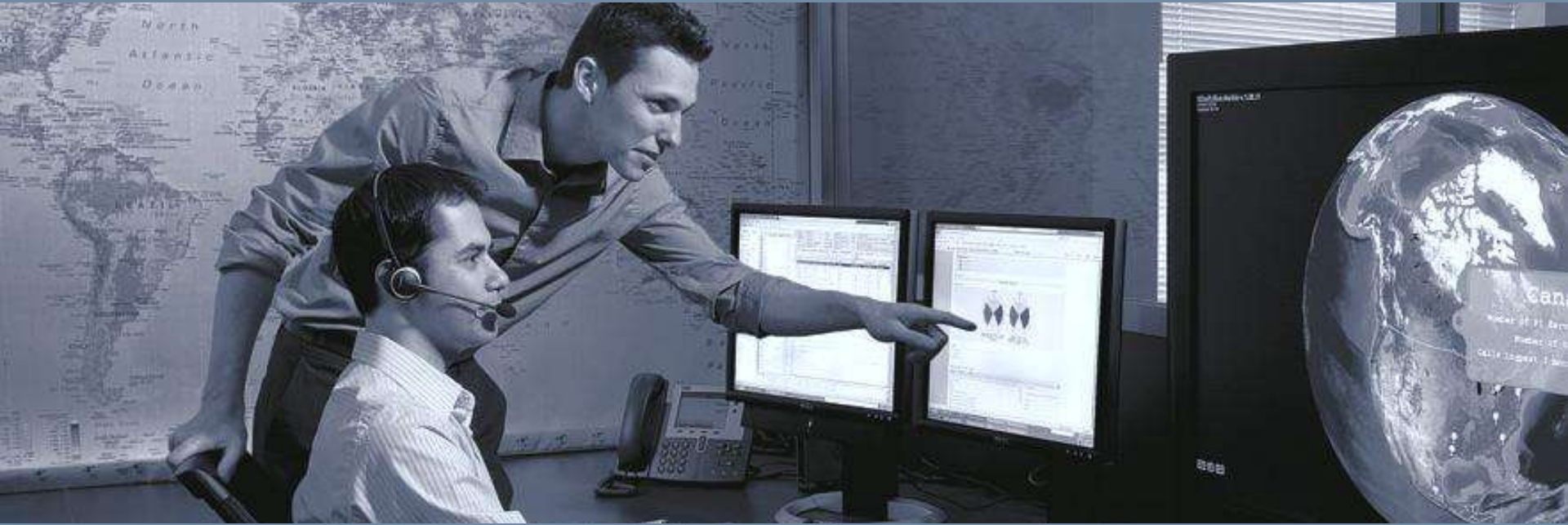




Regional Seminar Series Chicago, IL



PI System Roadmap

John Baier
Director, Product Management
OSIsoft

12 October, 2010

- 2009 Highlights
- PI System 2010
- PI System capabilities *coming soon*

The Recent Past: 2009 Highlights

2009 Themes: What did OSIsoft accomplish in 2009 to help you?



Security

Critical
Facilities are
Safe



Asset Centric PI

Define Once
Use Over and
Over



Localization

Use
Worldwide



Scaling, 64 bit

Use PI for
more data

- PI AF 2.x uses Windows Security since the first release
- The PI Server 3.4.380 can leverage Windows authentication mechanism
- PI Notifications leverages PI AF and PI Server Security



- True Single Sign-On (SSO)
- Easier to Manage
 - User Accounts in Windows/AD Only
 - Leverage AD Tools and Security Policies
- Upgrade Experience
 - Backward Compatibility
 - Simply Requires PI SDK 1.3.6



PI Identities for Role Based Security



sinusoid - Point Builder - PI System Management Tools

File View Tools Help

Collectives and Servers

Search

Servers

LG380

System Management Tools

Search

- Alarms
- Batch
- Data
- Interfaces
- IT Points
- Operation
- Points
 - Digital States
 - Performance Equations
 - Point Builder
 - Point Classes
 - Point Source Table
 - Totalizers
- Security
 - Database Security
 - Firewall
 - Identities, Users, & Groups
 - Mappings & Trusts
 - Security Settings

Server	Point	Point Security	Data Security
LG380	sinusoid	piadmin: A[r,w] piadmins: A[r,w] PIEngineers: A[r] PIWorld: A[r]	piadmin: A[r,w] piadmins: A[r,w] PIOperators: A[r] PIEng

General Archive Classic Security System

Point Security

- piadmin
- PIWorld
- piadmins
- PIEngineers

Add... Remove

Permissions for piadmin

Permission	Allow
Read	<input checked="" type="checkbox"/>
Write	<input checked="" type="checkbox"/>

Session Record

Data Security

- piadmin
- PIEngineers
- piadmins
- PIWorld
- PIOperators

OSI\lgarrigues | piadmin

Select

Select from server LG380

Type: All

Name	Description
piadmin	The administrative PI User with unrestricted access
piadmins	The administrative PI Group formerly named "piadmin"
pidemo	The generic PI User
PIEngineers	Any individual with engineering duties
PIOperators	Any individual with operational duties
PISupervisors	Any individual with supervisory duties
piusers	The generic PI Group formerly named "piuser"

Add

OK Cancel

Server - My_PI

- API trusts are disabled
- SDK trusts are disabled
- Explicit login disabled
- Explicit login for piadmin disabled
- Blank password not allowed

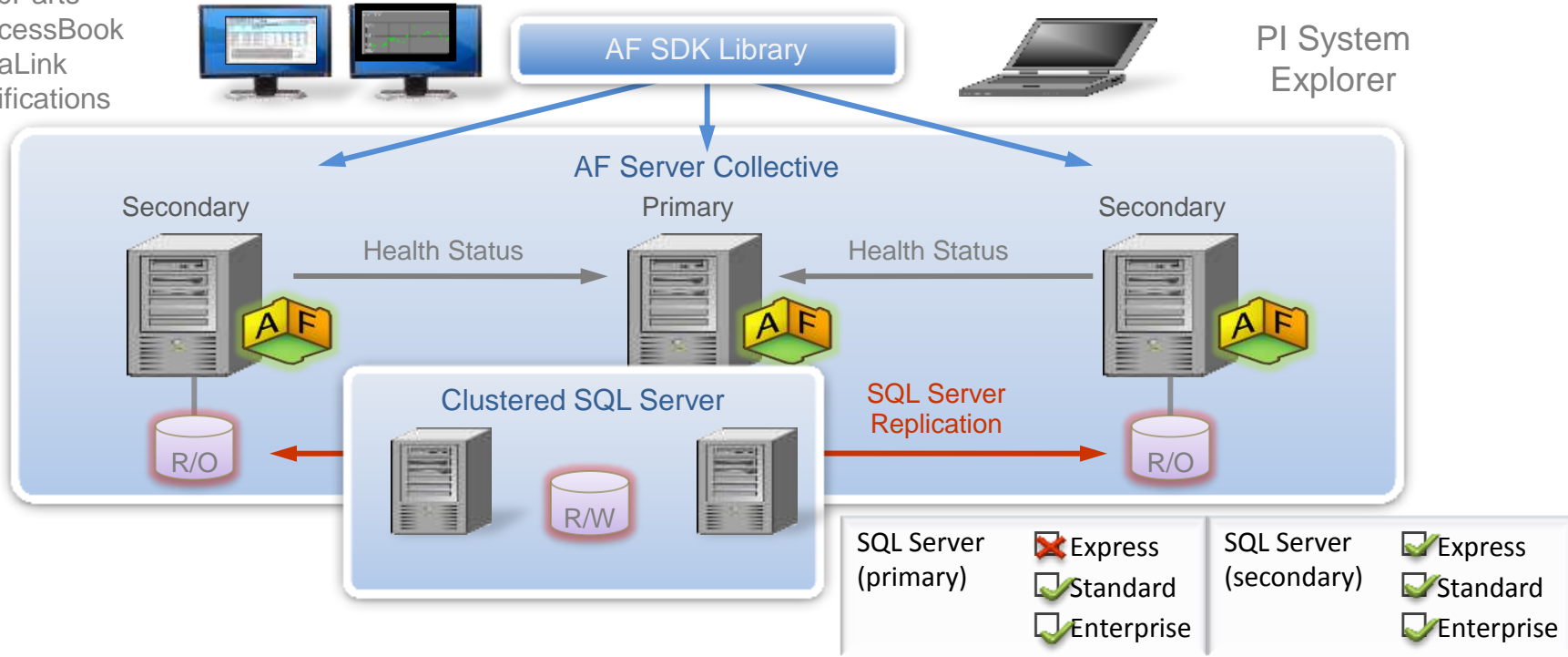
Note: This change requires a restart of the PI Base

- **OSIsoft Values**
 - Provide reliable data for your business
 - Minimize cyber risk
 - Ease compliance burden
- **Proactive Actions**
 - Security Development Lifecycle
 - Enable Built-In Defenses
 - Managed PI and First Responders
 - Dedicated Security Manager
- **Verification**
 - 2009 US Army NETCOM - Certificate of Noteworthiness (CoN)
 - 2008 Windows Logo Certification - Server 'Core'
 - 2006 National SCADA Test Bed - Cyber Assessment
 - 2004 EPRI and Utility Partner - Cyber Assessment

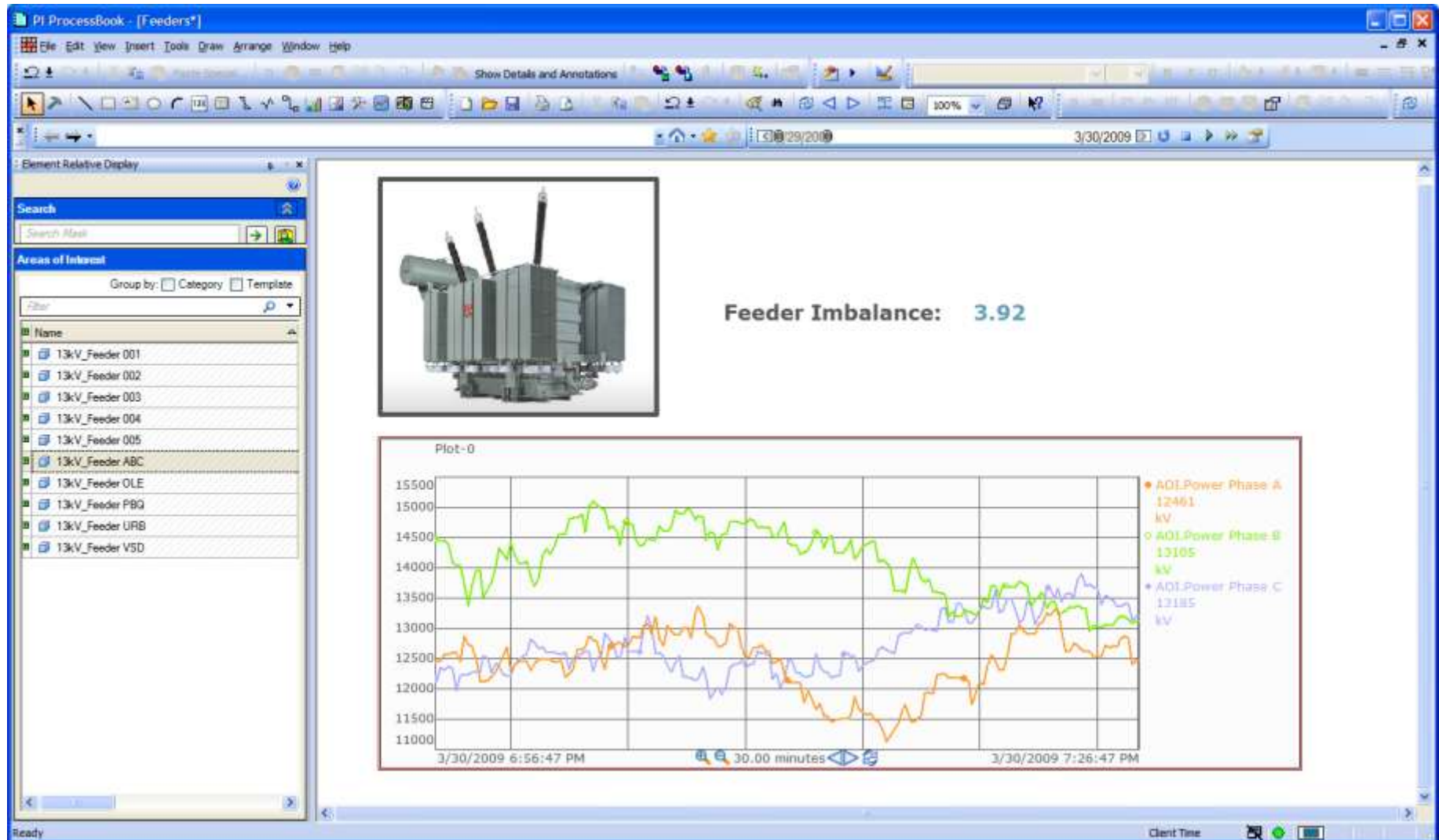
Asset Centric PI: AF HA

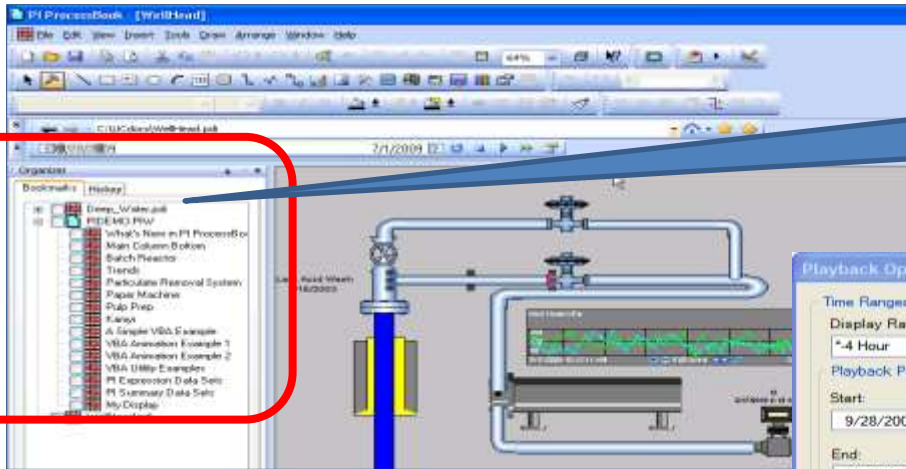


- AF-based PI Clients
- WebParts
 - ProcessBook
 - DataLink
 - Notifications

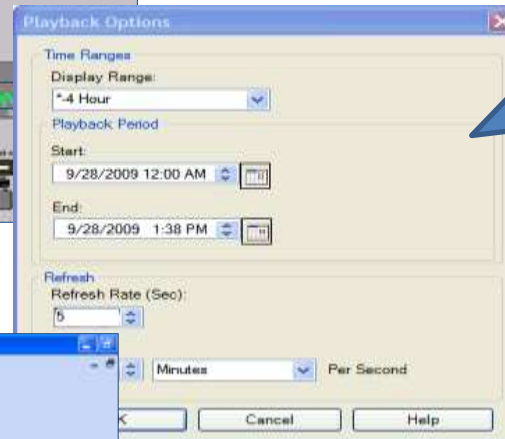


ProcessBook 3.2: Element Relative Displays

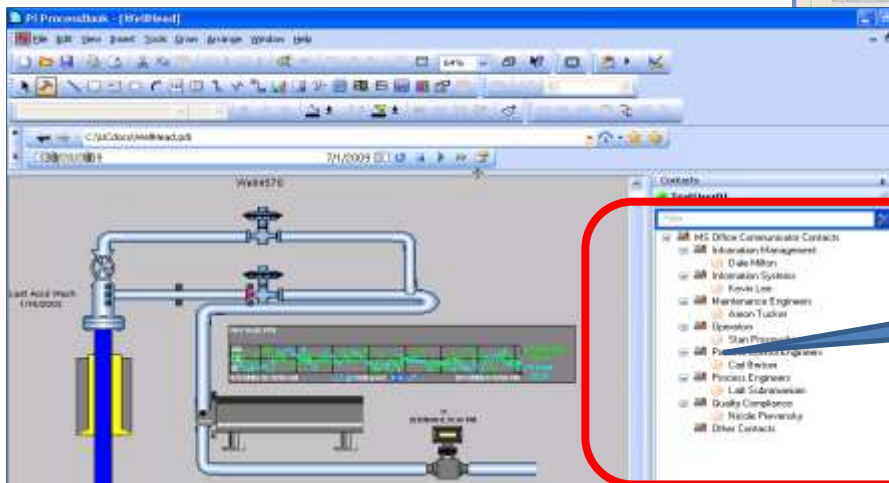




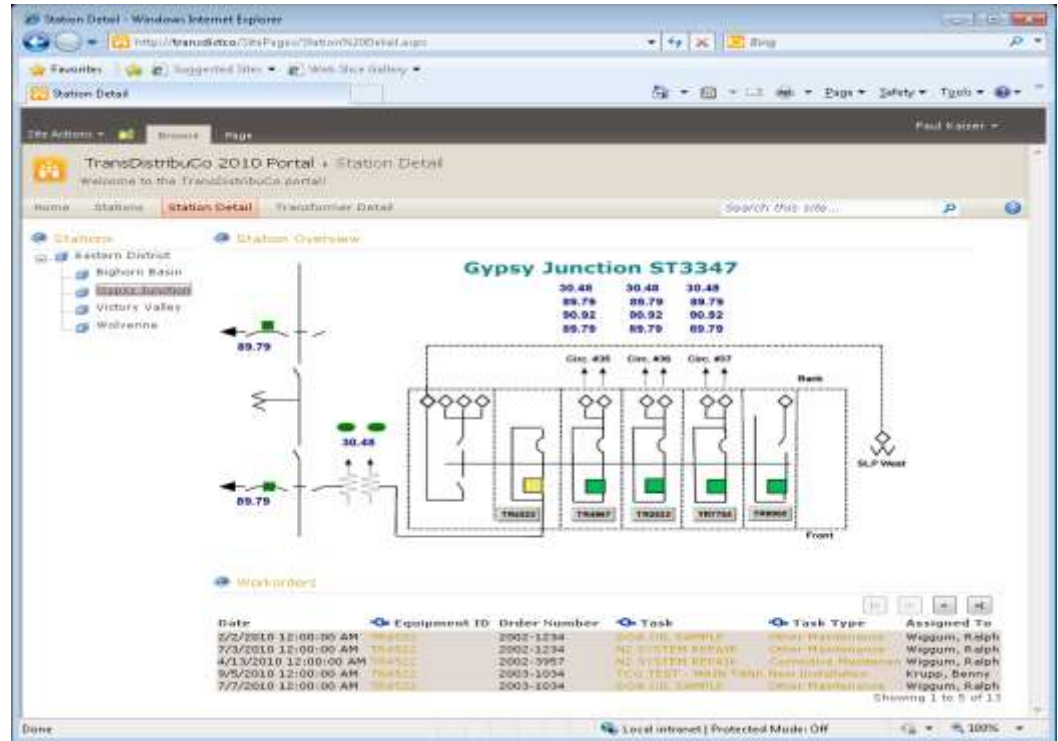
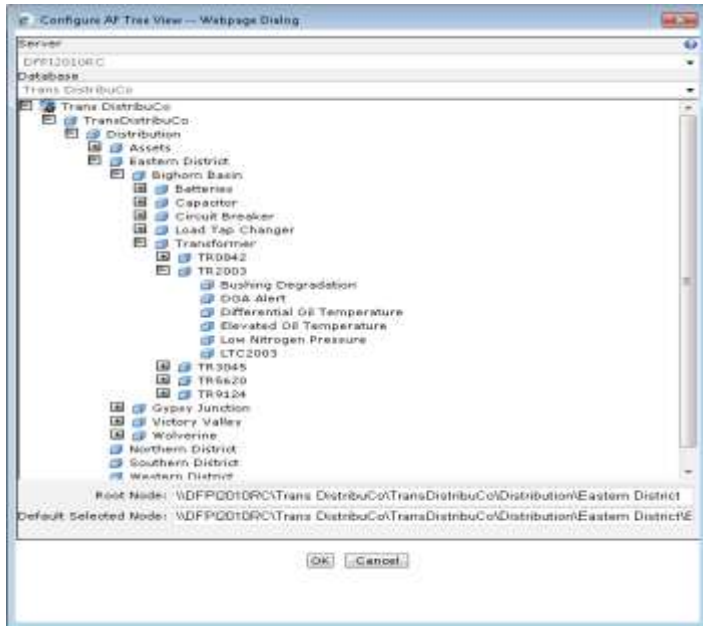
Browsing forward and backwards
Permanent books mark of favorites



Playback
Troubleshoot problems
by re-playing a display



Communicator
IM, Email Contacts
Easily send a PB
screenshot



- Available now
 - PI ProcessBook
 - PI ActiveView
 - PI WebParts
 - PI SDK
 - PI DataLink
 - In plan
 - PI System Explorer
 - PI Notifications
 - PI Manual Logger
- French
 - German
 - Russian
 - Spanish
 - Korean
 - Japanese
 - Brazilian Portuguese
 - Simplified Chinese

hallo *bonjour*
¡Hola **привет**
안녕하세요
こんにちは
你好 **Olá**
saluton

- Most server hardware today is 64 bits
- Microsoft aggressively moving to 64 bits
 - Windows Server 2008 R2, SharePoint 2010 are 64 bit only
- Allows full utilization of hardware and cache
- Mostly relevant to OSIsoft servers and customer applications
 - Programmatic interfaces are used by servers

2009 Releases



11-Oct-2010

Major release
 Minor release
 Service Pack

[◀ older](#)
[newer ▶](#)

Featured Products	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
CLIENT View more	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
PI ProcessBook										
PI ActiveView										
PI DataLink										
PI DataLink Server										
PI Manual Logger										
PI WebParts										
DATA ACCESS View more	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
PI JDBC										
PI ODBC										
PI OLEDB										
PI OLEDB Enterprise										
PI OPC DA/HDA Server										
PI SDK										
PI Web Services										
SERVER View more	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
PI ACE										
PI AF										
PI for StreamInsight										
PI Server										
PI Notifications										
INTERFACES View more Search	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011

ProcessBook
ERDs
Playback

PI SDK
64-Bit

PI OLEDB
64-Bit

PI AF
HA and
Scalability

PI Server
Windows
Security

PI
Notifications
Templates

2009 Themes: What did OSIsoft accomplish in 2009 to help you?



Security

- ✓ PI 380
- ✓ Deployment



Asset Centric PI

- ✓ ProcessBook
- ✓ WebParts
- ✓ Notifications
- ✓ AF HA



Localization

- ✓ 8 languages
- ✓ 5 products
- ✓ 3 planned



Scaling, 64-bit

- ✓ Servers
- ✓ Data Access
- ✓ Web Clients

The Present: PI System 2010

What are the benefits of PI System 2010



Simple

Easy to get started, system grows with you



Relevant

Deliver the most important data to right people



Collaborative

Everyone has access to the data, easy to share



PI Clients

- PI WebParts 2010
- PI DataLink 2010
- PI for Office 2010



PI Data Access

- PI OLEDB Enterprise 2010
- PI Web Services 2010
- PI JDBC 2010



PI Server

- PI Server 2010
- Assets and Tags

Business User Experience



Business Collaboration Platform

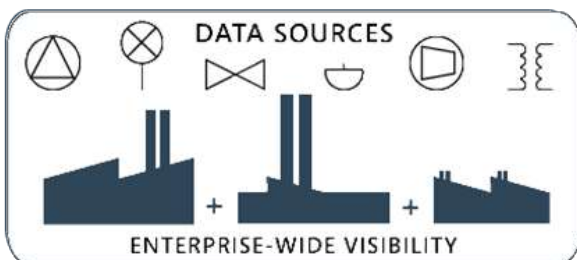
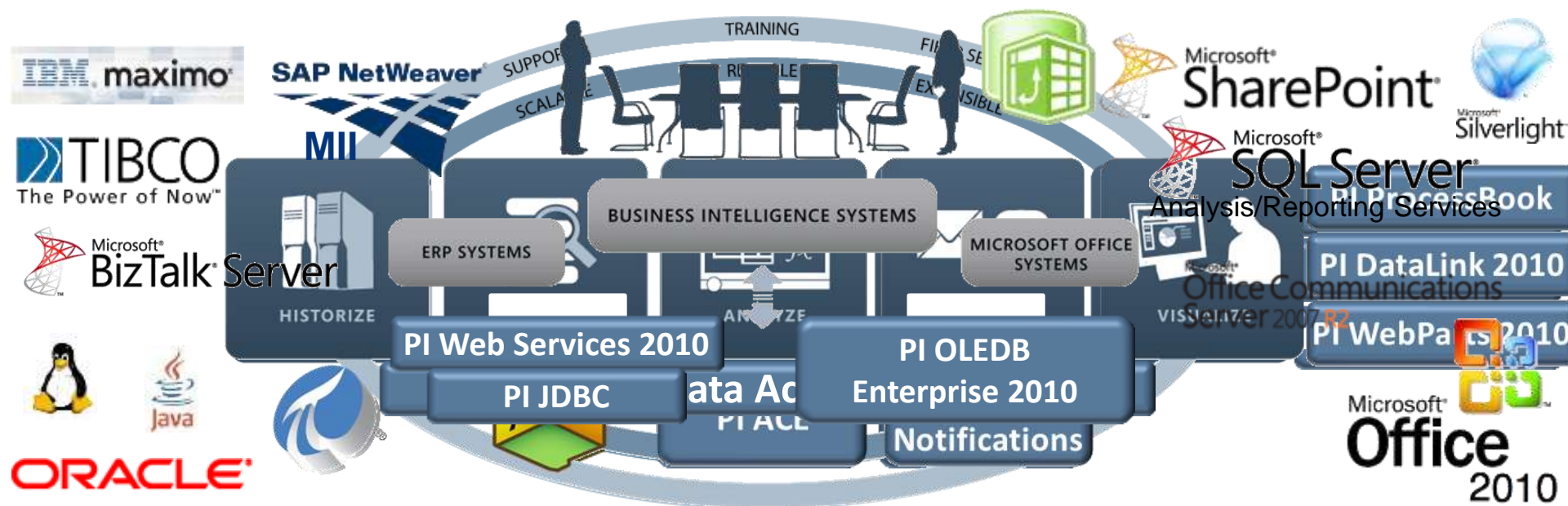


Data Infrastructure and BI Platform

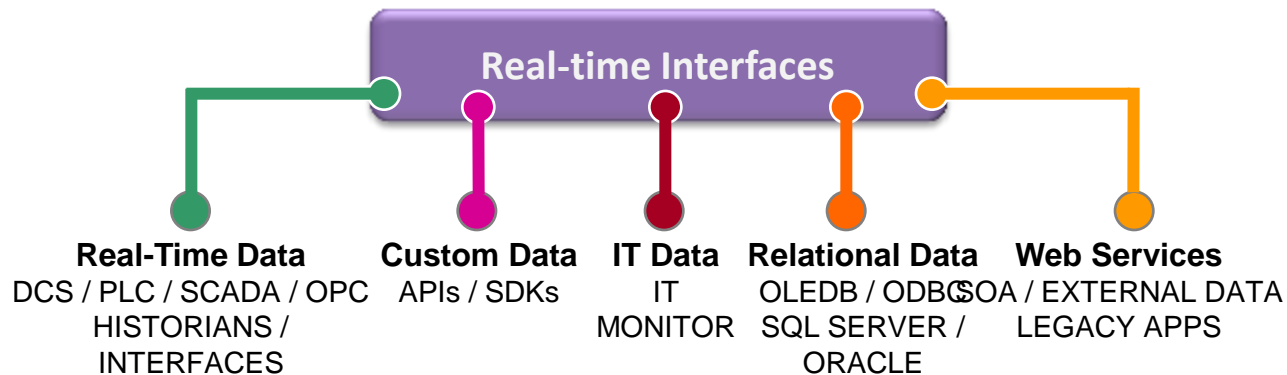
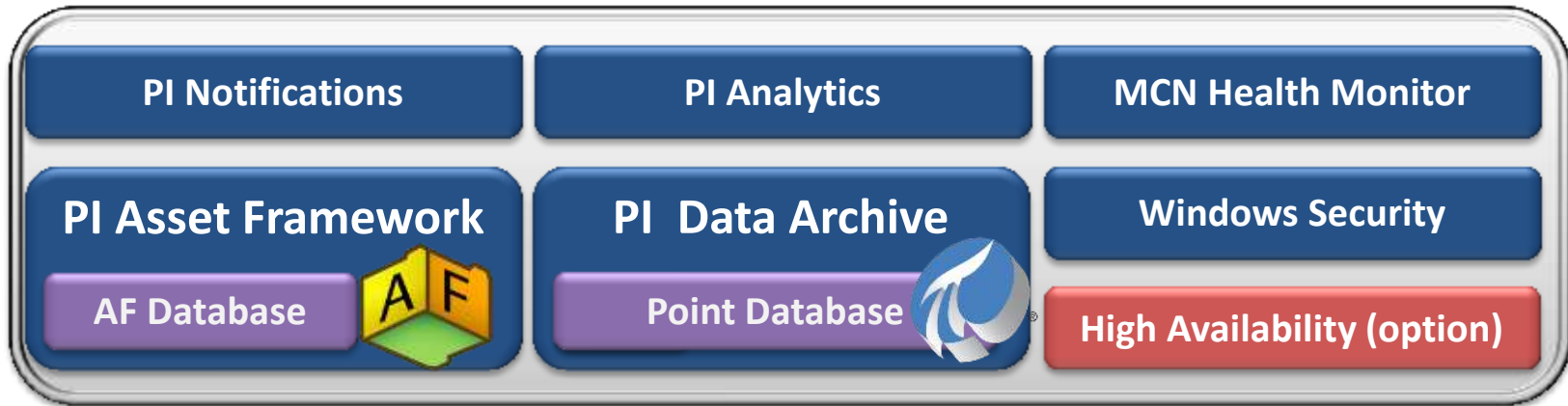


Experience





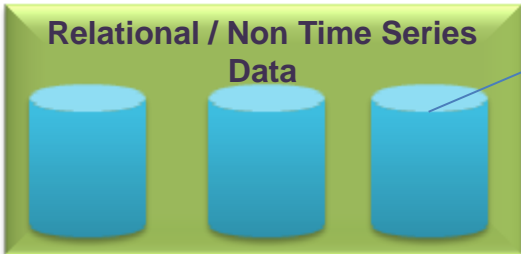
+
*All Released PI
 Client and Server
 Products*





Notifications

Analytics

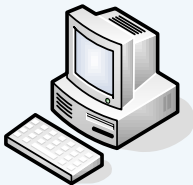


Mixed Applications

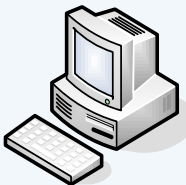
MDB based Applications



PI DataLink



IT Monitor



BatchView

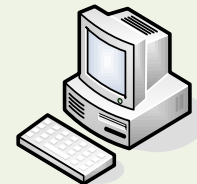


PI ACE

AF based Applications



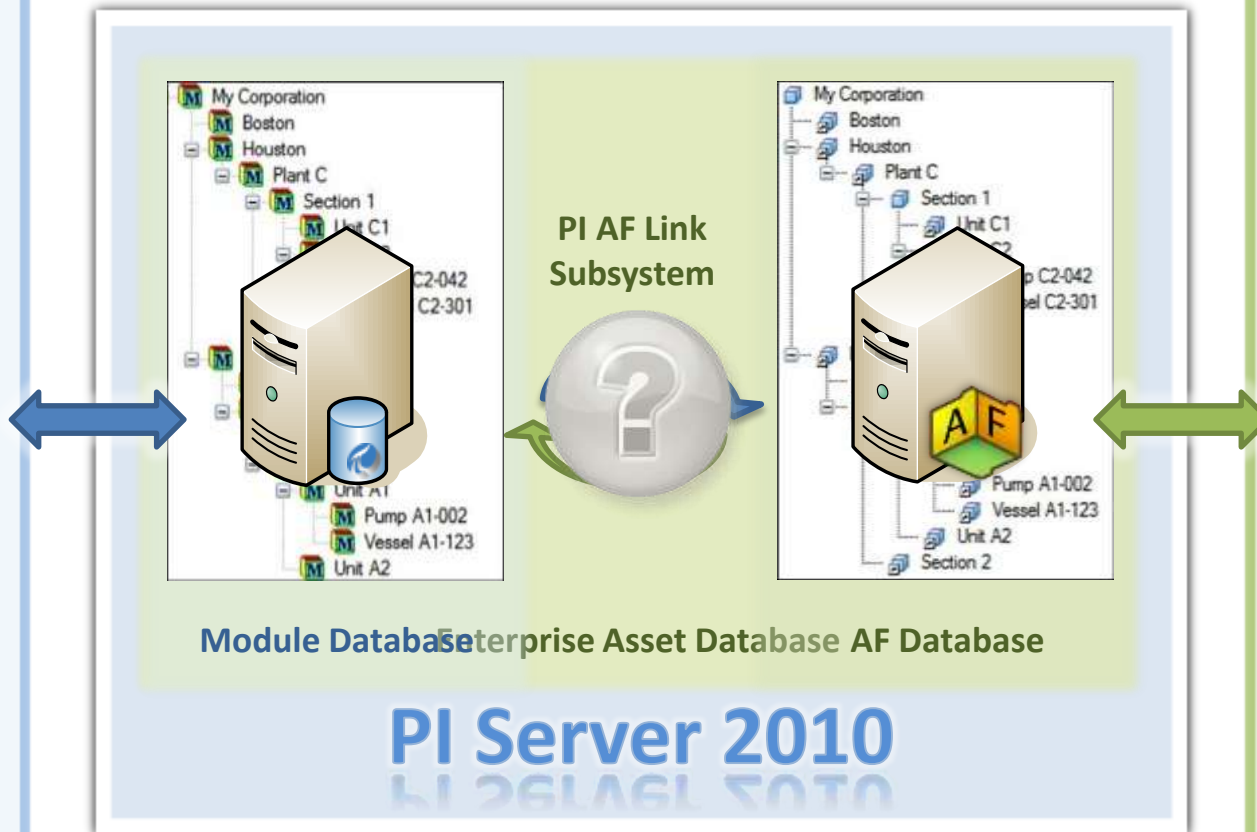
PI WebParts

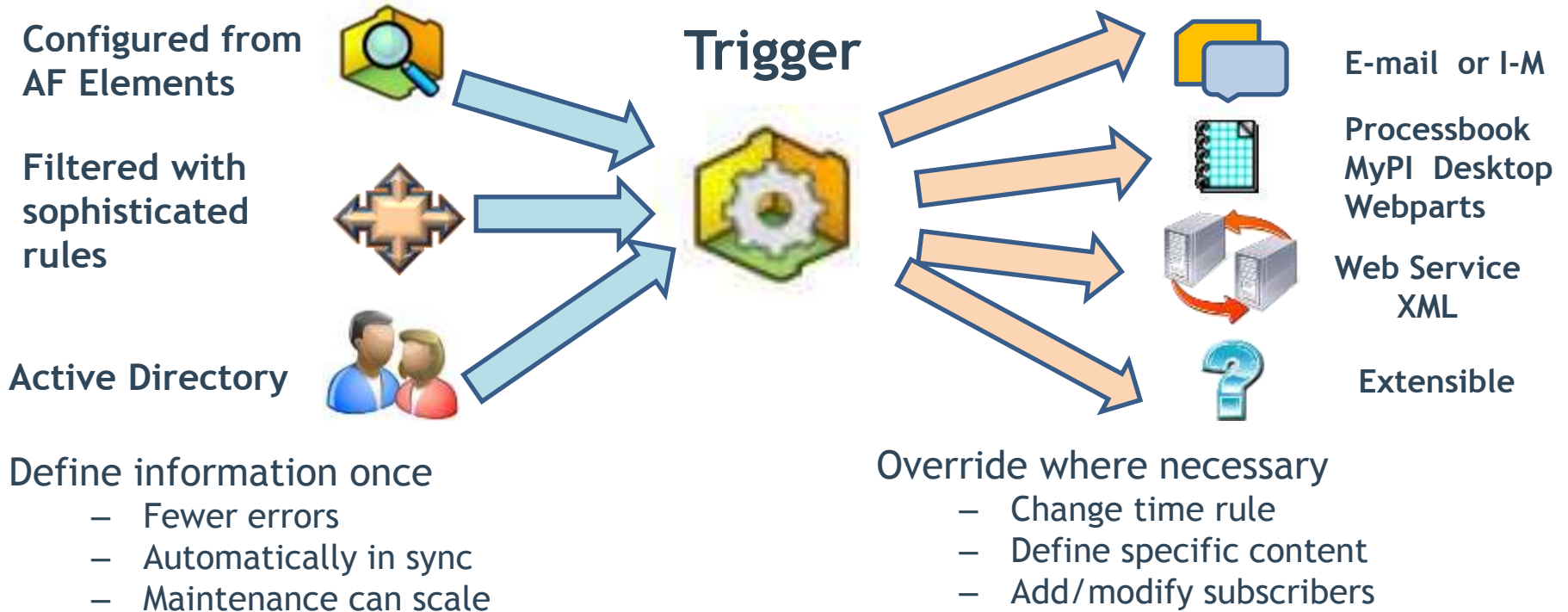


PI ProcessBook



Custom App





PI Data Access: The Products



SQL Family

Web Services

OPC Servers

OSIsoft SDKs

 Asset Information / Metadata

Notifications
Analytics

Relational / Non Time Series Data



PI Server



PI Server Collective

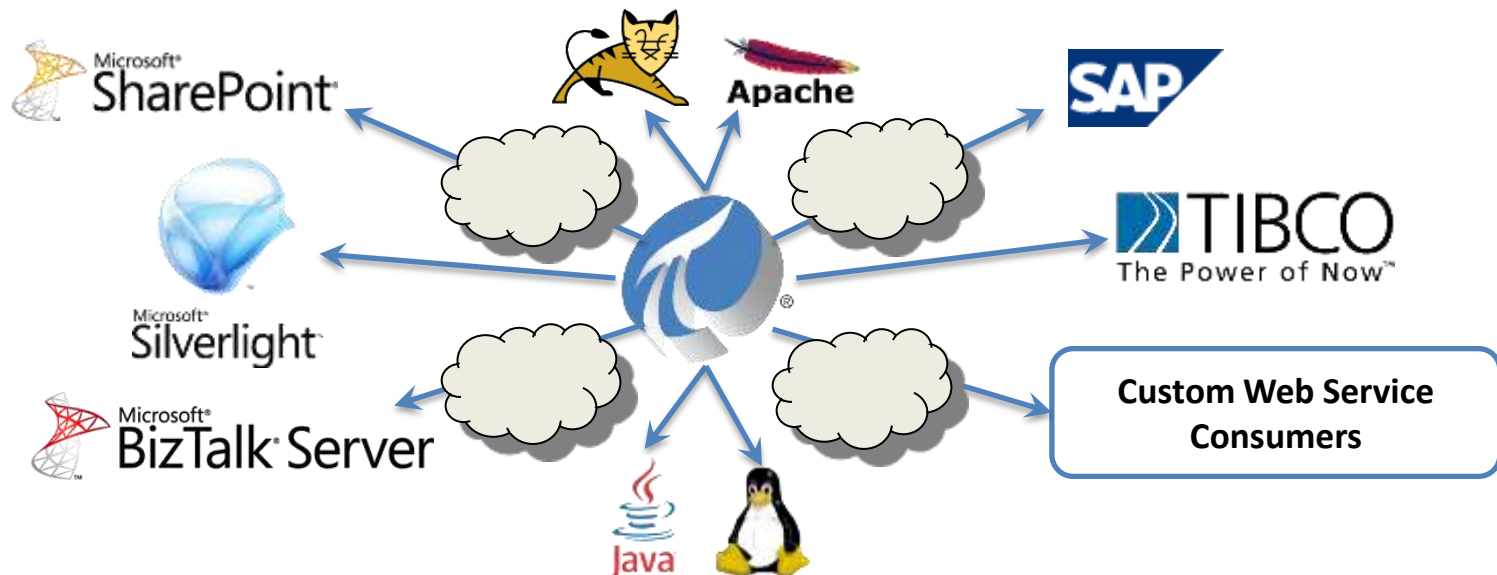
Time Series Data

- Provides access to **PI and AF** data through standard **web service** technologies
 - Many code-free integration scenarios
 - Any application, any language, any OS

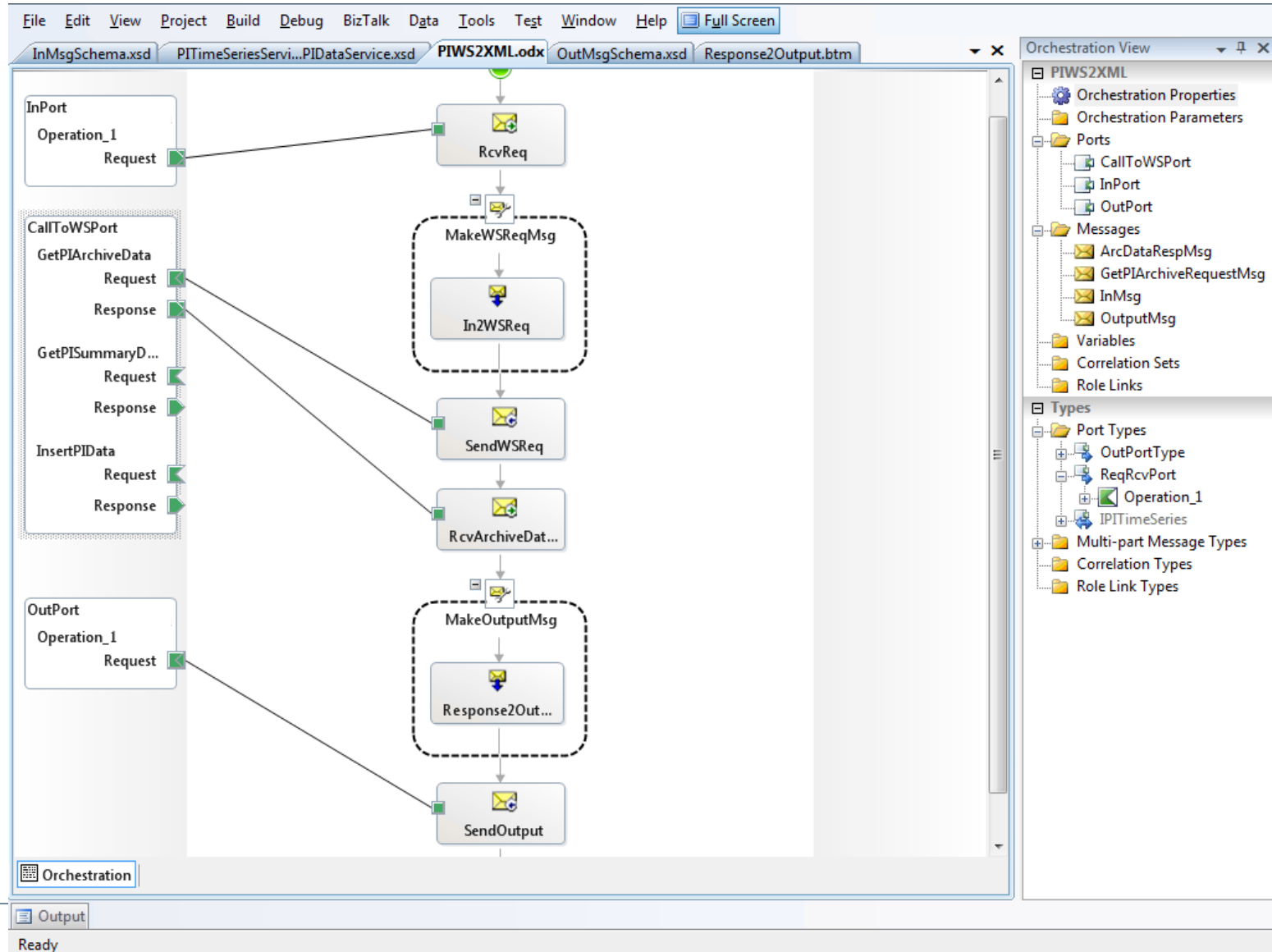
- Facilitates data access over **secure and distributed** environments
 - Nothing required on the client machine
 - Lightweight and firewall-friendly

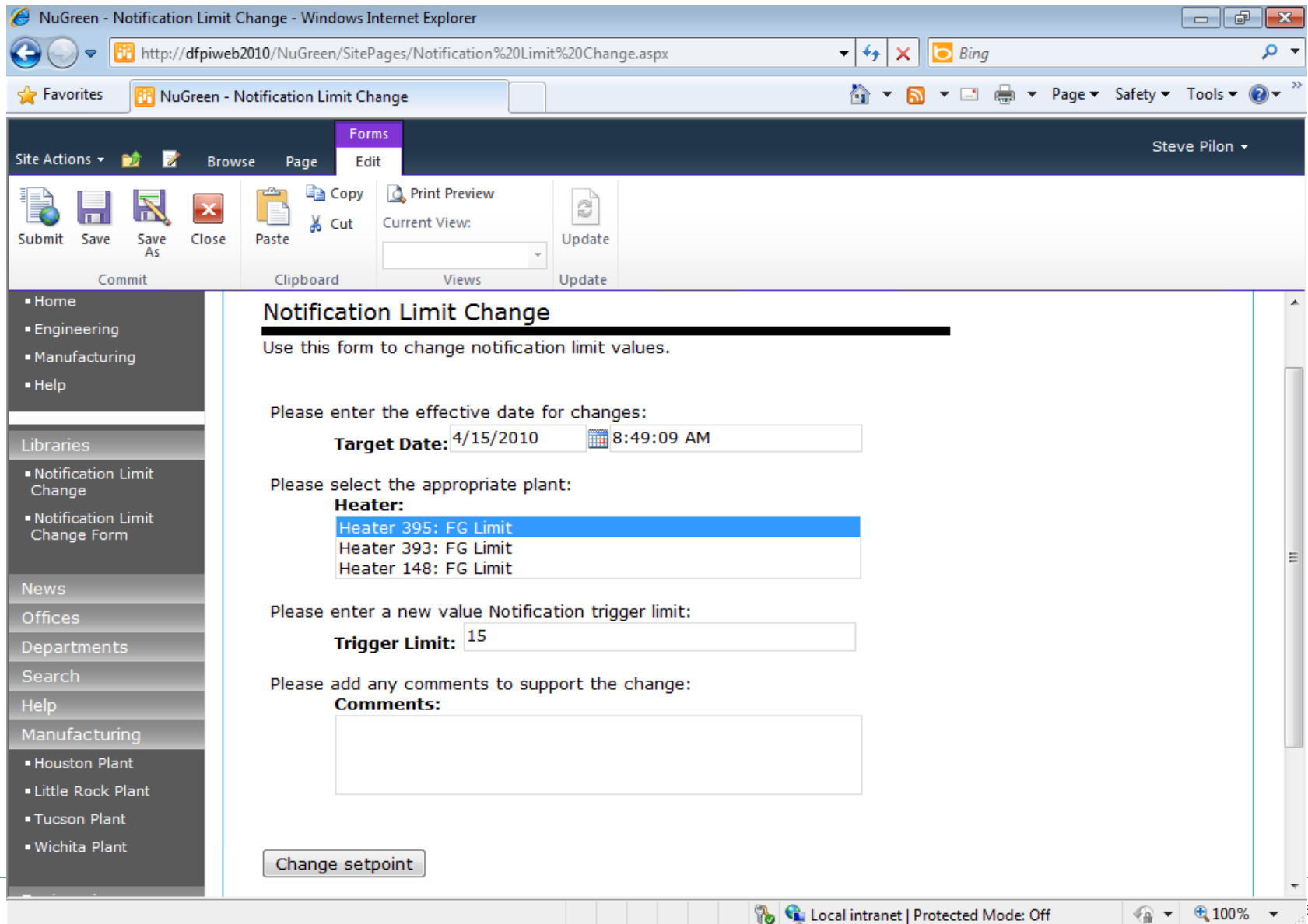


- Web-based visualization
- Integration scenarios
 - Line-of-Business (LoB) systems
 - Message buses
- Non-Windows environments



PI Web Services in Microsoft BizTalk





NuGreen - Notification Limit Change - Windows Internet Explorer

http://dfpiweb2010/NuGreen/SitePages/Notification%20Limit%20Change.aspx

NuGreen - Notification Limit Change

Forms

Steve Pilon

Site Actions | Browse | Page | Edit

Submit | Save | Save As | Close | Paste | Copy | Cut | Print Preview | Current View: | Update | Update

Commit | Clipboard | Views | Update

- Home
- Engineering
- Manufacturing
- Help

Libraries

- Notification Limit Change
- Notification Limit Change Form

News

Offices

Departments

Search

Help

Manufacturing

- Houston Plant
- Little Rock Plant
- Tucson Plant
- Wichita Plant

Notification Limit Change

Use this form to change notification limit values.

Please enter the effective date for changes:
Target Date: 4/15/2010 8:49:09 AM

Please select the appropriate plant:
Heater:
Heater 395: FG Limit
Heater 393: FG Limit
Heater 148: FG Limit

Please enter a new value Notification trigger limit:
Trigger Limit: 15

Please add any comments to support the change:
Comments:

Change setpoint

Local intranet | Protected Mode: Off | 100%

PI Web Services in Silverlight



Windows Internet Explorer window showing the PIDataServicesSL application. The address bar displays `http://localhost:52644/Default.aspx`. The page content includes a table of data points and a corresponding visualization.

Last response at 4/19/2010 6:22:47 PM, 34 total

Path	Time	Value	DisplayValue	LocalTime	FillColor
sinusoid	4/20/2010 1:20:27 AM	41.1247062683105	41.125	4/20/2010 1:20:27 AM	DarkBlue
cdt158	4/20/2010 1:20:27 AM	84.9165878295898	84.917	4/20/2010 1:20:27 AM	DarkBlue
cdep158	4/20/2010 1:14:27 AM	14	14	4/20/2010 1:14:27 AM	DarkBlue
BA:CONC.1	4/20/2010 1:22:27 AM	26.0399227142334	26.04	4/20/2010 1:22:27 AM	Green
BA:TEMP.1	4/20/2010 1:22:27 AM	38.2618522644043	38.262	4/20/2010 1:22:27 AM	Green
BadTag	1/1/0001 12:00:00 AM	NaN	PIPoint not found. \\dfpi2010RC\BadTag	1/1/0001 12:00:00 AM	Red

Below the table is a visualization showing horizontal bars for each tag, color-coded to match the 'FillColor' column in the table above.

- Set of drivers that expose PI System data in a relational database view
 - OLE DB, JDBC, ODBC
- Custom applications or integration scenarios



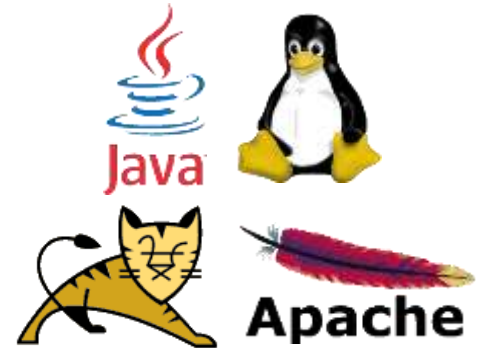
ORACLE



**Custom SQL
Applications**

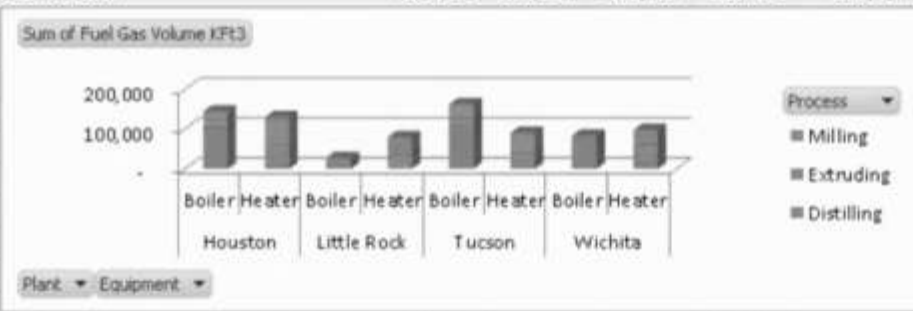


- Display data in an Apache Tomcat portal
- Integrate PI System data in a Line-of-Business (LoB) System (LIMS, PM)
- Business Intelligence (BI) engines (PowerPivot, Cognos, SAS, SAP BO)
- Analysis/Reporting Services



Corporate Fuel Gas Consumption

Row Labels	Cracking	Distilling	Extruding	Milling	Grand Total
Houston	121,818		54,812	98,063	274,694
Boiler	108,161		10,049	26,473	144,684
Heater	13,657		44,763	71,590	130,010
Little Rock		44,952	63,409		108,361
Boiler		9,464	18,646		28,110
Heater		35,488	44,763		80,251
Tucson	125,455	36,175		92,188	253,819
Boiler	107,410	17,321		38,036	162,767
Heater	18,045	18,854		54,152	91,052
Wichita	91,865	45,170	44,546		181,581
Boiler	57,075	18,199	8,468		83,741
Heater	34,790	26,971	36,078		97,840
Grand Total	339,138	126,297	162,767	190,252	818,454



Sum of Fuel Gas Volume Kft3

Process

- Milling
- Extruding
- Distilling

Plant: Equipment



Reporting Services - Fuel Gas Utilization and Benchmarking Report - Windows Internet Explorer

http://dfpiweb2010/_layouts/ReportServer/RSViewerPage.aspx?rv:RelativeReportUrl=/powerpivot%20g: Bing



Reporting Services - Fuel Gas Utilization and Benc...

PowerPivot Site > PowerPivot Gallery

Find Next 100%

Fuel Gas Utilization and Benchmarking Report

Asset ID	Company	Equipment	Time	Fuel Gas Flow Kft3Hr	Average of Fuel Ratio Ft3Ton
B-045	NuGreen	Boiler	3/10/2010 1:55:52 AM	29.7158317565918	687.52
B-117	NuGreen	Boiler	3/10/2010 1:55:52 AM	22.6283931732178	266.70
B-125	NuGreen	Boiler	3/10/2010 1:55:52 AM	18.3965110778809	815.54
B-209	NuGreen	Boiler	3/10/2010 1:55:52 AM	27.496036529541	3415.82
B-210	NuGreen	Boiler	3/10/2010 1:55:52 AM	69.3808746337891	2098.74
B-235	NuGreen	Boiler	3/10/2010 1:55:52 AM	81.8242492675781	2475.15
B-309	NuGreen	Boiler	3/10/2010 1:55:52 AM	67.8209686279297	2922.68
B-334	NuGreen	Boiler	3/10/2010 1:55:52 AM	13.3796691894531	213.23
B-352	NuGreen	Boiler	3/10/2010 1:55:52 AM	58.5128059387207	1871.39

Done Local intranet | Protected Mode

Business User Experience



Familiar User Experience

1. Self-service Business Insight
2. Data Exploration and Analysis
3. Data and Contextual Visualization

Business Collaboration Platform



Integrated Content and Collaboration

1. Dashboards and Composites
2. Enterprise Search
3. Content Management

Data Infrastructure and BI Platform



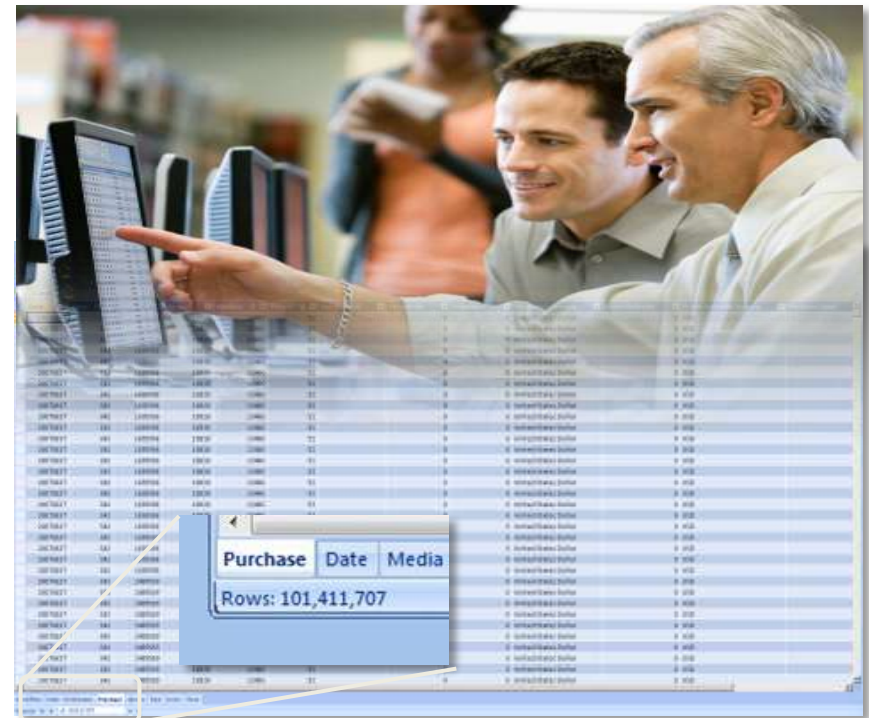
Data Infrastructure and BI Platform

1. Analyze, Integrate, Manage
2. Master Data
3. Data Mining and Data Warehousing

Microsoft
Excel 2010

Introducing PowerPivot for Excel 2010

- Enable users to perform self-service analysis and intuitively build their own BI solutions
- Allow users to interactively explore and perform calculations on large data sets
- Integrate data from multiple sources
- Minimize dependence on IT support



What's New with Visualization in PI System 2010?



Excel spreadsheet showing data for Tucson. A blue starburst labeled "Reports" is overlaid on the data.

Timestamp	B309_FG903	B555_FG120	B210_FG00
20-Apr-10 14:33:18	70.0065079	84.9462814	67.298210
20-Apr-10 14:28:18	68.5299	87.1578293	67.866409
20-Apr-10 14:18:18	67.4188	91.2100906	67.433746
20-Apr-10 14:08:18	67.4188	81.83	63.6964607
20-Apr-10 13:58:18	67.4188	81.83	63.6964607
20-Apr-10 13:48:18	67.4188	81.83	63.6964607
20-Apr-10 13:38:18	67.4188	81.83	63.6964607

Web browser screenshot of the NUGREEN dashboard. A blue starburst labeled "Dashboards" is overlaid on the right side.

Milling Process - Windows Internet Explorer
<http://dfpweb2010/nuGreen/Engineering/Process/2010/04/20/Milling0420Process.aspx>

Navigation: Home, Operations, Manufacturing, Engineering, Reports, Marketing, Sales, Accounting

Equipment Documents:

- Equipment Benchmarking Report
- Fuel Gas Rates
- Fuel Gas Utilization Report

PI Trend chart showing data for various equipment.

Milling Production Schedule:

Production	Raw Material		Product			Today's Performance			
	Rate (Tons/Hr)	Target (Tons/Hr)	Capacity (Tons/Hr)	Sales (Tons/Day)	Available Tons	Days	Energy %	Reliability %	Quality %
Houston	32.9	35.0	50	1,300	10,638	8.9	88206%	9557%	9847%

Notification Delivery window showing details for a fuel gas utilization notification.

Notification Delivery

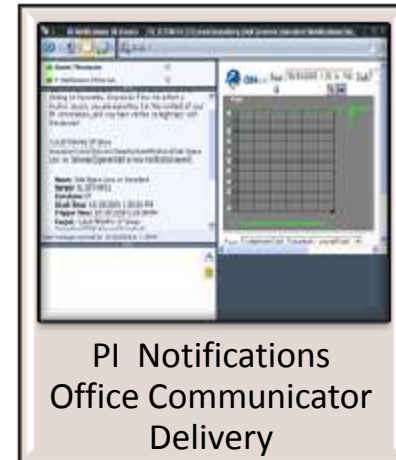
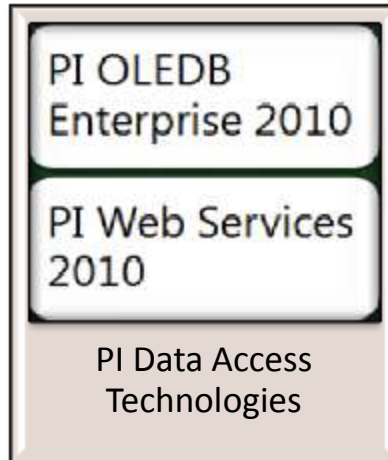
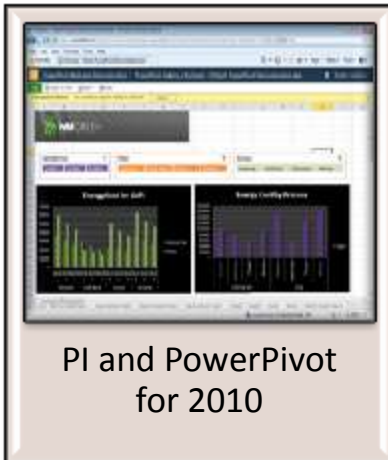
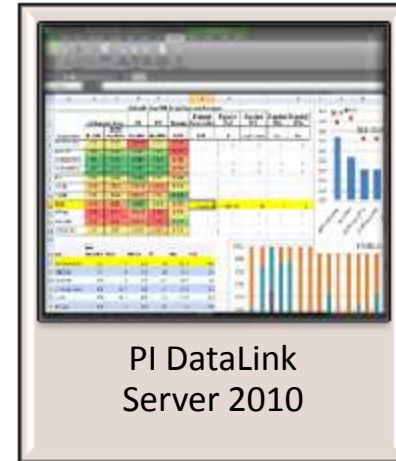
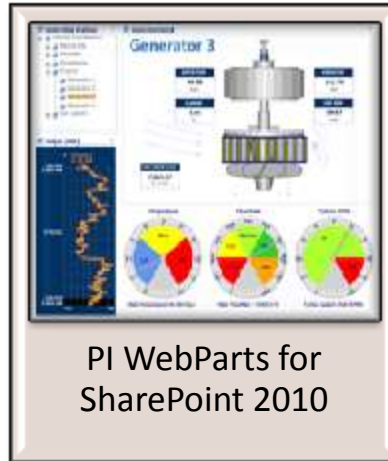
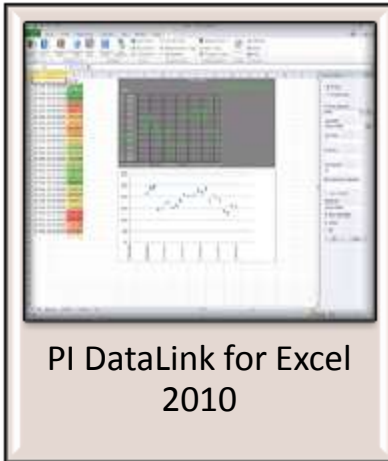
Name: Fuel gas utilization: Milling Process is Over
 Server: DFPI2010RC
 Database: NuGreen
 Start Time: 4/16/2010 11:24:10 AM
 Trigger Time: 4/16/2010 11:24:10 AM
 Target: \\DFPI2010RC\NuGreen\N
 Value: High
 Priority: Normal

Link:
[Milling Process, Fuel Gas Trend](#)
[Tucson - Process Overview](#)

Actions:
[Acknowledge](#)
[Acknowledge with Comment](#)

Operations Performance Scorecard table with a blue starburst labeled "Scorecards" overlaid on the right.

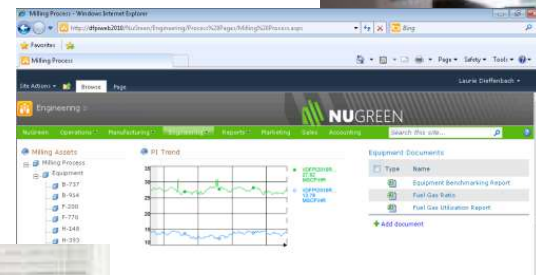
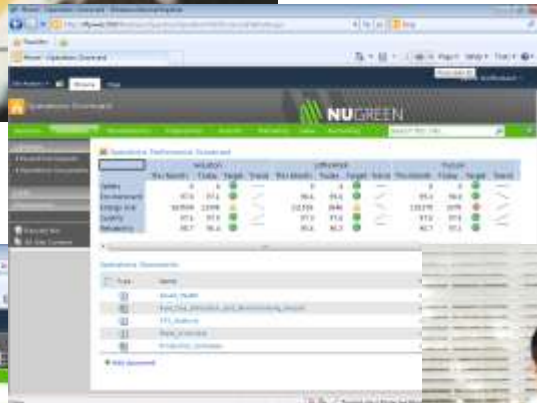
	Houston				Little Rock				Tucson			
	This Month	Today	Target	Trend	This Month	Today	Target	Trend	This Month	Today	Target	Trend
Safety	0	0	0	—	0	0	0	—	0	0	0	—
Environment	97.0	97.1	97.0	↗	98.6	99.0	98.6	↗	97.0	97.1	97.0	↗
Energy Use	363594	11998	363594	↘	111526	3646	111526	↘	363594	11998	363594	↘
Quality	97.6	97.9	97.6	↗	97.3	97.6	97.3	↗	97.6	97.9	97.6	↗
Reliability	95.7	96.4	95.7	↗	95.6	96.3	95.6	↗	96.7	97.1	96.7	↗



Management



Knowledge Worker

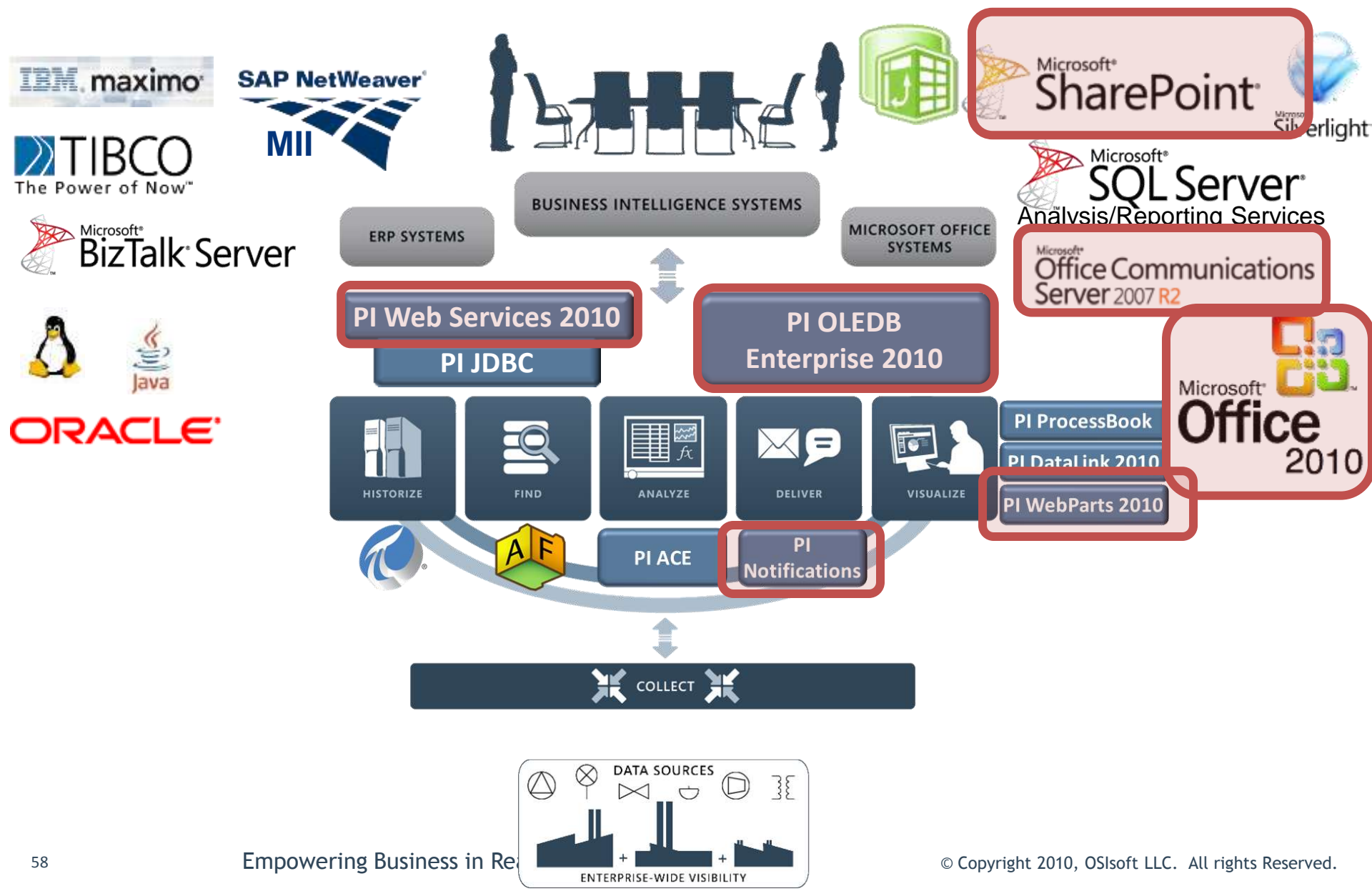


Milling Production Schedule				Inventories		Today's Performance		
Target	Capacity	Raw Material	Product	Sales	Product	Energy	Reliability	Quality
(Tons/Hr)	(Tons/Hr)	(Tons)	(Tons/Day)	(Tons)	(Tons)	2%	95%	98%
35.0	50	30,120	35.9	1,200	10,000	88200%	9557%	9847%

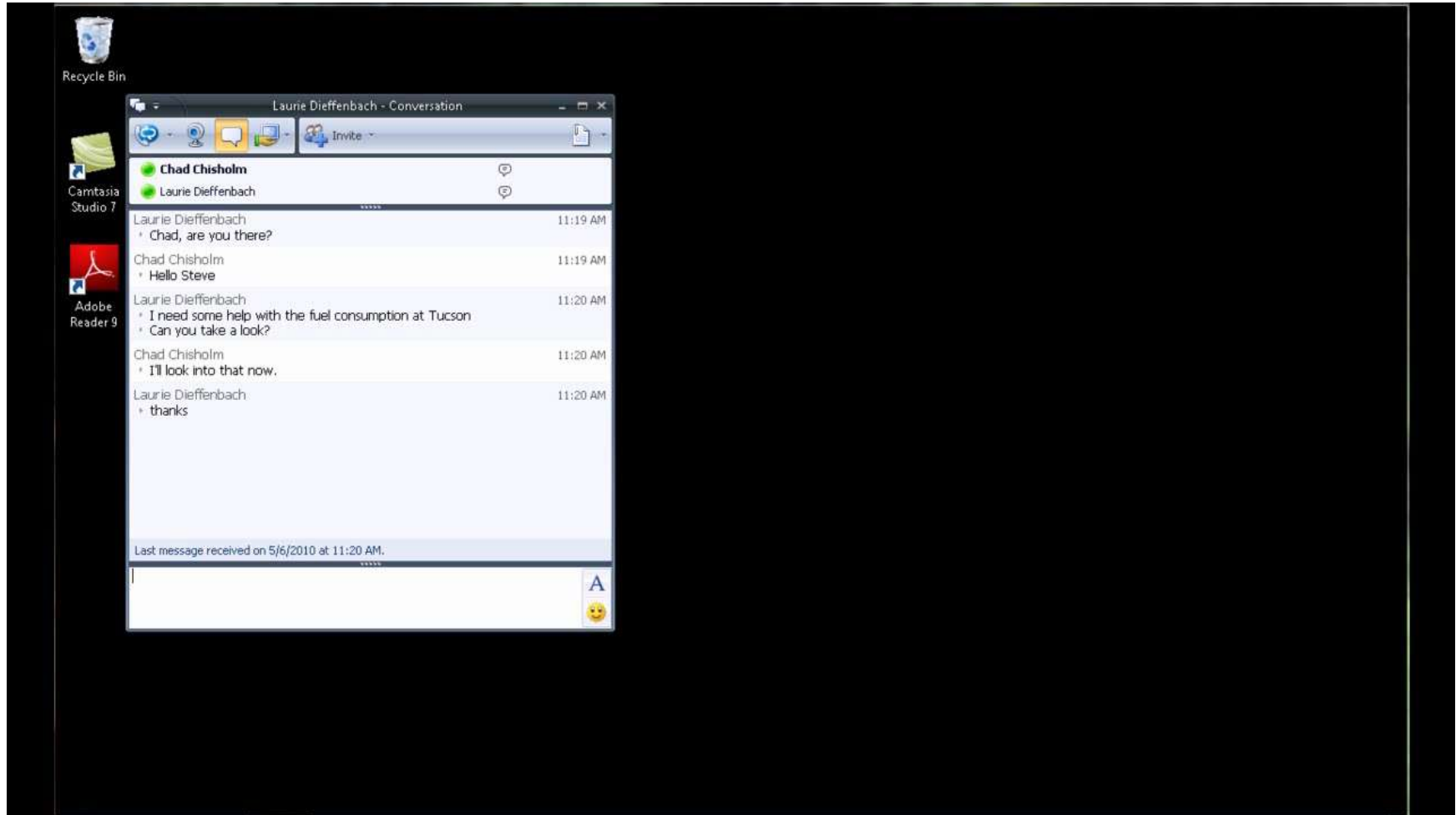


Content Creator

Respond to an Alert



Notification





- Productivity through familiar and intuitive tools
- End users to create their own BI solutions
- Improve sharing and discovery of insights

- Organizational productivity through dashboards
- Visibility into key team and organizational metrics
- Business user efficiency and collaboration



- Cut costs by leveraging existing IT investments
- Scale-out to support BI for all users
- Familiar and intuitive management tools



PI System 2010 Releases



11-Oct-2010

Major release
 Minor release
 Service Pack

[◀ older](#)
[newer ▶](#)

Featured Product	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011
CLIENT View more	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011
PI DataLink 2010 <i>Office 2010</i>								
PI ProcessBook								
PI ActiveView								
PI DL Server 2010 <i>SharePoint 2010</i>								
PI DataLink								
PI DataLink Server								
PI Manual Logger								
PI WebParts								
DATA ACCESS View more	2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010		
PI JDBC								
PI JDBC 2010 <i>1st Release</i>								
PI ODBC								
PI OLEDB								
PI OLEDB Enterprise								
PI OLEDB Enterprise 2010 <i>1st Release</i>								
PI OPC DA/HDA Server								
PI OPC Server <i>OPC Compliance Tested</i>								
PI SDK								
PI Web Services								
PI Web Services 2010 <i>1st Release</i>								
SERVER View more	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
PI ACE								
PI AF								
PI for StreamInsight								
PI Server <i>Assets and Tags, Scalability, Packaging</i>								
PI Notifications								
INTERFACES View more Search	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011

PI System 2010 - Simple, Relevant, Collaborative



Simple

- ➔ Simple naming and versioning
- ➔ Single PI Server package
- ➔ Aligned release schedule

Relevant

- ➔ Organize PI data around assets
- ➔ Migration of existing asset definitions
- ➔ Integration of PI with business systems
- ➔ New ways to analyze data

Collaborative

- ➔ Use the tools you already know
- ➔ Business Intelligence for the masses
- ➔ Easily share insights with others

Coming Soon: Enhancements in 4Q2010

Enhancements to Asset Meta-Data
using PI AF

- AF Builder - part of PI AF 2010 R2 release
 - Allows you to build or edit AF structure in bulk
 - Uses MS Excel
- Complete AF Attribute Access
 - PI WebParts 2010 R2
 - PI Web Services 2010 R2
- AF Support
 - PI JDBC 2010 R2 (uses PI OLEDB Enterprise)
- PI Notifications 2010
 - String Formatting for Message Body
 - Native 64-Bit support
 - Microsoft Lync Support (new name for Office Communicator)

AFBuilder - Build AF Hierarchy in Bulk



Book2 - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Add-Ins PI AF Builder Team

Current AF Connection
 PISystem: SKWANE6400
 Database: AF Demo

Database
 Headers
 Select All
 Deselect All
 Delete
 Export
 Library
 Elements
 Event Frames
 Errors
 About
 Help
 Resources

Connection
 Export to AF
 Import from AF
 Resources

A	B	C	D	E	F	G	H	I
Selected(x)	Parent	Name	ObjectType	Template	Description	Categories	AttributeDataReference	AttributeDefaultUOM
x		Power Plant #1	Element	Plant	Combined cycle power plant			
x	Power Plant #1	Train1	Element	Train	Combined Cycle Power Plant Train			
x	Power Plant #1\Train1	Plant1	Element	Plant	Combined cycle power plant			
x	Power Plant #1\Train1\Plant1	Gas Turbine1	Element	Gas Turbine	Gas Turbine			
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Exit Flow	Attribute		Gas Turbine Exit Flow		PI Point	klb/hr
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Exit Temperature	Attribute		Gas Turbine Exit Temperature		PI Point	°C
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Fuel Gas Flow	Attribute		Gas Turbine Fuel Flow		PI Point	klb/hr
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Inlet Flow	Attribute		Gas Turbine Inlet flow		PI Point	klb/hr
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Inlet Temperature	Attribute		Gas Turbine Inlet Temperature		PI Point	°C
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Power Output	Attribute		Gas Turbine MW Output		PI Point	MW
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Serial Number	Attribute		Gas Turbine Serial Number			
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Pump Type A1	Element	Pump Type A	Pump Type A Template	Pumps;		
x	Power Plant #1\Train1\Plant1\Gas Turbine1\Pump Type A1	Pump Casing Temperature	Attribute		Temperature of the pump casing		PI Point	°F
x	Power Plant #1\Train1\Plant1\Gas Turbine1\Pump Type A1	Pump Serial Number	Attribute		Serial Number for the pump			
x	Power Plant #1\Train1\Plant1\Gas Turbine1	Pump Type A2	Element	Pump Type A	Pump Type A Template	Pumps;		
x	Power Plant #1\Train1\Plant1\Gas Turbine1\Pump Type A2	Pump Casing Temperature	Attribute		Temperature of the pump casing		PI Point	°F
x	Power Plant #1\Train1\Plant1\Gas Turbine1\Pump Type A2	Pump Serial Number	Attribute		Serial Number for the pump			
x	Power Plant #1\Train1\Plant1	Gas Turbine2	Element	Gas Turbine	Gas Turbine			
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Exit Flow	Attribute		Gas Turbine Exit Flow		PI Point	klb/hr
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Exit Temperature	Attribute		Gas Turbine Exit Temperature		PI Point	°C
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Fuel Gas Flow	Attribute		Gas Turbine Fuel Flow		PI Point	klb/hr
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Inlet Flow	Attribute		Gas Turbine Inlet flow		PI Point	klb/hr
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Inlet Temperature	Attribute		Gas Turbine Inlet Temperature		PI Point	°C
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Power Output	Attribute		Gas Turbine MW Output		PI Point	MW
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Serial Number	Attribute		Gas Turbine Serial Number			
x	Power Plant #1\Train1\Plant1\Gas Turbine2\Pump Type A1	Pump Casing Temperature	Attribute	Pump Type A	Pump Type A Template	Pumps;	PI Point	°F
x	Power Plant #1\Train1\Plant1\Gas Turbine2\Pump Type A1	Pump Serial Number	Attribute		Serial Number for the pump			
x	Power Plant #1\Train1\Plant1\Gas Turbine2	Pump Type A2	Element	Pump Type A	Pump Type A Template	Pumps;		
x	Power Plant #1\Train1\Plant1\Gas Turbine2\Pump Type A2	Pump Casing Temperature	Attribute		Temperature of the pump casing		PI Point	°F
x	Power Plant #1\Train1\Plant1\Gas Turbine2\Pump Type A2	Pump Serial Number	Attribute		Serial Number for the pump			

Sheet1 Sheet2 Sheet3

Ready 100%

AFBuilder - Configure AF Attributes in Bulk



Book2 - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Add-Ins PI PI AF Builder Team

Current AF Connection
PISystem: SKWANE6400
Database: AF Demo

Database AF

Headers
(x) Select All
() Deselect All

Delete Export

Library Elements Event Frames

Import from AF

Errors
About
Help
Resources

Parent

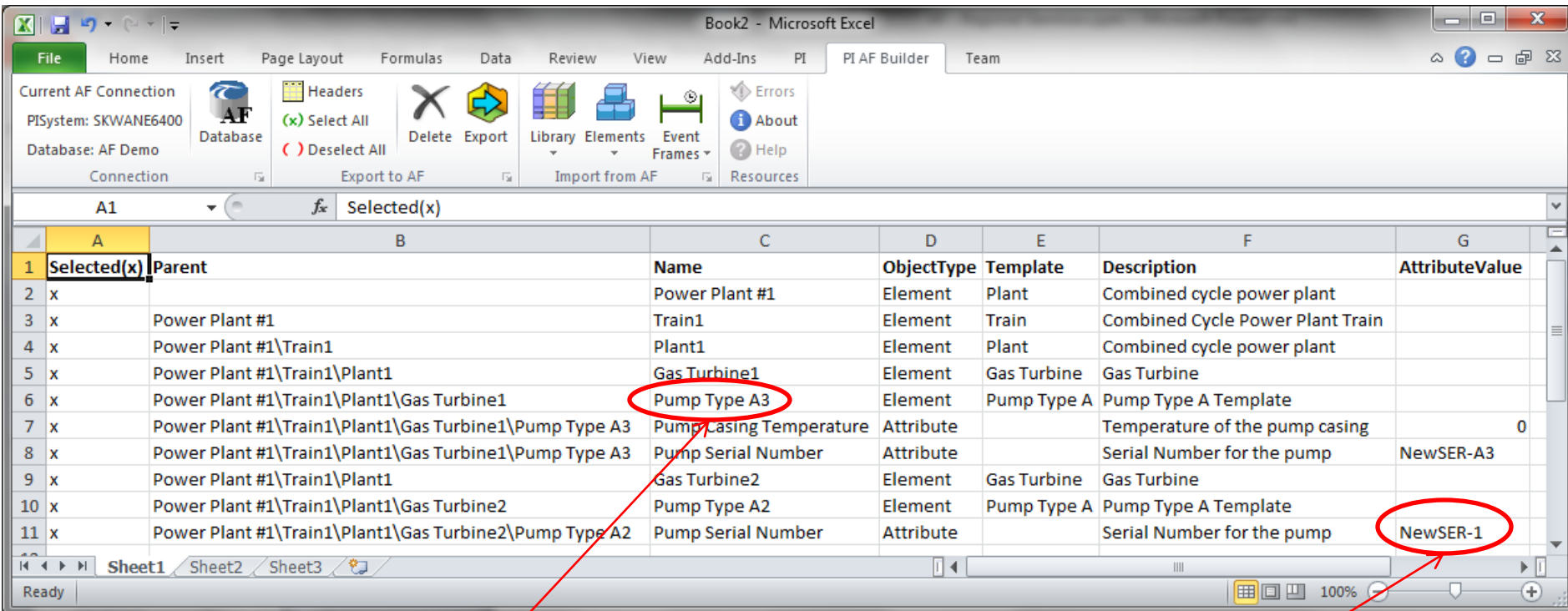
	A	B	C	D	E	F	G	H	I
1	Selected(x)	Parent	Name	ObjectType	Template	Description	Categories	Serial Number	Pump Serial Number
2	x		Power Plant #1	Element	Plant	Combined cycle power plant			
3	x	Power Plant #1	Train1	Element	Train	Combined Cycle Power Plant Train			
4	x	Power Plant #1\Train1	Plant1	Element	Plant	Combined cycle power plant			
5	x	Power Plant #1\Train1\Plant1	Gas Turbine1	Element	Gas Turbine	Gas Turbine		GT505-A	
6	x	Power Plant #1\Train1\Plant1\Gas Turbine1	Pump Type A1	Element	Pump Type A	Pump Type A Template	Pumps;		T1-197
7	x	Power Plant #1\Train1\Plant1\Gas Turbine1	Pump Type A2	Element	Pump Type A	Pump Type A Template	Pumps;		T1-198
8	x	Power Plant #1\Train1\Plant1	Gas Turbine2	Element	Gas Turbine	Gas Turbine		GT505-B	
9	x	Power Plant #1\Train1\Plant1\Gas Turbine2	Pump Type A1	Element	Pump Type A	Pump Type A Template	Pumps;		T1-199
10	x	Power Plant #1\Train1\Plant1\Gas Turbine2	Pump Type A2	Element	Pump Type A	Pump Type A Template	Pumps;		T1-200
11									
12									

Sheet1 Sheet2 Sheet3

Ready

100%

- Do you need to add an asset to AF?
- Did you replace an asset due to maintenance?



The screenshot shows a Microsoft Excel spreadsheet titled 'Book2 - Microsoft Excel' with the 'PI AF Builder' ribbon active. The spreadsheet contains a table with the following data:

	A	B	C	D	E	F	G
1	Selected(x)	Parent	Name	ObjectType	Template	Description	AttributeValue
2	x		Power Plant #1	Element	Plant	Combined cycle power plant	
3	x	Power Plant #1	Train1	Element	Train	Combined Cycle Power Plant Train	
4	x	Power Plant #1\Train1	Plant1	Element	Plant	Combined cycle power plant	
5	x	Power Plant #1\Train1\Plant1	Gas Turbine1	Element	Gas Turbine	Gas Turbine	
6	x	Power Plant #1\Train1\Plant1\Gas Turbine1	Pump Type A3	Element	Pump Type A	Pump Type A Template	
7	x	Power Plant #1\Train1\Plant1\Gas Turbine1\Pump Type A3	Pump Casing Temperature	Attribute		Temperature of the pump casing	0
8	x	Power Plant #1\Train1\Plant1\Gas Turbine1\Pump Type A3	Pump Serial Number	Attribute		Serial Number for the pump	NewSER-A3
9	x	Power Plant #1\Train1\Plant1	Gas Turbine2	Element	Gas Turbine	Gas Turbine	
10	x	Power Plant #1\Train1\Plant1\Gas Turbine2	Pump Type A2	Element	Pump Type A	Pump Type A Template	
11	x	Power Plant #1\Train1\Plant1\Gas Turbine2\Pump Type A2	Pump Serial Number	Attribute		Serial Number for the pump	NewSER-1

Annotations in the image include a red circle around the cell containing 'Pump Type A3' in row 6, column C, and another red circle around the cell containing 'NewSER-1' in row 11, column G. Red arrows point from these circles to the text labels 'Adding a new pump' and 'Changing an attribute value' respectively.

Adding a new pump

Changing an attribute value



11:23 AM
9/24/2010

PI System Roadmap - AF Wave



11-Oct-2010

Major release
 Minor release
 Service Pack

[older](#)
[newer](#)

Featured Products	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011	Q4 2011 - Q1 2012
CLIENT View more			Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011	Q4 2011 - Q1 2012
PI ProcessBook								
PI ActiveView								
PI DataLink								
PI DataLink Server								
PI Manual Logger								
PI WebParts								
DATA ACCESS View more			Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011	Q4 2011 - Q1 2012
PI JDBC								
PI ODBC								
PI OLEDB								
PI OLEDB Enterprise								
PI OPC DA/HDA Server								
PI SDK								
PI Web Services								
SERVER View more			Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011	Q4 2011 - Q1 2012	
PI ACE								
PI AF								
PI for StreamInsight								
PI Server								
PI Notifications								
INTERFACES View more Search	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011	Q4 2011 - Q1 2012

PI WebParts 2010 R2
Complete AF
Attribute Access

PI JDBC 2010 R2
Full Asset (AF) Support

PI Web Services 2010 R2
Complete AF Attribute
Access

PI AF 2010 R2
AF Builder

PI Notifications 2010
Message Formatting,
64-Bit, MS Lync

Coming Soon: Enhancements in 1H 2011

Improved Analytics

PI Analytics - Components and Functionality



calculations



event based



PI data

- Performance Equations



Sche User Configuration

- Totalizers



- Alarms/Statistical Quality Control



- Advanced Computing Engine



- PI for StreamInsight*



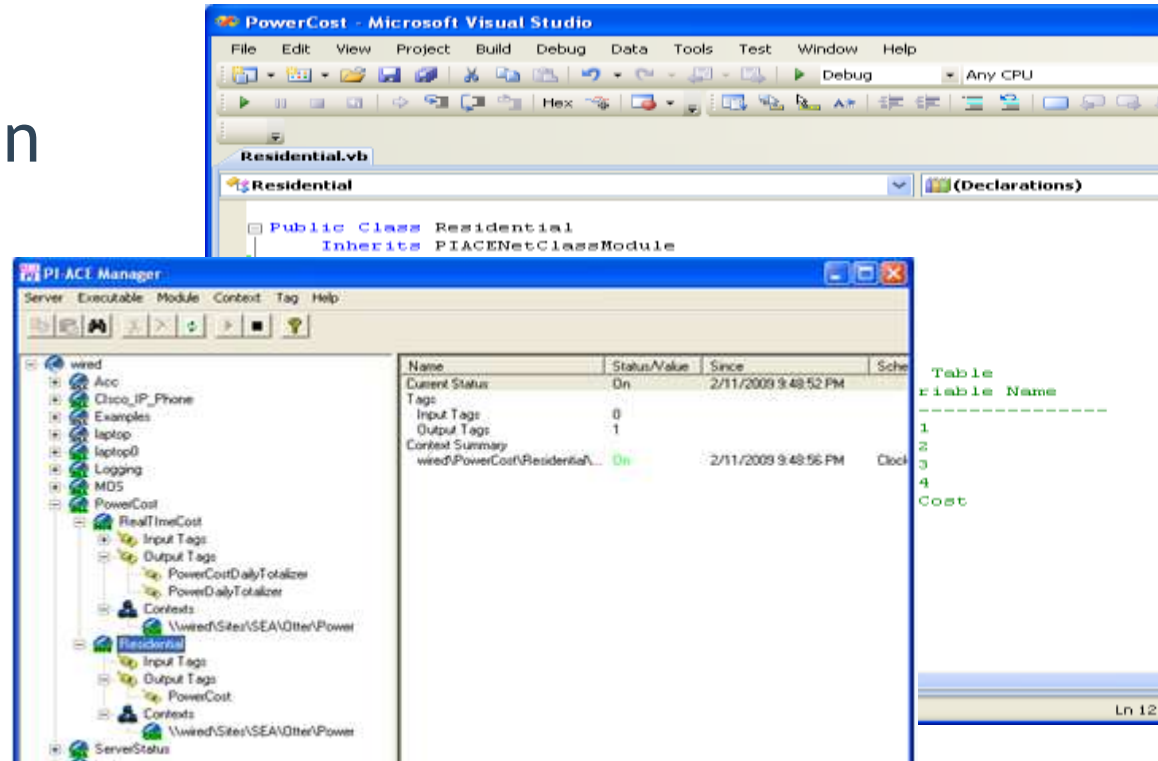
Programme Non-PI data

- Asset Framework supported Analytics*



* Future products

- Visual Studio add-in
- develop
- Manager client
 - configure
- Scheduler
 - execute



The image shows two overlapping windows. The top window is Microsoft Visual Studio, displaying a VB.NET code file named 'Residential.vb'. The code defines a 'Public Class Residential' that inherits from 'PIACENetClassModule'. The bottom window is the PI-ACE Manager application. It features a tree view on the left showing a hierarchy of components under a 'wired' server, including 'PowerCost' and 'Residential'. The main pane on the right displays a table with columns for Name, Status/Value, Since, and Schedule. The table contains data for 'Current Status' (On), 'Tags' (Input Tags: 0, Output Tags: 1), and 'Context Summary' (wired/PowerCost/Residential/... On). To the right of the table, there is a code snippet for a table with columns 'Table Name' and 'Variable Name', and rows for '1', '2', '3', '4', and 'Cost'. The bottom right corner of the window shows 'Ln 12'.

- Scheduled to be released early 2011

- Multiple Schedulers



ACE Scheduler 1 ACE Scheduler N

- Performance Improvements
 - Components re-written in .NET



- Visual Studio 2010 support

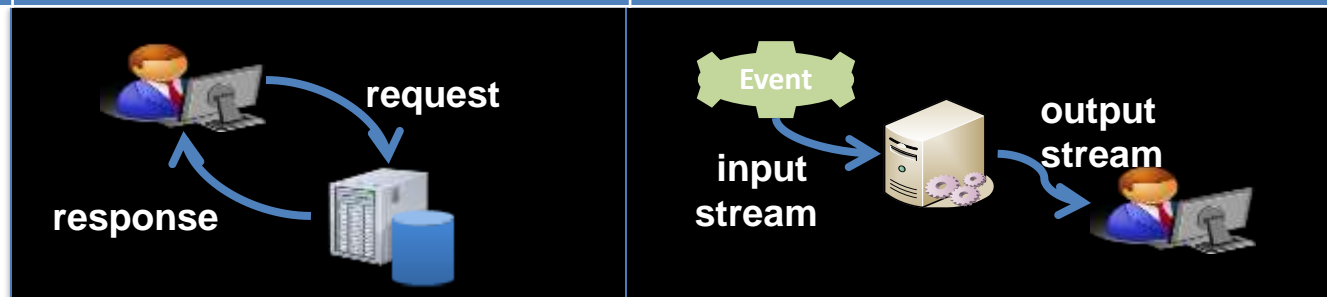


- Native 64-bit operating system support



Analytics need to be calculated in real time

	Database Applications	Event-driven Applications
Query Paradigm	Ad-hoc queries or requests	Continuous standing queries
Latency	Seconds, hours, days	Milliseconds or less
Data Rate	Hundreds of events/sec	Tens of thousands of events/sec or more
Query Semantics	Declarative relational analytics	Declarative relational <i>and temporal</i> analytics



PI System and StreamInsight Platform

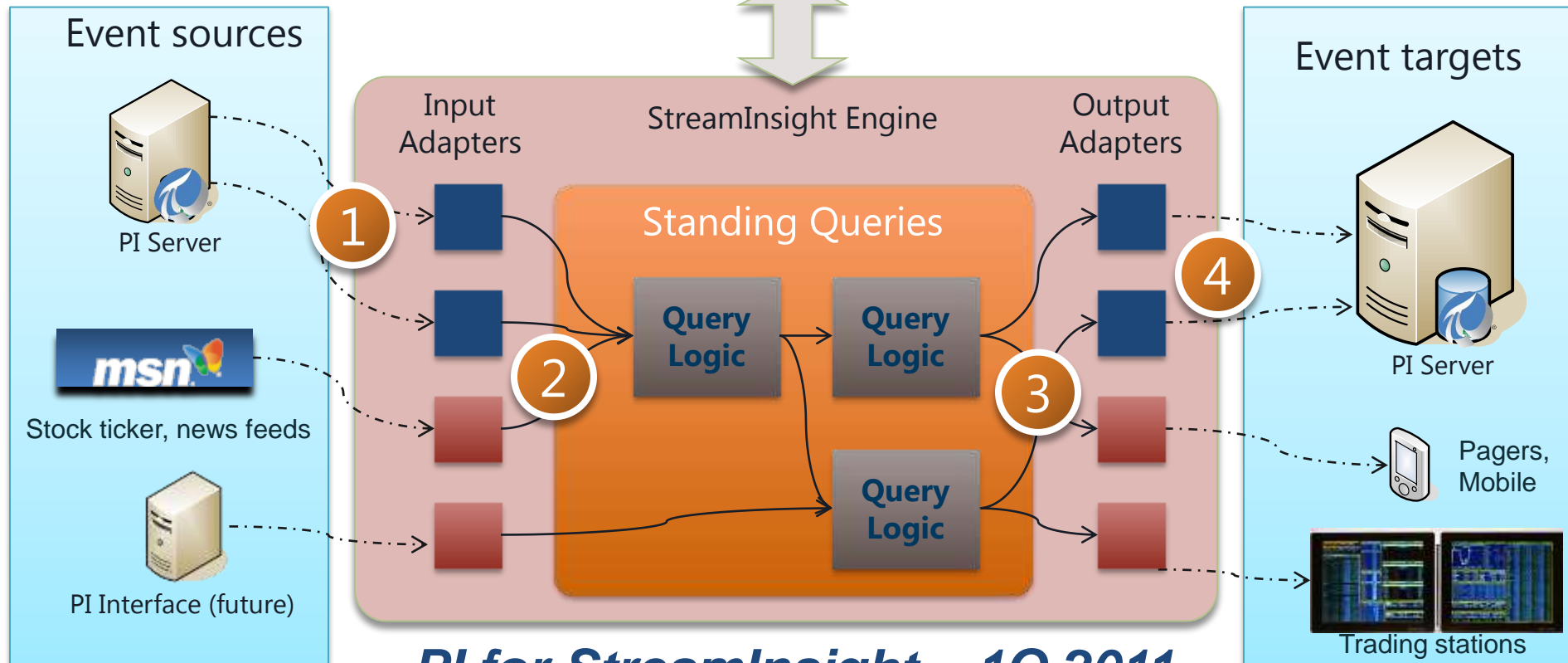
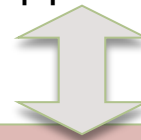


StreamInsight Application Development



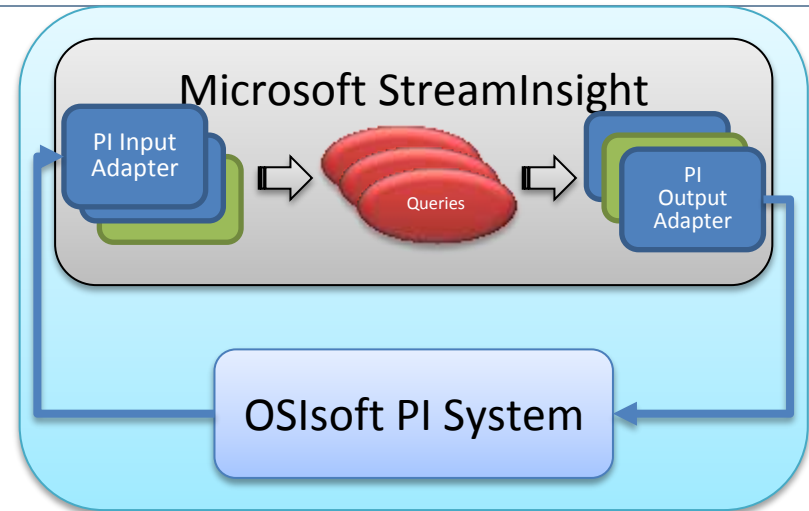
.NET
C#
LINQ

StreamInsight Application at Runtime



PI for StreamInsight – 1Q 2011

- Key functionality
 - Provide Adapters for data access to and from the PI System
- OSIsoft and StreamInsight Benefits
 - StreamInsight analytics access to PI data from hundreds of data sources
 - Data store to serve and store real-time, historical data and analysis
 - Enable rich and expressive querying of PI data using time window processing
- OSIsoft vCampus Community Technology Previews
 - February 2010
 - July 2010
 - Release 1Q 2011



PI System Roadmap - upcoming releases



11-Oct-2010

Major release
 Minor release
 Service Pack

[older](#)
[newer](#)

Featured Products	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011	Q4 2011 - Q1 2012
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PI ProcessBook								
PI ActiveView								
PI DataLink								
PI DataLink Server								
PI Manual Logger								
PI WebParts								
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PI OLEDB								
PI OLEDB Enterprise								
PI OPC DA/HDA Server								
PI SDK								
PI Web Services								
SERVER View more	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011		
PI ACE								
PI AF								
PI for StreamInsight								
PI Server								
PI Notifications								
INTERFACES View more Search	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011	Q4 2011 - Q1 2012

PI ProcessBook 2011
*Improved AF Support,
 Time manipulation*

PI DataLink 2011
Full Asset (AF) Support

PI WebParts 2011
*Silverlight (no Adobe
 SVG), AF Search*

PI SDK 2011
*Enhanced HA
 Support*

PI ACE 2011
*Scalability,
 Performance, 64-bit*

**PI for StreamInsight
 2011**
1st Release



Thank you

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