

OSIsoft.

# REGIONAL SEMINAR

The **Power** of **Data**

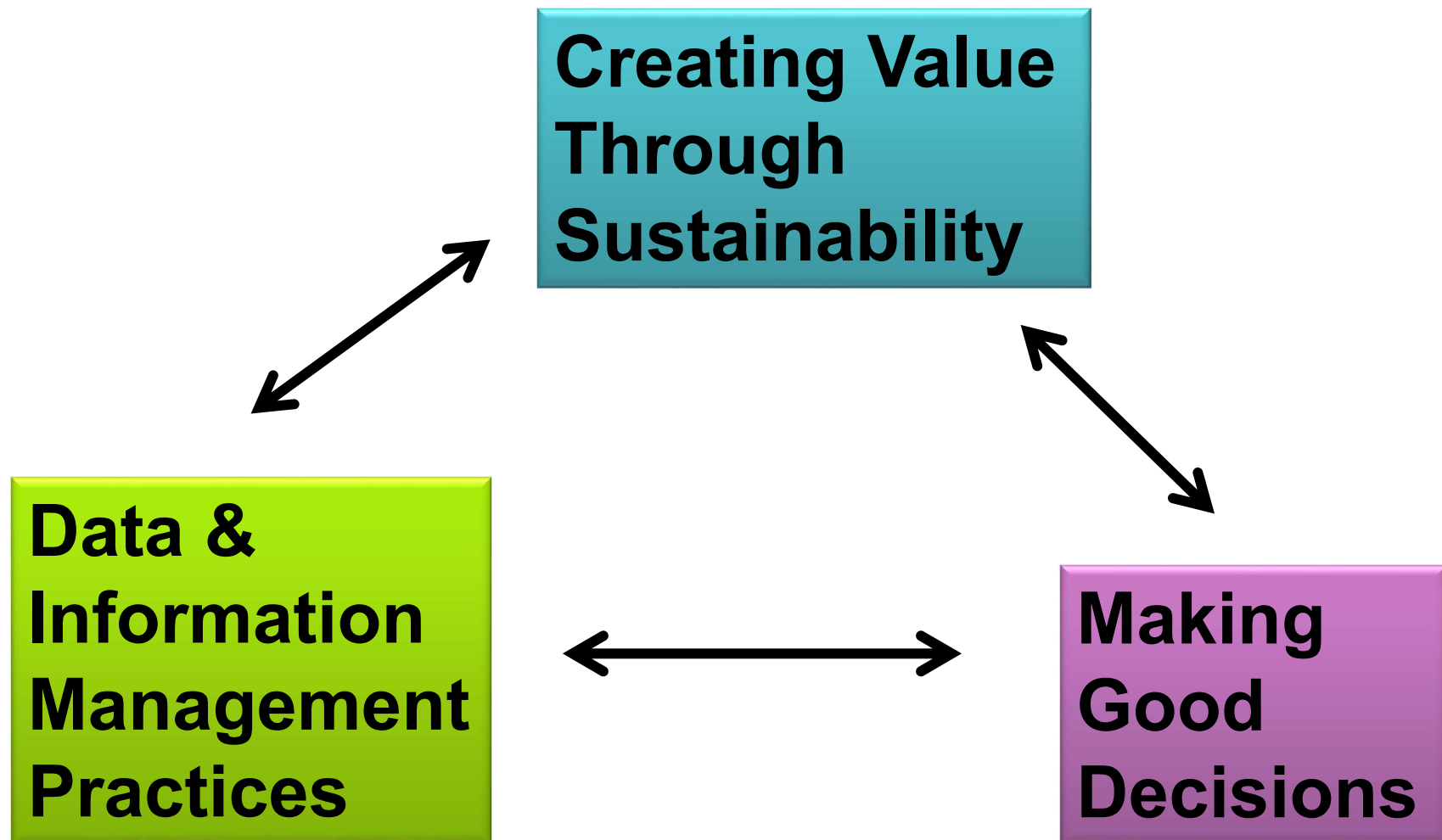
**THRIVING  
IN A  
WORLD OF  
CHANGE**



# A Data Infrastructure to Enable Wide- Ranging Sustainability Solutions

Presented by **Andrew Fanara**, *OSIsoft*

# Today's Topic: The Interplay of Three Areas



# **A Sustainability Strategy & Program is More than “*a Nice to Do*”**

- Businesses are trying to figure out the sustainability equation to:
  - Insulate themselves from turbulent times,
  - Adhere to customer requirements and
  - Ensure that communities welcome them where they operate.
- This approach will help them be resilient amid disruptions, find new competencies and maximize the value they can create long term.

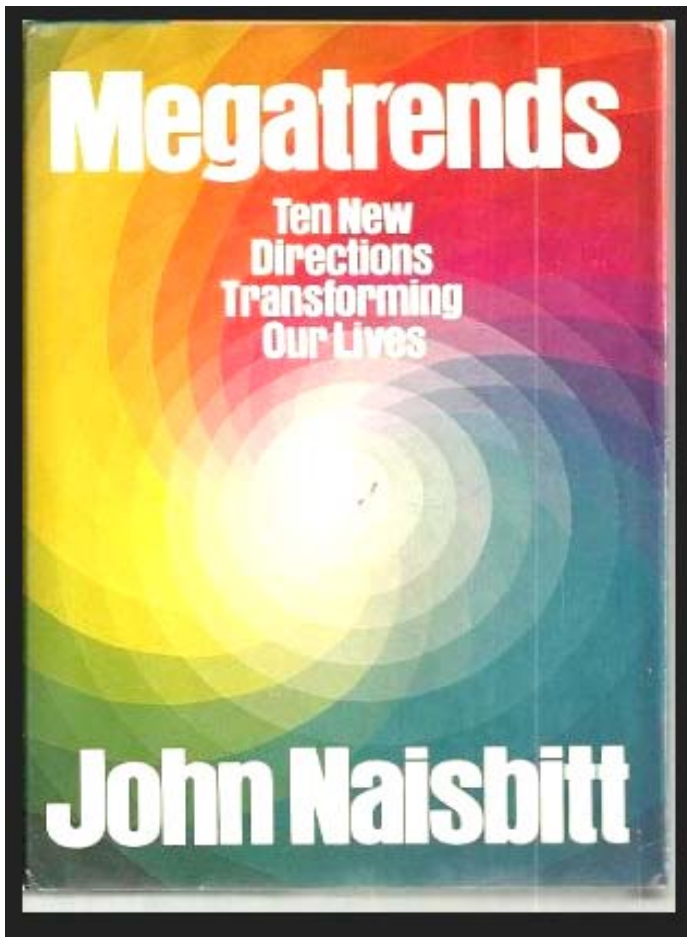
# Sustainability is Moving Beyond “Green”

Think of  
*SUSTAINABILITY*  
as a management  
philosophy and set  
of practices that is  
increasingly  
targeted towards  
the core of the  
business.

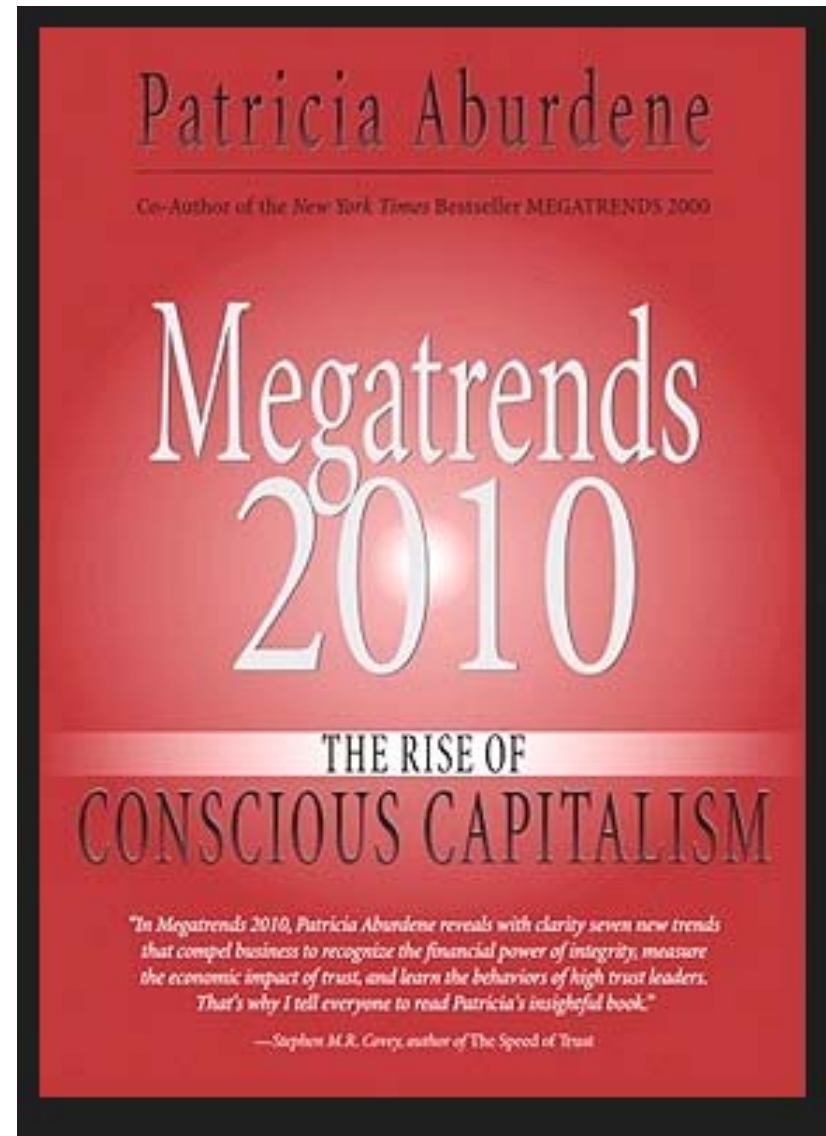


And it's **DATA** intensive...





**Published: 1982**



**Published: 2007**

# Why Sustainability is an Emerging Megatrend\*

- Launched by dramatic shifts in the marketplace which result in a general shift in thinking affecting entire countries, industries and organizations
- An inescapable strategic imperative that forces fundamental and persistent shifts in how companies think and compete
- Sustainability nears tipping point\*\*

\* *The Sustainability Imperative*, Harvard Business Review, May 2010, David Lubin, Dan Esty

\*\* MIT Sloan Management Review, Winter 2012, Vol.53 No. 2

# Similarities Between the *Quality Movement* & the *Sustainability Movement*

W. Edwards Deming



- Renown business management icon
- Famous for **Plan - Do – Check – Act – Adjust** cycle
- Famous for his contribution to Japanese industry's quality and innovation philosophy



# The First Sentence in RockTenn's 2012 Annual Report Addresses Sustainability

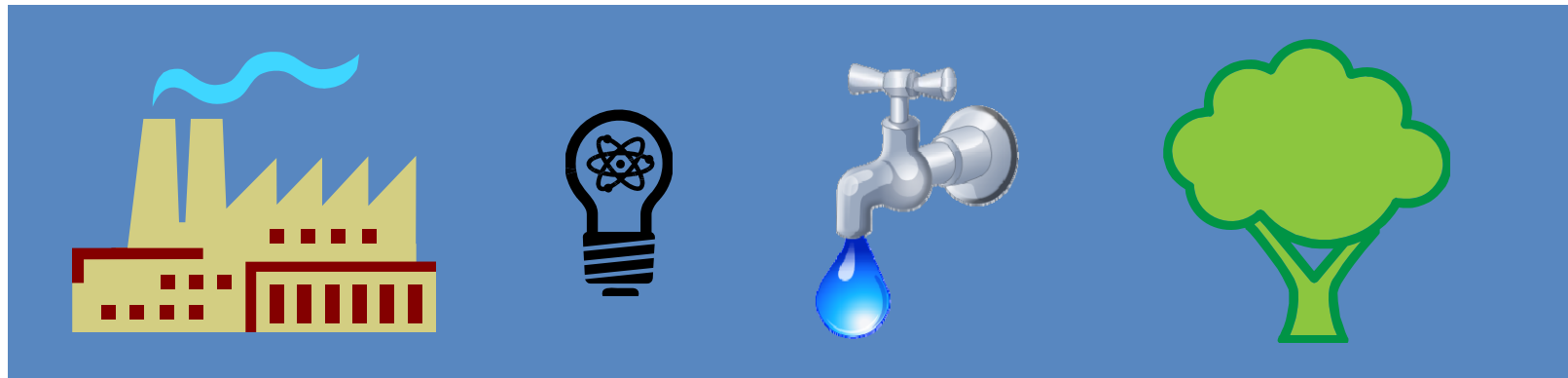
RockTenn has leading market positions in each of its **sustainable packaging** and recycling businesses. RockTenn is North America's second-largest producer of containerboard, corrugated packaging, recycled paperboard and folding cartons, and operates one of the largest paper recycling businesses in North America.

Sustainability:  
always at  
the heart  
of RockTenn's  
**business model**

RockTenn has always produced paper-based packaging from recycled paperboard. The Company's core business activities have been founded on recycling products that create economic value by reusing products otherwise bound for waste streams. The Company practices a comprehensive, transparent approach to sustainability to minimize its impact on the environment.

# What are the elements of sustainability?

Across Corporate Enterprises



Safety and  
Risk  
Management  
Cybersecurity

Human  
Capital  
Optimization

Resource  
Mgmt  
Emissions

Governance  
and Global  
Best  
Practices

Regulatory  
and  
Compliance

Supply Chain  
Management

The OSIsoft PI System

Data Infrastructure to Support Diverse  
Sustainability Initiatives





## Three-axis management & results for fiscal 2012

Here at the Mitsui Chemicals Group, we have been setting ourselves targets along three key axes: economic, environmental and social – and working to achieve those targets via our system of three-axis management ever since fiscal 2008, in an effort to contribute to the sustainable development of society and our own operations.

## Input → Output Data

Here at Mitsui Chemicals, we publish input-output reports outlining the amount of resources that we have consumed and the environmental impact of our business activities. We are actively working to save resources and reduce environmental impact throughout our business activities in the interests of sustainable development. We also conduct quantitative evaluations to ascertain the amount of resources consumed by our domestic and overseas subsidiaries and affiliates and their environmental impact, in an effort to improve the environment on a group wide basis.

Source: Mitsui Chemicals  
Group CSR Report 2012





# Sumitomo Chemical Co., Ltd.

## Contributing to Solving Global Problems and Promoting Sustainable Development with the Power of Chemistry

The Sumitomo Chemical Group will continue to conduct CSR activities globally as a member of the international community in cooperation with a range of stakeholders, including international organizations, local communities and NPOs. We will also strive to help solve the pressing problems faced by the international community, including those related to the environment, natural resources, energy and food supply, and contribute to the world's sustainable development by making full use of the creative power of chemistry and delivering innovative technologies and products to market.

We would greatly appreciate your continued support and cooperation.



Source: Sumitomo Chemical  
CSR Report 2012

Hiromasa Yonekura  
Chairman of Sumitomo Chemical Co., Ltd.

米倉弘昌

Masakazu Tokura  
President of Sumitomo Chemical Co., Ltd.

十倉雅和



## ***Why You Should Not Act Immediately on Sustainability\****

“Sustainability is a huge, complex, and daunting challenge. Most organizations feel a sense of urgency to do something – anything – to show their stakeholders that they are on the right path. **But in the rush to appear responsive, you may be missing the boat.**”

[Jennifer Woofner, Nov. 6, 2012, Strategic Sustainability Consulting](http://sustainabilityconsulting.com/blog/2012/11/6/why-you-should-not-act-immediately-on-sustainability.html)

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[Frank Partnoy](http://blogs.hbr.org/cs/2012/07/act_fast_not_first.html) is the George E. Barrett Professor of Law and Finance at the University of San Diego. Source: Harvard Business Journal article, [\*Act Fast, but Not Necessarily First\*](http://blogs.hbr.org/cs/2012/07/act_fast_not_first.html)

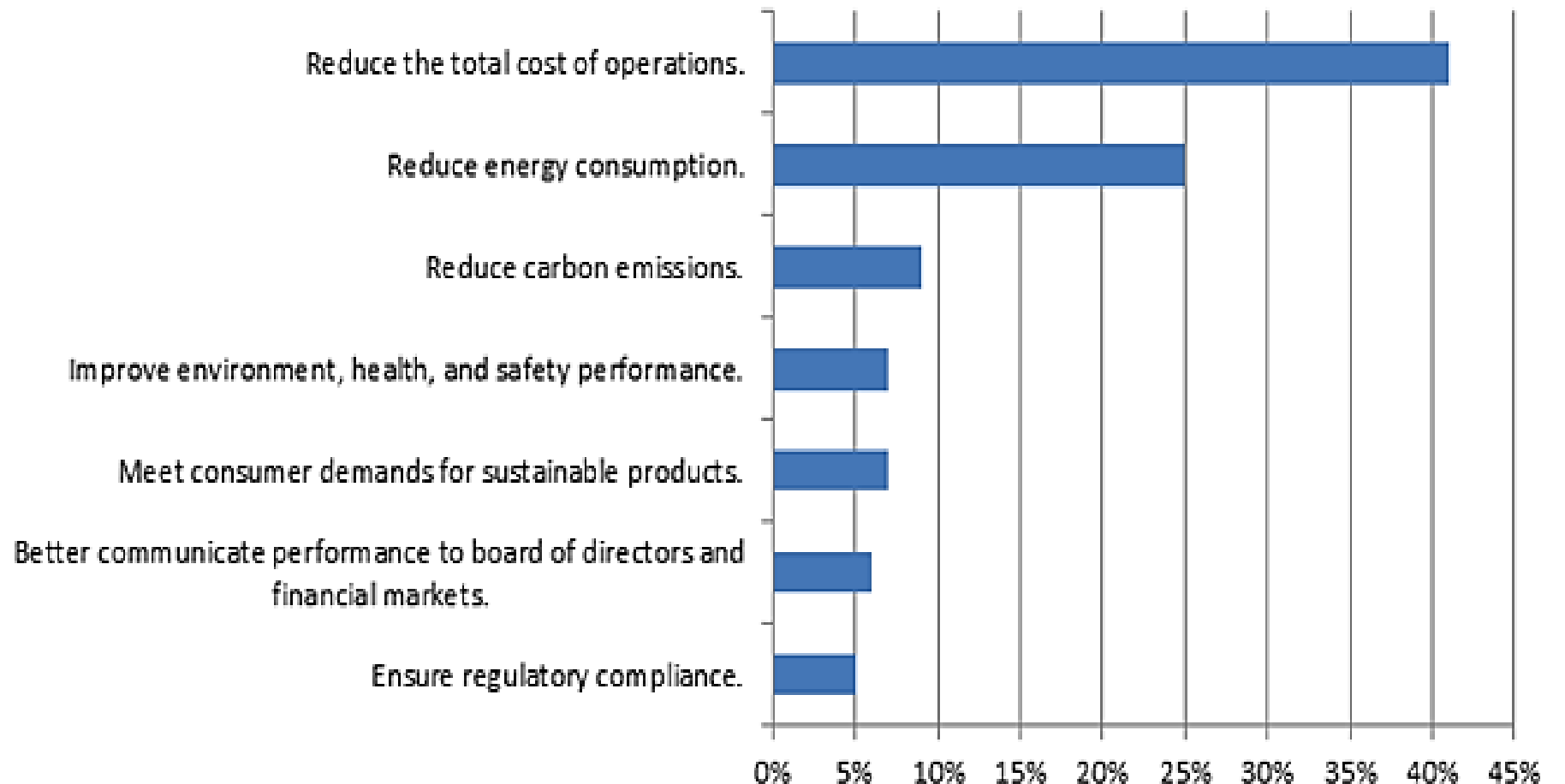
[http://blogs.hbr.org/cs/2012/07/act\\_fast\\_not\\_first.html](http://blogs.hbr.org/cs/2012/07/act_fast_not_first.html)

# Understand Before Acting

For Sustainability:

- What are the big issues driving our sustainability impacts?
- What are the global, regional, and industry trends that impact our operations and our supply chains?
- What are customers asking for and how are those requests changing?
- Where do we stand now have we benchmarked our most material operations?
- Where do we have good data and where are we making assumptions?

## Top Strategic Objective for Sustainability in Operations



Source: **LNS's Industrial Energy Management Research [DATA]**

Posted by [Matthew Littlefield](#) on Fri, May 24, 2013

## Top Challenges in Achieving This Sustainable Operations Objective

Sustainability metrics are not effectively measured.

Disparate systems and data sources.

Lack of visibility into performance.

No formal process for continuous improvement.

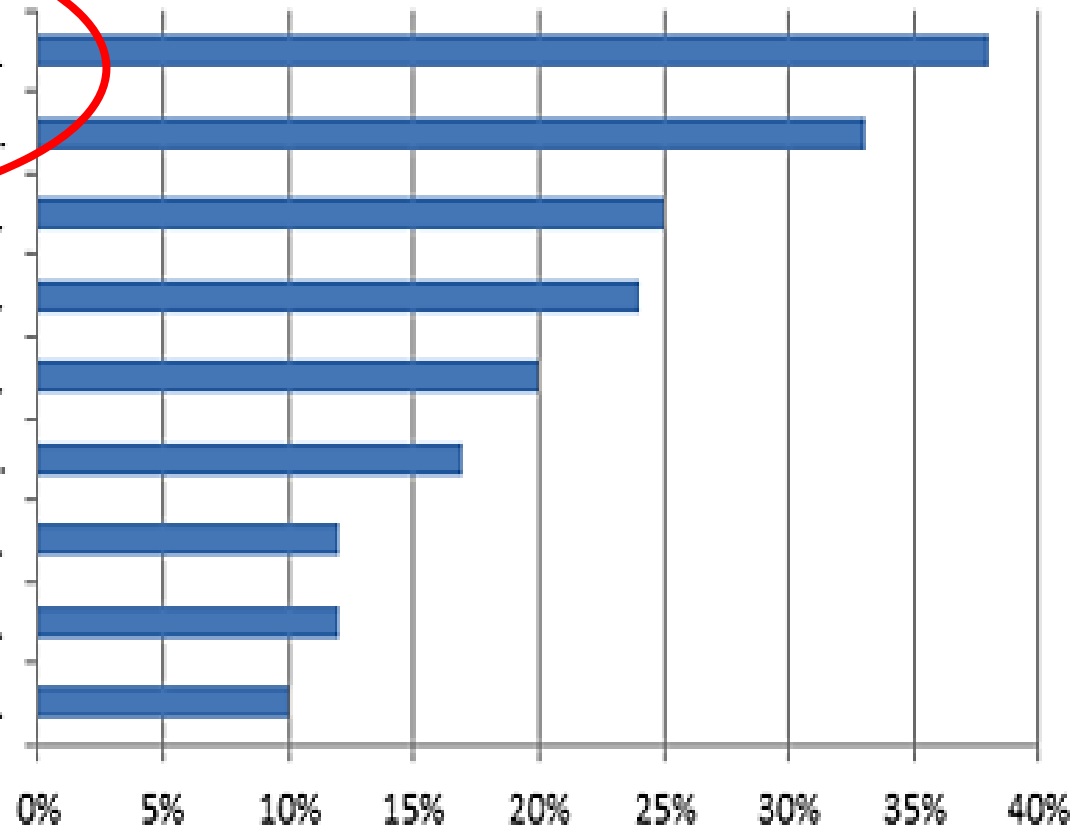
Lack of culture supporting sustainability.

Lack of collaboration across different departments.

No formal process for managing risk.

Lack of executive support.

Difficulty collaborating with the supply chain.

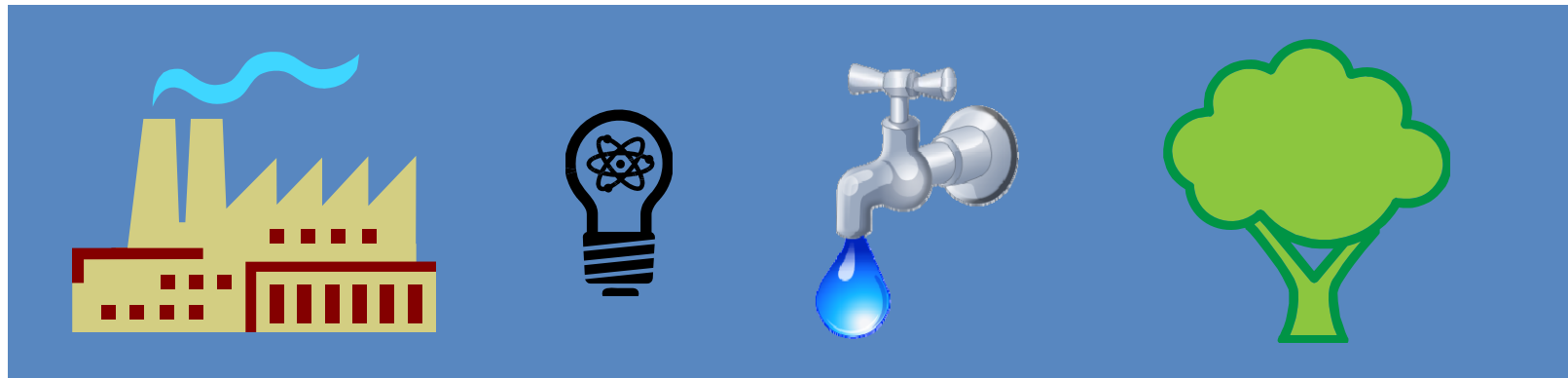


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The OSIsoft PI System

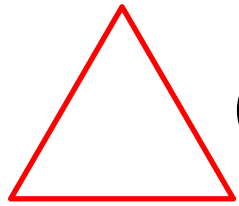
Data Infrastructure to Support Diverse  
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# ***A Unified Information Management Strategy\** to Support the Sustainability Journey**

- Procurement has incorporated sustainability metrics into supplier scorecards.
- Engineering has incorporated REACH or RoHS compliance into product data.
- Manufacturing/operations has implemented energy management systems.
- Maintenance has increased OSHA and environmental compliance.
- The supply chain has started tracking carbon emissions across the transportation fleet

*\* Research Spotlight: Enterprise Sustainability Management: A New Paradigm Emerges, October 2012, [www.insresearch.com](http://www.insresearch.com)*





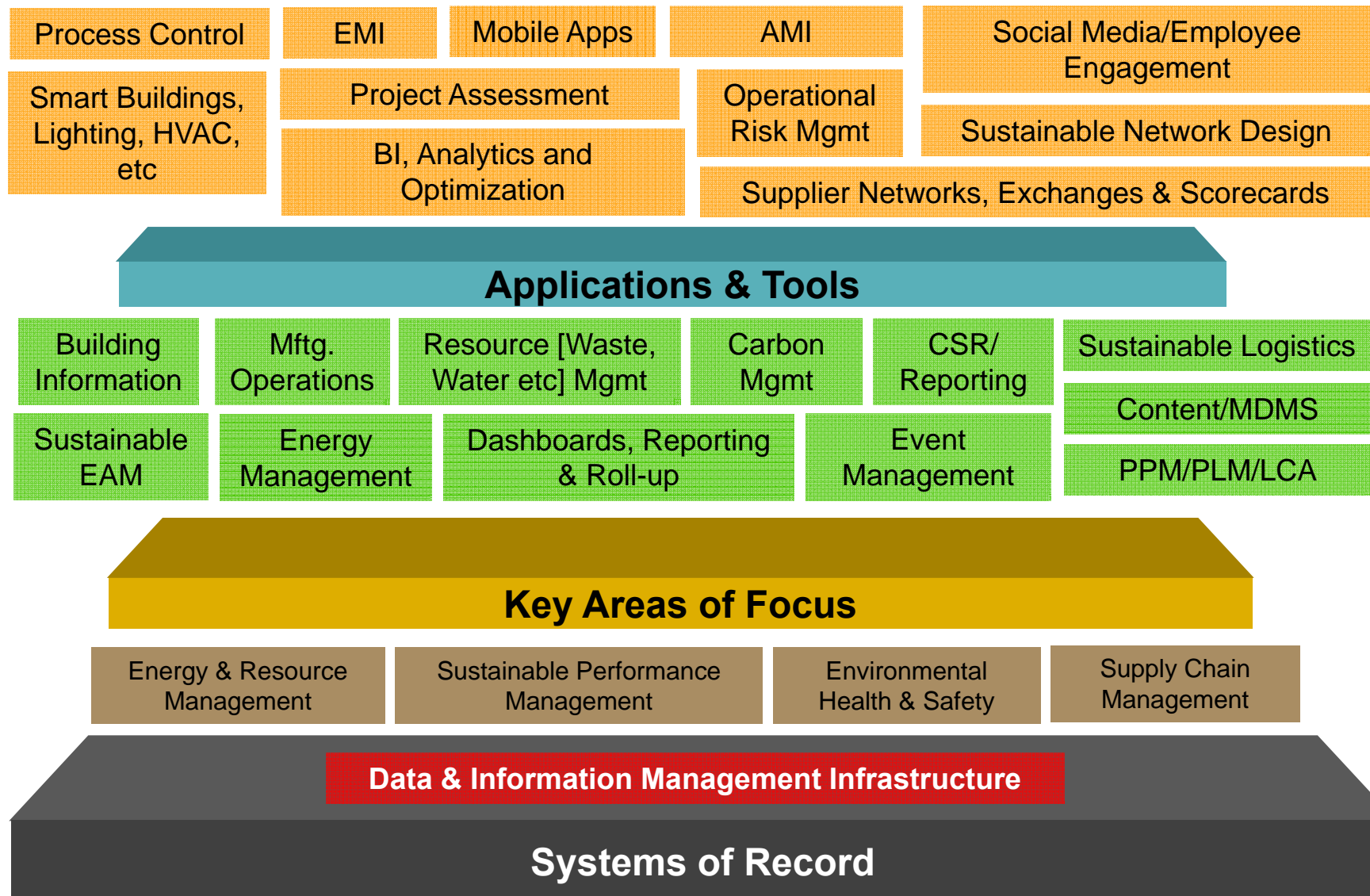
# Change is the Only Constant?

- Increasing intricacies of compliance with regulations, standards and policies
- Increasing demands for demonstrably sustainable production and products
- Increasing scrutiny of resource management
- Increasing penalties and cost for adverse events
- Increasing demands for reporting of sustainability performance
- Increasing awareness of sustainability among end consumers or other stakeholders

# Questions to Consider

- Are best practices being followed; Are you collecting all your data or are there gaps?
  - Actual measurements **vs.** estimates, sampling, assumptions and gut instinct
- How does data breadth, depth and fidelity affect the quality and timeliness of decision making at the plant or company level?
- Are applications or analytics programs data starved?
- Is there a traceable lineage to connect data to decisions or accomplishments?
- How much effort is expended to collect and share data with internal and external stakeholders
  - How safe and secure is your process?
- Is your commitment to transparency and communication hampered because there are inconsistencies or multiple values for the same data source?

# A Range of Solutions Touching Sustainability



# A Data Infrastructure Offers:

- Pervasive connectivity
- Agility in deployment
- Reliability and high availability
- Flexibility to roll data up or to drill down
- Ease of use out of the box
- High performance retrieval
- Safety and Security
- Accessibility
- Scalability



**It supports a wide variety of facility types & the pursuit of varied sustainability goals**









## Agencies can learn from eBay data center dashboard

The Office of Management and Budget might want to take note: Online mega auctioneer eBay has developed a new system of metrics that can reveal how even subtle changes in its vast data center and IT operations can affect the cost of a single online auction.

[Link to video of Interview with Dean Nelson, eBay and Neil Boland, Major League Baseball.](#)





adani™



- Real-time Operational Awareness
  - Security Office
- Unplanned Event Notification
  - Water Leak
- Operational Systems Costs
  - Stadium Roof Open/Close
- Key Equipment Reliability
  - Stadium Roof Equipment
- Solar Panel Integration
  - Green Operations and Cost Reduction



*“It’s an opportunity to reduce your costs, green your brand and reduce your environmental impact. Those are the three big reasons I think we should be doing this; why [the Mariners] are; and why we’re getting support at the league level, the executive level, the ownership level, from the staff and from the fans.”* Scott Jenkins, VP of Operations, Safeco Field

# Supply & Demand Side Energy Management



# Emissions Management & Regulatory Reporting



Oyvind Hagen – Statoil ASA



## AIR QUALITY HEALTH INDEX

| LOCATION:        |   | AQHI: | DATE:             |
|------------------|---|-------|-------------------|
| Anzac            | 1 | ■     | Jun 10/13 5:00 pm |
| Fort Chipewyan   | 1 | ■     | Jun 10/13 5:00 pm |
| Fort McKay       | 1 | ■     | Jun 10/13 4:00 pm |
| Fort McKay South | 1 | ■     | Jun 10/13 5:00 pm |
| Fort McMurray    | 1 | ■     | Jun 10/13 5:00 pm |

Low Moderate High Very High  
■ (1-3) ■ (4-6) ■ (7-10) ■ (>10)

Air Quality Health Index Risk Level



# WOOD BUFFALO ENVIRONMENTAL ASSOCIATION



## Your Independent Air Quality Reporter

The Wood Buffalo Environmental Association (WBEA) monitors the air in the Regional Municipality of Wood Buffalo, 24 hours a day, 365 days a year. We do this through a variety of air, land and human monitoring programs. The information collected is regularly shared with stakeholders and the public. [Learn more](#)

Meet Our Scientists

## Transparency & Communication

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TERRESTRIAL MONITORING

HUMAN EXPOSURE MONITORING

MONITORING STATIONS & DATA

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Enter keyword(s)...



## What's New

**June 09, 2013**

[WBEA Community Open House Today! - June 9, 2013](#)

**June 06, 2013**

[Public Invitation: WBEA Community Open House \(Sunday, June 9th\) - June 5, 2013](#)

**May 24, 2013**

[Former senior Environment Canada scientist joins WBEA - May 24, 2013](#)



At a time when population growth and urbanization are increasing the demand for mined minerals, mining companies are developing innovations to make their activities more sustainable than ever.

## Mobile Assets in Transportation

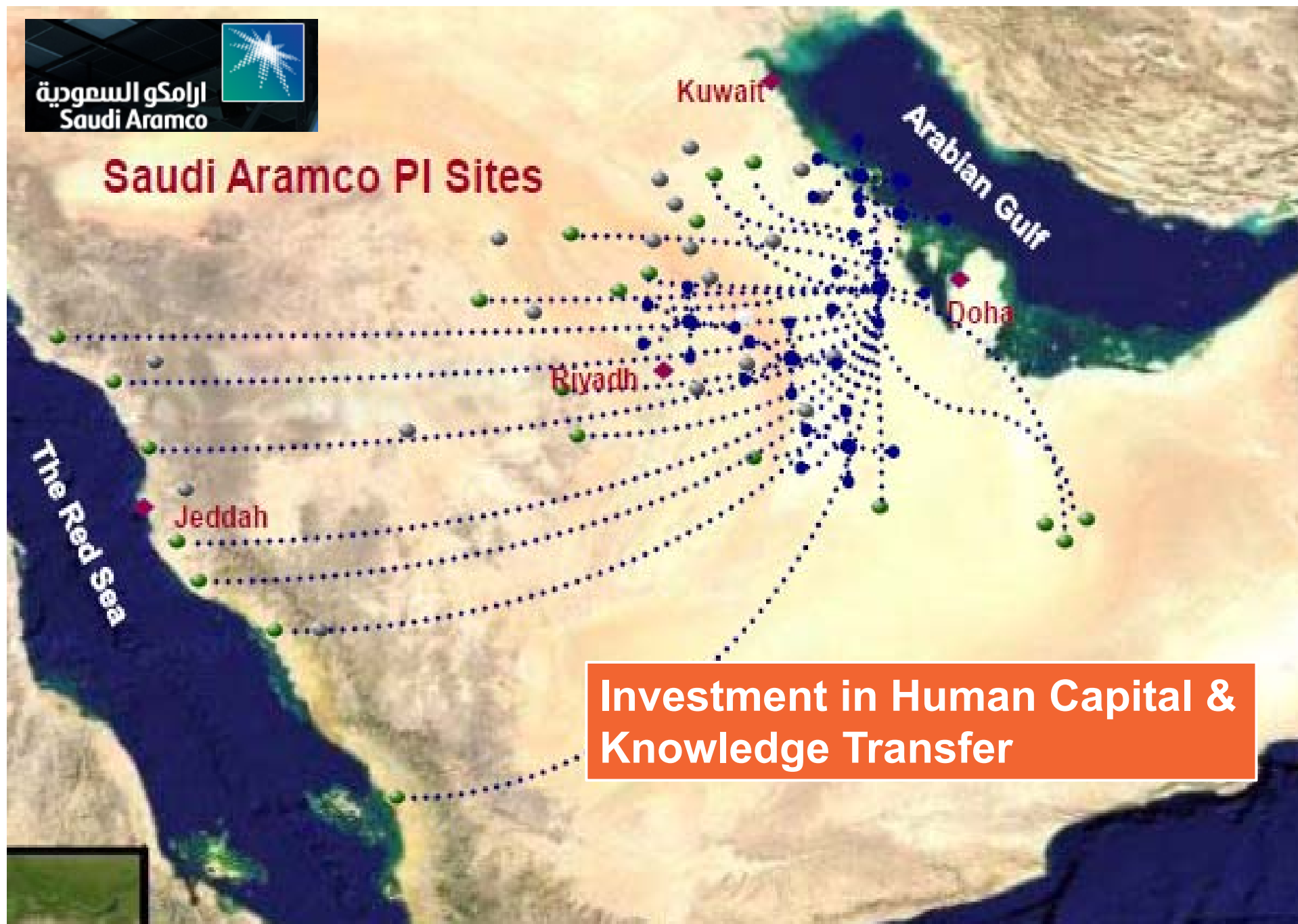


# Equipment Reliability, Diagnostics & Safety





## Saudi Aramco PI Sites



Investment in Human Capital & Knowledge Transfer



# Skill Development & Collaboration





# Situational Awareness & Grid Reliability





# Cost Savings & Labor Efficiencies





# Closing Thoughts

# Final Take Aways

- Sustainability is not just about “Green.”
- A **well conceived** sustainability strategy can help chart a path to a more prosperous long term future.
- A successful sustainability will focus on **material** operational issues & capture essential DATA.
- Consider how the quality of your data impacts the organization’s **decision making process** – at all levels
- Consider how the value of unifying your data with an **infrastructure** and eliminating gaps in knowledge that could support a wide range of new ideas and sustainability solutions.





**THANK  
YOU**

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