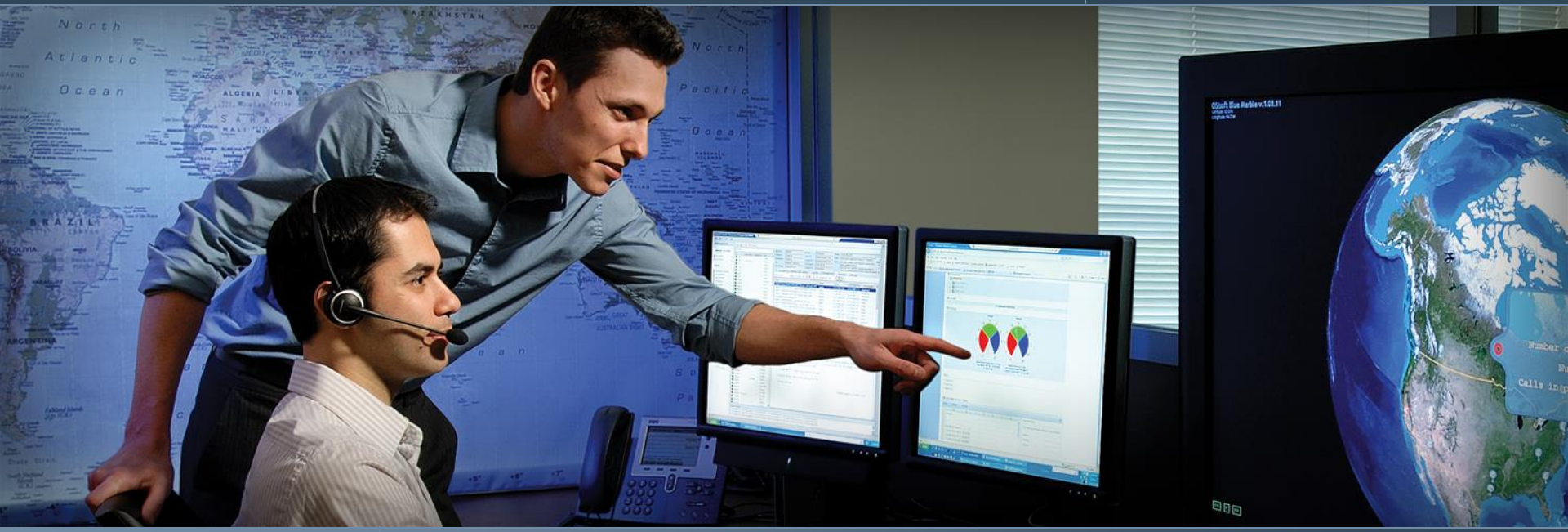
Regional Seminar Series
Houston



PI for Facilities and IT Infrastructure

Roger Kammerer
Regional Sales Manager
OSIsoft, LLC

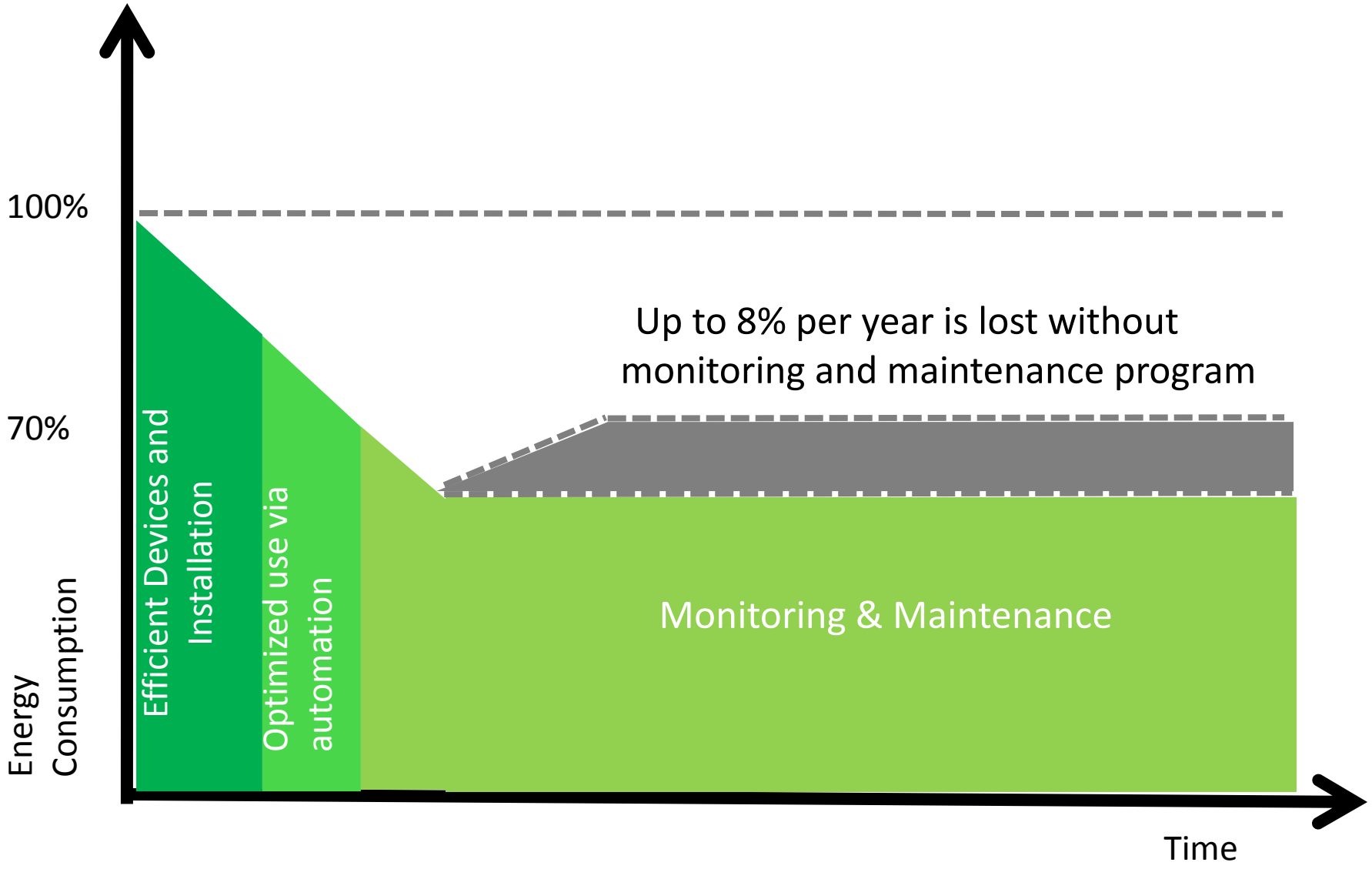
October 28, 2009

Empowering Business in Real Time.

State of Market

- Maintaining availability of the data center still the top priority
- Reducing operational costs
- Improving energy efficiency
- Potential government regulations

Why PI For Facilities Energy Management



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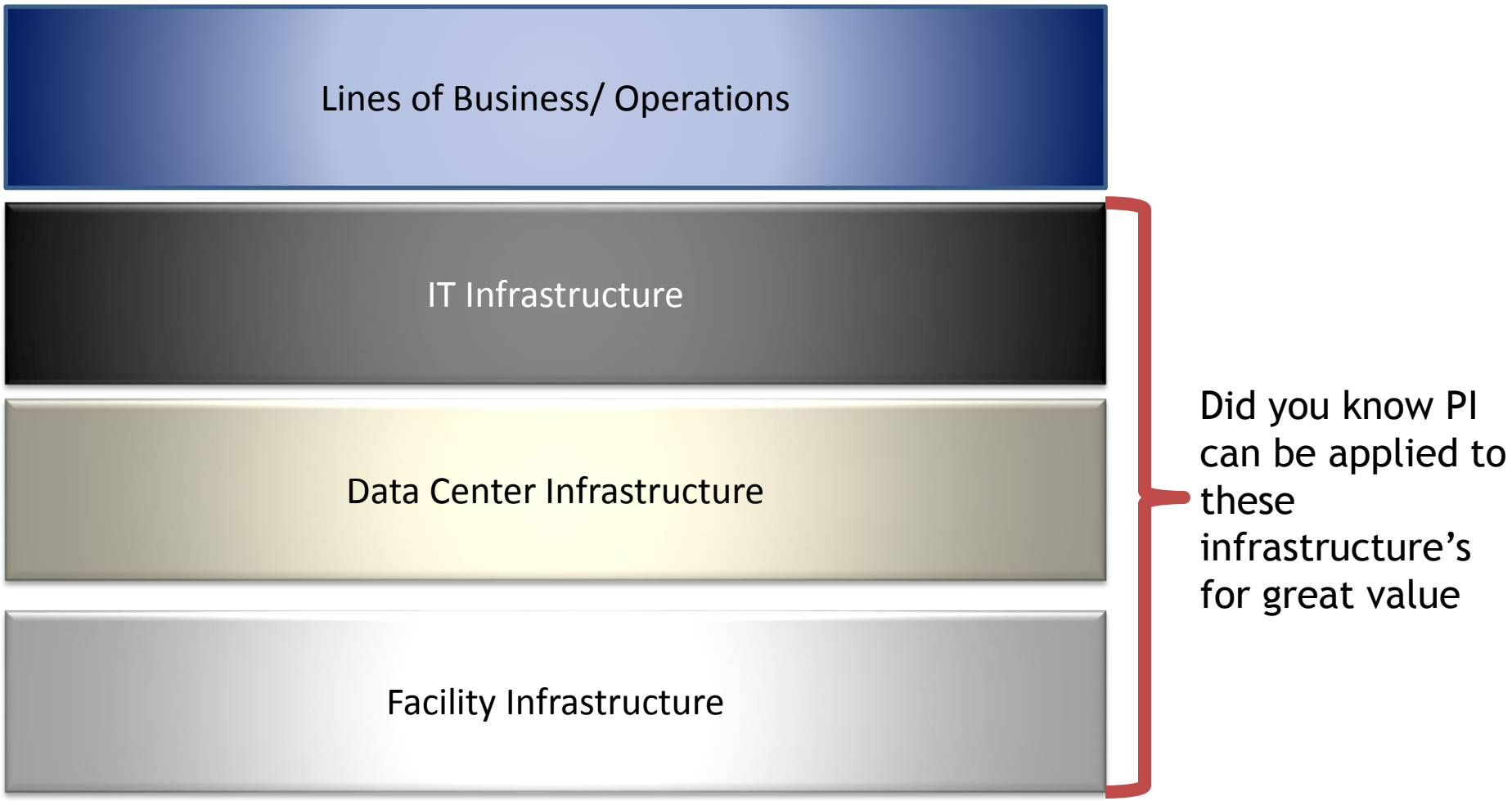
Expand your PI for the infrastructure



Some Example Customers

Facility Customers

Kodak

IBM

CISCO

Data Center Customers

Microsoft

APS

equinix

hp invent

Empowering Business in Real Time.

PI at Eastman Kodak

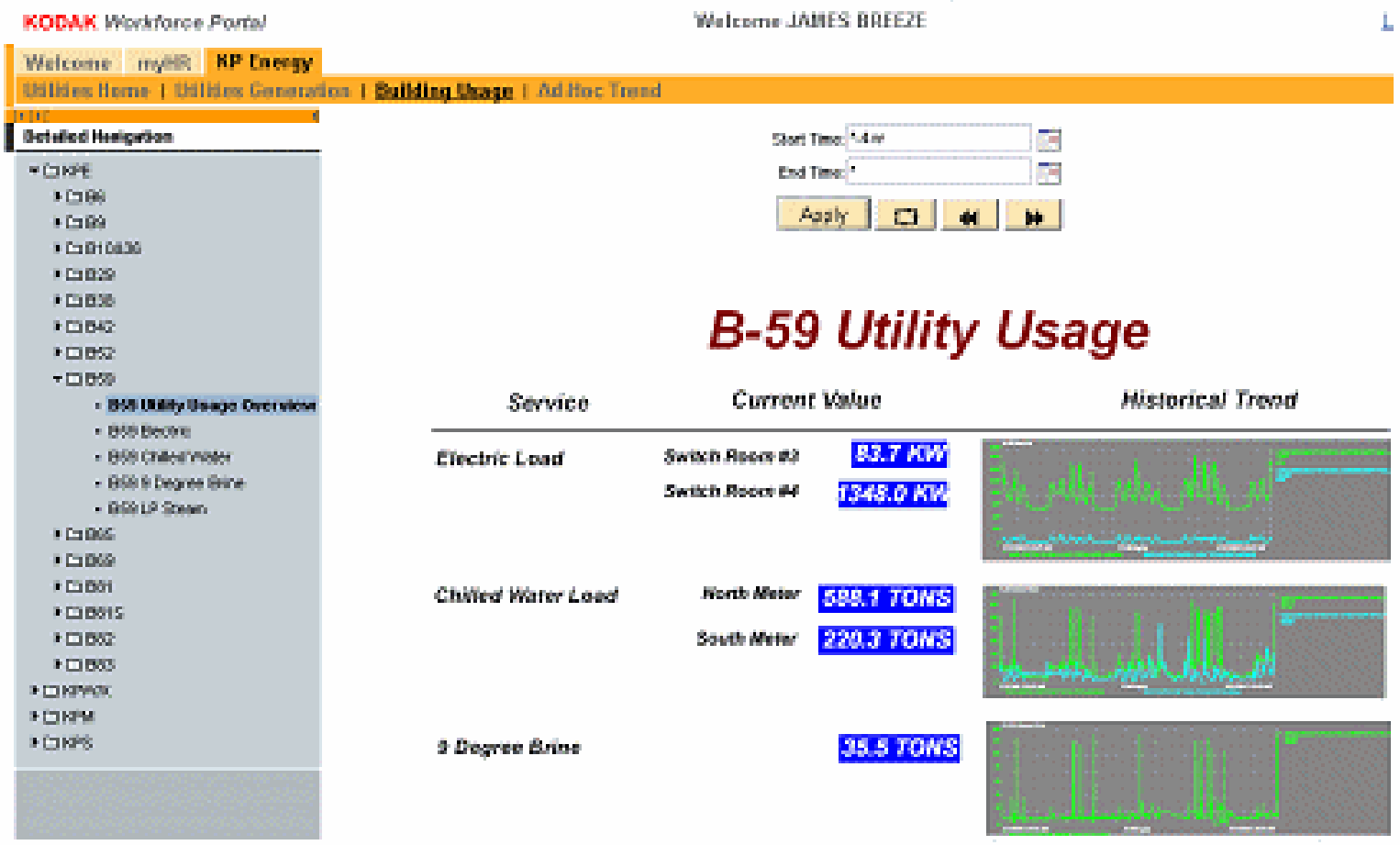
- **Kodak Park facts**

- Area>20,000,000 Square Feet
- 11,000 Employees
- Operates its own Fire Department
- Operates its own rail road
- Performs its own water and waste water treatment
- Operates 2 power plants
- Benefits >$10MM !

Measurements

- 600 **Electric** Distribution **Meters**
- 600 Additional Distribution **Meters** for Steam, Chilled water, Brine, Compressed air, Process water, Nitrogen, Natural gas etc.
- Significant **Metering** Used within the Power Houses to Manage the **Generation** Side

PI at Eastman Kodak



Empowering Business in Real Time.

System Components

- OSIsoft **PI System** – captures data from all meters, plant control system, and building automation systems
- Revenue Meter Interface
- Plant Control System & Meters
- Building submeters
- Building automation systems
- Network

Measurements

- **Hot water** meters
- **Electric** meters (including HV substations)
- Assorted **gas, oil** & other meters
- **Chilled water** meters
- **Steam** meters

River Campus Chilled Water

PI at Cornell Medical School

- Green computing…
  - Save power 8% of yearly energy by shutting down nodes that are not in use.
- …but minimize impact on performance
  - Maintain a target number of standby nodes ready to run new jobs immediately.
  - Reduce latency perceived by end users

Future direction

- Tunable parameters
  - Function of time of day, day of week?
  - Based on past observations?
- Balance runtime of nodes
- Balance heat distribution in data center
  - Synchronize with HVAC rotation schedule and failures

PI at Cornell Medical School

Empowering Business in Real Time.

PI expansion update- see for yourself

UC Davis

http://facilities.ucdavis.edu/Dashboard/

Queen's University

http://livebuilding.queensu.ca/

Rochester University

http://meters.energy.rochester.edu/rc%20sharepoint%20files/hutch%20hall%20electric.aspx

2009 User Conference Critical Facilities Track -

Industry Observations and Trends (David Jump, Quantum Energy) - PPT
The Daily Miracle of Internet Connectivity (PI Data Centers) (Greg Dumas, DST Controls, Ernest Holloway, Pamela Brigham, Equinix) - PPT
Real time Data for Data Center and Lab Energy Efficiency (Chris Nolan, Cisco Systems, Ken Morikawa, OSIsoft) - PPT
The Data Center Dashboard (Steven Berkovich, Teresa Tung, Accenture) - PPT
Understand How PI is being used at Microsoft in the 10min. Wrap (Scott Mauvais, Microsoft Technology Center) - PPT

Get Started today-ADD Value to the PI investment

Engage with OSIsoft for understanding how

Expand the use of PI For IT –

How to Utilize:
MCN Health Monitor
PI for IT Monitoring

Expand the use of PI for Critical Facilities

How to Utilize
Add- PI Interfaces BACnet, Modbus, OPC

Take advantage of Benefits

"While metering alone does not save energy, the information from the meters, when acted on, can result in significant reductions — typically **5 to 15 percent**"

- Jean Lupinacci, Director, Commercial and Industrial Branch of Energy Star®
- U.S. Environmental Protection Agency (EPA)

Thank you

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