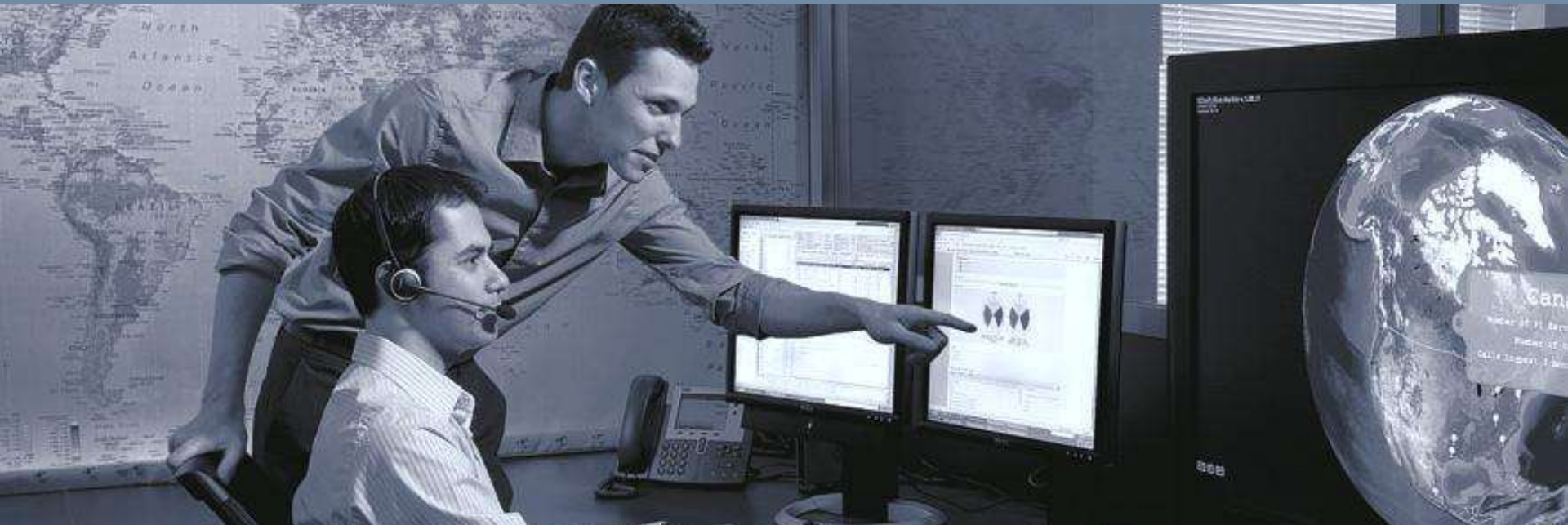




Regional Seminar Series Charlotte, NC



PI System Roadmap

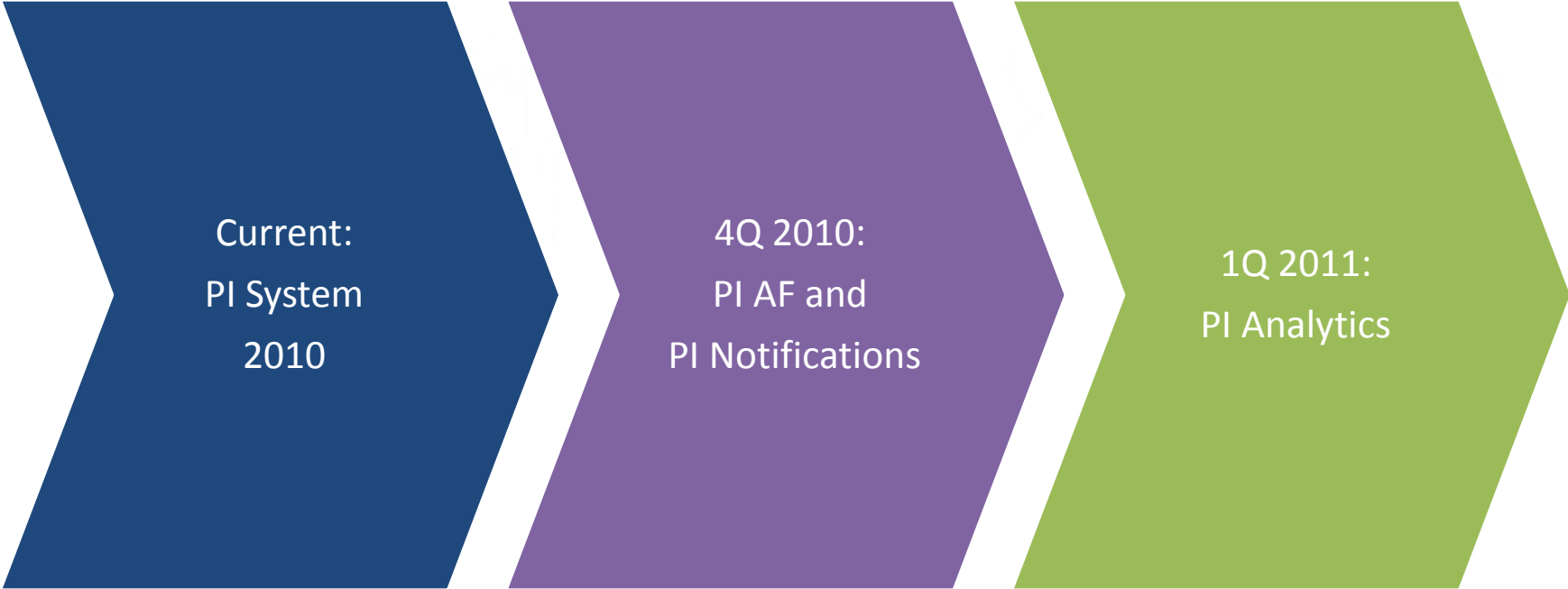
Stephen Kwan
Product Manager
OSIsoft, LLC

18 November 2010

Empowering Business in Real-time.

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PI System Roadmap - Agenda



Current:
PI System
2010

4Q 2010:
PI AF and
PI Notifications

1Q 2011:
PI Analytics



Security

Critical
Facilities are
Safe



Asset Centric PI System

Define Once
Use Over and Over



Localization

Use
Worldwide



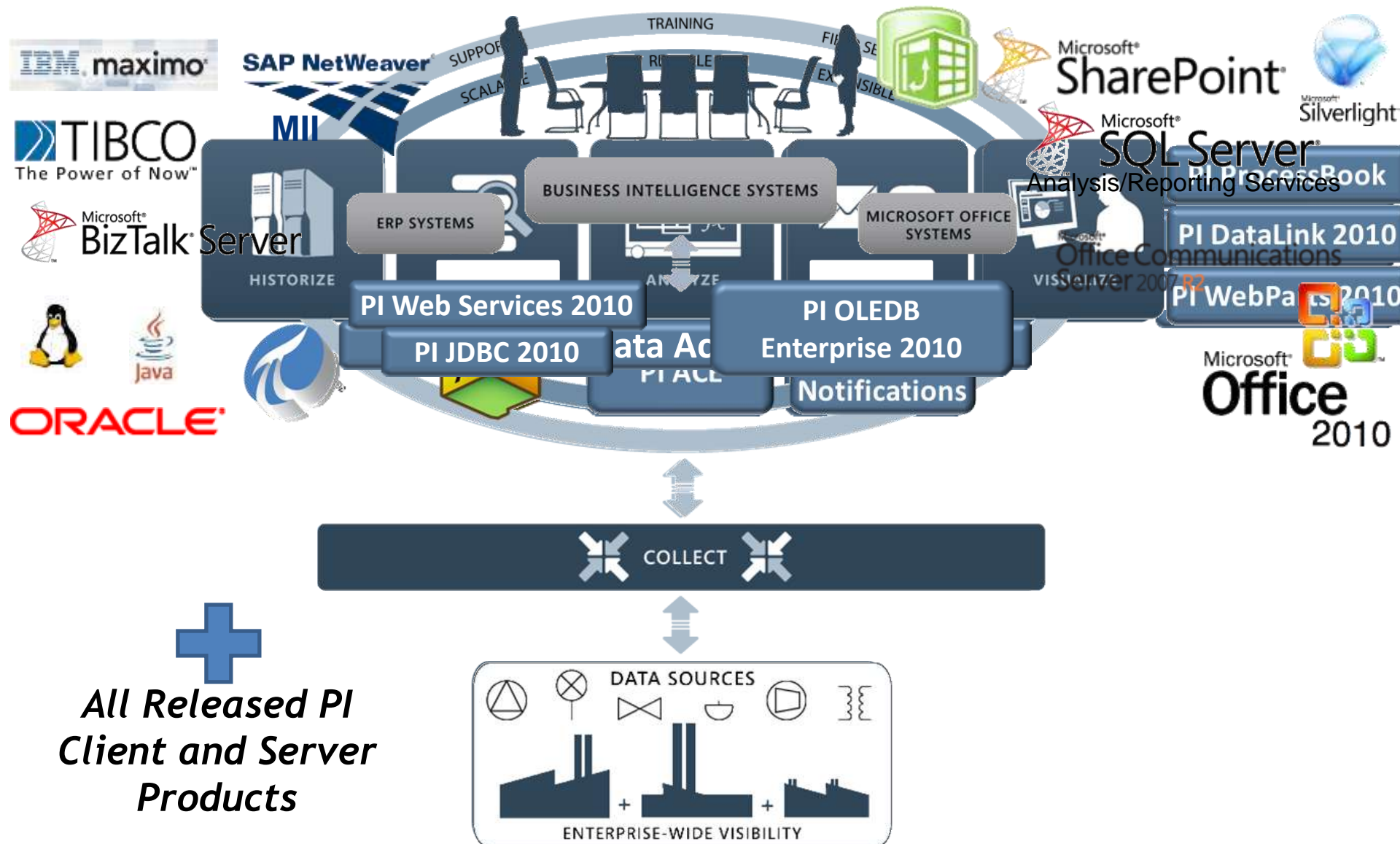
Scaling, 64 bit

Use the PI
System for more
data



The OSIsoft PI System is the highly scalable and secure real-time and event infrastructure that connects people with the right operational and manufacturing information at the right time in order to *analyze*, *collaborate*, and *make smart decisions*

PI System 2010



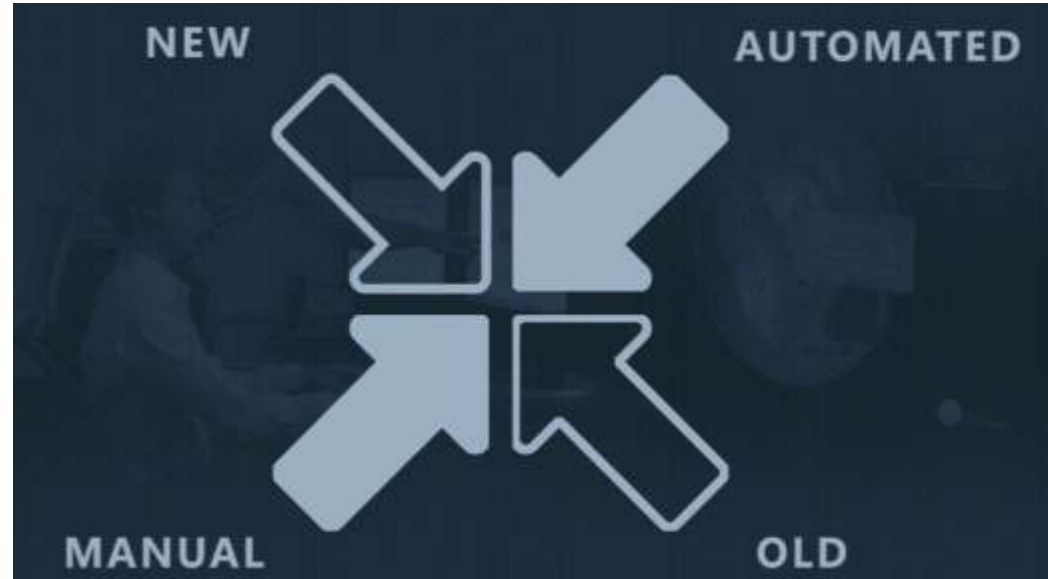
**+
All Released PI
Client and Server
Products**



Over 400 interfaces the PI System can Collect from:

Categories of Data Sources:

- Devices
- Systems
- Standards
- Manually entered data
- IT assets
- Databases
- Internet





- Store large volumes of data for a long period of time with the least amount of disk space possible.
- Allows retrieval of any data, no matter how old, in seconds.
- Securely Scale Up and Scale Out to support growing business needs



- 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



Comparing PI Users and PI Identities

Old Model

Windows

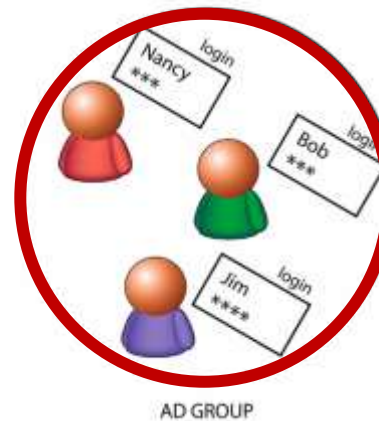


PI Server

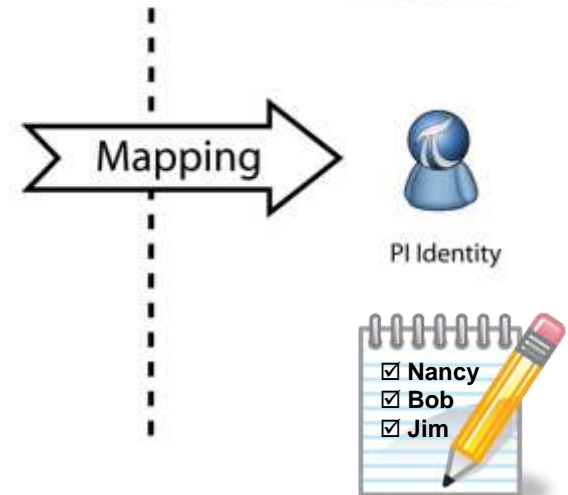


New Model

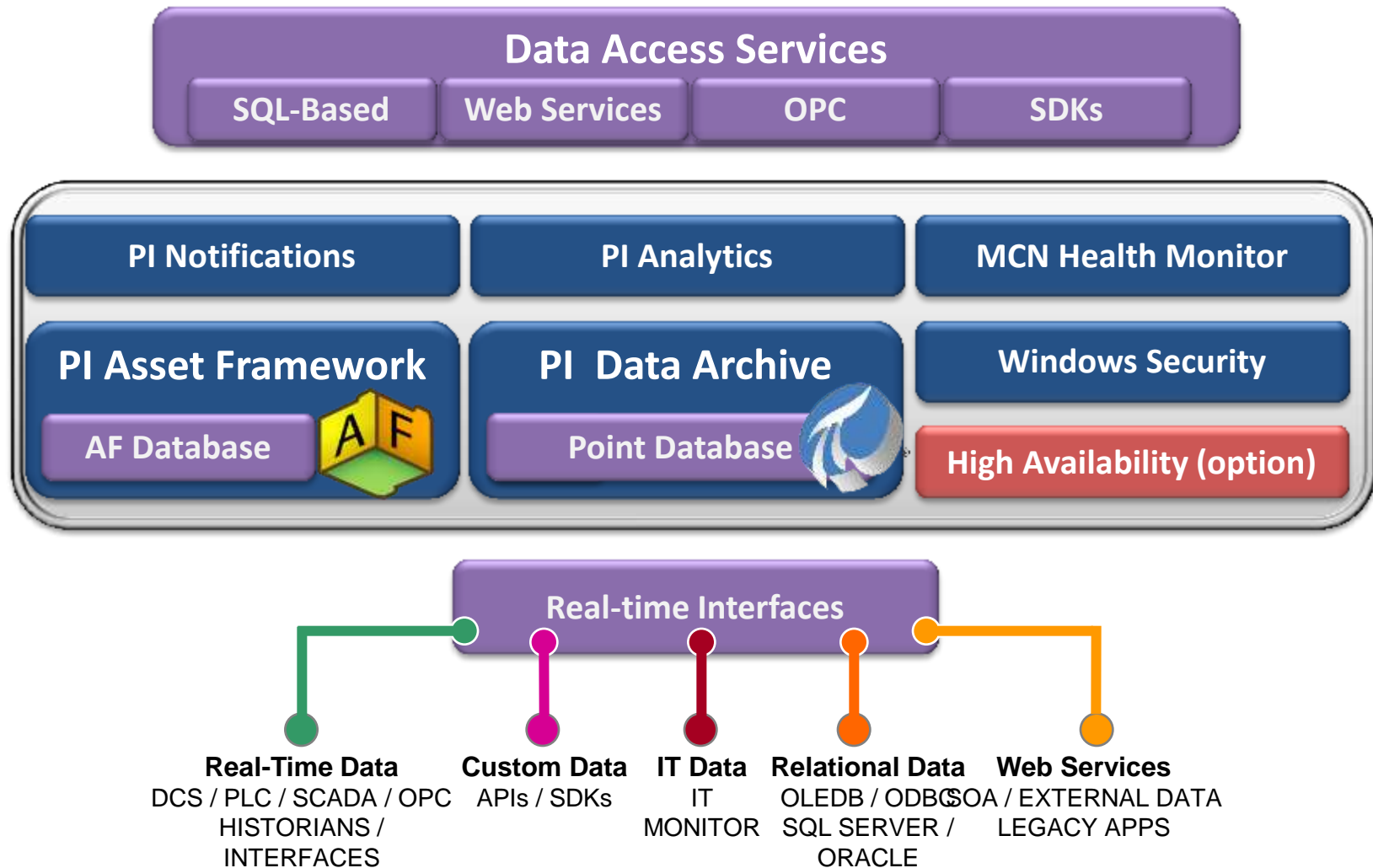
Windows



PI Server



- **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



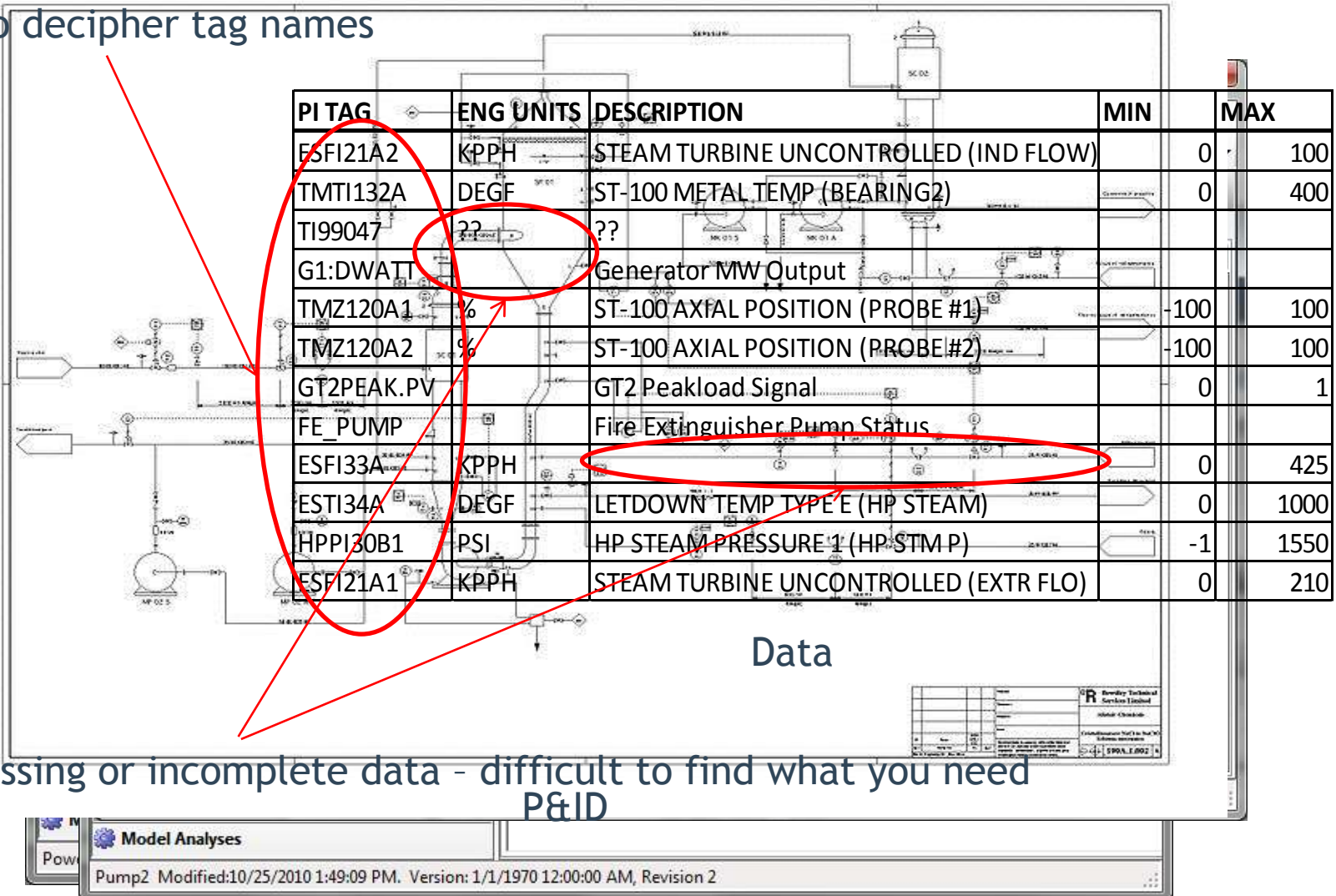


- Find all data by name, relationship, or usage
- Find important configurations such as analytics and displays
- Easily find work that you or colleagues have already completed
- Organize and Categorize data so it's easier to find next time
- Leverage your teams work

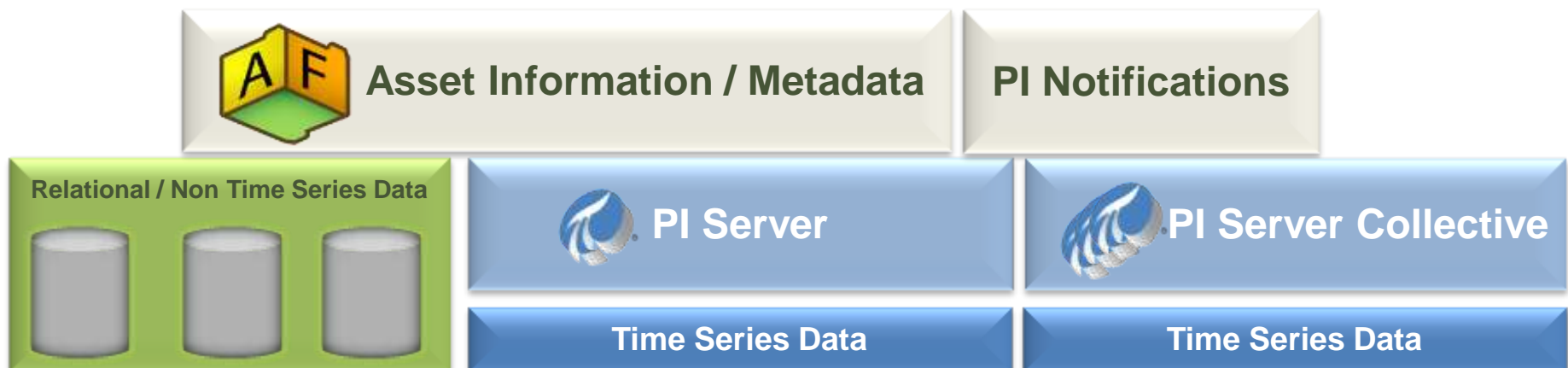
Add Context to Your Data



Difficult to decipher tag names



- Organize and structure all your data with context
- Build hierarchies, categories and connectivity models
- Templates - build ONCE and reuse many times
- Data references to time series (PI Points) and other data
- Search across multiple PI Servers to find information
- Leverage PI Notifications
- Common source of information for everyone to consume





- Combine data elements together
- Aggregate totals and averages
- Filter out irrelevant data.
- Includes both configured and programmed analytics
- Enables organizations to continually improve by analyzing data and obtaining insight into their operations.

BATCH ID	PI MIN	PI AVG	PI MAX	PI RANGE	PI STDEV
MP_20090911_115632	147.1	172.6	205.6	58.5	13.6
MP_20090910_204531	266.7	316.9	366.9	100.2	26.5
MP_20090910_170536	32.8	102.5	230.0	197.2	36.4
MP_20090910_160842	141.8	188.3	220.1	78.4	21.6
MP_20090909_220449	230.0	328.4	426.3	196.3	56.2
MP_20090909_153813	201.5	256.4	289.0	87.5	18.2
MP_20090909_142545	264.1	291.1	327.9	63.8	14.7
MP_20090909_132727	295.4	338.1	377.1	81.7	25.4
MP_20090902_171845	32.3	129.7	292.8	260.5	88.1
MP_20090902_153523	108.6	184.5	251.6	143.0	35.2
MP_20090901_204325	311.9	363.5	409.4	97.4	23.4
MP_20090831_194329	340.6	361.8	396.0	55.4	13.2

MIN	AVG	MAX	MAX	MAX
32.3	252.8	426.3	260.5	88.1

PI Analytics - Components and Functionality



calculations



event based



PI data

- Performance Equations



- Totalizers



Sche User Configuration

- Alarms/Statistical Quality Control



- Advanced Computing Engine



- PI for StreamInsight*



Programme Non-PI data

- Asset Framework supported Analytics*



* Future products



- **PI Notifications** – deliver exceptions to humans or push to other systems
- **PI Data Access** – enables development of custom PI applications, as well as integration with business

SQL Data Access

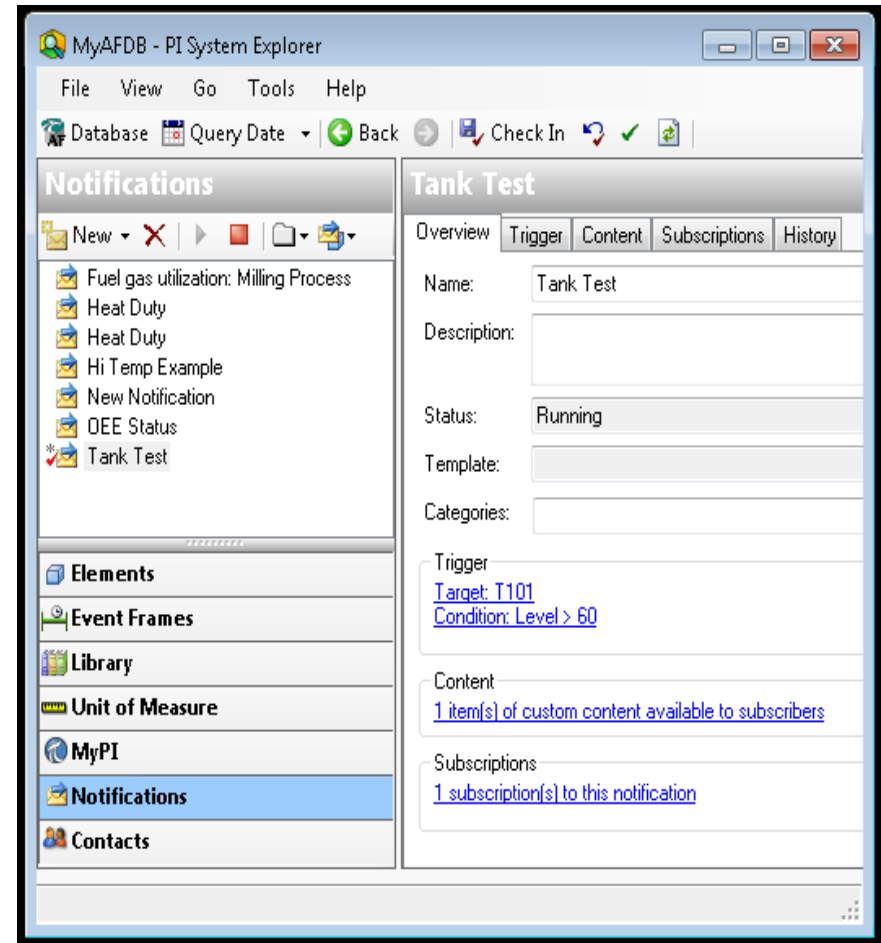
Web Services

OPC Servers

Software Development Kits (SDKs)



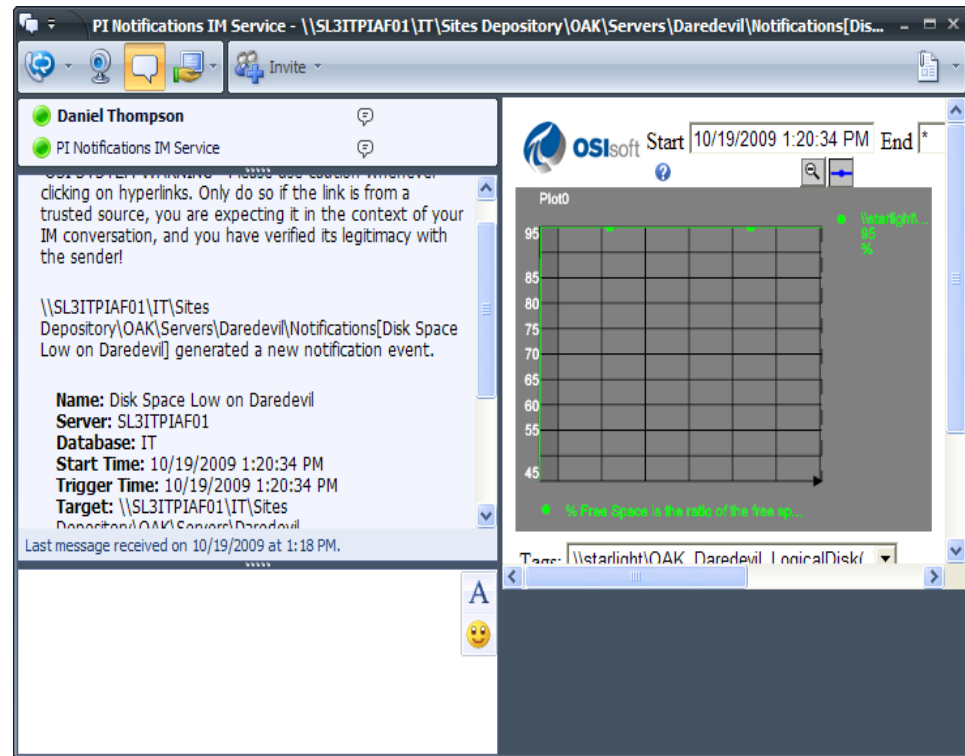
- Let one or more people or systems know an event has occurred
- Notifications combines
 - Trigger condition
 - Customizable content
 - Subscribers
 - Deliver the notification
 - Acknowledgement
 - Escalation



Delivery Channels



- How a message is delivered
- Supported Delivery Channels:
 - Email
 - Web service
 - Microsoft Office Communicator
- Extensible - write your own!
 - Helper classes available
- OSIsoft vCampus example
 - XML delivery channel



PI Server 2010 Releases



11-Oct-2010

Major release
 Minor release
 Service Pack

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

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

PI AF
Scalability
HA

PI Server
Windows
Security

PI Server 2010
Assets and Tags,
Scalability, Packaging

PI
Notifications
Templates



Deliver: 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

PI Data Access: The 2010 Wave



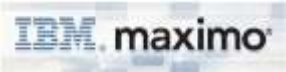
Microsoft®
BizTalk® Server



Microsoft®
SQL Server®
Analysis/Reporting Services



Microsoft®
Visual Studio®



ORACLE®



Microsoft®
Silverlight



Microsoft®
SharePoint®

TIBCO
The Power of Now™



PI JDBC

PI Web
Services 2010

PI OLEDB
Enterprise 2010

PI OPC DA/HDA
Server 2010

OSIsoft SDKs



Asset Information / Metadata

Notifications

Analytics

Relational / Non Time Series Data



PI Server



PI Server Collective

Time Series Data

PI Data Access Releases



11-Oct-2010

Major release
 Minor release
 Service Pack

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

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PI ActiveView										
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PI WebParts										
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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
PI OPC UA										

PI JDBC 2010
1st Release

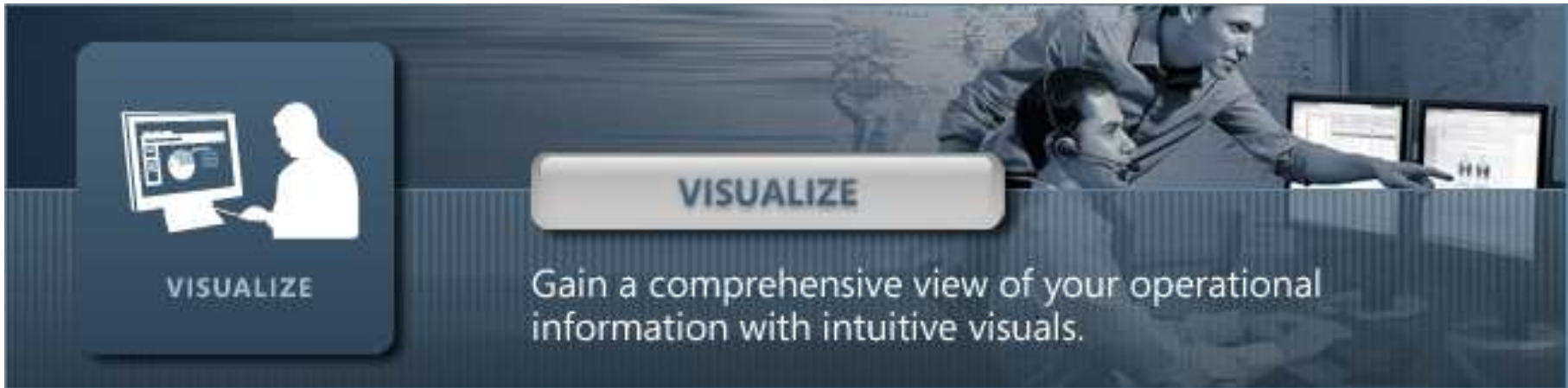
PI OLEDB
Enterprise 2010
1st Release

PI OLEDB
64-Bit

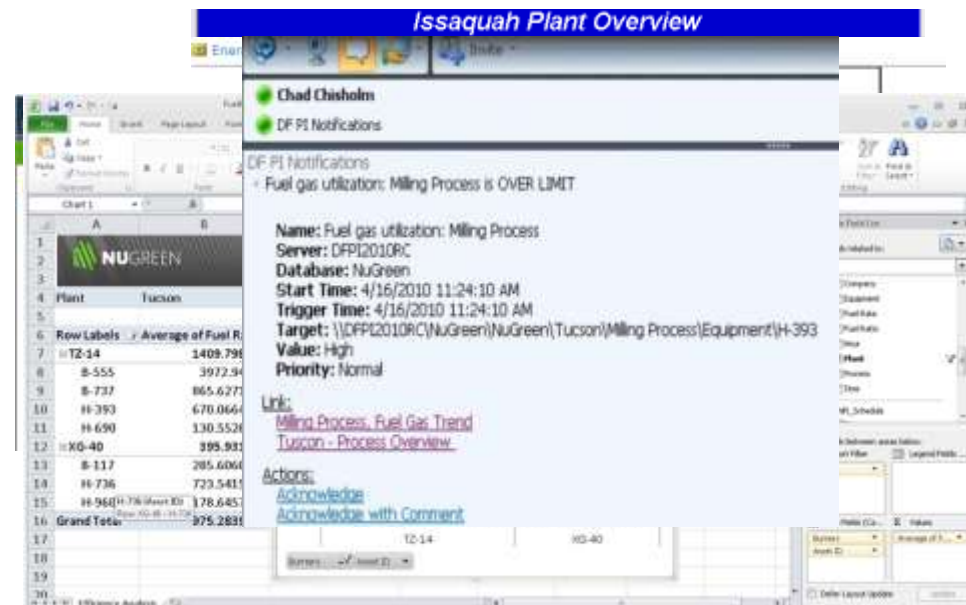
PI SDK
64-Bit

PI OPC Server
OPC Compliance
Tested

PI Web Services
2010
1st Release



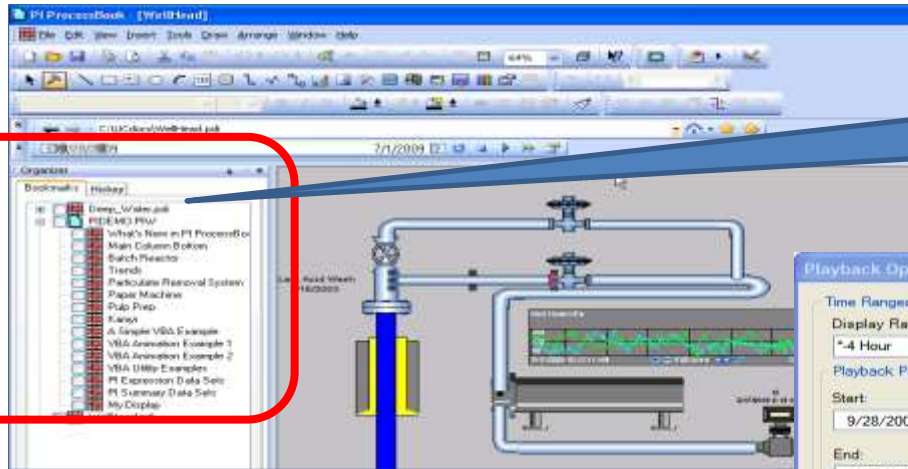
- Easy to build process graphics and data analysis displays
- Collaborate, Share Information, KPIs
- Build and Publish Drill Down Reports
- Integrate with standard off the shelf tools
- Deliver the visual



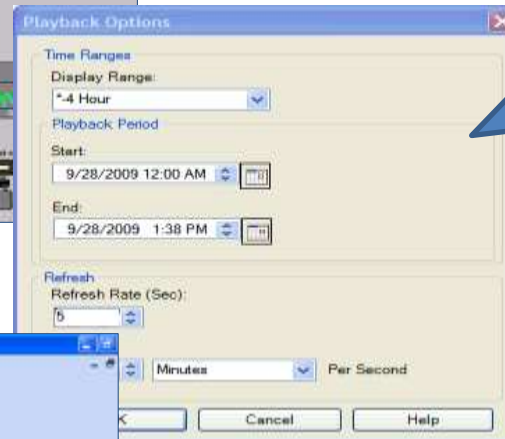
PI ProcessBook 3.2: Element Relative Displays



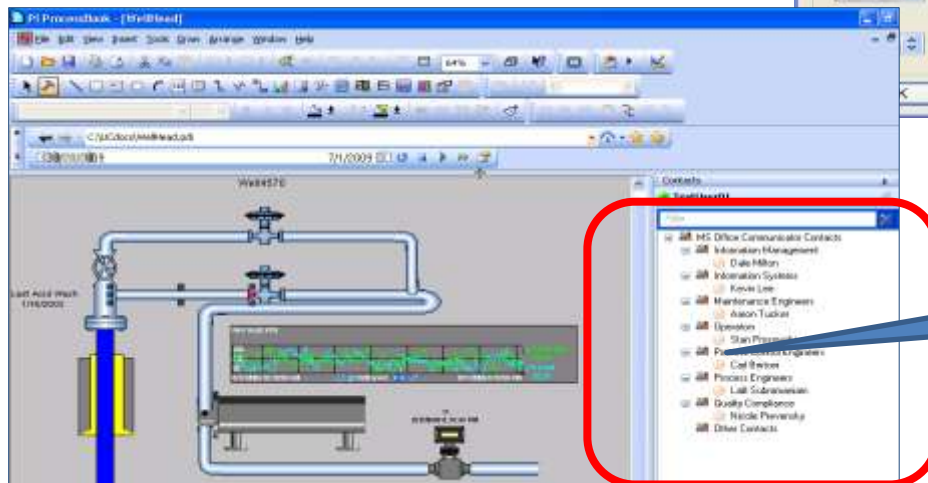
PI ProcessBook 3.2: Productivity Enhancements



Browsing forward and backwards
Permanent books mark of favorites



Playback
Troubleshoot problems
by re-playing a display

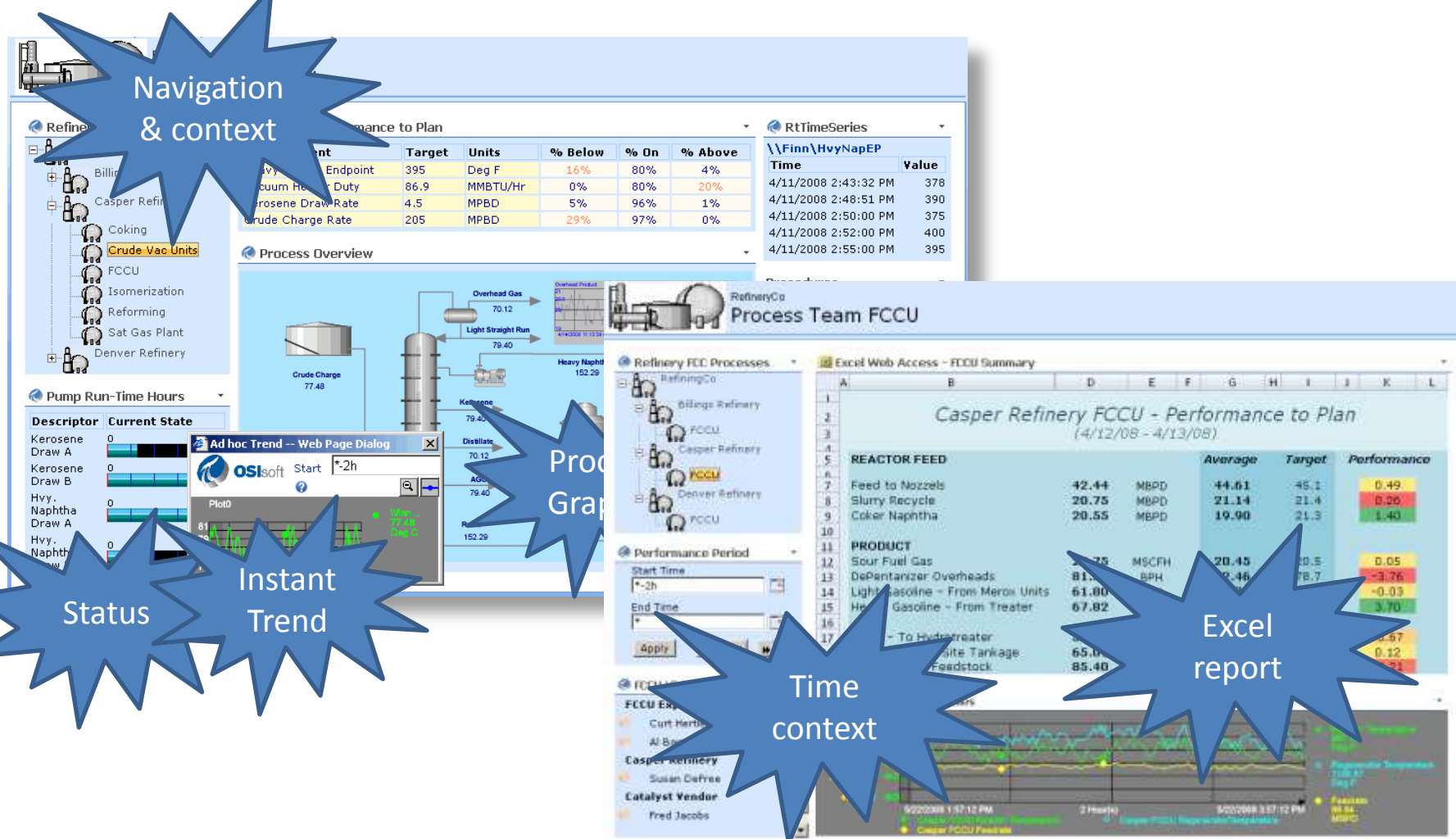


Communicator
IM, Email Contacts
Easily send a PB
screenshot

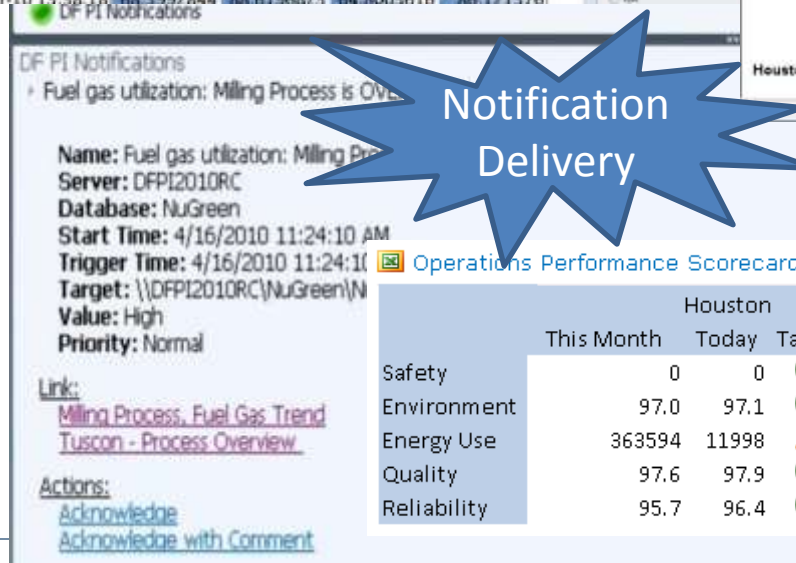
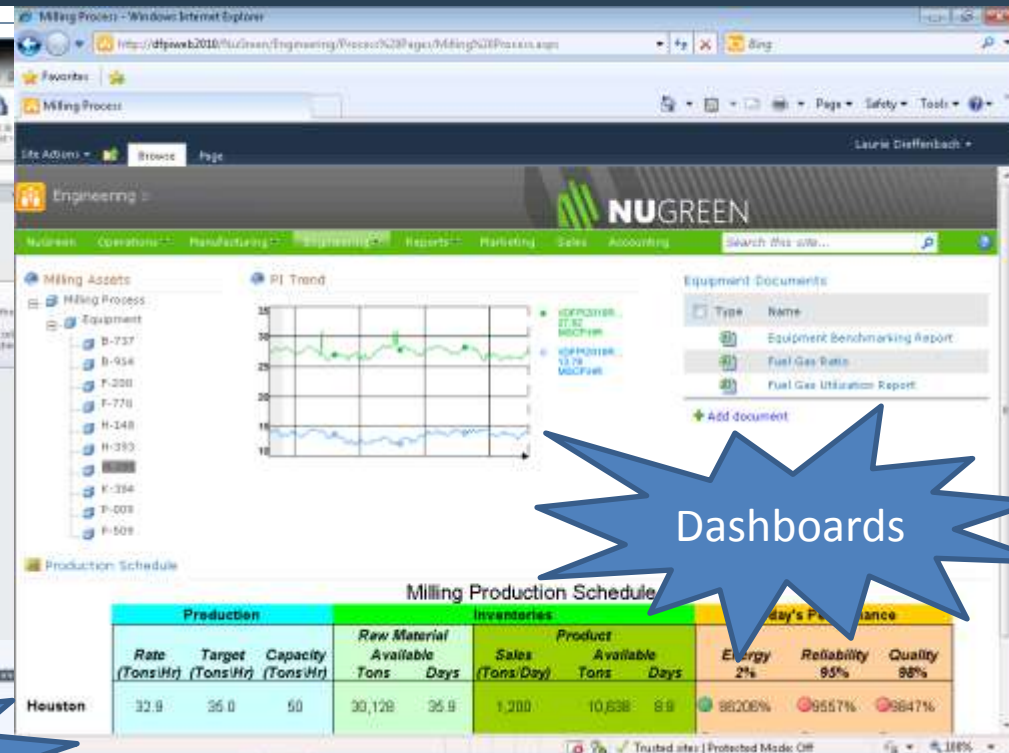
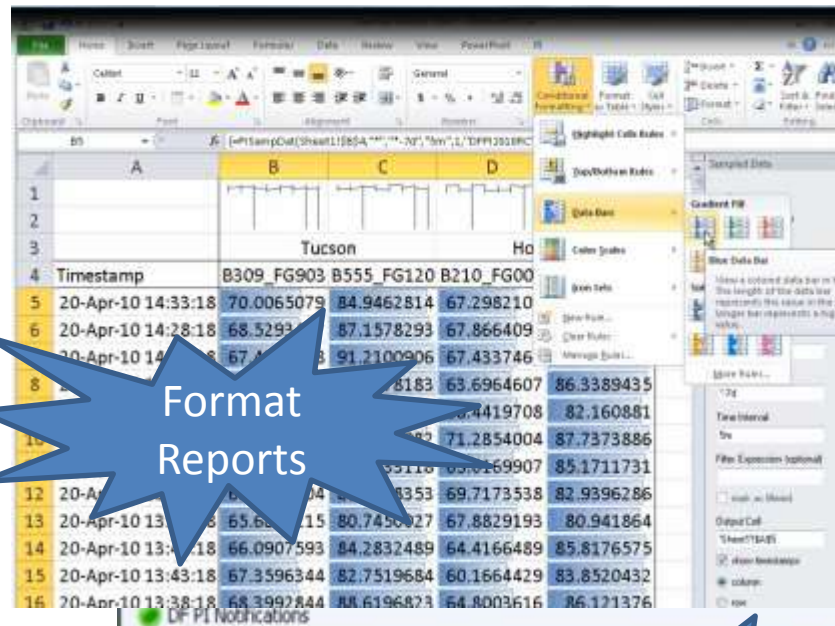
Dashboarding on the Corporate Portal



PI WebParts 2010 for Microsoft SharePoint 2010 or 2007



What's New with Visualization in PI System 2010?



Scorecards

	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	—	97.0	97.1	97.0	—
Quality	97.6	97.9	97.6	—	97.3	97.6	97.3	—	97.0	97.1	97.0	—
Reliability	95.7	96.4	95.7	—	95.6	96.3	95.6	—	96.7	97.1	96.7	—



- 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

Product Localization: Eight Languages



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

Visualization Releases



11-Oct-2010

Major release Minor release Service Pack

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

Featured Products	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011
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PI Notifications									
INTERFACES View more Search	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3 2011

PI ProcessBook
AF ERDs
Playback

PI Manual Logger
2010
Performance

PI WebParts 2010
SharePoint 2010,
AF, 64-Bit

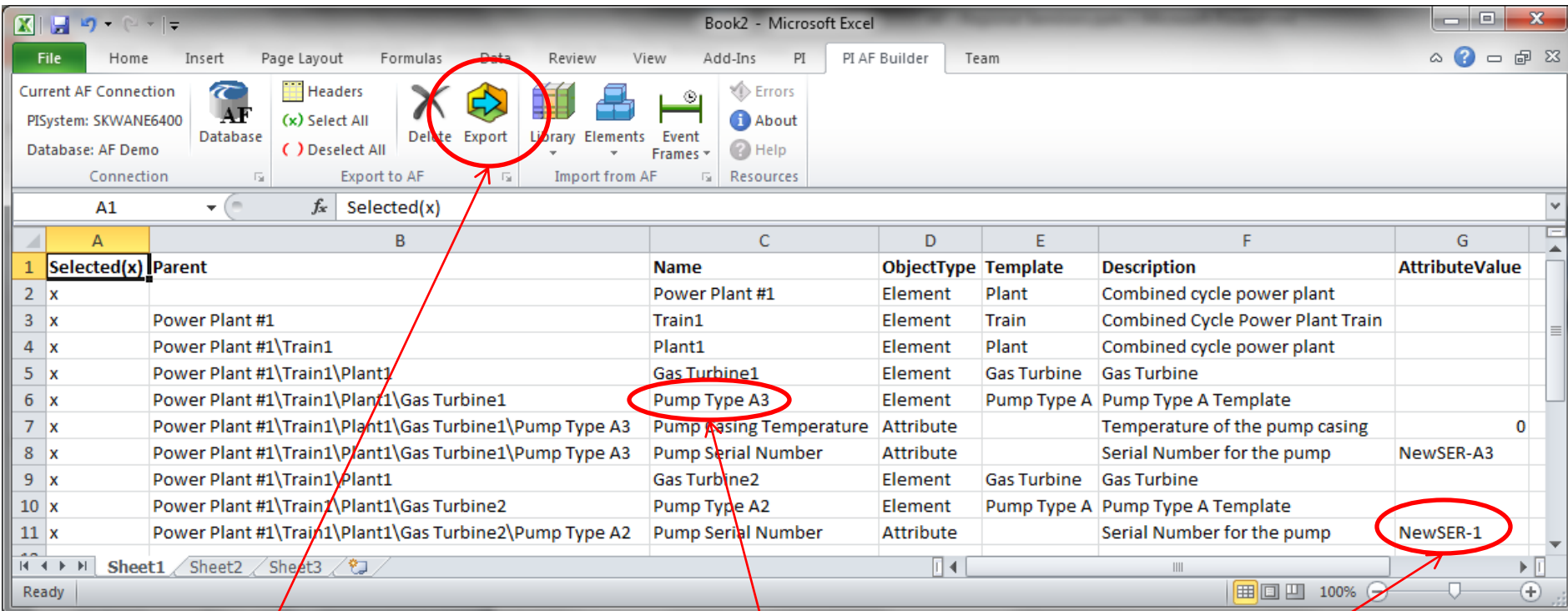
PI DataLink 2010
Office 2010

PI DL Server 2010
SharePoint 2010

Coming Soon: Enhancements in 4Q2010

Enhancements to Asset Meta-Data
using PI AF

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



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

(x) Select All
() Deselect All

Delete Export Library Elements Event Frames

Export to AF Import from AF

Errors About Help Resources

A1 Selected(x)

	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

Sheet1 Sheet2 Sheet3

Ready

Export your changes

Add a new asset

Change an attribute value

- **Message Formatting**
 - More control over the appearance of the subject and body
- **Performance**
 - **History retrieval** is improved by an order of magnitude
 - Native 64-bit operating system support
- **Internationalization**



PI Notifications 2010: Message Format



Subject

Alert on element [Target]

Attachments

Body

Warning: [Triggering Condition:Triggering Condition]

[Attribute1:Name]: [Attribute1:Value] [Attribute1:UOM] ([Attribute1:TimeStamp])

Free-form composition of
subject and body

Content is substituted
when alert is triggered

This message was sent with High importance.

From: dthompson@osisoft.com Sent: Mon 7-Jun-10 9:09 AM

To: David Moler

Cc:

Subject: Alert on element \\PIANODEMO\Demo1.2\Demo 01

Warning: Attribute1 has exceeded target:

Attribute1: 11 (7-Jun-10 9:08:40 AM)

PI Notifications 2010 - Microsoft Lync



Tuscon heater H-393 OVER LIMIT: 38.72 scf/h for gas utilizati...

PI Notifications - Available

IM Call Video Share

PI Notifications 5:22 PM

- The Tuscon plant milling process heater H-393 has a gas utilization **over limit** at 38.72 scf/h

Trigger Time: 10/13/2010 5:22:14 PM Pacific Daylight Time (GMT-07:00:00)
Triggering Condition: Fuel Gas Flow > UpperAlarmLimit
Fuel Gas Flow: 38.72 scf/h
UpperAlarmLimit: 25 scf/h

Link:
[Instant PI WebParts Trend](#)

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

Last message received on 10/13/2010 at 5:22 PM.

PI Notifications

Tuscon heater H-393 OVER LIMIT: 38.72 s...

Redirect Ignore

PI System Roadmap - 4Q 2010 AF Wave



11-Oct-2010

Major release Minor release Service Pack

◀ older newer ▶

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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

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

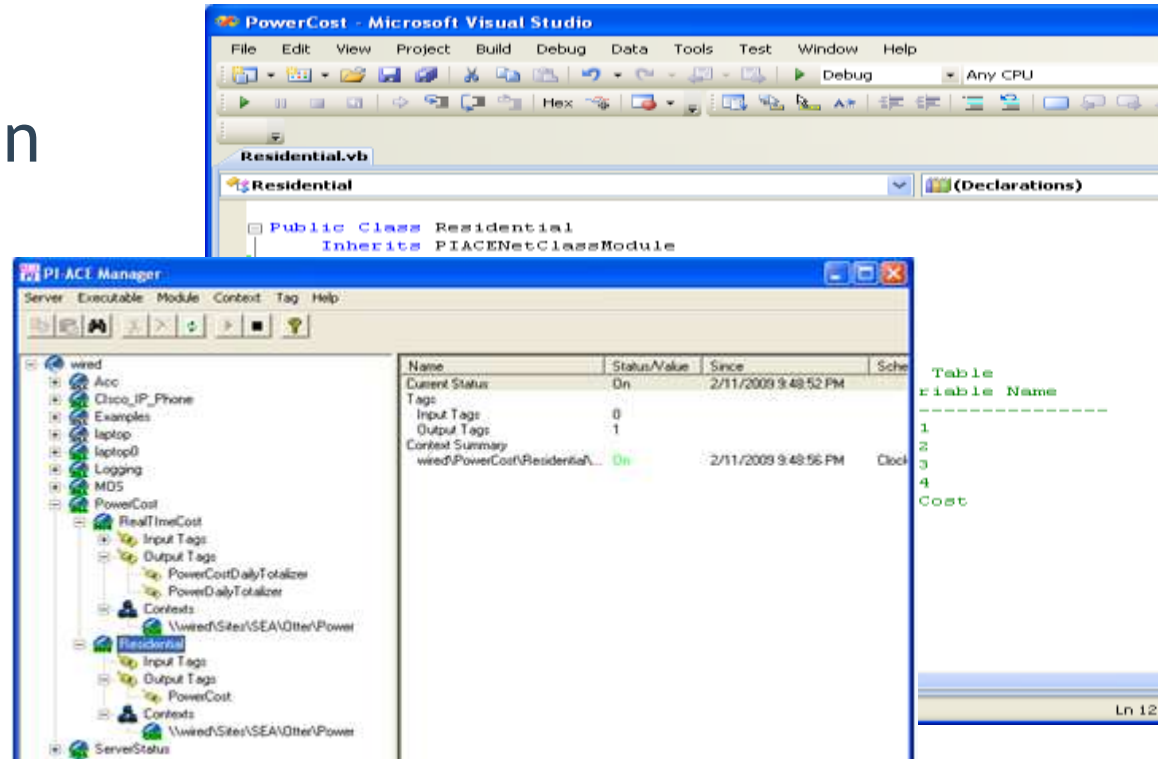
PI Notifications 2010
Message Formatting,
64-Bit, MS Lync

PI AF 2010 R2
AF Builder

Coming Soon: Enhancements in 1H 2011

Improved Analytics

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



- 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



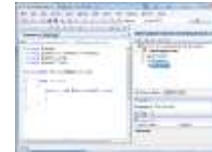
- Native 64-bit operating system support



PI System and StreamInsight Platform



StreamInsight Application Development



.NET
C#
LINQ

StreamInsight Application at Runtime



Event sources



PI Server



Stock ticker, news feeds



PI Interface (future)

1

Input
Adapters

2

StreamInsight Engine

Standing Queries

Query
Logic

Query
Logic

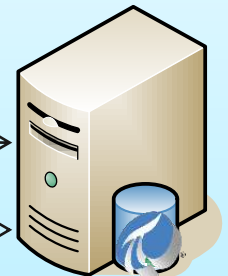
Query
Logic

3

Output
Adapters

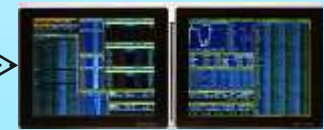
4

Event targets



PI Server

Pagers,
Mobile



Trading stations

PI for StreamInsight – 1Q 2011

PI System Roadmap - upcoming releases



11-Oct-2010

Major release Minor release Service Pack

older newer

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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 SDK 2011
Enhanced HA
Support

PI ACE 2011
Scalability,
Performance, 64-bit

PI for StreamInsight
2011
1st Release



Security

- ✓ Windows Security
- ✓ Single Sign On



Asset Centric PI System

- ✓ PI ProcessBook
- ✓ PI WebParts
- ✓ PI Notifications
- ✓ PI OLEDB Enterp.
- ✓ PI Web Services



Localization

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



Scaling, 64-bit

- ✓ Servers
- ✓ Notifications
- ✓ PI ACE
- ✓ Data Access
- ✓ Web Clients

Stay Up to Date On the Web



- See PI System Roadmap on OSIsoft Technical Support

<http://techsupport.osisoft.com/techsupport/NonTemplates/roadmap.aspx>





Thank you

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