HOW DO WE GET THERE?



Analytics is a journey to value

INTEGRATED DATA MANAGEMENT & ANALYTICS

THE CHALLENGE IS KNOWING HOW TO CONVERT DATA INTO VALUE

Data



Value



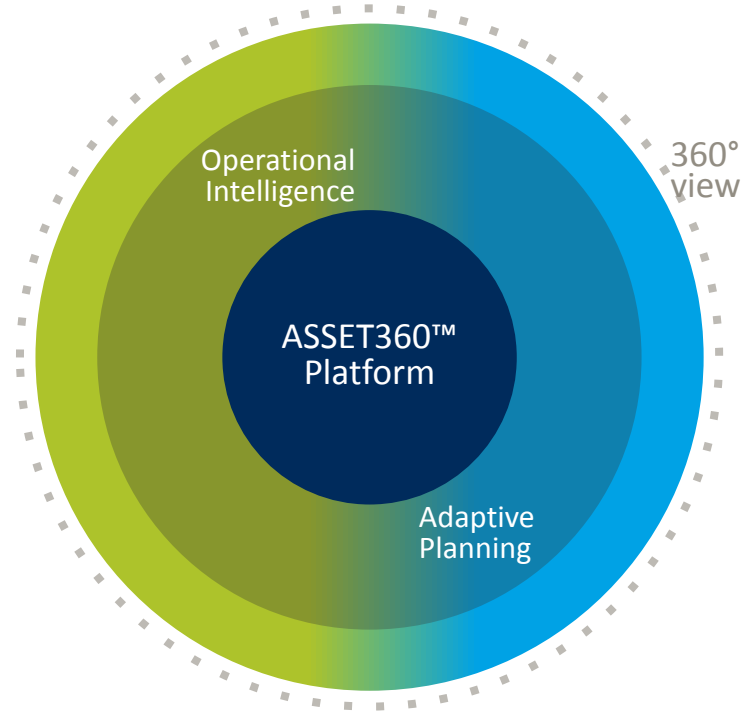
Black & Veatch ASSET360™ Platform

The bridge between data and value



B&V'S ASSET360™ PLATFORM ENABLES BIG ISSUES TO BE SOLVED INCREMENTALLY

- Big Data Management
- Single Point of Truth
- Solution Scalability
- Speed to Value
- Collaborative Problem Solving



World-Class set of technologies, tools and capabilities

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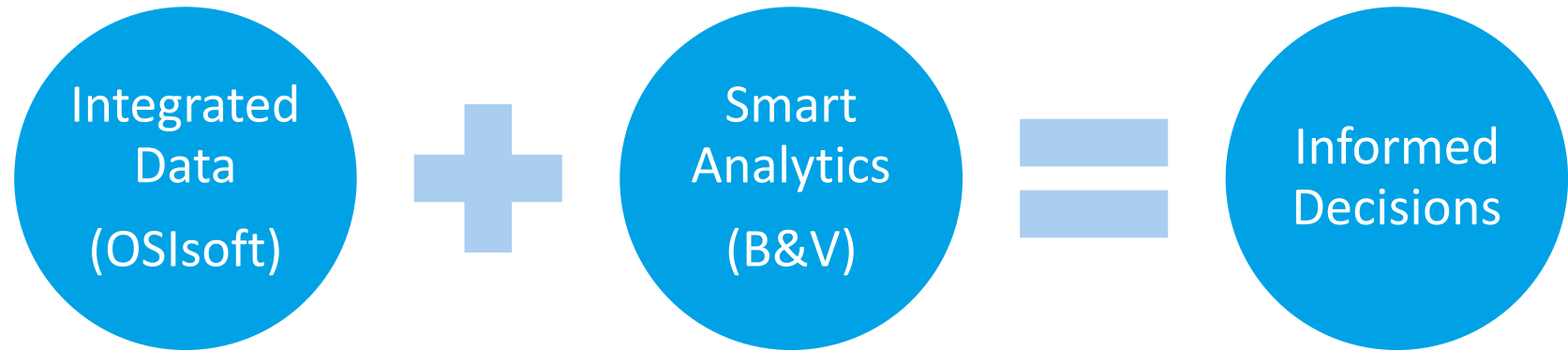


ASSET360™ MONITORING & DIAGNOSTICS

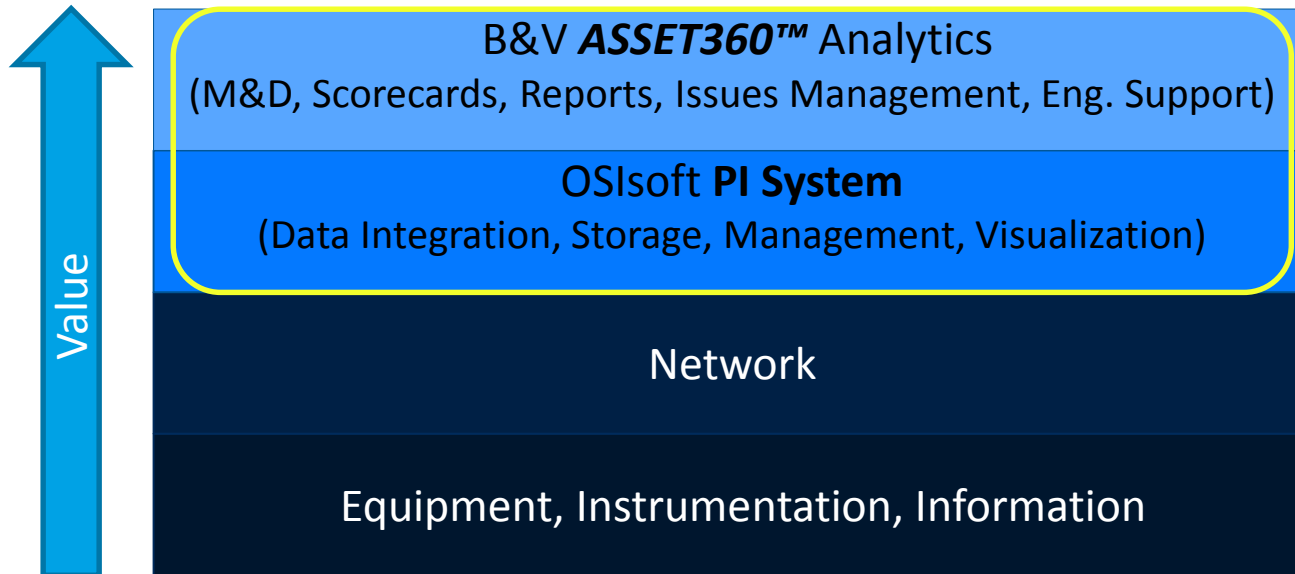


- **Collaborative monitoring services range from full scope to shared responsibilities to support of owner operated centers**
 - Improving Performance and Operations while Reducing Business Risk
 - 20+ Years of Experience, 200+ Customers including 120+ Monitored Sites
 - Deep domain knowledge and engineering expertise
 - ASSET360 Platform is basis for integrated Smart Analytics

A PARTNERED OFFERING



BUNDLED DATA MANAGEMENT AND ANALYTICS



Benefit Areas

Reliability
Efficiency
Performance
Compliance
Risk Mitigation
Sustainability
\$\$\$

PROJECT HIGHLIGHTS

Leveraging the PI System and B&V ASSET360™ for Energy Optimization

COMPANY and GOAL

Prairie State Generating Station, Illinois provides electricity to the region and wanted to leverage analytics for early detection of emerging issues.



CHALLENGE

New plant with new operating personnel seeks to mitigate reliability risk and maintain efficiency

- DCS with raw data – poor visualization
- Basic equipment protection in place
- Limited historical data

SOLUTION

B&V Monitoring and Diagnostics services leveraged the PI System and ASSET360

- Build performance calculations
- Show KPIs
- Use B&V domain experts to remotely monitor

RESULTS

Several vital catches have resulted in payback multiple times investment

- Improved reliability and energy utilization using APR analytics
- Dashboard development of KPIs



Leveraging the PI System and B&V ASSET360™ for Water Loss

COMPANY and GOAL

Board of Public Utilities (BPU) Electric and Water Utility of the Unified Government of Wyandotte County, /Kansas City, Kansas wanted to **Find Leaks Faster and Optimize Pumping Energy**



CHALLENGE

Large amount of data in different systems that was difficult analyze

- Analysis was done manually with exporting to spreadsheets
- Some leaks did not surface due to natural soils

SOLUTION

Use the PI system and ASSET360 to bring data together and perform analytics

- Daily water accounting
- Analysis for trends and anomalies
- Predict water use and compare against pumping plan

RESULTS

Just starting 12 month pilot project with district meters and analytics

- Find balance capital investment and data analytics
- Focus leak detection effort
- Apply to entire system



Leveraging the PI System and B&V ASSET360™ for Energy Optimization

COMPANY and GOAL

The City of Lawrence, Kansas provides water and wastewater services and wanted to optimize energy use at its Wastewater Plant



CHALLENGE

Energy was monitored at plant level but operations staff didn't have view into energy use of each asset

- SCADA system has some information
- Lab system had WQ data
- Not easy to see energy with WQ

SOLUTION

B&V Monitoring and Diagnostics services leveraged by the PI System and ASSET360

- Build standard calculations
- Show energy KPIs
- Use B&V technology experts to remotely monitor energy

RESULTS

Just starting 12 month pilot project of analytics and remote monitoring

- Anticipate energy savings from changing setpoints
- Developing dashboard of KPIs from technology understanding



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Integrated Data Management & Analytics

- The opportunity is there.....
 - Energy optimization
 - Water optimization
- Bring it together as a turn key system will...
 - Increase the speed to value
 - Decrease technology hurdles
 - Allows facility operators to focus on operations



Contact Information

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Smart Integrated Infrastructure
Solution Lead

Black & Veatch



Questions

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



State your
name & company

Please don't forget 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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Journey To Real-Time Operational Intelligence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Power of Connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tank Level Management System	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the PI System to Aid in Troubleshooting Operational Aspects of Oil and Gas Well Drilling and Completion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unleash your Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on the Spot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wrap-up/Seminar Conclusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Quality and organization of the seminar

Choice of date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time allowed for lunch/breaks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Choice of presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Break and time allowed for the presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado



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