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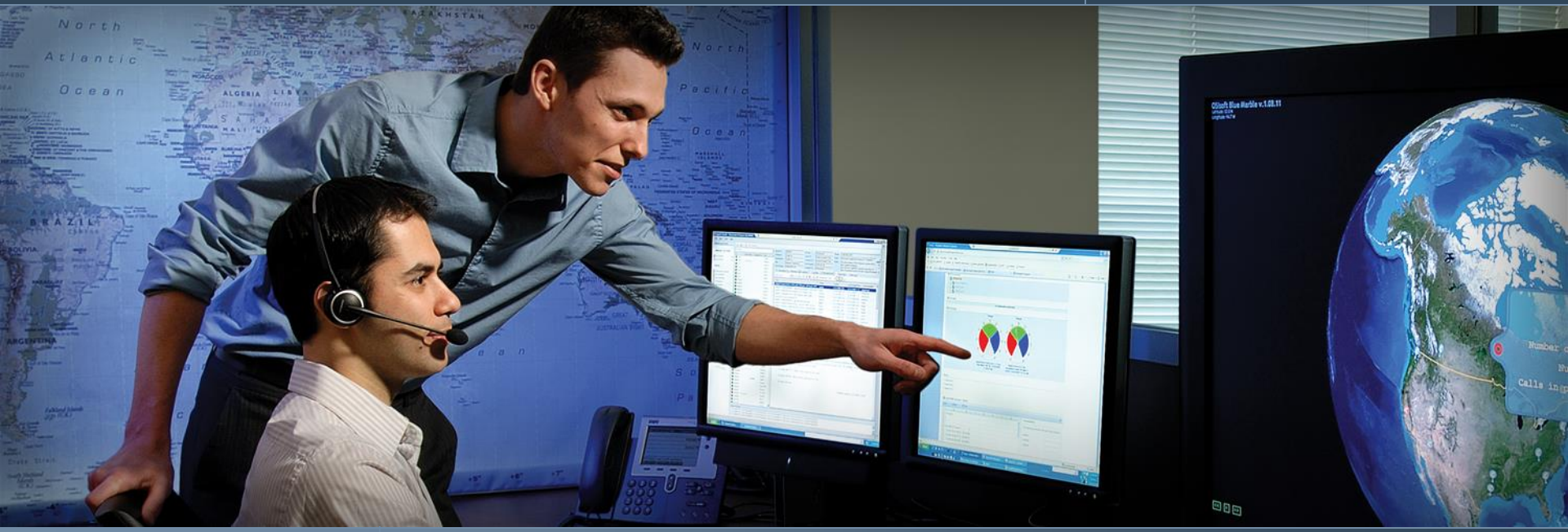

# Value Based Case Studies

Dave Roberts droberts@osisoft.com
Director of Business Development
OSIsoft

September 2, 2009

Empowering Business in Real Time.

# Introduction

- Highlights from a couple “non-power” User Conference Papers
- Common threads for consideration
- Users Conference Spring 2010 – San Francisco
  - Call for Papers Coming Fall 2010

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USERS CONFERENCE
2009
SAN FRANCISCO

# RockTenn
# Gaining Value Now with Enterprise Agreement

Presented by Bob Anderson

Empowering Business in Real Time
PI Infrastructure for the Enterprise

# Bringing Data Together

**Front Office Systems**

**JDE Financials**

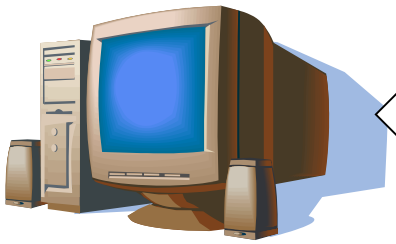
- Accounts Payable
- Accounts Receivable
- P&L Data
- Time & Attendance

**Internet / Intranet**

- Energy prices
- Invoice Search
- Backlog
- Sales

**AS/400 Mill System Business / MES**

- Order Entry
- Customer Service
- Scheduling
- Production
- Roll Labeling and Tracking
- Quality Lab
- Shipping / Inventory / Backlog
- Invoicing / Sales



**OSI PI Data Historian**

**Scanners & Gauging Systems**

**Power House**

- Gas
- Oil
- Steam
- Electricity

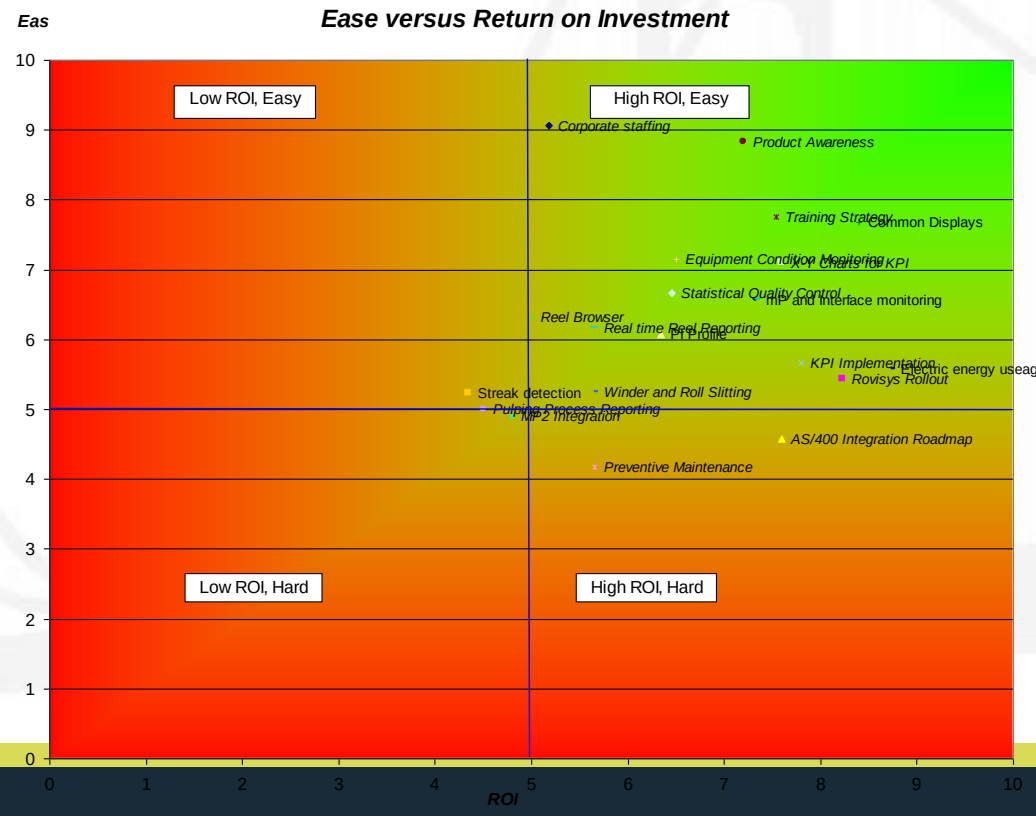
**Process Controls and Metering**

- DCS
- PLCs
- Recorders
- Meters

**Plant Floor Systems**

# Acceptance & Utilization – "Picking Up the Hammer"

- Initial mixed mill management support
- Identified at first one "early adopter" at each mill
- Application development driven by local needs
- Divisional priorities identified with CoE Value Realization Process (VRP)
- Application development required both Subject Matter Experts and PI Experts
- Utilization produces $$$'s



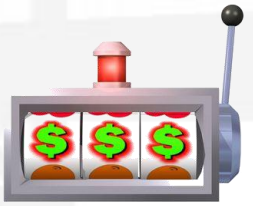
# Overall Results

- Energy Reductions from reducing steam usage variability and thereby lowering overall boiler gas consumption > $1,000,000
- Fewer Customer Complaints – higher customer retention
- Improved Paper Machine Efficiency by 1% or 2.5 TPD *(OSI estimated savings using published $500/ton $450,000/yr)*
- Standardized Visualization & Benchmarking across 13 mills
- Six Sigma Process Capability Analysis rolled out across 13 mills

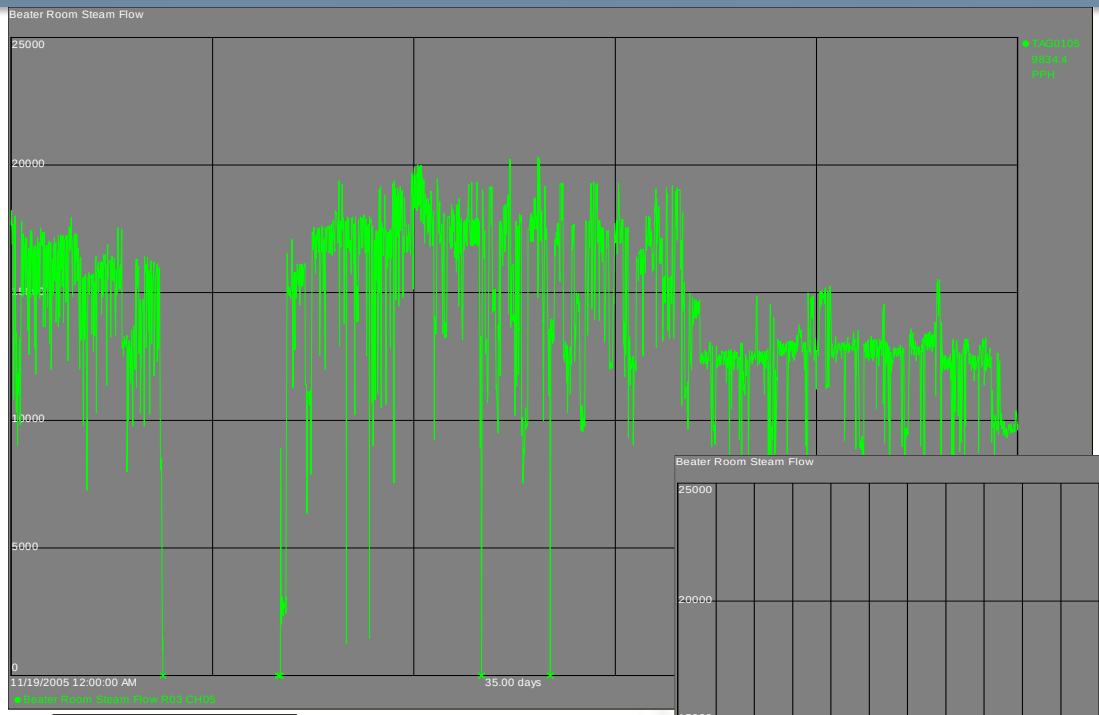
# The PI Effect: Energy Reduction

- Initial PI installation, Oct. 2005
- Began using PI trends to monitor pulper steam usage
- Made procedure changes to limit pulper steam usage
- Reduced steam usage 41%
- Reduced boiler gas consumption 23%
- Half of gas reduction attributable to pulper steam

> $1,000,000

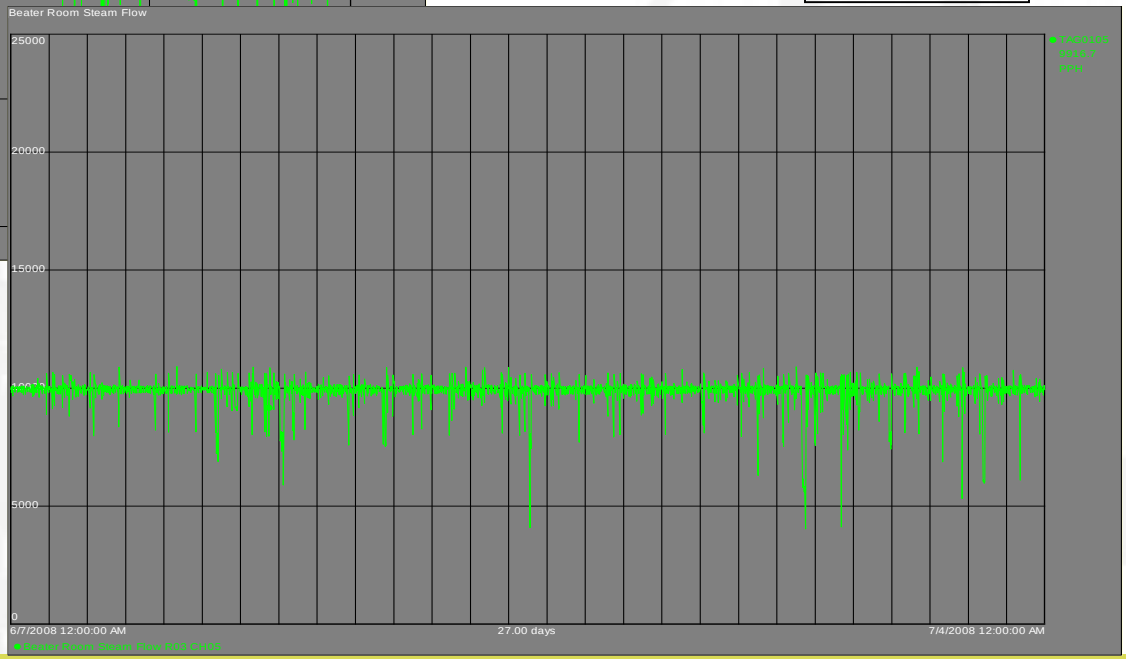


# Visibility of Steam Usage…

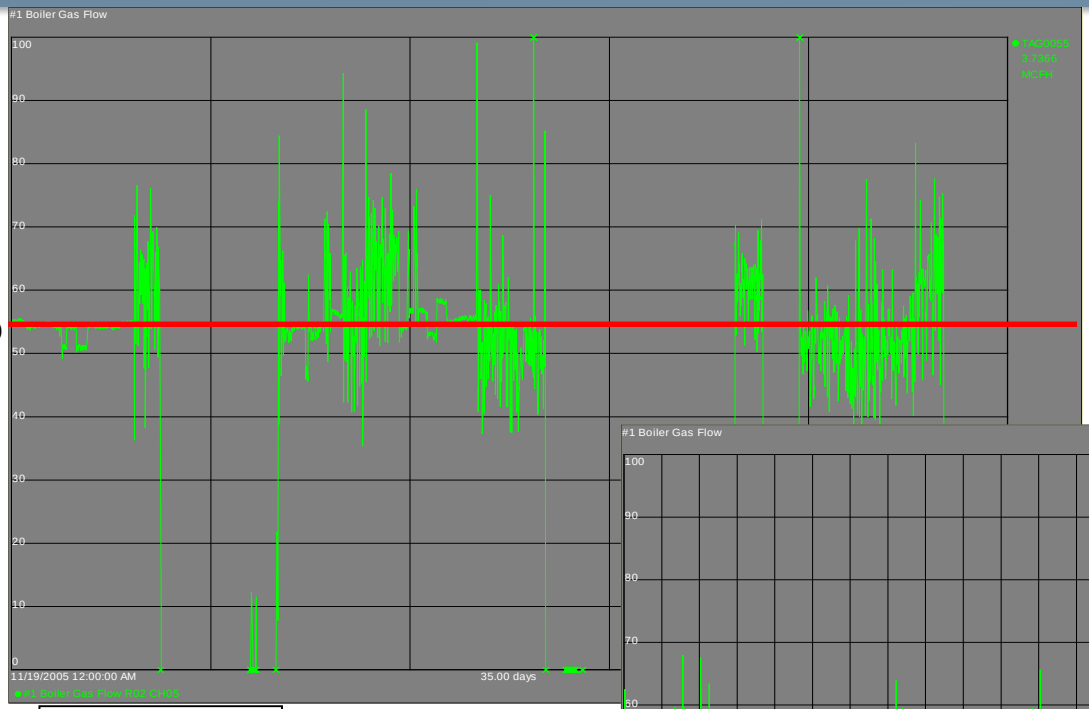



**Before**

**After**



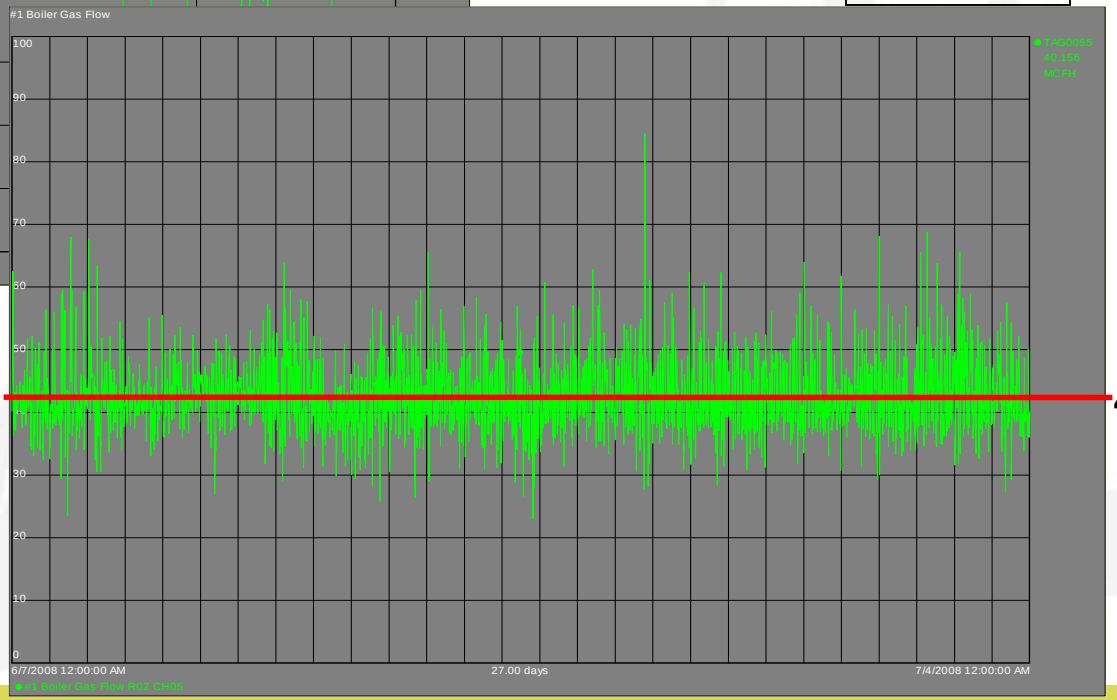
# ...Lowers Boiler Gas Consumption




55%

Before

After



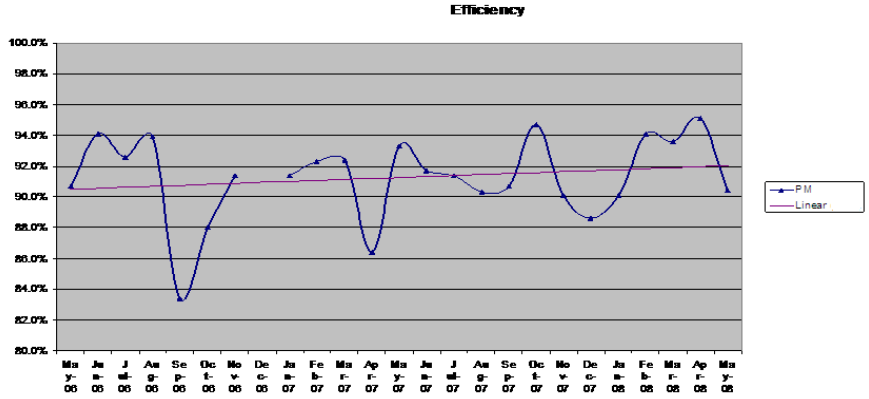

42%

# Customer Complaint Reduction

- Plant received a warp complaint
- Manually researching quality and process data was time consuming and inconclusive
- Reviewing the PI ProfileView images revealed back edge caliper and moisture streaks
- Corrective action
  - Use PI process trends and RtAlerts to notify supervisors of variances
  - Created a spreadsheet that captures all quality and process data for each reel in real-time
- Results – reduced warp complaints and claims

# Paper Machine Efficiency Increase

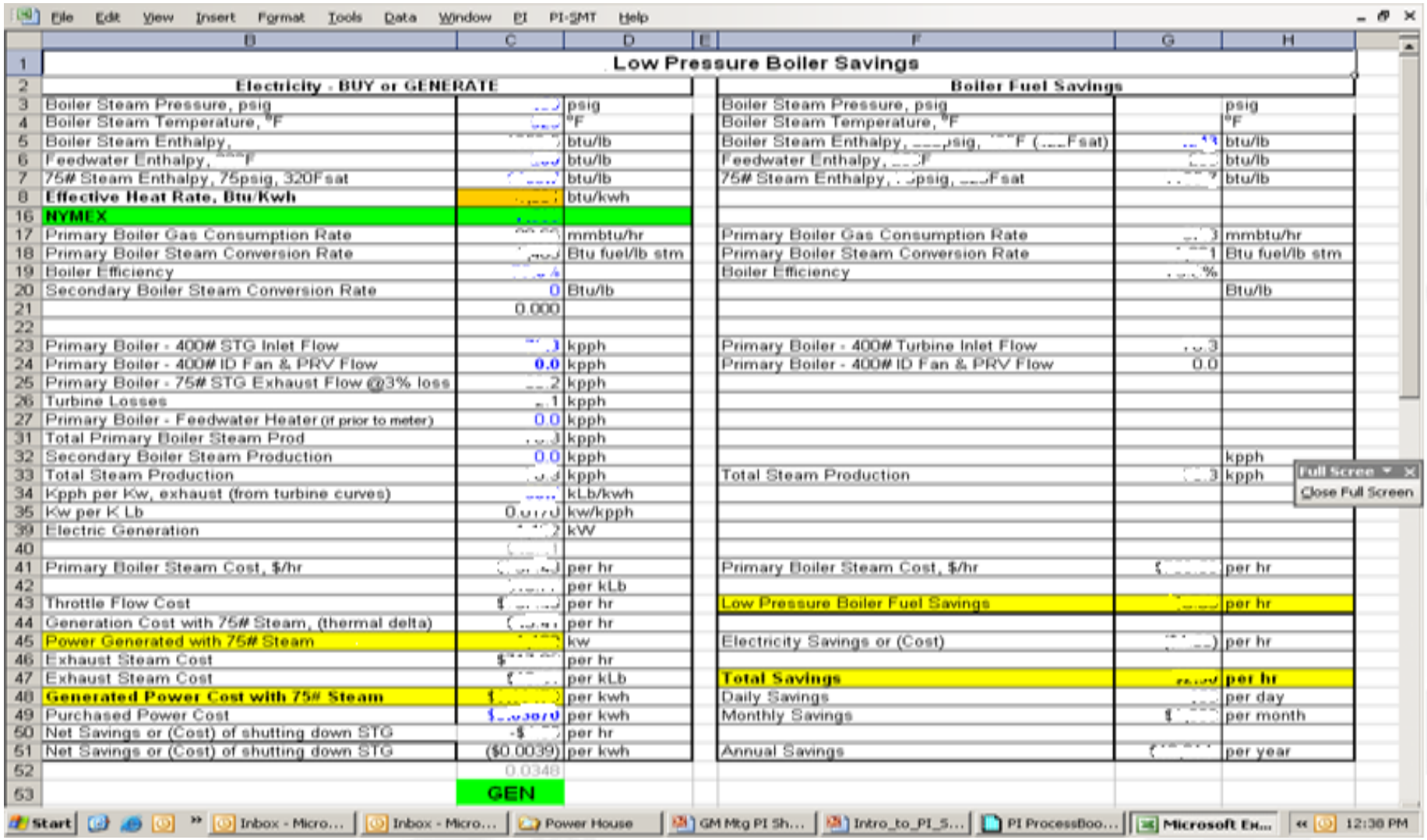
- PM experienced more breaks and lost time due to draw variations
- Developed a dashboard with R-Y-G indicators for tight and loose draws
- PM efficiency has improved by one percentage point
- 1% efficiency improvement equals 2.5 TPD




PM Speeds and Draws

| | Speed | Draw | Status | Grade |
|---|---|---|---|---|
| Couch | 1440 | | | |
| 1st Press | 1468 | 27.9 | Loose | |
| 2nd Press | 1486 | 18.2 | Very Loose | |
| 1st Dryer | 1500 | 13.5 | Tight | |
| 2nd Dryer | 1501 | 1.2 | Good | |
| 3rd Dryer | 1503 | 1.8 | Loose | |
| 4th Dryer | 1504 | 1.6 | Loose | |
| 5th Dryer | 1506 | 1.3 | Good | |
| 6th Dryer | 1505 | -0.7 | Loose | |
| Stack | 1507 | 2.1 | Good | |
| Reel | 1505 | -2.0 | Good | |

# Buy / Generate Power Decision Tool



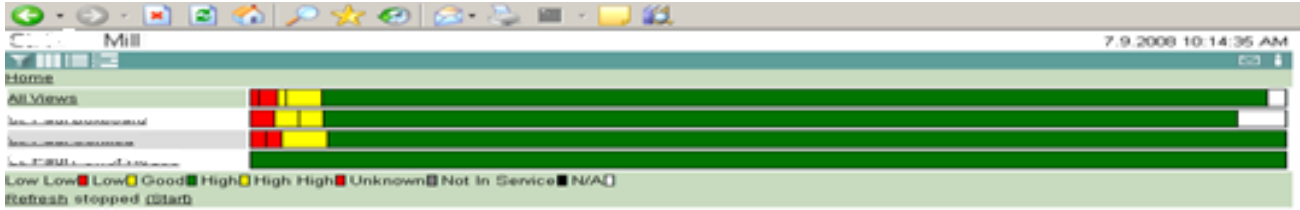
File Edit View Insert Format Tools Data Window PI PI-SMT Help

| | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 1 | **Low Pressure Boiler Savings** | | | | | | |
| 2 | **Electricity - BUY or GENERATE** | | | | **Boiler Fuel Savings** | | |
| 3 | Boiler Steam Pressure, psig | | psig | | Boiler Steam Pressure, psig | | psig |
| 4 | Boiler Steam Temperature, °F | | °F | | Boiler Steam Temperature, °F | | °F |
| 5 | Boiler Steam Enthalpy, | | btu/lb | | Boiler Steam Enthalpy, psig, °F (Fsat) | | btu/lb |
| 6 | Feedwater Enthalpy, °F | | btu/lb | | Feedwater Enthalpy, °F | | btu/lb |
| 7 | 75# Steam Enthalpy, 75psig, 320Fsat | | btu/lb | | 75# Steam Enthalpy, psig, Fsat | | btu/lb |
| 8 | **Effective Heat Rate, Btu/Kwh** | | btu/kwh | | | | |
| 16 | **NYMEX** | | | | | | |
| 17 | Primary Boiler Gas Consumption Rate | | mmbtu/hr | | Primary Boiler Gas Consumption Rate | | mmbtu/hr |
| 18 | Primary Boiler Steam Conversion Rate | | Btu fuel/lb stm | | Primary Boiler Steam Conversion Rate | | Btu fuel/lb stm |
| 19 | Boiler Efficiency | | | | Boiler Efficiency | | % |
| 20 | Secondary Boiler Steam Conversion Rate | 0 | Btu/lb | | | | Btu/lb |
| 21 | | 0.000 | | | | | |
| 22 | | | | | | | |
| 23 | Primary Boiler - 400# STG Inlet Flow | | kpph | | Primary Boiler - 400# Turbine Inlet Flow | | |
| 24 | Primary Boiler - 400# ID Fan & PRV Flow | 0.0 | kpph | | Primary Boiler - 400# ID Fan & PRV Flow | 0.0 | |
| 25 | Primary Boiler - 75# STG Exhaust Flow @3% loss | | kpph | | | | |
| 26 | Turbine Losses | | kpph | | | | |
| 27 | Primary Boiler - Feedwater Heater (if prior to meter) | 0.0 | kpph | | | | |
| 31 | Total Primary Boiler Steam Prod | | kpph | | | | |
| 32 | Secondary Boiler Steam Production | 0.0 | kpph | | | | kpph |
| 33 | Total Steam Production | | kpph | | Total Steam Production | | kpph |
| 34 | Kpph per Kw, exhaust (from turbine curves) | | kLb/kwh | | | | |
| 35 | Kw per K Lb | | kw/kpph | | | | |
| 39 | Electric Generation | | kW | | | | |
| 40 | | | | | | | |
| 41 | Primary Boiler Steam Cost, $/hr | | per hr | | Primary Boiler Steam Cost, $/hr | | per hr |
| 42 | | | per kLb | | | | |
| 43 | Throttle Flow Cost | | per hr | | Low Pressure Boiler Fuel Savings | | per hr |
| 44 | Generation Cost with 75# Steam, (thermal delta) | | per hr | | | | |
| 45 | Power Generated with 75# Steam | | kw | | Electricity Savings or (Cost) | | per hr |
| 46 | Exhaust Steam Cost | | per hr | | | | |
| 47 | Exhaust Steam Cost | | per kLb | | **Total Savings** | | **per hr** |
| 48 | **Generated Power Cost with 75# Steam** | | per kwh | | Daily Savings | | per day |
| 49 | Purchased Power Cost | | per kwh | | Monthly Savings | | per month |
| 50 | Net Savings or (Cost) of shutting down STG | | per hr | | | | |
| 51 | Net Savings or (Cost) of shutting down STG | ($0.0039) | per kwh | | Annual Savings | | per year |
| 52 | | 0.0348 | | | | | |
| 53 | | GEN | | | | | |

Full Screen
Close Full Screen

Start | Inbox - Micro... | Inbox - Micro... | Power House | GM Mtg PI Sh... | Intro_to_PI_S... | PI ProcessBoo... | Microsoft Ex... | 12:38 PM

# Standard Visual KPI Display




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Area: Beater Room | | | | | | | | | | | |
| BR Broke C 50.33 | BR Broke t -1.078 | BR Broke t 457.9 | BR HHP Fe 1.905 | BR Liner t 75 | BR OCC Fe 0 | BR Sewer F 125 | | | | | |
| Area: Draws | | | | | | | | | | | |
| PM Couch 28.62 | PM 1Prs 2 17.76 | PM 2Prs 1 13.11 | PM 1Dry 2 1.077 | PM 2Dry 3 1.654 | PM 3Dry 4 1.595 | PM 4Dry 5 1.542 | PM 5Dry 6 -.839 | PM 6Dry S 1.961 | PM Stk Re -1.702 | PM Couch 36.08 | PM 1Prs 2 40.25 |
| PM 2Prs 1 4.167 | PM 1Dry 2 2 | PM 2Dry 3 2.083 | PM 3Dry 4 2.917 | PM 4Dry 5 1.792 | PM 5Dry S 7.708 | PM Stk Re 8.017 | | | | | |
| Area: Paper Machines | | | | | | | | | | | |
| PM Break Running | PM Break Running | PM Coagul 183.1 | PM Daily 0 | PM Daily 39.51 | PM Floccu 2.448 | PM Grade 1,240 | PM HHP D 312.2 | PM Machin 398.1 | PM1 Reel S 415.4 | PM Shutdo Running | PM Steam 45,032 |
| PM Steam 56.48 | PM TPH 11.01 | PM1 1st Pr 23.3 | PM1 1st Pr 23.93 | PM1 1st To 11.4 | PM2 2nd Ma 14.16 | PM2 2nd To 6.776 | PM2 3rd To 4.228 | PM2 Bottom 3.816 | PM2 Break Running | PM2 Break Running | PM2 Coagul 183.9 |
| PM Daily 0 | PM2 Daily 44.72 | PM2 Drum 25.41 | PM2 Floccu 2.964 | PM2 Grade 1,200 | PM2 Machin 405 | PM2 OCC D 332 | PM2 Reel S 440.3 | PM2 Shutdo Running | PM2 Steam 44,791 | PM2 Steam 46.05 | PM2 TPH 12.45 |
| PM2 Aquatr 45 | PM2 Break Running | PM2 BW Re .285 | PM2 Couch 1,440 | PM2 DW Re .157 | PM2 Main D 33.96 | PM2 Main S 291.7 | PM2 Mois C .609 | PM2 Mois M .196 | PM2 Pond L 11.99 | PM2 Prod. 11.19 | PM2 Reel M 8.5 |
| PM2 Reel S 1,506 | PM2 Rush D -21.52 | PM2 Shutdo Running | PM2 Steam 38,230 | PM2 Thicks 3.93 | PM2 Tickle 504.9 | PM2 Aquatr 25 | PM2 Break Running | PM2 BW Re .116 | PM2 Couch .534 | PM2 Couch 1,535 | PM2 Day Ti Running |
| PM2 DW Re .294 | PM2 Mach. 4.203 | PM2 Main D 57.03 | PM2 Mois C .403 | PM2 Mois M .242 | PM2 Pond L 12.59 | PM2 Prod. 12.61 | PM2 Reel S 1,640 | PM2 Rush D -22.39 | PM2 Shutdo Running | PM2 Steam 19,080 | PM2 Steam 6.05 |
| PM5 Tickle 450.1 | | | | | | | | | | | |
| Area: Power House | | | | | | | | | | | |
| PH #2 Opac 10.69 | PH #2 Boil 82.64 | PH #3 Opac -.339 | PH #3 Boil 103.1 | PH Total S 185.7 | | | | | | | |
| Area: Stock Prep | | | | | | | | | | | |
| SP #4 Barr 3.899 | SP #4 Brok 197.6 | SP #4 Ref. 4.365 | SP #5 Barr 3.629 | SP #5 Ref. 3.796 | SP 4-2 Ref -1.016 | SP 4-3 Ref 700.7 | SP 5-1 Ref 546.8 | SP 5-2 Ref 540.6 | SP CM Sew 142 | SP PB Ches 3.255 | |

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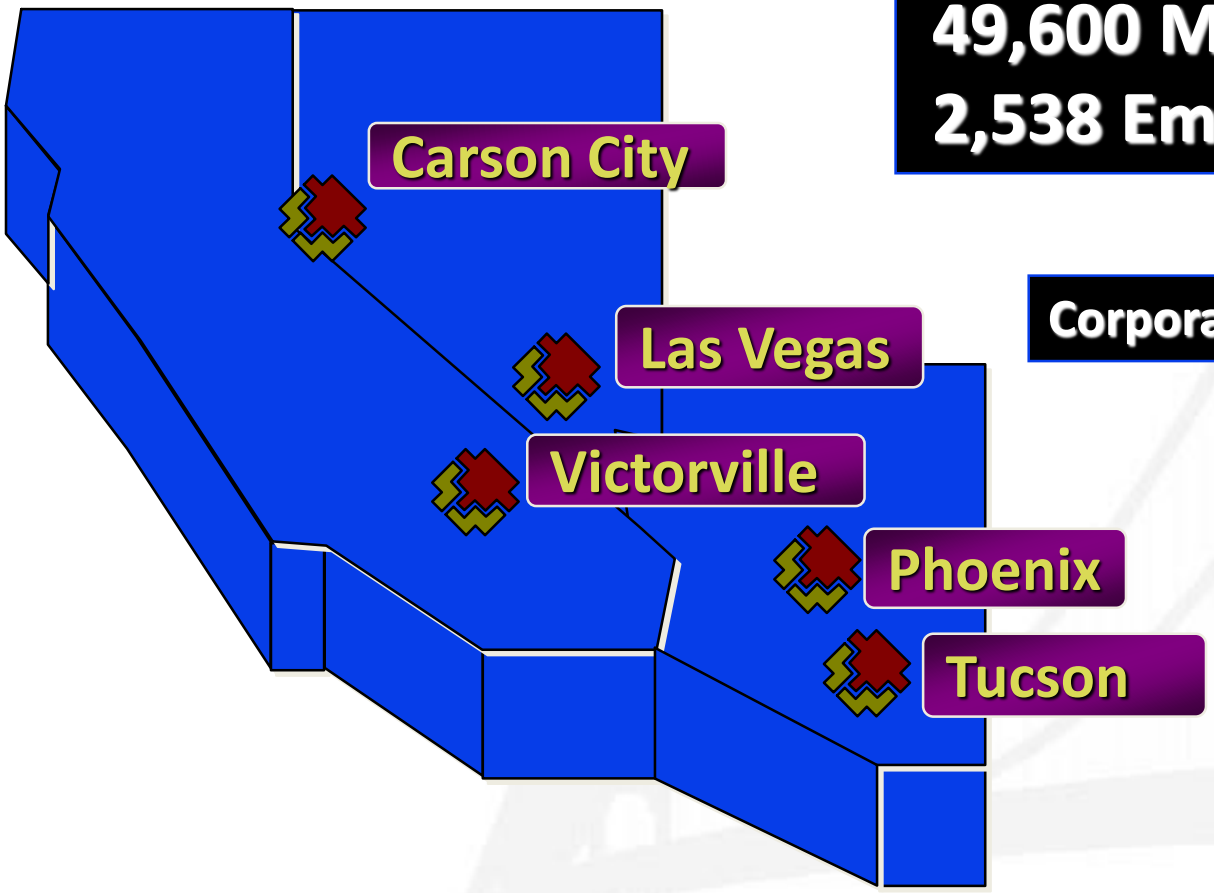
# Stitching Together Disparate Data Systems to Create a 'Single Version of the Truth'

## A Southwest Gas Case Study

Presented by Jim Mlachnik and Jeremy Snider

Empowering Business in Real Time
PI Infrastructure for the Enterprise

# Southwest Gas Corporation




**1,813,000 Customers**
**49,600 Miles of Pipe**
**2,538 Employees**

**Corporate Headquarters**

# Let Everyone Look at SCADA Data

- **Challenge:** Put SCADA data to work for the rest of the company (not just Gas Control)
- **Before PI**: Information had to be extracted from the SCADA historical sub-system in a very cumbersome and time consuming method to provide data to end users
- **After PI**: End users are now able to extract data themselves using the PI client tools
- **Benefits Derived**:
  - Easy access to SCADA data for planning purposes and engineering studies
  - Access to SCADA data during an emergency situation
  - Ability to provide PI data to internal and external customers via the WEB

# SOUTHERN NEVADA TAPS

| TAP SITE | SUPPLIER | STATION FLOWRATE | SUPPLY PRESSURE | DELIVERY PRESSURE | CURRENT DAY VOLUME |
|---|---|---|---|---|---|
| SGTC | EL PASO | 2.66 | 593.31 | 545.78 | 7 |
| SGTC | TRANSWESTERN | 2906.95 | 909.51 | 545.78 | 5175 |
| LAS VEGAS PURCHASE | EL PASO | 0.00 | | 497.05 | 0 |
| BULLHEAD CITY | EL PASO | 54.57 | | 244.90 | 213 |
| BLUE DIAMOND | KERN RIVER | 4510.05 | 706.02 | 634.80 | 14098 |
| LONE MOUNTAIN | KERN RIVER | 4077.94 | 842.64 | 703.28 | 13297 |
| CENTENNIAL | KERN RIVER | 543.20 | 963.48 | 714.55 | 2085 |
| PECOS | KERN RIVER | 91.71 | 979.99 | 704.48 | 275 |
| APEX | KERN RIVER | 1595.78 | 977.58 | 678.30 | 4748 |

# Turn Regulations into Value for Our Customers

- **Challenge:** To comply with tariffs requiring SWG to provide key natural gas parameters like pressure, temperature, flow and quality to both agents and customers.
- **Before PI**: SWG provided agents and customers with phone numbers and passwords for direct access to system RTUs.
- **After PI**: Direct RTU access was revoked. PI-RtWebParts was used to configure Agent and Customer specific web views of tariff data in a secure environment.
- **Benefits Derived**:
  - Securing RTUs
  - The ability for agents and customers to access gas parameters in near real-time
  - PI-RtWebParts provides trending and data downloading via the web

Home - Southwest Gas Corporation - Microsoft Internet Explorer

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Address https://gasinfo.swgas.com/default.aspx Go Links

Welcome to Southwest Gas

Contacts

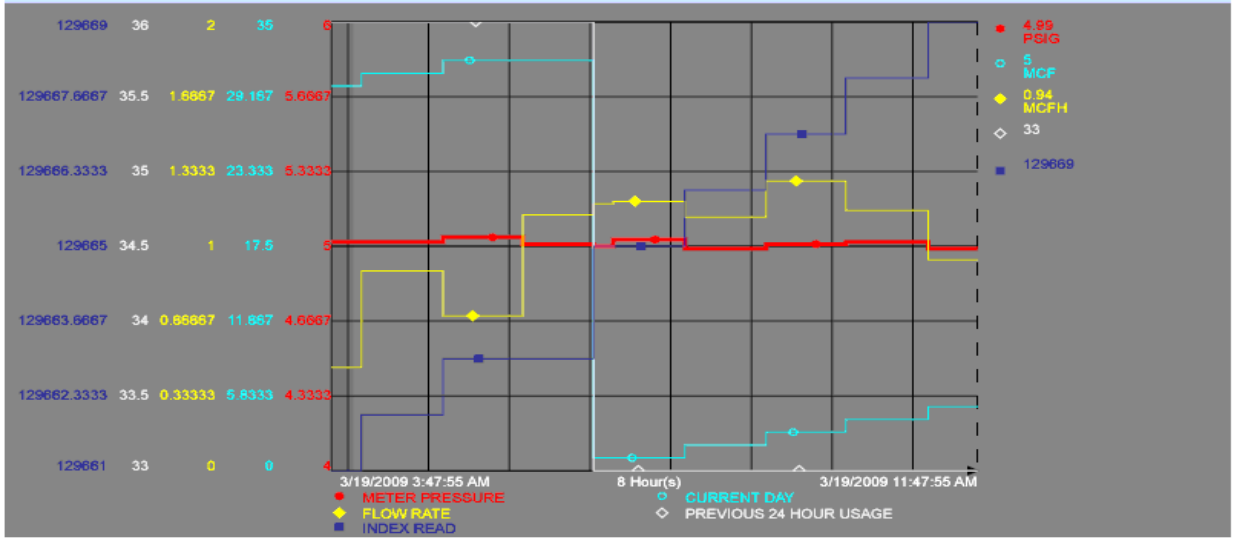
Harrahs Vegas

**Current Values**

| Time | Descriptor | Value | EngineeringUnits |
|---|---|---|---|
| 3/19/2009 11:11:33 AM | METER PRESSURE | 4.99 | PSIG |
| 3/19/2009 11:11:33 AM | CURRENT DAY | 5 | MCF |
| 3/19/2009 11:11:33 AM | FLOW RATE | 0.94 | MCFH |
| 3/19/2009 7:02:35 AM | PREVIOUS 24 HOUR USAGE | 33 | |
| 3/19/2009 11:11:33 AM | INDEX READ | 129669 | |

- Harrahs Vegas
  - Harrahs Casino
  - Harrahs Central Plant
  - Harrahs Hotel

**RtTrend**




## Data Extract

### All Values are in MCF

| Scan Time | Value |
|---|---|
| 3/19/2009 7:16:16 AM | 101 |
| 3/19/2009 7:17:27 AM | 109 |
| 3/19/2009 7:18:45 AM | 117 |

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Address https://gasinfo.swgas.com/default.aspx Go Links

Home | Clark 4 | Clark 5 | Clark 6 | Clark 7 | Clark 8 | Sunrise 1 | Sunrise 2 | Sunrise 3 | LV Cogen 1 | LV Cogen 2 | LV Cogen 3 | LV Cogen 4 | LV Cogen 5 | Ft Churchhill | Reno CG 1 | Reno CG 2 | Reno

Nevada Power

# Clark 7

## Current Values

| Descriptor | Time | Value | EngineeringUnits |
|---|---|---|---|
| CURRENT DAY 7 | 3/24/2009 7:27:01 AM | 114 | |
| FLOW RATE 7 | 3/24/2009 7:27:42 AM | 532.32 | MCFH |
| PREVIOUS 24 HOUR RUN 7 | 3/24/2009 7:01:21 AM | 2978 | |

## Volume History

\\lvc-pi-03\LNVPCLELAC7V

| Time | Value |
|---|---|
| 3/23/2009 8:11:09 AM | NON-UPDATE |
| 3/23/2009 8:16:02 AM | 0 |
| 3/23/2009 8:26:29 AM | NON-UPDATE |
| 3/23/2009 8:31:19 AM | 0 |
| 3/23/2009 8:46:57 AM | 10 |

Showing 1 to 5 of 101

## Flow History

\\lvc-pi-03\LNVPCLELFL7A

| Time | Value |
|---|---|
| 3/23/2009 7:32:06 AM | 0 |
| 3/23/2009 7:39:51 AM | NON-UPDATE |
| 3/23/2009 7:41:25 AM | 0 |
| 3/23/2009 7:43:36 AM | NON-UPDATE |
| 3/23/2009 7:48:50 AM | 0 |

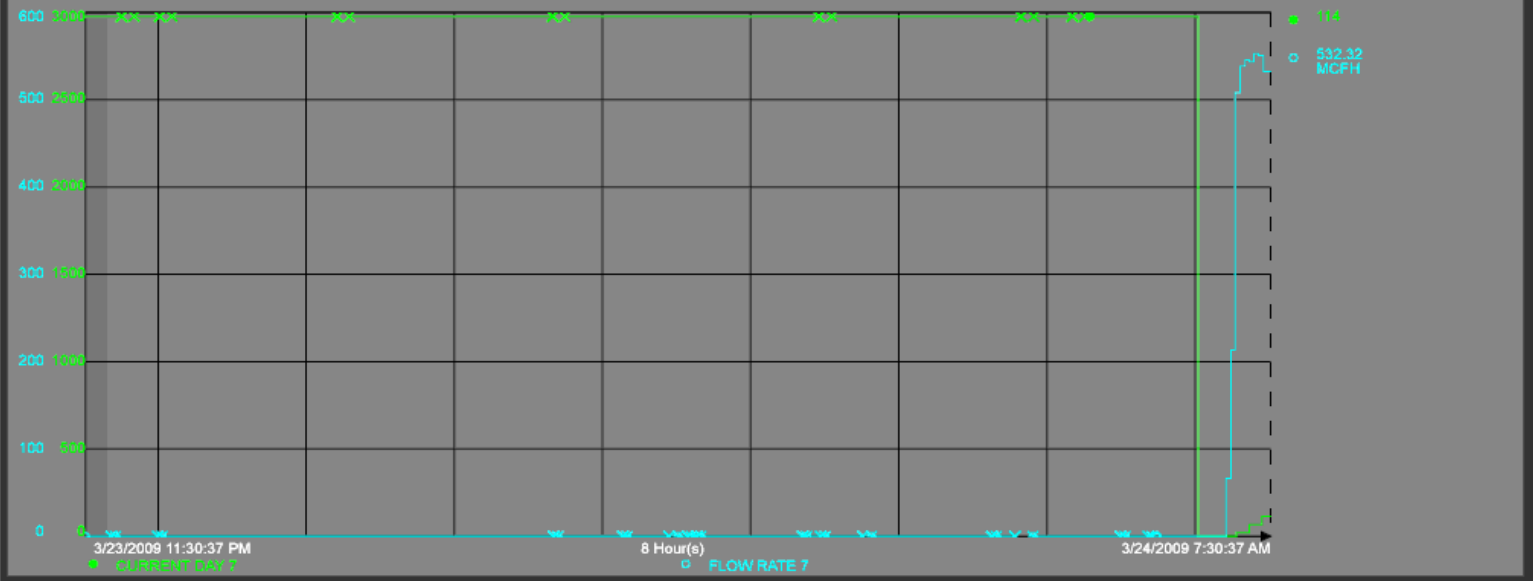
Showing 1 to 5 of 289

## Prev Day Volume History

\\lvc-pi-03\LNVPCLELYA7V

| Time |
|---|
| 12/24/2008 12:52:55 PM |
| 12/24/2008 12:57:50 PM |
| 12/25/2008 12:05:18 AM |
| 12/25/2008 12:10:19 AM |
| 12/25/2008 5:38:51 AM |

## Volume / Flow



# Reduce and Control Project Risk

- **Challenge**: To provide a single 'window' for users to look through for viewing distribution operations data alongside business data held in other databases.
- **Before PI**: SWG conceived and roughed in a RFP for an extensive 'data warehouse' project designed to consolidate data held in various database applications across every major department.
- **After PI**: Data Warehouse project was avoided. SWG introducing portal pages to various internal user groups that leverages RtBaseLine Services and RtWebParts to view data held within critical database applications.
- **Benefits Derived**:
  - Avoided a very costly, complicated project
  - Avoided future maintenance of custom system
  - Used technology (OSIsoft and Microsoft) that we already owned

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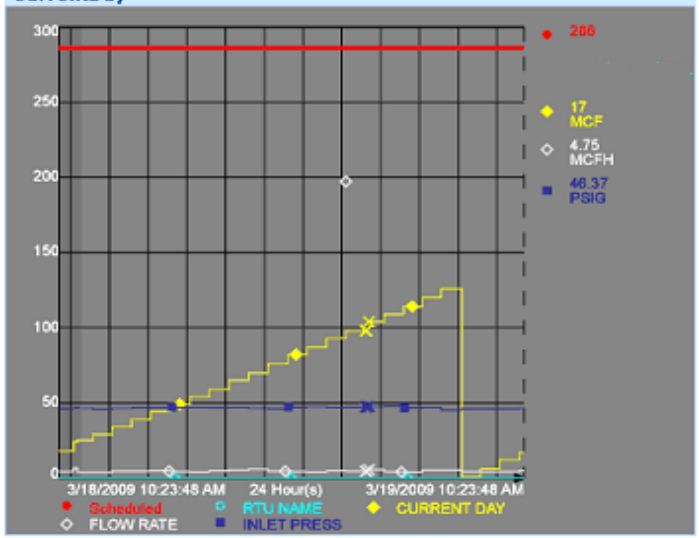
Value

## SOAZ Telemetered Customer List

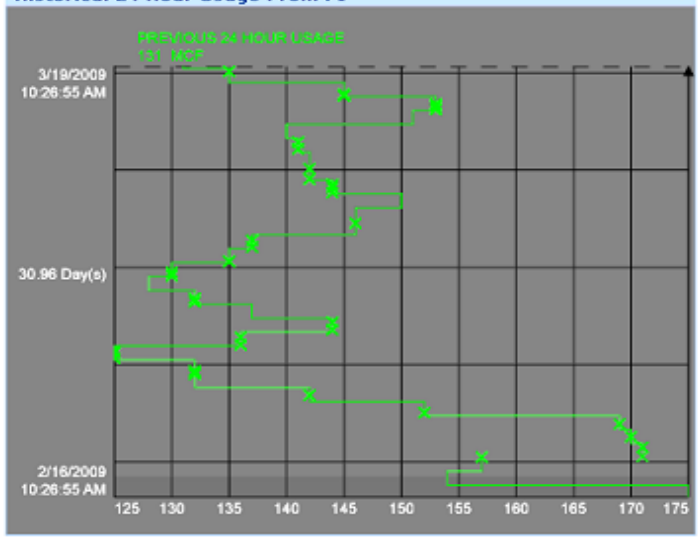
| Customer |
|---|
| ALSCO |
| AZ PORT CEMENT ROTORY |
| AZ PORT CEMENT TURBINE |
| CARONDELET HOSP ST JOES |
| CARONDELET HOSP ST MARY |
| CITY OF TUCSON CNG |
| DAVIS MT AFB MAINLN TAP |
| DAVIS MT AFB SWAN RD |
| EUROFRESH |
| EUROFRESH 2 |
| EUROFRESH 3 |
| EUROFRESH 4 |
| EUROFRESH 5 |
| EUROFRESH 6 |
| FORT HUACHUCA A |
| FRITO LAY |
| FT HUACHUCA C |
| GRUB ELLIS BDU |

Showing 1 to 18 of 34

## CurrentDay




## Historical 24 Hour Usage From PI




## Previous 24 Hour Usage From PI

| Value | EngineeringUnits |
|---|---|
| 131 | MCF |

## WMIS Metered Customers

| MET_PREMISE | DIRECT_ADDRESS_INFORMATION | MET_ID | MET_MANUFACTURER | MET_COMP_TYPE | EVC_MANUFACTURER | EPR_MANUFACTURER |
|---|---|---|---|---|---|---|
| 3611906162 | 1601 W ST MARYS RD | 155191 | DRESSER | ROTMTR2YR | MERCURY | |

## GTS Transport Customers

| GAS_DAY | SHORT_NAME | METER_IDENTIFIER | CSS_SERVICE_NUMBER | RTU_IDENTIFIER | SHORT_NAME1 | MCF_VOLUME | CODE | Daily Scheduled | CODE1 |
|---|---|---|---|---|---|---|---|---|---|
| 3/18/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 131 | TRANS | 286 | CYCLE 1 |
| 3/18/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 131 | TRANS | 286 | CYCLE 2 |
| 3/18/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 131 | TRANS | 286 | CYCLE 3 |
| 3/18/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 131 | TRANS | 286 | CYCLE 4 |
| 3/17/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 135 | TRANS | 286 | CYCLE 1 |
| 3/17/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 135 | TRANS | 286 | CYCLE 2 |
| 3/17/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 135 | TRANS | 286 | CYCLE 3 |
| 3/17/2009 12:00:00 AM | | 00569943 | 3611906162021 | TCARSMSS | SOAZ | 135 | TRANS | 286 | CYCLE 4 |
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# 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, Inc., International Paper, MeadWestvaco

**CRITICAL FACILITIES, DATA CENTERS & IT**

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



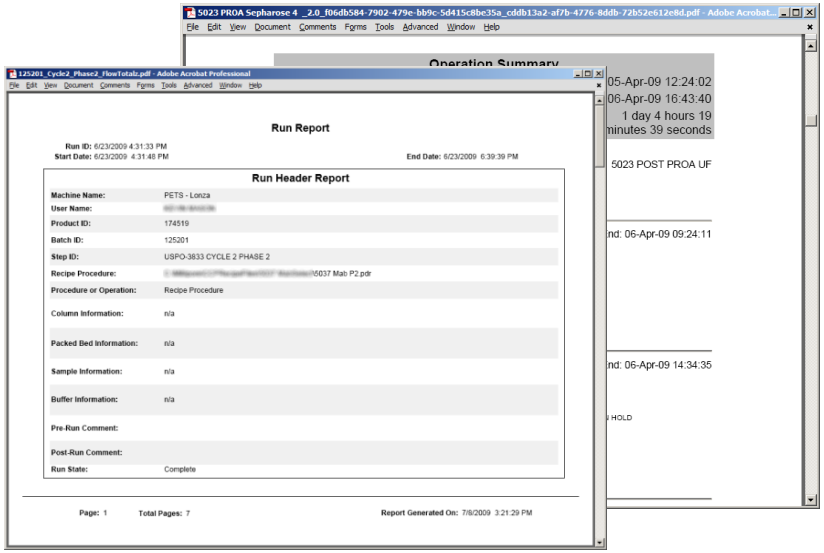
Empowering Business in Real Time.

## **The Challenge:** Consistent Batch Reporting across disparate systems

*"We use the PI system to provide our customers with a consistent batch record review process which includes a review of the process alarms summary and critical process data trends for our DeltaV systems. The reports and the review process should be the same despite the production area or the equipment used."*

Lonza

*Rob Horton – Controls Engineer*




### Customer Business Challenge

- Provide our Customers with a consistent report format regardless of the process equipment used
- Reduce the workload of operators
- Create exception based reporting to improve the efficiency of lot review
- Reduce the opportunities for errors during the batch release processes

### Solution

- Leverage the RtReports installation already in use with the site PI system
- Utilize the existing investment in our site system which had PIBaGen and the batch sub system installed
- Propagate information already available in the existing HMI database

### Customer Results / Benefits

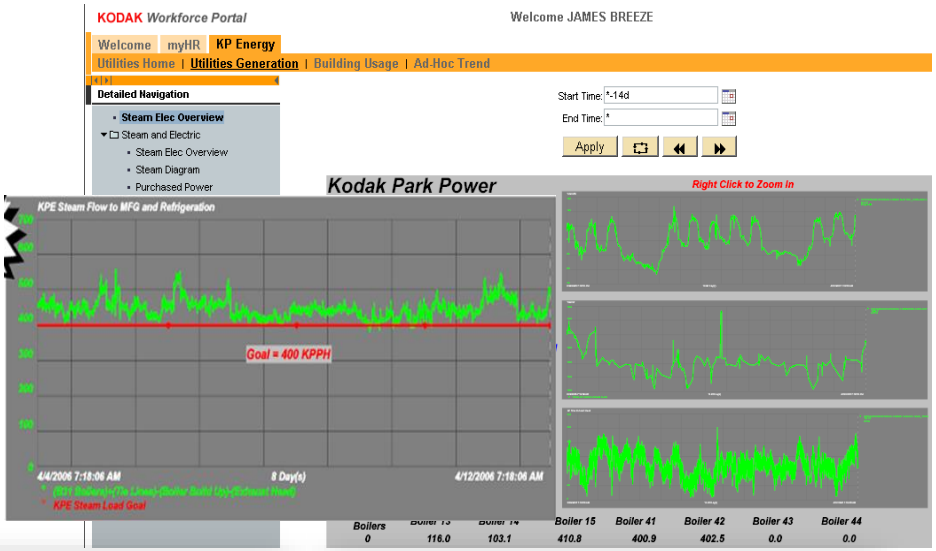
- Consistent batch reporting format
- Transfer the responsibility of report generation from the operators to the Quality group
- Report by exception which translates to less time for product release
- Eliminates the manual method for identifying exceptions

# **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 / Project Leader
Worldwide

Kodak




## Customer Business Challenge

- Conservation, optimization of resources, and cost control is imperative
- Merge real-time energy management data with business processes.

## Solution

- Implemented a new Energy Information System without buying a new application
- Used OSIsoft Business Package for SAP Portal with the PI System
- View and manage their Enterprise energy demand across the enterprise with standard OSIsoft interfaces.

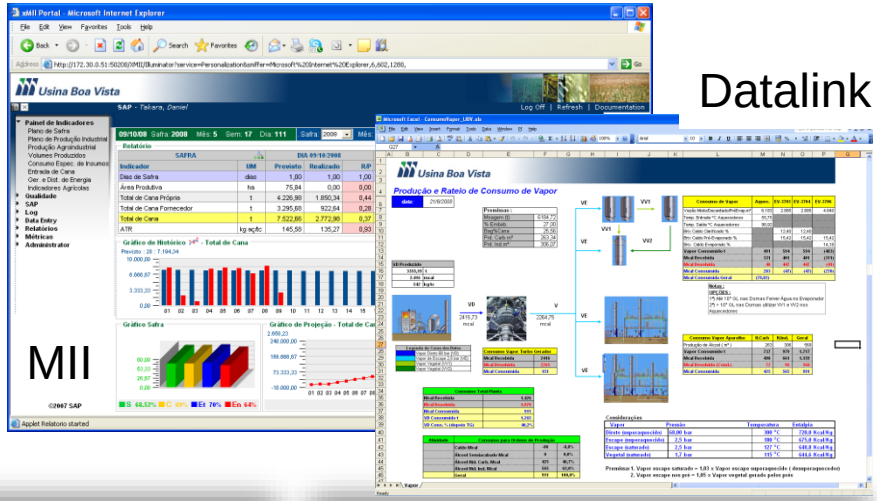
## Customer Results / Benefits

- 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.

# **Grupo São Martinho:** Vertical Integration between plant floor and SAP ERP

Grupo São Martinho is a company operating three sugar mills with alcohol production in Brazil. In their presentation, they explained the value achieved from connecting PI to SAP via MII at their Usina Boa Vista to provide complete supply chain visibility.

Presentation by **Edinei Castro**| Project Leader | Seminario Regional da OSIsoft do Brasil 2008




## Customer Business Challenge

- Operational Visibility in real-time across their entire supply chain from production planning through manufacturing and shipping
- Needed to eliminate manual entry errors in inventory accounting

## Solution

- Implemented PI with connectivity to SAP via MII for presenting a real-time view of order planning and execution.
- Link PI data to PP/PI and PM

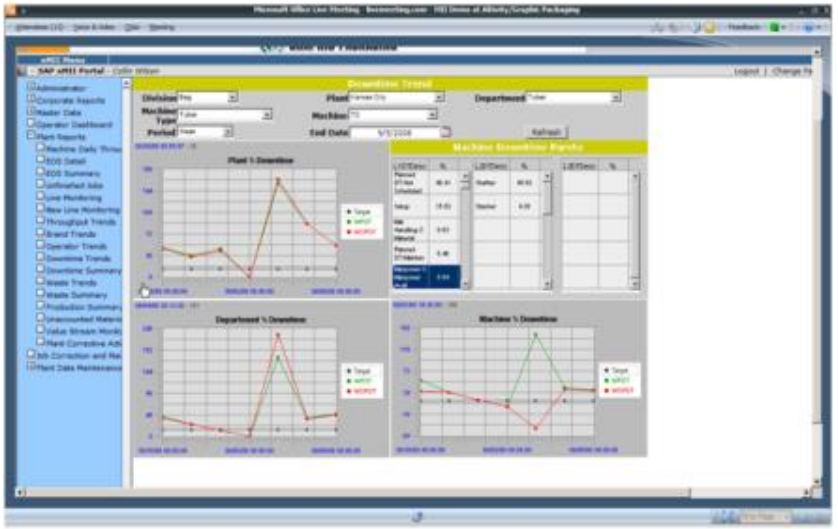
## Customer Results / Benefits

- Provided visibility needed for planning optimization and gave operations information in real-time
- PI gave plant personnel the ability to have a central data store for all plant data so that problems could analyzed easily.
- Vastly accelerated the learning curve for plant operations for personnel



Empowering Business in Real Time.

# **Altivity:** Production Reporting



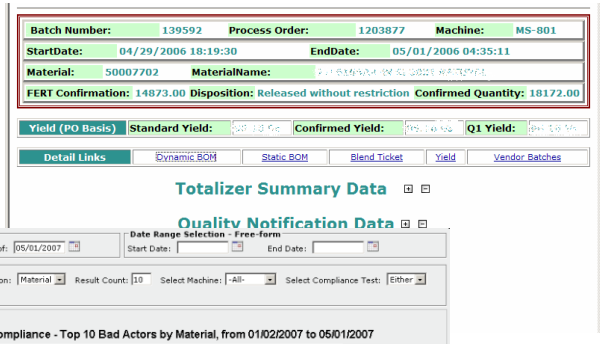
*"When Altivity Packaging designed their corporate production reporting application for their bag facilities, we selected OSIsoft's PI System and SAP's MII application. Together, these applications give our users a single view of information in an easy- to-use software framework.."*

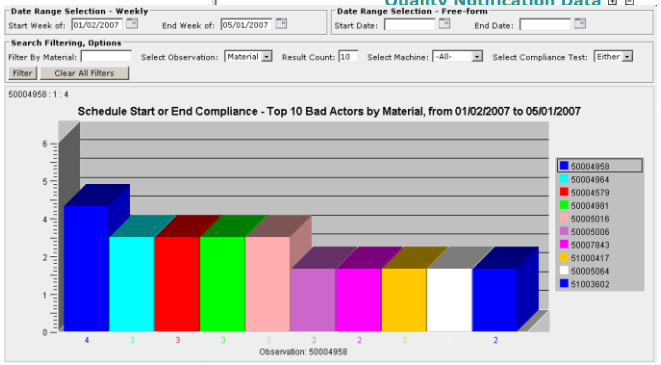
GRAPHIC PACKAGING HOLDING COMPANY

***Rod Jackson**, Senior Director, IT Integration and Distributed*

| Customer Business Challenge | Solution | Customer Results / Benefits |
|---|---|---|
| • Need uniform reporting and display environment to monitor production.<br>• Require data in real-time for better decision making | • Implemented the PI System as data historian and analytical engine. | • Have accurate Production reporting environment viewable by al to have consistent set of results.<br>• Calculations available in real-time<br>• Reporting available on 9 sites located in three time zones. |

# **Celanese:** Actionable Intelligence on the Plant Floor for superior plant performance




*"The translation of operational parameters into financial parameters makes work more meaningful. But we only deliver actionable information...in other words, those few KPIs whose results a given individual can influence through good decision-making."*

**Brenda Hightower,** Celanese Corp.

Celanese

## Customer Business Challenge

- Key operational data dispersed across disconnected enterprise systems
- Lack of consistent KPIs across multiple plants produced inaccurate corporate goal accountability measurements
- Difficulty in meeting continuous process improvement goals

## Solution

- Implemented the PI System as data historian and analytical engine.

## Customer Results / Benefits

- Operations dashboards include production performance and business metrics to drive decision making down to the plants.
- From the first installations at two sites - $1.3MM in savings was attributed to the project. Currently installed in 10 sites, with rollout extending to 25 sites.

# **Queensland Nickel QNI:** Condition-based Maintenance

*"We're using OSIsoft's PI Platform and interfacing to SAP PM to benefit our operations in many ways—from tracing product quality to justifying Six Sigma process improvement projects."*

***Dave Hunter**, QNI, Australia*

bhpbilliton
resourcing the future

| Customer Business Challenge | Solution | Customer Results / Benefits |
|---|---|---|
| • Plant floor and business users needed one version of the truth for all facets of refinery operations<br>• Needed real-time alarming to monitor quality<br>• Needed automatically generated maintenance notifications in SAP | • Implemented the PI System as data historian and analytical engine.<br>• Implemented connectivity to SAP PM for automated work order creation | • Reduction in downtime<br>• Achieved 9001 certification Quality Assurance/Six Sigma goals<br>• Reduction in total steam consumption<br>• Users see profitability and growth historically and in real-time |

# Some Common Threads

- Both of these examples highlighted some elements:
  - Technology – is the technology "fit for purpose" and "does it work"?
  - Deployment – what does it take to put in across the asset base and pull all the data together?
  - Adoption – If the technology works, and it deploys easily, what does it take to get the users to "pick up the hammer" and use it?
  - Business – Assuming all of the above, what was the business value created?
  - Sustainability – What are the continuous improvement opportunities to leverage the existing investment for future value returns?
- Check out the new OSIsoft websites
  - All New Web Site www.osisoft.com
  - Virtual Campus http://vcampus.osisoft.com/
  - User Presentations http://www.osisoft.com/templates/presentation-list.aspx?id=1818


# Thank you



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