Regional Seminar Series
Phoenix/Scottsdale

Seeing Clearly in the New Reality

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Empowering Business in Real Time.

Communication

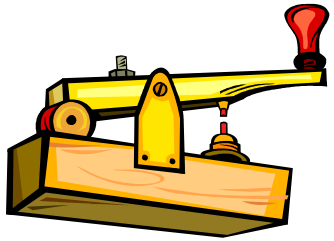
- Twitter worth $1 billion based on recent round of financing
  - Started in 2006, 55 million users, no profit
  - Co-founder name Biz Stone
  - Another dot com bubble?

- Many think
  - Blackberrys are electronic leashes
  - Facebook replaces real relationships
  - Twitter 140 char “tweets” annoying
  - Texting makes us illiterate (cul8r, lol, ttfn)

- Worries about new communication technology have always existed, but we must adapt

Communication

- 1840s: telegraph
  - Samuel Morse invents instant transcontinental communication
  - Henry David Thoreau “Maine & Texas have nothing important to communicate”



- 1870s: telephone
  - Samuel Morse declined to buy patent, “provides no permanent record of conversation”
  - Western Union declined, “would any sensible man transact his affairs by such a means of communication”

- 1930s: typewriter
  - NY Times said “usurped the art of writing with one’s own hand”

Finance

- So communication has evolved in past 150 years and impacted our personal and business worlds

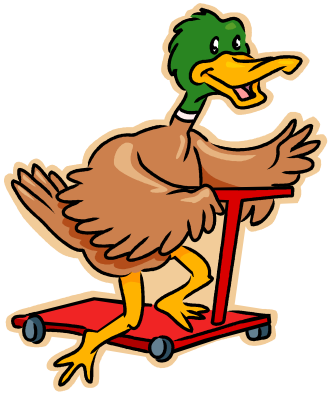
- Let's see how the Finance world has changed

CDOs

- CDO – Collateralized Debt Obligations
- $1.5 trillion securities linked to home loans
- GSAMP Trust 2006-S3
  - $494 million mortgage product, backed by 8,274 second mortgages
  - Avg. equity was 0.71%
  - 58% of loans no documentation (occupy home, employment, etc)
  - Goldman created 13 slices to sell as securities
  - Individual loans toxic, but 68% of securities created rated AAA by Moody's, Standard & Poor's and Fitch
  - Appeared safe as U.S. Treasury Bonds with better interest
  - 315 pg prospectus, most investors didn't read it

CDOs

- 93% rated investment grade (BBB- or higher)
  - Despite backed by 2nd mortgages of dubious quality on homes with less than 1% equity
  - Home prices fell, couldn't sell or refinance, 18% of loans defaulted
  - Most investors wiped out
- This was just one of 916 residential mortgage-backed issues totaling $592 billion in 2006
- Wall Street
  - "when the ducks quack, feed them"



Lehman Brothers collapse

- Lehman Brothers collapse 13 months ago
  - Biggest bankruptcy in US history
  - Sale of Bear Stearns to JPMorgan Chase and Merrill Lynch to Bank of America
  - Transformed Wall Street and started wave of problems in all industries
- CIT just declared bankruptcy 3 days ago
  - 5th largest in US history after Lehman, WaMu, Worldcom & GM
  - 60% of apparel market depends on CIT
- All businesses struggled with new reality
  - Slash costs
  - Hunker down and weather storm
  - Need to innovate and consider new business models

Crisis = Opportunity

- Lehman reminded us that crisis creates opportunity
- Baron Rothschild – The time to invest is when the streets are “red with blood”
- Thomas Edison started GE during the Panic of 1873
- Bill Gates started Microsoft in 1978 Recession
- And little company called Oil Systems was started in 1980…

CDOs & Lehman

- How is this relevant?
  - CDOs are complex & high risk and nobody knew what was behind them
  - No transparency
  - Like ERP big bang projects – long time to implement and high risk projects
- Need quick wins with 100% guaranteed success
  - Use data for competitive edge
  - Adapt and change
- That's PI: value now, value over time

Need Data Infrastructure

- Many of our customers were impacted
  - Mandate to cut costs
  - Innovation needs information and collaboration
  - Plus existing pressures of regulatory compliance, competition, globalization, etc
- Need ability to improve situational awareness
  - Change direction when external influences change
  - Respond faster and adapt as industry changes
  - Requires flexible infrastructure
- OSIsoft building products to help
  - And leveraging Microsoft products like Sharepoint, OCS, etc

International Paper

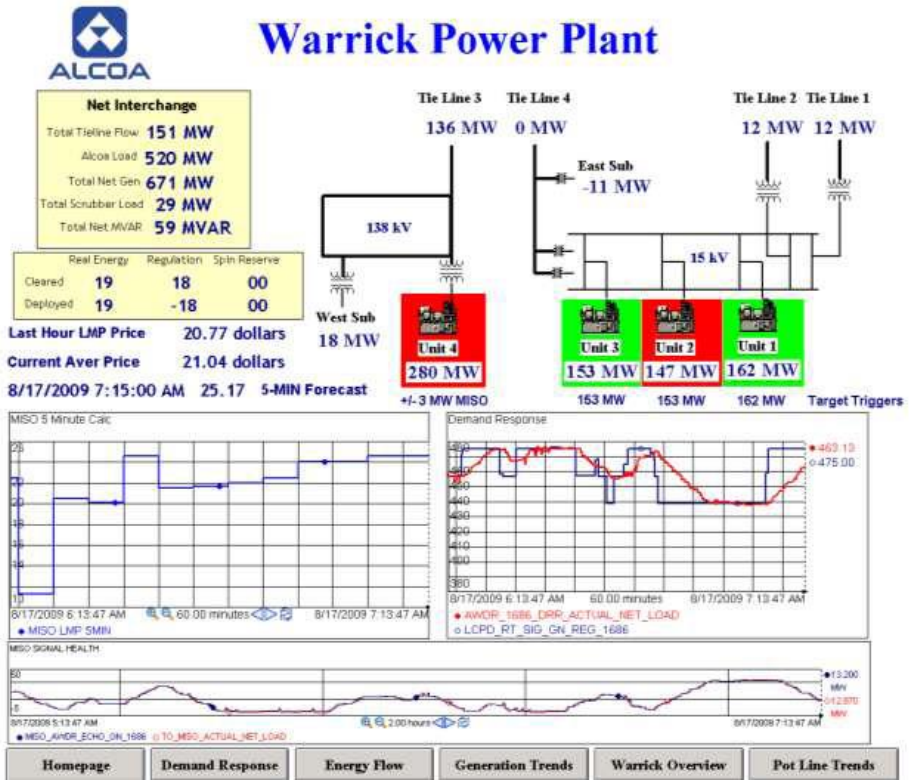
- One key benefit of common infrastructure is “unplanned” value
- International Paper
  - Greatest benefit was Environmental Monitoring
  - Wasn’t on radar screen when PI purchased
  - Came up immediately after deployment
  - Able to respond to operational challenge because common infrastructure to integrate with
  - Disguised many disparate systems under common real-time layer; programs had enterprise applicability
- That’s PI helping very large paper company, let’s see about smaller one

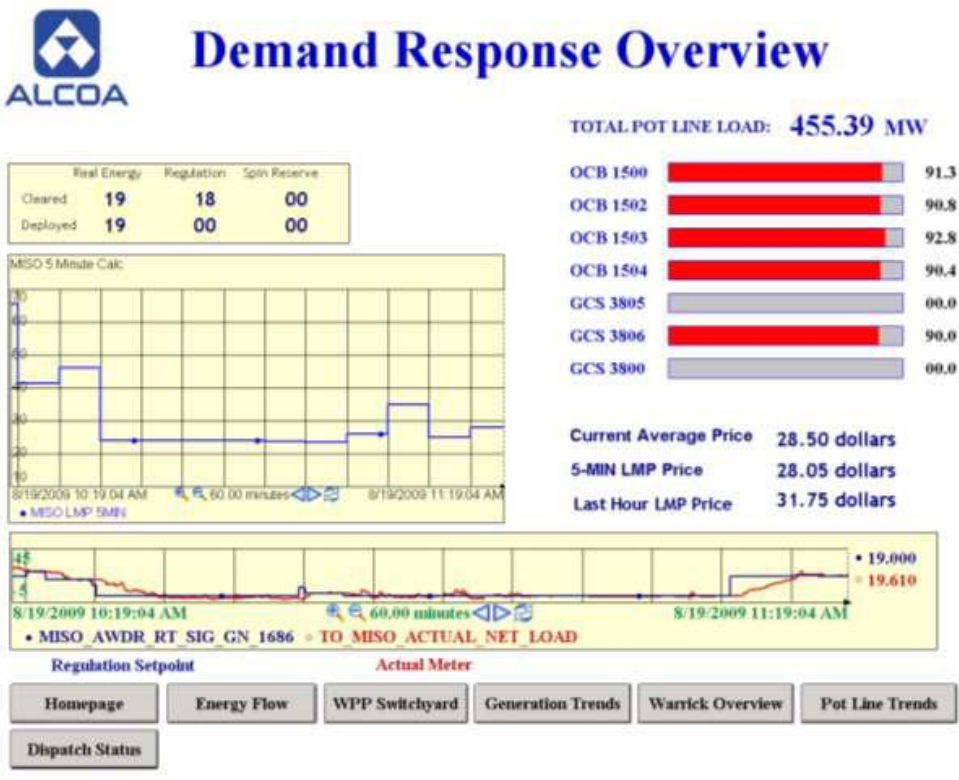
Smart Papers – Hamilton, Ohio

- 116-year-old paper company
- Actively market electricity produced by cogen plant
  - Can produce 37 MW, including 20 MW it can sell
  - Established CRES (competitive retail electric supplier)
  - "smart.gen" & "smart.load" nodes in MISO
- Monitoring price swings
  - Looking for opportunities to produce more electricity
  - Can buy wholesale power and sell to other customers (not just utility)
- First tenant/customer for "micro grid"
  - Company will build their plant in building on site, Smart will sell power, steam & water
- PI enables this business model

Alcoa – Warrick, Indiana

- Fully integrated power plant (800MW), smelter (1960s) and rolling mill
- Alcoa's largest smelter, energy 40% cost of aluminum mfg
- MISO controls top 30MW of load – saved $1 million/yr





Manufacturing Changes

- Those are some PI examples of having data infrastructure to respond to market/industry changes

- Other more dramatic changes are coming that require us to manage information across wider scope

Manufacturing Changes

New Business Models : Shai Agassi company “Better Place”

- Used to be 2,000 auto companies, arguably most important invention in 20th century – impacted everyone
- Now most are gone & moving to distributed vehicle manufacturing
- New infrastructure for operation, infrastructure owns battery
- Environment driving force in new business model

Sensors Everywhere

Something Old Something New: Minnesota Bridge

Bridge Performance - Sensors for bridge movements, expansion, contraction, corrosion, icing

Bridge Operation - sensors and cameras for traffic flow, speed, disruptions, accidents, stalls and other disruptions, security

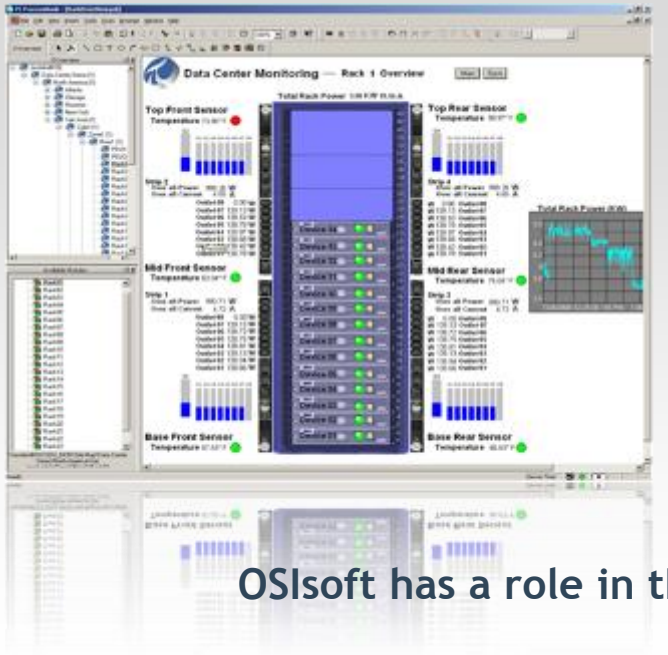
Real Time Needed – Summary of Accidents not useful for Operation – like getting Summary of House Fires at end of Month

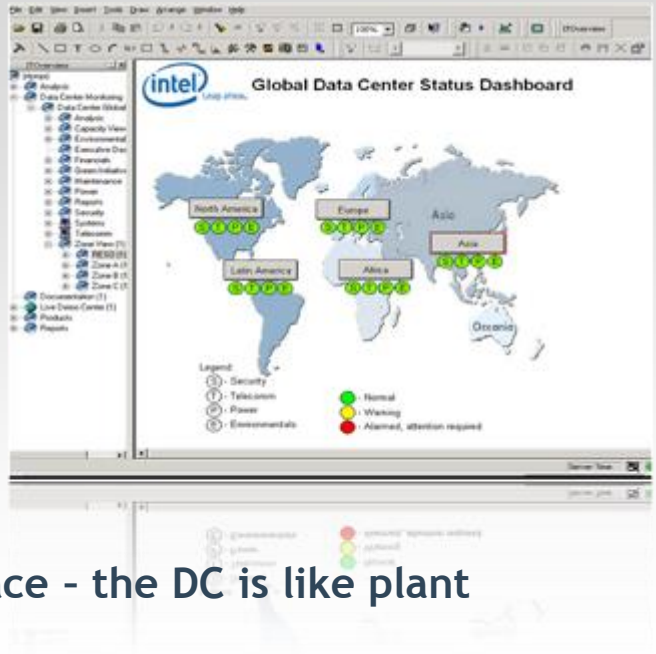
Sensors Everywhere

New Business – e.g. Data Center

- Consume ~2% of all energy in USA
- Google for Search, Apple for iPhone Apps, Facebook, Twitter, etc.
- Business – Amazon, E-Bay, Craig's List
- Capacity planning (power/cool) vs. physical space

Industry – Data Centers, IT & Telecom





OSIsoft has a role in this space – the DC is like plant

Microsoft was our first customer – 150K servers, $7.4B power bill/yr

Quincy, WA - 27MW, 500K sq. ft.
Chicago - 60MW, 770K sq. ft.

Sensors Everywhere

Cornell Medical School

- 40M variable set of differential equations
- Simulate organs/tissues/molecules
- 3 server rooms with 1MW total load
- Saved 7% of power with 1 week project for 100-node cluster used for batch jobs (no interactive users)
- PI decides what nodes needed and turns off/on via IPMI interface
- All servers support IPMI, create thermal map of server room with no added instrumentation

Sensors Everywhere

New Business – e.g. Facilities

- 5 million commercial buildings in USA
- Recent Texas A&M study: buildings degrade up to 25% after 2 years from commission date (or re-commission date)
- Less than 0.1% of existing commercial buildings and 5% percent of new ones undergo commissioning for energy efficiency

Smart Grid - Enabler

Largest Distributed Plant: Smart Grid

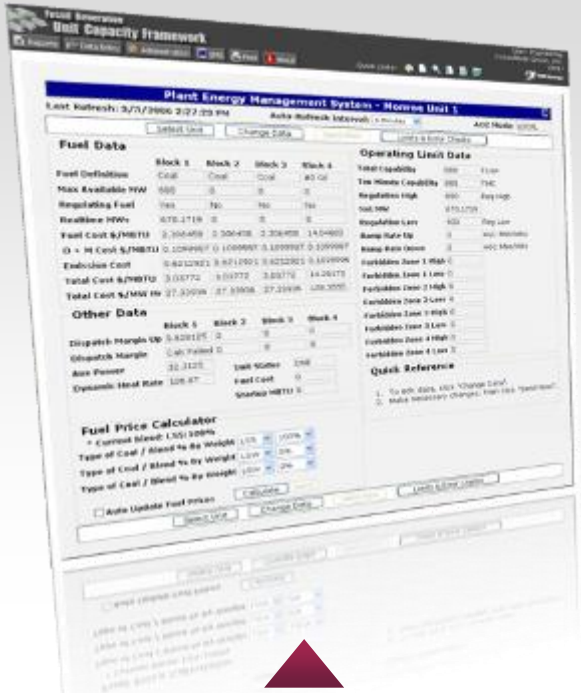
- Plant: Power Generation, Distribution and Transmission, Consumption
- Technology: Smart Equipment, Storage of renewable energy, AMI (Demand response pricing), Energy improvements
- Environment: Conservation, Renewables, Carbon Foot Print
- Techniques: Reliability, Energy Monitoring, Efficiency Studies

Manufacturing and the Smart Grid

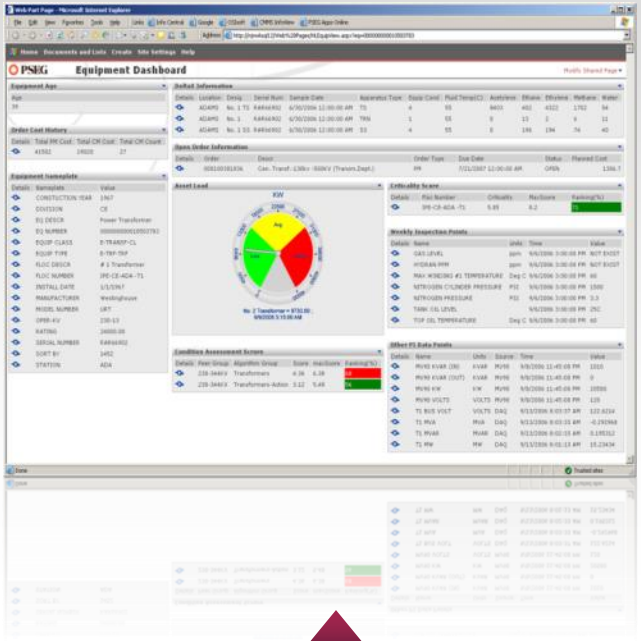
Evolving Shift from Industrial Age to Information Age

- Telcom industry change – cell phones, VOIP, SMS, Web 2.0, SaaS, DaaS
- Smart Grid is an Enabling Technology
- Rise of Microgrid – knowledge of applying power to manufacturing process - MaaS
- Convergence of Information and Energy
- Learn from deregulation of telecom
- Like Dot.com, will see 100's of failures and a few game changing winners

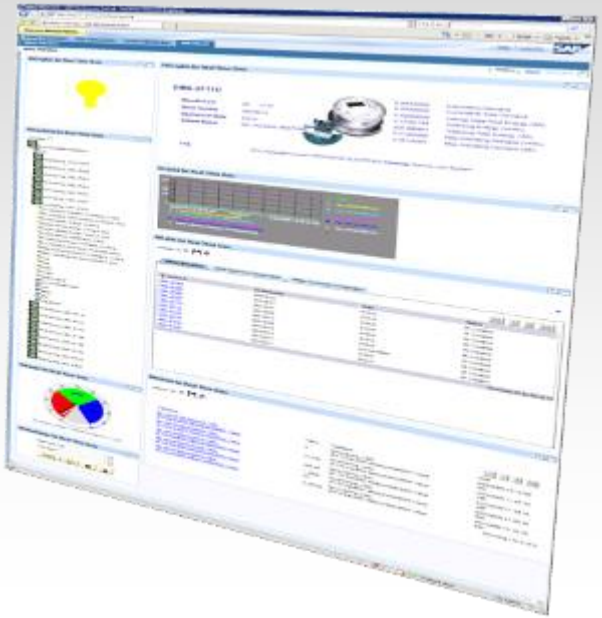
Smart Grid



Power Generation Energy Management Support



Transmission & Distribution Dashboard



AMI

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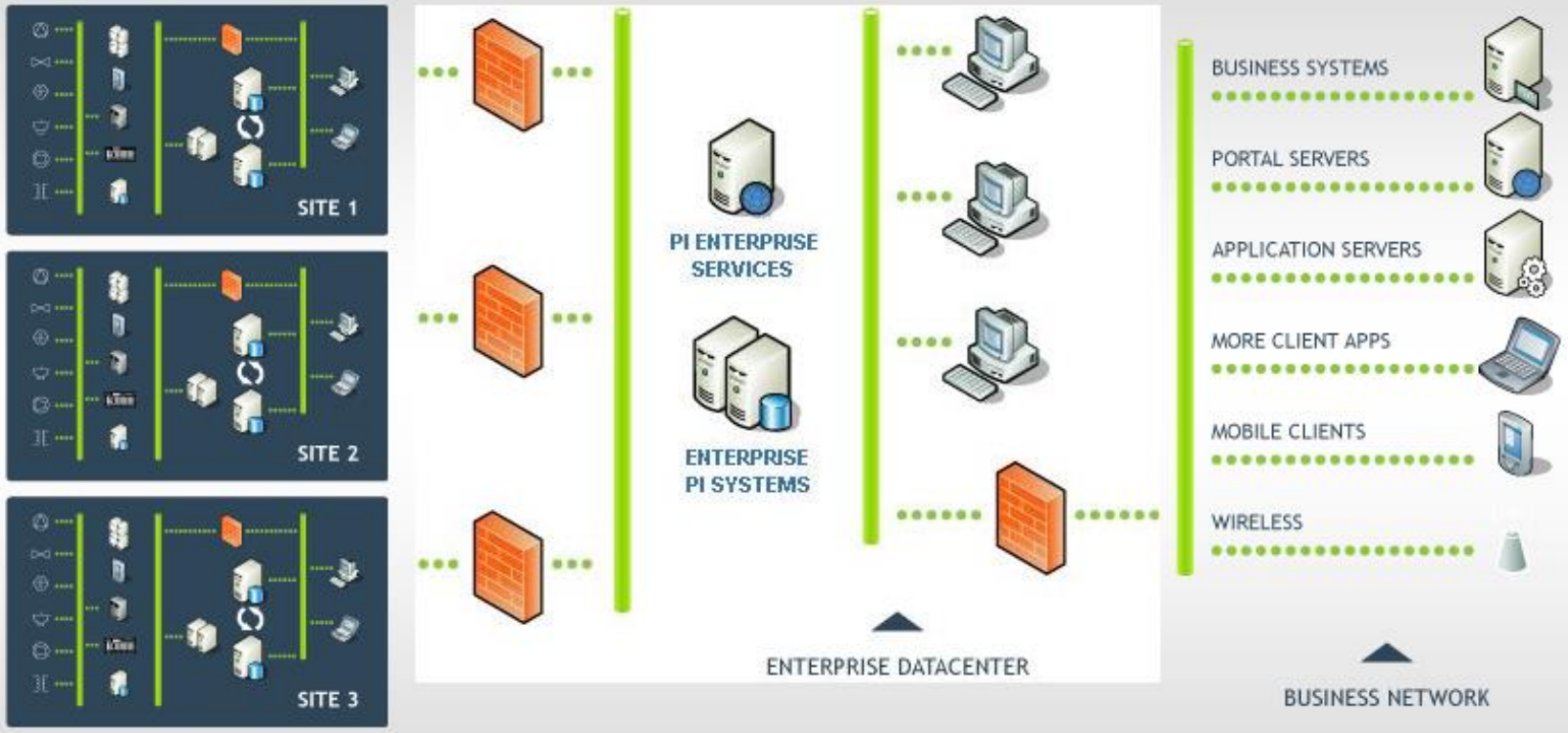
Role of the PI System:

- Data Capture and Storage
- Distribute to Virtual Collaborative environment
- Event, exception based alerts – work by exception
- Aggregation and Communication of Info to Business
- Goal: rapid deployment & zero maintenance

PI Systems across the Enterprise



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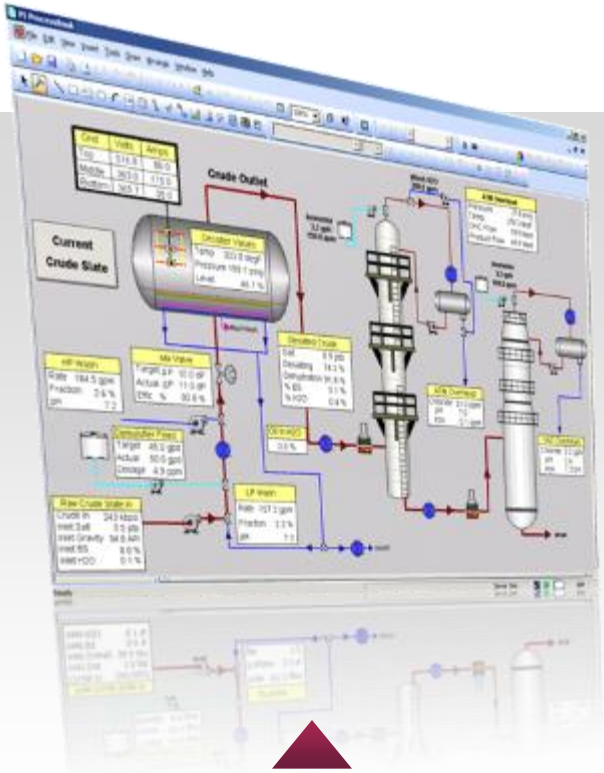
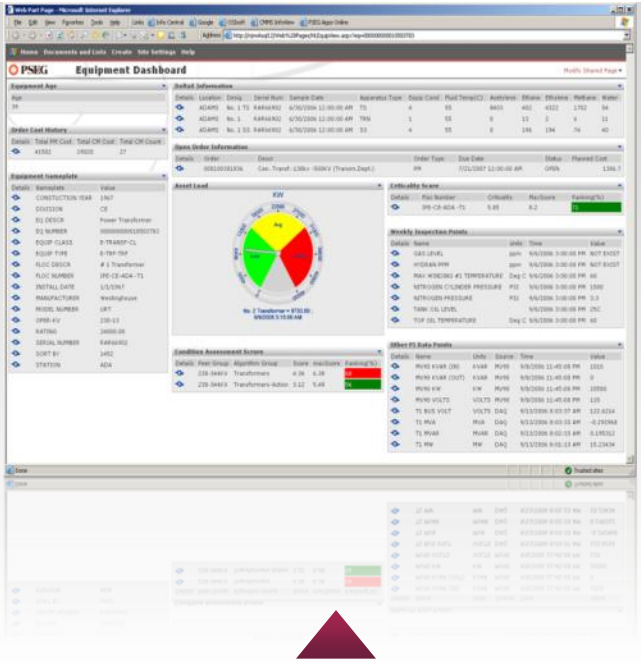
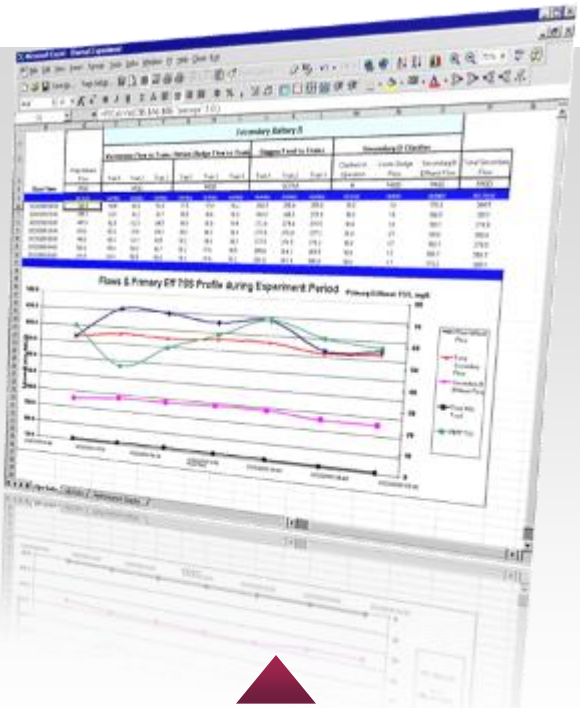
Clarity in Visualization and Collaboration



PI ProcessBook



Web



Excel

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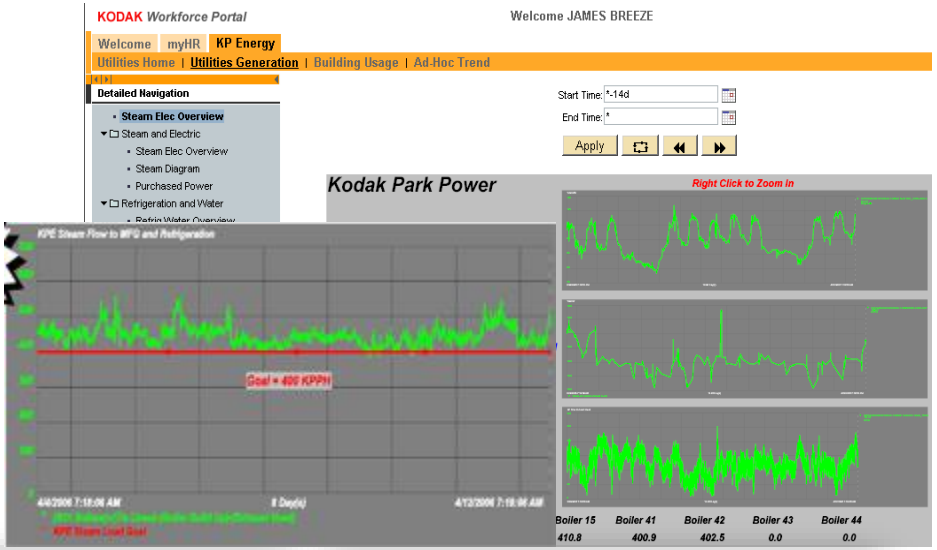
Kodak: Collaboration enables optimized energy consumption

"There was no 'Big Bang.' Rather, there were **1,000 little bangs**. Collectively these efforts have yielded savings into the millions of dollars and established a culture of continuous process improvement."

James Breeze | Energy Engineer



Customer Business Challenge

- Conservation, optimization of resources, and cost control
- Merge real-time energy data with business processes.
- Film finish bldg 1M sq ft, need % outside air for ventilation, 500 people there but enough air to support 10,000, must heat/cool

Solution

- Implemented Energy Information System without buying new app
- Used OSIsoft Business Package for SAP Portal with PI
- View and manage Enterprise energy demand with standard OSIsoft interfaces.

Customer Results / Benefits

- Increased ROI on improved demand side management and optimization of power generation assets, saving millions of dollars, annually
- Opportunities in manufacturing to implement an energy conservation mode between product runs.

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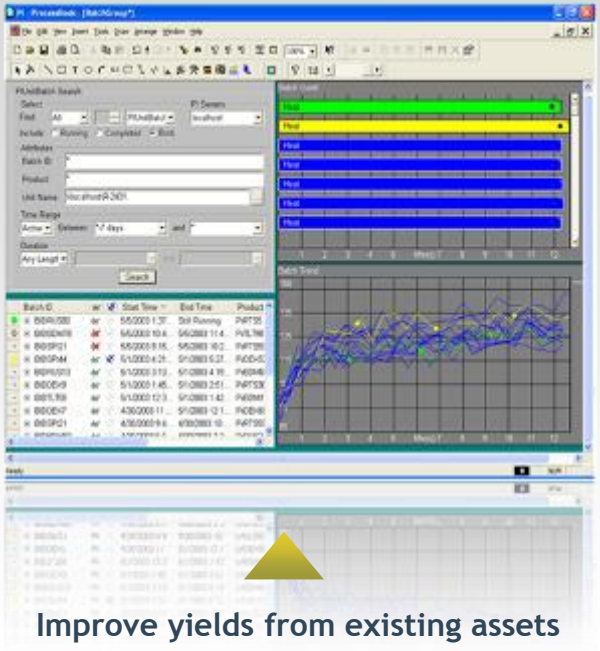
Event Management



Improve yields from existing assets
(cycle time reduction)

Increase energy efficiency
(company wide energy program)

Executive
Dashboard

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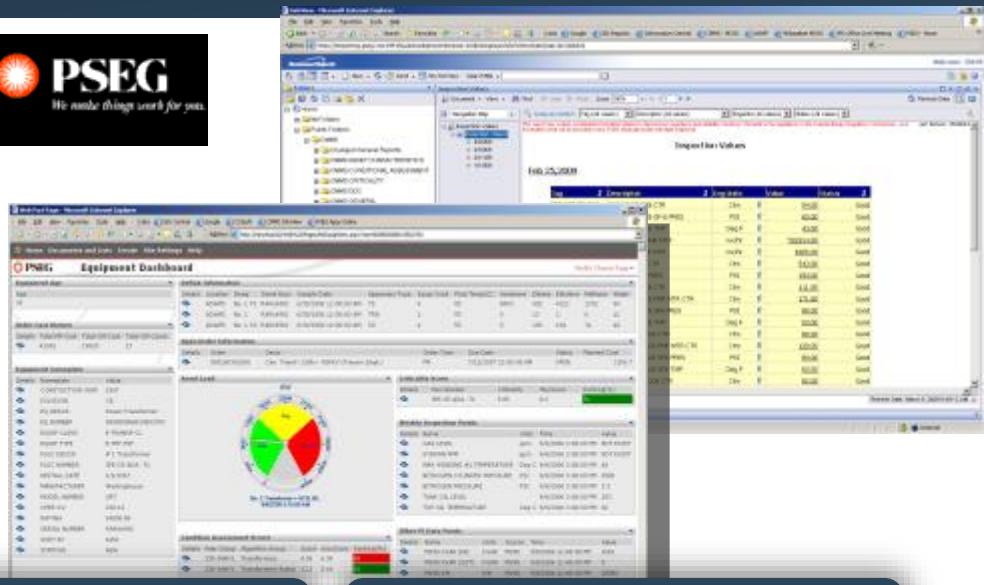
PSE&G: Condition Based Maintenance

"We get a detailed breakdown on equipment costs and man/hours to service that gives us important business benefits. Without the use of the PI System, it would have taken us several months to gather and analyze the information."

Angela Rothweiler, Principal Engineer



Customer Business Challenge

- Providing the highest reliability Power Distribution is requirement
- Minimize Maintenance Costs

Solution

- Implemented automatic data collection & notifications to SAP PM
- Standard business rules for condition based maintenance using PI – ACE (6,000 calcs)
- Provided focused view into equipment using SAP Portal

Customer Results / Benefits

- Holds Reliability award for Mid Atlantic States last 7 years
- Last month: transformer sounded like jet engine
- LTC stationary & moving contacts burned, next PM due 2015, transformer would have failed, saved $2M transformer

Empowering Business in Real Time.

Value Now Across Industries

POWER & UTILITIES

- OSIsoft is ranked 1st in the power industry
- DTE Energy, PSE&G, Entergy, British Energy, Iberdrola

OIL & GAS

- 100% of the global Top 10 producers use the PI System
- BP, Shell, Chevron, ExxonMobil, Pemex, Total, Petrobras

CHEMICALS & PETROCHEMICALS

- 40 of top 50 Chemical Companies rely on the PI System
- Dow Corning, Eastman Kodak, Cytec, Rhodia

PHARMACEUTICALS, FOOD & LIFE SCIENCES

- Nine of the Top 10 pharmaceuticals use the PI System
- Amgen, Bayer, PDL, Allergen, Johnson & Johnson, Roche

MATERIALS, MINES, METALS & METALLURGY

- The PI System is installed in the world's largest mining companies.
- Cemex, Cargill, BHP Billiton Yabulu, Codelco

PULP & PAPER

- 400 sites from worldwide leaders use OSIsoft to manage their mills
- Abitibi, Cascades, International Paper, MeadWestvaco

CRITICAL FACILITIES, DATA CENTERS & IT

- Innovative use of PI System to monitor complex IT environments
- Microsoft, US Army, Cisco Systems

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Value Now with OSIsoft

- Understand the Importance of the infrastructure
- Develop plan to build strategically but act tactically, measure results
- Understand the nature of pressure, take clear action to address, innovate and find new opportunities

"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change."

Charles Darwin

Thank you

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