

2009 SAN FRANCISCO At the Crossroads of Reliability, Regulatory Pressure, Smart Grid and Energy Economics

Which Way Do I Go?



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Empowering Business in Real Time Pl Infrastructure for the Enterprise

# Intelligent, Distributed Energy Storage







## Ice-on-Coil Heat Exchanger







## Why are we here?

## Searching for an answer

# Do we know what problem we are actually trying to solve?

Do we know how problems actually get solved?





## Knowledge Management (KM)

- What is Knowledge Management
  - Knowledge Management is the discipline of enabling a workforce to better fulfill business objectives via more effective decision making
- KM has 4 universal components
  - Information (Content, Data)
  - Community (The workforce; KM is shared among a group)
  - Interaction (How the workforce shares information)
  - Know-how (Skills of the individuals)
- OSIsoft UC 2009 is an excellent example





Information / Content





Information / Content

- Radio, Television
- Desktop Publishing





#### Information / Content

- Radio, Television
- Desktop Publishing
- Internet

- Web publishing
- Wikipedia
- Document repositories
- Search Engines





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Community

• Travel, City Infra.

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- Portals
- Social Networking





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- Fax, Cell Phones

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- Chat Rooms
- Web Services
- Agents

### OSIsoft. 2009 USERS CONFERENCE

### ICE ENERGY

## The Internet is a driver

- The internet is driving profound change
  - How we work
  - How we think
  - Our culture
- It's effecting every industry

   And it comes a great time for utilities





## KM and the Utilities

- Information
  - Operating currently with very limited access and visibility
- Community
  - Utility personnel, few outside parties
- Interaction
  - Manual, slow
- Know-how
  - Very few true experts

### Smart Grid examples

• AMI

- Community explodes to include consumers
- 596 Protocol Standards
- Huge influx of players, algorithms

...but what problem are we trying to solve?





# THE Problem – Load Shape

#### TYPICAL 24 HOUR LOAD PROFILE







# **Energy Economics 101**

The laws of supply and demand state that the equilibrium market price and quantity of a commodity is at the intersection of consumer demand and producer supply. However, when demand exceeds supply, significant shifts in price will occur.



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# THE Problem – At the system level





# The Symptoms

- Reliability
- Market Inefficiency
- Customer Dissatisfaction
- Regulatory/Legislative Pressure





## The result



## IDIOCY

NEVER UNDERESTIMATE THE POWER OF STUPID PEOPLE IN LARGE GROUPS.



## **IGNORANCE**

It's Amazing How Much Easier it is for a Team to Work Together When No One Has Any Idea Where They're Going.





## The Solution







## The Solution







# Which way do I go?

- Transform IT from risk mgt to strategic partner
- Focus on what you are good at!
- Partners Win Independents Lose
- Start with the Foundation Not the Roof
- Solution <u>NOT</u> Product
- Start Now Can't wait





## What are we waiting for?



#### PROCRASTINATION

HARD WORK OFTEN PAYS OFF AFTER TIME, BUT LAZINESS ALWAYS PAYS OFF NOW.





#### THE POWER OF ICE



Distributed, controllable, clean, cost-effective, scalable and available to deploy today.

To some, this represents a new form of energy efficiency. To others, it is a new kind of renewable resource, or a way to make better use of the intermittent renewables we already have.

It is unquestionably the first cost-effective, smart gridenabled distributed energy storage solution, one that forever transforms system efficiency and reliability.

Until now, the industry has only imagined a technology that could completely reshape the load curve and optimize the grid, improving system reliability. While other technologies address the symptoms, Ice Energy solves the problem.

## DISCOVER THE POWER OF ICE



## Thank you!

TRANSFORMING ENERGY SYSTEM EFFICIENCY & GRID RELIABILITY