



Turning Insight into Action

Presented by

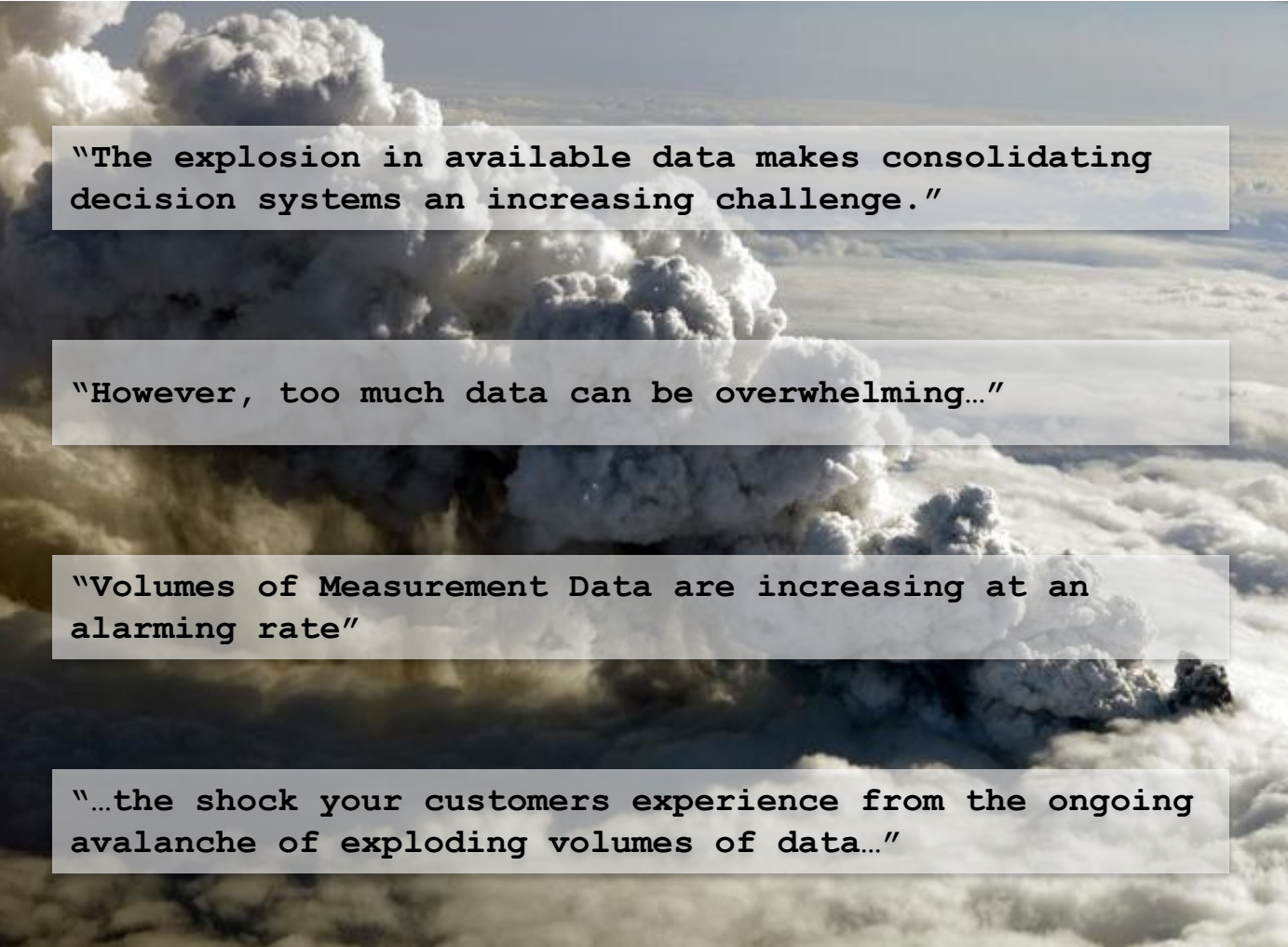
Ted Gorrie

VP Sales – Americas



What's New with OSIsoft – Three Continuing Themes

1. Always Aspiring to be Prepared for the Future
2. Helping You Leverage Your Investments through Partnerships
3. Making It Easier to Do Business



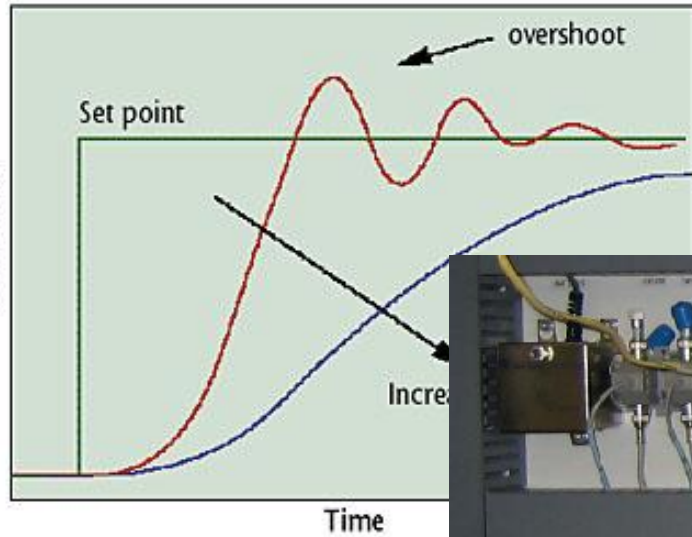
"The explosion in available data makes consolidating decision systems an increasing challenge."

"...too much data can be overwhelming..."

"Volumes of Measurement Data are increasing at an alarming rate"

"...the shock your customers experience from the ongoing avalanche of exploding volumes of data..."

Did Your Company Lead the Data Renaissance?



Internet Brings New Focus on Data

“Information has gone from scarce to superabundant. That brings huge new benefits, but also big headaches.”

Data, data, everywhere

The Economist, February 25, 2010

(<http://www.economist.com/node/15557443>)





Emerging concept “Big Data”

- New term has been introduced:
“Big data” refers to datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze.
- 10 terabyte to petabyte size range
- 10 TB is only 72 days of PI System data at 100,000 events/second

Source: Dobbs, Richard; Bugin, Jacques; Hung Byers, Angela; Roxburgh, Charles; Manyika, James; Global Institute, McKinsey; Brown, Brad; Chui, Michael (2011-05-13). Big data: The next frontier for innovation, competition, and productivity (Kindle Locations 95-96). McKinsey Global Institute. Kindle Edition.



Leveraging the Data

- Spell checkers
 - Mascarade (i.e., masquerade)
 - <http://www.bing.com/search?q=mascarade&go=&qsn=&sk=&sc=8-9&form=QBLH>
- Amazon's Kindle
 - Spying on how we read
 - Read speed, most abandoned, trophy books, biggest slogs, etc.
- Personalized advertisements
 - What you purchased in the past
 - Where you have browsed



Other Interesting Trends

- Data is widely available now—what's lacking is the ability to extract the insight
- Increased demand for those with data mining skills
 - Hal Varian, Google's chief economist, predicts that the job of statistician will become the “sexiest” around.



Some Concerns and Responsibility

- Privacy violation?
- Use the data to improve the experience not intrude
- Fortunately, we are looking at inanimate objects—manufacturing equipment and processes



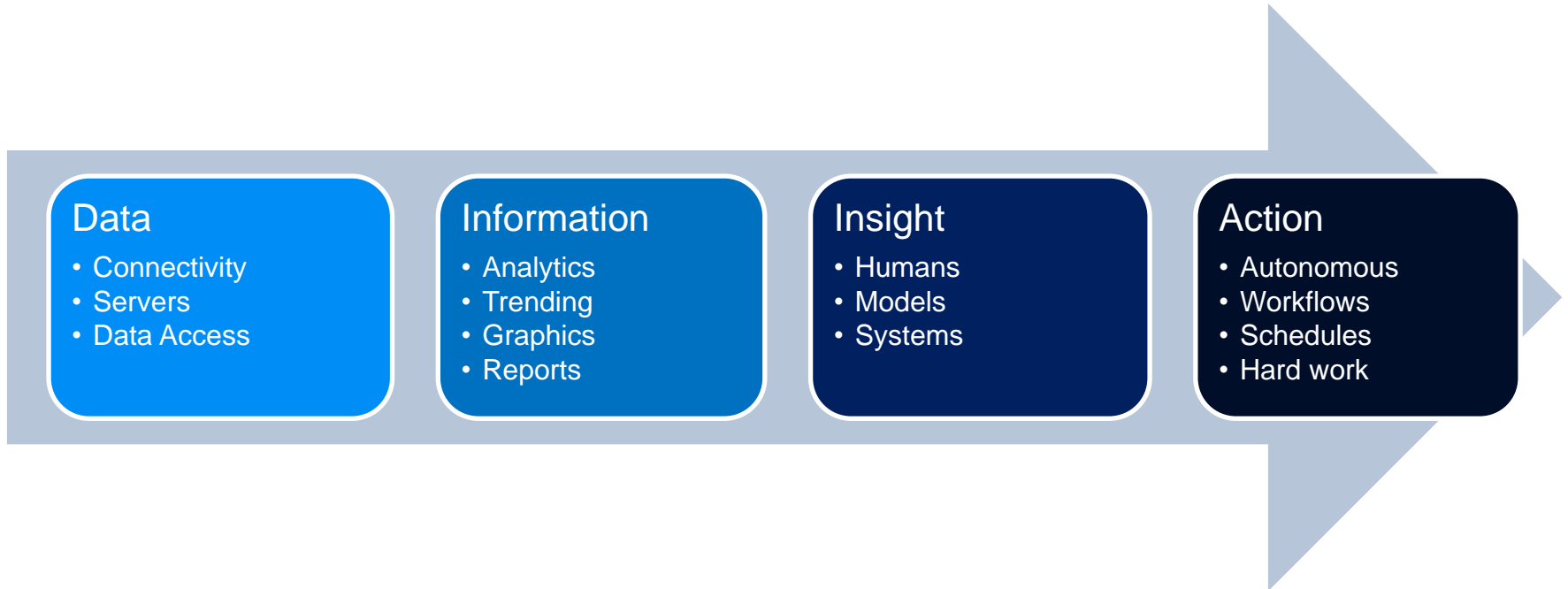
Value to be Gained Leveraging Big Data

- \$300 Billion/year in US Healthcare
- €250 Billion/year in Europe public sector administration
- \$100 Billion revenue for service providers
- 60% increase in net profit in US retail
- 7% reduction in working capital in manufacturing
- Up to 50% in product development and production costs in manufacturing

Source: Dobbs, Richard; Bugin, Jacques; Hung Byers, Angela; Roxburgh, Charles; Manyika, James; Global Institute, McKinsey; Brown, Brad; Chui, Michael (2011-05-13). Big data: The next frontier for innovation, competition, and productivity (Kindle Locations 95-96). McKinsey Global Institute. Kindle Edition.

Turning Insight Into Action

- Information Value Chain





The PI System and “Big Data”

Vital in maintaining
Situational Awareness

- Know where your business is now

Cornerstone of Continuous
Improvement

- Be a Learning Company

Foundational for
Sustainability & Innovation

- Build Longevity & Competitiveness

OSIsoft Competencies



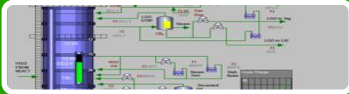
Acquire Data

- Interface systems and acquire streaming data and events



Historize

- Store at resolution of acquisition and trend on demand



Present

- Engineered and Ad Hoc displays



Analyze

- Pre & Post processing including simple to complex calculations



Organize

- Structure PI System data through PI Points, PI Elements and PI Events



Monitor

- Process rules & Notify, Alert on event

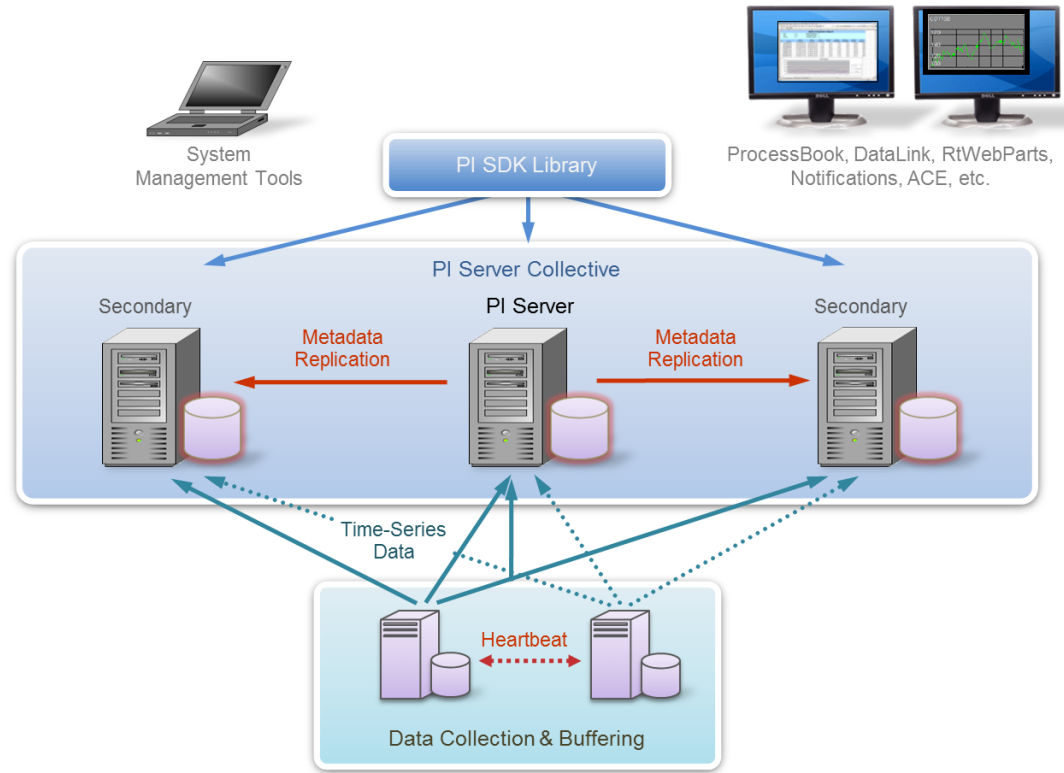



Integrate

- Data Exchange with other Systems

OSIsoft Intrinsic Values


- Reliability
- Availability
- Interoperability
- Scalability
- Extensibility
- Security





What's New with OSIsoft – Three Continuing Trends

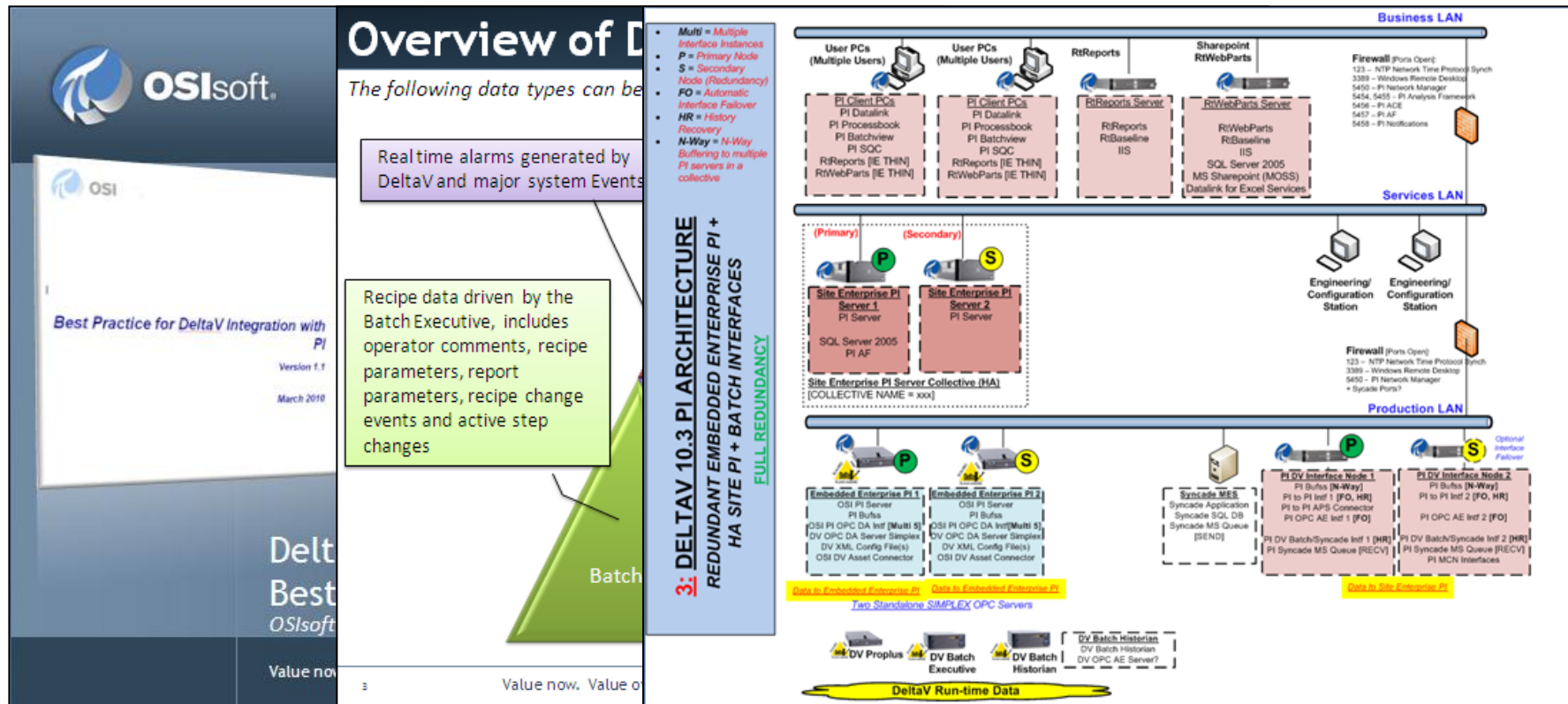
- Always Aspiring to be Prepared for the Future
 - Constantly modernizing integration capabilities
 - Continuing to evolve the PI System to be an Enterprise infrastructure
 - Scalability
 - Tags
 - Assets
 - High-Availability
 - “Cloud” Readiness



What's New with OSIsoft – Three Continuing Trends

- Helping You Leverage Your Investments through Partnerships
 - Enterprise Application and Infrastructure Integration
 - Future proofing through Technology Adoption and Enhancement
 - The Value of Information as a Service

Emerson & OSIsoft *since 1996*



SAP & OSIsoft *since 1996*

SAP The Best-Run Businesses Run SAP

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SAP HANA

What Is SAP HANA? > Deploy Now >
Customer Testimonials > SAP HANA Experience Community >
See It in Action >

SAP HANA News
November 09, 2011
SAP to Transform Traditional Database Approach With SAP NetWeaver® Business Warehouse, Powered by SAP HANA™

SAP.com Solutions SAP HANA What Is SAP HANA? Real-Time Applications Industries

Overview Real-Time Analytics Real-Time Platform Real-Time Applications

Industries Lines of Business

Turn smart meter data into powerful insights and actions

Introducing SAP Smart Meter Analytics, powered by SAP HANA - an application that enables utility companies to turn massive volumes of smart meter data into powerful insights and actions. This solution delivers instant, in-depth customer analysis, advanced segmentation based on energy consumption patterns, and energy efficiency benchmarking. As a result, you can:

- Deliver targeted demand-side management programs to increase adoption rate
- Reduce direct energy costs via more accurate load forecasts
- Achieve energy savings and carbon emission targets
- Increase revenue by upselling new energy services



SAP Solution Brief
SAP for Utilities
SAP Smart Meter Analytics, Powered by SAP HANA

Turn Smart Meter Data into Powerful Insights and Actions



Quick Facts

Summary

With SAP® Smart Meter Analytics software, you can turn massive volumes of smart meter data into powerful insights that transform customer interactions and business operations. Breaking through the limitations of current analytical tools in the market, it delivers instant, in-depth customer insights and advanced customer segmentation based on energy consumption patterns. You can also perform energy efficiency benchmarking and provide customers with self-service access to energy data.

Business Challenges

- Increase effectiveness of demand-side management programs
- Comply with regulatory targets
- Generate revenue and reduce energy costs
- Improve accuracy of load forecasting
- Reduce churn rates in deregulated markets

Key Features

- **Powerful customer insights** - Instantly aggregate data and analyze customer energy usage at any level of granularity, aggregation, and dimension
- **Advanced customer segmentation** - Precisely segment customers based on consumption patterns
- **Energy efficiency benchmarking** - Compare energy usage of customers against peers; use root cause analysis to improve their energy efficiency
- **Access to insights for end customers** - Empower customers with self-service access to energy usage insights

Business Benefits

- **Increase adoption rates** for demand-side management programs by precisely segmenting and targeting customers
- **Reduce direct energy costs** via more accurate load forecasts based on energy consumption patterns
- **Achieve energy savings and emission targets** via more effective energy efficiency programs
- **Increase revenue** by up-selling and cross-selling new energy services
- **Reduce revenue risk** via increased transparency into smart meter data and benchmarking of accounts
- **Boost customer satisfaction and retention** by providing direct access to energy usage insights

For More Information

Contact your SAP representative, or visit us online at www.sap.com/utl.

 The Best-Run Businesses Run SAP®

Microsoft & OSIsoft *since 1993*

Microsoft Partner Network

2010 PARTNER OF THE YEAR
Microsoft Global IV
Industry
Finalist

Microsoft GOLD CERTIFIED Partner

2009 GLOBAL IV
Industry
PARTNER OF THE YEAR
WINNER

OSIsoft | **Microsoft**

Microsoft Windows Server 2003

Microsoft Visual Basic for Applications

Windows NT

Leveraging the Power of Microsoft

PI Clients

- PI WebPart
- PI DataLink
- PI ProcessBook

PI Analytics

- PI Notification
- PI for Streamline
- PI Advanced
- PI Coresight

PI Data Access

- PI OLEDB Engine
- PI Web Services
- PI JDBC

PI Server

- PI Server 2005
- Assets and Tools

Delivering Value to Manufacturing

Active Collaboration

Microsoft SharePoint 2010 Enterprise

Microsoft Office 2010

Situational Awareness

Microsoft Exchange & Lync

Microsoft SQL Server 2008 R2 Enterprise

Intuitive Exploration and Analysis

Operational Insight

Category	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Category 1	100	120	150	180	200	220	250	280	300	320	350	380	400	420
Category 2	80	90	100	110	120	130	140	150	160	170	180	190	200	210
Category 3	60	70	80	90	100	110	120	130	140	150	160	170	180	190
Category 4	40	50	60	70	80	90	100	110	120	130	140	150	160	170
Category 5	20	30	40	50	60	70	80	90	100	110	120	130	140	150



Customer Examples

Nalco & OSIsoft

NALCO
Essential B



NALCO



Infrastr

Challe

- Access
 - Reps PC's
 - Customer
 - Access M
- Viewing Da
 - Customer
 - Remote L
- Transferrin
 - Handheld
 - FTP Files
 - Controller
- Security of
 - Customer
 - Certificate
- Training

KEY FUNCTIONALITY TO SOLVE CHALLENGES

ISSUE	FUNCTIONALITY
Embedded sales force – No Nalco VPN access ➡	Secure wireless data transfer
Explosive atmosphere ➡	Class 1, Div. 2 or Intrinsically Safe Devices
Lots of data collected, DCS, LIMS, Manual, Nalco controllers ➡	Ability to organize data collection in PI and perform necessary calculations analyzing data for valuable action
Data is collected and pushed to data center for calculations ➡	VPN's, APN's, HH Remote Management Tools, Applications Servers
Scaling out of the solutions ➡	Developed equipment level templates that could be used over and over



Long-Term Contractual Asset Portfolio

“Diverse Gas Turbine Technology and Geographical Locations”



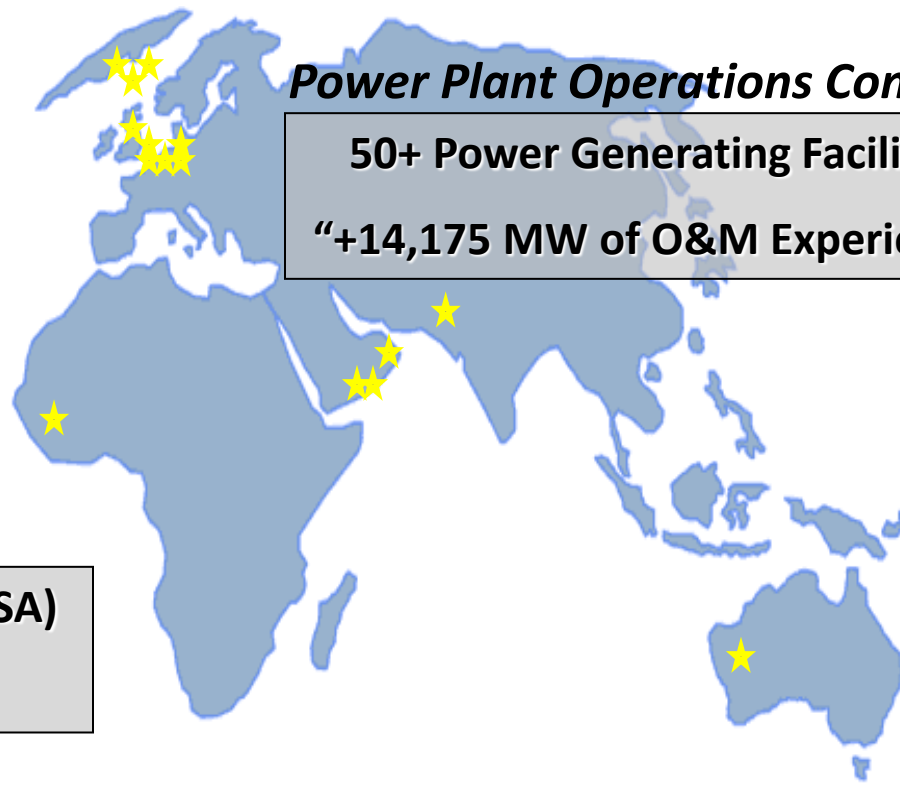
Wood Group GTS
Keep on turning



Turbine Maintenance Contracts

40+ Long Term Service Agreements (LTSA)

“+7,542 MW Under Contract”



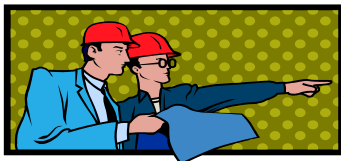
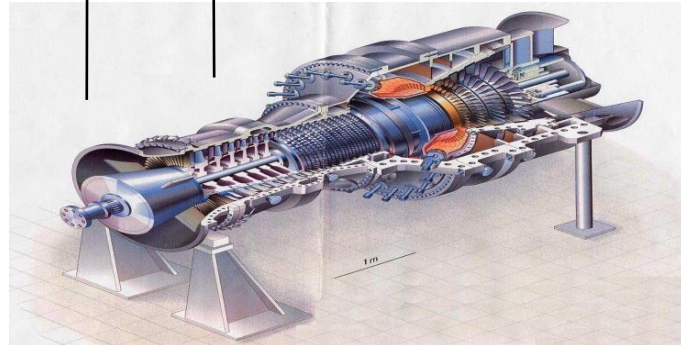
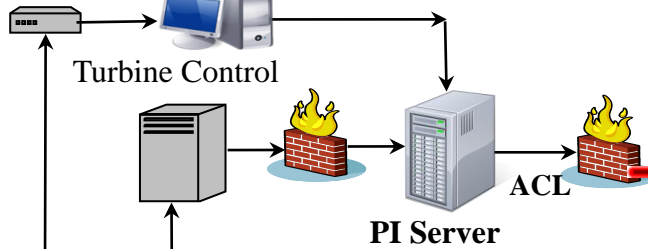
Power Plant Operations Contracts

50+ Power Generating Facilities

“+14,175 MW of O&M Experience”

Power Plant - ACTION

Vibration / Combustion / Performance



On-Site O&M



Process Data

IPsec VPN

Solutions

SERVICES

- remote monitoring
- web graphics/trends
- periodic reports
- engineering analysis
- technical support
- recommendations
- pager / email alerts

Wood Group RM&D Center - INSIGHT



PI to PI
Interface

PI Server

PI ACE

PI
WebParts



Diagnostics
Engineering

Customer Contract
Managers

Global Engineering




Gas Turbine Degradation Management

How Did My Scheduled Maintenance Effect Gas Turbine Performance? What's the Economic Bottom Line?

Asset Configuration CT Technology	E-Tech CTG Pre-Outage	E-Tech CTG Post-Outage	
Assumptions	Base Cogen	Base Cogen	Units
Nominal Capacity	82.2	85.7	MW
Nominal Heat Rate (HHV)	10,879	10,692	Btu / kwh
Service Factor	95%	95%	%
Base Load Run Time %	90%	90%	%
Part Load Run Time %	10%	10%	%
Nominal Fuel Cost	\$3.25	\$3.25	\$ / MMBtu
Nominal Power Price	\$38.00	\$38.00	\$ / Mwh
Nominal Spark Spread	\$2.64	\$3.25	\$ / Mwh
Avg Daily Mwh's	1,827	1,905	Mwh / Day
Avg Hourly Revenue	\$201	\$258	\$ / Hour
Avg Daily Revenue	\$4,830	\$6,194	\$ / Day

- Output Increased 4.3%
- Heat Rate Decreased 1.7%
- \$0.60 Increase in Spark Spread
- \$1,364 / Day Increase in Revenue
- \$42,000 / Month = \$252,000 over 6 months



What's New with OSIsoft – Three Continuing Trends

- Making It Easier to Do Business
 - Licensing Simplicity of PI System 2010
 - International Investment in New Employees and Offices
 - Enterprise Agreements – taking the relationship to the next level

There is no Finish Line

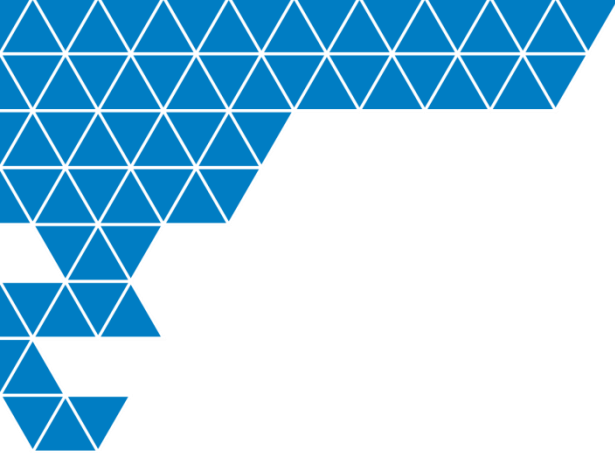
- It is a continuous job meeting our responsibilities
 - New technology, for example Microsoft Azure
 - New expectations





Turning Insight Into Action

- Insight:
 - Ability to see clearly and intuitively into the nature of a complex situation
 - Power to discern the true nature of a situation
- Action:
 - Ability to achieve a purpose or a goal
 - Power to redirect and control the outcome



Thank you