



Sustainability: Just Good Business

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Empowering Business in Real-time.

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- OSIsoft Overview
- What is Sustainability? (*without belaboring well known definitions*)
- What is OSIsoft's Vision on Sustainability?
- Customer Case Studies
- Discussion & Feedback

- **Corporate - Founded 1980, Private**

- Dr. J. Pat Kennedy, Founder and CEO

- **Employees - 700**

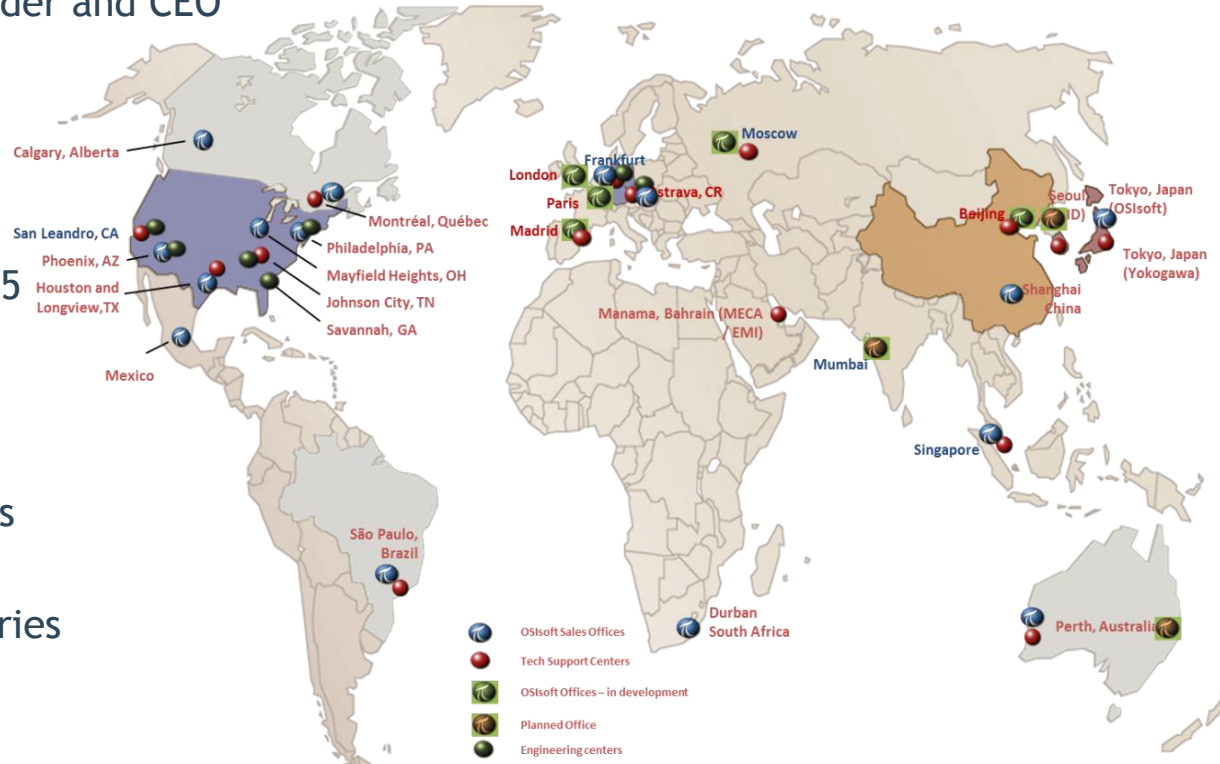
- Engineering - 215
- Customer. Support - 210
- Sales and Marketing - 175
- Operations - 100

- **Geography**

- 23 offices in 13 countries
- Wholly owned globally
- PI Installed in 110 countries

- **Installed Base**

- 10 000 + Active System licenses (excluding OEM)
- 32 000 + I/F licenses (connection, node, server, site)
- 250 000 + clients licenses (individual, concurrent, enterprise)
- 250 000 000 + Data Streams
- Monitor 500 PI servers, 1 500 Host computers & 8 000 interfaces



DIVERSE CUSTOMER BASE ACROSS INDUSTRIES



- Core competencies
 - Focus
 - Understanding proper technology to leverage and WHEN !
 - HP-> DEC -> Microsoft/Intel
 - Standards such as TCP/IP
 - Commitment to our customers
- OSIsoft's energy and resource efficiency efforts
 - Enterprise Agreement Program
 - Significant move to remote installs—on site is rare today
 - Less shipment of products—download are preferred by many customers
 - Electronic books
- OSIsoft is a key enabler of underlying Sustainability initiatives

WHAT IS SUSTAINABILITY?

- Definition(s) ...many

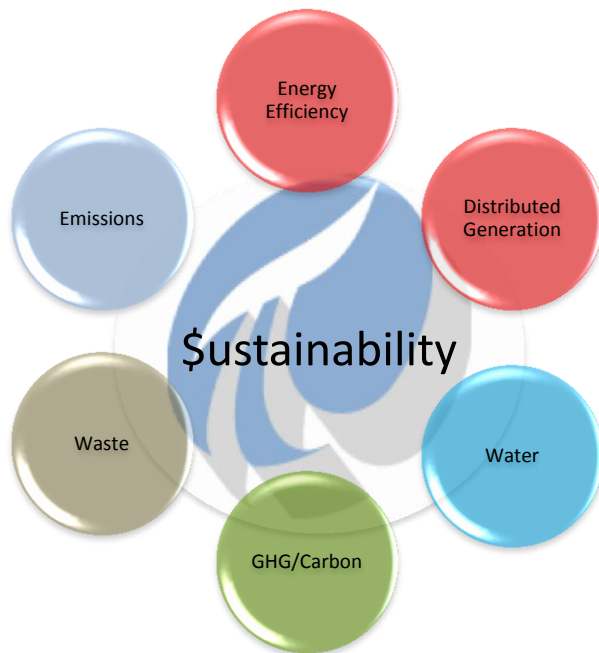
sus·tain·abil·i·ty \- ,stā-nə-'bi-lə-tē\ *noun*

Date: circa 1727

1: capable of being [sustained](#)

2 **a**: using a resource so that the resource is not depleted or permanently damaged **b**: a lifestyle involving the use of sustainable methods

sustainability is the capacity to endure. derived from the Latin *sustinere* (*tenere*, to hold; *sus*, up)



Other Descriptions

“Sexy” “the next Y2K for software”
“an essential business policy” “vague”
“important to the Board, CEO & CFO”
“politically correct bullshit” “Excel hell”
“as fundamental as 21CFR11 or PSM”
“part of everything we do”

NOT just “green” but about GREEN\$\$
- as in US/American “Greenbacks

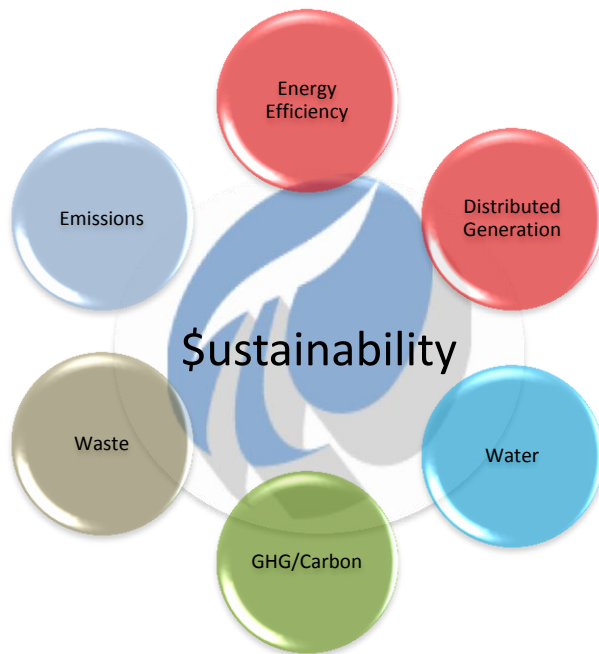
Sustainability

- is an executive-level problem,
- that is truly global,
- that is heavily funded, and
- seeks to address the “Triple Bottom Line”

...but perhaps most importantly:

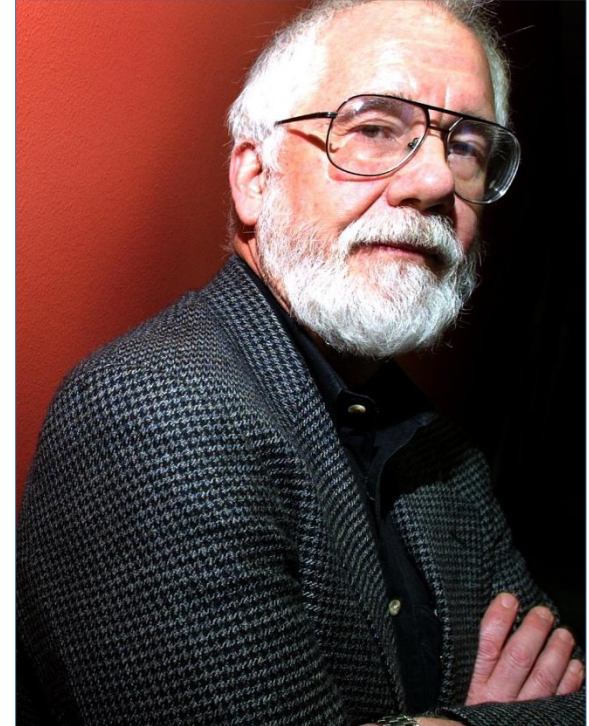
Sustainability is a process!

**.... a process for innovation
(transformation) and continuous
improvement (for benefits today)**



“The prime function of any company is to endure large numbers of known and unknown transients. It’s very hard to imagine things in the future especially if they are unpleasant. Sustainability is a process that companies can adopt to help them move quickly, have an infrastructure to sense all that is going on around them and make the sound real-time decisions that support a resilient long term strategy.”

– *Dr. J. Patrick Kennedy,
CEO & Founder*

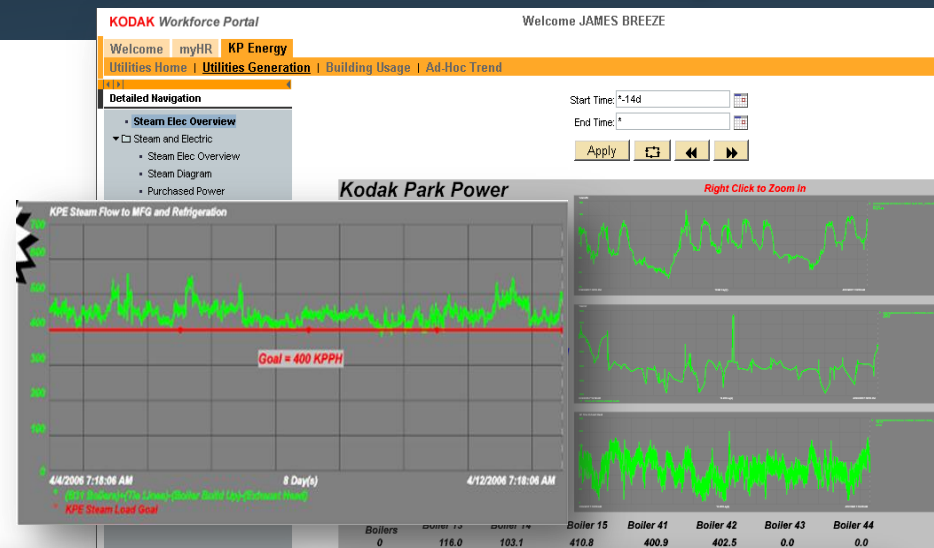


Case Studies

- Kodak **saving a single site! Time and time over...**
 - Bayer *** an Enterprise Agreement Approach**
 - Harvard **a campus & a new industry vertical**
 - IBM **applicable to many/any sites**
-
- Customers address multiple facets of Sustainability
 - Not just carbon, or just water, or just waste/costs
 - Using an Infrastructure software approach
 - Some in response to a business challenge; some pre-emptively
 - For BOTH immediate and long term payback in traditional/heavy industries, critical facilities, and others.
 - ALL have untapped potential remaining STILL !

• “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

Customer Business Challenge

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

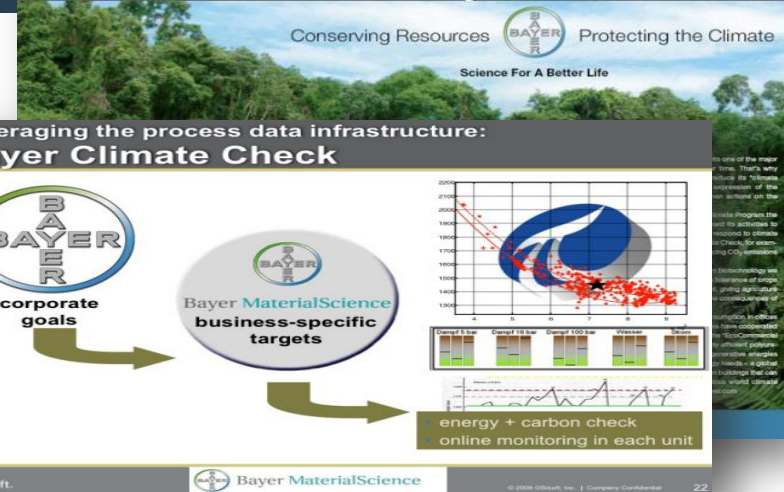
Solution

- Implemented a new Energy Information System without buying a new application
- Uses 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.
- Leveraging same infrastructure for millions in water savings

climate & environment: Bayer Climate Check



- Emissions track record 1990-2007: 37% absolute reduction in green house gas (GHG) emissions
- Improvement in energy efficiency and change in corporate portfolio
- Best-in-class ranking by Carbon Disclosure Leadership Index
- Dr. Felix Hanisch

Customer Business Challenge

- New Climate Targets in the subgroups:
 - Bayer MaterialScience -25%
 - Bayer CropScience - 15%
 - Bayer HealthCare - 5%
- €1 billion program for climate-related research, development and projects

Solution

- Uses the PI System as a new instrument to reduce CO2 in production by monitoring and analyzing 100 production plants worldwide
- Company-wide CO2 emission and energy efficiency check
- 85% of greenhouse gas emissions covered
- Also applied to new technology and investment projects

Customer Results / Benefits

- The PI System enables Bayer to provide production units with detailed and real time information from utility provider
- Calculate KPIs: Costs, Energy Quality, Peak Consumption
- Support aggregated reports: month, site, organizational entity, and type of energy
- Employees use the PI data to ultimately reduce GHG emissions to meet the new climate targets

- **University of Rochester**

- PI began as a solution to manual metering to capture:
 - + month-behind billing
 - + data from all energy & water meters,
- Now monitors campus-wide plant control and building automation systems.
- Data is available to everyone from engineers to students.

<http://meters.energy.rochester.edu/default.aspx>

- **Queen's University**

- PI supports conservation science and research into renewable energy.
- PI is used as a complete infrastructure across building facilities
 - + “Live Building” is a living lab where mechanical, electrical and structural systems are monitored in real-time.
- + Sustainable practices and LEED design can be incorporated into building design AND measured/maintained over time.

<http://livebuilding.queensu.ca/> &

http://livebuilding.queensu.ca/building_systems/electrical_systems/campus_power

Warrick Operations is Alcoa's Largest Operating U.S. Smelter.

- 330,000 MT capacity/year
- Energy is 30-40% of Aluminum Production Costs
- Generates power for Aluminum Smelter and Rigid Packaging

Brian Helms
Power Markets Coordinator
Alcoa Power Generation



Demand Response Overview

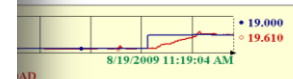
Real Energy	Regulation	Spin Reserve
Cleared 19	18	00
Deployed 19	00	00

MISO 5 Minute Calc

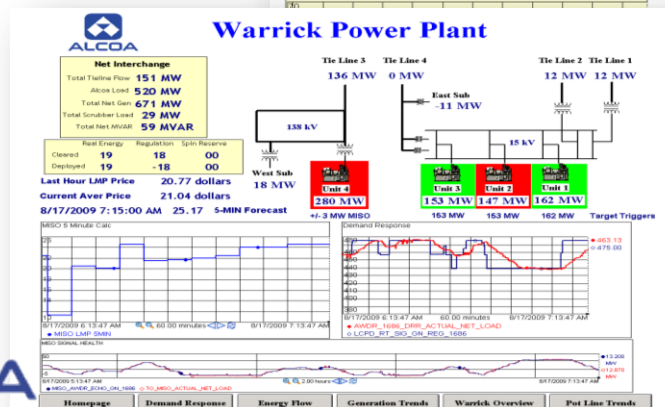
TOTAL POT LINE LOAD: 455.39 MW

OCB 1500	91.3
OCB 1502	90.8
OCB 1503	92.8
OCB 1504	90.4
GCS 3805	00.0
GCS 3806	90.0
GCS 3800	00.0

Current Average Price 28.50 dollars
5-MIN LMP Price 28.05 dollars
Last Hour LMP Price 31.75 dollars



on Trends Warrick Overview Pot Line Trends



Customer Business Challenge

- Faced with competition in a worldwide commodities market
- Business took a major hit due to economic downturn
- Needed to find a way to sustain the business; keep it from going under

Solution

- Uses the PI System for energy regulation - generate electricity and feed it back into Midwest ISO (MISO)
- Monitor MISO for energy demand notifications, and respond accordingly
- Submit forecasted load data from the PI System
- Focused on selling regulation (20MW) and spinning reserve (40MW)

Customer Results / Benefits

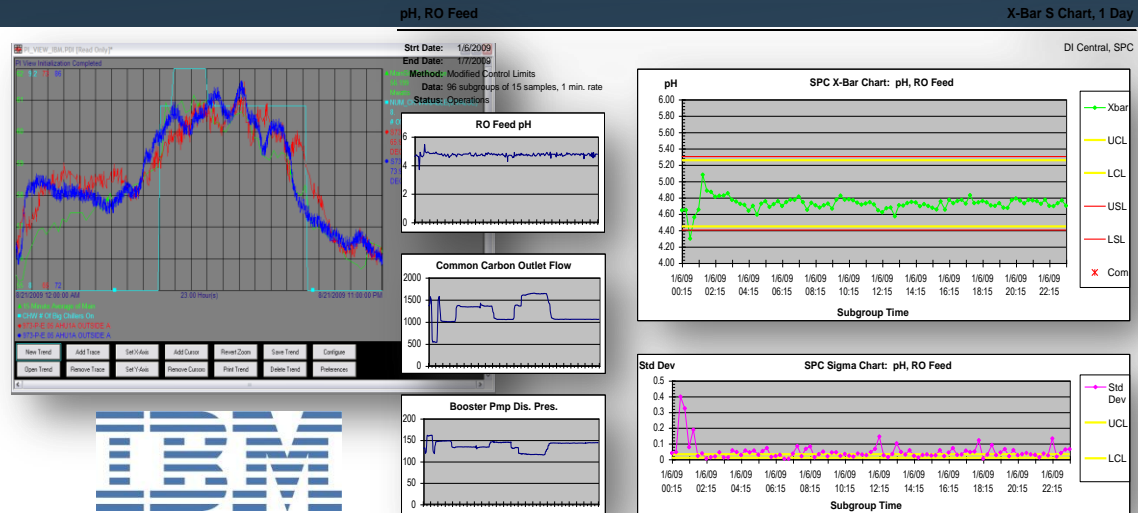
- Total project cost was \$700,000
- Project payback was in 4 months
- System runs efficiently
- Gets a weekly check from MISO for the power they generate in the grid
- Use this money to sustain their Aluminum business - revenues are now above their competition

Advanced Water Management Case Study: IBM 200 mm Wafer Fabricator in Burlington, Vermont

Jeff Chapman

Ultra Pure Water Engineer,
Senior Technical Team Leader

Center of Excellence for Enterprise Operations



Customer Business Challenge

- Reduce water consumption (and associated need for energy, chemicals, maintenance and labor) to reduce operating cost and minimize environmental impact
- Leverage end-to-end data acquisition, storage and visualization techniques to monitor water usage and improve efficiency

Solution

- Implemented data collection and storage infrastructure: sensors, IT network and servers
- Statistical process control techniques used to continually analyze vast amounts of operational data and present information in efficient, concise interface
- IBM's Green Sigma methodology - for reducing water and electrical power consumption and increase process efficiency.

Customer Results / Benefits

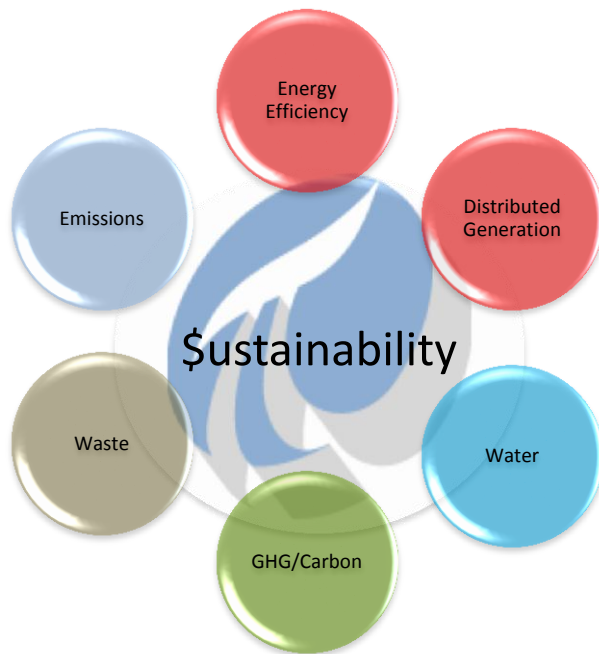
- IBM has achieved over \$3.6M in annual savings, reduced water usage by 27% while increasing manufacturing capability over 30%

Conclusions

- Organizations that tackle sustainability driving innovation and capitalizing on a culture of continuous improvement can simultaneously and pre-emptively address profitability, compliance, and public mandate.
 - OSISOFT has been helping its customers better manage resources, assets, and efficiencies for 30 years
 - OSISOFT already successfully & cost-effectively addresses Energy Efficiency, Energy Demand, Water Usage, Green House Gas Accounting and Waste Minimization for its customers.
 - Innovation & Continuous Improvement each require an Infrastructure ; Data-driven decision-making is the key

Sustainability

- ... is NOT a project
- ... is NOT a product
- ... is NOT best achieved (in the long term) with a set of disjointed custom applications.



Sustainability IS :

1. an opportunity for innovation
2. requiring lots of data (timely & accurate) plus a common decision making infrastructure,
3. best approached as a business process, and

Just good business for today and tomorrow !



Thank you

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