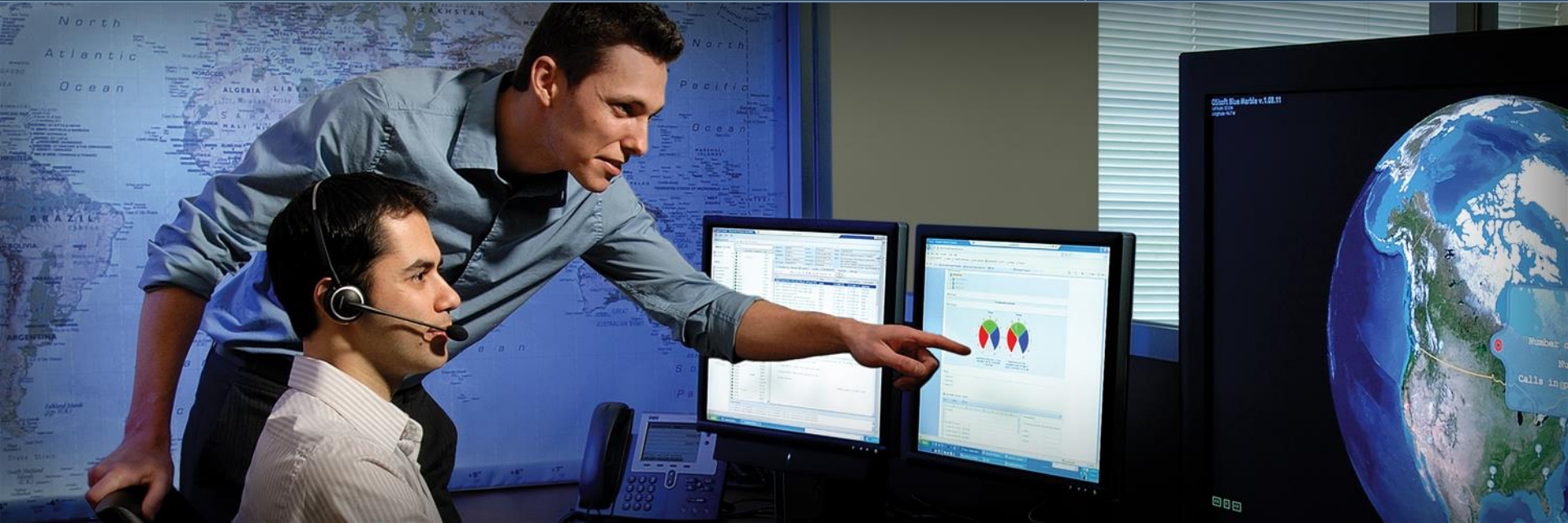




Regional Seminar Series Atlanta



PI System Roadmap

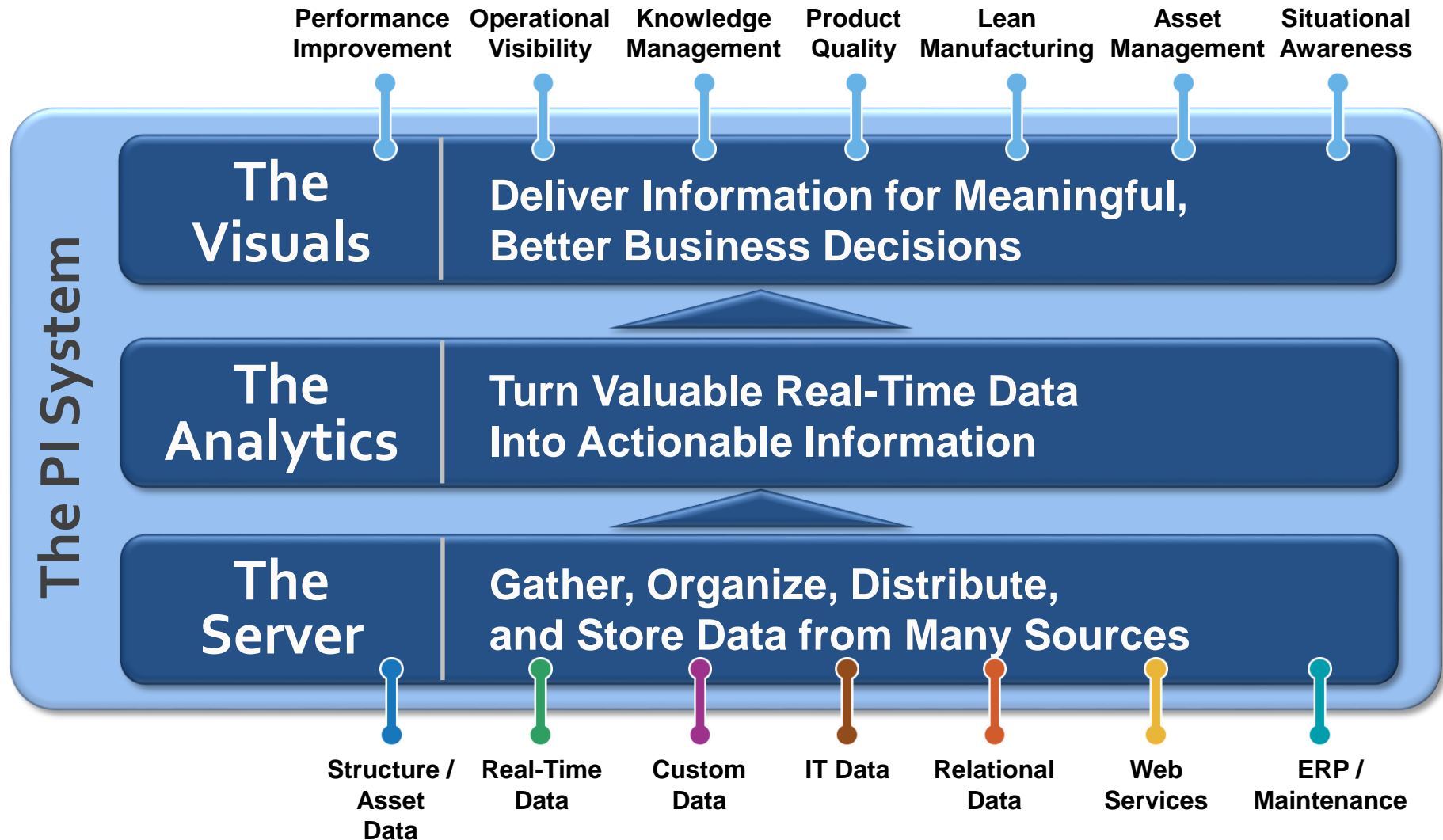
Jay Lakumb
Product Manager
OSIsoft, LLC.

October 22, 2009

Empowering Business in Real Time.

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Functional Groups of The PI System



Cross Functional Aspects of the PI System

Scalable

Available

Reliable

Extensible

Secure

Interoperable

**The
Visuals**

**Deliver Information for Meaningful,
Better Business Decisions**

**The
Analytics**

**Turn Valuable Real-Time Data
Into Actionable Information**

**The
Server**

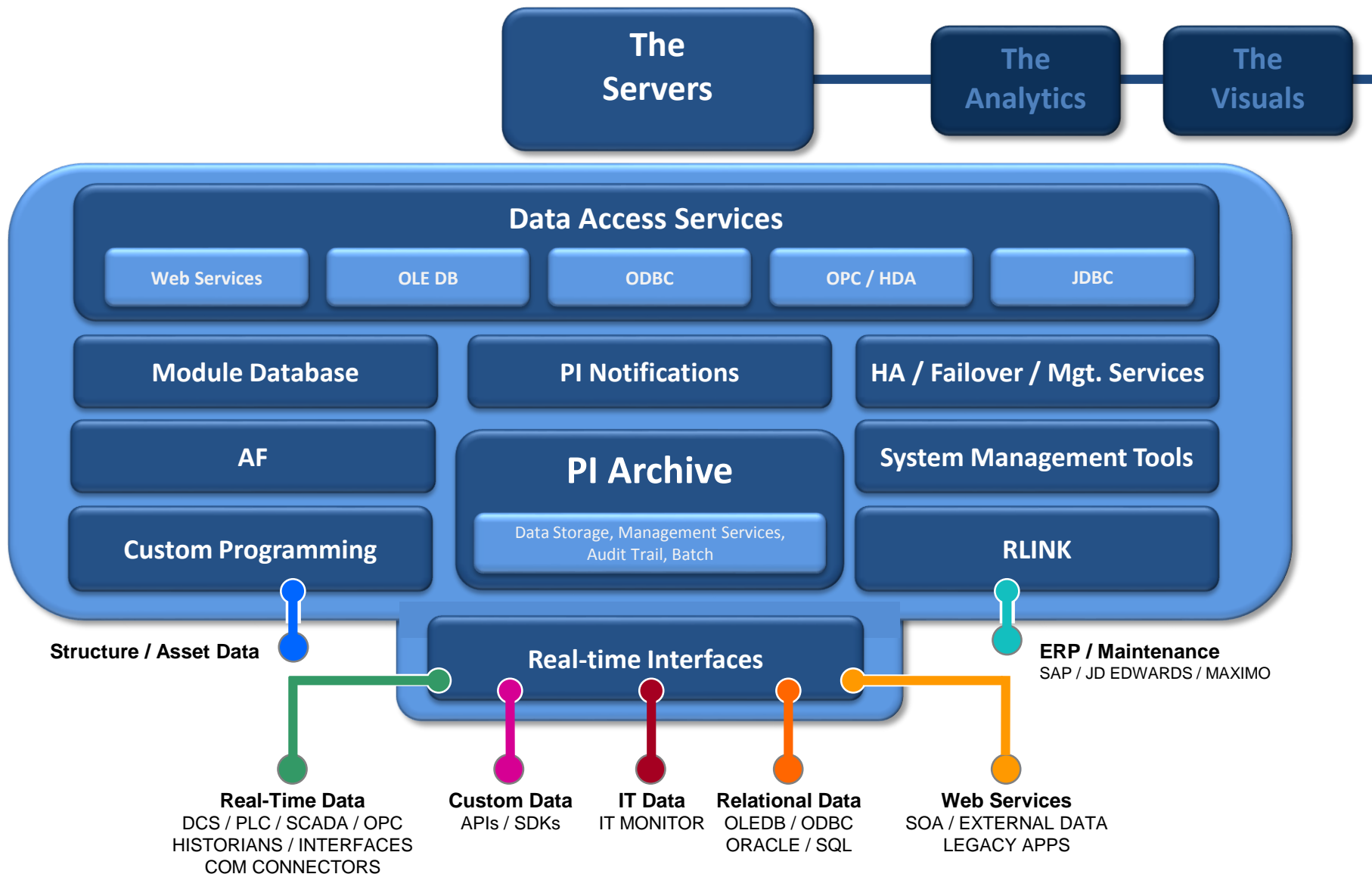
**Gather, Organize, Distribute,
and Store Data from Many Sources**

- Security
- Scalability
 - 64-bit Support
- High Availability
- Establish Single Data Context Model - AF
- Usability / Productivity Improvements

The Servers



The PI Servers



3 concurrent releases for 3 themes

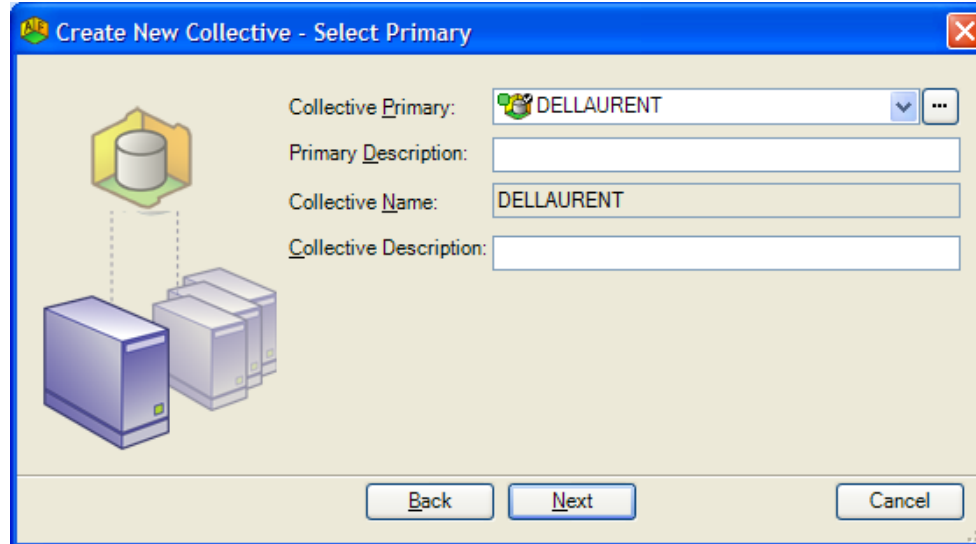


- Releases
 - PI Server 3.4.380 with Windows Integrated Security
 - Released September 21, 2009
 - PI AF 2.1
 - Released September 1, 2009
 - PI Notifications 1.1
 - Released September 30, 2009
- Integration with Windows Security
- High Availability
- More Scalability and Manageability

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



- The PI Server has been HA for almost 3 years (1Q 2007)
- PI Notifications has been HA since initial release (1Q 2008)
- PI AF 2.1 is now Highly Available (3Q 2009)



- Better performance, scalability and throughput for the PI Server, PI AF and PI Notifications
- Support for 64-bit
 - Native support for the PI Server and PI AF on 64-bit
 - PI Notifications tested as 32-bit running on 64-bit
- New PI SMT plug-ins to manage the new security model
- Improved manageability for PI Notifications leveraging PI AF Notifications templates



PI Server 3.4.380 Windows Security



Technical Overview and Value proposition

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



Enhanced System Management Tools



The screenshot displays the PI System Management Tools interface. The main window has tabs for 'PI Identities', 'PI Users', and 'PI Groups'. The 'PI Identities' tab is active, showing a list of identities with columns for Identity, Description, Enabled, and Mapping.

Identity	Description	Enabled	Mapping
PIEngineers	Any individual with engineering duties	True	True
PIOperators	Any individual with operational duties	True	True
PISupervisors	Any individual with supervisory duties		
PIWorld	Built-in identity to represent world security		

Below the main window, there is a section titled 'About PI System Management Tools' and a 'PI System Management Version 3.3.1.3' box. This box contains a table of assembly file versions:

Assembly	File Version
mscorlib	2.0.0.0
SMTHost	3.3.1.2
System.Windows.Forms	2.0.0.0
System	2.0.0.0
System.Drawing	2.0.0.0
Microsoft.VisualBasic	8.0.0.0

Overlaid on the right is a 'Mappings' window showing a list of mappings with columns for Mapping, PI Server, Collective, Description, PI Identity, and Enabled.

Mapping	PI Server	Collective	Description	PI Identity	Enabled
OSI\Bob	My_PIServer			PISupervisors	True
OSI\PI_engins	My_PIServer			PIEngineers	True
OSI\PI_admins	My_PIServer			PIOperators	True
				PIOperators	True

At the bottom right, a configuration window for 'Server - My_PI' is shown. It features a lock icon and a list of settings:

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

A note on the right states: 'Note: This change requires restart of the PI Base'.

Unlimited Access Control Lists (ACLs)



The screenshot displays the 'sinusoid - Point Builder - PI System Management Tools' application. The left sidebar shows a tree view with 'Collectives and Servers' and 'System Management Tools'. The main window has tabs for 'Server', 'Point', 'Point Security', and 'Data Security'. The 'Point Security' tab is active, showing a list of users and their permissions. A callout box highlights the 'Point Security' section, showing the ACL string: `piadmin: A(r,w) | piadmins: A(r,w) | PEngineers: A(r) | PIWorld: A(r)`. A 'Select' dialog box is open, showing a list of users from server LG380. The 'PIOperators' user is selected.

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

OSI\garrigues piadmin

Server Point Point Security Data Security

LG380 sinusoid

1 point

Point Security

piadmin: A(r,w) | piadmins: A(r,w) | PEngineers: A(r) | PIWorld: A(r)

General Archive Classic Security System

Point Security

piadmin PIWorld

piadmins

PEngineers

Add... Remove

Permissions for piadmin

Read ☒

Write ☒

Session Record

Data Security

piadmin

piadmins

PIOperators

Permissions for piadmin

Read

Write

Select

Select from server LG380

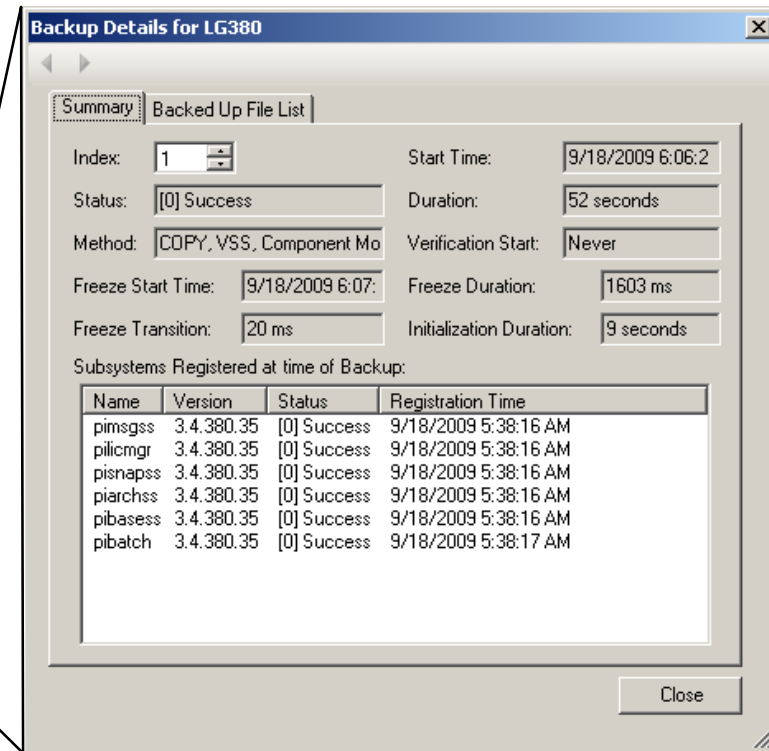
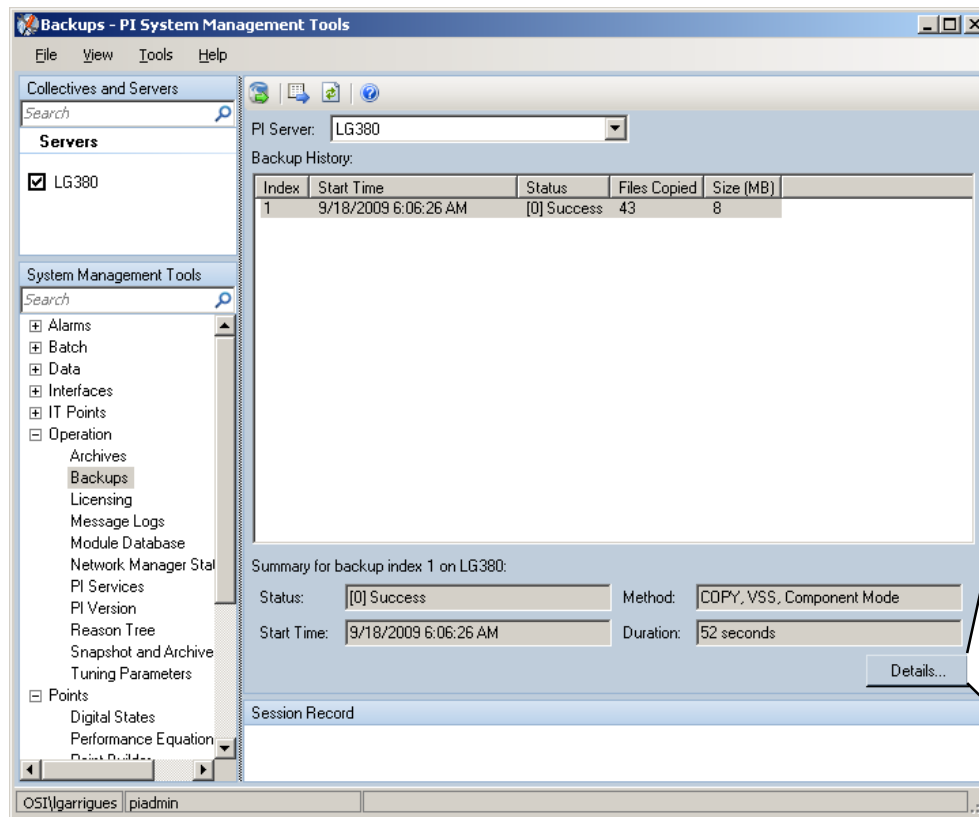
Type: All

Name	Description
piadmin	The administrative PI User with unrestricted access
piadmins	The administrative PI Group formerly named "piadmin"
pidemo	The generic PI User
PEngineers	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"

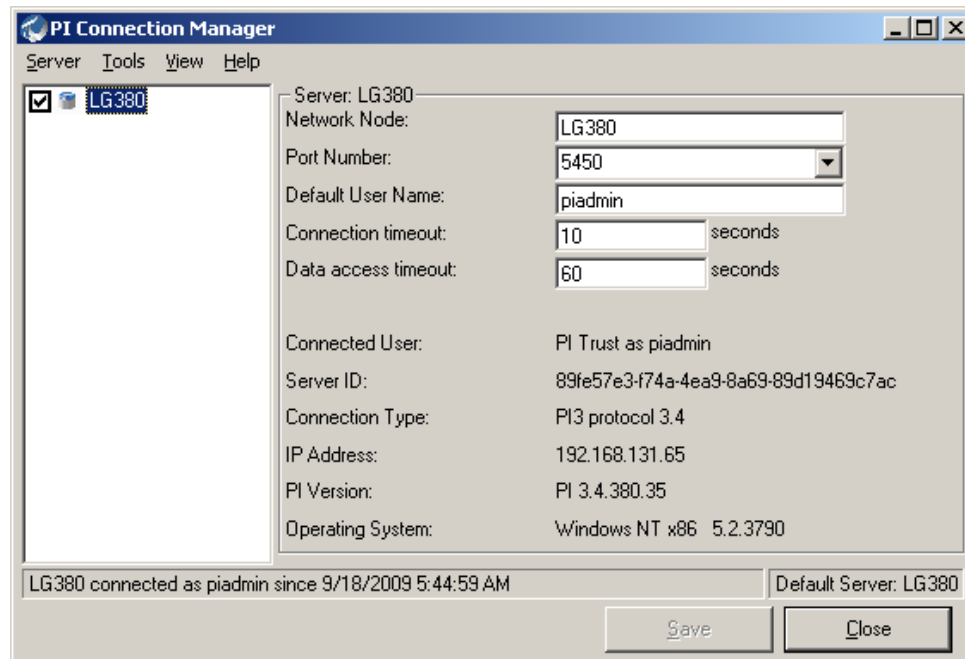
Add

OK Cancel

- Added support for incremental backups, verified backups, and a full backup history



- Clients apps only need to upgrade the PI SDK 1.3.6 (released Q3 2008) to take advantage of the new Security Model
- Most clients, like PI ProcessBook 3.x, PI WebParts 2.x, and PI DataLink 4.x are already shipping with the PI SDK 1.3.6

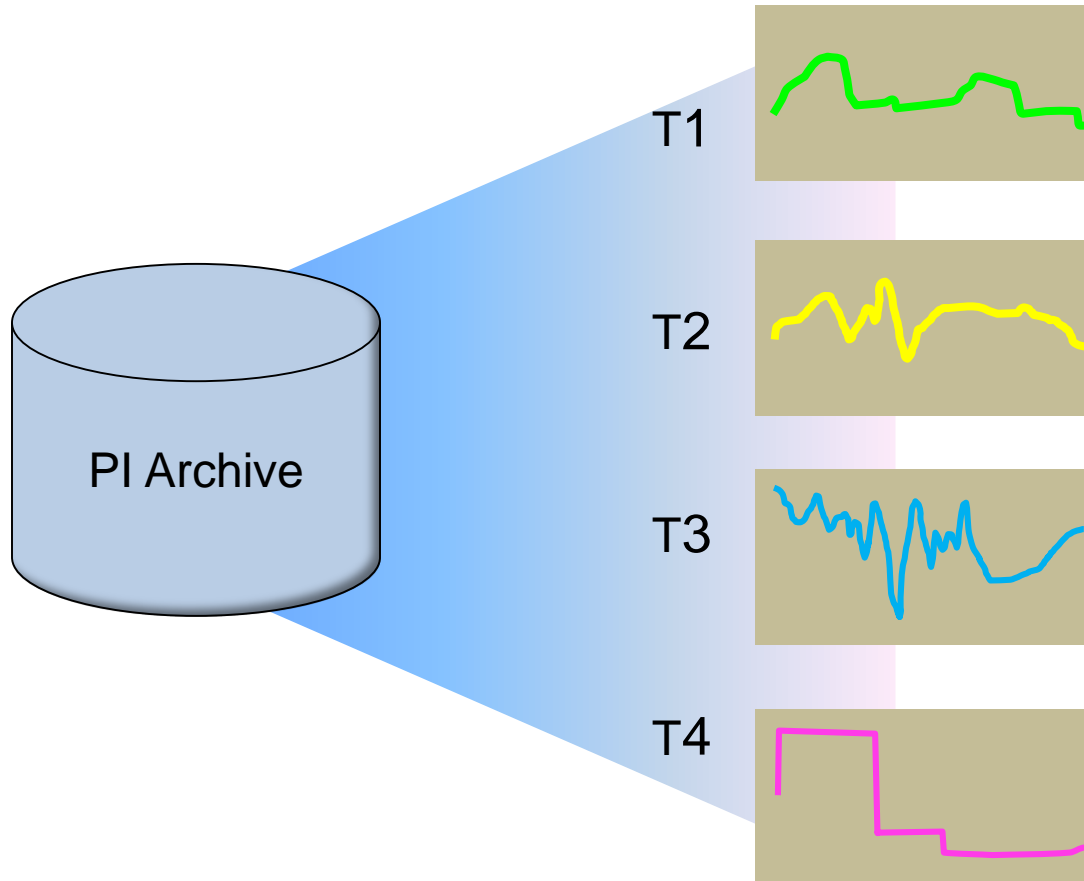


PI AF 2.1

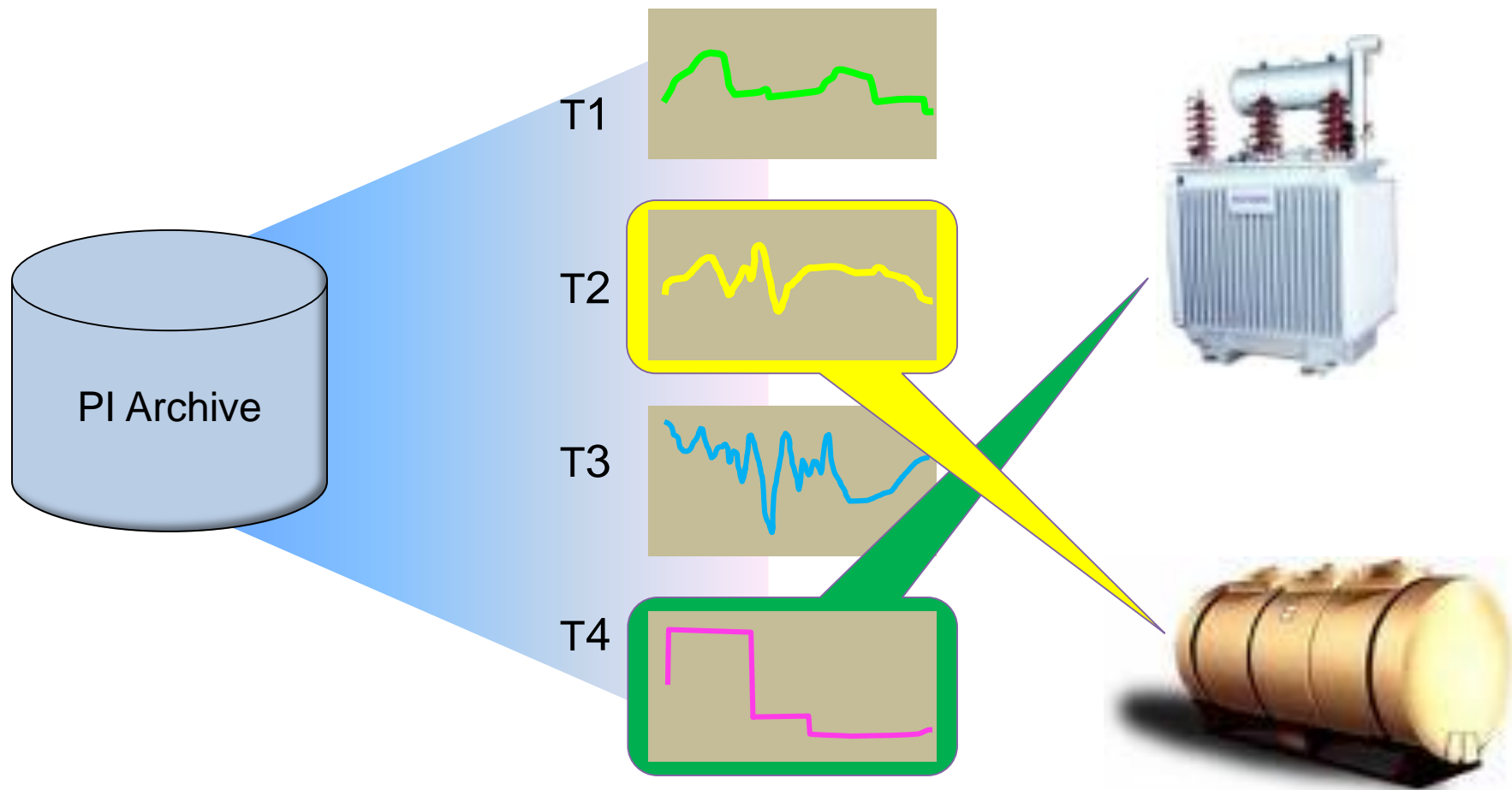


Technical Overview and Value proposition

PI is about time series data ... and tags!



But Tags mostly relate to Assets



Who is using AF today?



Oil & Gas

- Shell, Chevron, TOTAL



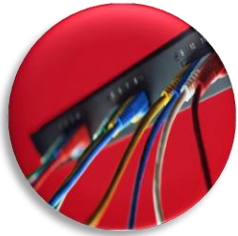
Power Generation, T&D

- AMI, Xcel Energy, AEP, DTE, KCPL, Hydro-Quebec



Pulp & Papers

- Appleton, International Paper, Tembec



Data Centers

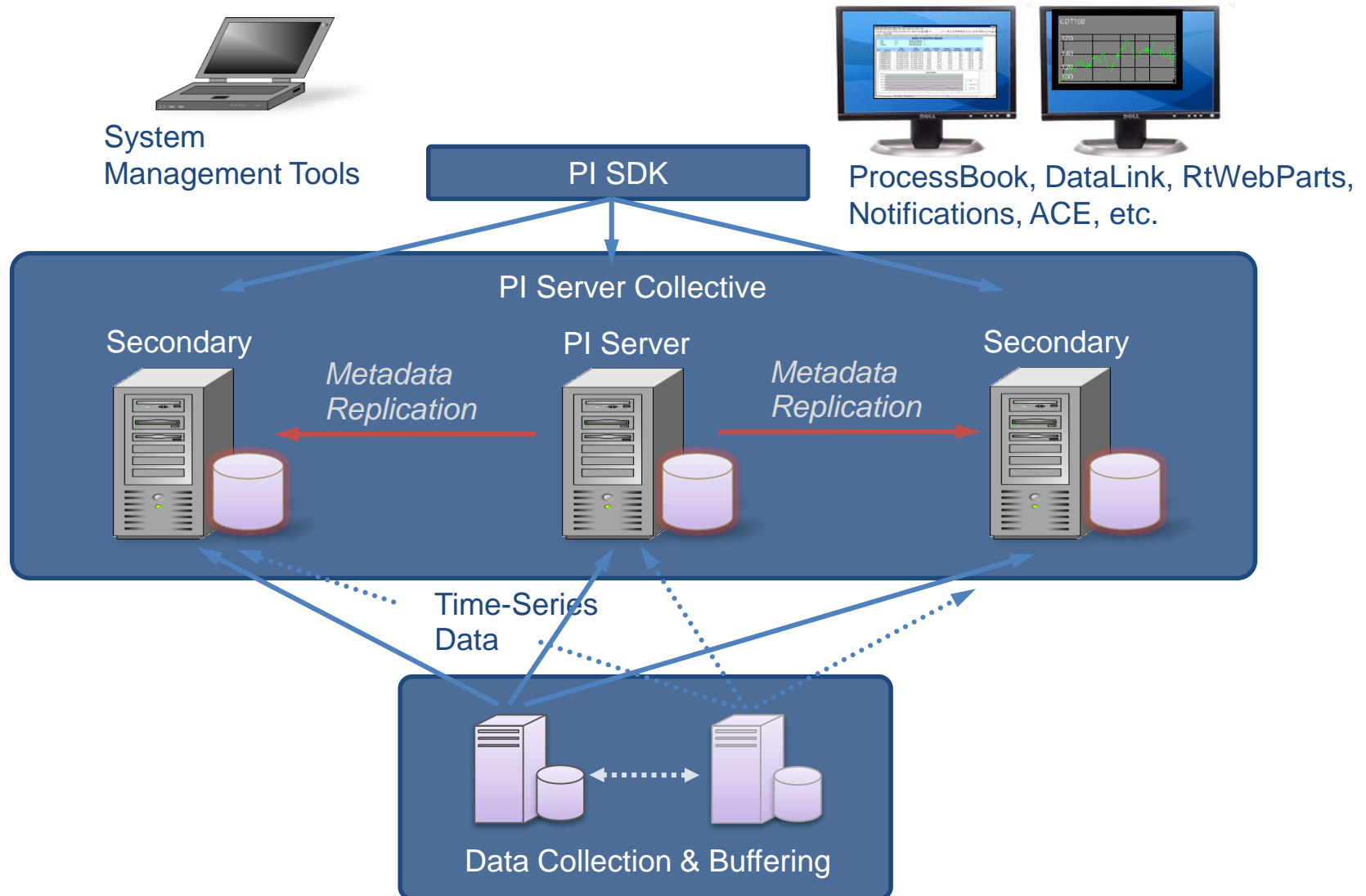
- Microsoft, HP, Cornell

High Availability



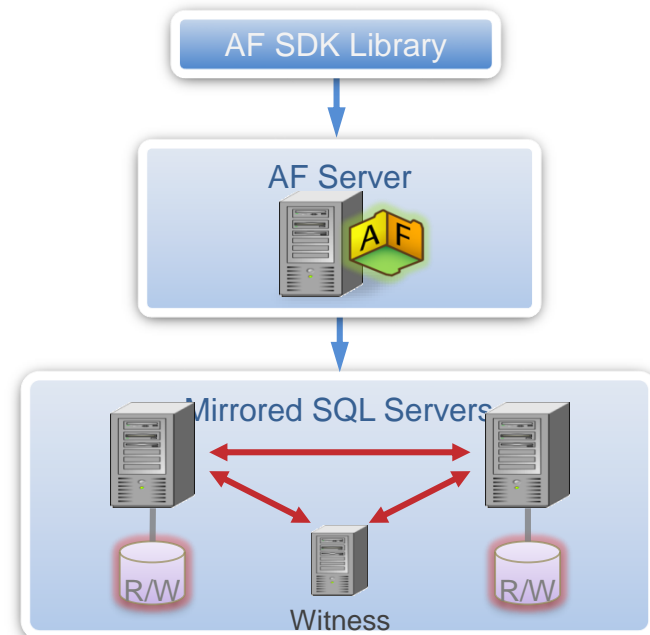
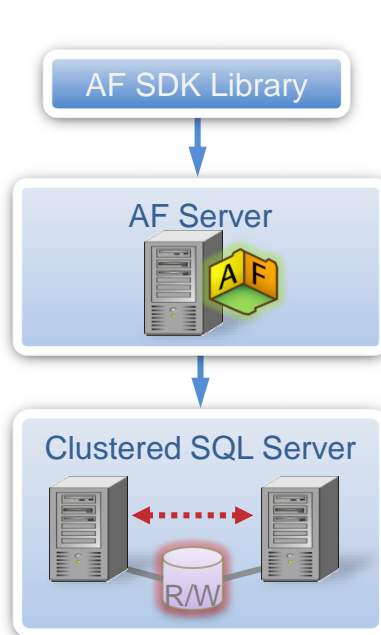
- Network Failure
- Administrative/User Failure
- Upgrades and Migrations
 - Hardware
 - Operating System Software (Patches)
 - Applications Software

High Availability for PI Server

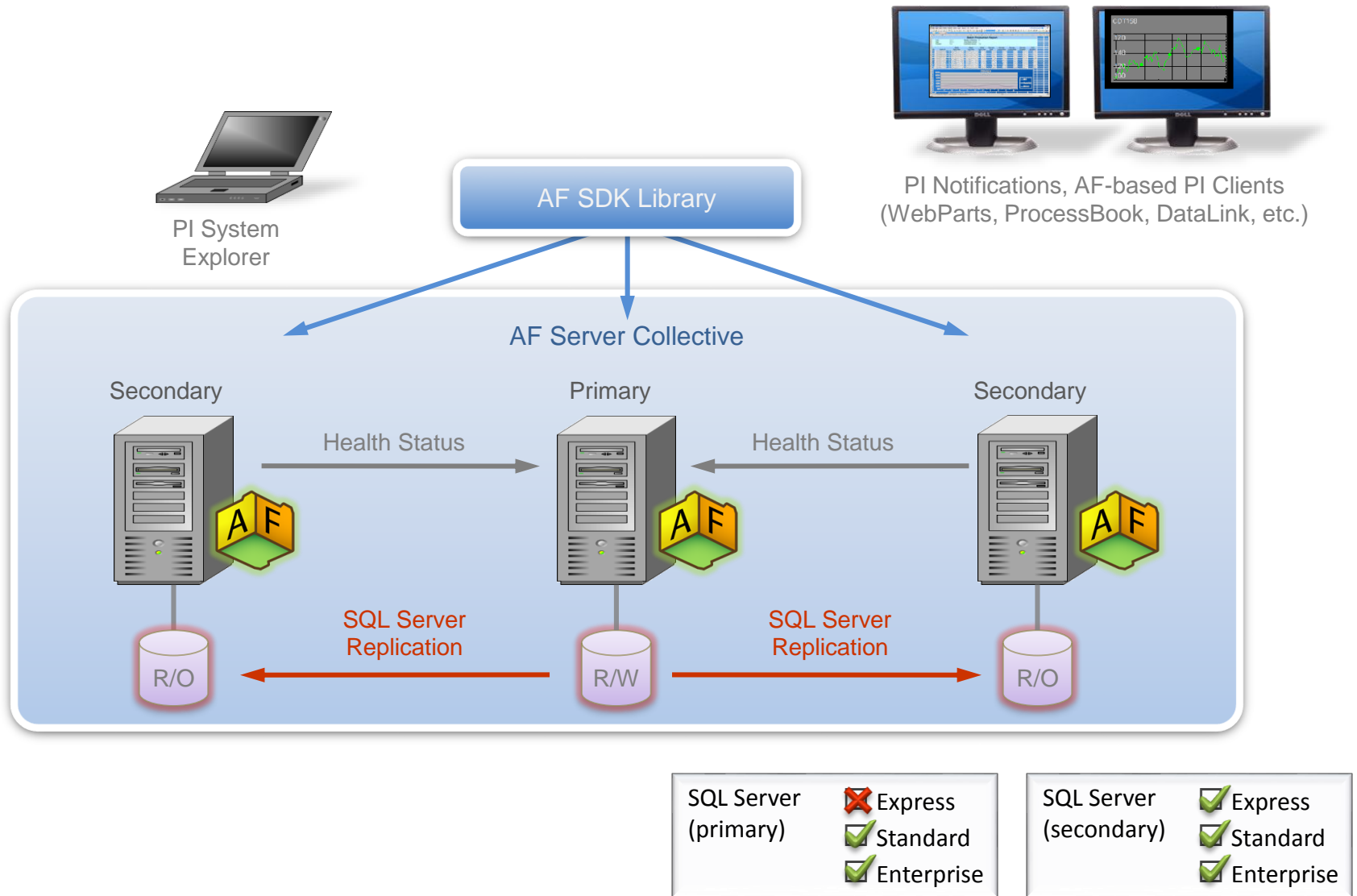


High Availability for AF Server

- Support for Clustering, Mirroring, and Replication (HA)
- Conceptually very similar to HA for the PI Server
 - Automatic Failover for clients
 - SQL replication for the AF database



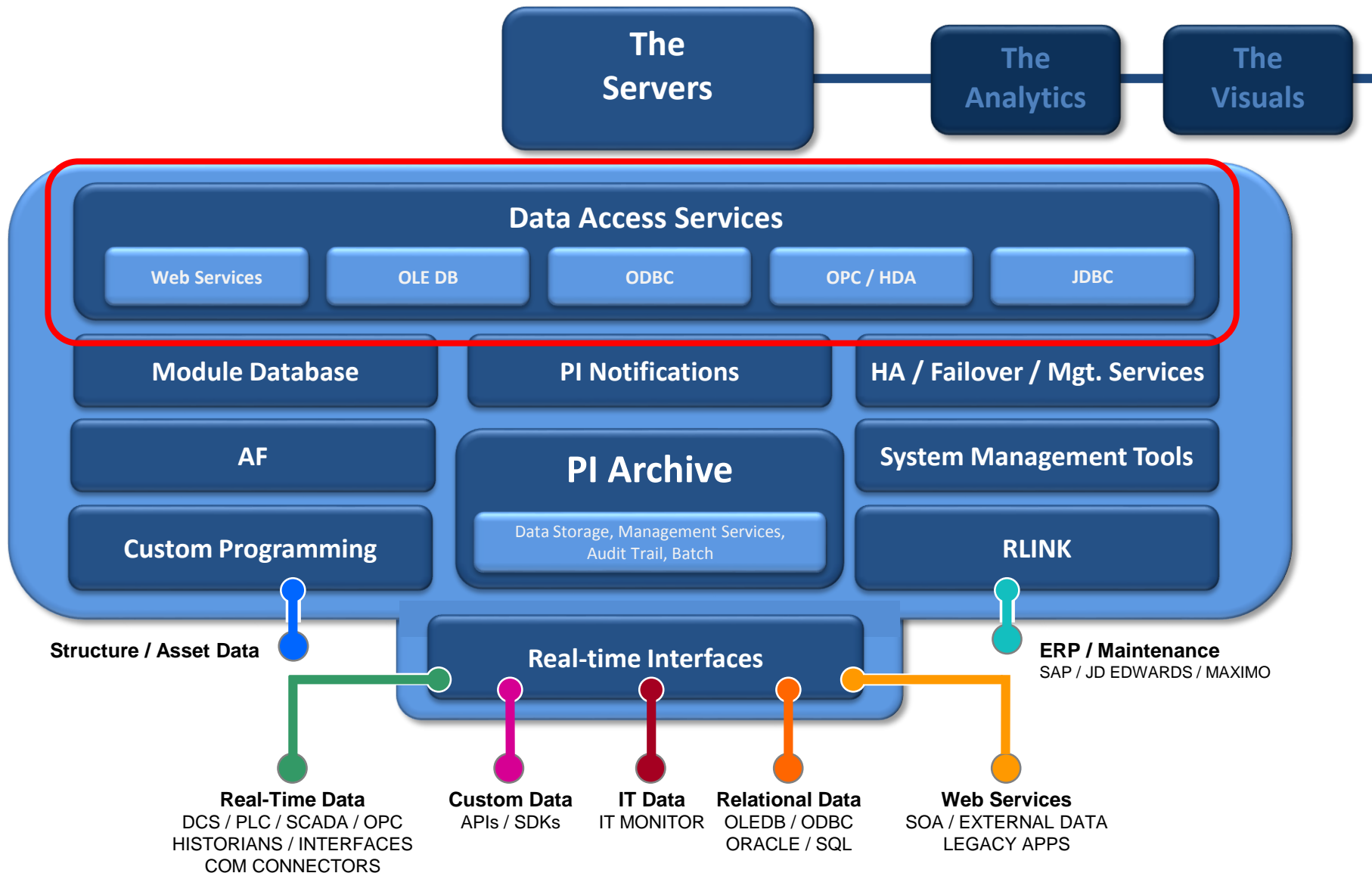
High Availability for AF Server



Data Access



Data Access Services



- Collection of all products that offer programmatic data access to all or part of the PI System
 - SQL tools
 - PI OLEDB Provider
 - PI JDBC Driver (*available on OSIsoft vCampus*)
 - PI ODBC Client
 - Web Services
 - PI Web Services (*CTP available on OSIsoft vCampus*)
 - OPC
 - OPC DA/HDA Server
 - OPC UA Server (*CTP available on OSIsoft vCampus*)
 - SDKs (for partners/developers)
 - PI SDK
 - AF SDK

- Integrate with 3rd party products (SQL, Office, SAP)
- Create reports (SQL Reporting Services, Crystal Reports, Cognos, etc)
- Share PI data on the Web (SharePoint, ASP.NET, etc)
- Enterprise Application Integration - EAI (BizTalk, Tibco, etc)
- Extract, Transform and Load PI data - ETL (SQL, SAP BO, etc)
- Combine PI with data in other systems (SQL, Oracle, etc)
- Online Analytical Processing - OLAP (SQL)
- Visualize with HMI (OPC clients)
- Develop custom interfaces to PI system
- Manage the PI systems
- Support virtually any custom application in any programming language on any platform!

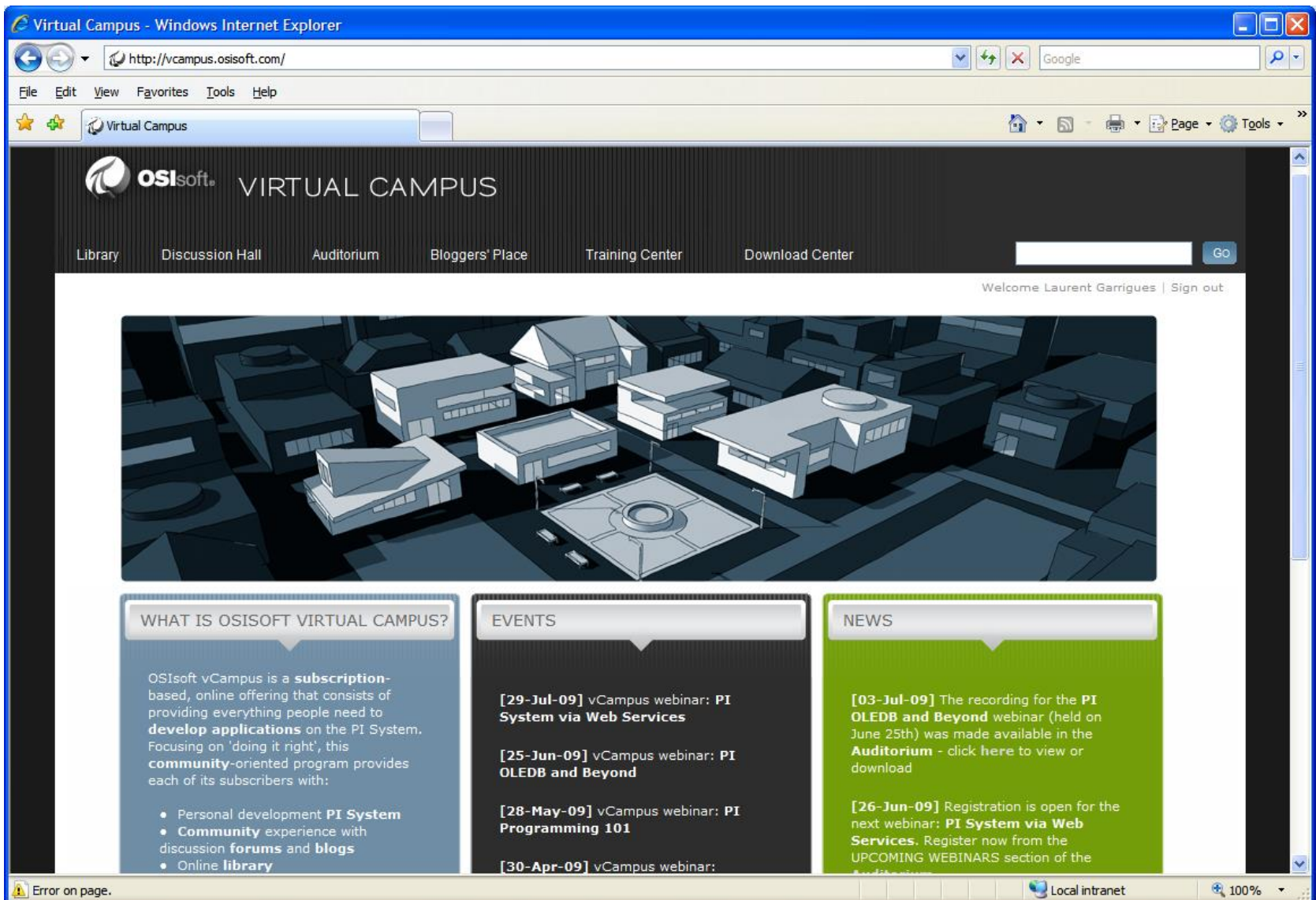
- PI Data Services (Baseline Services) (Q4 2009)
 - Includes both 32-bit and 64-bit providers
- PI Web Services Technical Preview (*Released*)
 - OSIsoft vCampus online, hosted environment
- PI OLEDB 3.3 (*Released*)
 - Includes both 32-bit and 64-bit providers
- PI OLEDB 4.0 (1Q 2010)
 - Support for entire PI system, both PI Tags and AF Elements
- PI JDBC 1.0 (*Released*)
 - JDBC-OLEDB Bridge for Windows and Linux, OSIsoft vCampus

- OPC DA/HDA Server 1.2.6 (*Released*)
 - Achieved Self-Certification Logo from OPC Foundation
- PI OPC UA Server Technical Preview (*Released*)
 - OSIsoft vCampus online, hosted environment
- PI SDK 1.3.8 (*Released*)
 - Includes 64-bit provider
- AF SDK 2.1 (*Released*)
 - Includes both 32-bit and 64-bit providers
- PI SDK 1.4.0 (1Q 2010)
 - Client-side buffering for manually entered data, ACE calculations writing to PI, and custom SDK-based interfaces

OSIsoft vCampus



- Includes access to all programmatic interfaces to the PI System: PI OLEDB/JDBC/ODBC, PI SDK, AF/AN SDK, PI Web Services, OPC DA/HDA/UA Server
- Development license for programmatic interfaces
- Runtime licensing (CAL)
- Programming examples and documentation
- OSIsoft Virtual Campus - community collaboration site
 - Forums
 - Blogs
 - Webinars



Virtual Campus - Windows Internet Explorer

http://vcampus.osisoft.com/

File Edit View Favorites Tools Help

Virtual Campus

OSIsoft VIRTUAL CAMPUS

Library Discussion Hall Auditorium Bloggers' Place Training Center Download Center

Welcome Laurent Garrigues | Sign out

WHAT IS OSISOFT VIRTUAL CAMPUS?

OSIsoft vCampus is a **subscription**-based, online offering that consists of providing everything people need to **develop applications** on the PI System. Focusing on 'doing it right', this **community**-oriented program provides each of its subscribers with:

- Personal development **PI System**
- **Community** experience with discussion **forums** and **blogs**
- Online **library**

EVENTS

[29-Jul-09] vCampus webinar: **PI System via Web Services**

[25-Jun-09] vCampus webinar: **PI OLEDB and Beyond**

[28-May-09] vCampus webinar: **PI Programming 101**

[30-Apr-09] vCampus webinar:

NEWS

[03-Jul-09] The recording for the **PI OLEDB and Beyond** webinar (held on June 25th) was made available in the **Auditorium** - click [here](#) to view or download

[26-Jun-09] Registration is open for the next webinar: **PI System via Web Services**. Register now from the **UPCOMING WEBINARS** section of the

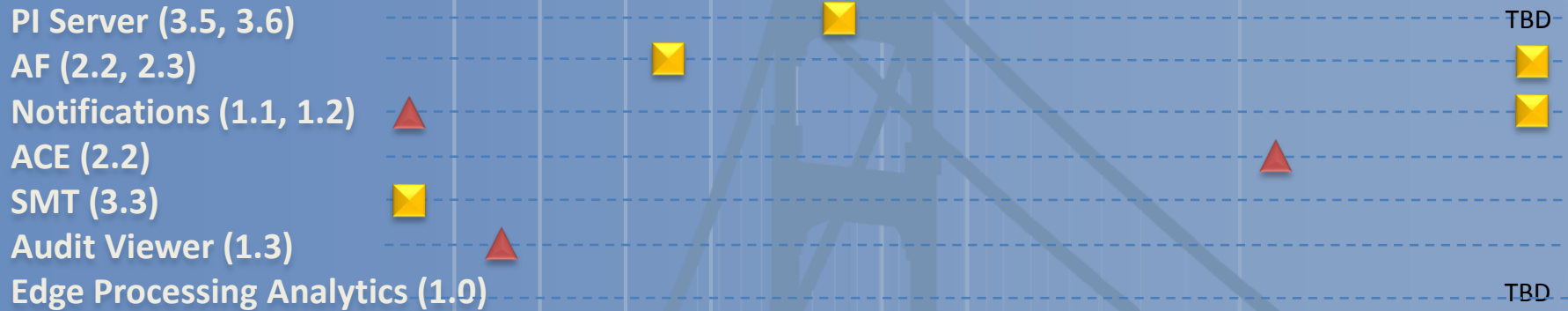
Error on page. Local intranet 100%

- Major Release
- Minor Release

OSIsoft Product Roadmap

Oct Nov Dec Jan Feb Mar Q2'10 Q3 '10

Server



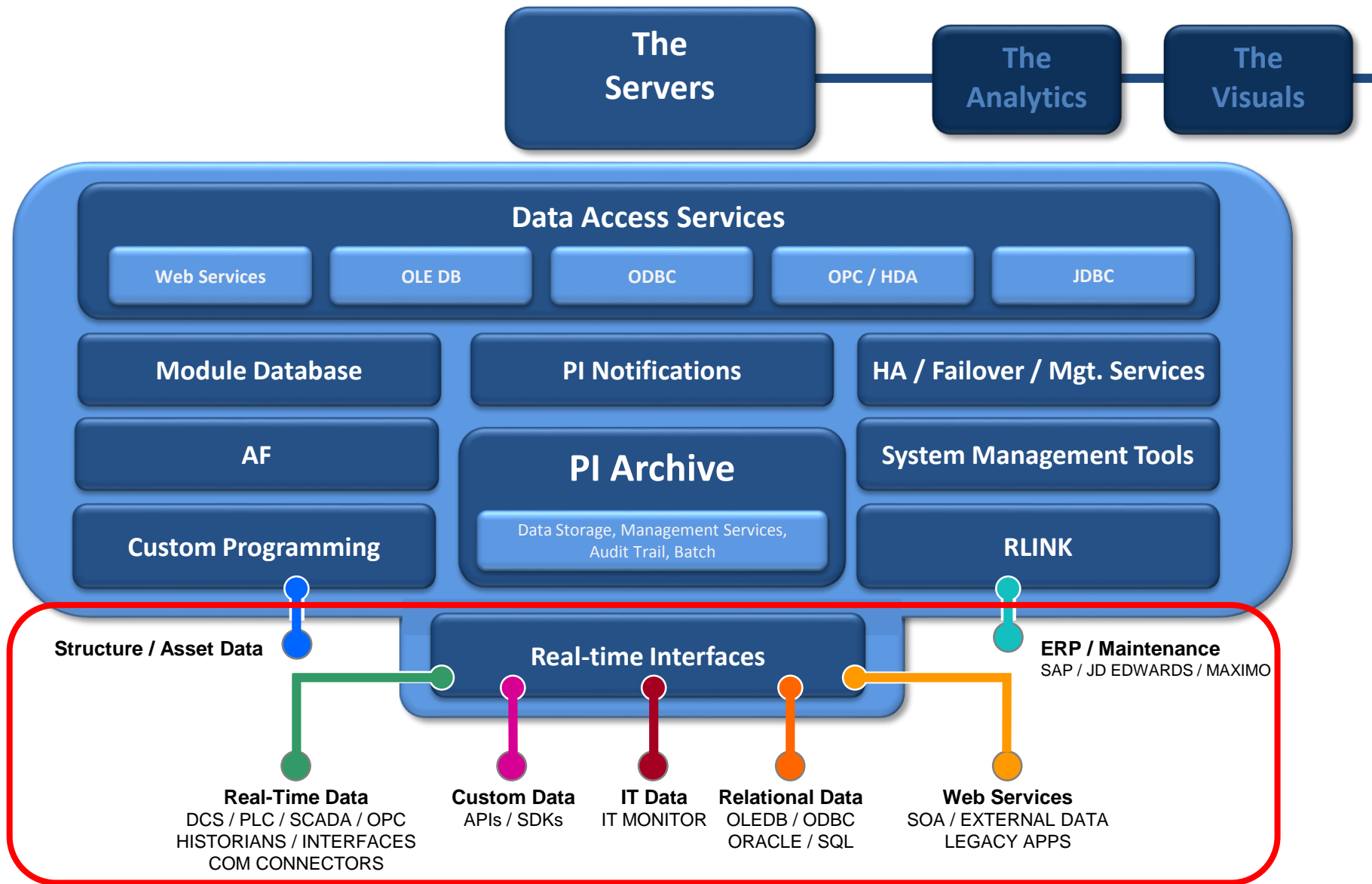
Data Access



PI Interfaces



The PI Servers



OSIsoft Product Roadmap – Interfaces

- Major Release
- Minor Release

Oct Nov Dec Jan Feb Mar Q2'10 Q3 '10

General Interfaces

AutoPointSync (1.2.6)									TBD
PI UFL (3.2.0)			▲						
RDBMS (3.17.0)			▲						
WITSML (1.0)			■						
IT Monitor			▲						
ICU (1.5.0)									TBD

OPC Interfaces

PI OPC UA Interface (1.0)									TBD
PI OPC Interface / DA (2.4.0)									TBD

Batch Interfaces

ABB 800xA (1.0)	■								
Siemens Simatic PCS7 (1.0)		■							
Wonderware InBatch (1.0)		■							

Power Meter Interfaces

Elster (1.0)						■			
Tiilliant Unity (1.0)						■			
Grid Net PolicyNet (1.0)						■			
Silver Springs Network UtilityIQ (1.0)					■				

PI Analytics



The Analytics within the PI System



The
Server

The
Analytics

The
Visuals

Advanced Computing Engine (ACE)

PI Notifications

RtReports

Enterprise Services

PI Analytics

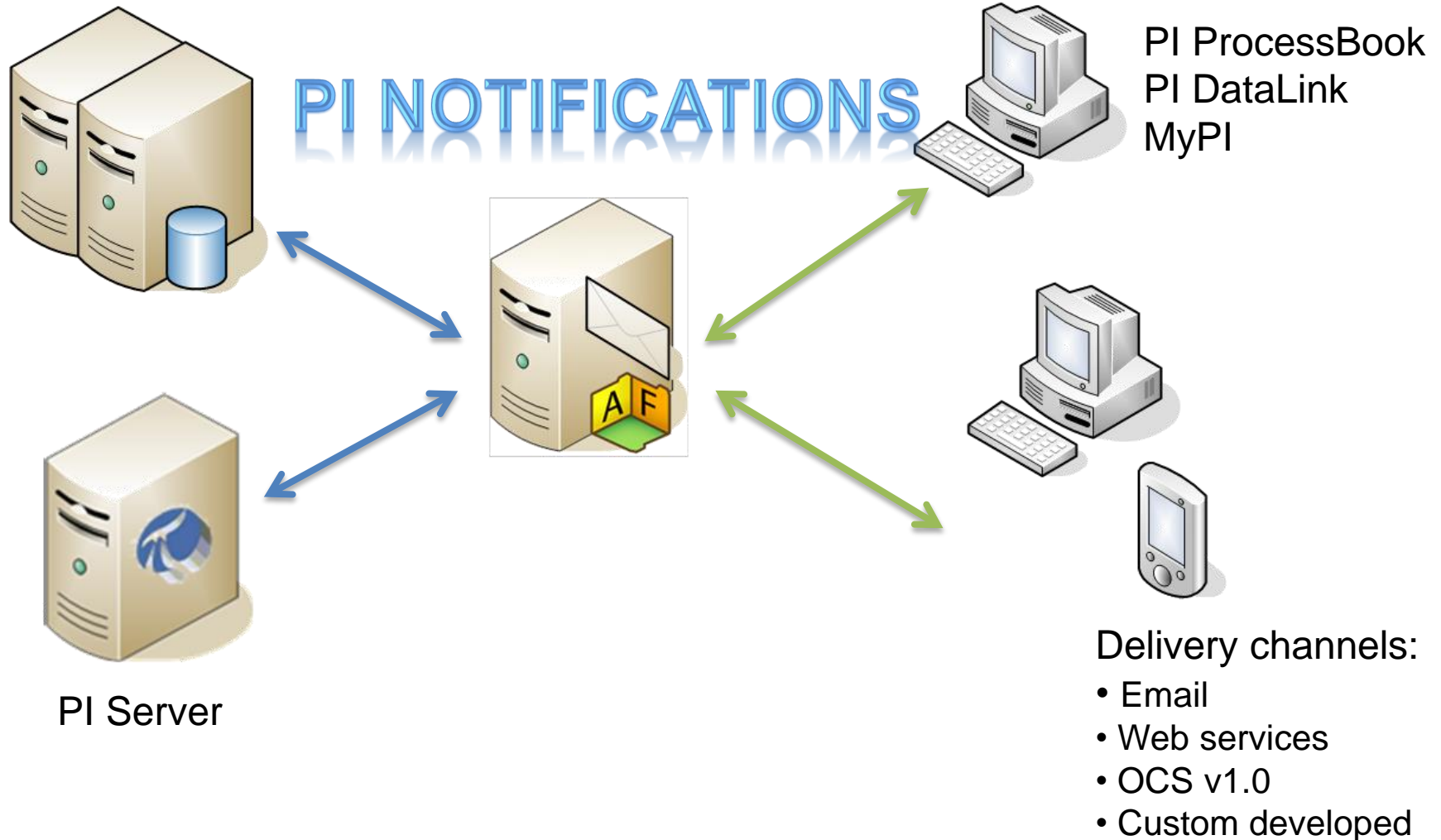
(PI Performance Equations, PI Totalizers, PI Alarms, PI RTSQC)

PI Notifications 1.1

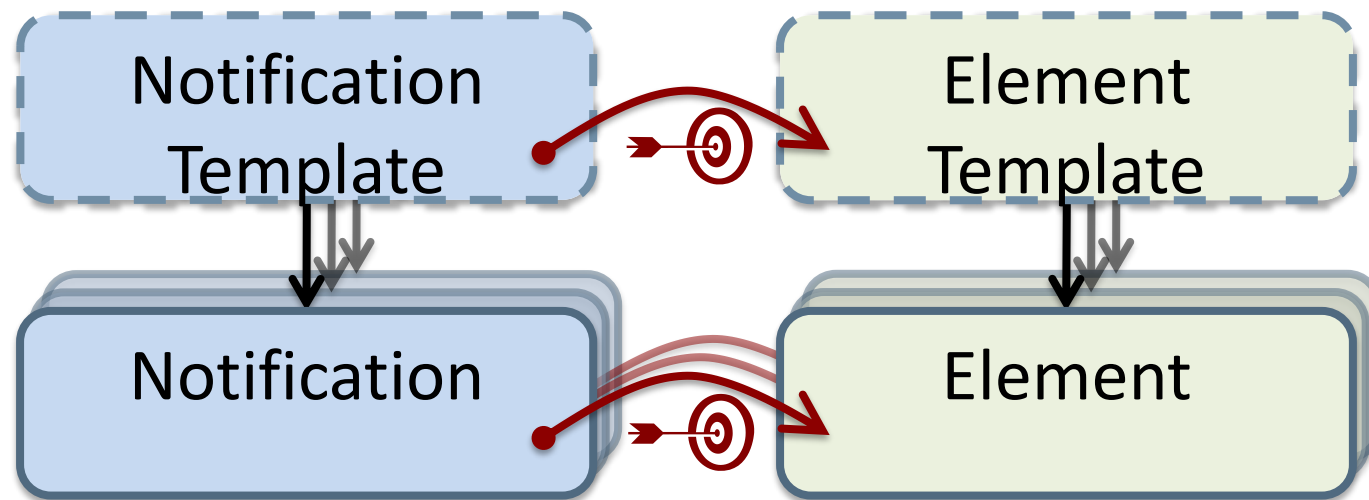


Technical Overview and Value proposition

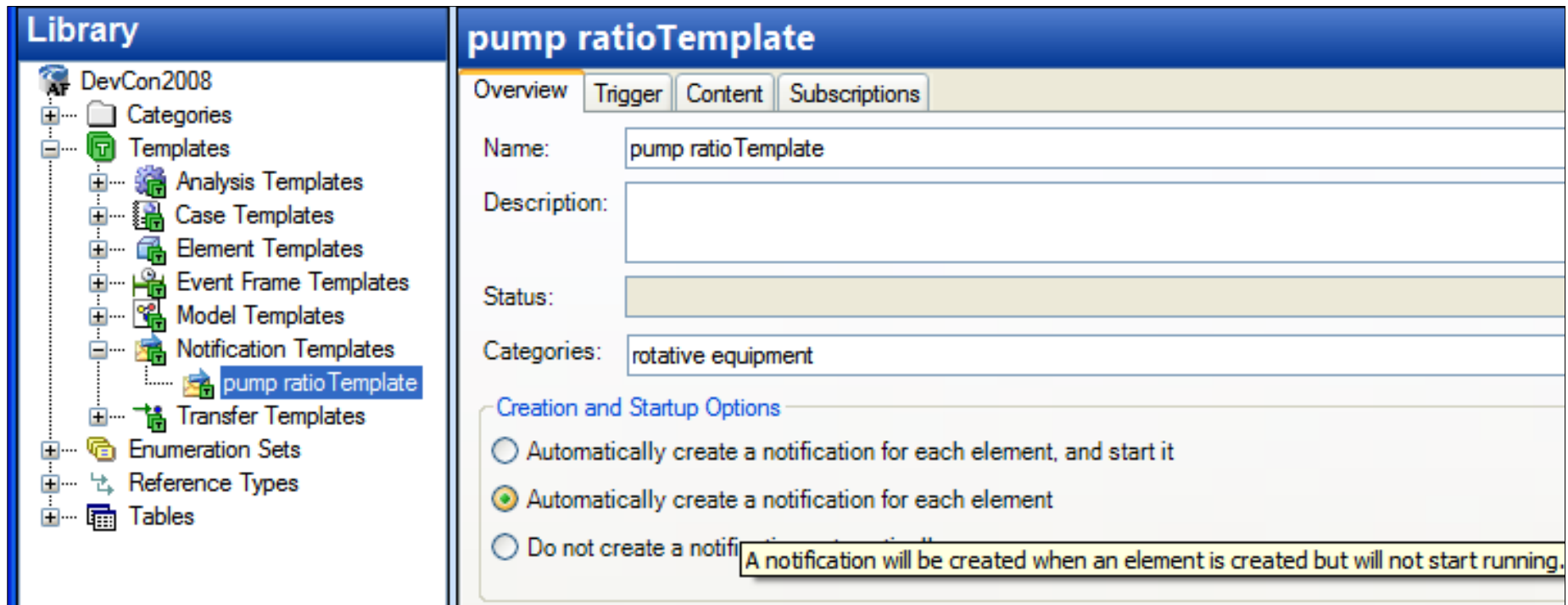
Others data sources



- Performance Improvements (start-up and retrieval)
- Can use Email service to send an SMS message (offered by most wireless providers)
- Notification Templates enable rapid and automatic creation of maintainable notifications



- Automate the creation and maintenance process



The screenshot displays the 'Library' pane on the left, showing a tree structure of templates. The 'Notification Templates' folder is expanded, and 'pump ratioTemplate' is selected. The main pane shows the configuration for this template, with tabs for Overview, Trigger, Content, and Subscriptions. The 'Overview' tab is active, showing fields for Name, Description, Status, and Categories. The 'Creation and Startup Options' section contains three radio buttons: 'Automatically create a notification for each element, and start it', 'Automatically create a notification for each element' (which is selected), and 'Do not create a notification'. A tooltip is visible over the selected option, stating: 'A notification will be created when an element is created but will not start running.'

Library

- DevCon2008
 - Categories
 - Templates
 - Analysis Templates
 - Case Templates
 - Element Templates
 - Event Frame Templates
 - Model Templates
 - Notification Templates
 - pump ratioTemplate**
 - Transfer Templates
 - Enumeration Sets
 - Reference Types
 - Tables

pump ratioTemplate

Overview | Trigger | Content | Subscriptions

Name: pump ratioTemplate

Description:

Status:

Categories: rotative equipment

Creation and Startup Options

- ☐ Automatically create a notification for each element, and start it
- ☒ Automatically create a notification for each element
- ☐ Do not create a notification

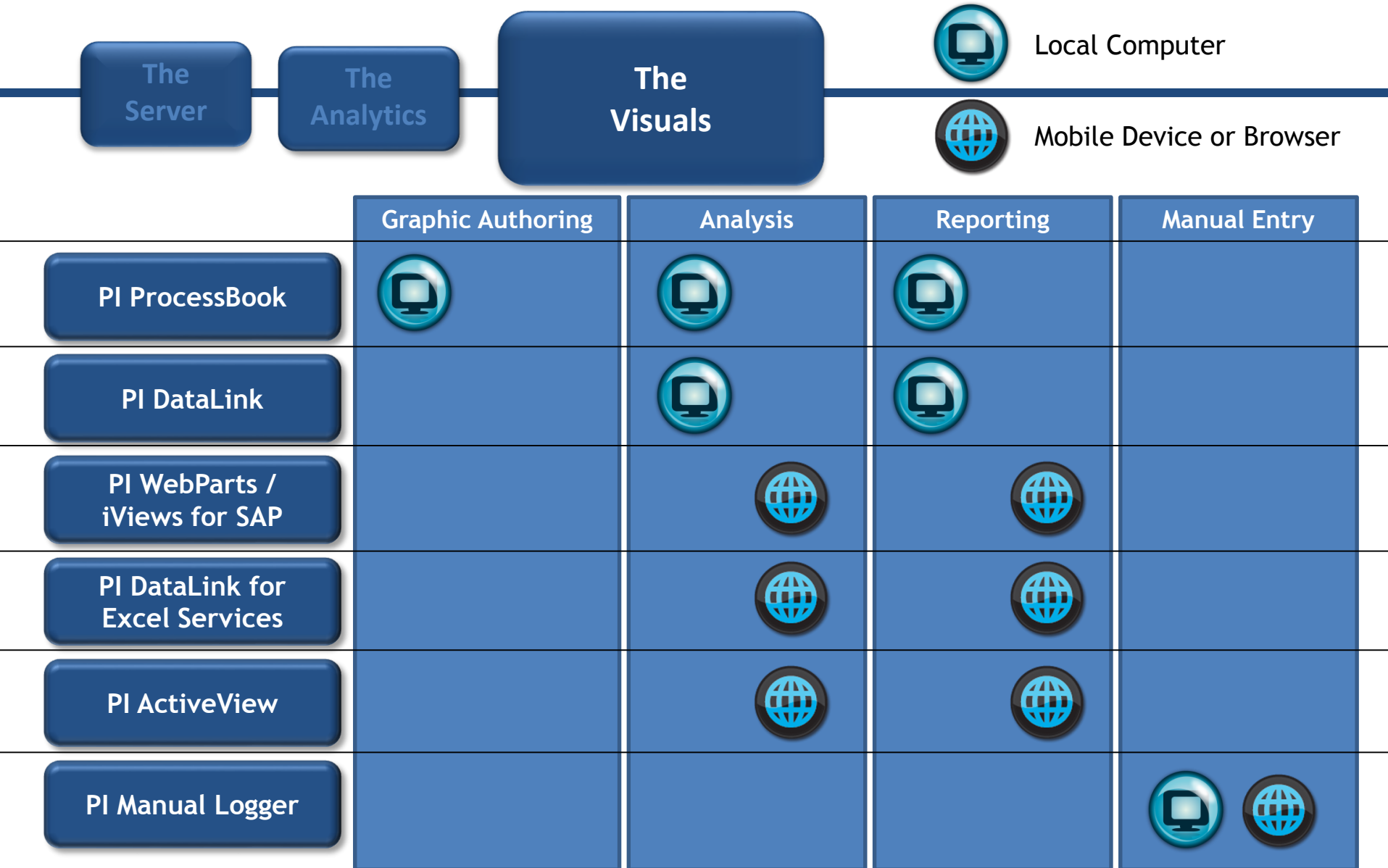
A notification will be created when an element is created but will not start running.

- Native Office Communication Server 2007 R2 (OCS) delivery channel
 - Scheduled for release in Nov 2009
 - Support presence and Instant Messaging (IM)
 - Will ship as a new plug-in for PI Notifications 1.1
 - Applications available for major cell phones
 - Windows Mobile
 - BlackBerry
 - iPhone

The Visuals



The Visuals within the PI System



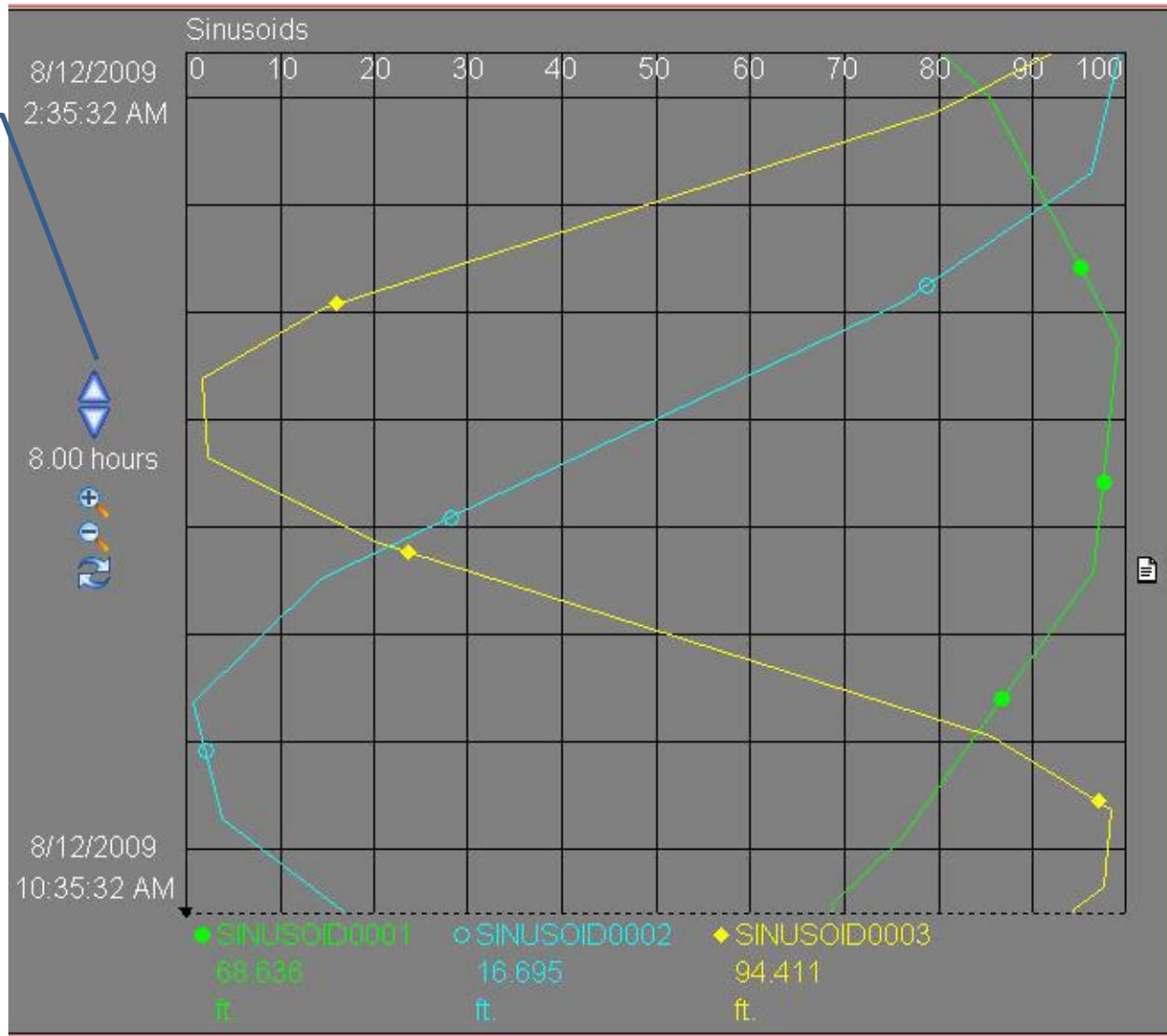
PI ProcessBook



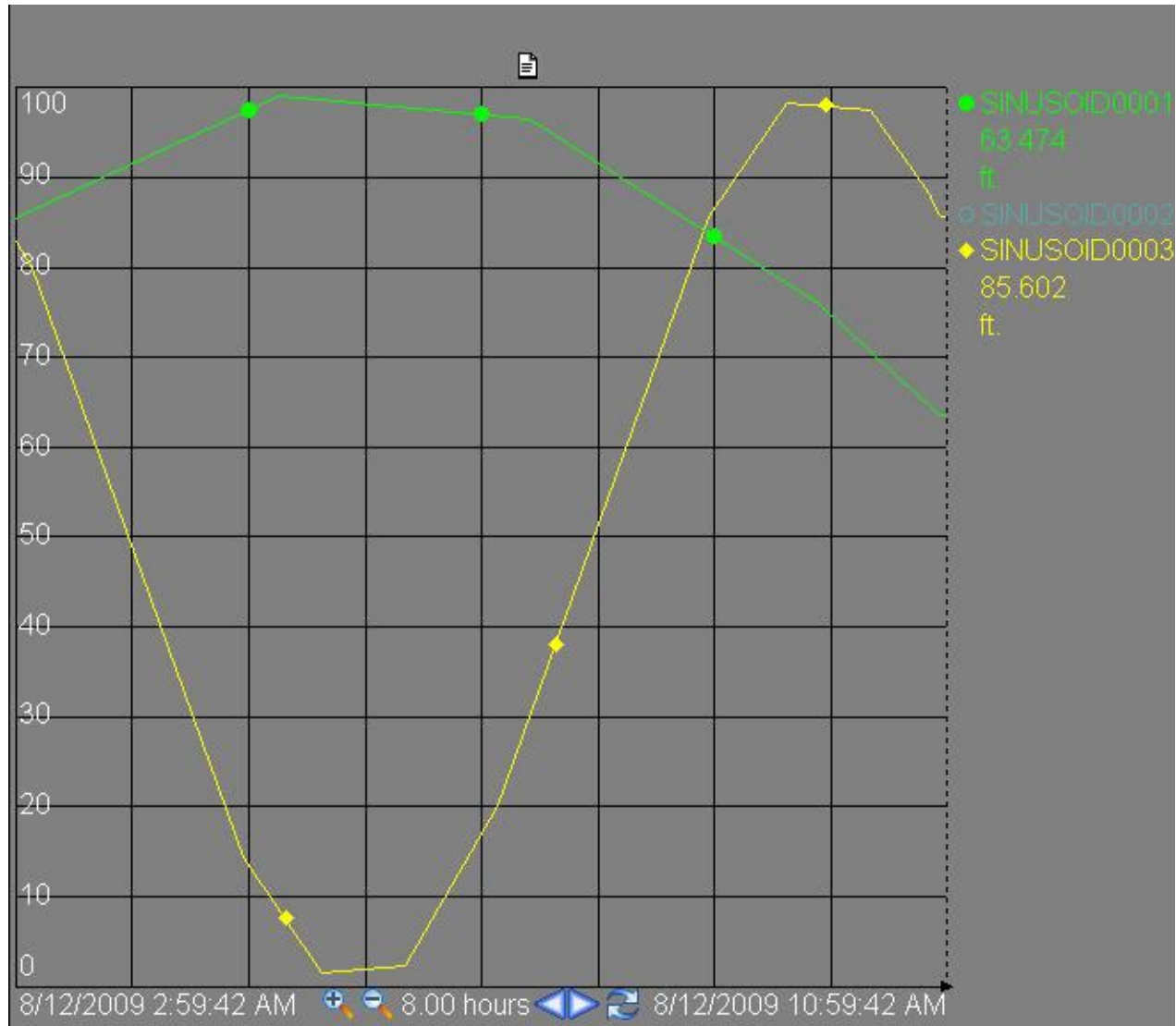
- Easier Symbol Formatting
- Vertical Trends available
- Quick Trend Zoom & Pan
- Data Details in a table
- Annotations on PI events
- Linear Regression Line on trends
- Tooltip Statistics on all dynamic symbols
- Drag and Drop symbol configuration

Trend Formatting

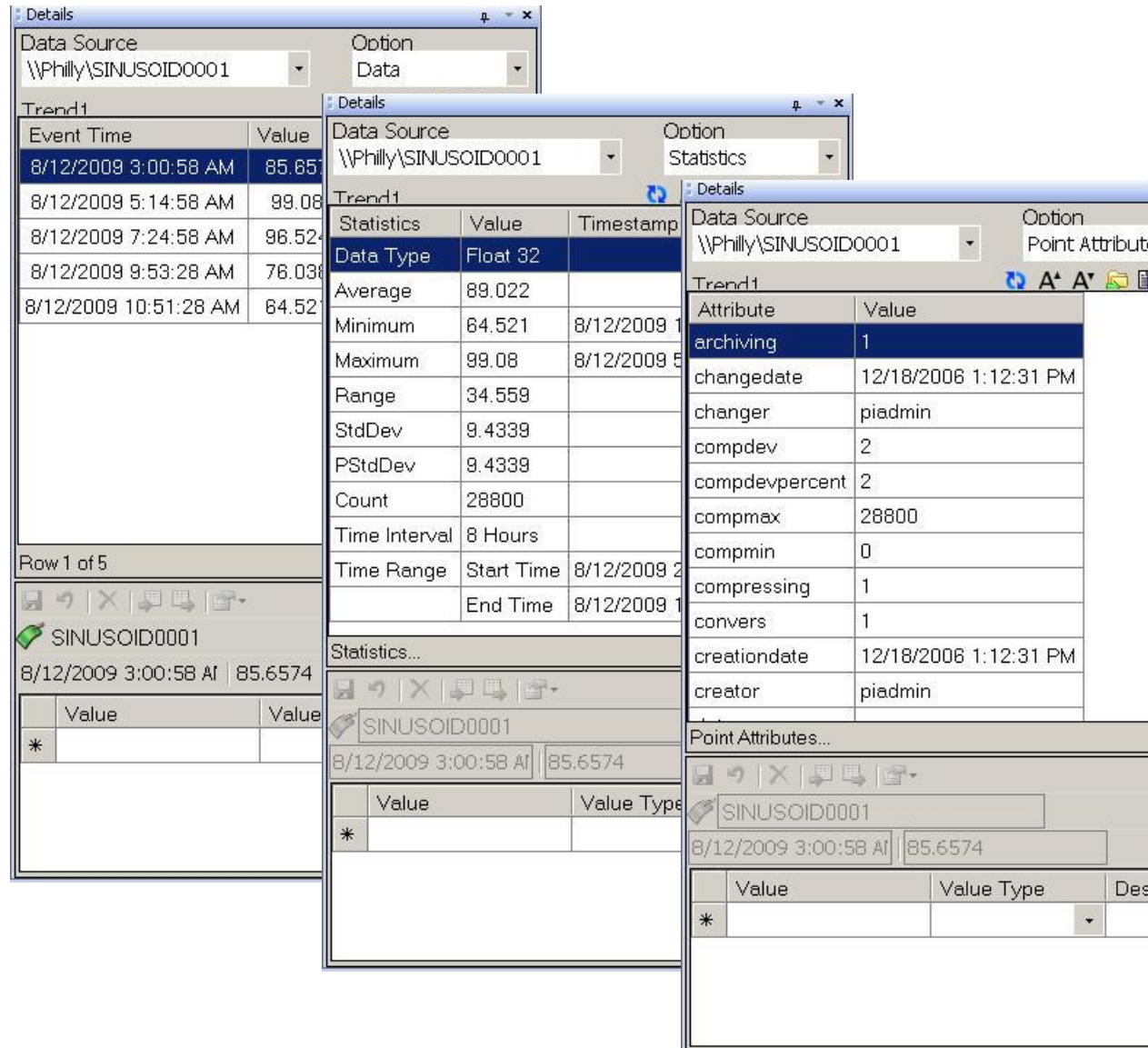
Scroll
Zoom
Revert



Hide/Show Individual Traces



- Data
- Statistics
- Point Attributes



The image displays three overlapping screenshots of the OSIsoft Details Pane, illustrating different views of data for a specific data source: \\Philly\SINUSOID0001.

Left Pane (Data View): Shows a table of data points for Trend1.

Event Time	Value
8/12/2009 3:00:58 AM	85.6574
8/12/2009 5:14:58 AM	99.08
8/12/2009 7:24:58 AM	98.52
8/12/2009 8:53:28 AM	76.03
8/12/2009 10:51:28 AM	84.52

Below the table, it indicates "Row 1 of 5" and shows a toolbar with icons for saving, deleting, and other actions. The data source is identified as SINUSOID0001.

Middle Pane (Statistics View): Shows statistical data for the same data source.

Statistics	Value	Timestamp
Data Type	Float 32	
Average	89.022	
Minimum	84.521	8/12/2009 1
Maximum	99.08	8/12/2009 5
Range	34.559	
StdDev	9.4339	
PStdDev	9.4339	
Count	28800	
Time Interval	8 Hours	
Time Range	Start Time 8/12/2009 2	
	End Time 8/12/2009 1	

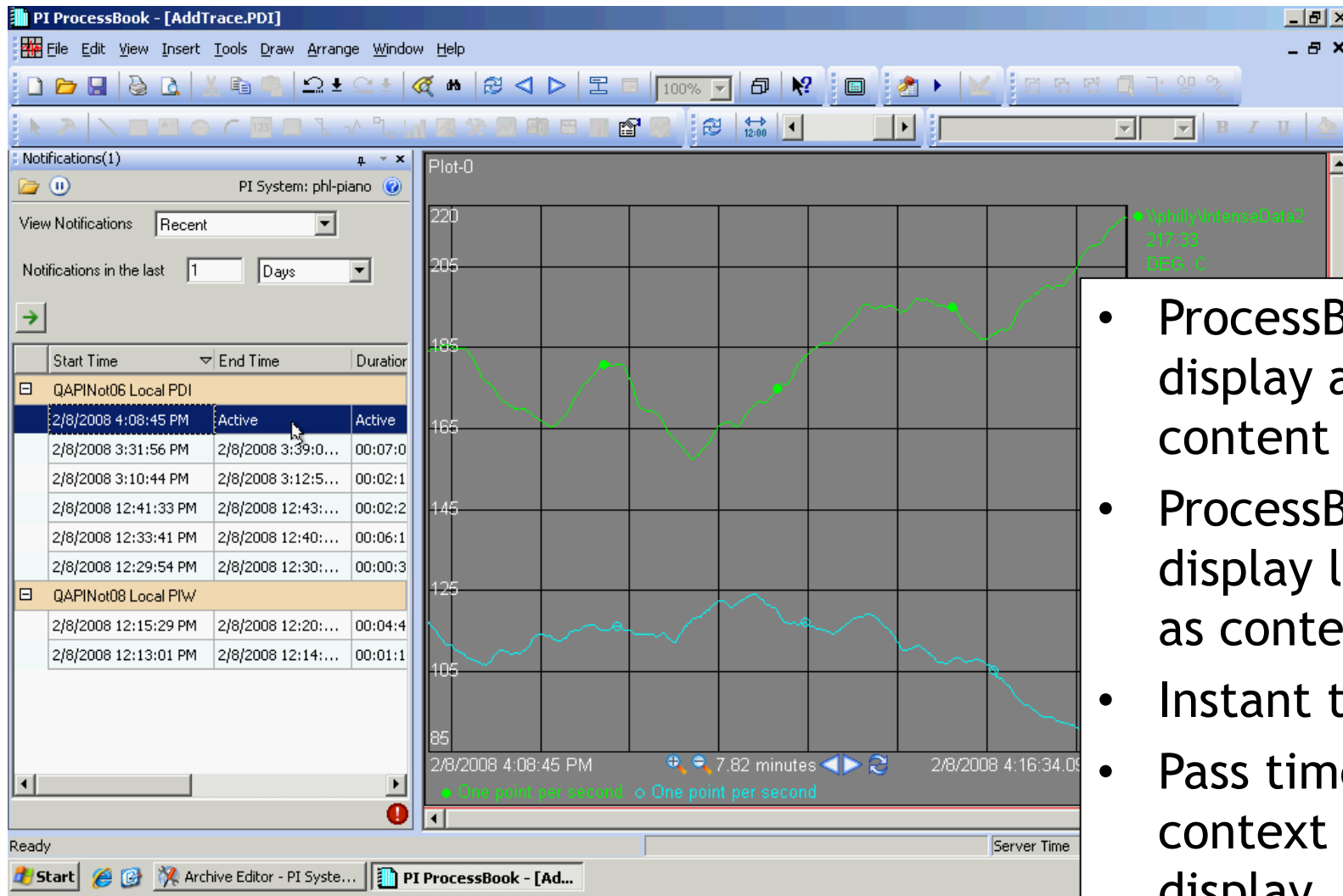
Below the statistics, it shows a toolbar and the data source name SINUSOID0001.

Right Pane (Point Attributes View): Shows point attributes for the same data source.

Attribute	Value
archiving	1
changedate	12/18/2008 1:12:31 PM
changer	piadmin
compdev	2
compdevpercent	2
compmax	28800
compmin	0
compressing	1
convers	1
creationdate	12/18/2008 1:12:31 PM
creator	piadmin

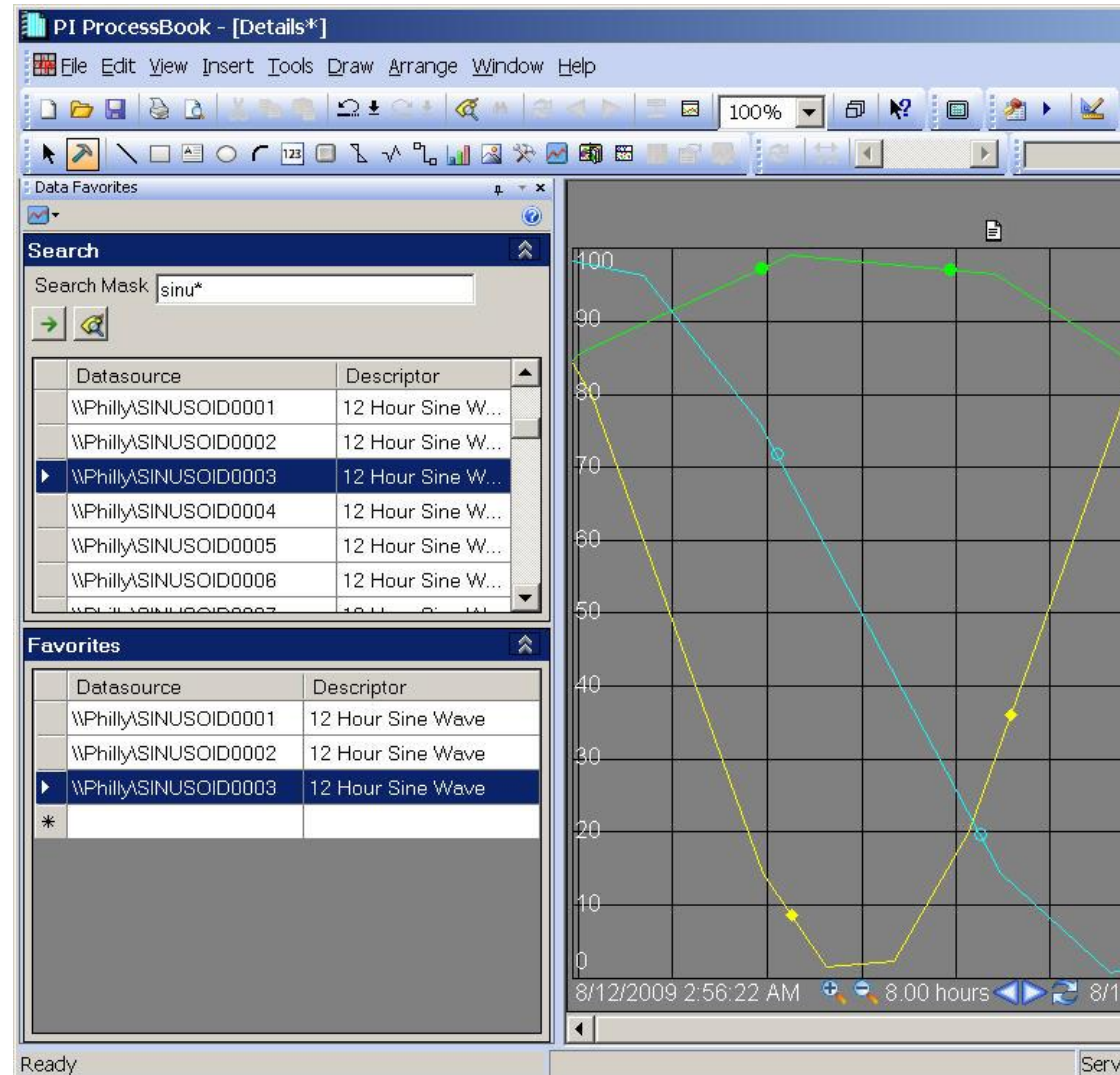
Below the attributes, it shows a toolbar and the data source name SINUSOID0001.

PI Notifications

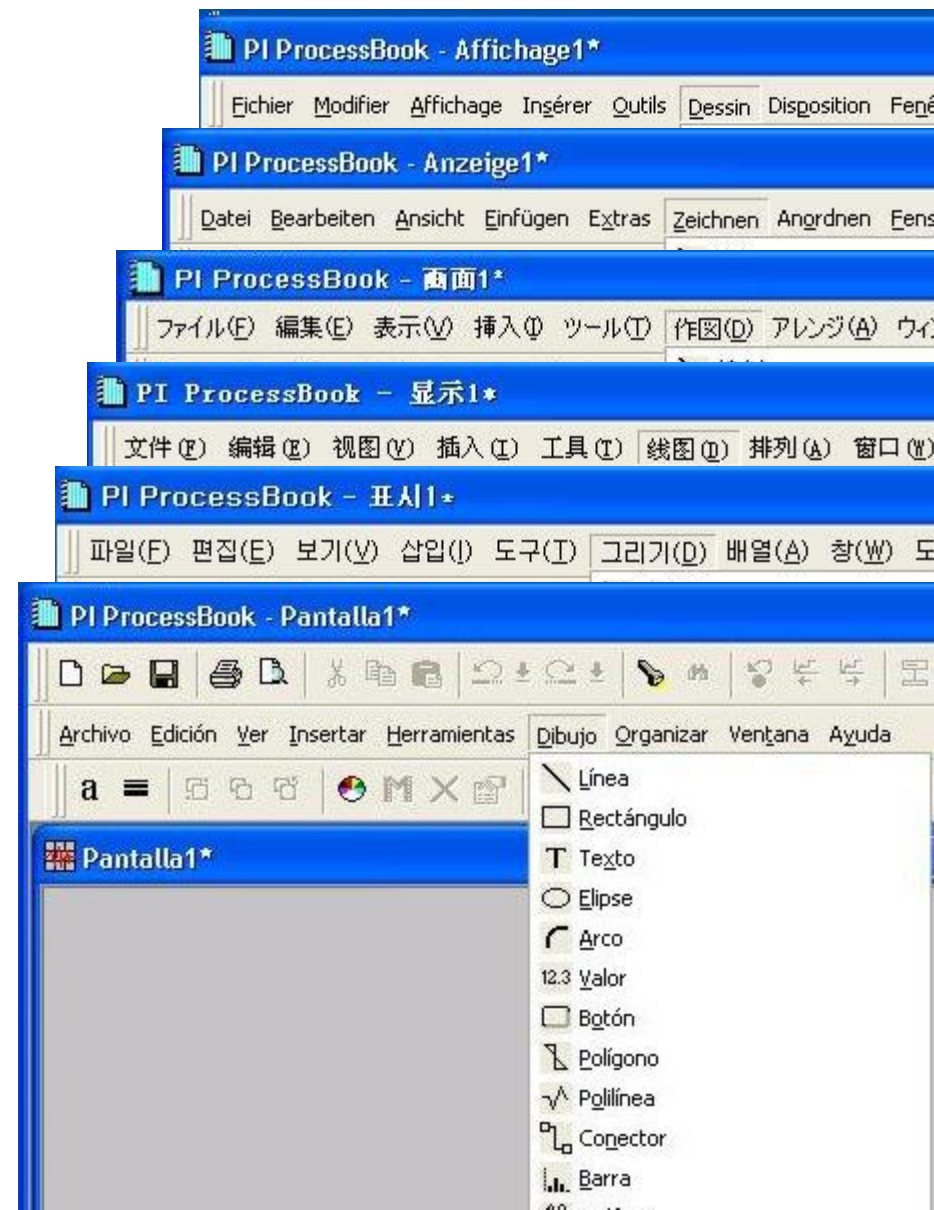


- ProcessBook display as content
- ProcessBook display linked as content
- Instant trend
- Pass time context to display

- Search
 - To Display Elements
 - From Search
 - From Favorites
 - To other applications (Microsoft Excel)
- Favorites



- ProcessBook and ActiveView
 - English
 - French
 - German
 - Spanish
 - Simplified Chinese
 - Japanese
 - Korean
 - Russian (*coming soon*)
 - Brazilian Portuguese (*coming soon*)
- BatchView
 - Japanese



- ProcessBook 3.1 (October 2008)
 - Windows security integration
 - PI Notifications integration
 - Trending enhancements
- ProcessBook 3.2 (September 2009)
 - AF Element Relative Displays
 - Display Playback
 - Display Browsing and Bookmarking
 - Office Communicator collaboration integration
 - Statistical Quality Control (SQC) symbol now included

PB 3.2 - AF Element Relative Displays

PI ProcessBook - [WellHead]

File Edit View Insert Tools Draw Arrange Window Help

64%

C:\UCdocs\WellHead.pdi

7/1/2009

Element Relative Display

Search

well*

Elements of Interest

Group by: ☐ Template

Filter

Name	Description	Category
Well12345		
Well2346		
Well2347		
Well4569		
Well4570		

Well4570

Last Acid Wash 1/16/2003

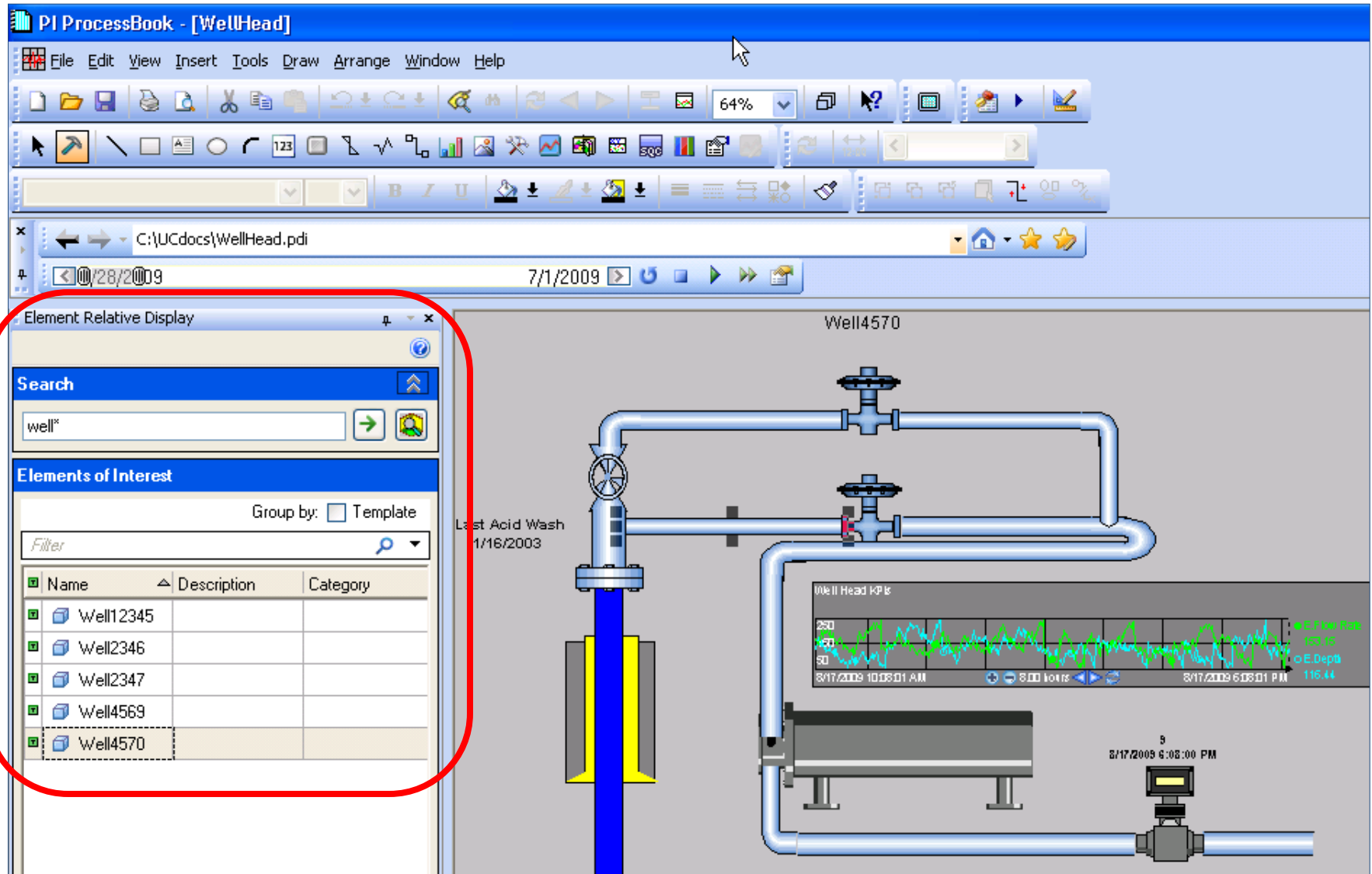
Well Head KPIs

250
150
50

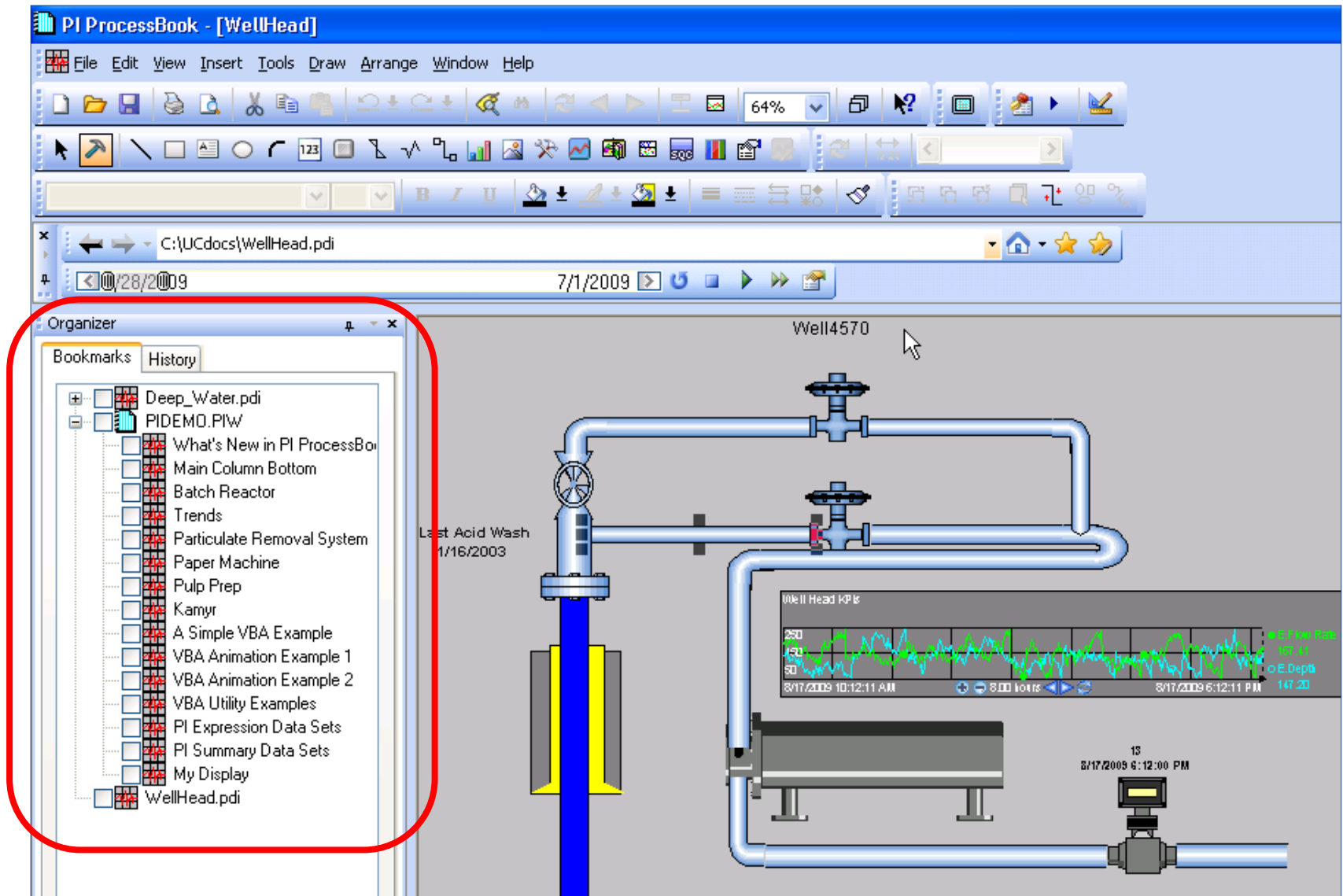
8/17/2009 10:05:01 AM 8:00 hours 8/17/2009 6:05:01 PM

Well Flow Rate 153.15
Well Depth 116.44

5
8/17/2009 6:05:00 PM



PB 3.2 - Display Browsing and Bookmarking

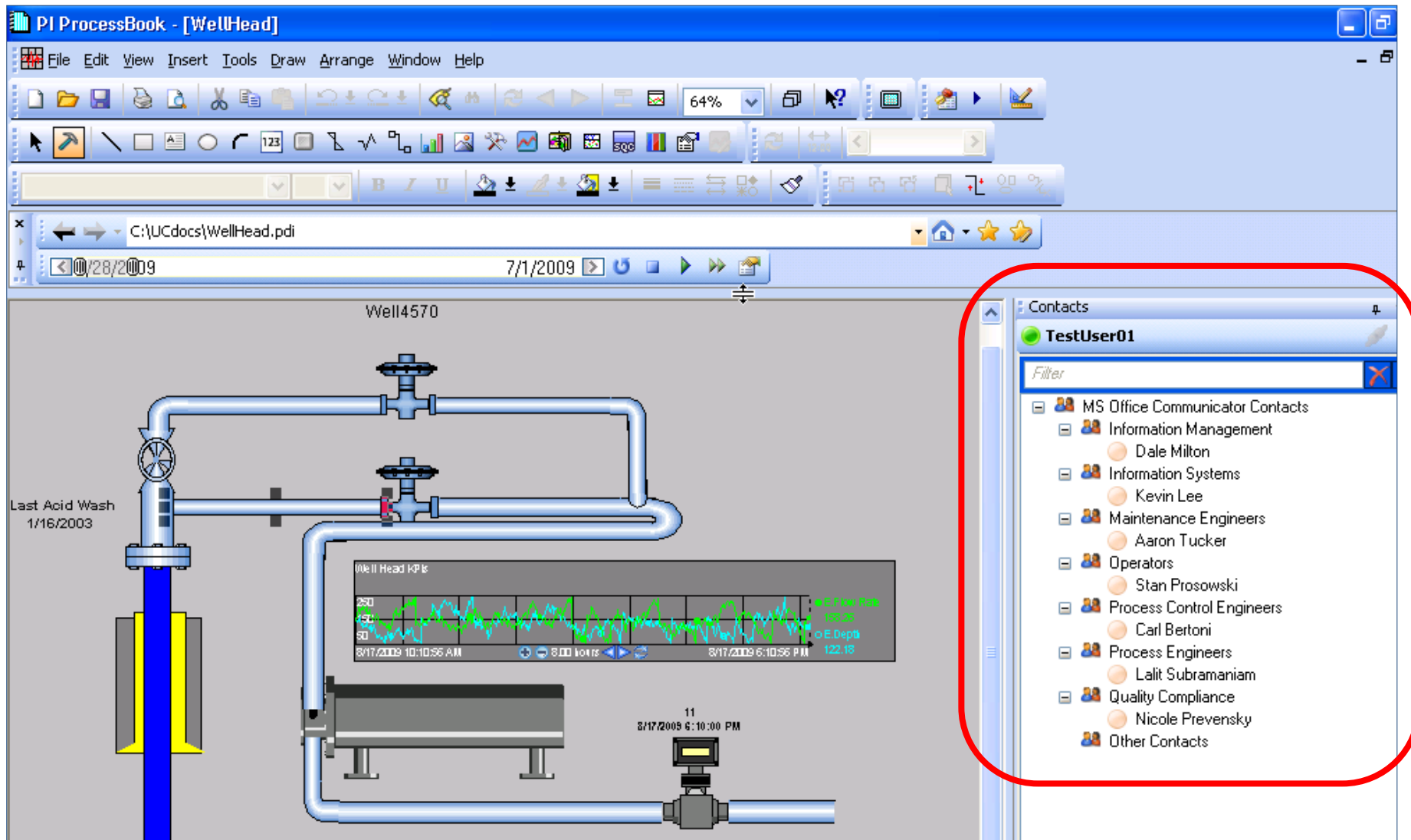


The screenshot displays the PI ProcessBook interface for a process named "WellHead". The main window shows a process diagram with blue pipes, valves, and a yellow wellhead. A mouse cursor is hovering over a valve labeled "Well4570". A text label "Last Acid Wash 1/16/2003" is visible. A graph titled "Well Head KPIs" shows a line chart with green and blue data series over time, with values ranging from 50 to 250. The graph includes a legend with "Flow Rate" and "Depth" and a timestamp "8/17/2009 6:12:11 PM".

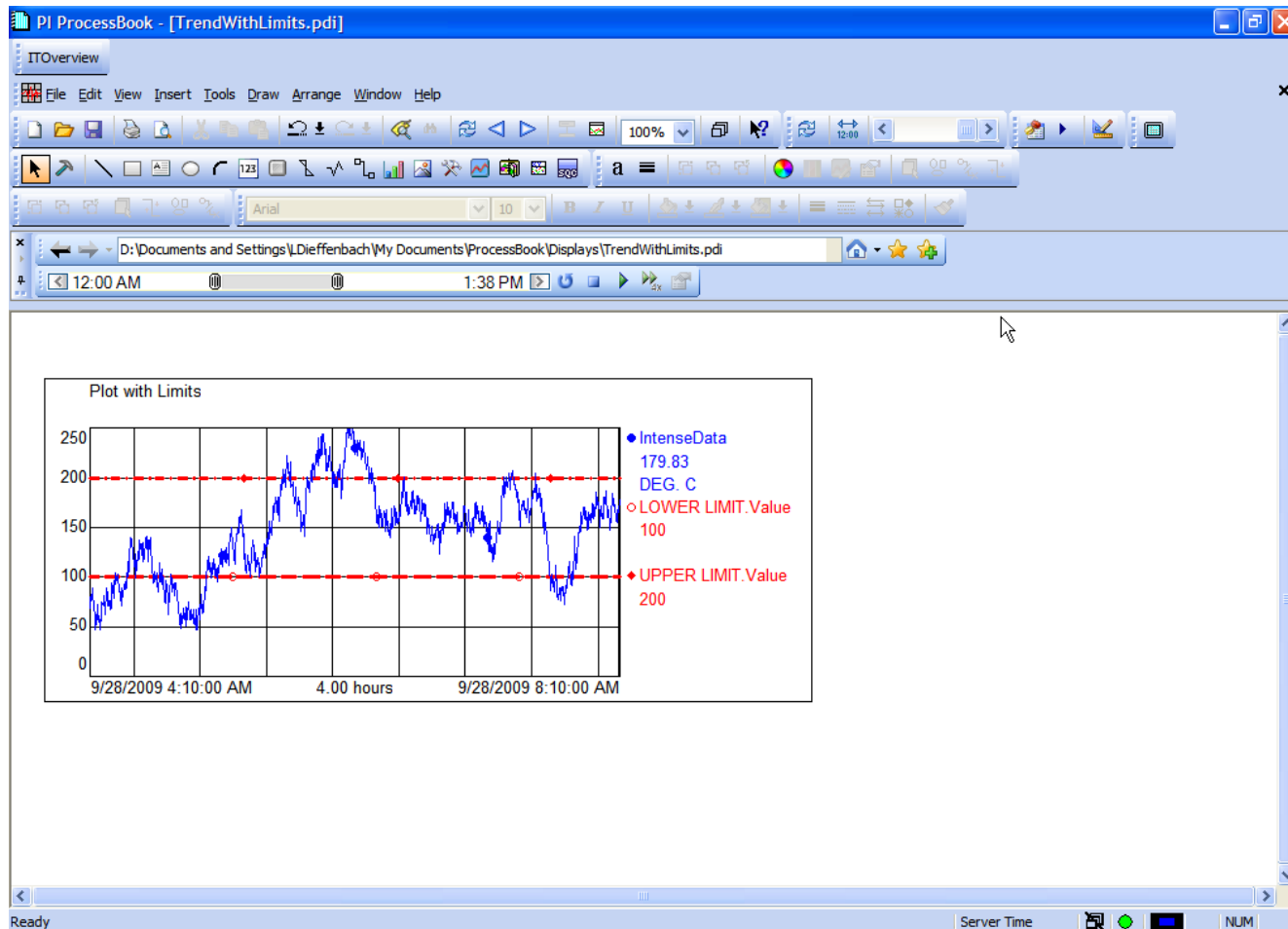
The "Organizer" window is open on the left, showing a "Bookmarks" tab. A red rectangle highlights the list of bookmarks, which includes:

- Deep_Water.pdi
- PIDEMO.PIW
- What's New in PI ProcessBook
- Main Column Bottom
- Batch Reactor
- Trends
- Particulate Removal System
- Paper Machine
- Pulp Prep
- Kamyr
- A Simple VBA Example
- VBA Animation Example 1
- VBA Animation Example 2
- VBA Utility Examples
- PI Expression Data Sets
- PI Summary Data Sets
- My Display
- WellHead.pdi

PB 3.2 - Office Communicator Integration



PB 3.2 Playback Feature

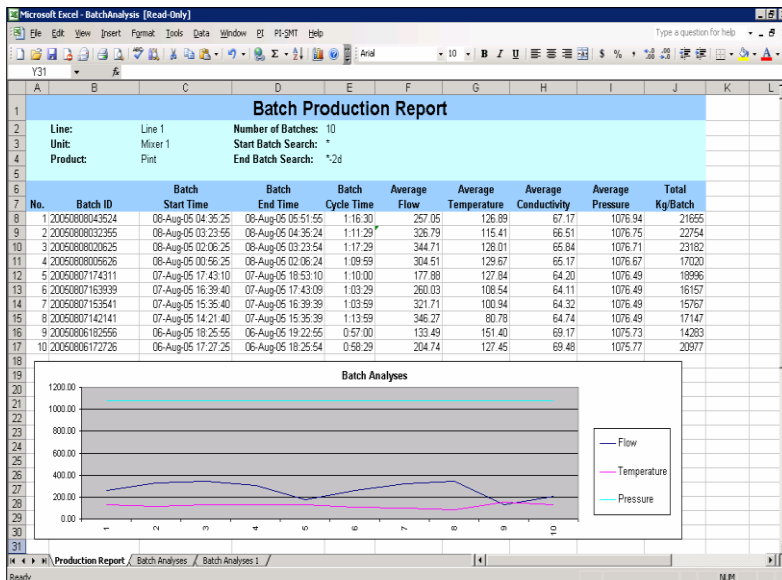


DataLink

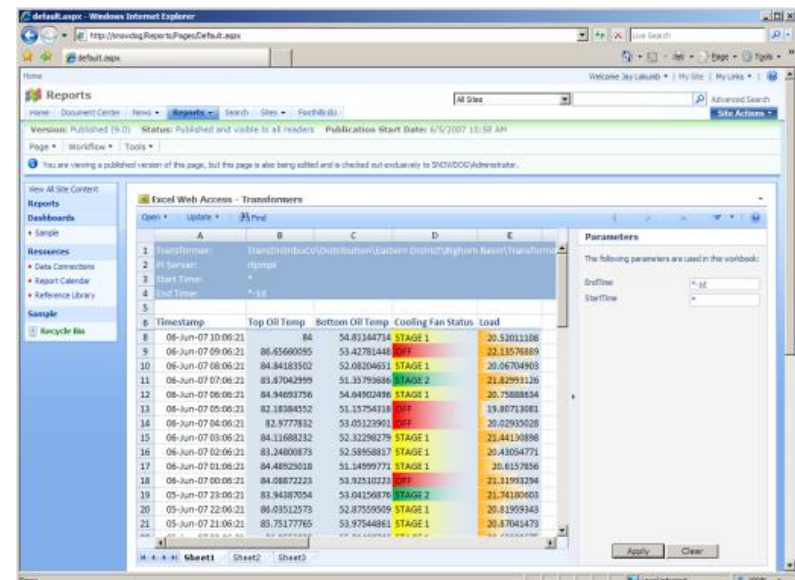


PI DataLink:

- Excel add-in to access real-time and historical PI data
- ## PI DataLink for Excel Services (DLES):
- DataLink spreadsheets on the Web



DataLink



DataLink for Excel Services

- DataLink 4.1 (*Released*)
 - Support for automatic updating
- DataLink for Excel Services 4.1 (Q4 2009)
 - Support for 64-bit SharePoint 2007
- See “OSIsoft Products and Office 2007 Compatibility FAQ” on Tech Support site
- DataLink 5.0 (2H 2010)
 - Support for Office 2010
 - Support for AF

PI WebParts / RtPM iViews

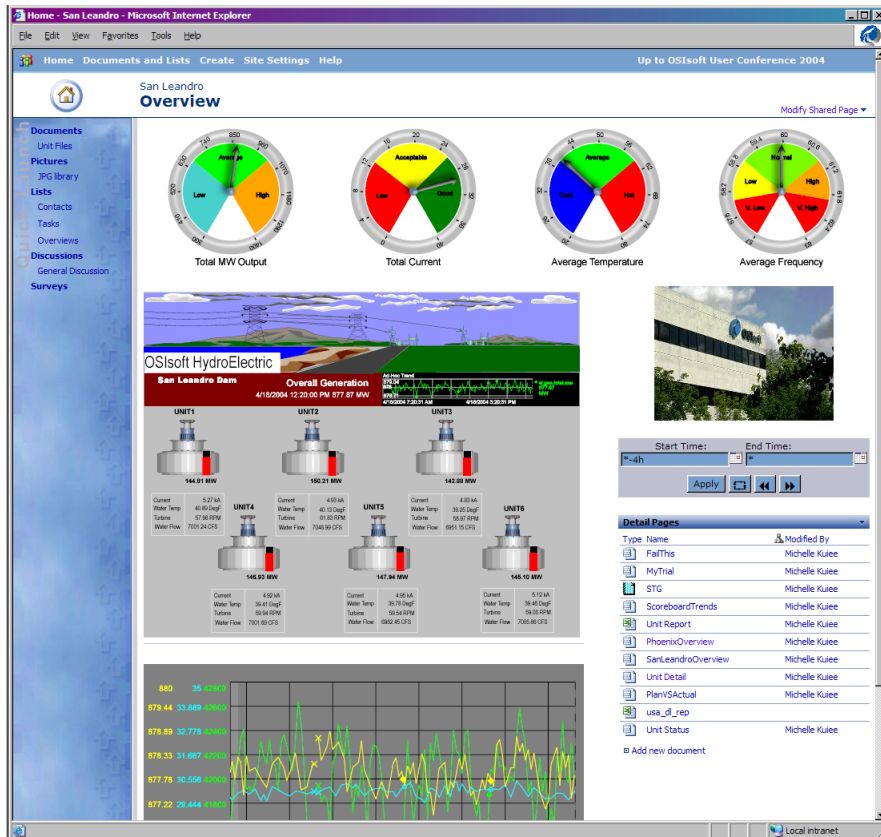


Use Cases for PI WebParts and RtPM iViews

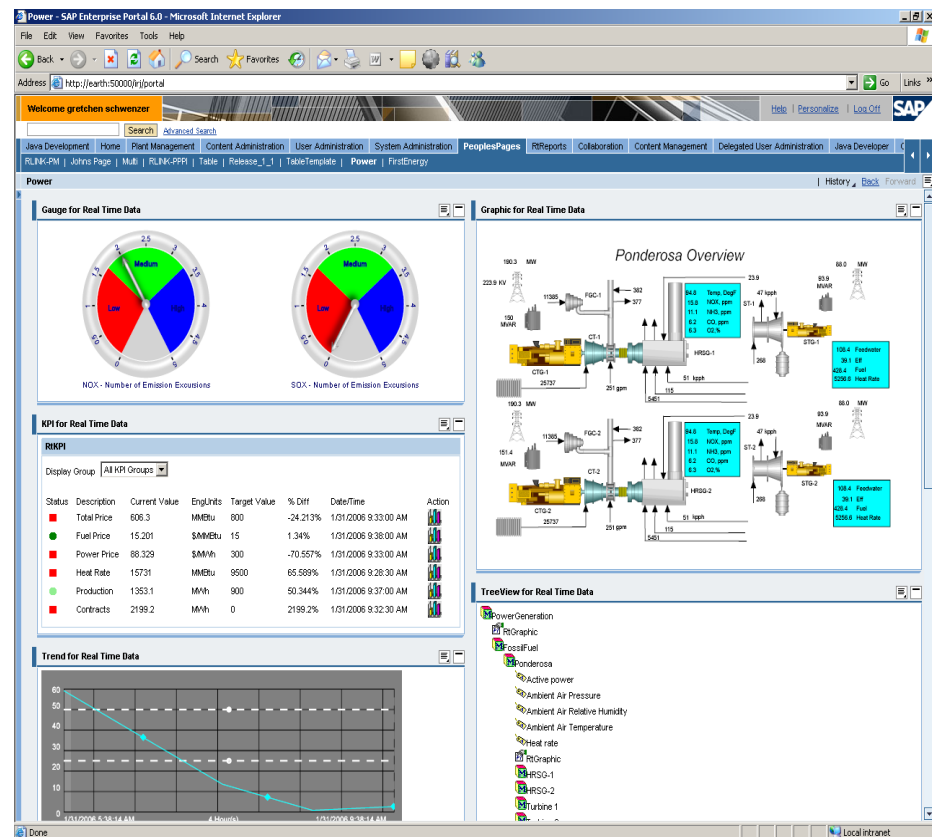


- Access to Process Information
- Analysis and Reporting
- Integration and Collaboration

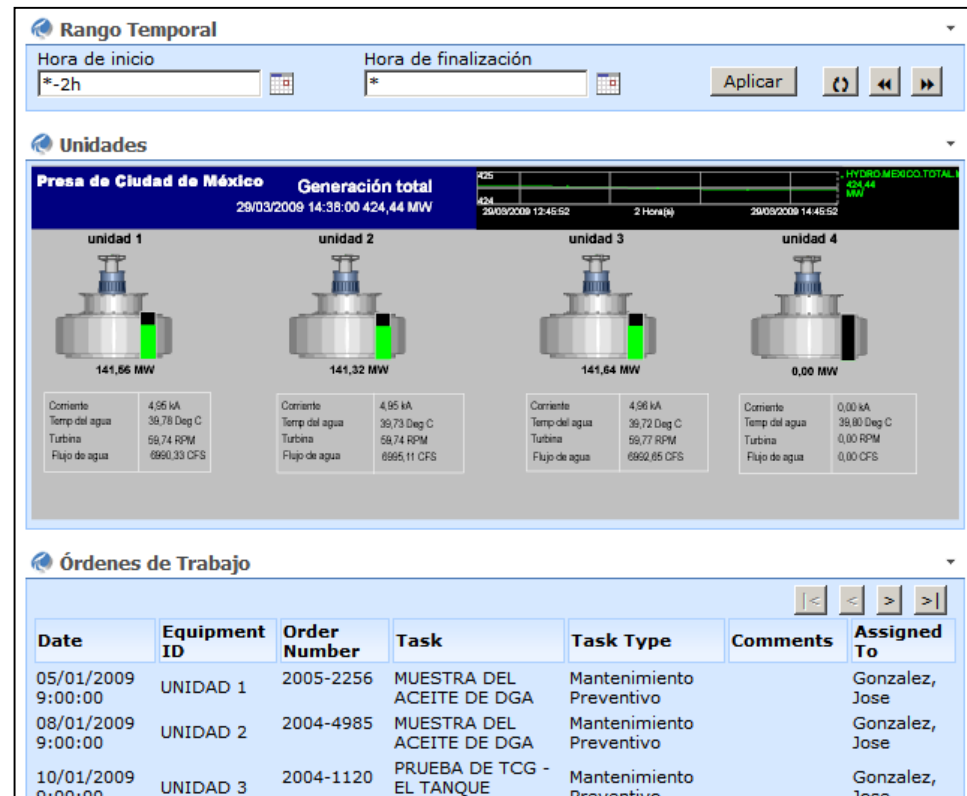
PI WebParts example



iViews example



- RtWebParts 2.2 (September 2008)
- 8 Language Packs (March 2009)
 - Japanese
 - Simplified Chinese
 - Korean
 - French
 - Brazilian Portuguese
 - German
 - Spanish
 - Russian



- PI WebParts 3.0 (4Q 2009)
 - Product will be officially rebranded PI WebParts
 - Support for 64-bit operating systems
 - Support for AF
- PI WebParts 4.0 (2H 2010)
 - Support for Office 2010
 - Enhanced AF Support
 - Support for Microsoft Silverlight

- Major Release
- Minor Release

OSisoft Product Roadmap

Oct Nov Dec Jan Feb Mar Q2'10 Q3 '10

Client

Desktop

- ProcessBook (3.2, 3.3) Major Release
- DataLink (5.0) Major Release
- Manual Logger (2.3, 2.4) Minor Release
- ProfileView (2.2) Minor Release

Web

- PI WebParts (3.0, 4.0) Major Release
- ActiveView (3.2, 3.3) Minor Release
- DataLink Excel Services (4.1, 5.0) Major Release
- RtPM Business Pkg (70.1.1) Minor Release

Server:

- PI Server 3.4.380 - *Released* September 2009 (Security)
- PI AF 2.1 - August 2009 (64-bit, HA) *Released*
- PI Notifications 1.1 - September 2009 (Templates, OCS)
- PI Web Services - 1Q 2010 (PI, AF)
- PI Server 3.5 - 1Q 2010 (MDB to AF)

Clients:

- PI ProcessBook 3.2 - *Released* September 2009 (AF Element Relative Displays)
- PI WebParts 3.0 - 4Q 2009 (64-bit, AF Support)
- PI DataLink 4.1 for Excel Services - 4Q 2009 (64-bit)



Thank you

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