



Nourishing Ideas. Nourishing People.



•CONFIDENTIAL. THIS DOCUMENT CONTAINS TRADE SECRET INFORMATION. DISCLOSURE, USE OR REPRODUCTION OUT-SIDE CARGILL AND INSIDE CARGILL, TO OR BY THOSE EMPLOYEES WHO DO NOT HAVE A NEED TO KNOW, IS PROHIBITED EXCEPT AS AUTHORIZED BY CARGILL IN WRITING.

•(COPYRIGHT CARGILL INCORPORATED 2002. ALL RIGHTS RESERVED.)

Agenda

- **Company Profile**
- **EA Deployment**
- **PI Value Proposition**
- **Vision and Direction**

Cargill: *collaborate > create > succeed*

***Who is
Cargill?***

Cargill Company Profile

- **Founded 1865 in Conover, IA**
- **Privately owned**
- **HQ in Minneapolis, MN**
- **Offices and facilities in ~66 countries**
- **~158,000 employees worldwide**
- **Food, agriculture, and risk management**


Cargill Products and Services

- **Agriculture Services**
 - Provides farm and ranch services and products worldwide.
- **Food Ingredients and Applications**
 - Serves global, regional and local food manufacturers, food service companies and retailers with food and beverage ingredients, meat and poultry products and new food applications.
- **Industrial**
 - Supplies customers worldwide with fertilizer, salt and steel products and services, and develops industrial applications for agricultural feedstock's.
- **Origination and Processing**
 - Connects producers and users of grain, oilseeds and other agricultural commodities through origination, processing, marketing and distribution capabilities and services.
- **Risk Management and Financial**
 - Provides Cargill customers and the company with risk management and financial solutions in world markets.

Our challenge ...

- If the western world is to compete in manufacturing, we will have to become more sophisticated -- our *competitive advantage*.
-- Ron Christenson, CTO, Cargill

A Brief History of PI

- **In 1996, OSI and Cargill partnered to use PI with limited initial deployment**
 - **By 2005, 50 PI systems worldwide**
 - North America: 33
 - Europe: 15
 - Asia: 2
- 

Site Locations: Global



● = Currently Installed ● = New Site

Value Proposition

“With PI as the eyes and ears of our entire operation, we are ‘Operationally Ready’ to manage and plan for any situation. I can’t imagine operating without PI.”

--

Refinery Supervisor, DSO

“PI enables a more intelligent use of people’s time and resources. It’s a very powerful advantage when people can see into the operation in virtually any way they want and find the data they need to improve operating efficiencies.”

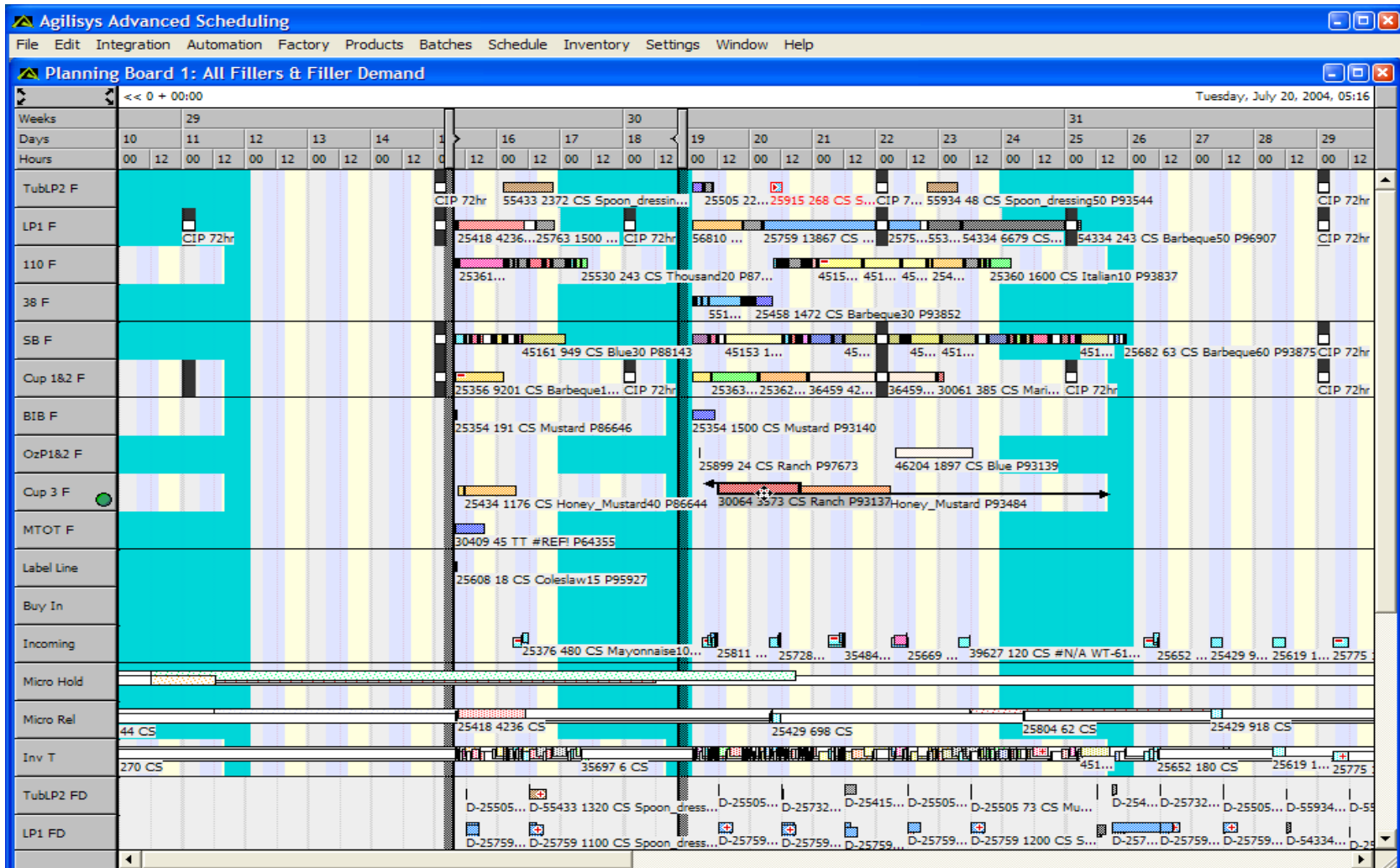
–Plant Manager, GOSC

PI Within Cargill

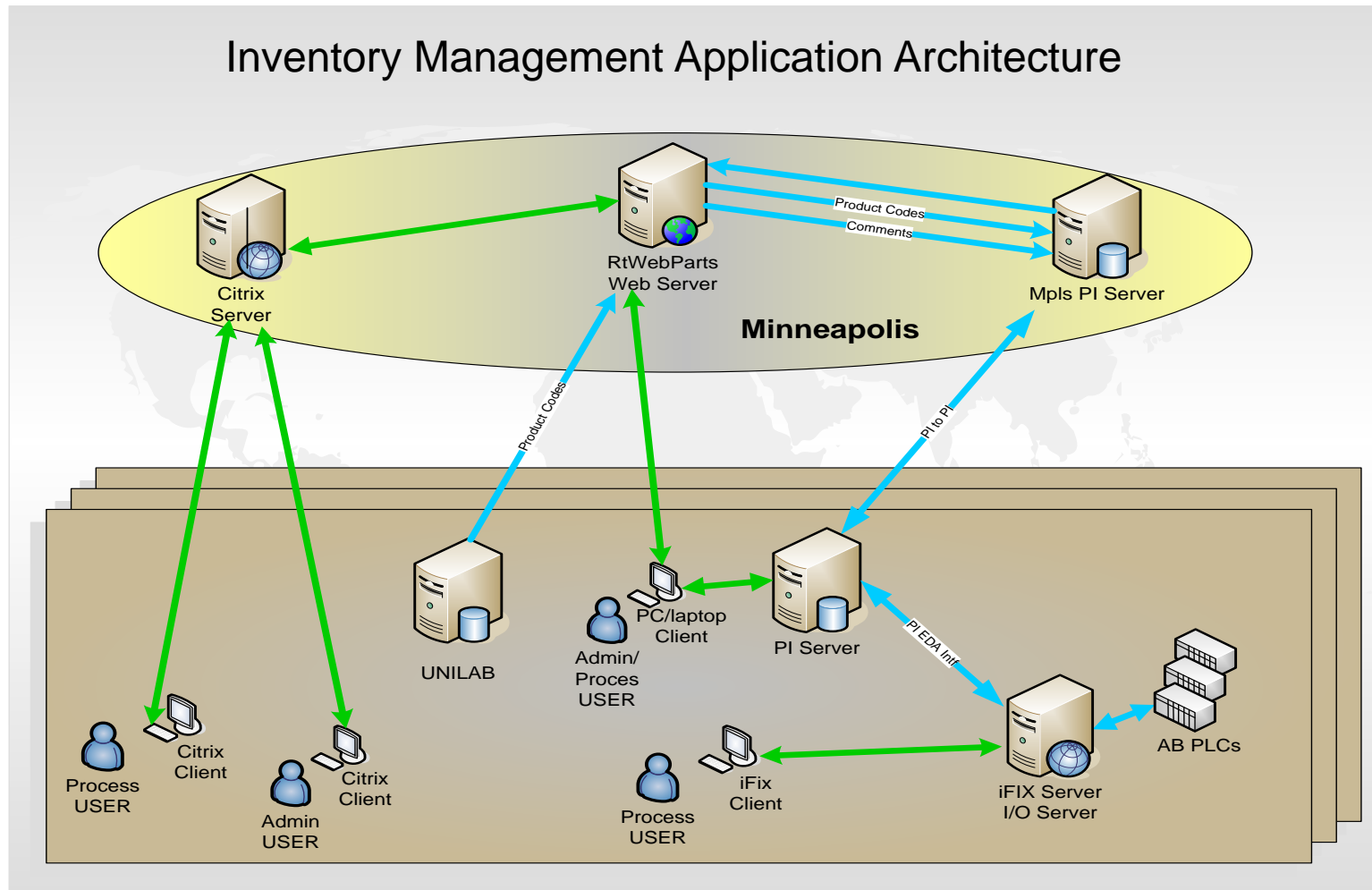
Applications and Uses of PI Data

- Sales and operations planning
- Real time costing
- Process Modeling
- Six Sigma
- Production reporting
- EPA reporting
- Quality reporting
- Monitoring
- Troubleshooting

Advanced Scheduling



Data Convergence

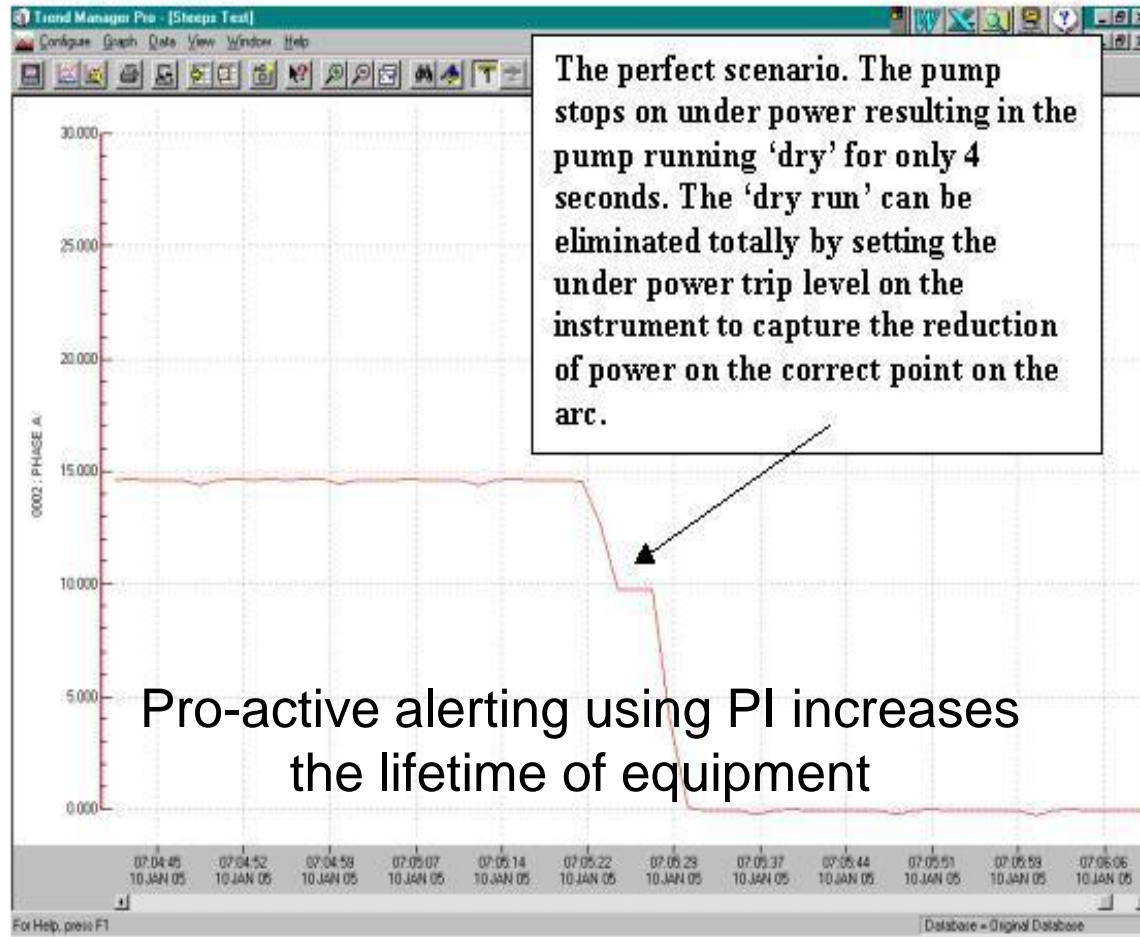


PI Within Cargill

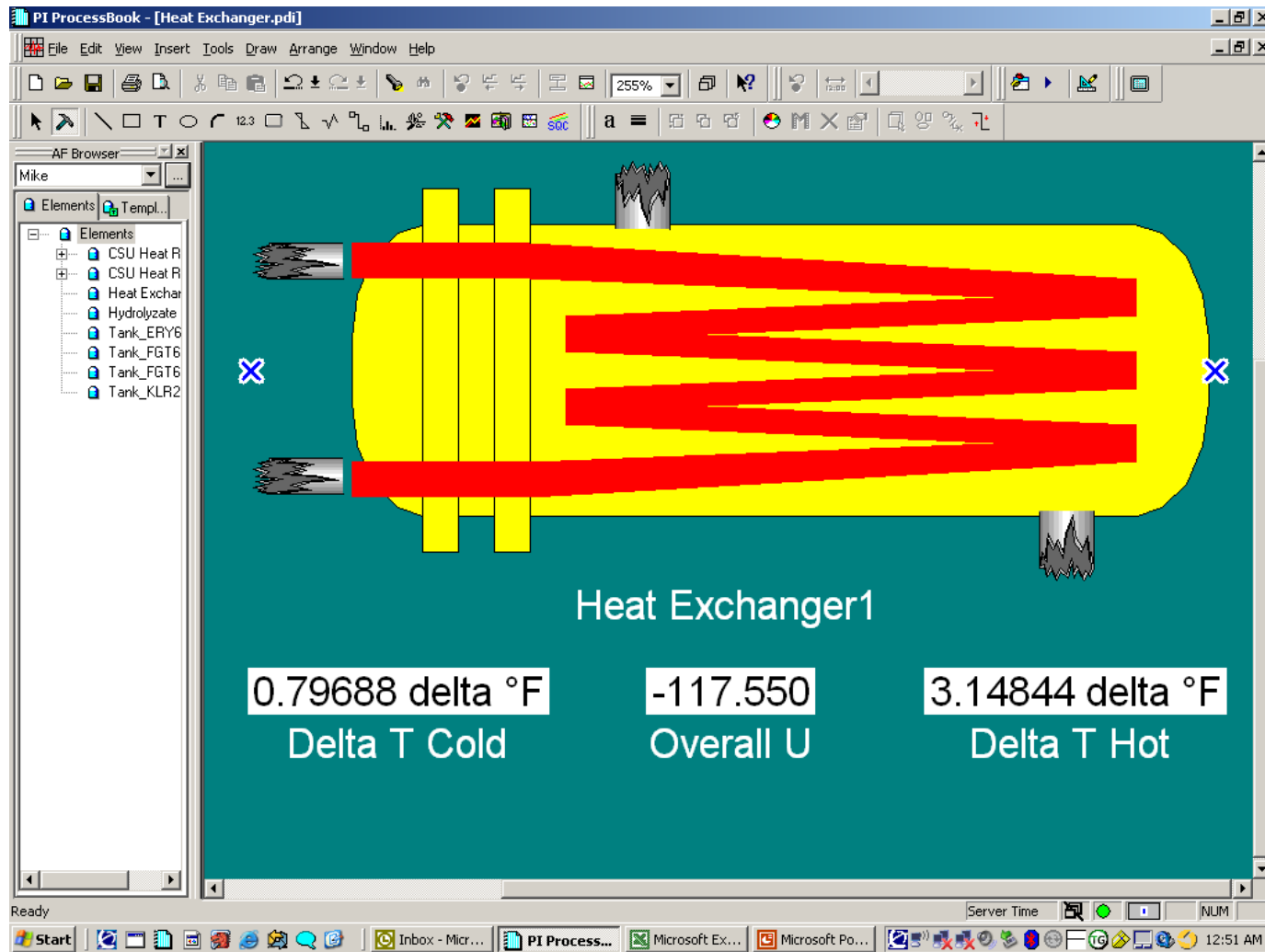
Applications and Uses of PI Data

- Sales and operations planning
- Real time costing
- Process Modeling
- Six Sigma
- Production reporting
- EPA reporting
- Quality reporting
- Monitoring
- Troubleshooting

Example of creating significant value with PI



Energy Management



PI Within Cargill

Applications and Uses of PI Data

- Sales and operations planning
- Real time costing
- Process Modeling
- Six Sigma
- Production reporting
- EPA reporting
- Quality reporting
- Monitoring
- Troubleshooting

DMAIC, The Roadmap to Operation Excellence



•Define

- ❑ PI Data helps define the current state of process performance
- ❑ PI Data delivers information absent of resources
- ❑ PI Data alerts us when conditions are abnormal



•Measure

- ❑ PI Data historical information is ready even before the project is launched thereby increasing the speed of a typical Six Sigma project
- ❑ PI Data collection is automatic, absent of resources



•Analyze

- ❑ PI Data allows you to analyze multiple data streams simultaneously
- ❑ PI Data collections systems can indicate special-cause from common-cause events



•Improve

- ❑ PI Data gives us near instant quantified feedback as to the degree of improvement.
- ❑ PI Data takes the emotion out of the improvement options

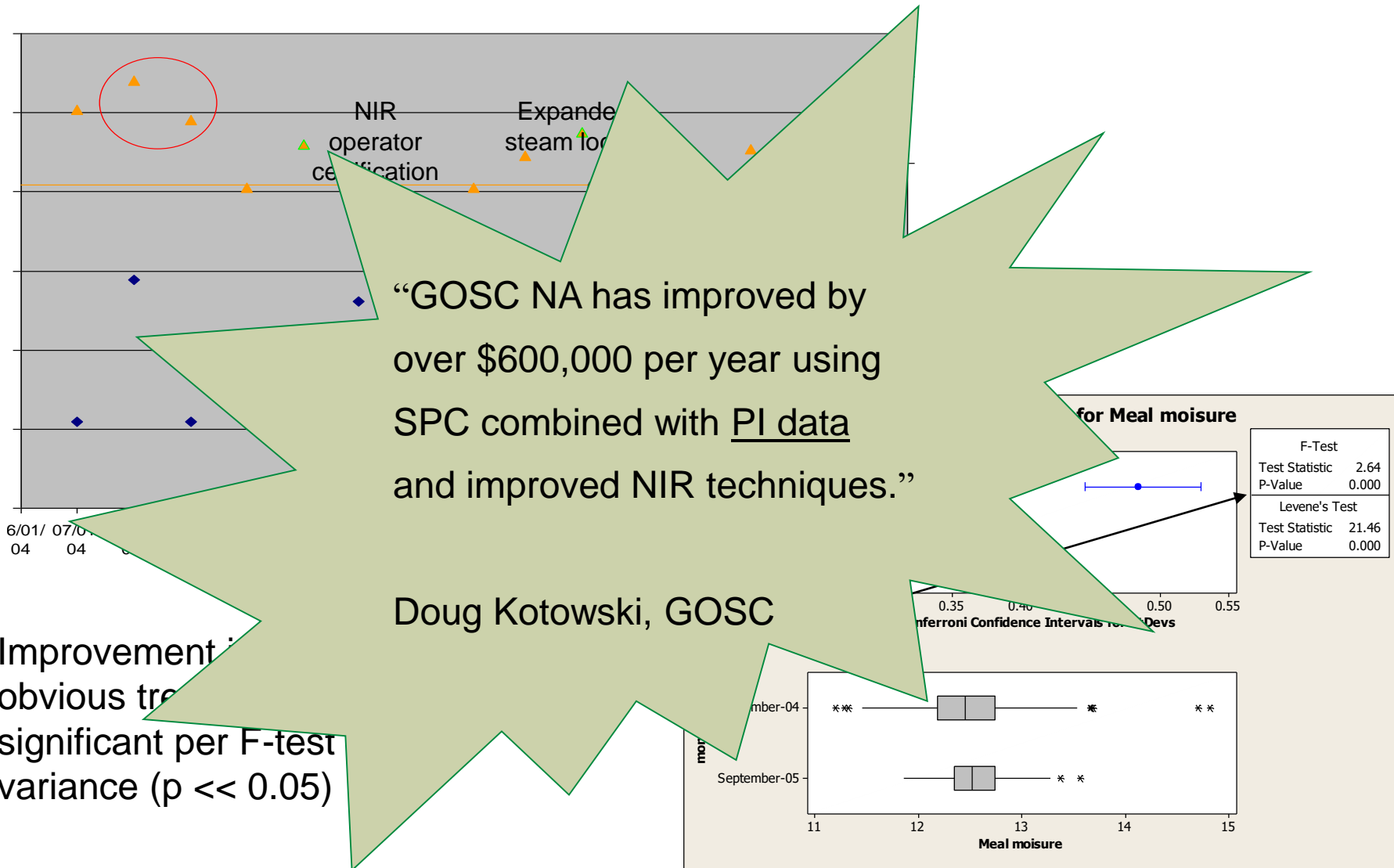


•Control

- ❑ PI Data gives us instant monitoring and conditional feedback.
- ❑ PI can send alerts of approaching negative conditions
- ❑ PI can report the duration and frequency of out-of-spec conditions.

Initial “Opportunity Mapping” allows us to determine where to apply the toolset for best return

6 sigma project drove an improvement in finished meal moisture variation - Goal exceeded !

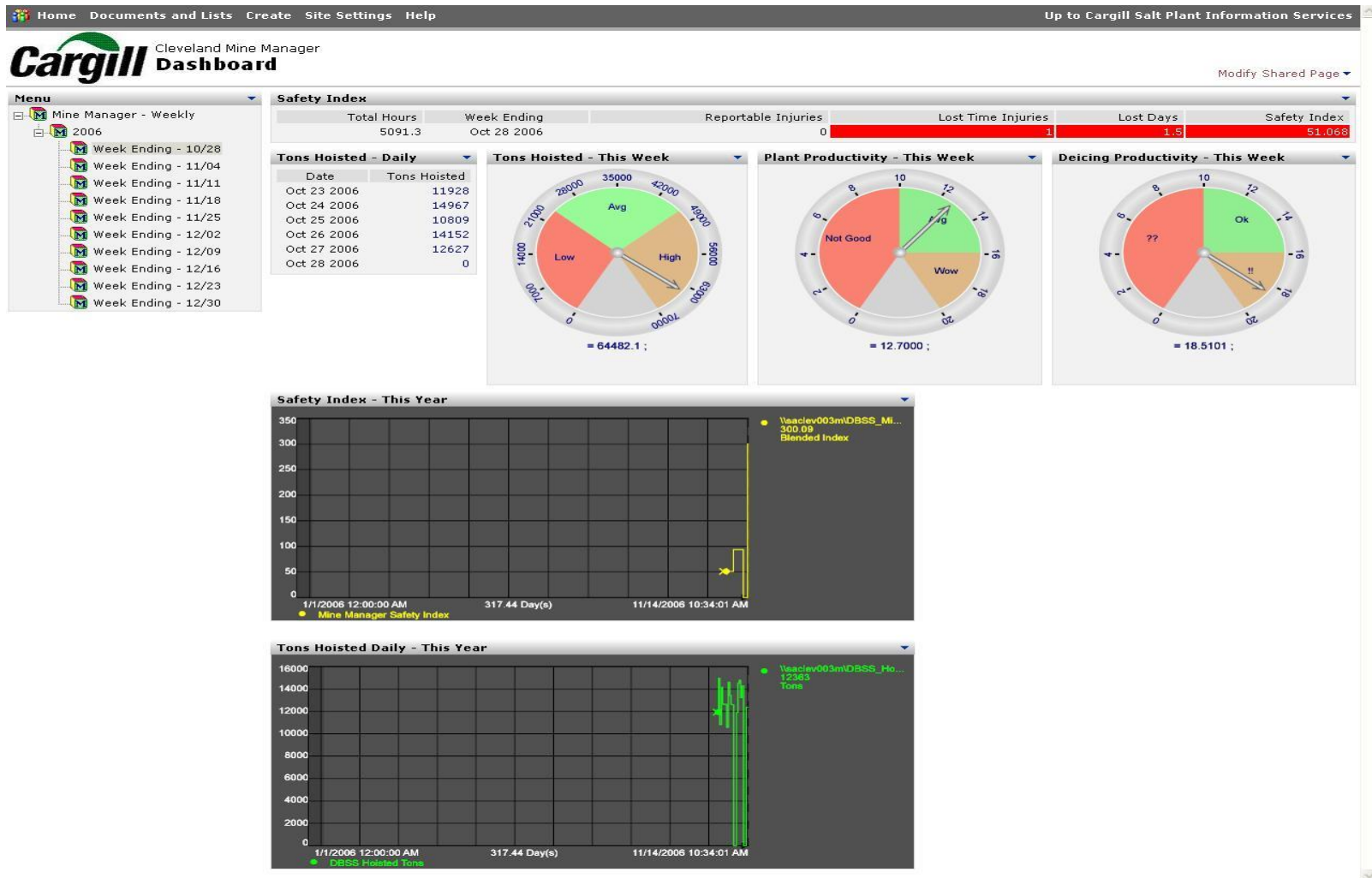


PI Within Cargill

Applications and Uses of PI Data

- Sales and operations planning
- Real time costing
- Process Modeling
- Six Sigma
- Production reporting
- EPA reporting
- Quality reporting
- Monitoring
- Troubleshooting

CDT Mine Manager Dashboard



CDT Mine Manager Dashboard

• CDT OSI PI RtWebParts

• Plant Information Services – Project Concept

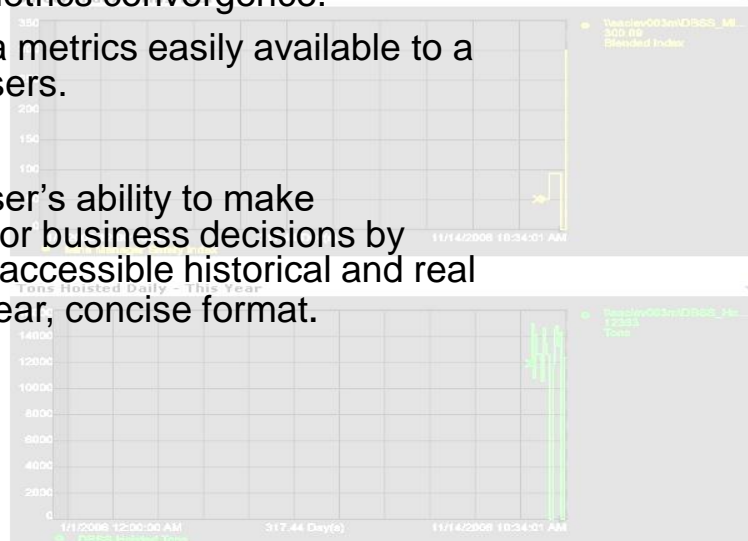
- Provide access to plant operations metrics.
- Provide access to plant business metrics.
- Provide a platform for plant operations and business data metrics convergence.
- Make these data metrics easily available to a wide range of users.

• Project Goal:

- To enhance a user's ability to make operational and/or business decisions by providing easily accessible historical and real time data in a clear, concise format.

• Data Convergence

- One World Corporate & One World BU
- MXES (Maximo)
- Kronos (Labor Information)
- Operational Data from PI Data Historian
- Manual Data (safety & etc)



PI Within Cargill

Applications and Uses of PI Data

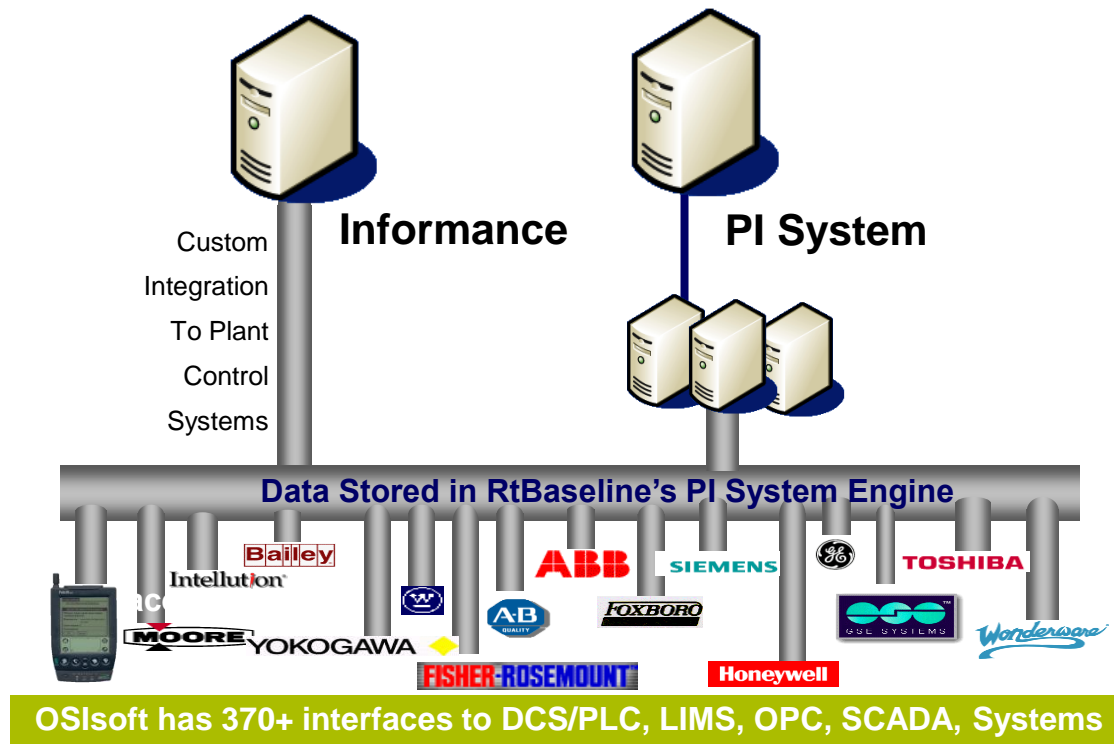
- Sales and operations planning
- Real time costing
- Process Modeling
- Six Sigma
- Production reporting
- EPA reporting
- Quality reporting
- Monitoring
- Troubleshooting

Decision Support

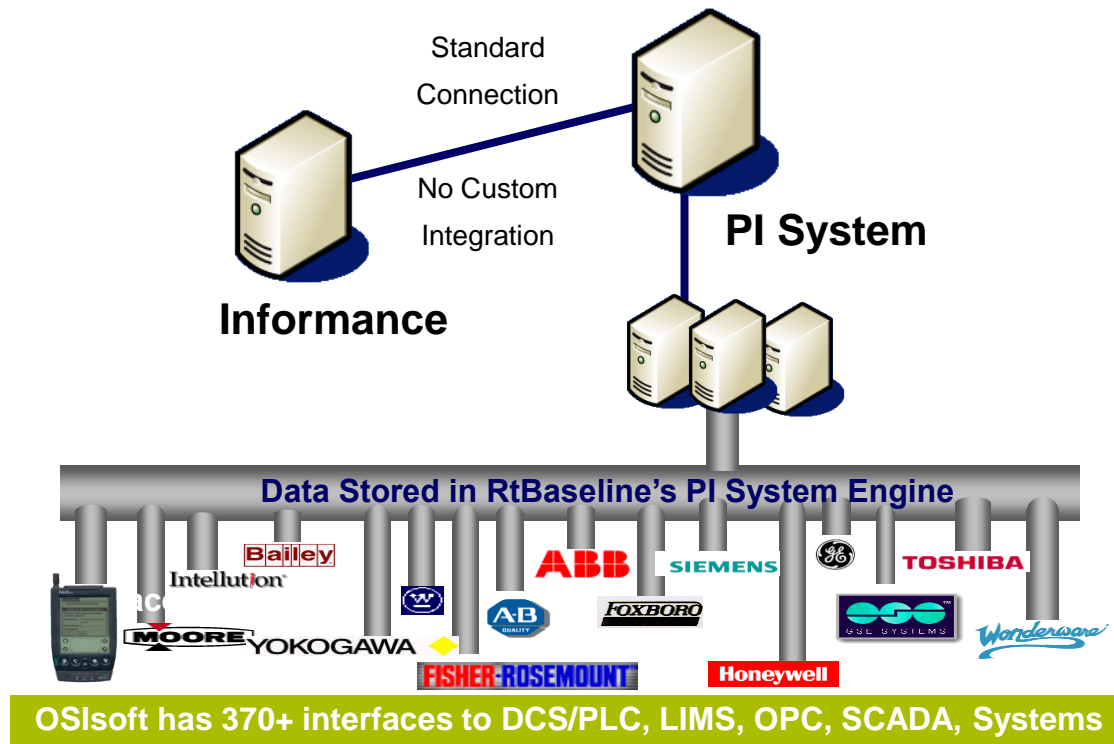
Throughout the plant or enterprise

- Provides global visibility for those who “need to know” in real time, anywhere in the world
- Data is converted into information to drive continuous improvement activities
- Monitor adjustments in real time to ensure sustained benefit and provide alerts if process is not within control limits
- Individualized, key metric dashboards by user profile
- Benchmark processes across lines to replicate improvements

Informance Architecture -- Before



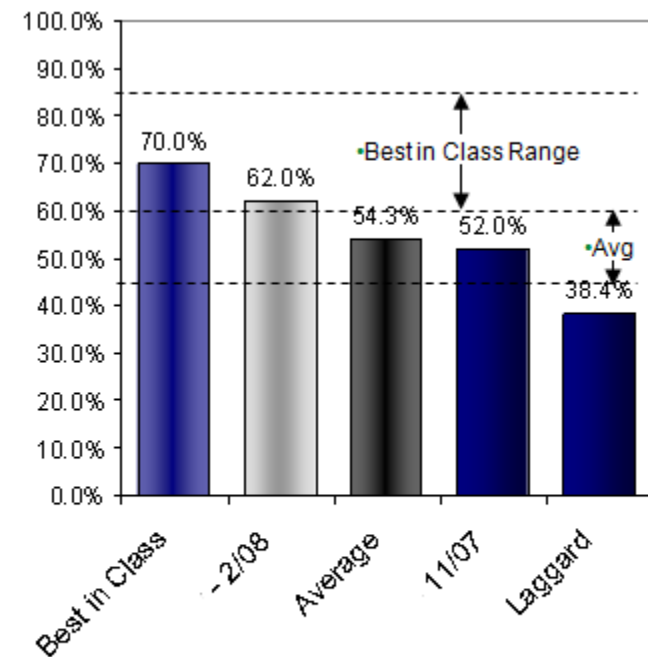
Informance Architecture -- After



Executive Summary

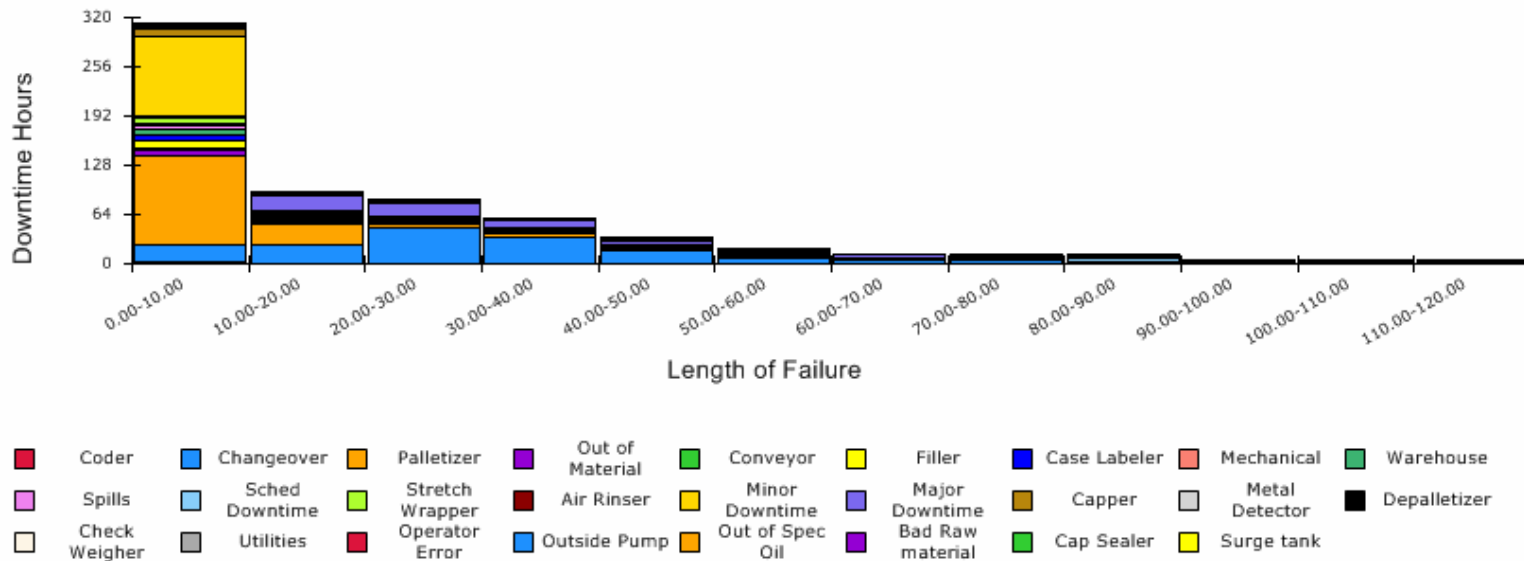
- Success from 11/1/07 to 2/23/08
- A and B Lines: OEE Improved from 52% to 62% (19.2% improvement)

- Per Informance Benchmarks, the site has improved OEE from below average to inside Best in Class range (60.63% - 85.78%)



Primary Root Cause

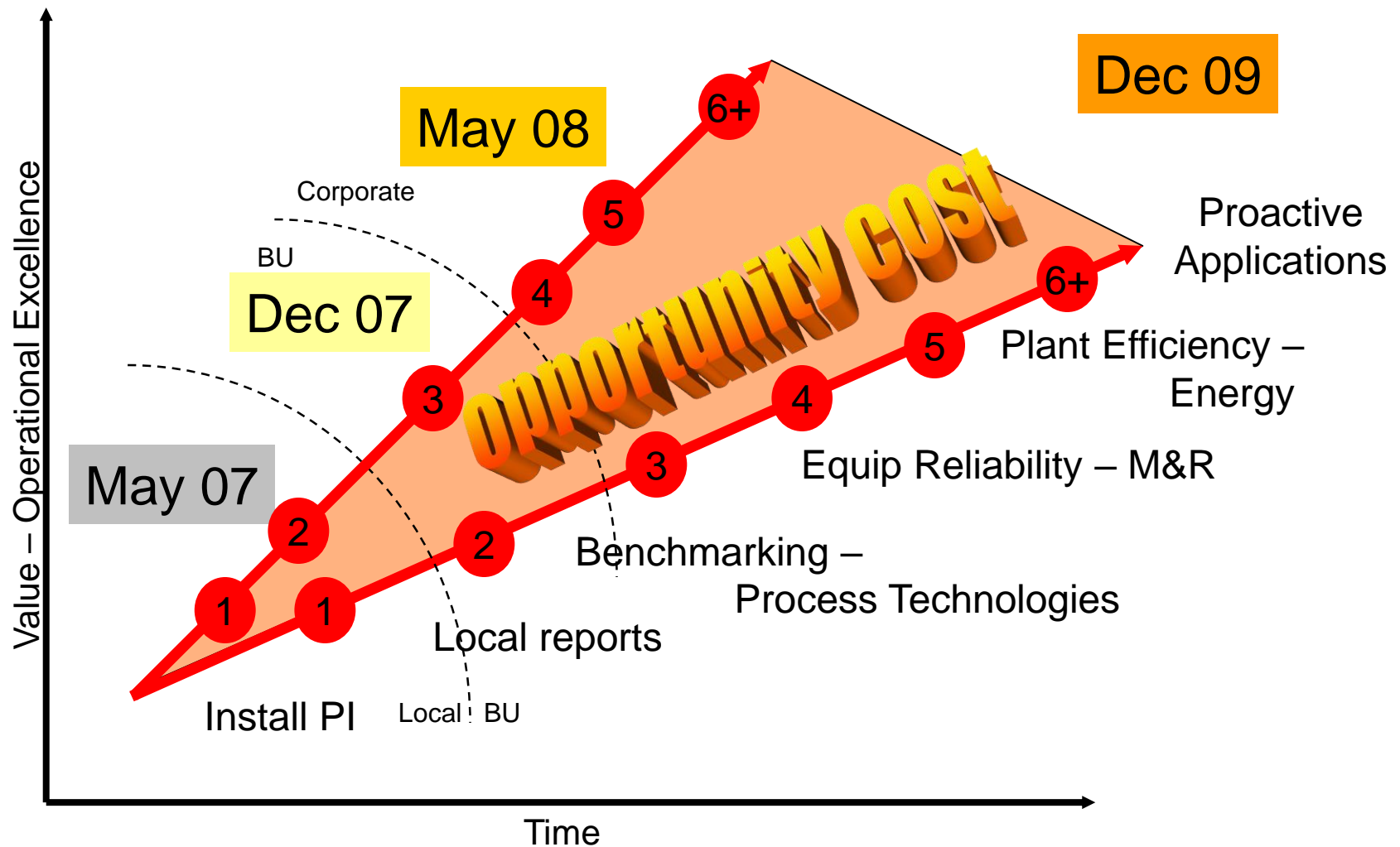
- Palletizer minor stops (< 10 minutes)



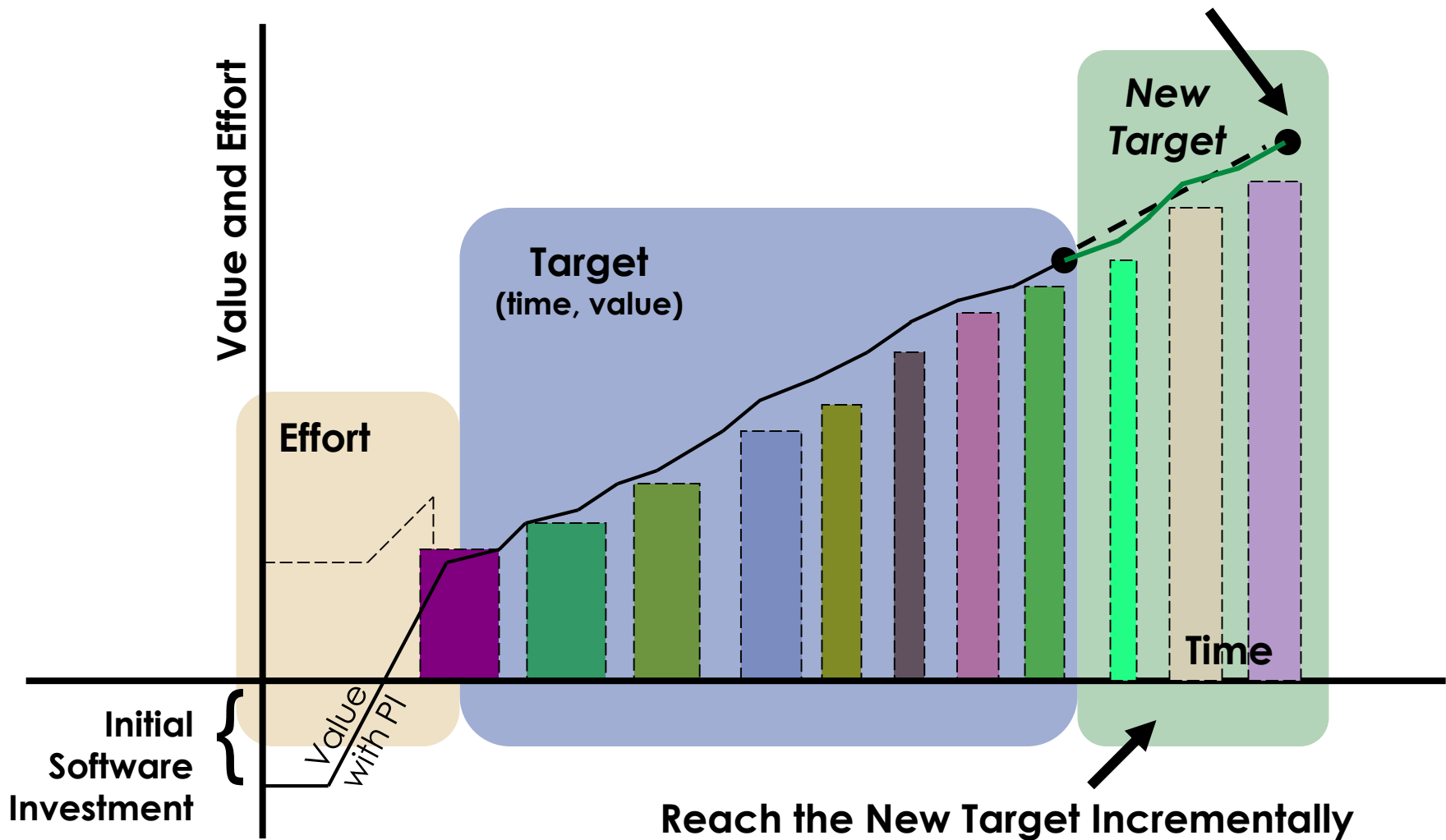
“Naked Without PI”

- Tool for leveraging process data to compete effectively in global economy
- Real time access to ALL process data
- Real-time monitoring of KPIs
- Historical data access for best practice, in-depth analysis, troubleshooting and root cause analysis
- Common data layer for process data using standard formats, tools and applications
- Easily configurable tools for meeting a host of production and business needs and scenarios

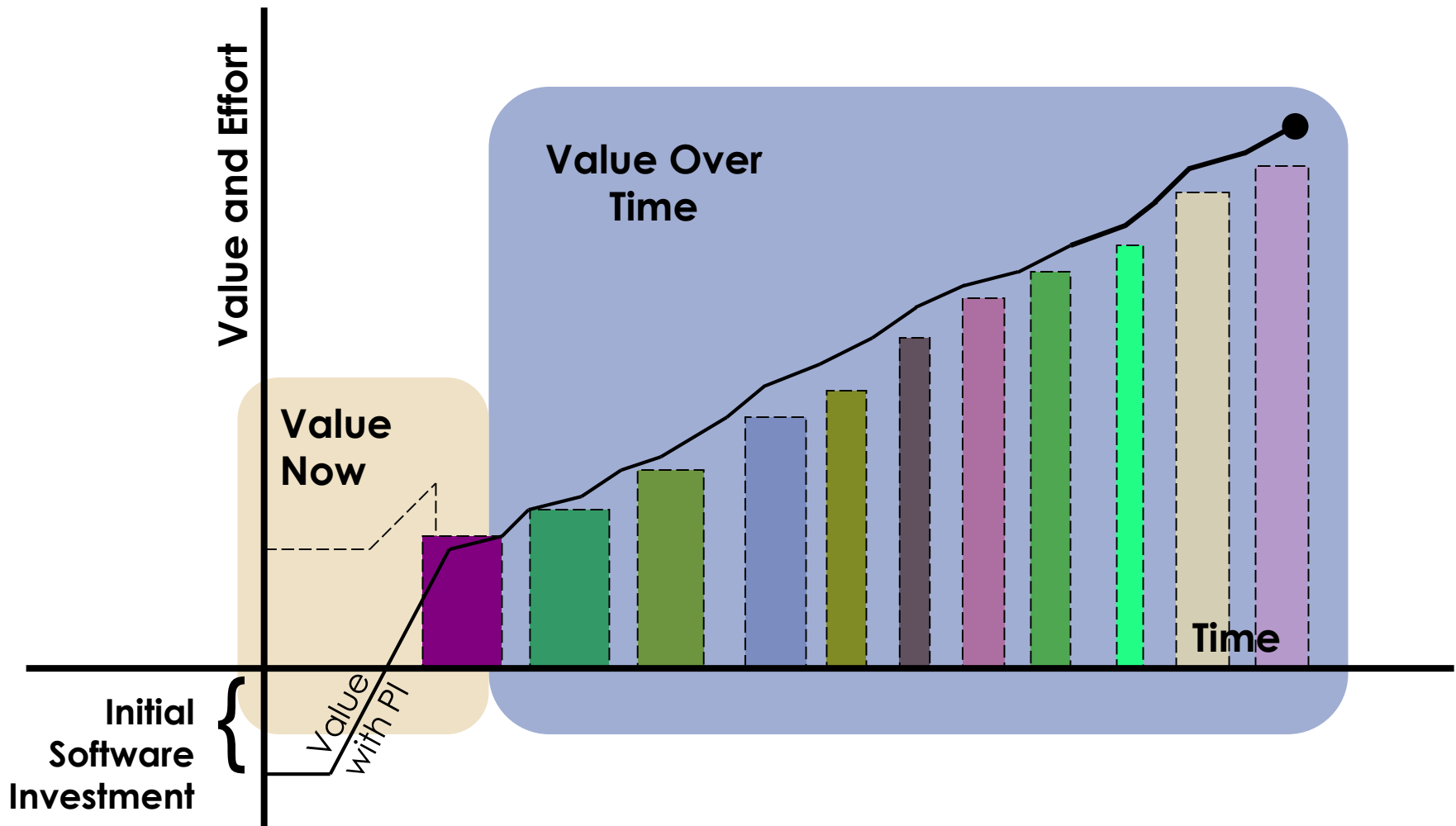
PI Roadmap: Opportunity Cost



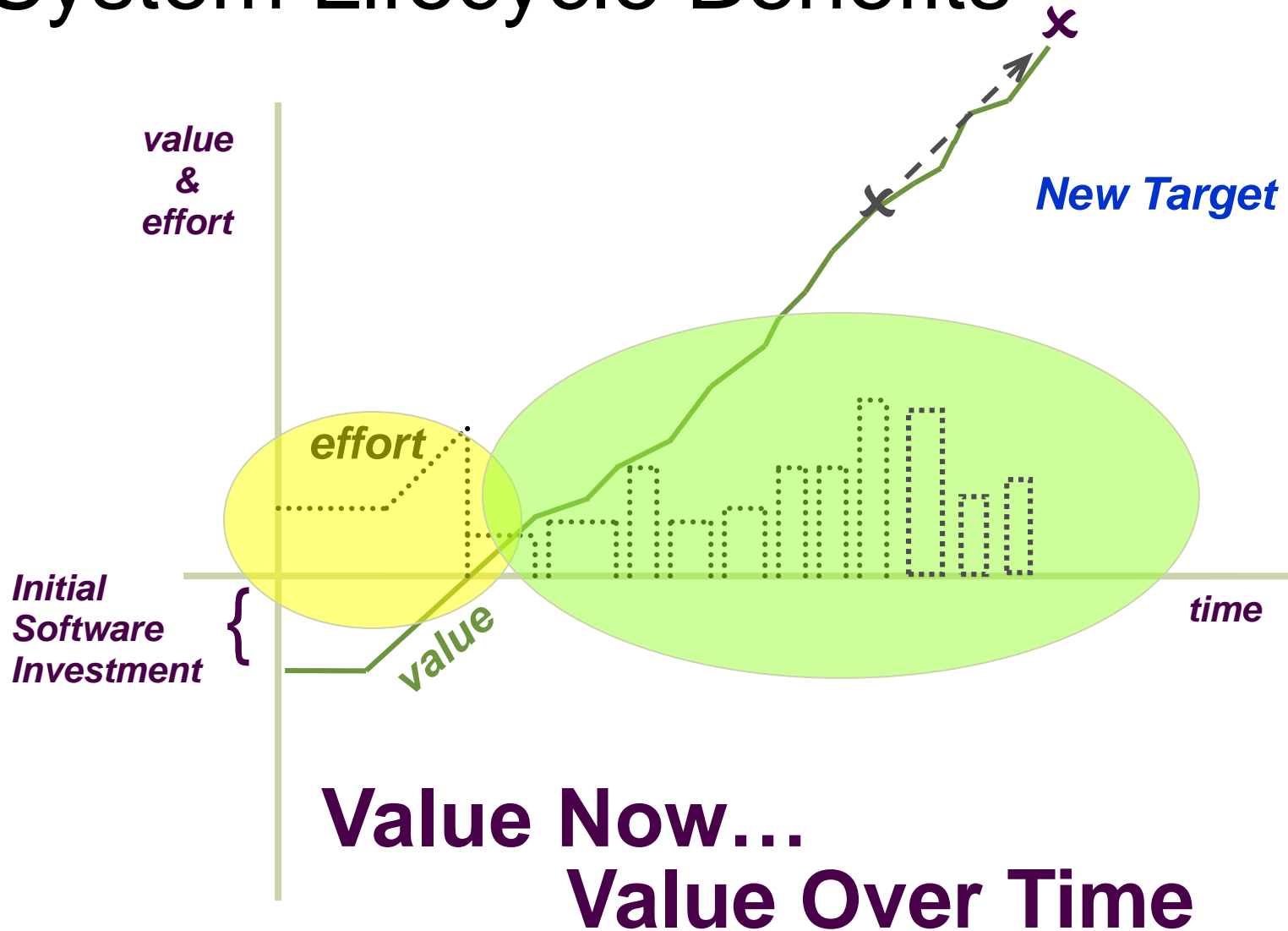
Value Now, Value Over Time



Value Now, Value Over Time



PI System Lifecycle Benefits



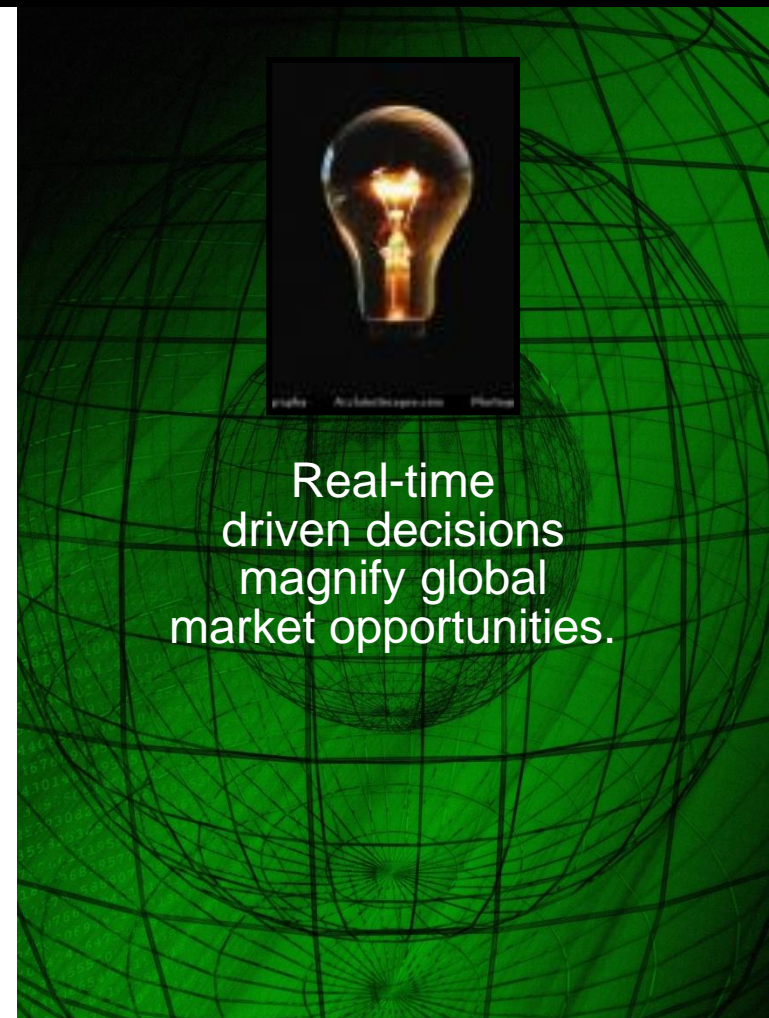
Conclusion

- Executive sponsorship as well as grass roots support for PI critical to its success
- PI is a DB for real-time plant data
- 113 sites licensed... 750+ by 2015
- Real-time business intelligence...
real-time plant data available throughout organization
- Common plant data infrastructure to leverage across multiple sites & BUs

Serving the Enterprise ...

“Companies that have an *infrastructure* in place to make the management and delivery of this information [operating metrics and key performance indicators] will be able to *react to the market faster and ultimately out perform* those that can’t.”

John Hagerty,
AMR Research, October, 2004



Real-time
driven decisions
magnify global
market opportunities.