



Data, Data Everywhere and not a Decision to Make

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VOYAGE2007



Cargill is taking action and making decisions leveraging PI

Turning PI data into a strategic business weapon



Agenda

- Cargill intro and overview
- Informance intro and overview
- Cargill case study
- The future of PI data

Cargill Company Profile

- Founded 1865 in Conover, IA
- Privately owned
- HQ in Minneapolis, MN
- Offices and facilities in 66 countries
- 153,000 employees worldwide
- International provider of food, agriculture and risk management products and services

Cargill Company Profile

Agriculture Services

- ▶ Provides crop and livestock producers worldwide with customized farm services and products.

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

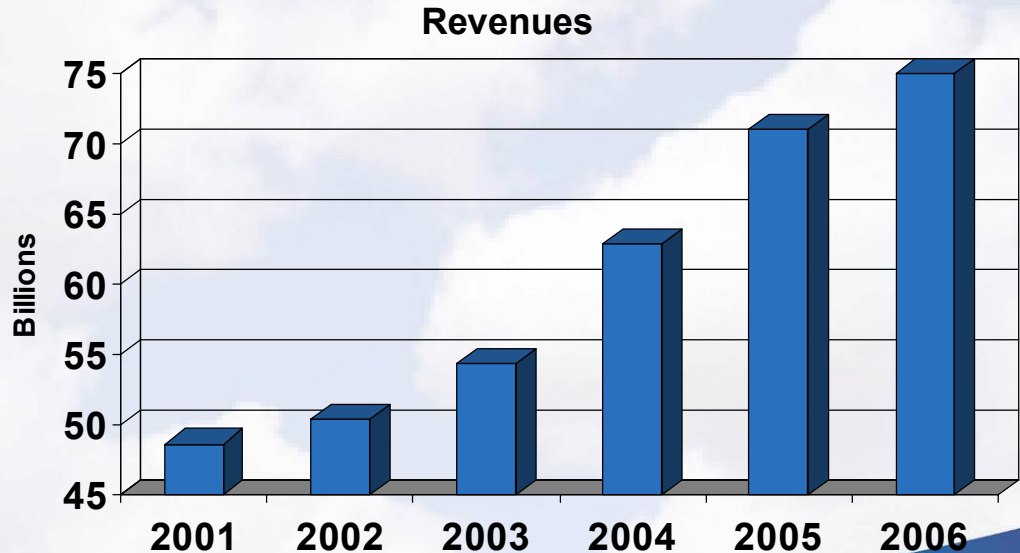
- ▶ Provides Cargill customers and the company with risk management and financial solutions in world markets.

Cargill Company Profile

Revenues: \$75 billion

Net earnings: \$1.5 billion

Net worth: \$14 billion



Cargill is an OSIsoft EA Customer

SERVER

- PI-Enterprise Server Professional
- PI OPC HDA Server
- PI Control Monitor Server
- PI System Management Tools (PI-SMT)
- RtReports (non compliance, future version)

INTERFACES

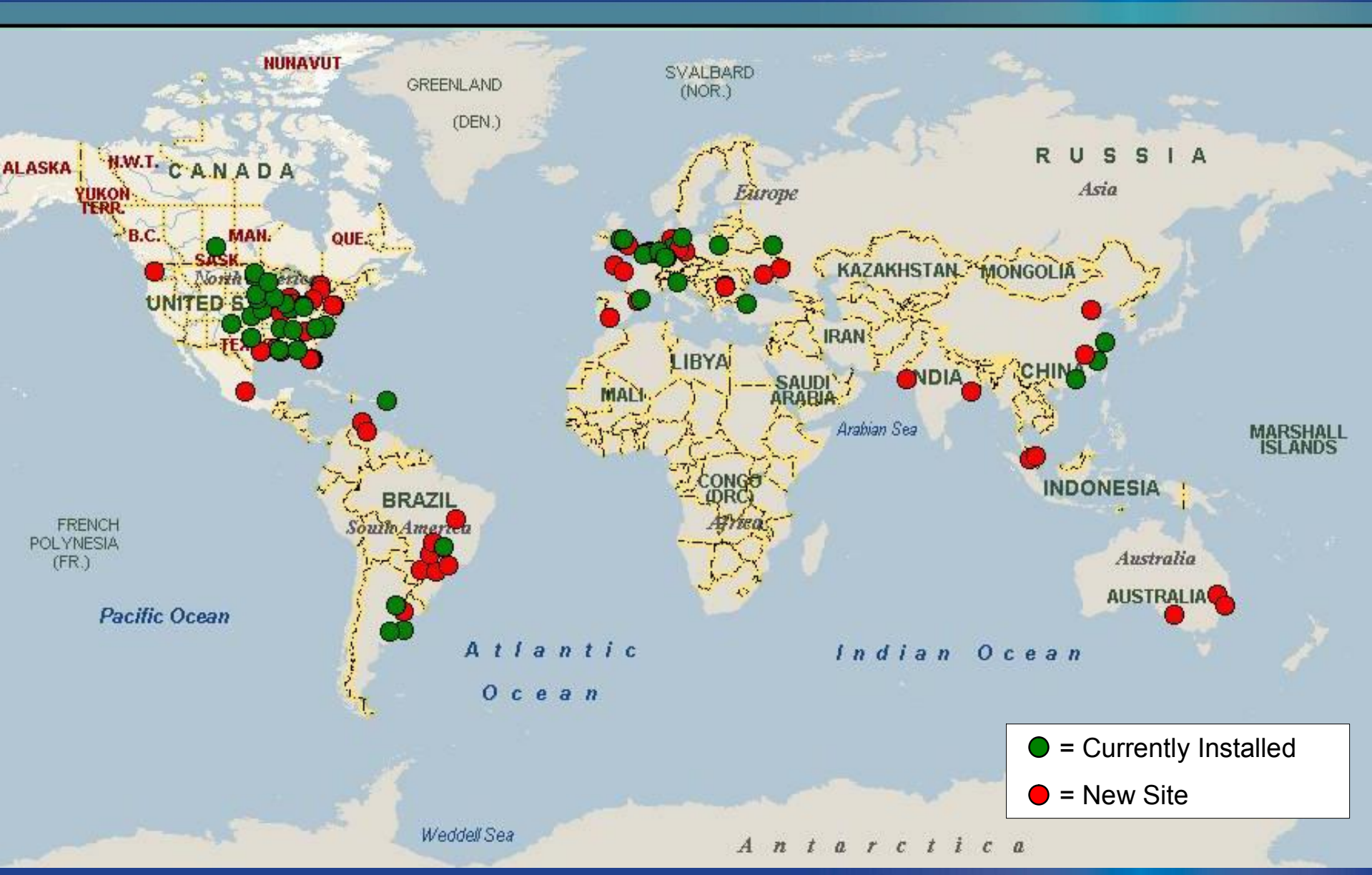
- All OSIsoft standard interfaces
- All OSIsoft standard COM connectors
- PI-IN-OS-PI-NTI
- PI-IN-OS-SNMP-NTI
- PI-IN-OS-PING-NTI
- PI-IN-OS-PERF-NTI
- PI-IN-OS-TCP-NTI

SOFTWARE & NON-STANDARD INTERFACES

CLIENT

- RtWebParts
- RtAlerts
- PI-ProcessBook
- PI-DataLink
- PI-Batch View
- PI-ActiveView
- PI-Manual Logger
- PI-Hand Held Terminal Client
- PI-SQC Client
- PI AlarmView Client
- PI Control Monitor Client
- PI-Application Framework
- PI-DAP-Individual
- Standard available API's for other non-Intel operating systems

Global Site Locations



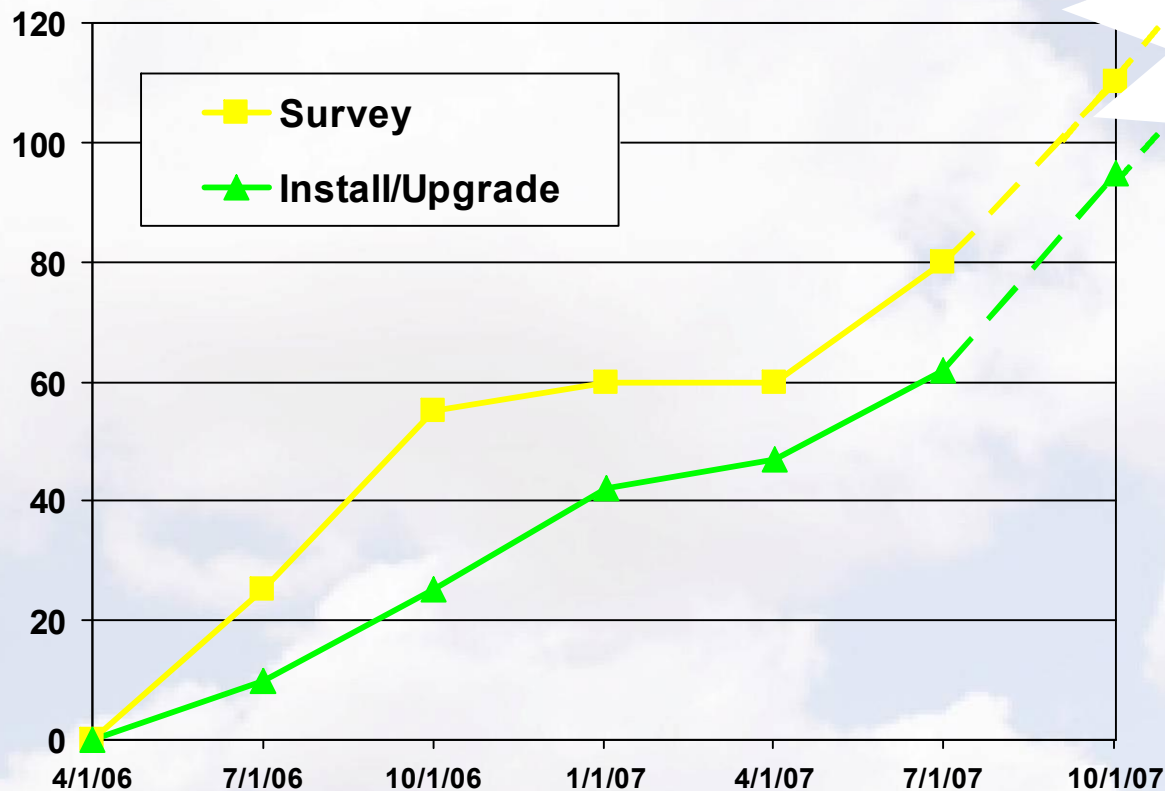
PI is Mission-Critical

Strategic Intent 2015 (SI 2015)...

"By 2015, Cargill will be the partner of choice, recognized as having great people with imagination committed to delivering the best ideas to the worlds we serve: agriculture, food and risk management."

...Creating distinctive value is key to SI 2015

PI EA Rollout Update



**750+ PI
Systems
by 2015**

Value Now...

Applications and Uses of PI Data

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

Value Over Time...

Informance

- ▶ Extend the value of PI with data aggregation, and line-, plant- and cross-plant analytics
- ▶ Make strategic decisions better and faster, significantly accelerating and sustaining manufacturing performance

Value Over Time...

Applications and Uses of PI Data

- Sales and operations planning
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- Quality reporting
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From Perception to Reality

What is the largest bucket of downtime?

Where should we focus our attention?



- 5 minutes and less
- Difficult to quantify
- Unnoticed
- Unaccounted

- Uptime**
- Planned Downtime & Setup**
- Catastrophic Downtime**
- Hidden Downtime**
Opportunity for best-in-class performance

Value Over Time...

- ▶ Manufacturing professionals can make strategic decisions using PI data transformed into intelligence
- ▶ Impact capacity, inventory levels, cycle time, product reliability
- ▶ Cargill continues to earn and build customer trust through reliable products
- ▶ Cargill becomes customers' supplier of choice

Informance

- Accelerate, enhance and sustain operational performance initiatives such as lean, TPM, Six Sigma and other continuous improvement methods
- Drive operating strategies at the executive level into execution tactics at the plant-level
- Provide intelligence in the form of actionable insight from actual data
- Our clients have experienced the following results:
 - ▶ Unlocked capacity
 - ▶ Increased productivity without additional capital investment
 - ▶ Reduced inventory and labor costs
 - ▶ Increased working capital

At:

Enterprise level

Plant level

Executive Level

With:

World-class analytics

Domain knowledge

Financial data

Using:

Real-time metrics

Rapid deployment

Intuitive solution

Key Customers

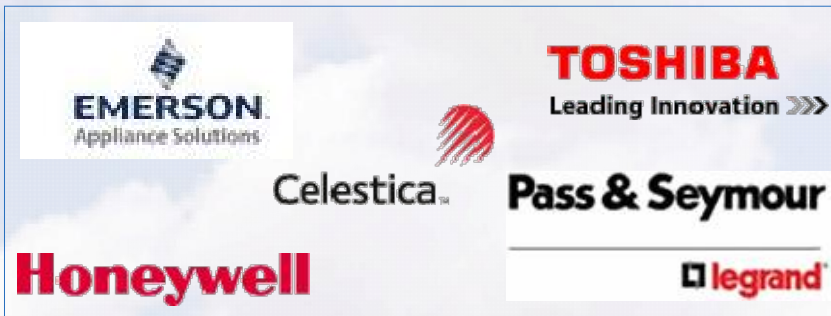
Consumer and Packaged Goods



Pharmaceuticals



Electronics



Industrials



Most Common Areas Of Value

Lean, Continuous Improvement TPM, Six Sigma, etc.

- Real-time analysis with actionable information for root cause identification and issue resolution
- Fact-based, systematic approach with IMPACT for instituting sustainable improvement programs

Increase Revenue while Reducing Capital Expenditures

- Reduce cost by streamlining production and eliminating waste
- Increase revenue by boosting production and unlocking additional production capacity – without additional capital expenditure

Reduce Inventory Cost

- High velocity supply chain based on higher replenishment frequencies with smaller lot sizes
- Compressed production cycle times by reducing key production losses and increasing uptime

Reduce Labor Cost while Increasing Productivity

- Reduce or eliminate overtime by boosting efficiency
- Reduce productivity variance amongst plants/lines/shifts by understanding root causes of discrepancies

Decision Support

Throughout the plant or enterprise

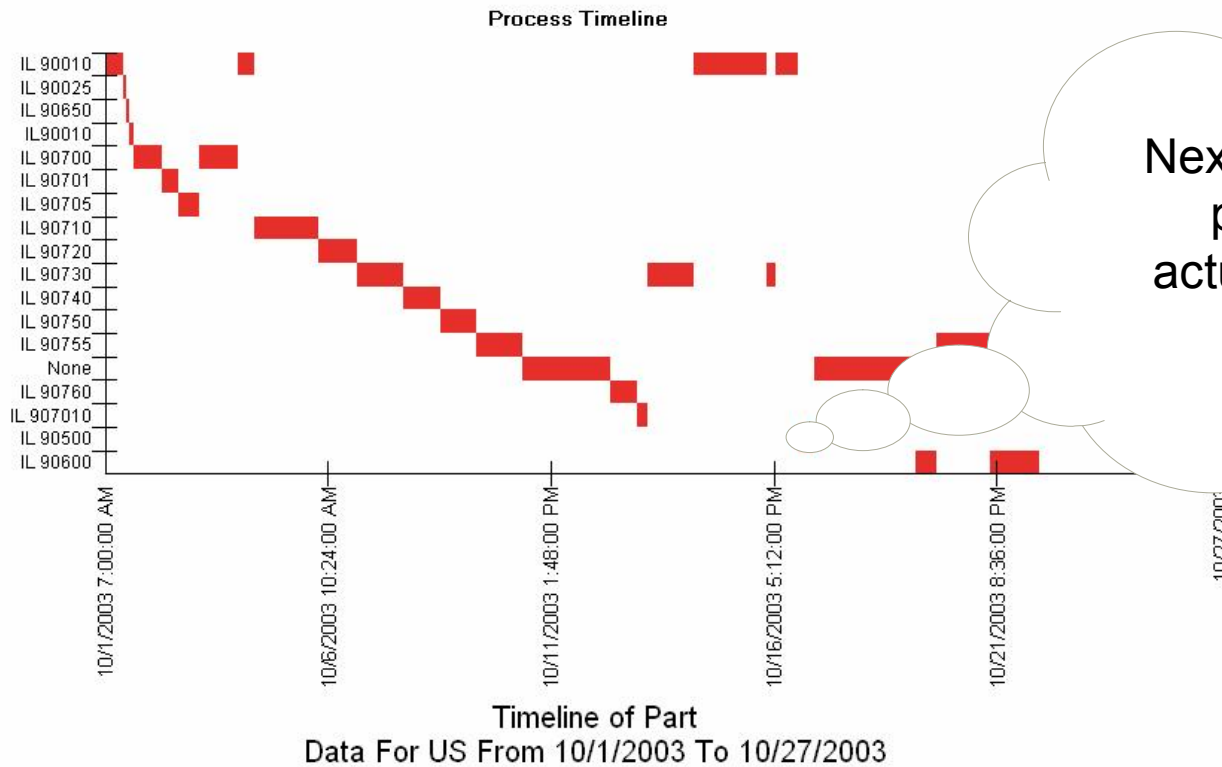
- ▶ Global visibility for those who “need to know” in real time, anywhere in the world
- ▶ Data converted into information to drive continuous improvement activities
- ▶ Monitor adjustments in real time, ensure sustained benefit and provide alerts if process is not within control limits
- ▶ Individualized,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

Data...

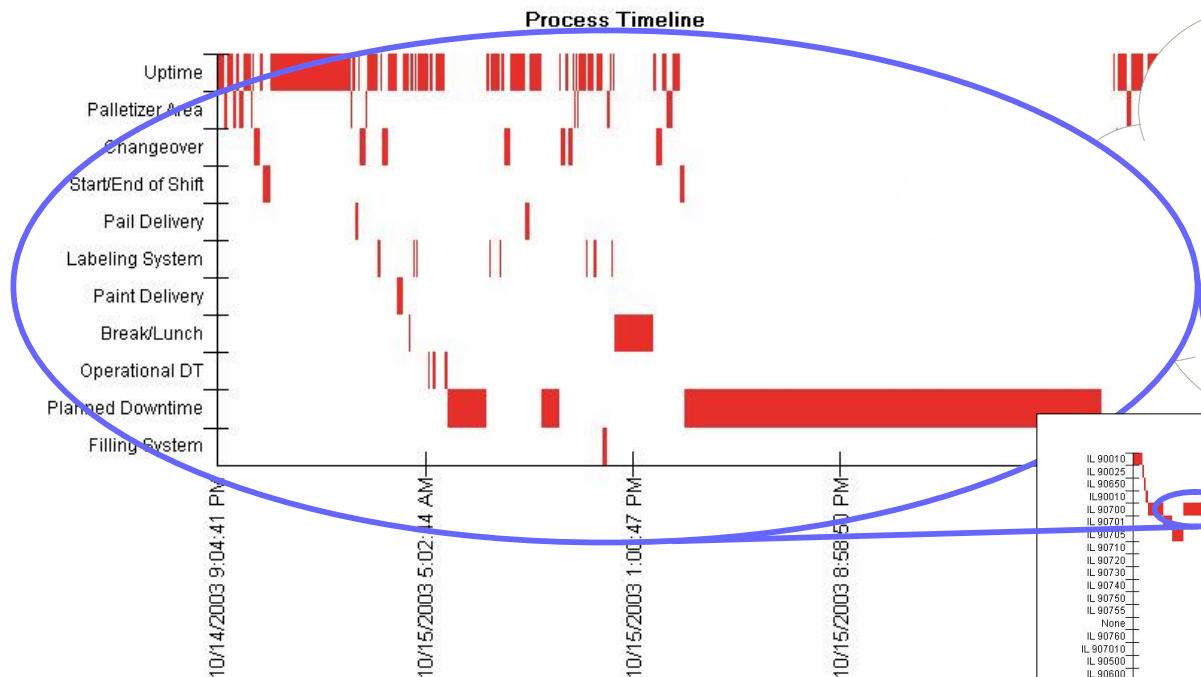
Part	Start Time	End Time	Length
IL 90010	10/1/2003 7:00:00 AM	10/1/2003 5:06:57 PM	10:06:57
IL 90025	10/1/2003 5:06:57 PM	10/1/2003 6:52:41 PM	1:45:44
IL 90650	10/1/2003 6:52:41 PM	10/1/2003 8:21:45 PM	1:29:04
IL90010	10/1/2003 8:21:45 PM	10/1/2003 10:40:17 PM	2:18:32
IL 90700	10/1/2003 10:40:17 PM	10/2/2003 2:27:45 PM	15:47:28
IL 90701	10/2/2003 2:27:45 PM	10/2/2003 11:05:29 PM	8:37:44
IL 90705	10/2/2003 11:05:29 PM	10/2/2003 10:58:17 AM	11:52:48
IL 90700	10/3/2003 10:58:17 AM	10/4/2003 8:46:33 AM	21:48:16
IL 90010	10/4/2003 8:46:33 AM	10/4/2003 5:41:45 PM	9:55:12
IL 90710	10/4/2003 5:41:45 PM		

Most manufacturers only have approximate information on the start and end of a production run

...Becomes...

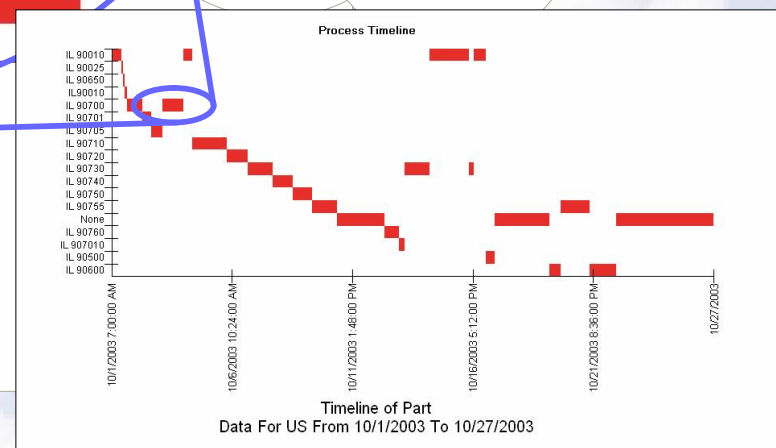


...Actionable Intelligence



Category For IL 90010
Data For US From 10/1/2003 To 10/27/2003

Actionable intelligence...
visibility throughout
the production run



Cargill History with Informance

- Informance deployment began in 2005
- Cargill Salt and DSO (Dressings, Sauces and Oils)
- Deployed, or in the process at 26 Plants
- Used to make strategic and tactical decisions

Business Challenge

- Provide a standard/consistent infrastructure
 - ▶ Apples to apples across entire manufacturing network
 - ▶ More readily troubleshoot and resolve issues
 - ▶ Easier to maintain and roll-out across the enterprise
- Save money
- Reduce downtime

Salt Business Unit

Challenge → Higher costs (overtime, inventory)

- ▶ Seasonal demand
- ▶ Sporadic excess and out-of-stock finished goods inventory due to inconsistent capacity utilization across all manufacturing locations

Solution → Enterprise approach to operations excellence

- ▶ Informance Enterprise Solution
 - Detailed analysis across all plants
- ▶ Informance Plant Solution
 - Fine grain analysis within plants; prioritize actions

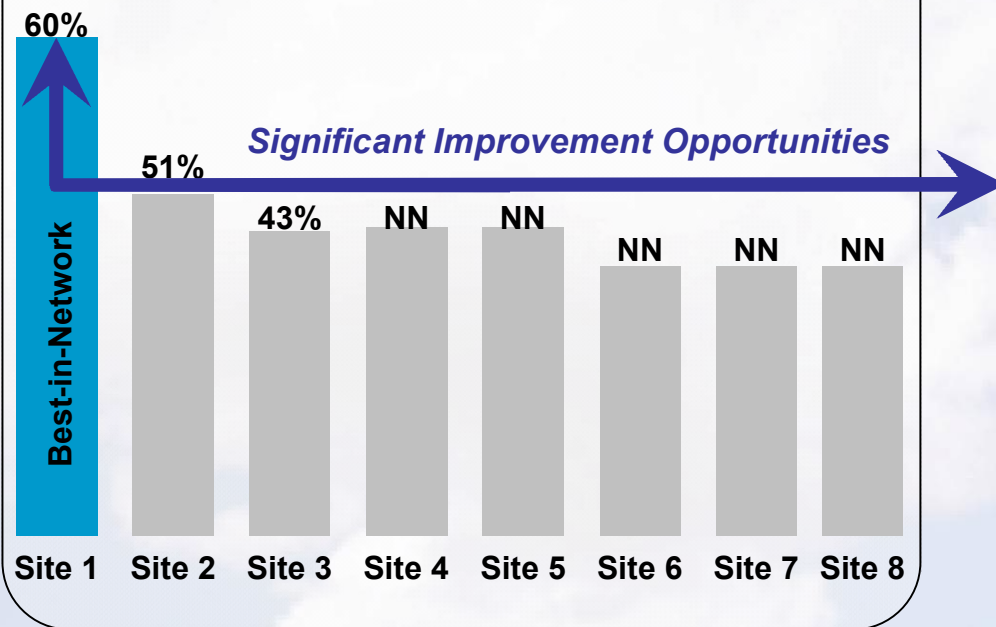
Benefits & Challenges

Monitor key operational parameters for all sites
(dashboard)

- ▶ Comparisons at multiple levels
 - Products
 - Equipment
 - Geography
- Biggest challenge – determine hierarchical design

Plant Opportunities

OEE Performance, YTD by Plant



Potential Annual Impact

Site 3

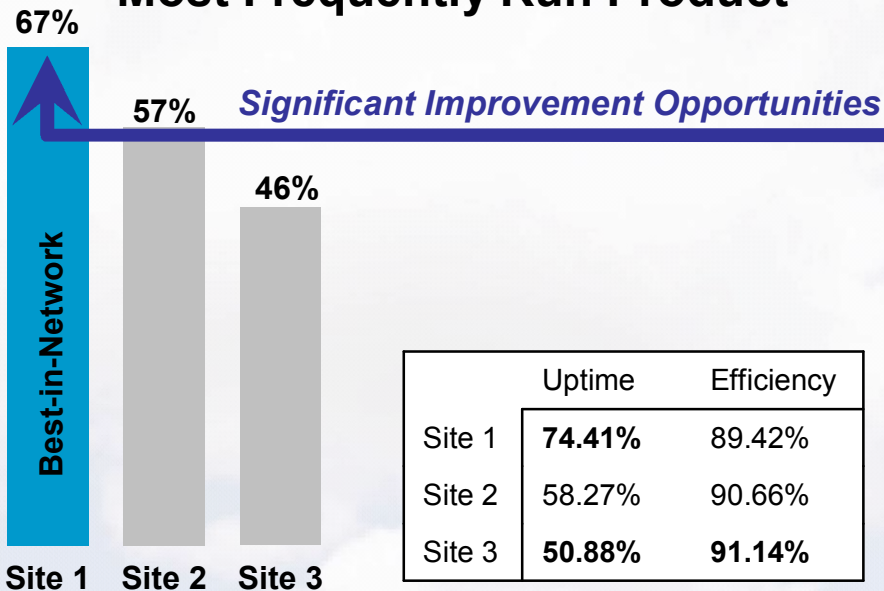
- 42% more capacity
- 4.1M more units
- \$X.0M margin @ \$0.xx per unit

Site 2

- 17% more capacity
- 1.1M more units
- \$xxxK margin @ \$0.xx per unit

Best Practices Opportunities

OEE Performance, Most Frequently Run Product



Potential Annual Impact

Site 3

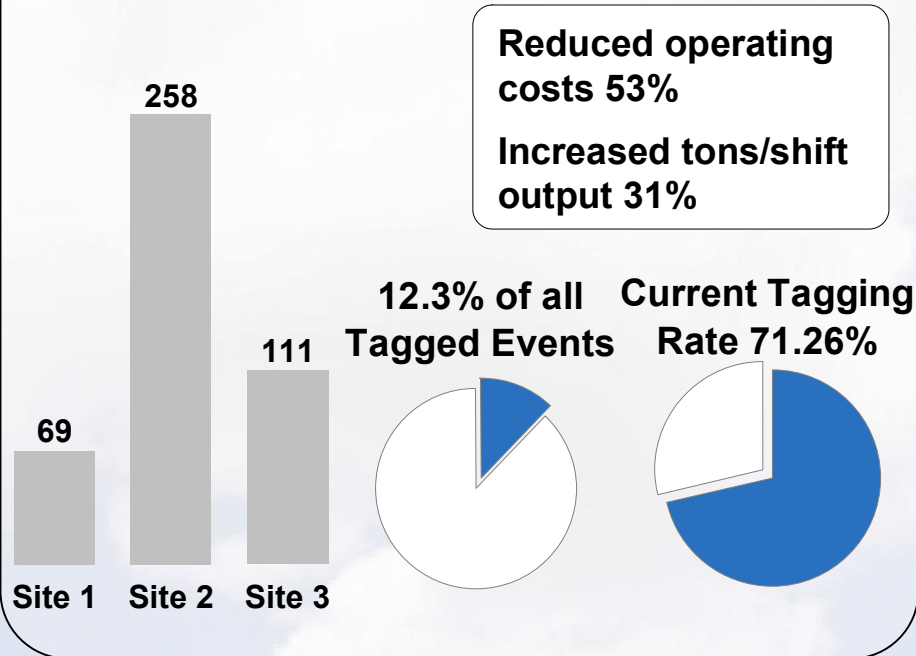
- 45% performance increase
- 1882 hours faster to complete
- or-
- 187K more units
- \$xxxK margin @ \$0.xx per unit

Site 2

- 18% performance increase
- 577 hours faster to complete
- or-
- 277K more units
- \$xxxK margin @ \$0.xx per unit

Hidden Opportunities

Hours Lost (no RM)



Potential Annual Impact

At current 71% tagging rate...

- 1.15M more units
- \$xxxK margin @ \$0.xx per unit

At a 95% tagging rate...

- 1.6M more units
- \$xxxK margin @ \$0.xx per unit

At current rate...

Site 3 → 750K more units, \$xxxK margin

Site 2 → 197 more units, \$xxxK margin

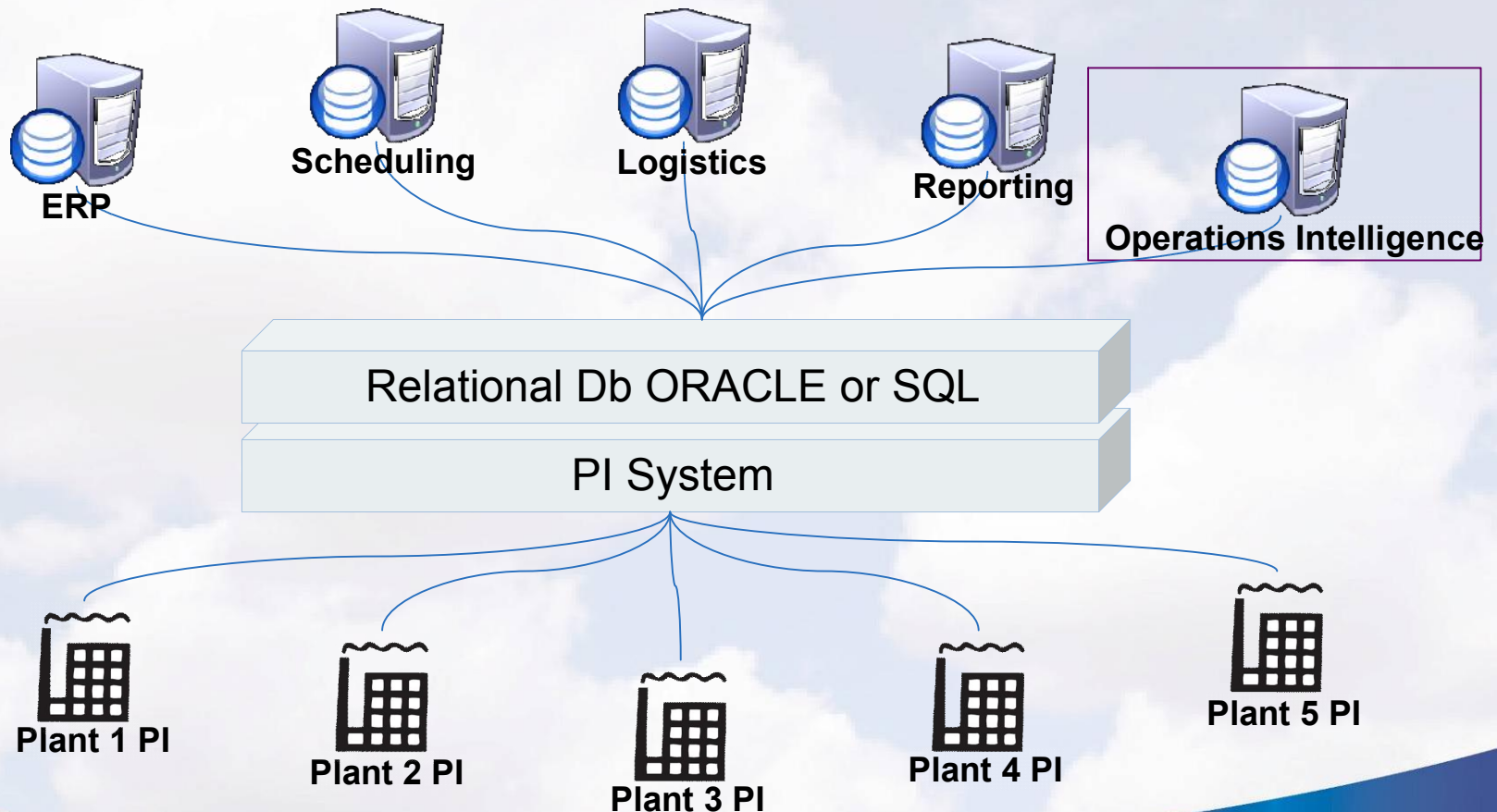
Site 1 → 244K more units, \$xxxK margin

Future Plans

- Leverage PI with Informance in as many facilities as possible
- Cargill partners with key solution providers to provide
 - ▶ Common tools
 - ▶ Common infrastructure
 - ▶ Common look and feel
 - ▶ Common business process
 - ▶ 1 face to the customer

The Future

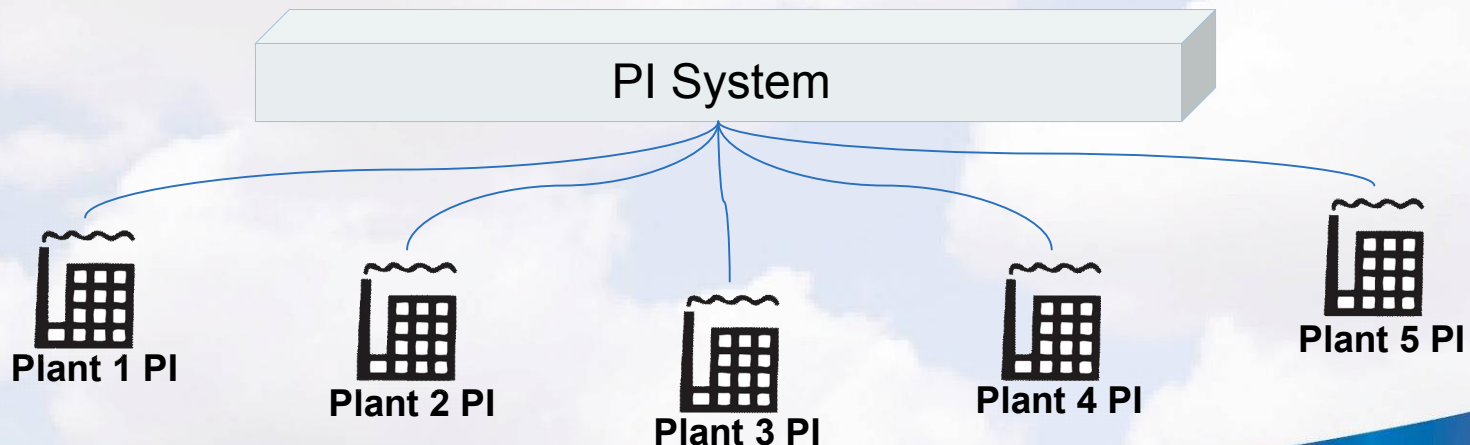
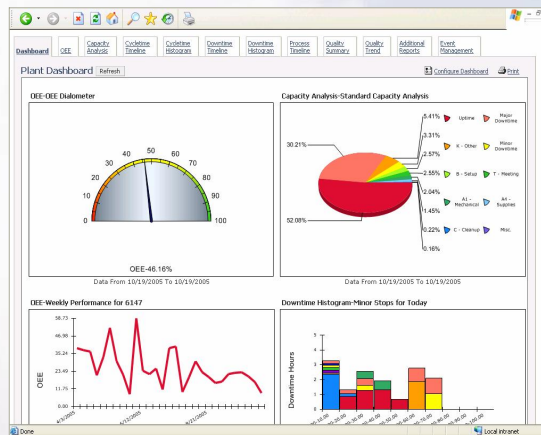
PI: Process Data Abstraction Layer



Personalized Dashboards

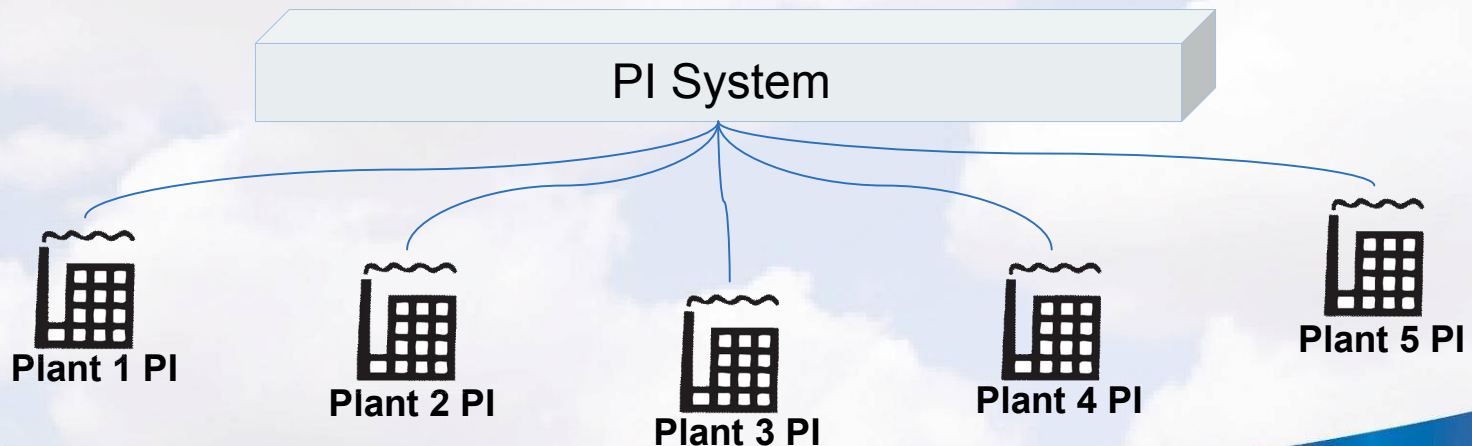
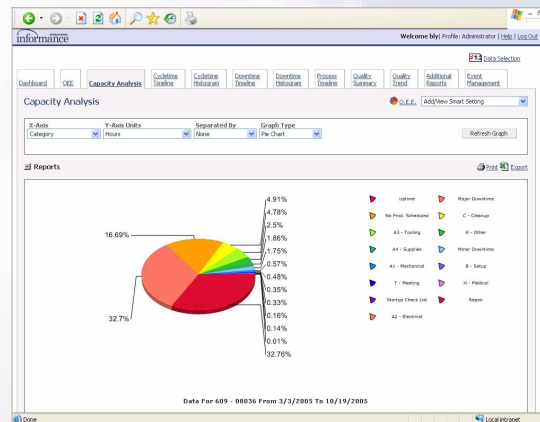
Executive Level

Plant Level



Analytics

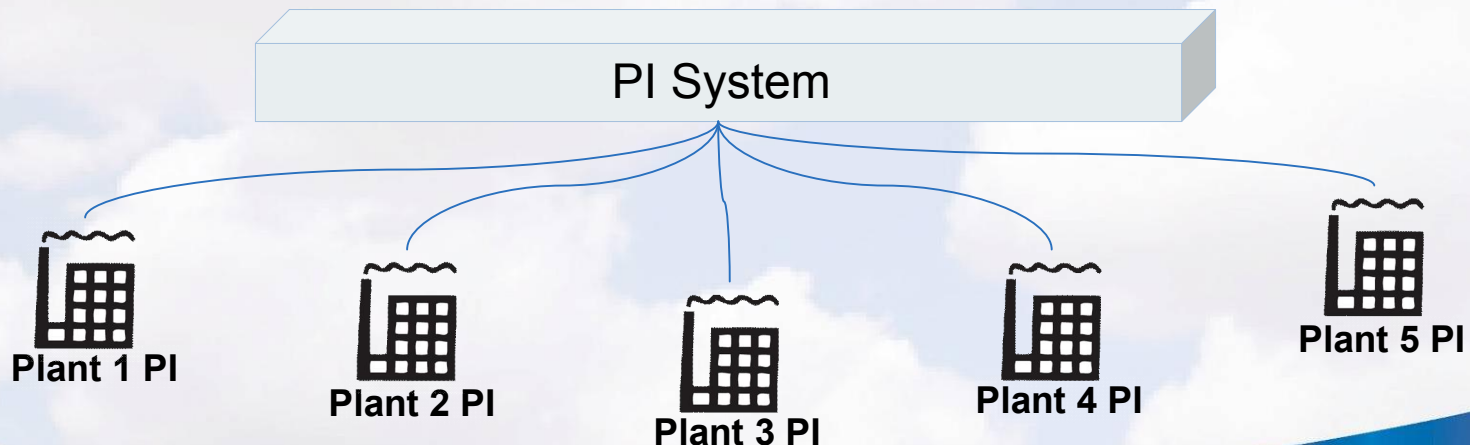
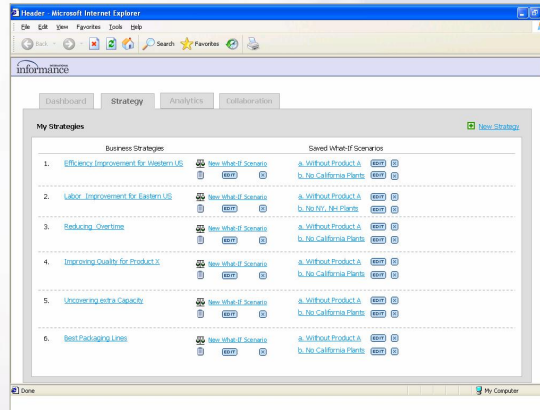
Availability
Performance
Quality



What-If Scenario Analysis

“How do I increase availability?”

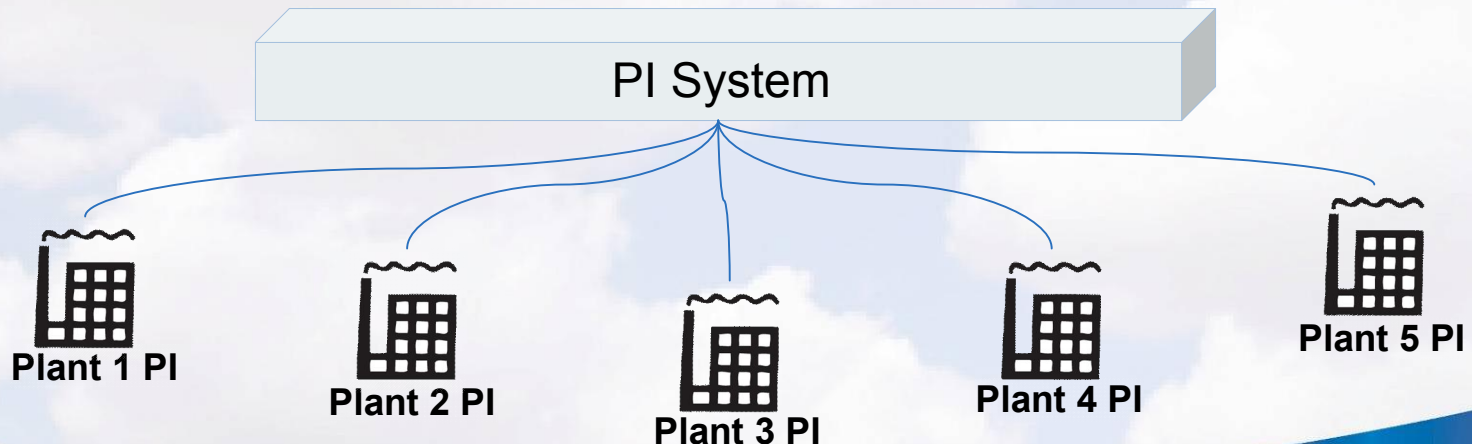
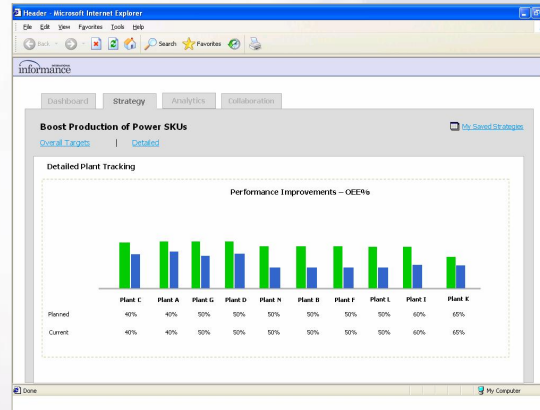
“Where can I obtain 5% more capacity?”



Financial Analysis

“What is my cost per order?”

“What is the cost per SKU?”



Summary

- Real time, accurate process information, 24x7 to all process owners
- Continuous improvement support – take process ACTION much faster
- Support operational effectiveness and contribute to improved bottom line financial performance
- Sustain improvements
- Simple to use data inputs for operators
- Short implementation, quick time to value

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***Thank
You***

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