



# PI System Roadmap – New and on the Way

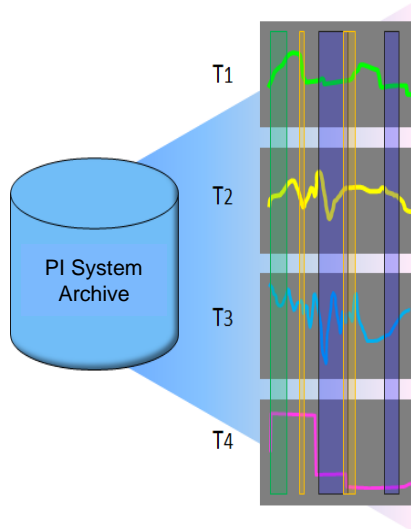
# Agenda and Expectations

- This presentation assumes:
  - You know the PI System basics
  - You want to hear about what is coming to the PI System in the >6 month horizon
- Very few specific dates
- All information is subject to change
- We want your feedback and suggestions!

# PI System Themes - Future



**Asset Centric PI System**  
 Manage data via Asset context – Reuse many times



**Event Frames**  
 Identify and use important events and related data

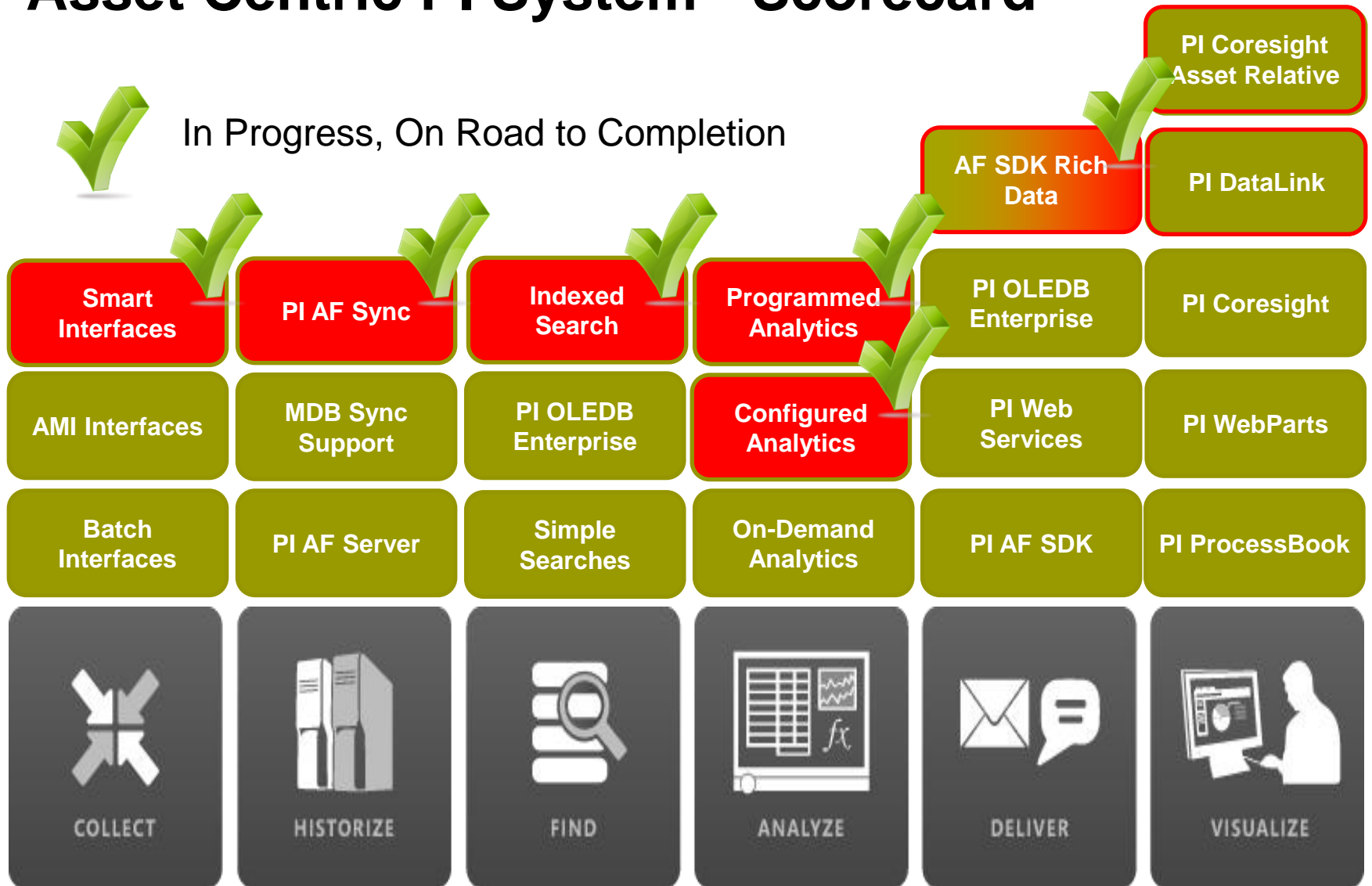


**Mobile**  
 Many Devices  
 Touch Centric  
 Role Focused



**Cloud**  
 More Data  
 Access Anywhere  
 Trans-Enterprise

# Asset Centric PI System - Scorecard

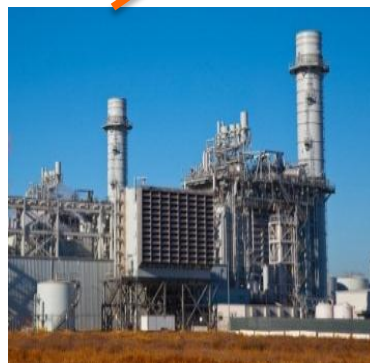


# PI AF to PI AF Scenarios

- Implement corporate standards
- Ensure commonality across enterprise
- Configuration changes, updates
- PI Event Frames and data to support analysis and KPIs



Templates





**Project Abacus**  
Configured and Programmed  
Calculations for PI AF

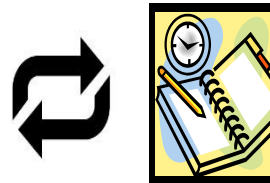
# Project Abacus Use Case

## Extruding Process

Boiler Efficiency =  $AVG(B1..Bn)$

### Boiler1

Flow Out  
Fuel Flow Rate



Boiler  
Template



Efficiency =  $(\text{Flow Out} / \text{Fuel Flow Rate} * 3.14)$

Or myProgrammedCalc (Flow Out, Fuel Flow Rate)

### Boiler2

Flow Out  
Fuel Flow Rate

Efficiency

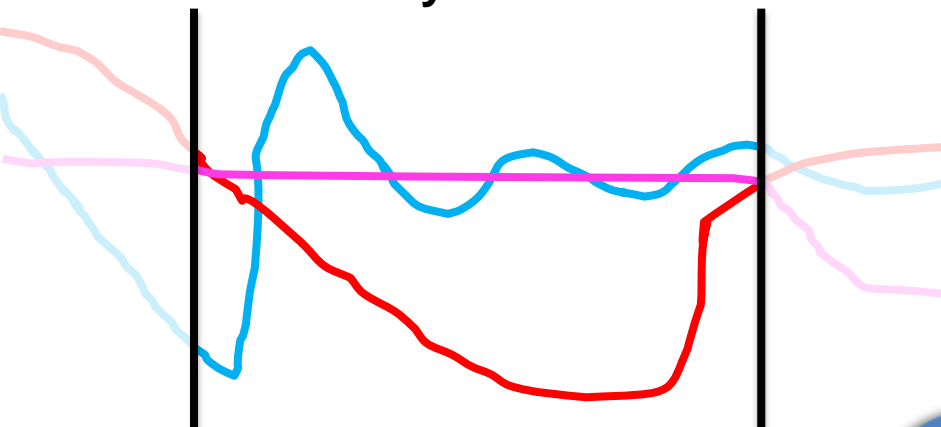
### Boiler3

Flow Out  
Fuel Flow Rate  
Efficiency

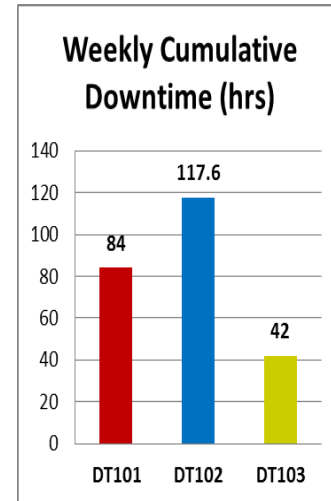
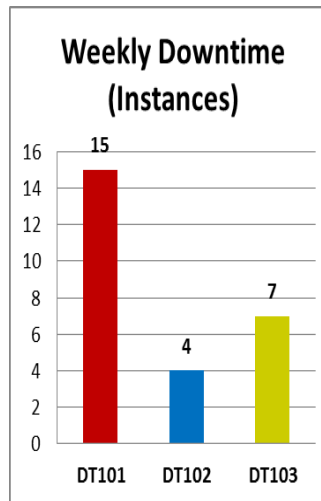


# Simplify Data Analysis

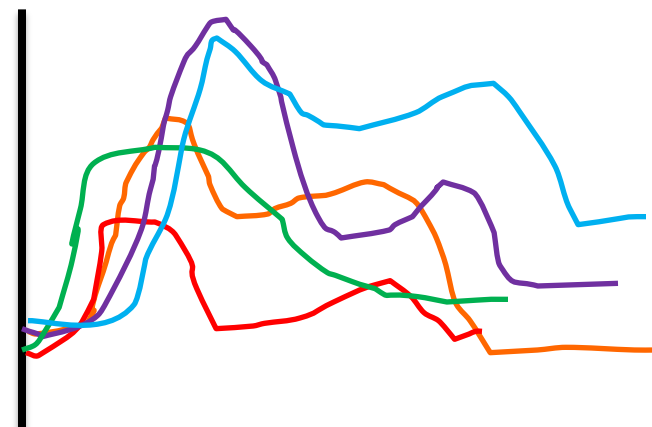
## myEvent



# Perform Asset Comparisons



## Event Overlay Trend (Temp)

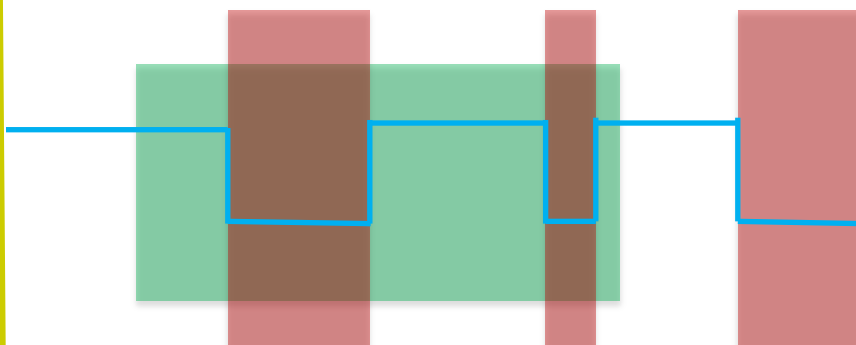


Name	Temp.Max
EF1	122.47
EF2	109.34
EF3	112.73
EF4	98.61
EF5	125.24

## Downtime Events for Product XYZ

Product XYZ (1)

Downtime (2)

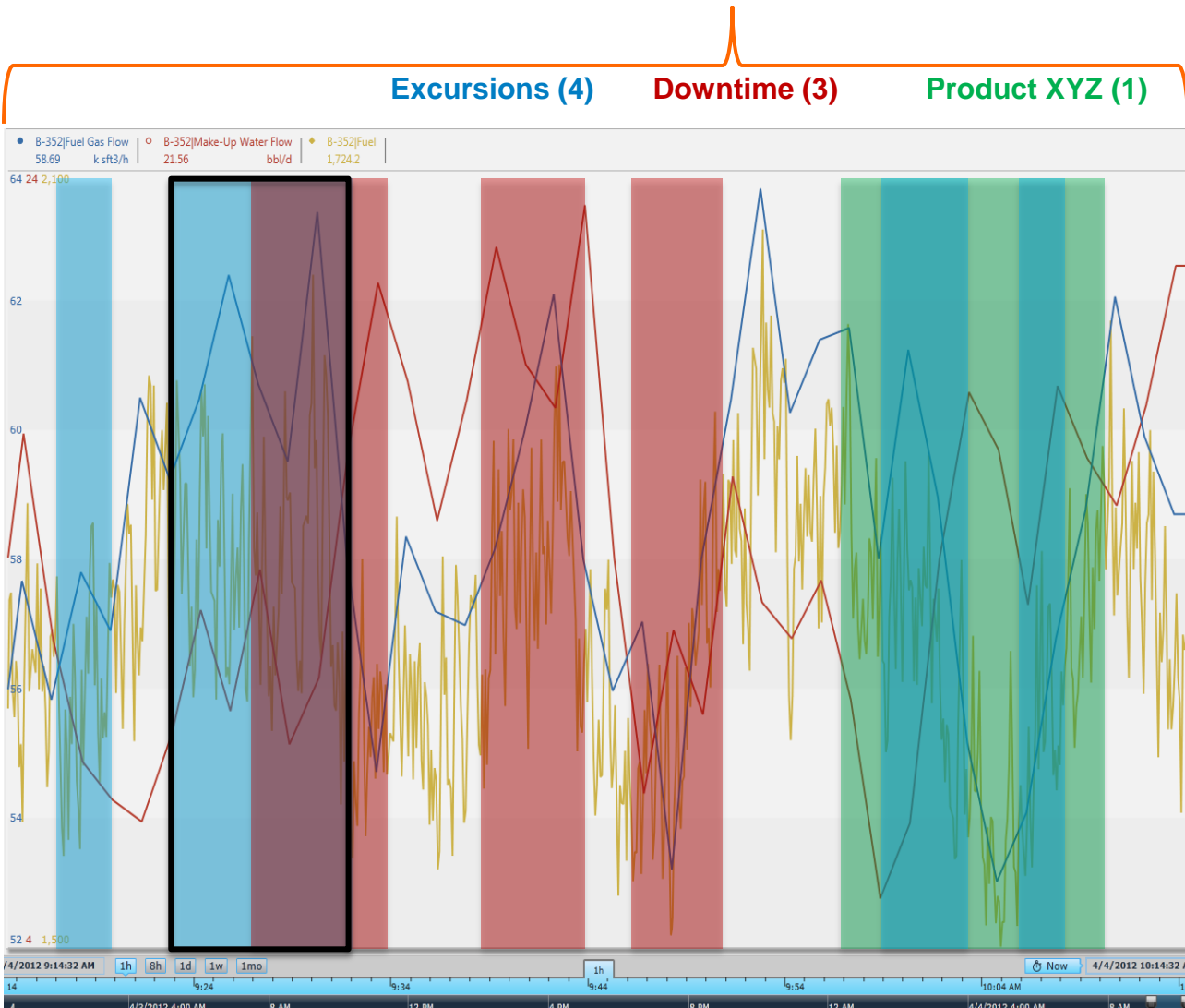


# Perform Event Comparisons

# Discover Event Interrelationships



# PI Event Frames is a core capability of the PI Server to record important process or business events and help you find the *related data*.



Event Attribute	Value
Name	Ex 20121215-0002
Start	15-Dec-2012 10:35:02
End	15-Dec-2012 10:47:26
Duration	12 min, 24 sec
Asset	Boiler-459
Excursion Type	High Violation
Fuel Gas Flow.Avg	37.12 k sft3/h
Fuel.Start	823.48 k sft3/ton
myPIKPI.Max	47.19 bbl/d

### EVENT FILTERS

**Duration**  
 Longer Than  Shorter Than   
 0 m 200 m

**Category**

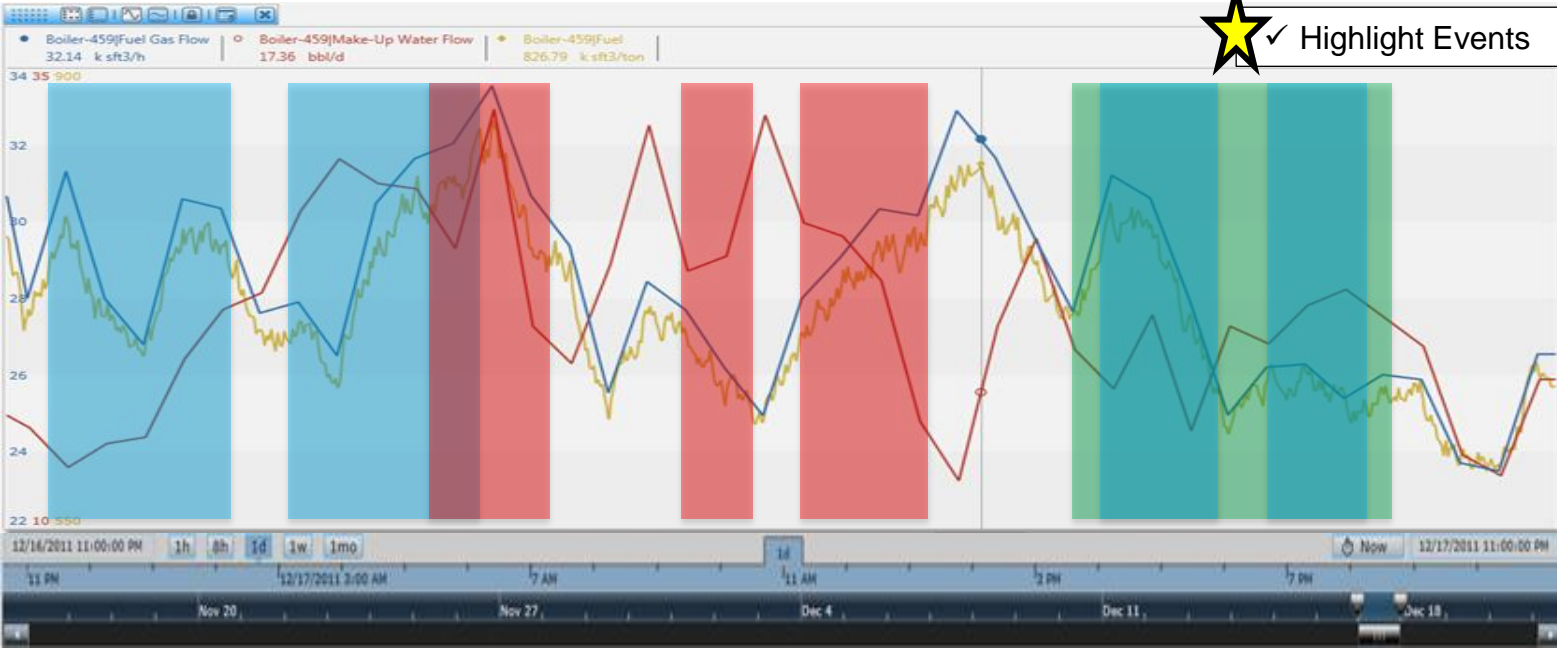
- ✓ Excursions (4)
- ✓ Downtime (3)
- ✓ Product XYZ (1)

**Template**

- ✓ Boiler Downtime (3)
- ✓ Boiler KPI Excursion (4)
- ✓ PIUnitBatch (1)

**Temp.Max**  
 Greater Than  Less Than   
 C 100 C

Name	Start	End	Duration	Element	Category	Template	Reason Code	Temp.Max
Ex01	16-Dec-2011 23:05:48	17-Dec-2011 00:25:24	01:19:36	B-459	Excursions	Boiler KPI Excursion	High Temp	91.2
Ex02	17-Dec-2011 02:37:19	17-Dec-2011 04:12:07	01:34:48	B-459	Excursions	Boiler KPI Excursion	Low Pressure	54.1
DT45	17-Dec-2011 04:31:22	17-Dec-2011 05:20:34	00:49:12	B-459	Downtime	Boiler Downtime	Broken Thermo	32.4
DT46	17-Dec-2011 07:56:58	17-Dec-2011 08:19:46	00:22:48	B-459	Downtime	Boiler Downtime	Broken Thermo	31.7
DT47	17-Dec-2011 09:41:22	17-Dec-2011 10:52:58	01:11:36	B-459	Downtime	Boiler Downtime	Safety Shutdown	87.2
XYZ146	17-Dec-2011 13:12:34	17-Dec-2011 16:29:22	03:16:48	B-459	Product XYZ	PIUnitBatch	n/a	48.9
Ex03	17-Dec-2011 19:28:58	17-Dec-2011 20:41:22	01:12:24	B-459	Excursions	Boiler KPI Excursion	High Temp	95.3
Ex04	17-Dec-2011 21:44:58	17-Dec-2011 22:45:46	01:00:48	B-459	Excursions	Boiler KPI Excursion	Low Temp	20.4



Ex01

Ex02

XYZ146

DT45

DT46

DT47

Ex03

Ex04

# Event Generation in Abacus

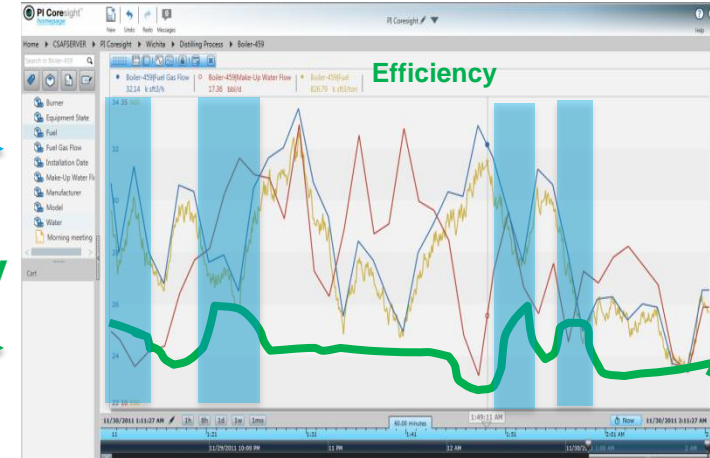


|Efficiency

|Fuel Flow Rate

|Flow Out

“Abacus”

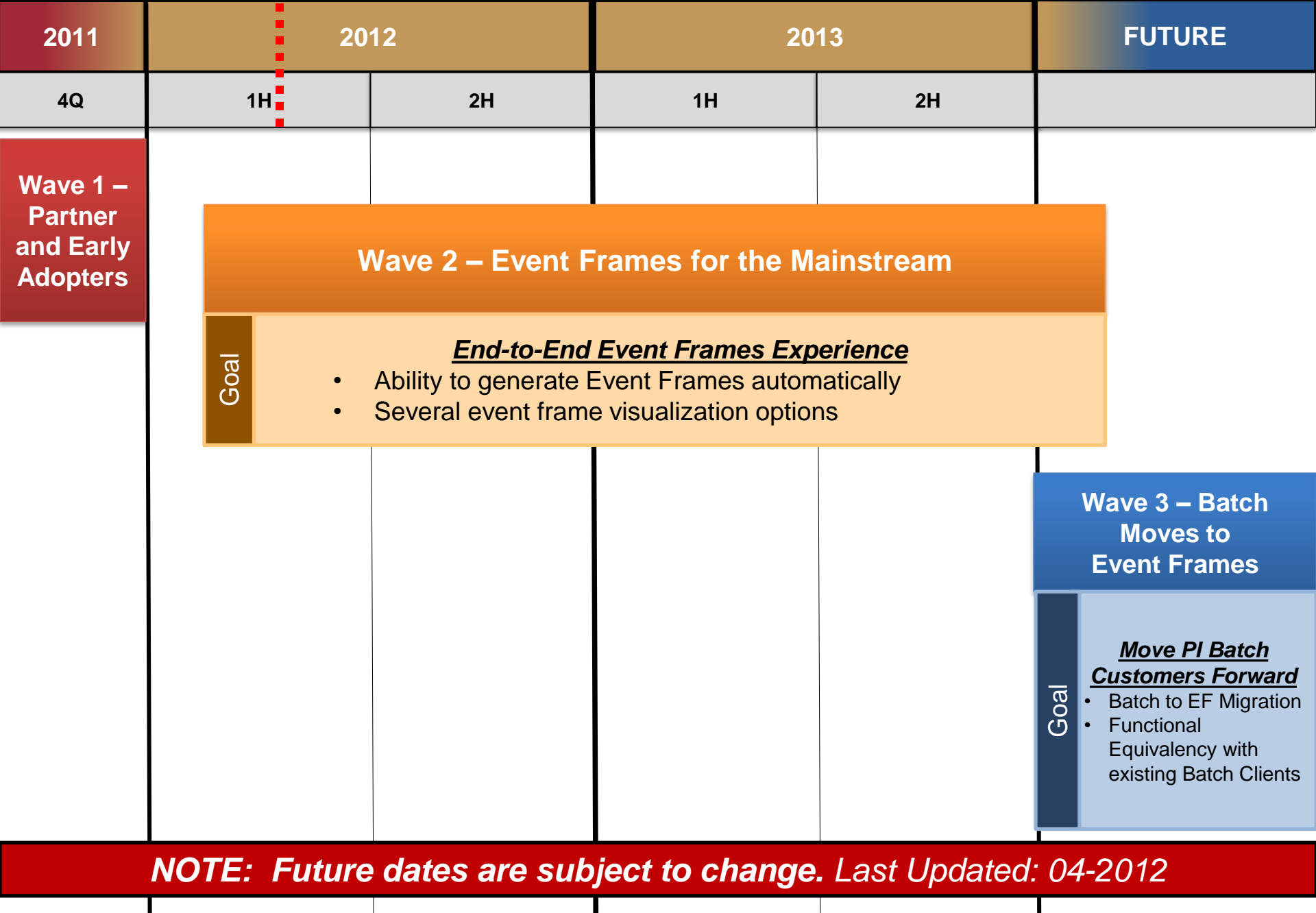


Efficiency = (Flow Out / Fuel Flow Rate \* 3.14)



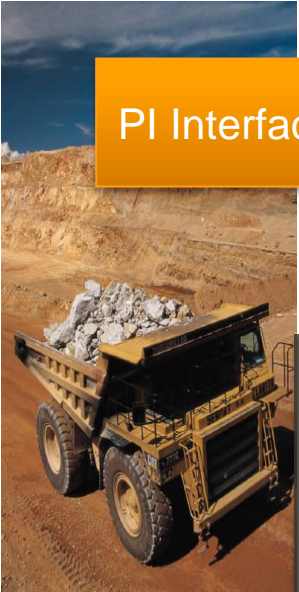
myEF.Start = (Efficiency > LIMIT)

myEF.End = (Efficiency < LIMIT) AND (Fuel Flow Rate > 80)

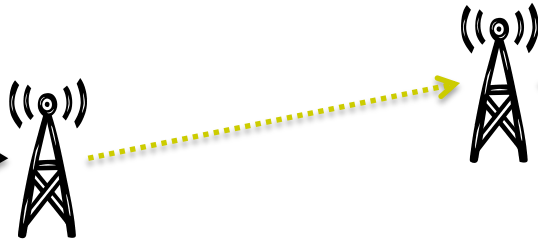


**NOTE: Future dates are subject to change. Last Updated: 04-2012**

# Smart Interfaces



PI Interface



PI System



Tags

- Tags
- Assets
- Assets Data
- Events
- Data
- Events

PI Interface



Tags

- Assets
- Data
- Events

Automatically discover your data, send it to your PI System, and keep it in sync.

PI Interface



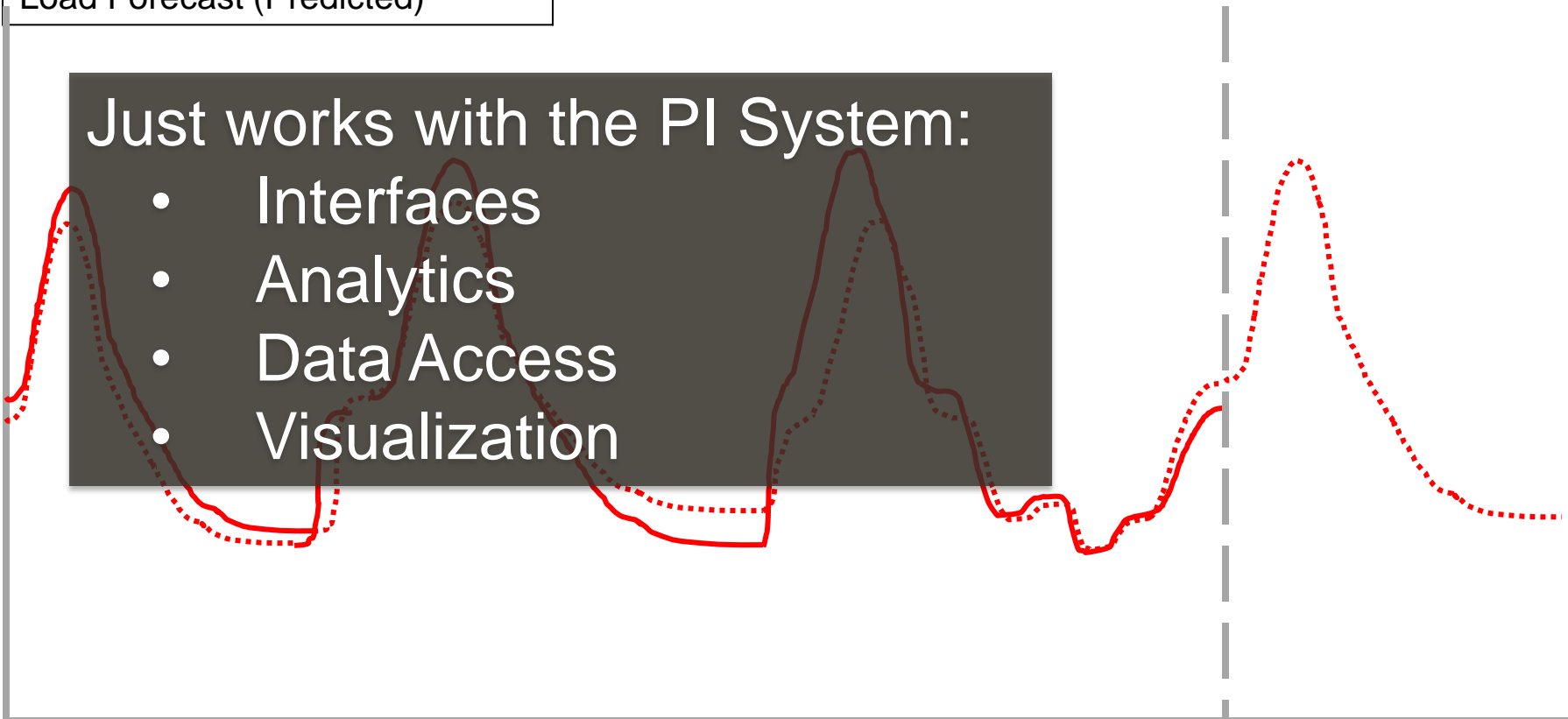
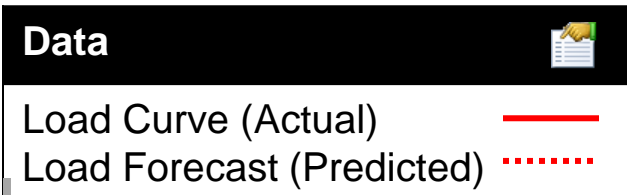
Tags

- Assets
- Data
- Events

# Find - PI System Search

- Optimized Search Engine for the whole PI System
  - And perhaps related systems
- Indexed for high performance
- Weighted / Ranked Results
  - Helps you find things more easily
- Can crawl many PI System machines
- Includes client artifacts
  - PI ProcessBook Displays, PI Coresight Displays
- Common User Experience

# Future Data Coming – Next PI Server



time

# PI Data Access, longer-term

## PI System SDK

A single high performance SDK that allows you to access all PI System data

## RESTful Web Services

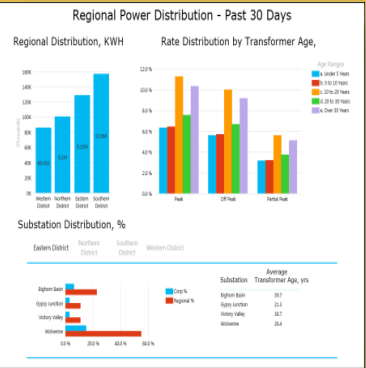
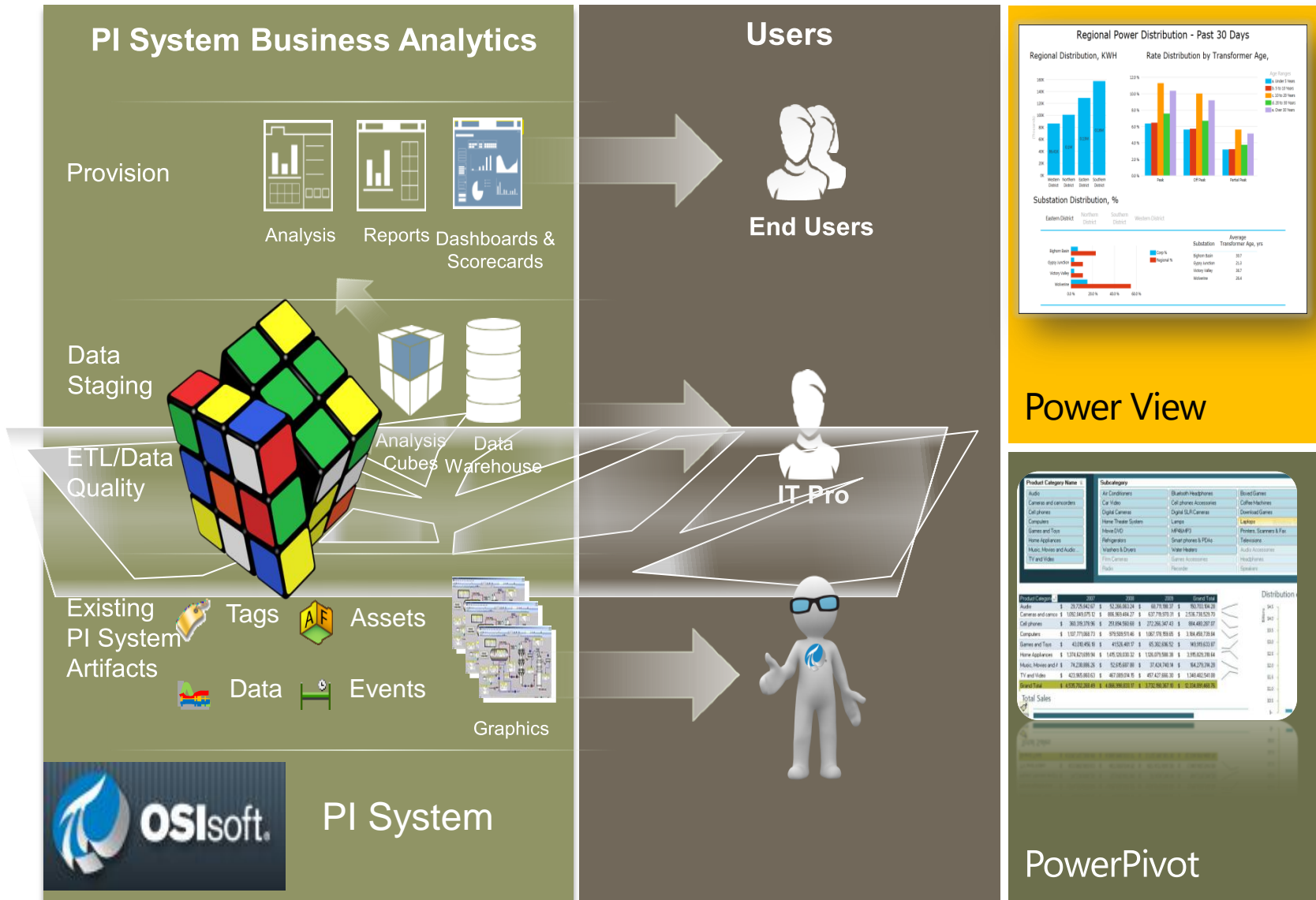
Emerging web service standard, ideally suited for mobile and cloud

## Integration Services

Makes business system integration easy, not just possible (ERP, BI)



# Project Rubik – Why?



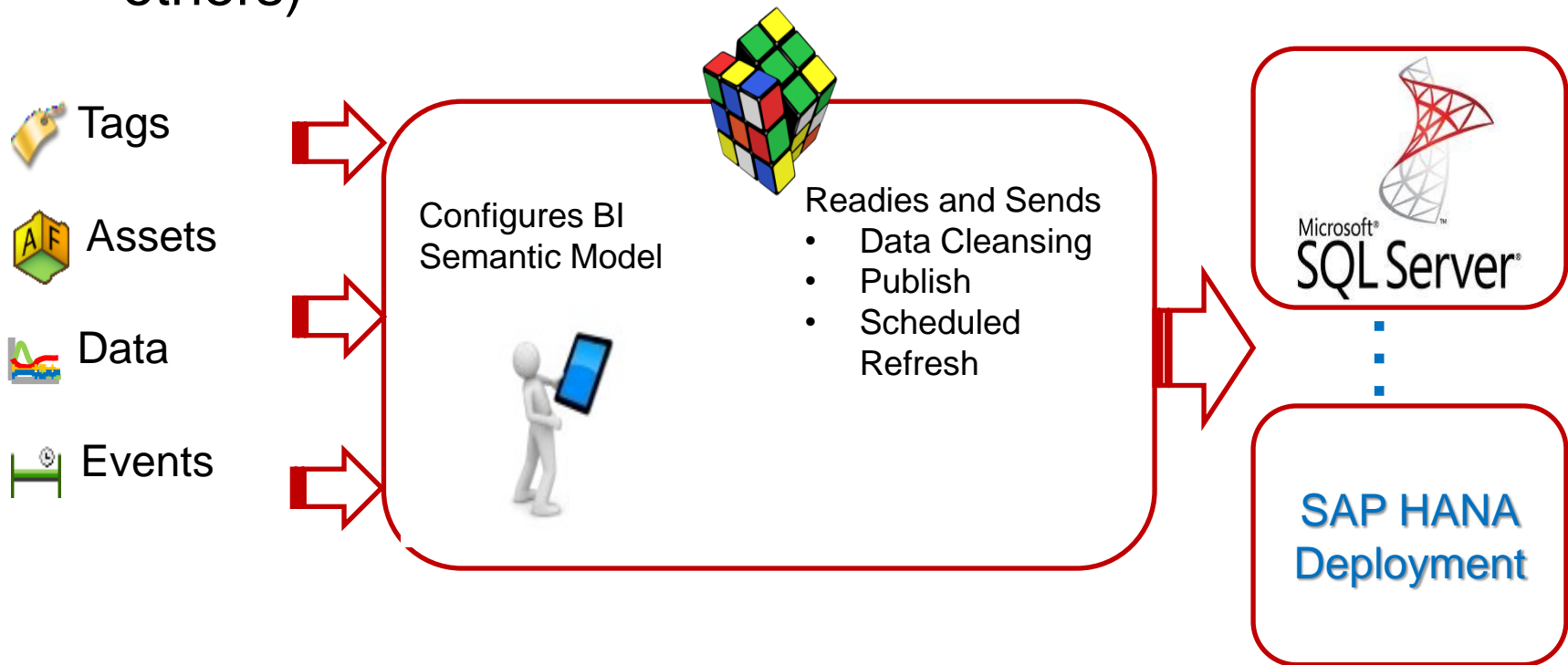
Product Category Name	Subcategory	Subcategory	Subcategory
Audio	Air Conditioners	Bluetooth Headphones	Board Games
Cameras and camcorders	Car Video	Cell phones/Accessories	Coffee Machines
Cell phones	Digital Cameras	Digital SLR Cameras	Download Games
Computers	Home Theater Systems	Laptops	Laptops
Games and Toys	Home DVD	MP4/MP3	Printers, Scanners & Fax
Home Appliances	Refrigerators	Smart phones & PDAs	Televisions
Music, Movies and Audio	Washers & Dryers	Water Heaters	Audio Accessories
TV and Video	Video Cameras	Game Accessories	Headphones
	Radio	Peripherals	Speakers

Product Category	2009	2008	2007	Grand Total
Audio	\$ 25,725,942.07	\$ 22,388,463.24	\$ 18,778,581.37	\$ 66,932,986.68
Camera and camcorder	\$ 1,092,849,975.12	\$ 896,859,494.27	\$ 537,778,979.21	\$ 2,527,488,448.60
Cell phones	\$ 386,393,979.96	\$ 293,949,603.01	\$ 272,285,347.41	\$ 952,628,930.38
Computers	\$ 1,127,771,888.73	\$ 979,920,974.46	\$ 882,778,838.81	\$ 2,990,471,702.00
Games and Toys	\$ 43,916,495.91	\$ 41,528,401.07	\$ 35,302,836.52	\$ 120,747,733.50
Home Appliances	\$ 1,374,421,891.94	\$ 1,495,028,030.32	\$ 1,528,079,588.38	\$ 4,397,529,510.64
Music, Movies and TV	\$ 74,228,888.26	\$ 2,875,687.89	\$ 27,428,740.81	\$ 104,533,317.96
TV and Video	\$ 423,985,883.63	\$ 407,893,074.91	\$ 407,427,689.31	\$ 1,239,306,648.85
<b>Total Sales</b>	<b>\$ 4,182,762,889.89</b>	<b>\$ 3,461,766,671.97</b>	<b>\$ 2,772,766,976.31</b>	<b>\$ 10,417,306,538.17</b>

# Project Rubik

- Bridge the gap between PI System experts and BI Users
- Allow PI System expert to select the data
- Leverage BI Visualization Tools from Microsoft, SAP (and others)



# Visualization Landscape

**PI Coresight:**  
*Ad Hoc Analysis & Collaboration*



Explore

Review

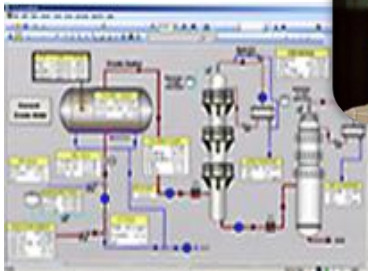
PI Clients

Monitor

Report



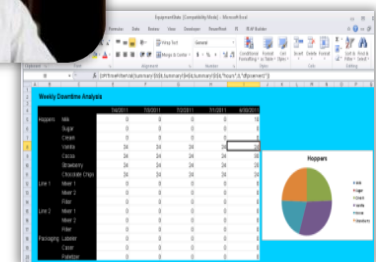
**PI ProcessBook:**  
Display authoring and  
Process monitoring



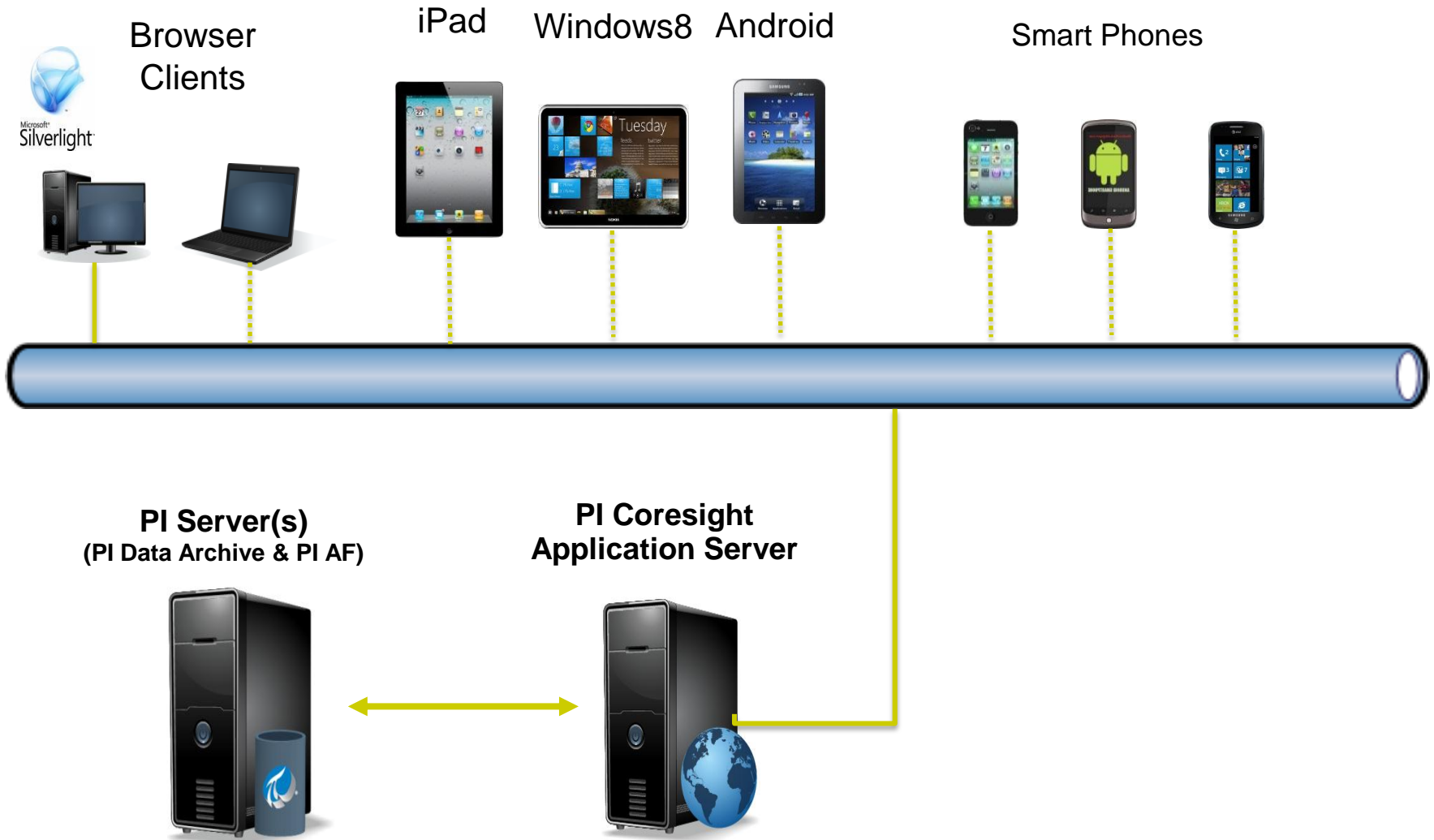
**PI WebParts:** Composite  
Apps, Shared broadly



**PI DataLink:**  
Reporting and table  
based analytics in  
Microsoft Excel



# PI Coresight with Mobile Clients



# PI Coresight Tablet Edition – Target Audience

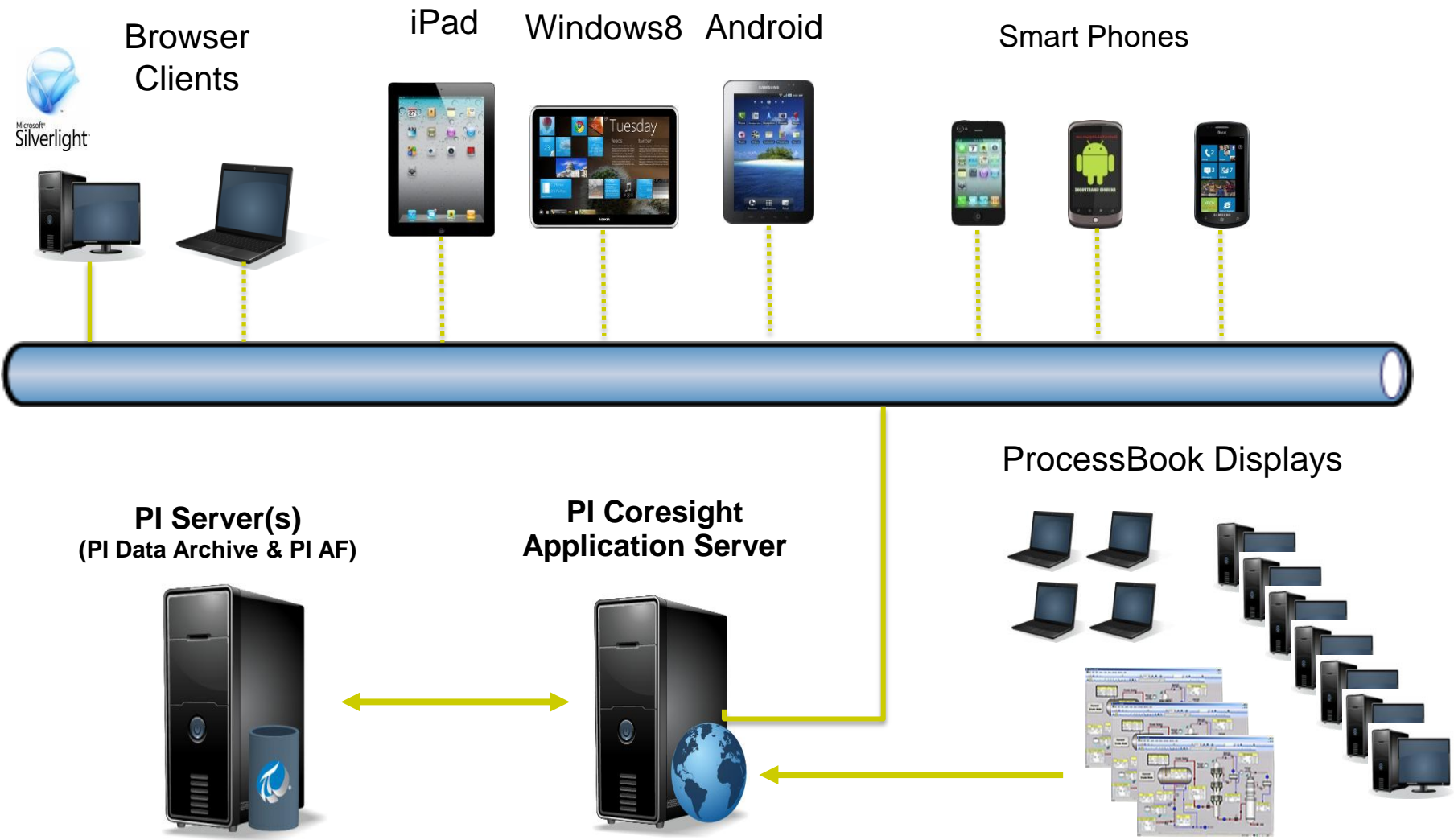
- Plant / Operations Management
  - Most likely to have iPad or similar device
  - Overview of how the plant/utility is running
  - Failures, Efficiency, KPIs, Actual vs Forecast
- Process Engineers / Corporate Plant
  - Identifying problems
  - Optimize processes – plant to plant
  - Create Content / Displays for management
- Maintenance
  - Manual Data Entry / Problem Recording
  - Troubleshooting – documents and real-time
  - Calibration



# PI Coresight Phone Edition – Target Audience

- Check in with Plant from Home / Road
- Tell me if something is wrong!
- Focus on Notifications, Acknowledge, Dispatch, and Escalation
- Give me some basic data related to notification
- Outside of plant - 3G, 4G, or public WiFi
- Personalization

# PI Coresight – ProcessBook Display Viewer



# PI WebParts 2012

- Support for SharePoint 2010 and SharePoint “15”
- Become a better SharePoint corporate citizen
- Become a more “IT” friendly product
- Replace obsolete technology
- Set the stage for OS and Browser independence, Mobile



- Remote Data Services
- WSP Installs
- Can leverage Adobe SVG Viewer if needed
- Support for IE 8



- Remote Data Services
- WSP Installs
- Visualization using Web Standards
- Support for IE9, IE10, Firefox, and Chrome



# Evolution of Operating Systems



# Windows Azure™

# PI Cloud Initiatives

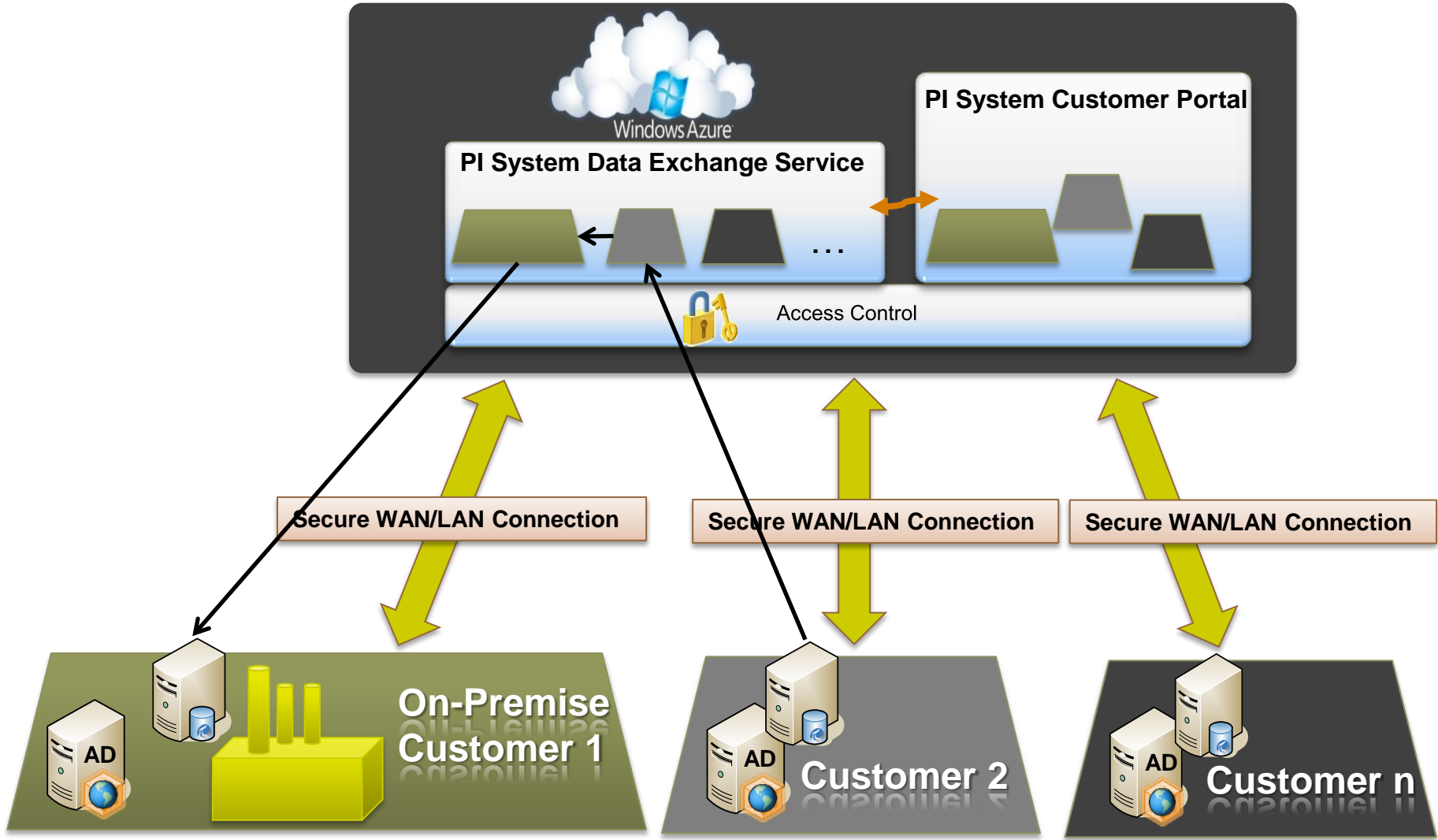
## Add to existing PI System installations

- PI System Management
- PI Data Exchange
- PI Coresight Service
- Data, Visualization and other services for Partner and Custom Apps

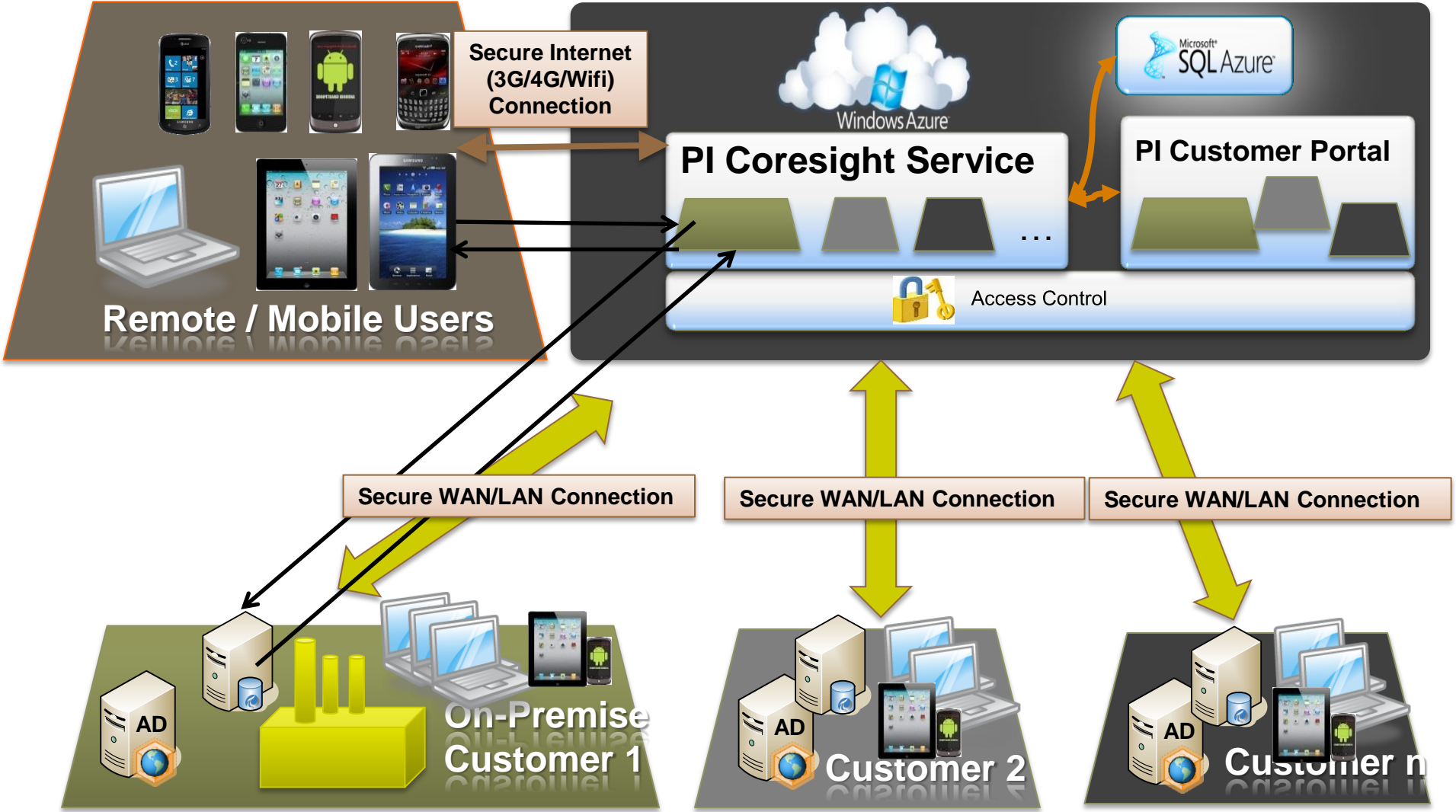
## Full PI System Deployment in the Cloud

- Simplified Deployment and Management
- Take advantage of the Windows Azure Platform (PaaS)
- Functionality you know in the PI System today plus much more
- Highly efficient and elastic

# PI Data Exchange Service



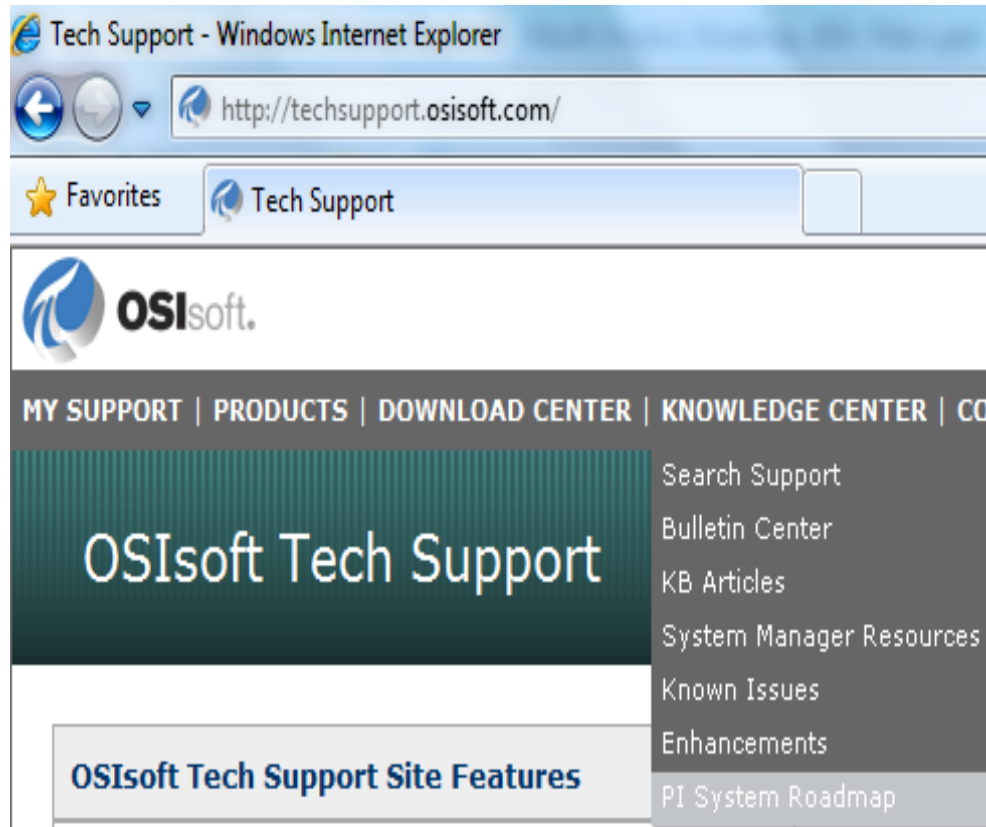
# PI Coresight Service with Mobility



# Stay Up-To-Date on the Web

- PI System Roadmap on OSIsoft Technical Support Site

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





# THANK YOU

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