



# PI Server 2014

*Unleash Your Infrastructure*

Presented by **Stephen Kwan, OSIsoft Product Manager**

# Agenda

## 1. PI Server Basics:

- What is an infrastructure?
- What is the PI Server's role?
- What is included with the PI Server?

## 2. Tags vs. Assets

- Value from both approaches
- High value features driven by assets
- Future investment is in assets

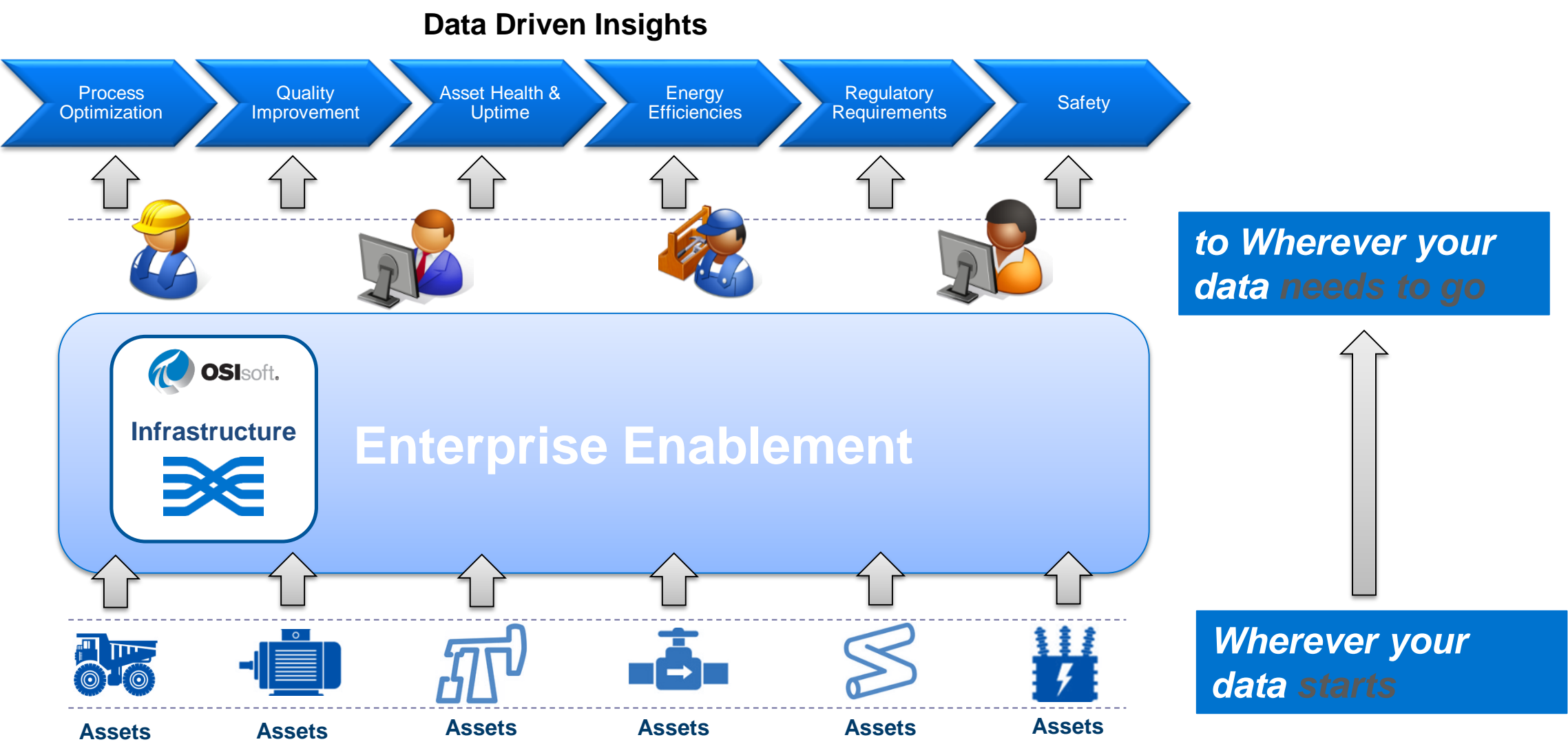
## 3. Asset-Based Analytics

- What is new in PI Server 2014?
- The value of PI Server 2014 and our Asset-Based Analytics capabilities
- What do I do next?

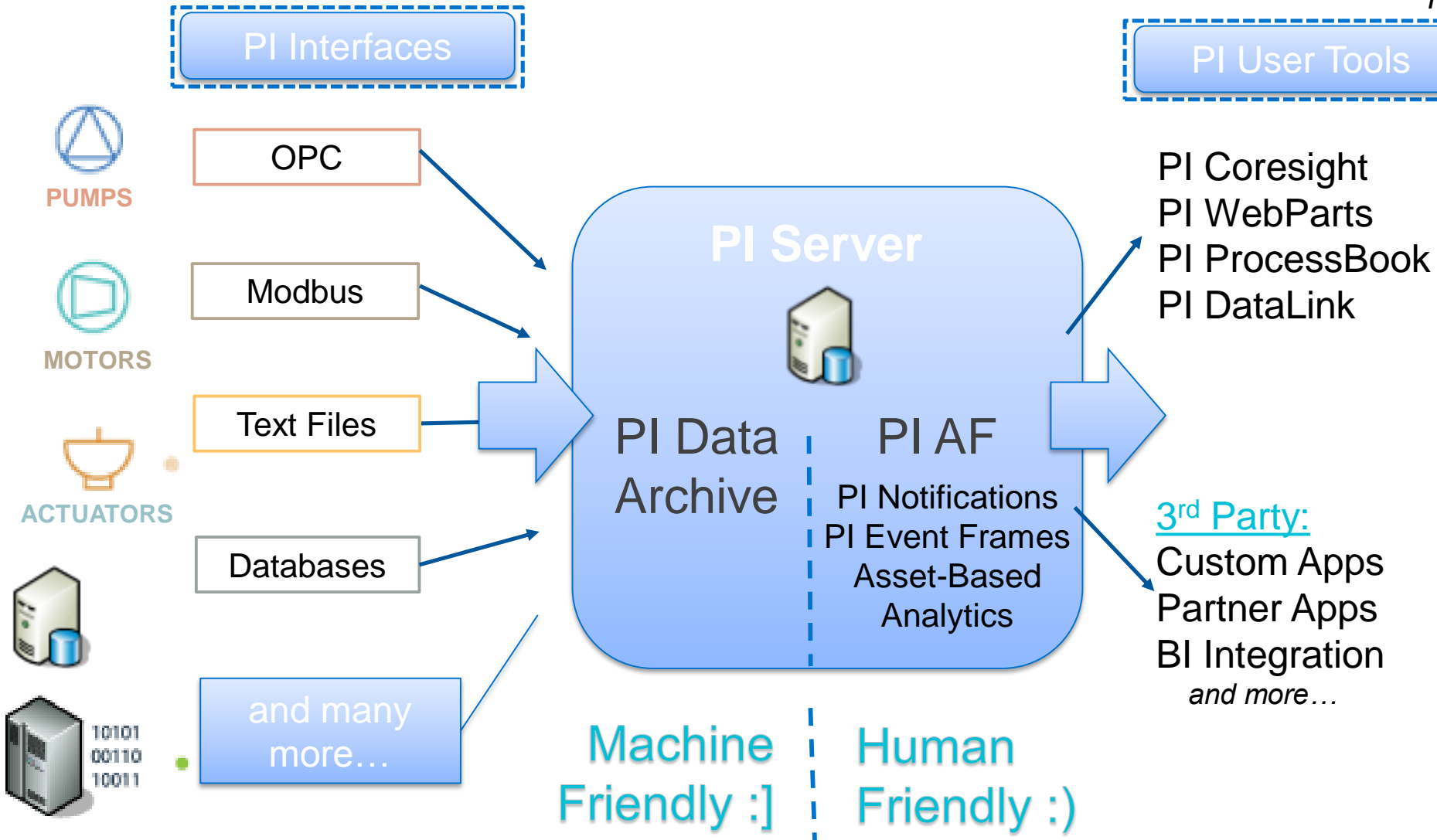
1.

# PI Server Basics

# An Enterprise Infrastructure



# What is part of our Infrastructure...



'The pump is down - what's happening?'

Real Time Troubleshooting

Keep the Process Healthy

Report on data quickly

Avoid breakdowns

# The PI System is in many industries



## Power & Utilities

OSIsoft is ranked **1st** in the power industry



## Oil & Gas

**100%** of the global Top 10 producers



## Chemicals & Petrochemicals

**40 of top 50** Chemical Companies



## Materials, Mines, Metals & Metallurgy

Installed in the world's **largest** mining companies



## Pharmaceuticals, Food & Life Sciences

**9 of the Top 10** pharmaceuticals



## Pulp & Paper

**400** sites from worldwide leaders



## Critical Facilities, Data Centers & IT

Innovative uses to monitor complex IT environments



## Developing Markets

Health care, Machine to Machine, Automotive,  
Semi Conductors

# What's included in PI Server 2014

- **Time Series Data Storage**
  - PI Data Archive
- **Contextual, Organize and Find**
  - PI Asset Framework (PI AF)

- **Mark Important Events**
  - PI Event Frames
- **Notify Based on Conditions**
  - PI Notifications

- **Analytics and Event Generation**
  - Asset-Based Analytics
  - PI ACE (Advanced Computing Engine)
  - PI Performance Equations
  - PI Totalizers

- **System Management**
  - PI System Management Tool
  - PI Interfaces for System Management

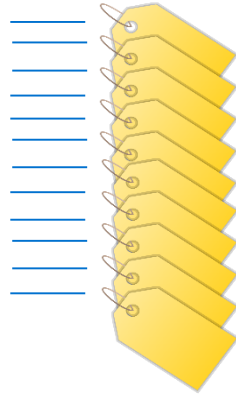
# 2.

## Tags vs. Assets

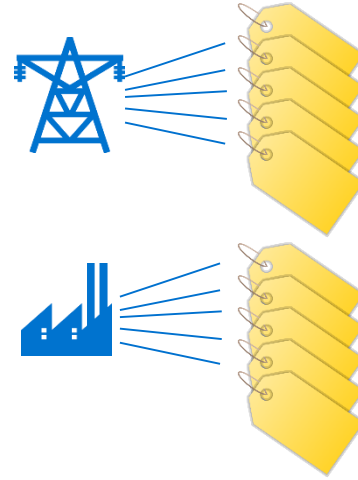


# Both approaches add value

## Tag Centric



- Named by **Control System point names**
- Traditional method of data collection
- Leverage historical knowledge built around tags
- Simple deployment

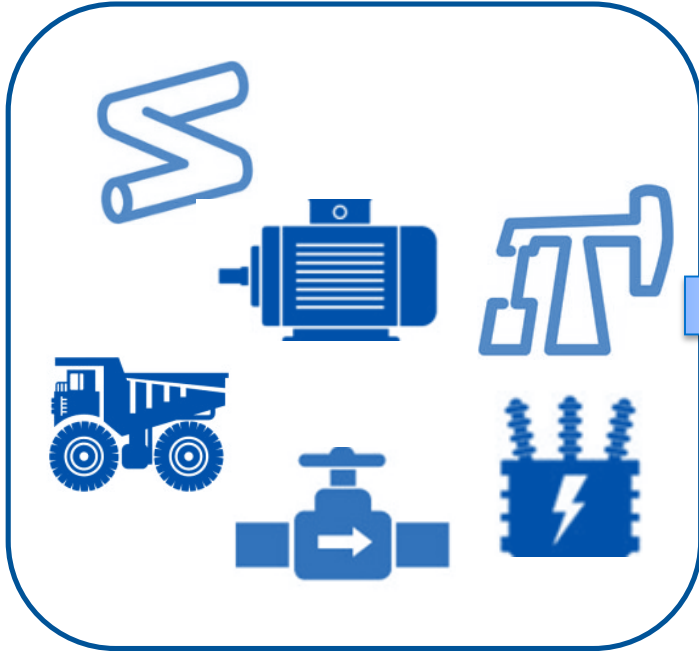


## Asset Centric

- Named by **Asset & Property**
- Organize your assets hierarchically, categorically, or by a particular grouping
- Standardize and build templates to help create a uniform way to compare assets
- Helps scale your system

# An asset-based approach has many benefits

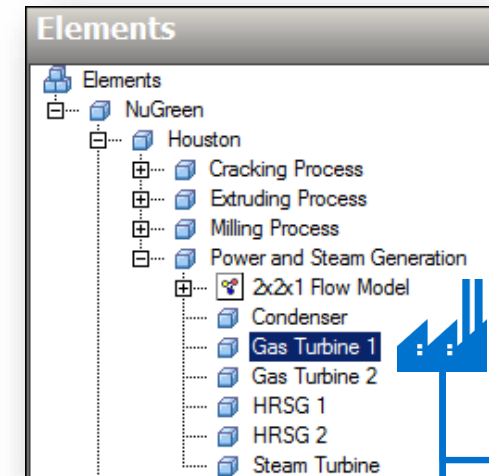
## Assets



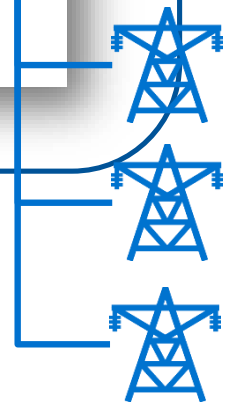
## Human friendly names

Gas Turbine Template		
General Attribute Templates Ports		
Filter		
Name	Unit Of Measure	
Compressor Discharge Pressure	rel. bar	
Compressor Discharge Temp	degree Celsius	
Compressor Inlet Temperature	degree Celsius	
Exhaust Gas Pressure	rel. bar	
Exhaust Gas Temp - #1 Probe	degree Celsius	
Exhaust Gas Temp - #2 Probe	degree Celsius	

## Relationships



**OSIsoft is investing in Asset Based Technology**

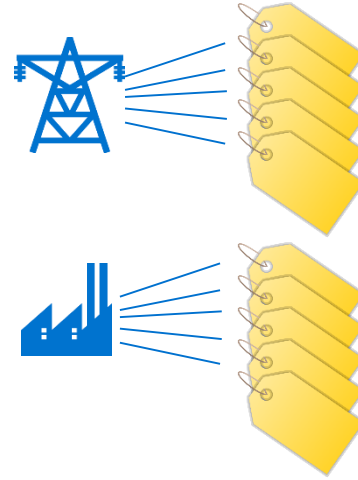


# Many high value PI Server 2014 features rely on assets

## Tag Centric



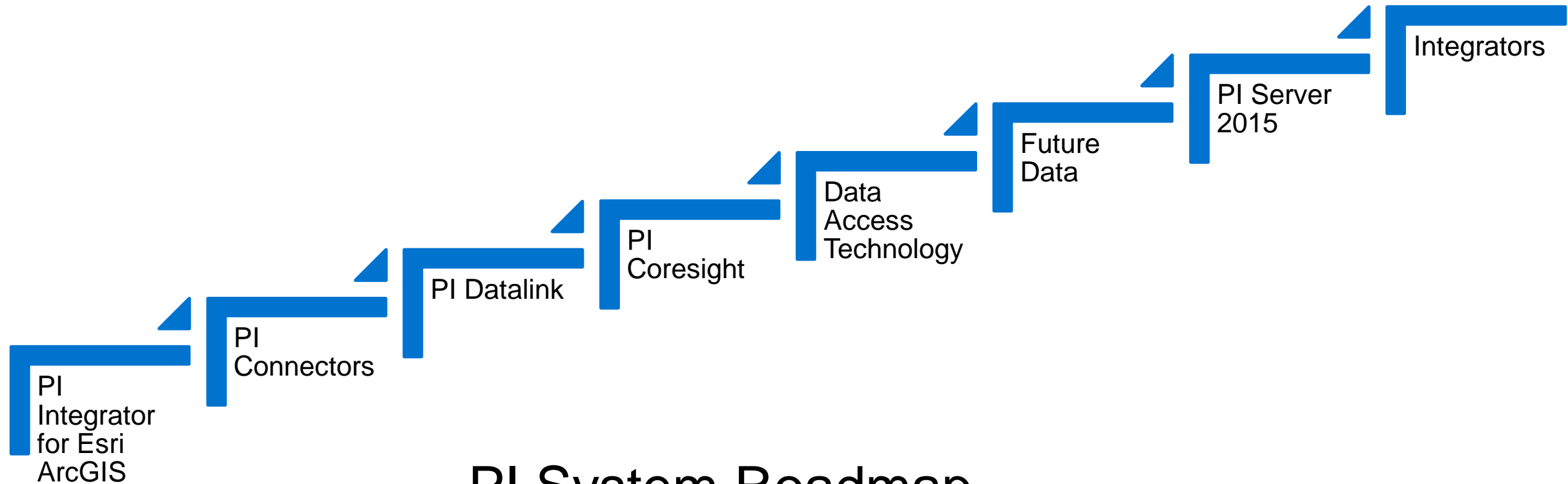
- Classic Historian
- Supports over 400+ Interfaces



## Asset Centric

- Classic Historian
- Supports over 400+ Interfaces
- PI Asset Framework
- PI Event Frames
- PI Notifications
- Asset-Based Analytics

# Future OSIsoft technologies are based on assets



## PI System Roadmap

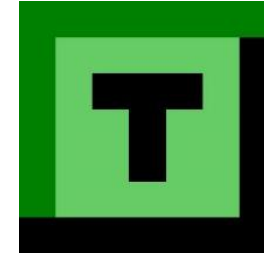
<https://techsupport.osisoft.com/Products/Product-Roadmap>

# 3.

## New in PI Server 2014

# Asset-Based Analytics

- Easy – empower users to build their own calculations
- Standardize and Reuse
  - Clarity and correctness
- KPIs and Rollups
- Automatic Event marking
- And of course, *Performance and Scalability*



# Performance

- Use Bulk RPCs
- Make One Call instead of Spinning Like a Top



# Performance – Bulk Calls



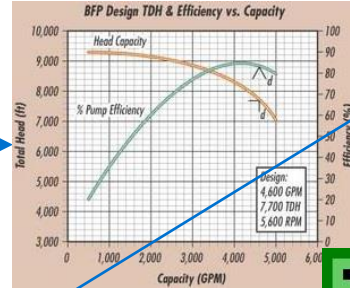


# Pipe & Cache

- **Pipe Already Holds Interesting Data**
- **Cache Retains Data Client-Side**



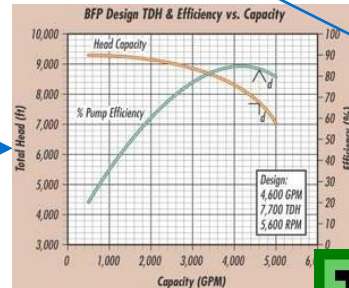
# Usage Scenarios



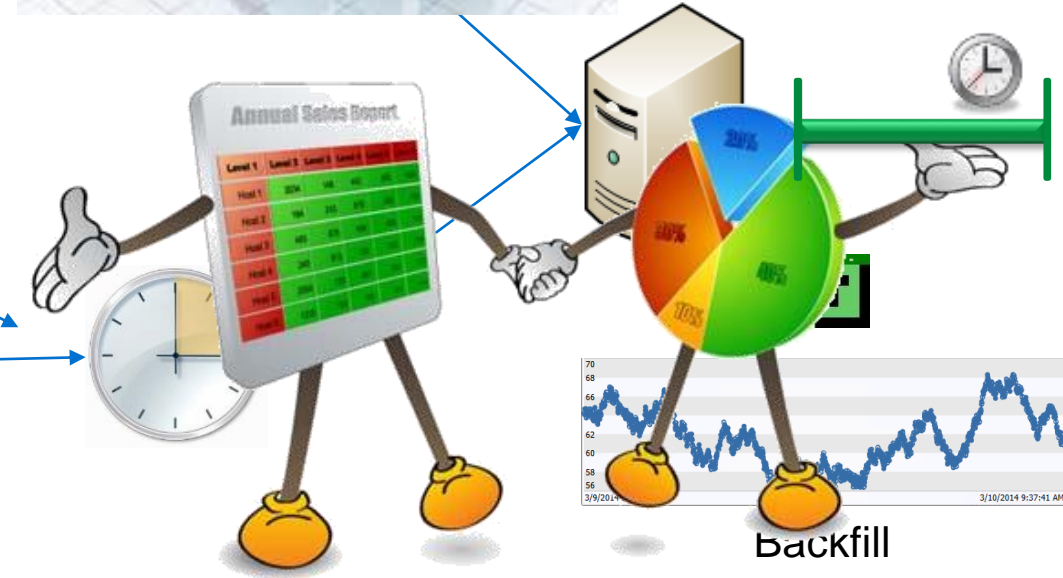
Calculations



Test



Calculations



Backfill

File View Go Tools Help

Database Query Date Back Check In Refresh New Template Search Element Templates

**Library**

- NuGreen
  - Categories
    - Analysis Categories
    - Attribute Categories
    - Element Categories
    - Reference Type Categories
    - Table Categories
  - Templates
    - Element Templates
      - Boiler
      - Combined Cycle Power Plan
      - Compressor
      - Condenser
      - Cooling Fan
      - Enterprise
      - Gas Turbine
      - Heater
      - HRSG
      - Monitored Site
      - Plant
      - Process
      - Pump
      - Steam Turbine
      - Unit
    - Event Frame Templates
    - Model Templates
    - Transfer Templates

**Gas Turbine**

General Attribute Templates Ports Analysis Templates

Name: G

Description:

Categories:

Analysis Type: ☒ Expression ☐ Rollup ☐ Event Frame Generation

Example Element: [NuGreen\Houston\Power and Steam Generation\Gas Turbine 1](#)

Name	Expression	Value	Output Attribute
Variable1	Type an expression		<a href="#">Click to map</a>
<a href="#">Add a new expression</a>			

[Evaluate](#)

Scheduling: ☐ Event-Triggered ☒ Periodic

Period: 00h 05m 00s [Configure](#)

**Functions**

Insert functions into the expression

All

Abs

Acos

And

Ascii

Asin

Atn

Abs(number x)

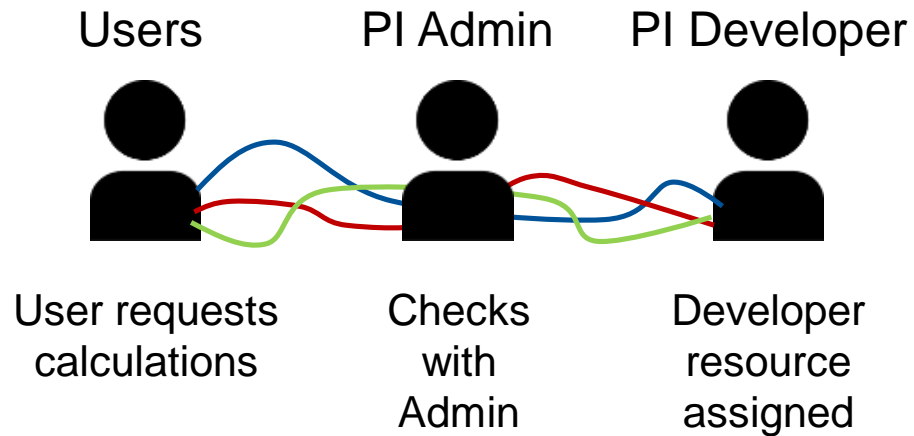
Return the absolute value of an integer or real number.  
Example: Abs(1)

Attributes

Gas Turbine Modified:3/13/2014 12:52:45 PM.

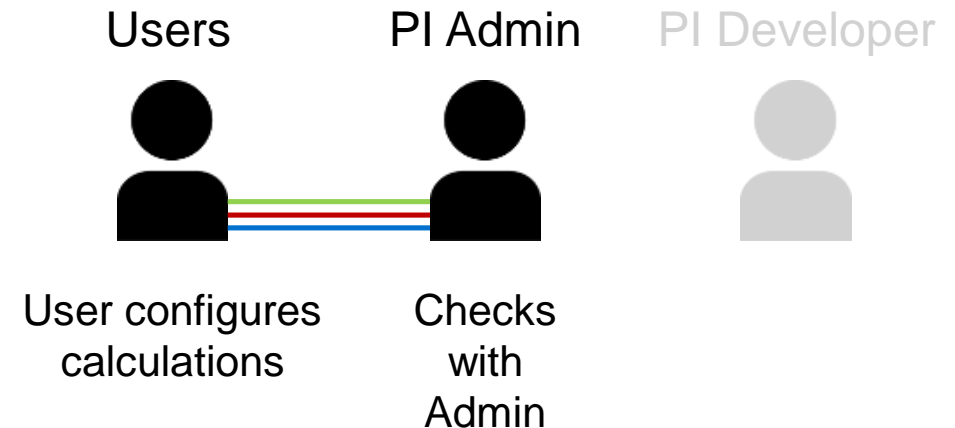
# Asset-Based Analytics: Self-Service Analytics

## Before



- Slows down time to value
- Numerous interactions, creates complexities

## After



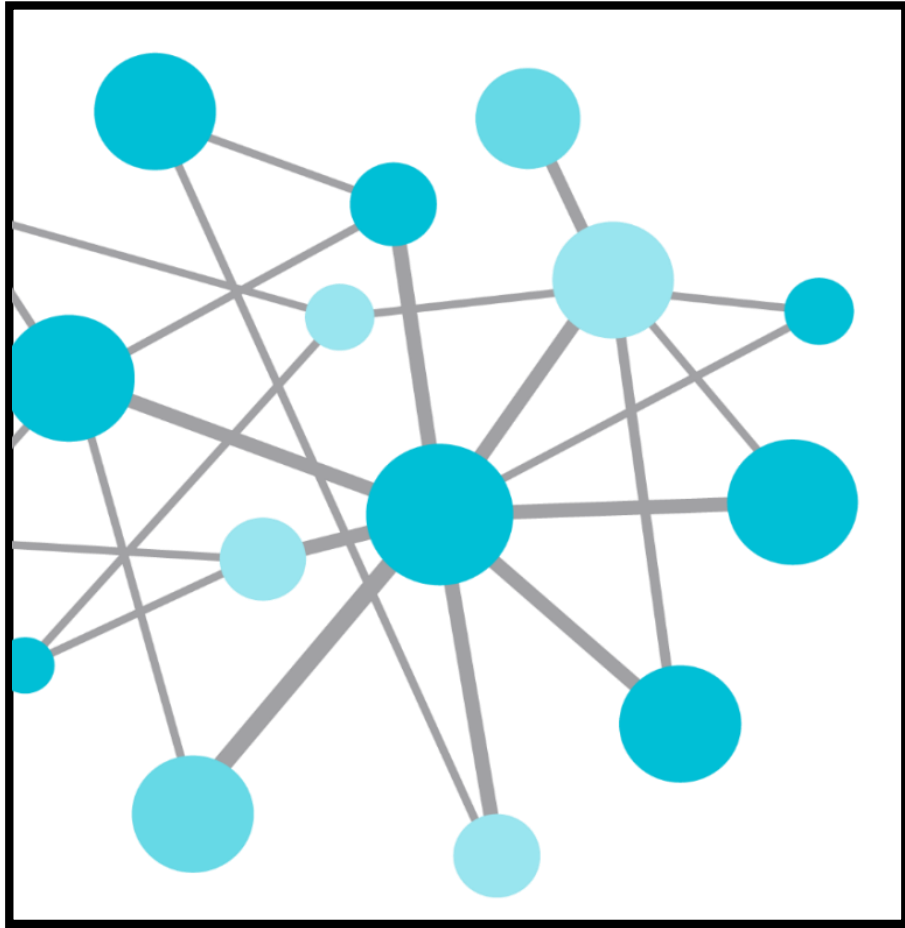
- Configure, test and validate – immediate feedback
- Build new assets – templates ensure same calculations in all instances

# Asset-Based Analytics Timeline



- 300+ beta users

# PI Server 2014: How to get it



## New Customer?

- ⇒ Talk to you Account Manager
- ⇒ Download and Install

## Existing Customer?

- ⇒ Easy Upgrade with current SRP

## OSIsoft Learning

- ⇒ OSIsoft Learning Web site
- ⇒ <http://learning.osisoft.com>



# Thank you

© Copyright 2014 OSIsoft, LLC.  
777 Davis St., San Leandro, CA 94577