



OSIsoft®

INDUSTRY SEMINAR

E M E A

The **Power** of **Data**



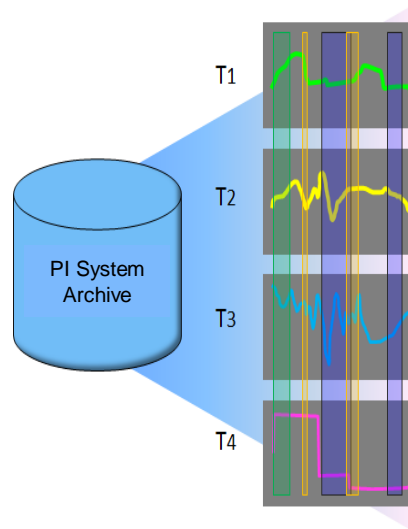
PI System Roadmap

Presented by **Christian Leroux, EPM**

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

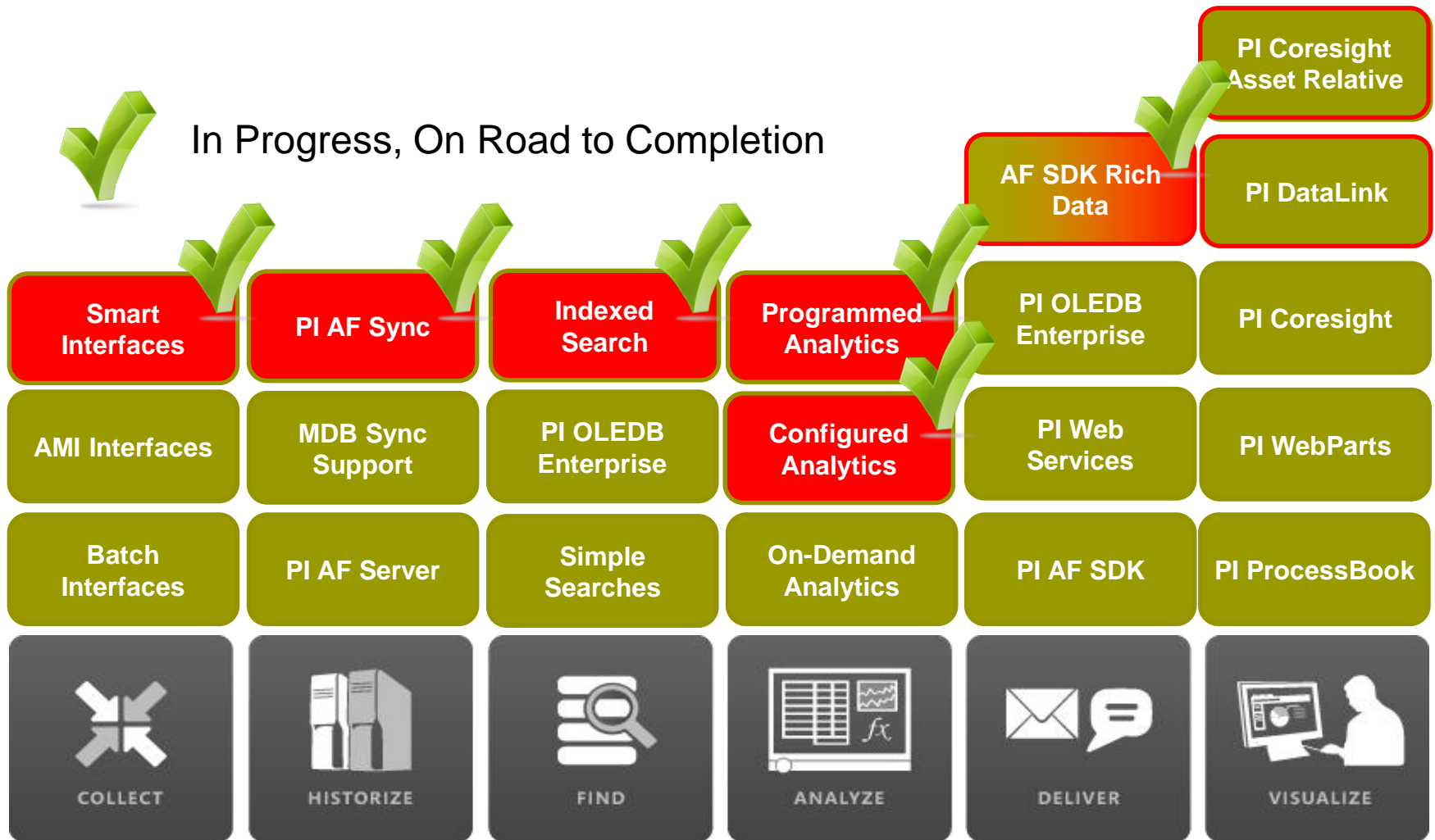


Cloud
More Data
Access Anywhere
Trans-Enterprise

Asset Centric PI System - Scorecard



In Progress, On Road to Completion



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

Corporate HQ



Templates



Project Abacus

Configured and Programmed Calculations for PI AF



Project Abacus Use Case



Extruding Process

Boiler Efficiency = $\text{AVG}(\text{B1}..\text{Bn})$

Boiler1

Flow Out

Fuel Flow Rate

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

Or myProgrammedCalc (Flow Out, Fuel Flow Rate)

Boiler2

Flow Out

Fuel Flow Rate

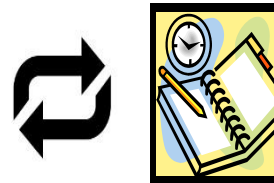
Efficiency

Boiler3

Flow Out

Fuel Flow Rate

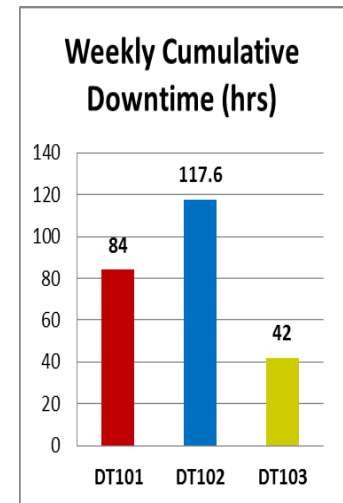
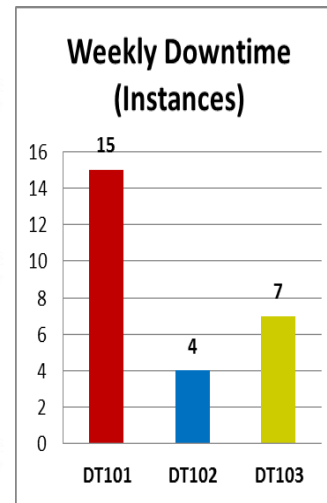
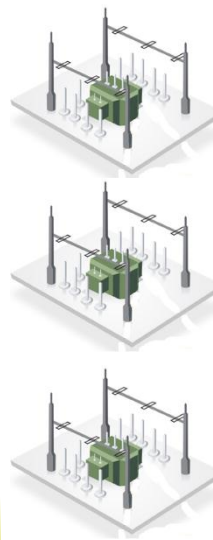
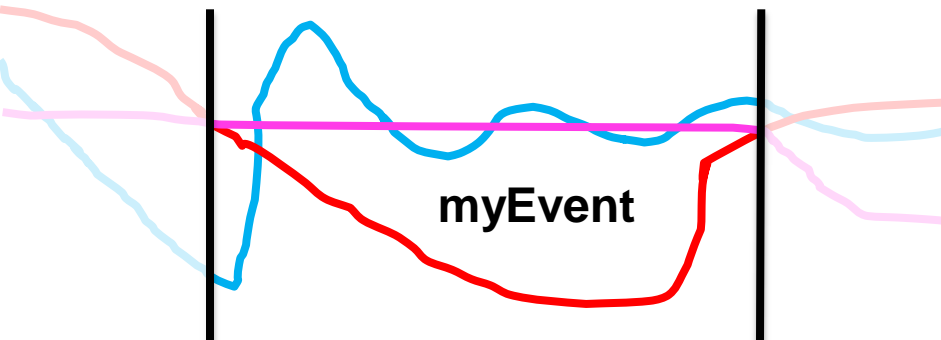
Efficiency



Boiler
Template



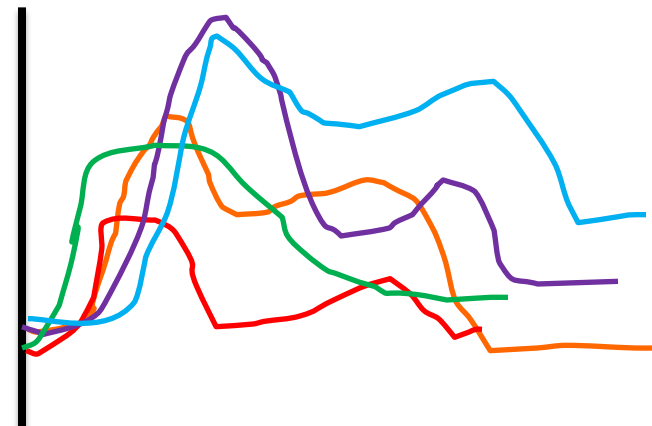
Event Frames



Simplify Data Analysis

Perform Asset Comparisons

Event Overlay Trend (Temp)

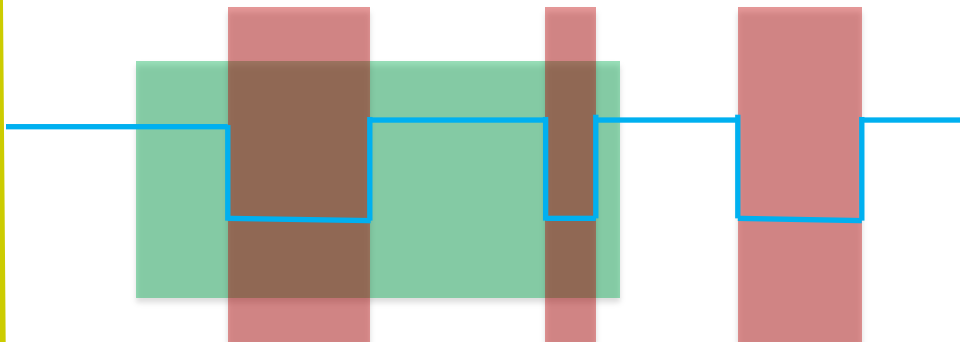


Name	Temp.Max
EF1	122.47
EF2	109.34
EF3	112.73
EF4	98.61
EF5	125.24

Downtime Events for Product XYZ

Product XYZ (1)

Downtime (2)



Perform Event Comparisons

Discover Event Interrelationships

EVENT FILTERS

Duration

Longer Than Shorter Than

0 m 200 m

Category

All None

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

Template

All None

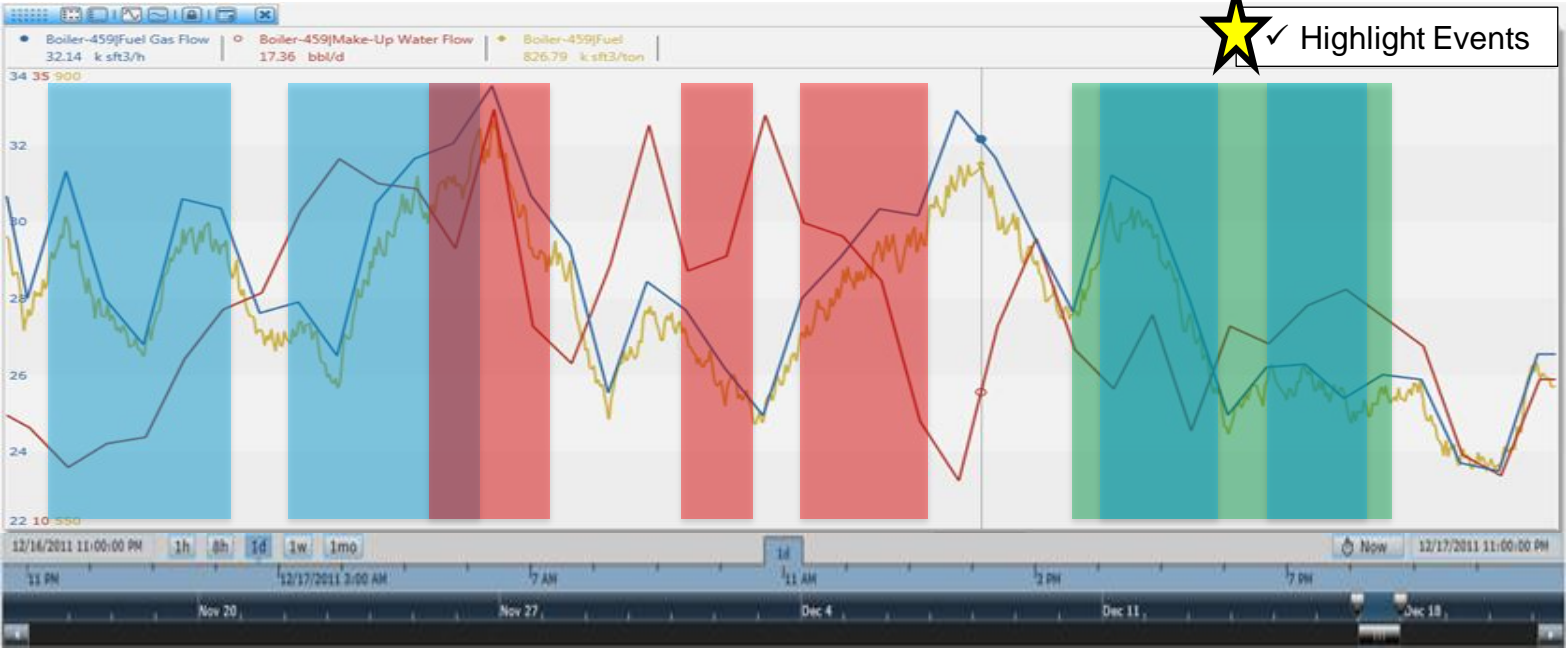
- ✓ Boiler Downtime (3)
- ✓ Boiler KPI Excursion (4)
- ✓ PIUnitBatch (1)

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

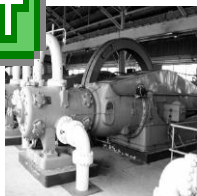


Ex01Ex02

DT45DT46DT47

XYZ146Ex03Ex04

Event Generation in Abacus



|Efficiency

|Fuel Flow Rate

|Flow Out

“Abacus”



myEF

|Efficiency

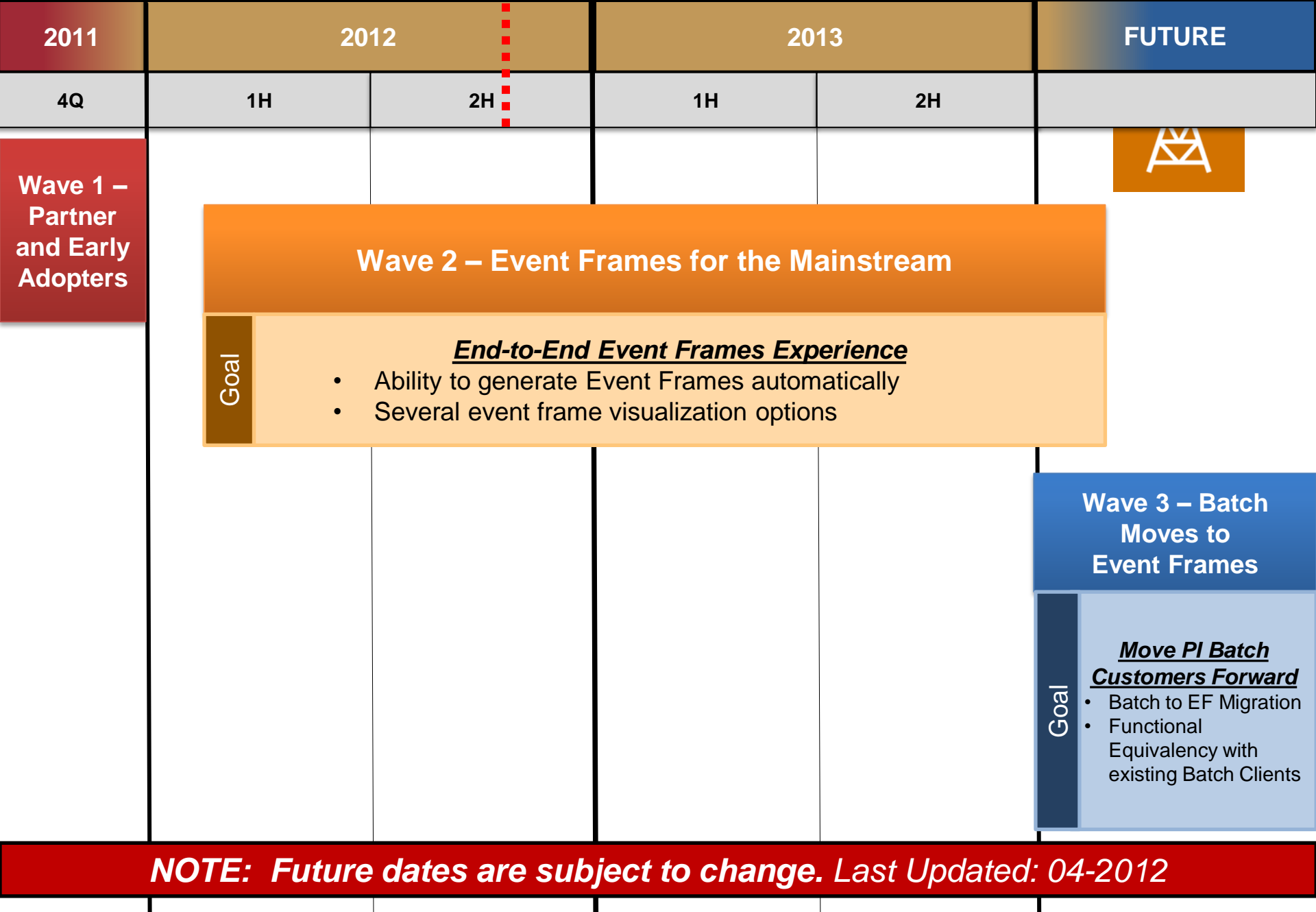


Efficiency = (Flow Out / Fuel Flow Rate * 3.14)



myEF.Start = (Efficiency > LIMIT)

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



Smart Interfaces

PI Interface



PI System

Tags

Assets
Data

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

PI Interface

Assets

Data

Events

Tags

Assets

Data

Events

PI Interface

Events

Events

Events

Events

Events

Events

Events

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 – Next PI Server



Data

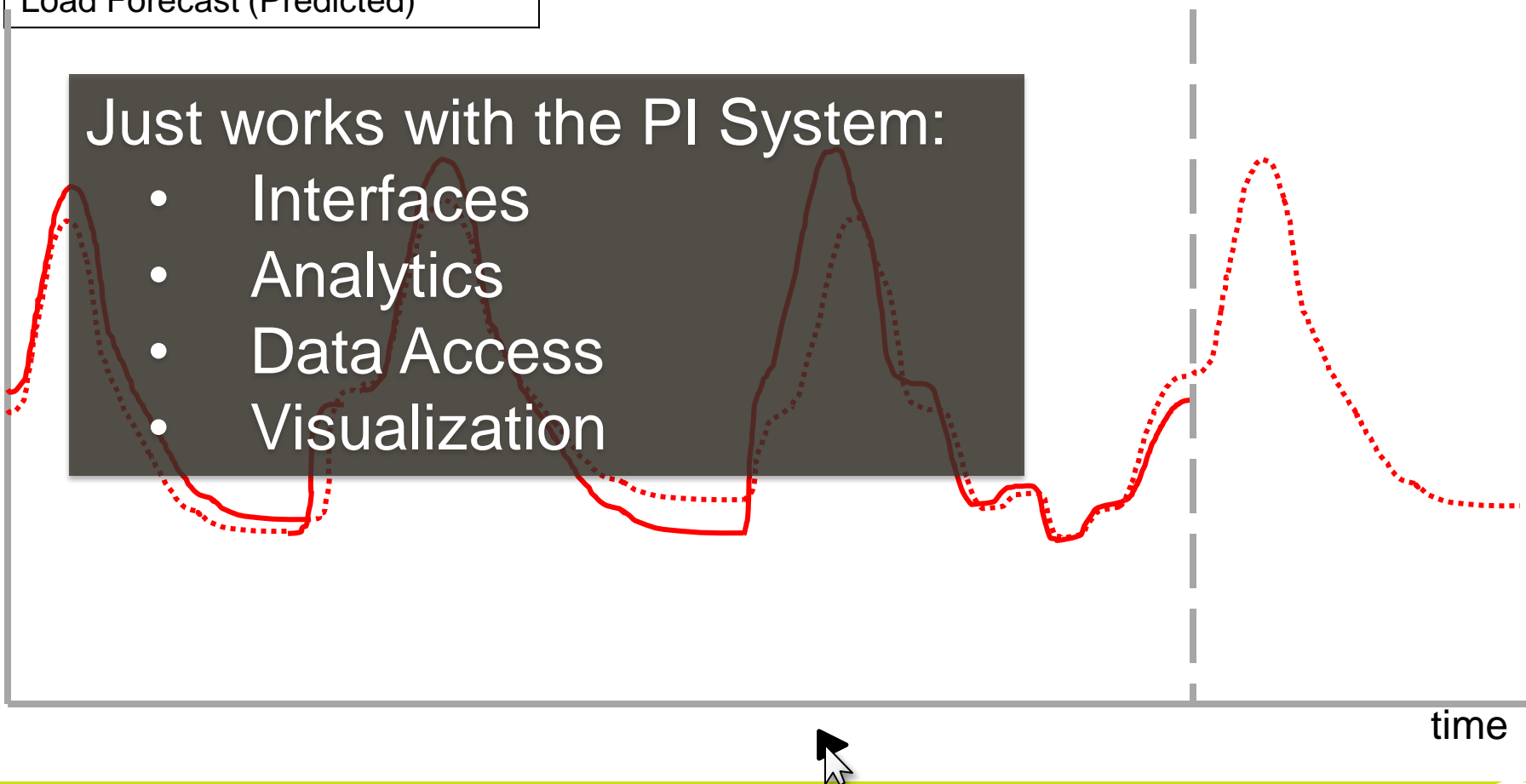


Load Curve (Actual) ———

Load Forecast (Predicted) ·····

Just works with the PI System:

- Interfaces
- Analytics
- Data Access
- Visualization



PI Data Access, longer-term



PI System SDK

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

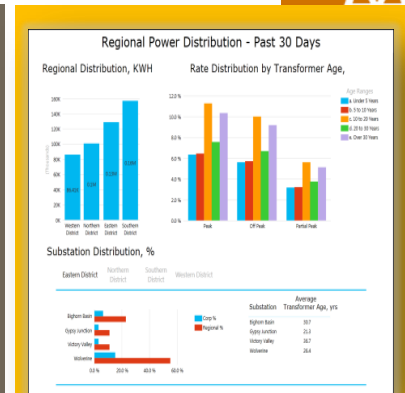
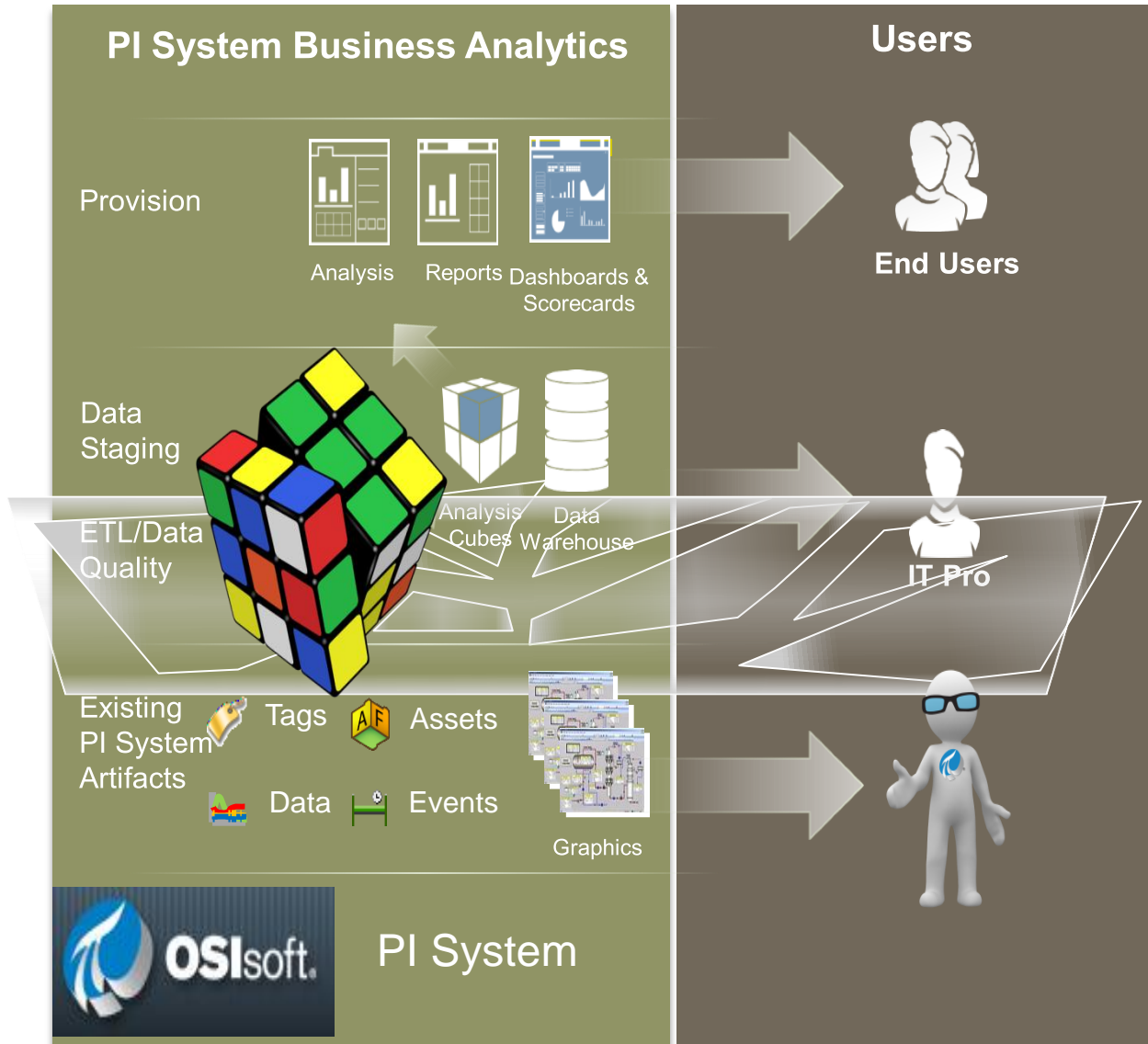
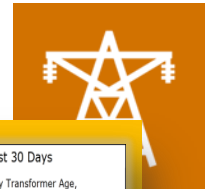
RESTful Web Services

- 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?



Power View

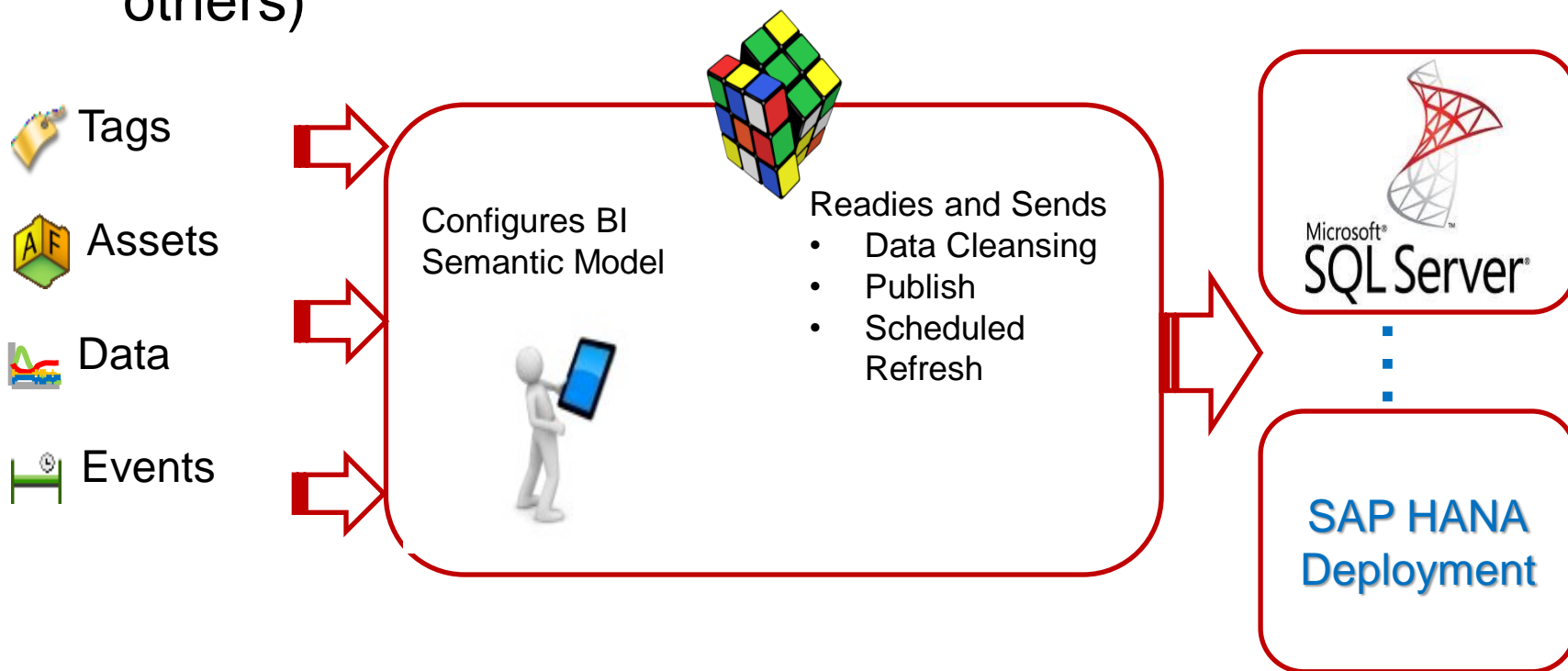


PowerPivot

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



PI WebParts: Composite Apps, Shared broadly



Explore

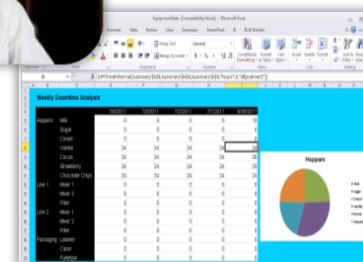
Review

PI Clients

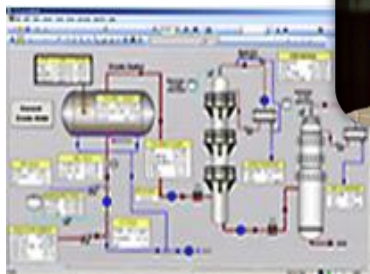
Monitor

Report

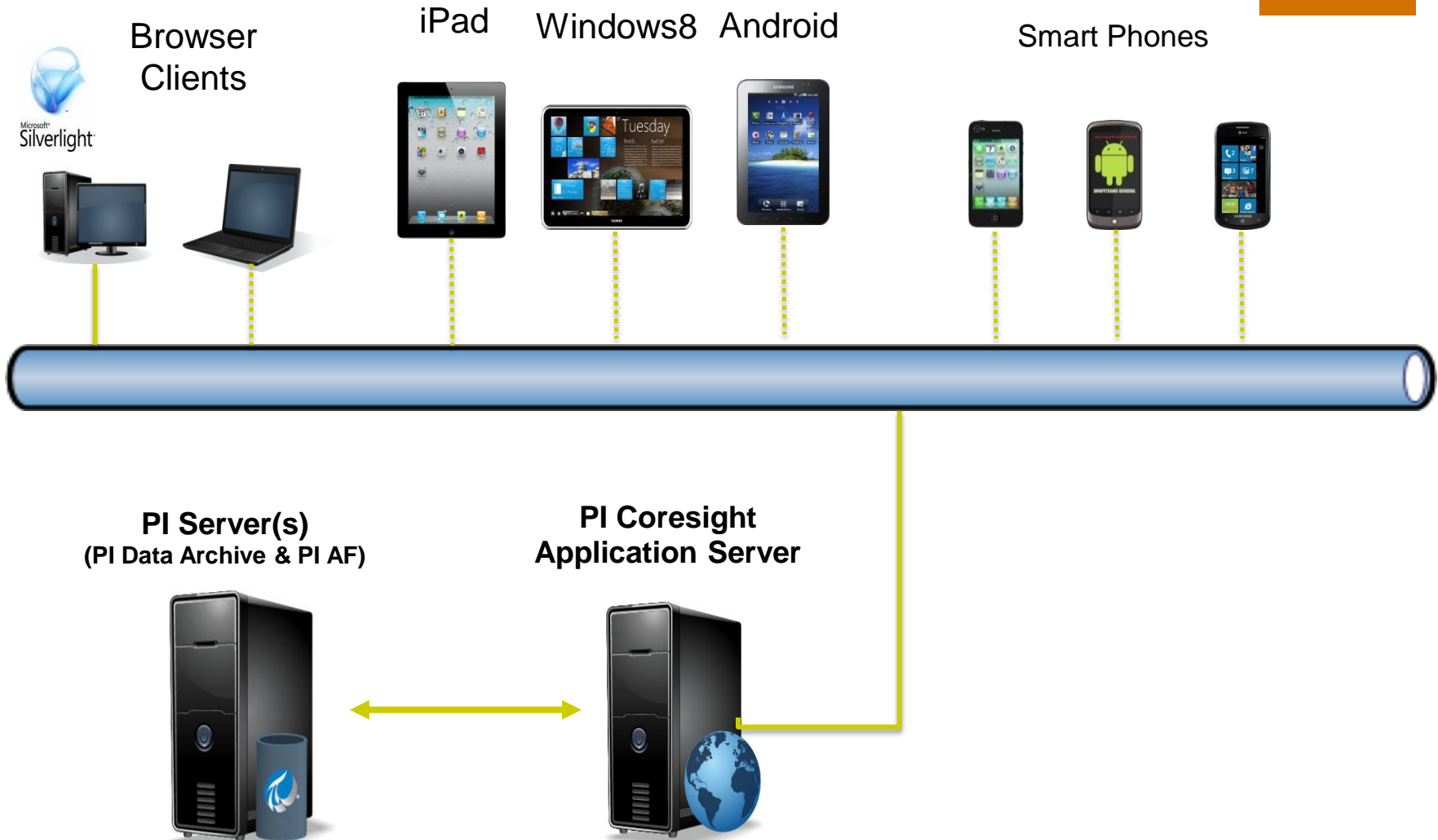
PI DataLink:
Reporting and table based analytics in Microsoft Excel



PI ProcessBook:
Display authoring and Process monitoring



PI Coresight with Mobile Clients



PI Coresight Tablet Edition



- 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

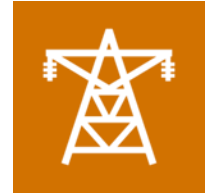
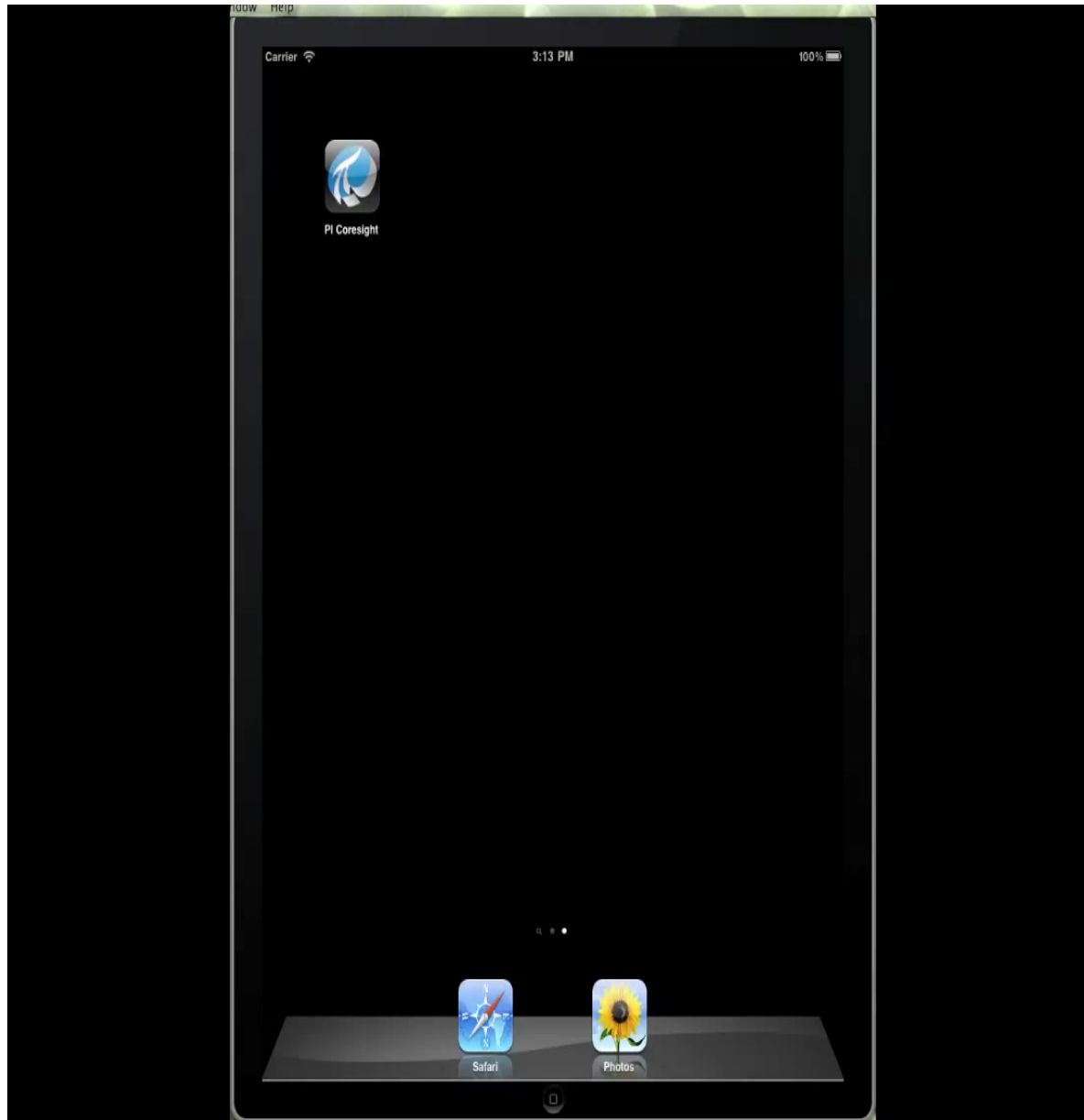


PI Coresight Phone Edition

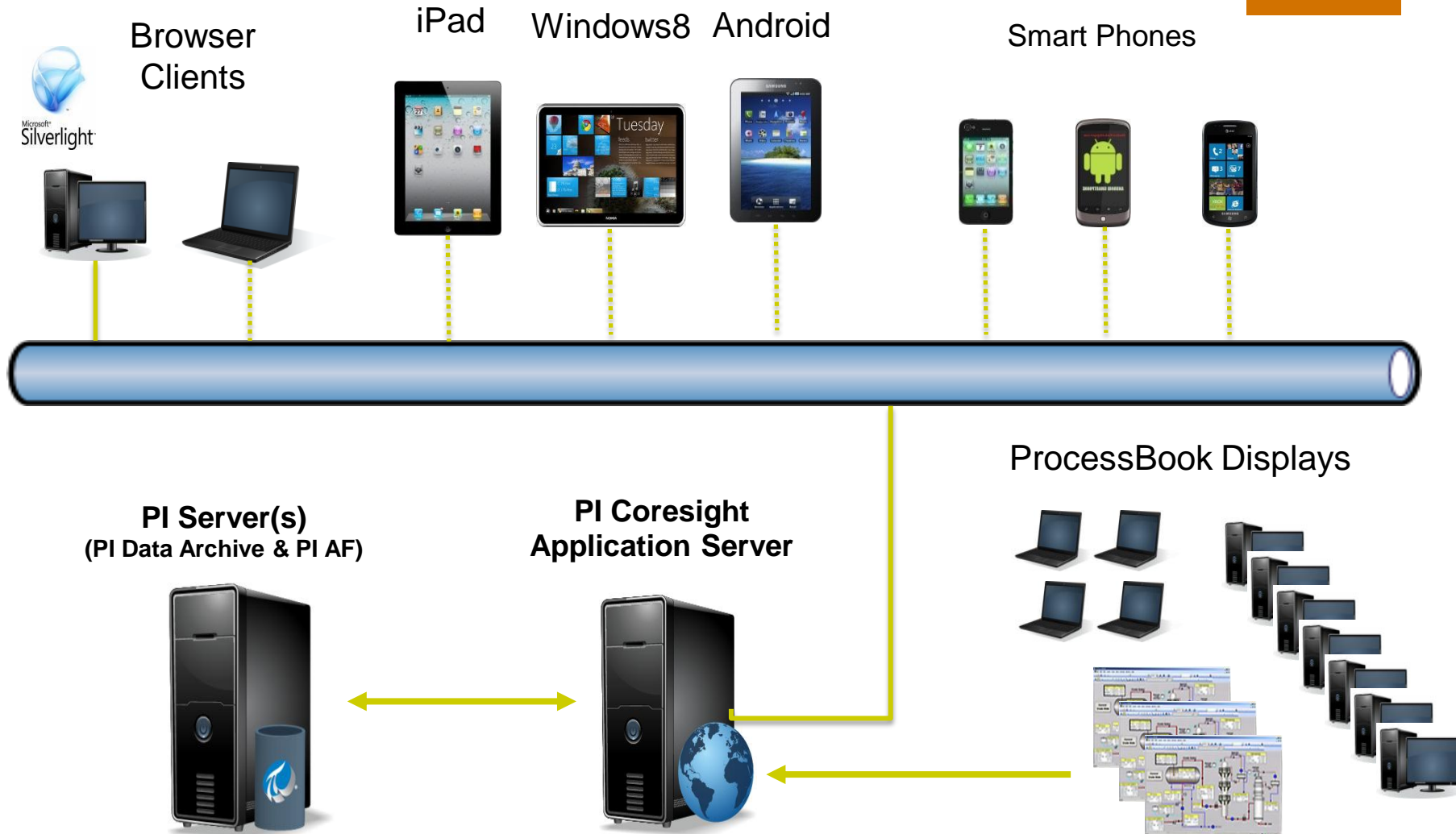


- Check in with Plant from Home / Road
- Tell me if something is wrong!
- Focus on Notifications, Acknowledge, Dispatch, and Escalation
- Give me some basic data related to notification
- Outside of plant - 3G, 4G, or public WiFi
- Personalization

PI Coresight iPad Demo



PI Coresight with ProcessBook



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



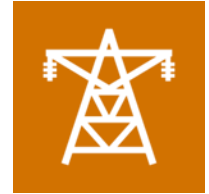
- Remote Data Services
- WSP Installs
- Visualization using Web Standards
- Support for IE9, IE10, Firefox, and Chrome

Evolution of Operating Systems



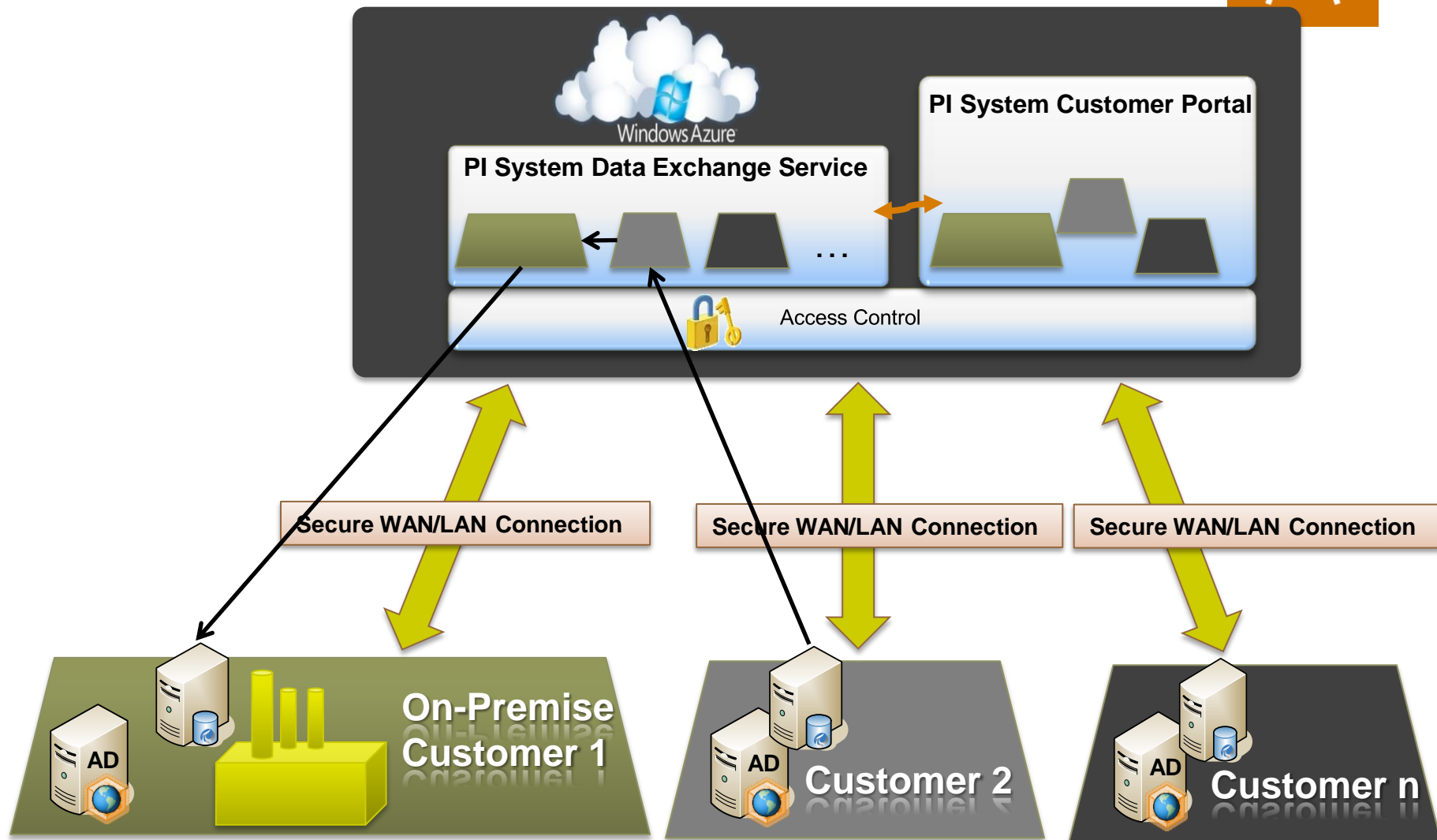
Windows Azure™

PI Cloud Initiatives

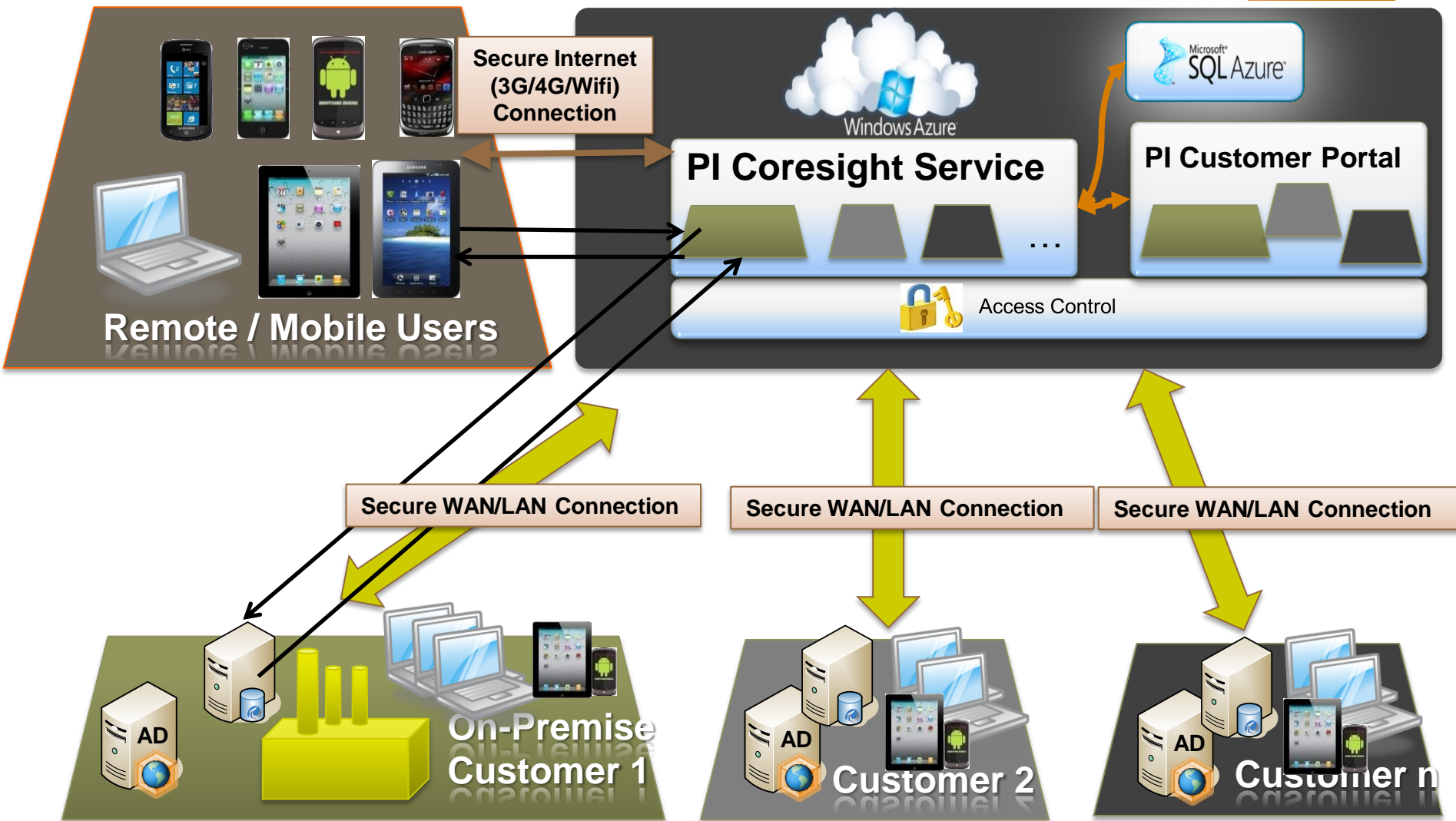


- Add to existing PI System installations
- PI System Management
- PI Data Exchange
- PI Coresight Service
- Data, Visualization and other services for Partner and Custom Apps
- Full PI System Deployment in the Cloud
- Simplified Deployment and Management
- Take advantage of the Windows Azure Platform (PaaS)
- Functionality you know in the PI System today plus much more
- Highly efficient and elastic

PI Data Exchange Service



PI Coresight Service for Mobility

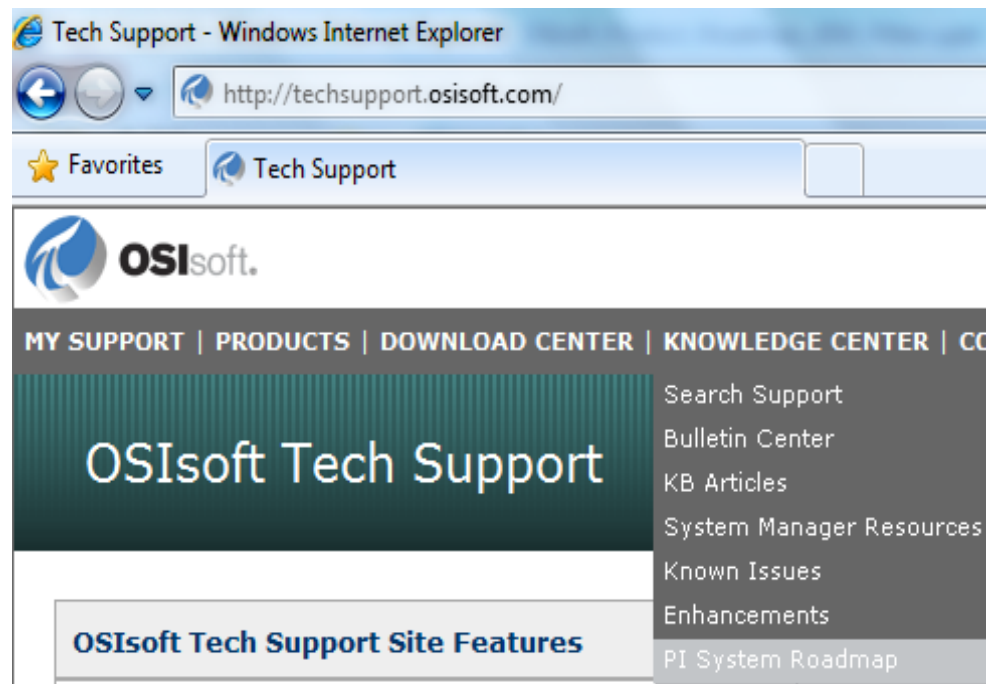


Stay Up-To-Date on the Web



- PI System Roadmap on OSIsoft Technical Support Site

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





THANK YOU

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