OSIsoft®

PI System Roadmap

John Baier
Director of Product Management
OSIsoft, LLC

October 28, 2010

Empowering Business in Real Time.

PI System Roadmap - Outline

- 2009 Highlights

- PI System 2010

- PI System capabilities *coming soon*

Empowering Business in Real Time

The Recent Past:
2009 Highlights

Empowering Business in Real Time.

OSIsoft.

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

Security	Asset Centric PI System	Localization	Scaling, 64 bit
Critical Facilities are Safe	Define Once Use Over and	Use Worldwide	Use PI for more data

Empowering Business in Real Time.

Security Value Proposition

- 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

Empowering Business in Real Time.

Security - Critical Infrastructure Protection

- **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
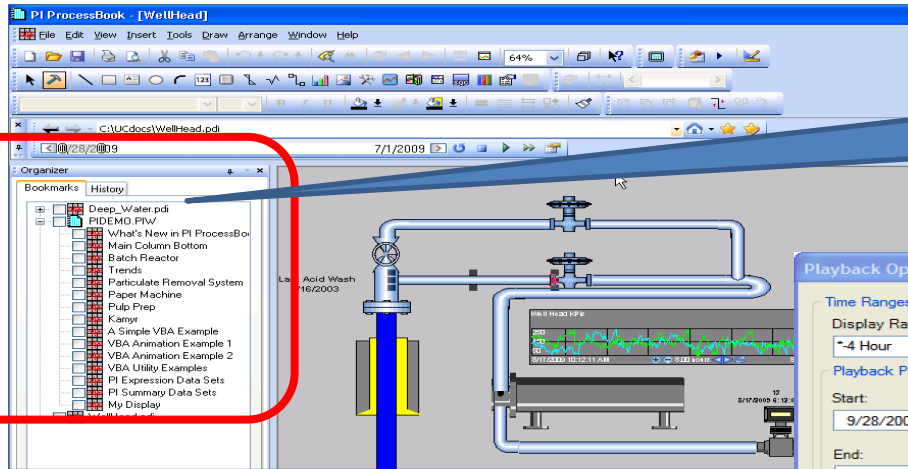 - 2004 EPRI and Utility Partner – Cyber Assessment

Empowering Business in Real Time.
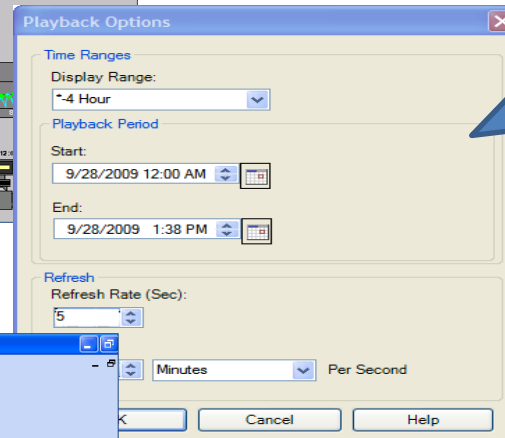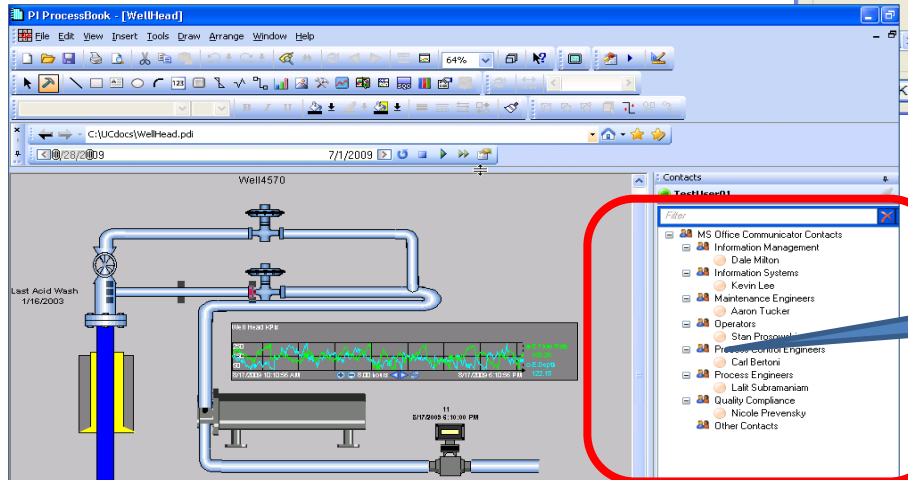
Empowering Business in Real Time.
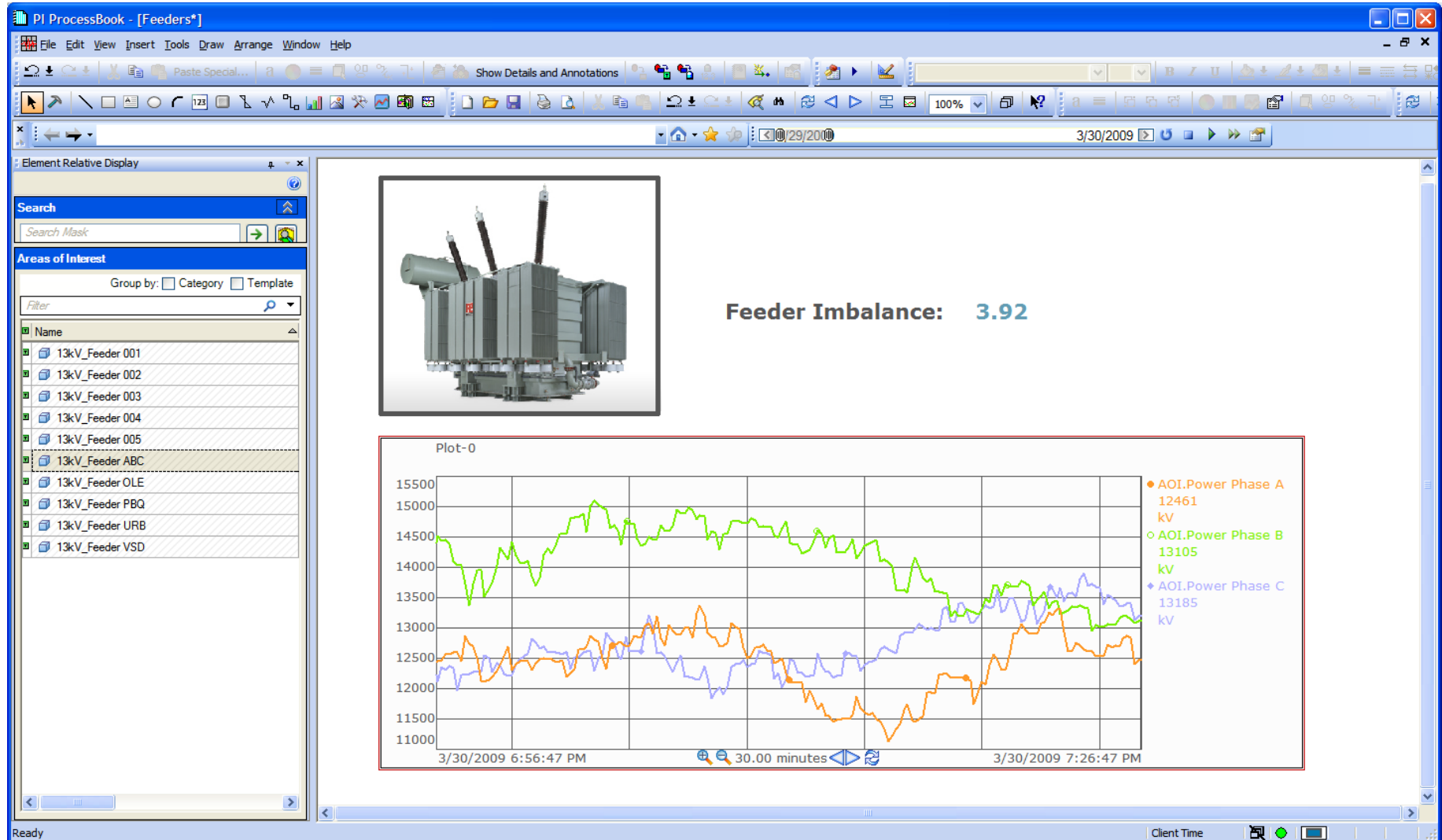
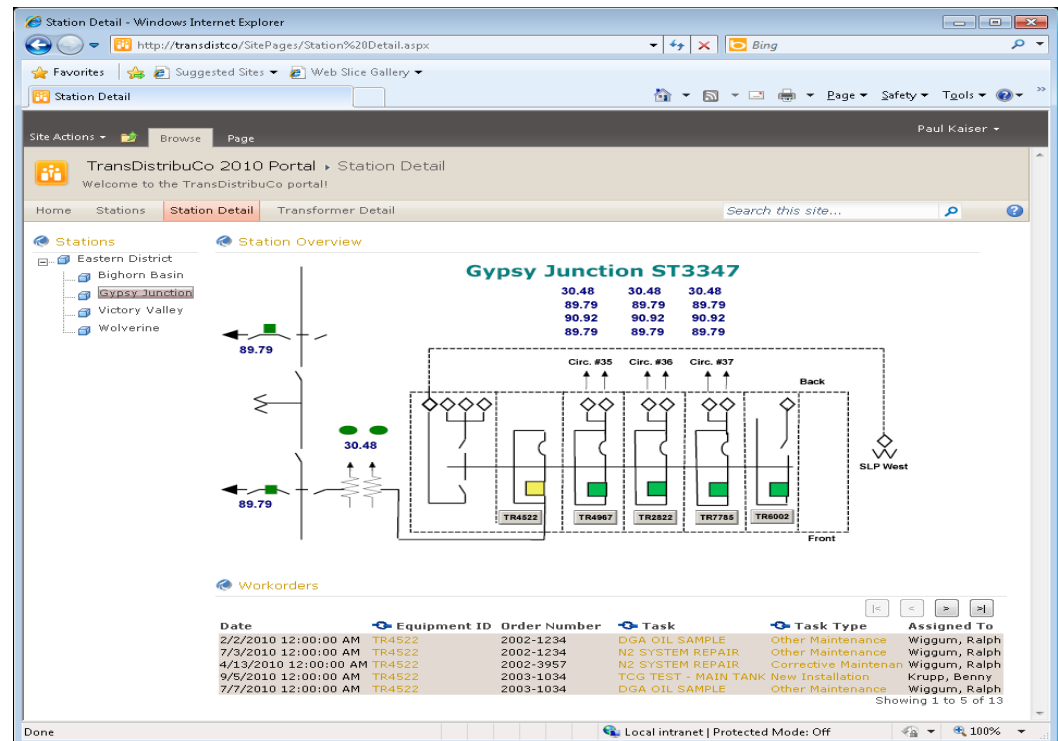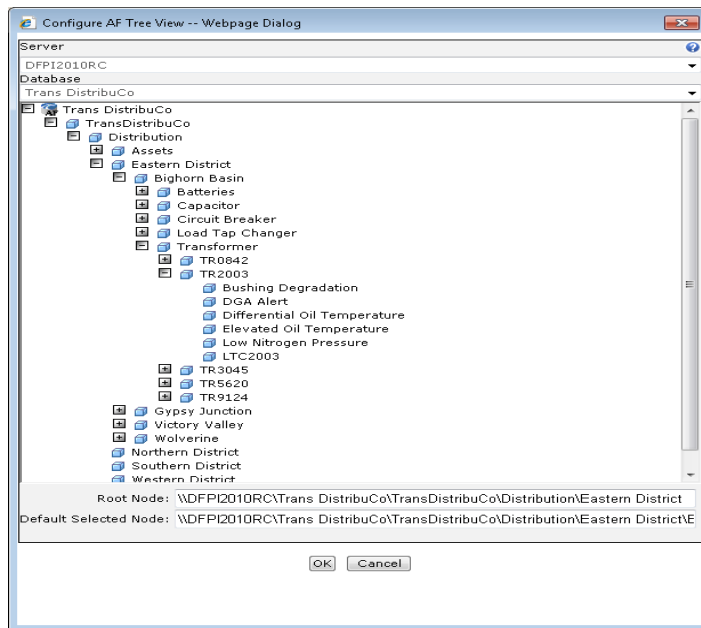# PI ProcessBook 3.2: Productivity Enhancements

Browsing forward and backwards
Permanent books mark of favorites

Playback
Troubleshoot problems by re-playing a display

Communicator
IM, Email Contacts
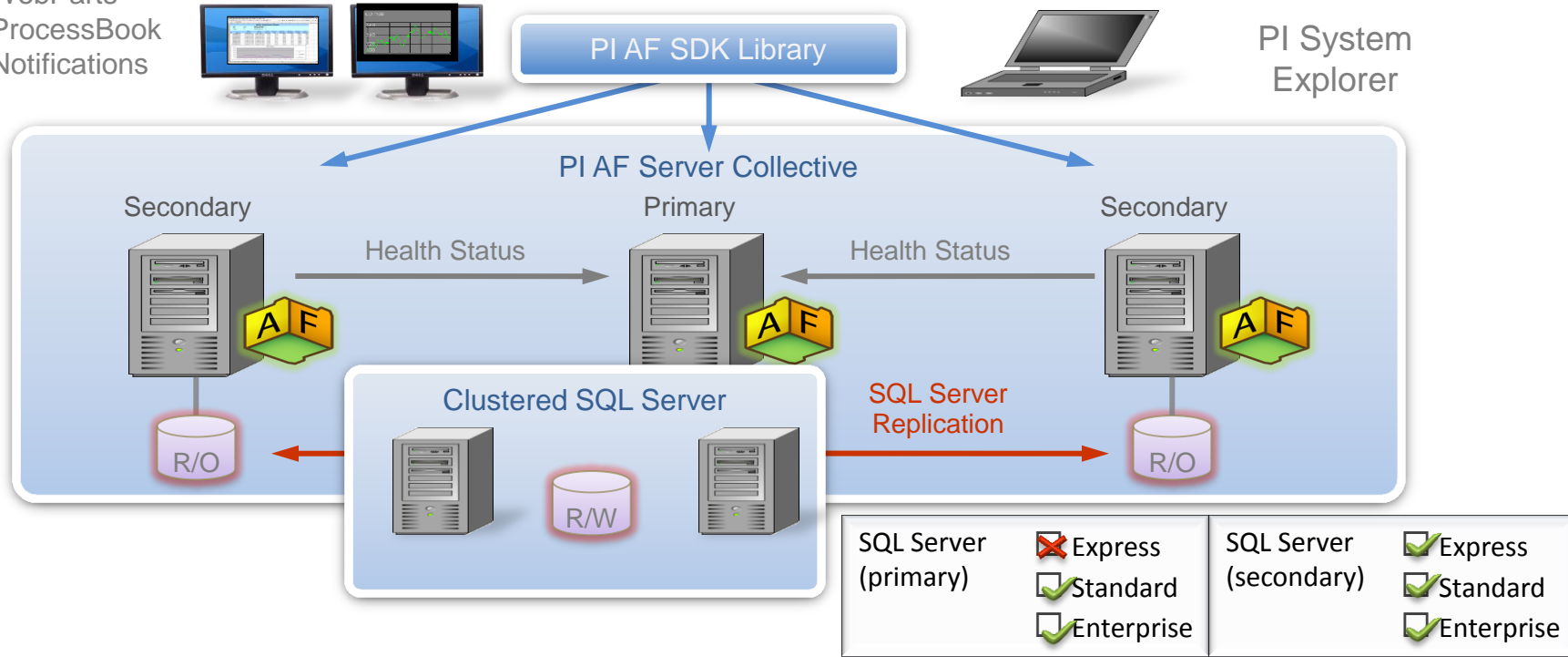Easily send a PB screenshot

Empowering Business in Real Time.

PI WebParts 3.0

Empowering Business in Real Time.

Asset Centric PI System: PI AF HA

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

PI AF SDK Library

PI System Explorer

PI AF Server Collective

Secondary — Primary — Secondary

Health Status → ← Health Status

Clustered SQL Server

SQL Server Replication

R/O   R/W   R/O

SQL Server (primary)		SQL Server (secondary)	
✗ Express		✓ Express	
☐ Standard		✓ Standard	
✓ Enterprise		✓ Enterprise	

Empowering Business in Real Time.

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

bonjour

hallo

привет

¡Hola

안녕하세요

こんにちは

Olá

你好

Saluton

64-bit Support

- 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

Empowering Business in Real Time.

2009 Releases

2009 Themes

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

Security

✓PI Server 380
✓Deployment
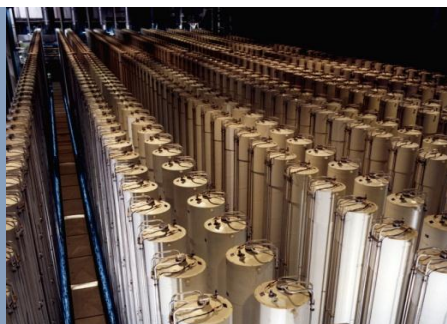
Asset Centric PI System

✓PI ProcessBook
✓PI WebParts
✓PI Notifications
✓PI AF HA

Localization

✓8 languages
✓5 products
✓3 planned

Scaling, 64-bit

✓ Servers
✓ Data Access
✓ Web Clients

The Present: PI System 2010

Empowering Business in Real Time.

PI System 2010

What are the benefits of PI System 2010
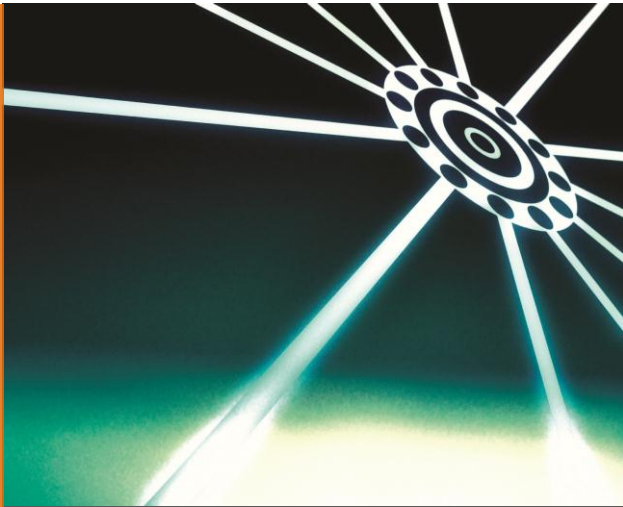
Simple

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

Empowering Business in Real Time.

New in PI System 2010

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

Business User Experience
Microsoft® Office 2010

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

Business Collaboration Platform
Microsoft® SharePoint 2010

PI Server
- PI Server 2010
- Assets and Tags

Data Infrastructure and BI Platform
Microsoft® SQL Server 2008 R2

Empowering Business in Real Time.

All Released PI Client and Server Products

Empowering Business in Real Time.

PI Server 2010

PI Data Access Services

| SQL-Based | Web Services | OPC | SDKs |

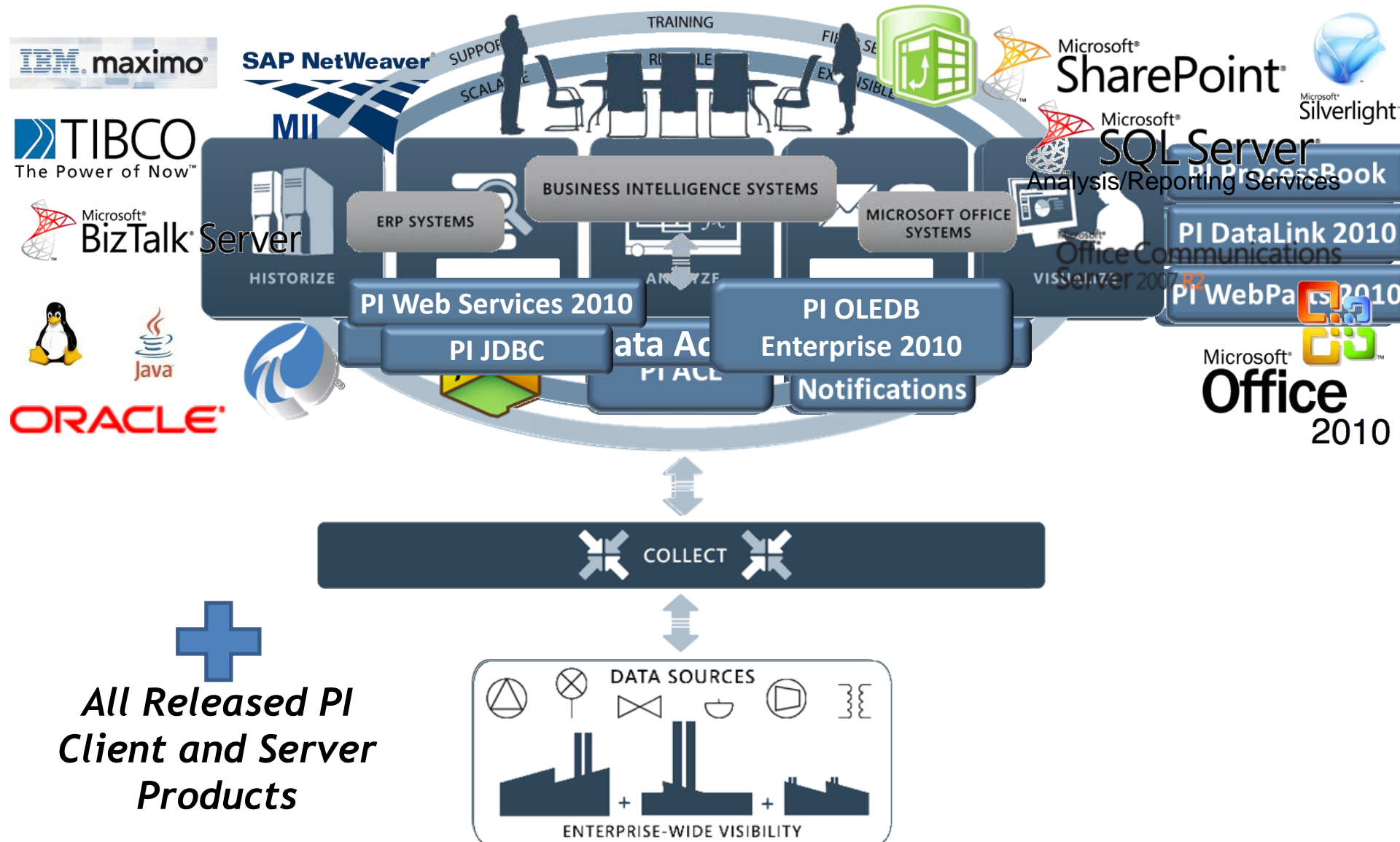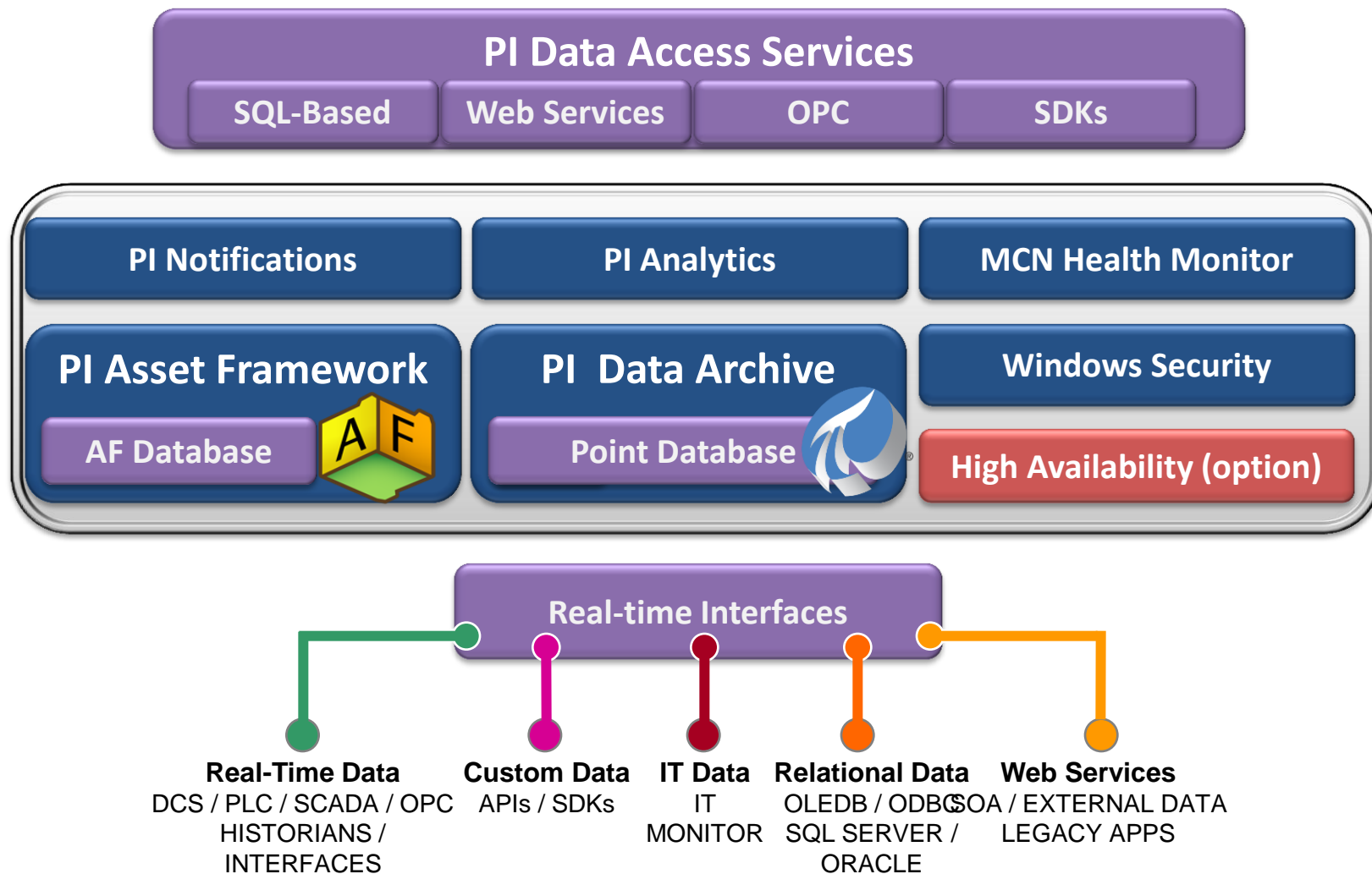**PI Notifications** | **PI Analytics** | **MCN Health Monitor**

PI Asset Framework | **PI Data Archive** | **Windows Security**

AF Database | **Point Database** | **High Availability (option)**

Real-time Interfaces

Real-Time Data
DCS / PLC / SCADA / OPC
HISTORIANS /
INTERFACES

Custom Data
APIs / SDKs

IT Data
IT
MONITOR

Relational Data
OLEDB / ODBC
SQL SERVER /
ORACLE

Web Services
SOA / EXTERNAL DATA
LEGACY APPS

Empowering Business in Real Time.

PI Asset Framework – context for data

OSIsoft

Asset Information / Metadata **AF**

My Corporation
- Boston
- Houston
  - Plant C
    - Section 1
      - Unit C1
      - Unit C2
        - Pump C2-042
        - Vessel C2-301
    - Section 3
- Miami
  - Plant A
  - Plant B
    - Section 1
      - Unit A1
        - Pump A1-002
        - Vessel A1-123
      - Unit A2
    - Section 2

Notifications

Analytics

Relational / Non Time Series Data

PI Server

PI Server Collective

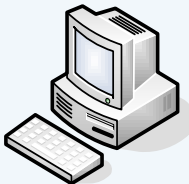**Time Series Data**

Empowering Business in Real Time.

Mixed Applications
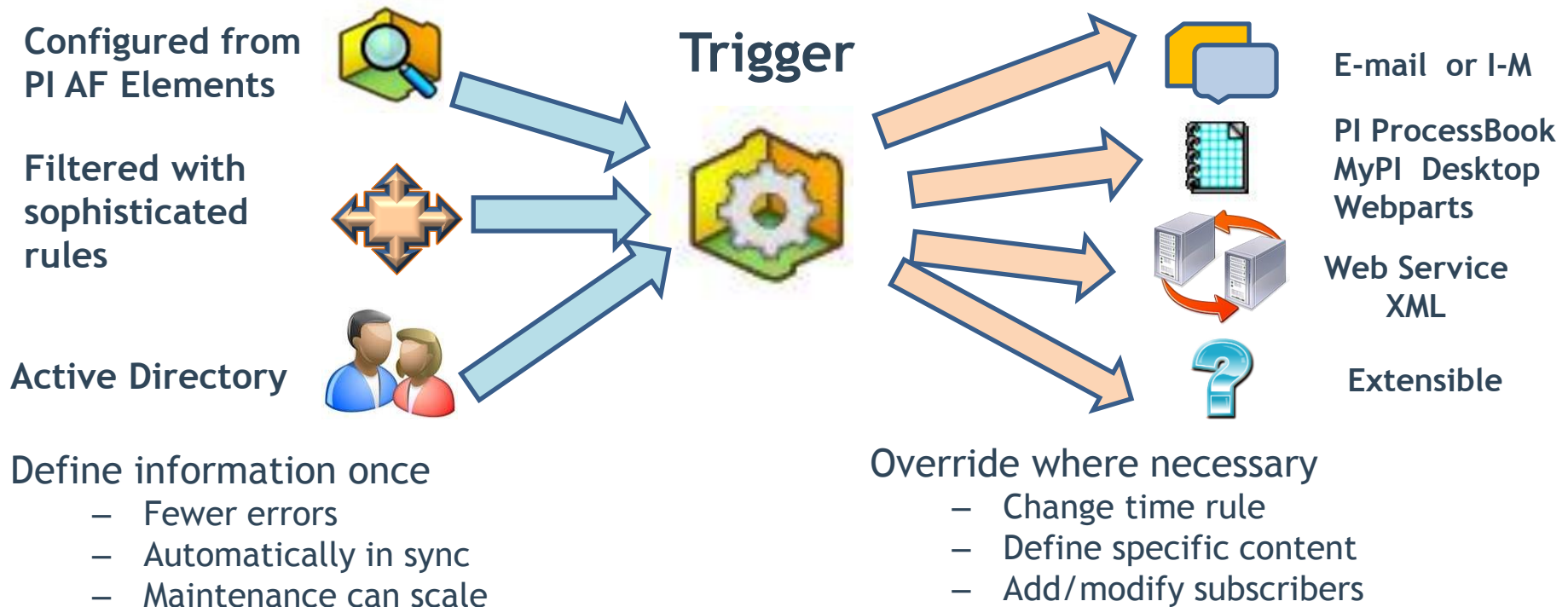

PI MDB based Applications
- PI DataLink
- IT Monitor
- PI BatchView
- PI ACE

PI AF based Applications
- PI WebParts
- PI ProcessBook
- Custom App

PI AF Link Subsystem

Module Database Enterprise Asset Database AF Database

PI Server 2010

Empowering Business in Real Time.

PI Notifications: The Power of Templates...

Configured from PI AF Elements

Filtered with sophisticated rules

Active Directory

Trigger

E-mail or I-M

PI ProcessBook
MyPI Desktop
Webparts

Web Service
XML

Extensible

Define information once
– Fewer errors
– Automatically in sync
– Maintenance can scale

Override where necessary
– Change time rule
– Define specific content
– Add/modify subscribers

Empowering Business in Real Time.

What's New with Visualization in PI System 2010?

Reports

Dashboards

Notification Delivery

Scorecards

Empowering Business in Real Time.
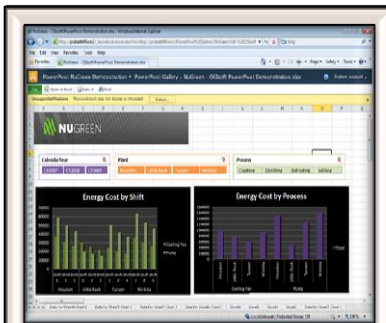
PI for Office 2010

PI DataLink for Excel 2010
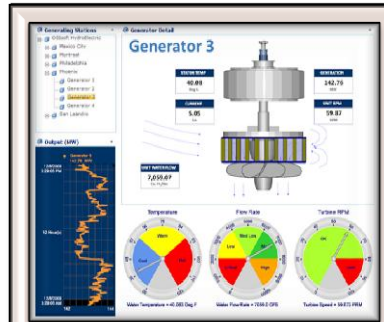
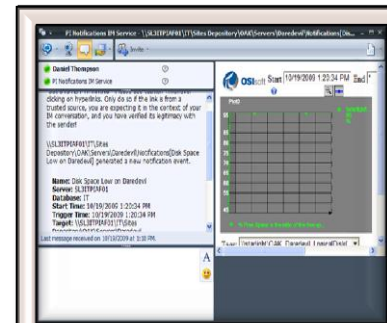PI WebParts for SharePoint 2010
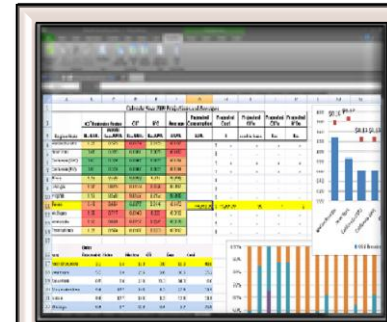
PI DataLink Server 2010

PI and PowerPivot for 2010

PI OLEDB Enterprise 2010

PI Web Services 2010

PI System Access

PI Notifications Office Communicator Delivery

Empowering Business in Real Time.

PI for Office 2010

- 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

Empowering Business in Real Time.

PI System 2010 Releases

PI System 2010

What are the benefits of PI System 2010

Simple

- ✓PI AF
- ✓Notifications
- ✓Analytics

Relevant

- ✓Organize by Asset
- ✓Dashboards
- ✓Delivered to You

Collaborative

- ✓Use Office Tools
- ✓Easy to Share
- ✓LoB Integration

Empowering Business in Real Time.

Coming Soon:
Enhancements in 4Q2010

Enhancements to Asset Meta-Data
using PI AF

Empowering Business in Real Time.

- 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

    - PI Web Services 2010 R2

- PI AF Support

    - PI JDBC 2010 R2 (uses PI OLEDB Enterprise)

PI AF Builder – Build PI AF Hierarchy in Bulk

Empowering Business in Real Time.

PI AF Builder – Configure PI AF Attributes in Bulk

Empowering Business in Real Time.

PI AF Builder

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

Adding a new pump

Changing an attribute value

Empowering Business in Real Time.

© Copyright 2010, OSIsoft LLC. All rights Reserved.

PI System Roadmap – PI AF Wave

Coming Soon:
Enhancements in 1H 2011

Improved Analytics

Empowering Business in Real Time.

PI Analytics – Components and Functionality

calculations | event based | PI data

- Performance Equations

Sche **User Configuration**

- Totalizers

- Alarms/Statistical Quality Control

- Advanced Computing Engine

Programme | Non-PI System data

- PI for StreamInsight*

- Asset Framework supported Analytics*

* Future products

- Visual Studio add-in
  - develop

- Manager client

  - configure

- Scheduler

  - execute

Empowering Business in Real Time.
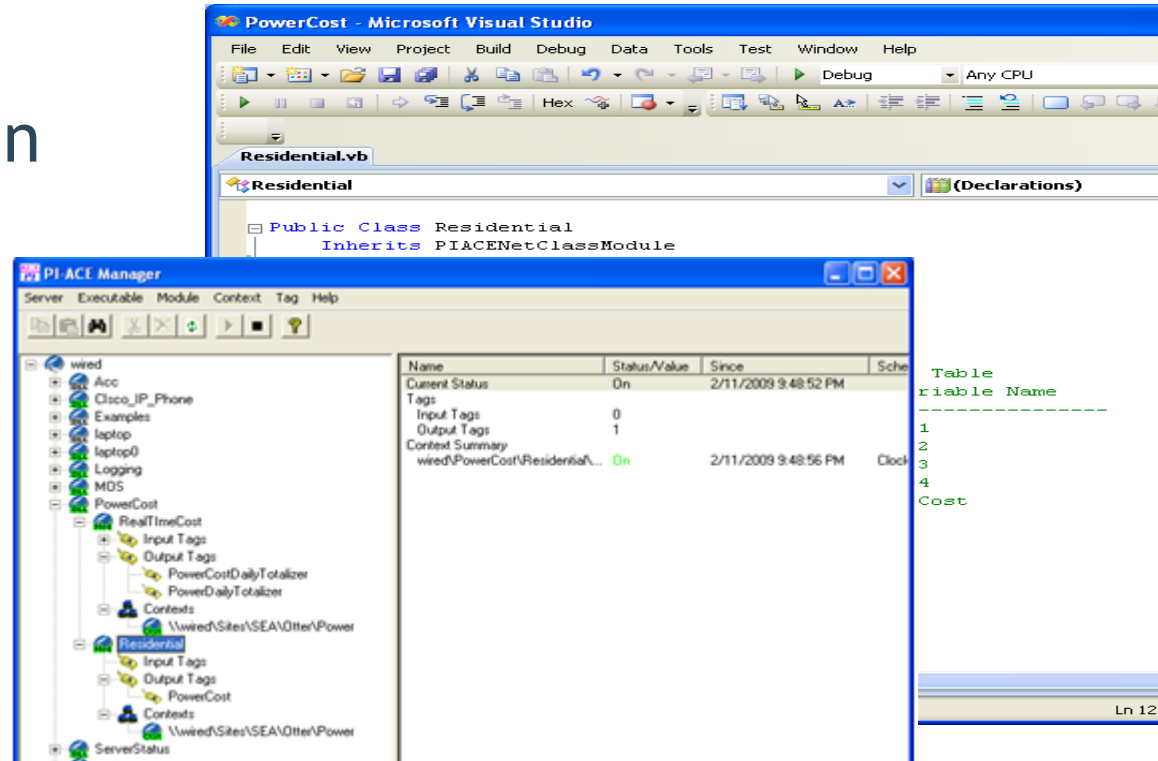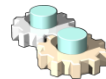
- ## Scheduled to be released early 2011

- ## 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

Where PI geeks meet...

Empowering Business in Real Time.

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 *and temporal* analytics

Empowering Business in Real Time.
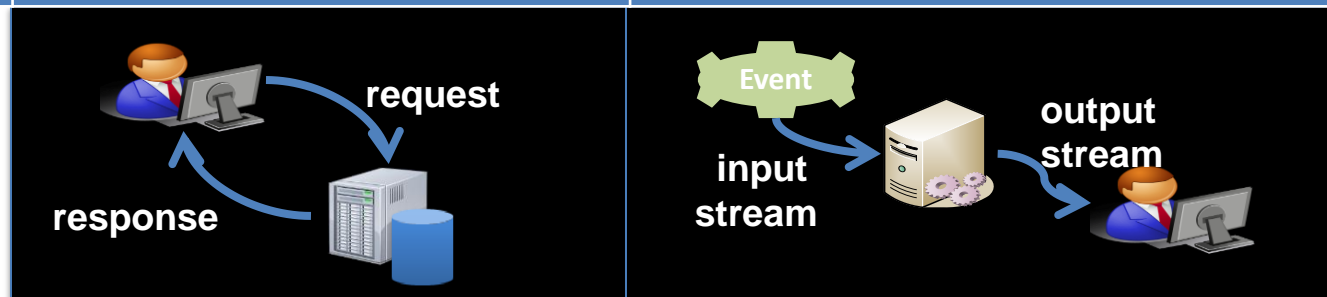
StreamInsight Application Development

Microsoft® Visual Studio 2008
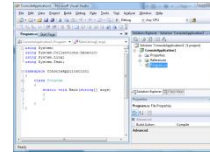
.NET
C#
LINQ

StreamInsight Application at Runtime

Event sources

PI Server

msn

Stock ticker, news feeds

PI Interface (future)

StreamInsight Engine

Input Adapters

Output Adapters

Standing Queries

Query Logic

Query Logic

Query Logic

1

2

3

4

Event targets

PI Server

Pagers, Mobile

Trading stations
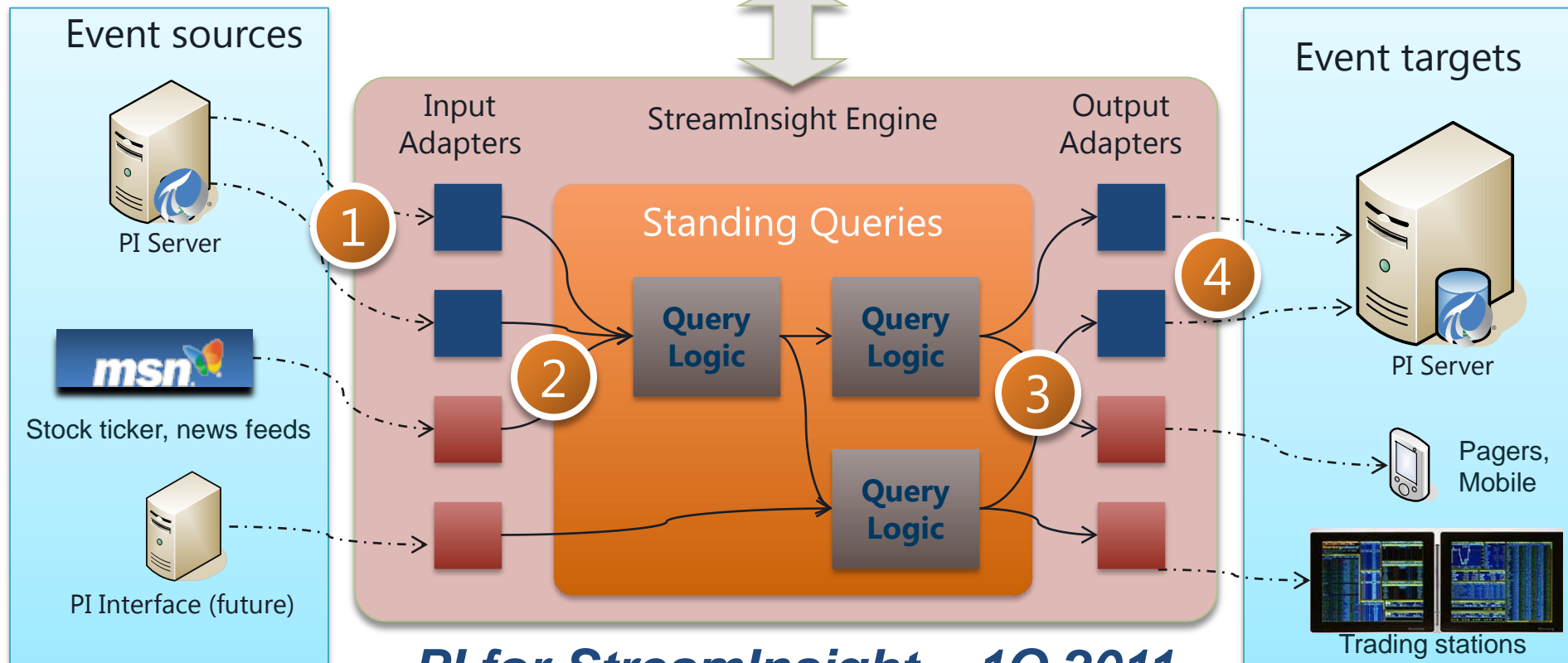
PI for StreamInsight – 1Q 2011

Empowering Business in Real Time.

PI System Roadmap – upcoming releases

OSIsoft.

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	Q4 2009				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	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011 - Q3	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	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