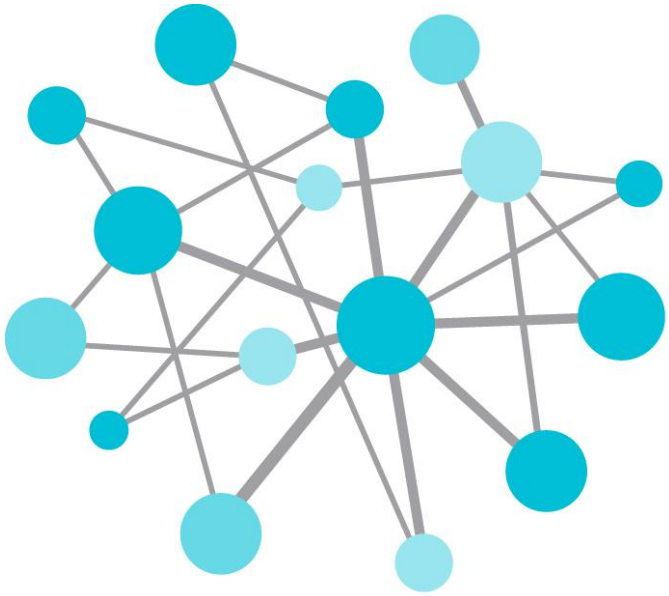


OSIsoft®

REGIONAL SEMINAR 2014

The Power of Data

DECISION READY IN REAL-TIME

The Power of Connection

Presented by **Alejandro Molano, Field Service Engineer**

amolano@osisoft.com

Why is Connectivity Important?

Context	Need	Solution
More data sources available Advanced analyses require information from multiple systems Expanding ecosystem of mobile devices	Imperative need to access all operational data and analyses, any time, any where	Implement a modern, **connected** PI System

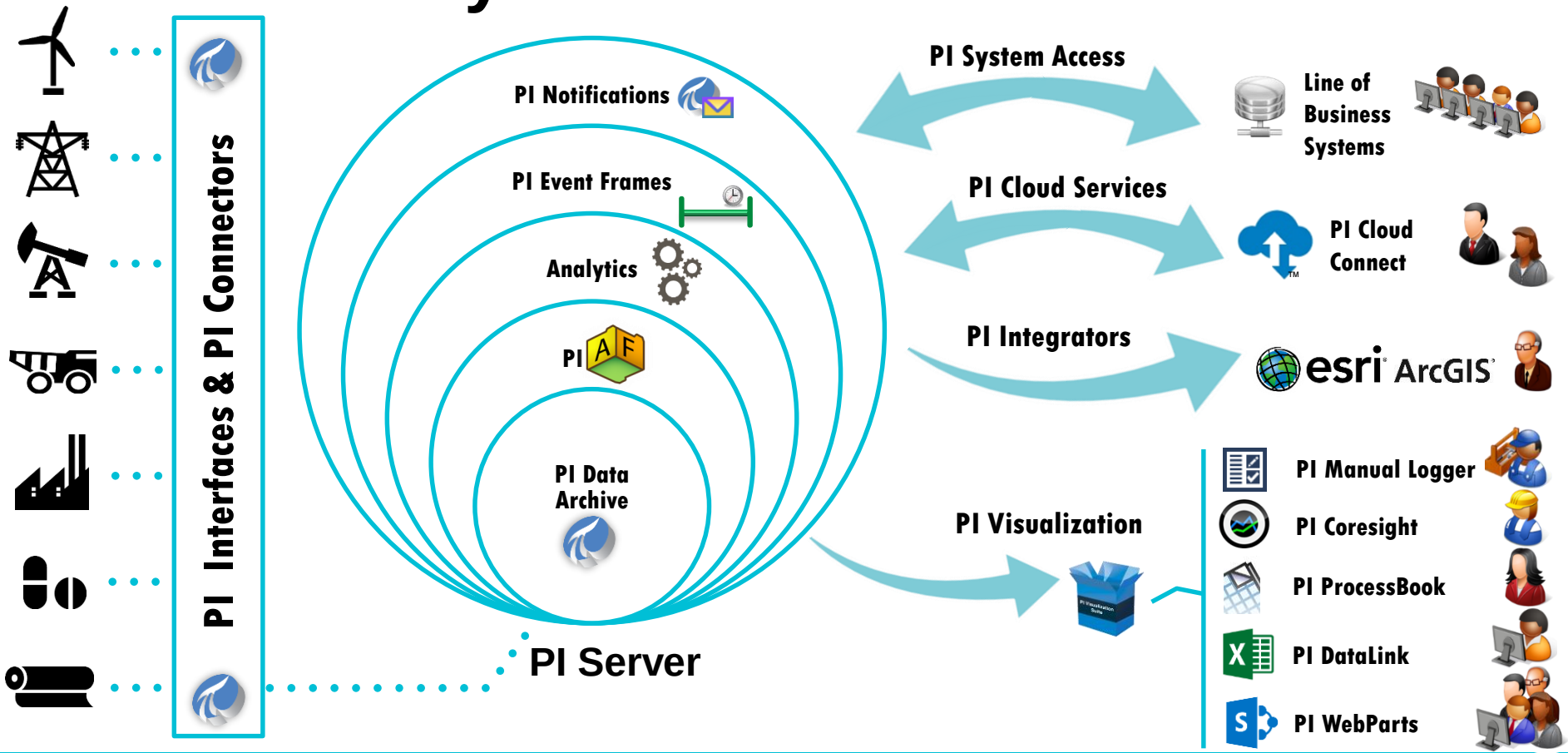
What

can this look like?

Solution

Implement a modern, **connected** PI System

PI System Infrastructure



How

can all of this

be done at

your organization*?*

Key Steps

STEP 1

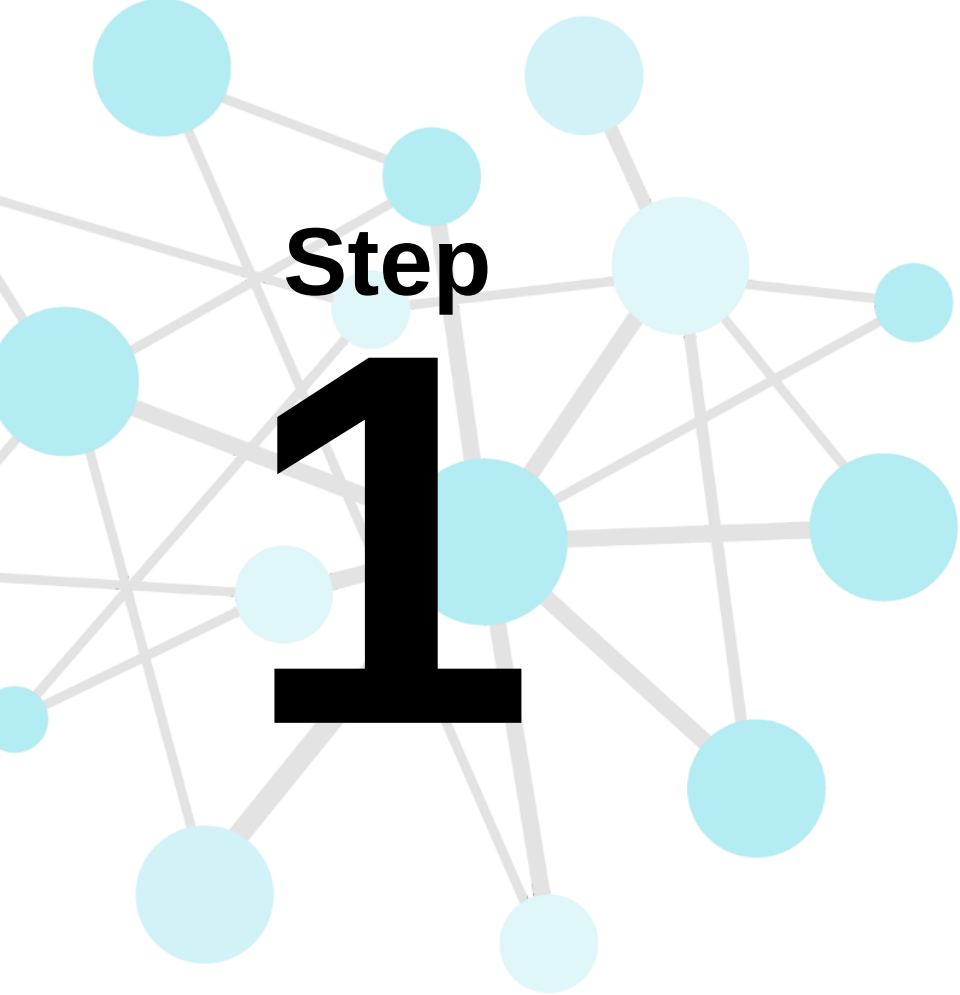
Connect Your PI System to Your Data

STEP 2

Connect Your PI System to Your Users

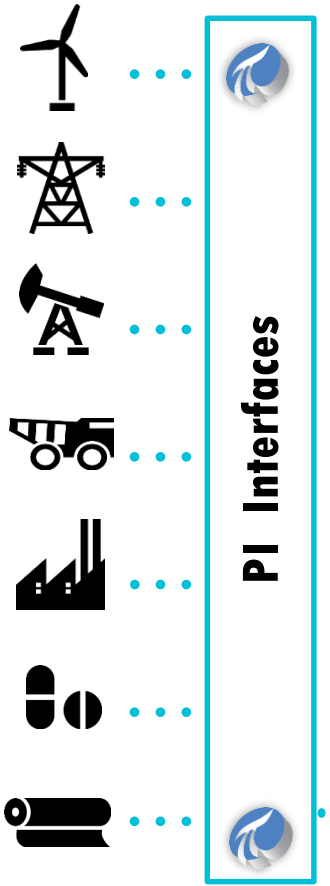
STEP 3

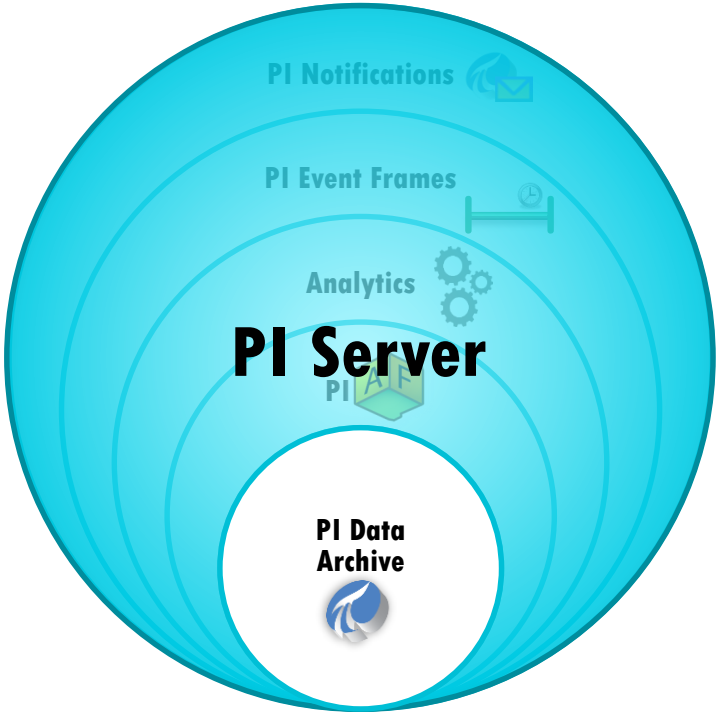
Connect Your PI System Across Boundaries

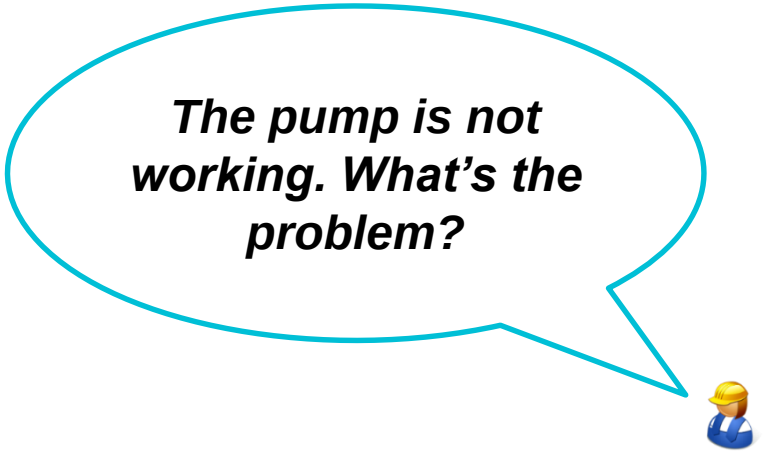


Connect Your PI System to Your Data

PI System Infrastructure







PI Interfaces – Bringing the Data in

Vendor Specific (PLC, DCS, SCADA)	Generic (Protocols and Standards)
• ABB • Bailey • Fisher • Foxboro • Allen-Bradley • Honeywell	• OPC • Modbus • BACnet • DNP 3.0 • ODBC • Text Files

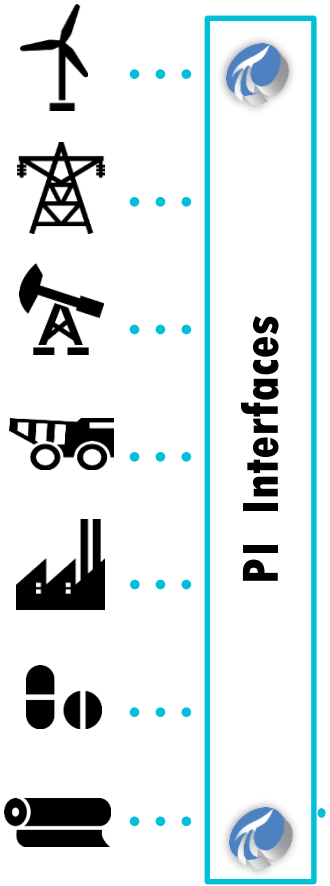
✓ More than 450 PI Interfaces developed!

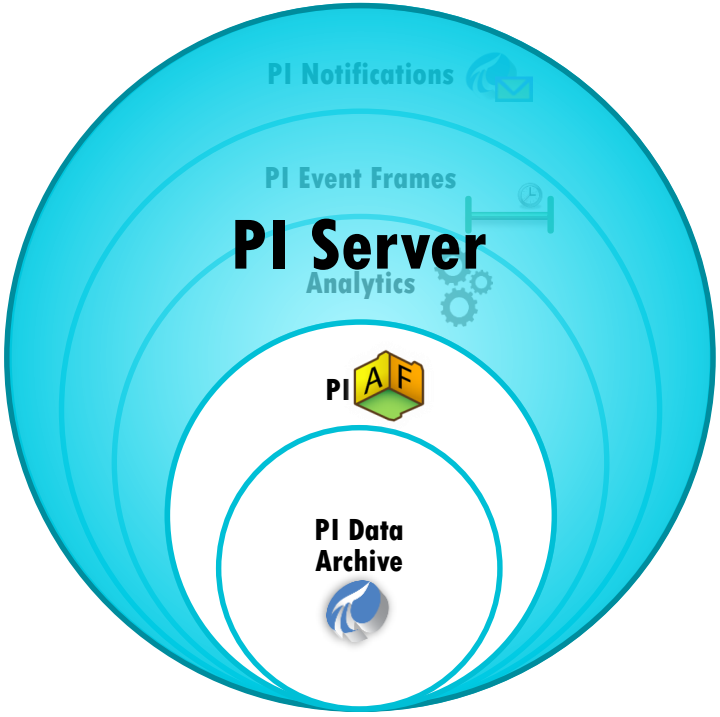
PI Data Archive and PI Tags

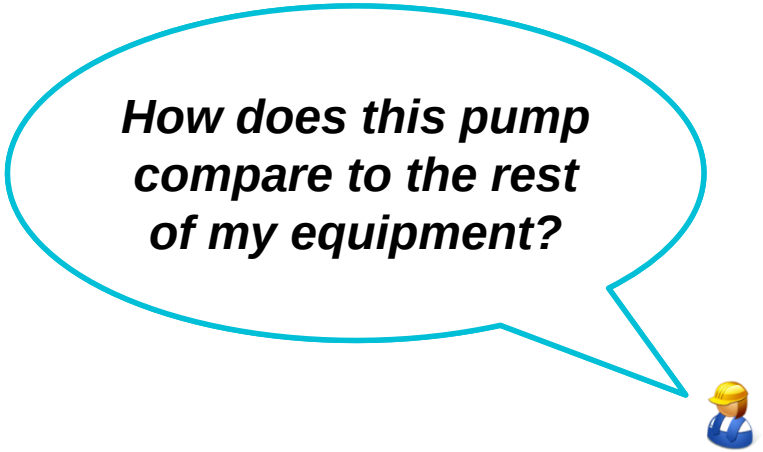
Tag-Centric

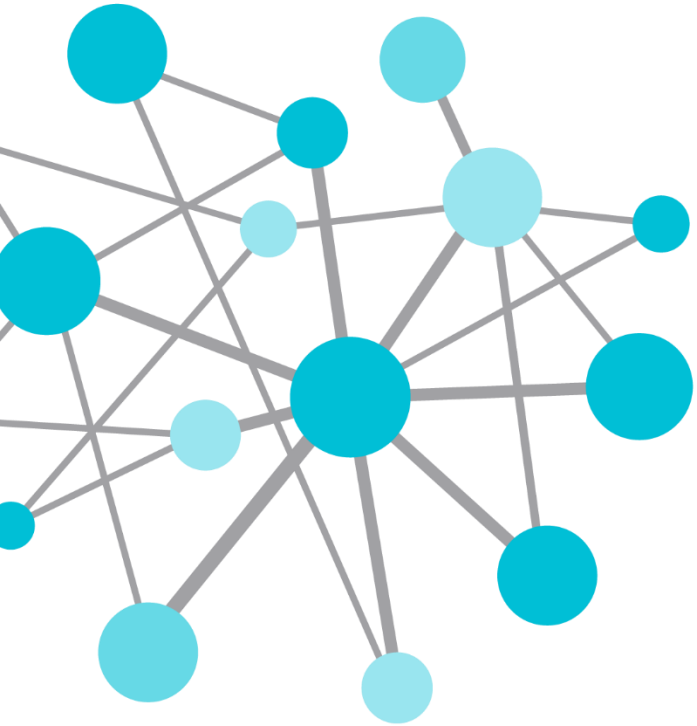
- Based on **Control System point names**
- **Traditional** method of data storage
- Leverage **historical knowledge** built around tags
- **Simple** deployment

PI System Infrastructure









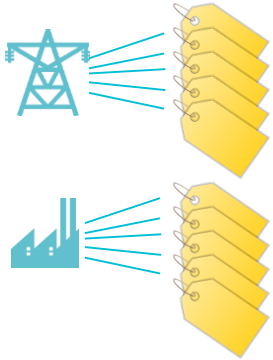
Connect Data Sources Into the PI Data Archive and PI AF

PI Tags and PI AF Assets: Both Approaches Add Value

Tag-Centric

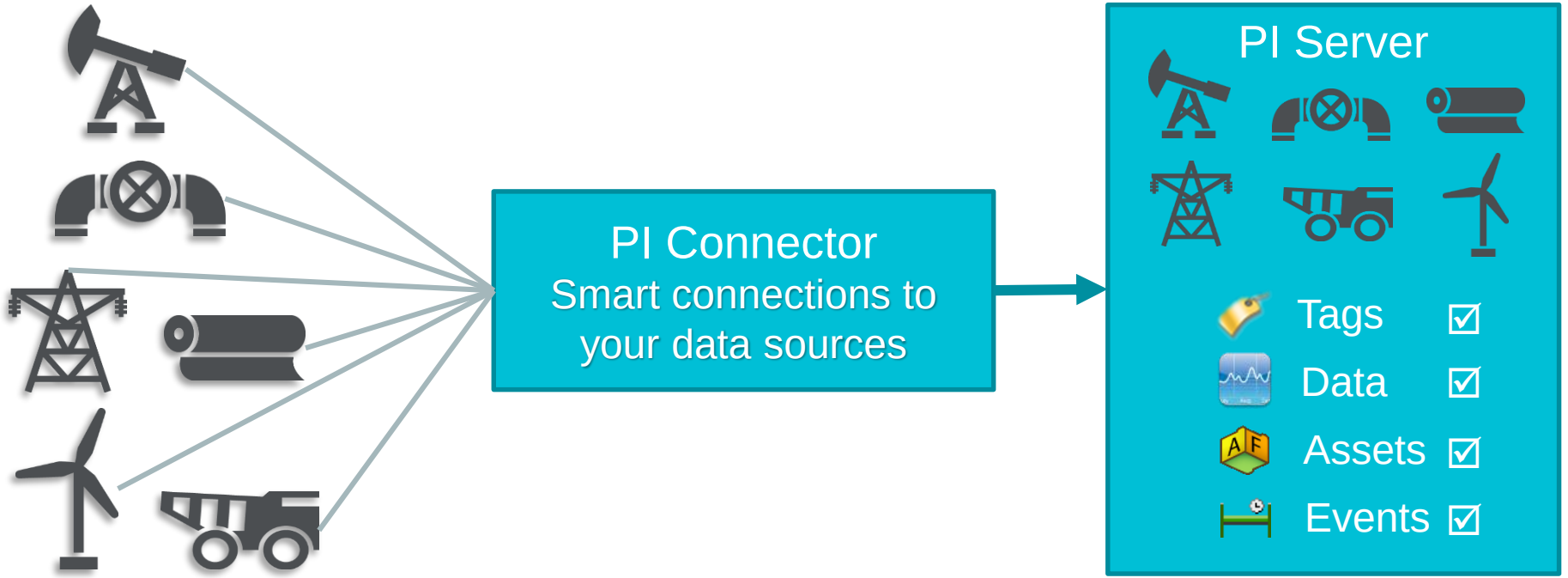
- Based on **Control System point names**
- **Traditional** method of data storage
- Leverage **historical knowledge** built around tags
- **Simple** deployment

Asset-Centric



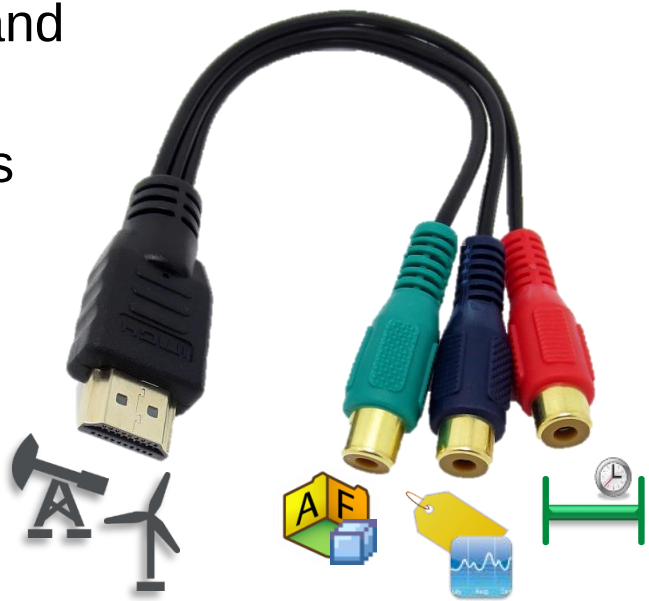
- Named by **asset and property**
- Organize your assets **hierarchically** and **logically**
- Build **templates** to standardize and compare assets
- **Scale** your system

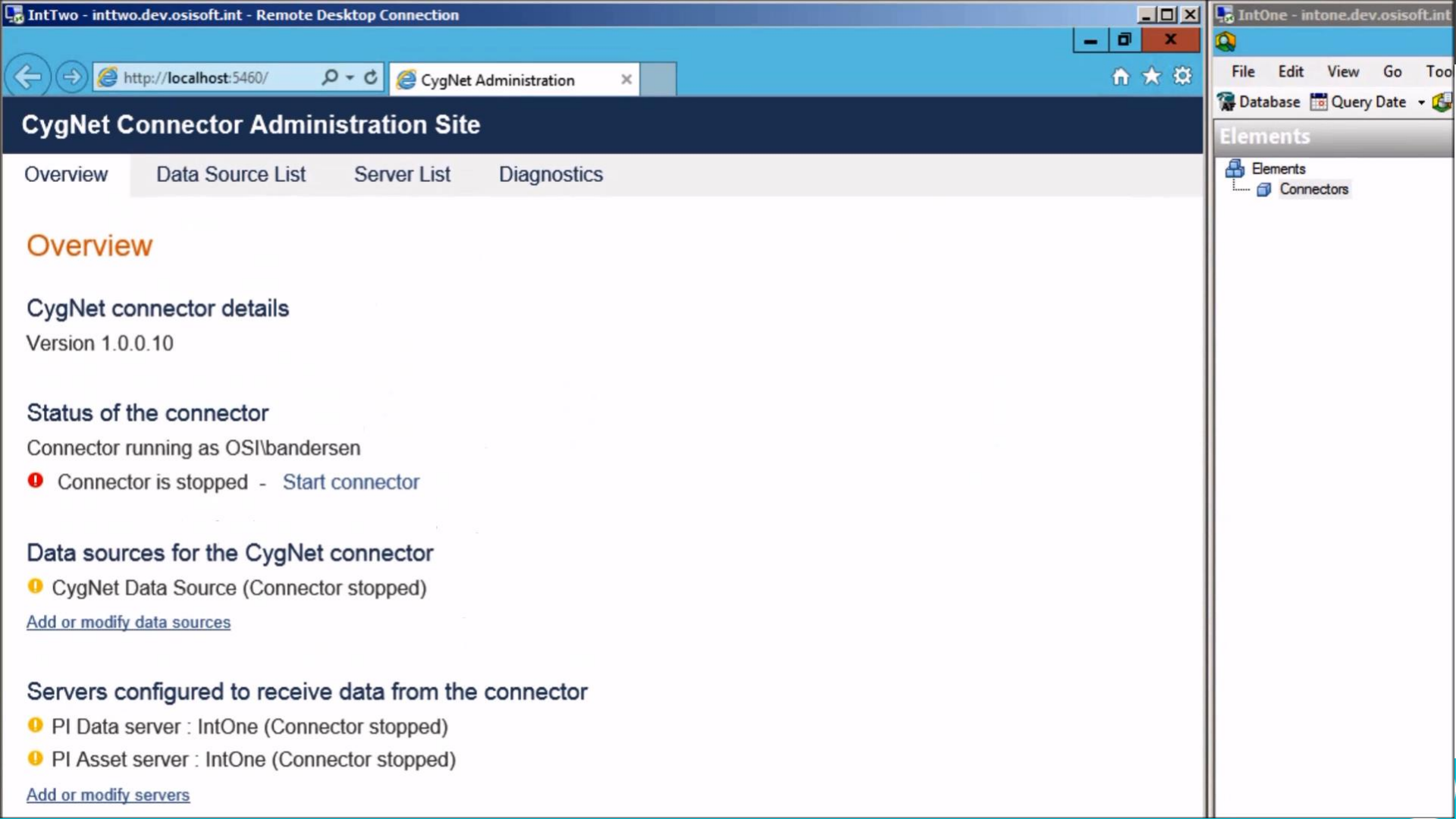
Introducing PI Connectors, the Next Generation of Data Acquisition



Advantages of PI Connectors

- Automatically **discover and create** assets and tags
- Future versions will **collect event** data types (PI Event Frames)
- **Simple configuration**
- Accommodate **higher data rates**
- Enhanced **security**
- **Linux** operating systems supported




IntTwo - inttwo.dev.osisoft.int - Remote Desktop Connection
http://localhost:5460/
CygNet Administration
CygNet Connector Administration Site
Overview
Data Source List
Server List
Diagnostics
Overview
CygNet connector details
Version 1.0.0.10
Status of the connector
Connector running as OSI\bandersen
Connector is stopped - Start connector
Data sources for the CygNet connector
CygNet Data Source (Connector stopped)
Add or modify data sources
Servers configured to receive data from the connector
PI Data server : IntOne (Connector stopped)
PI Asset server : IntOne (Connector stopped)
Add or modify servers
IntOne - intone.dev.osisoft.int
File
Edit
View
Go
Database
Query Date
Elements
Elements
Connectors

PI Connectors Have Arrived

Released

- PI Connector for IPMI

Beta

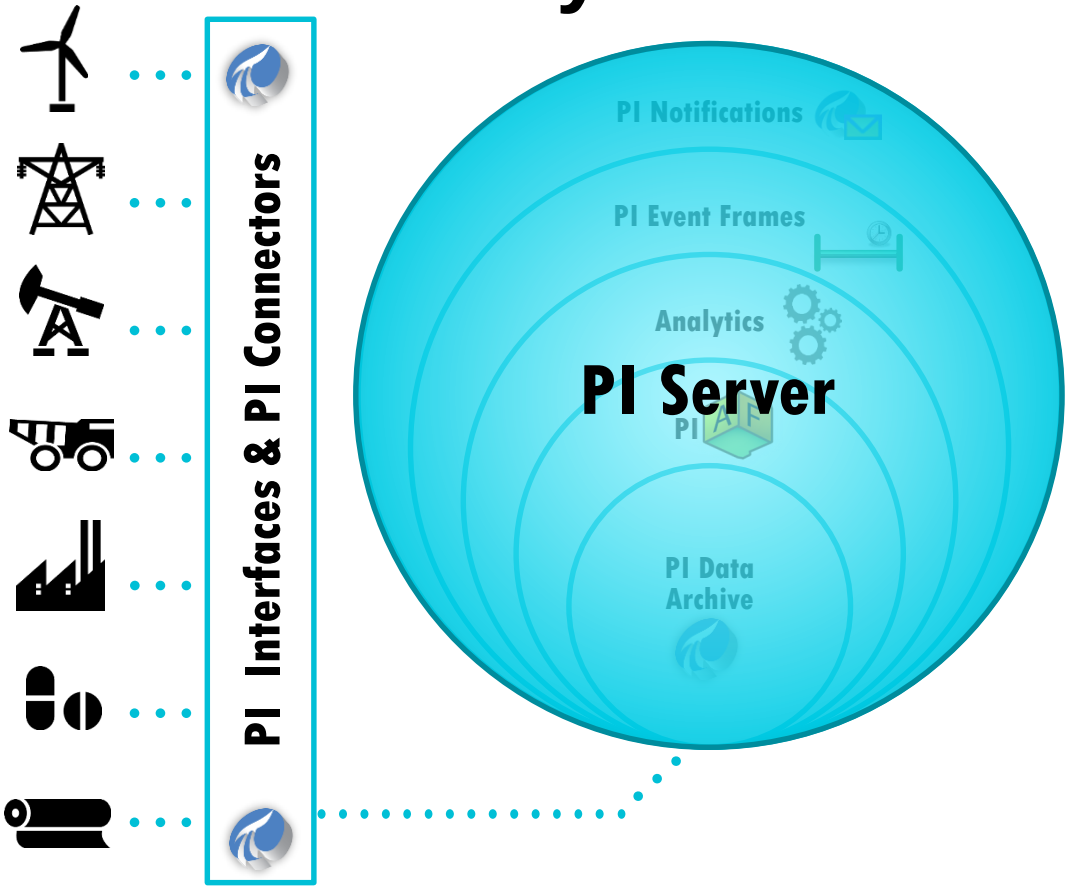
- PI Connector for CygNet
- PI Connector for Ethernet/IP
- PI Connector for Kongsberg

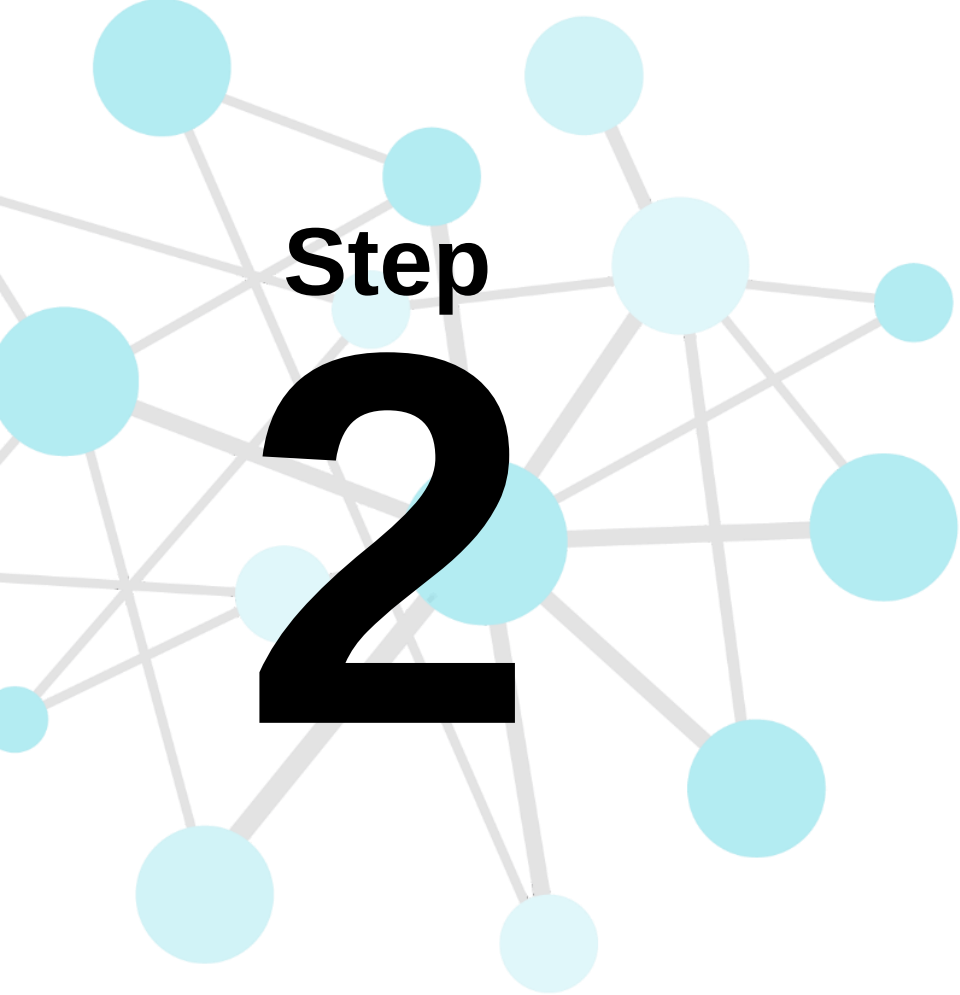
Under development

- PI Connector for Wonderware Historian
- PI Connector for IEC 60870-5-104

Much more to come!

PI System Infrastructure



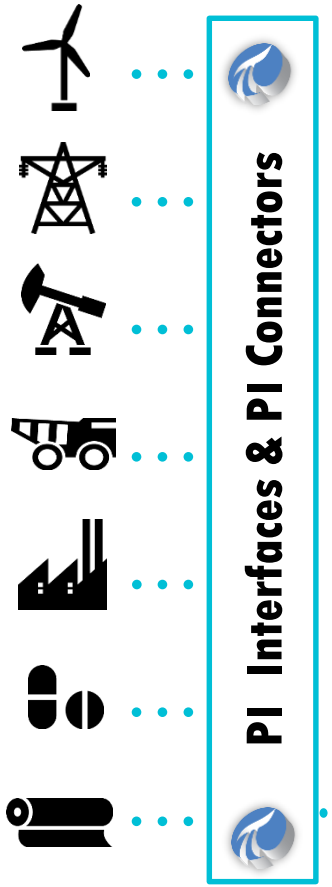


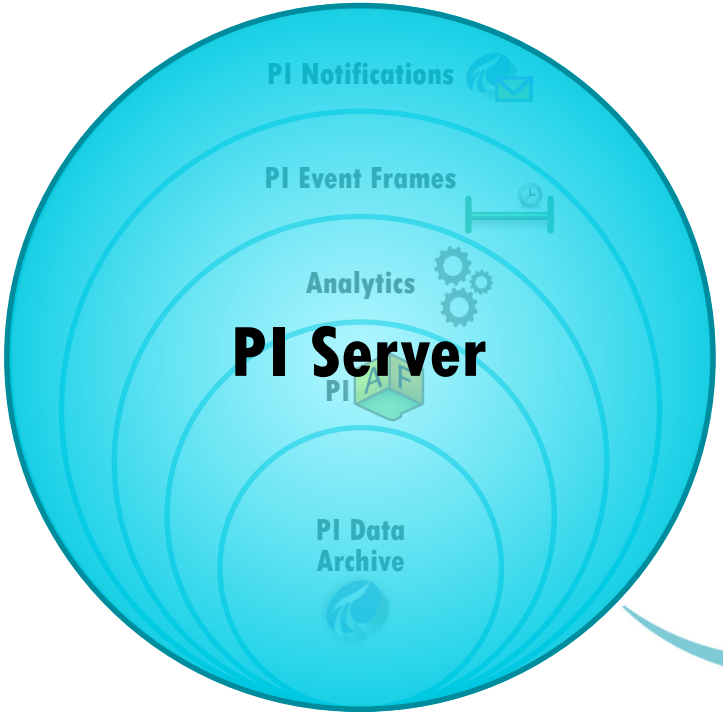
Step

2

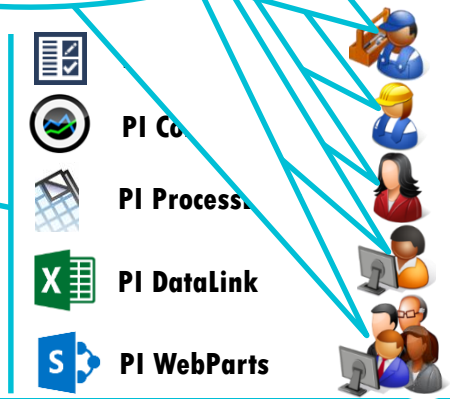
Connect Your PI System to Your Users

PI System Infrastructure



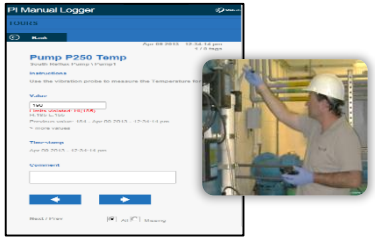


Need to centralize different manually collected data in our PI System.



Visualization Landscape

PI Manual Logger
Manual entries, fast and secure from anywhere

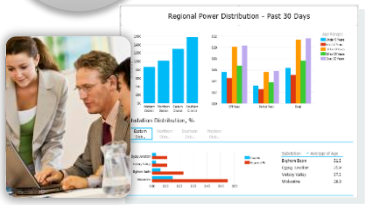


PI Coresight
Ad hoc analysis and collaboration

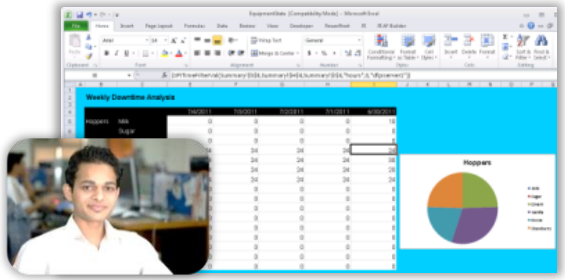
PI WebParts
Composite apps, shared broadly

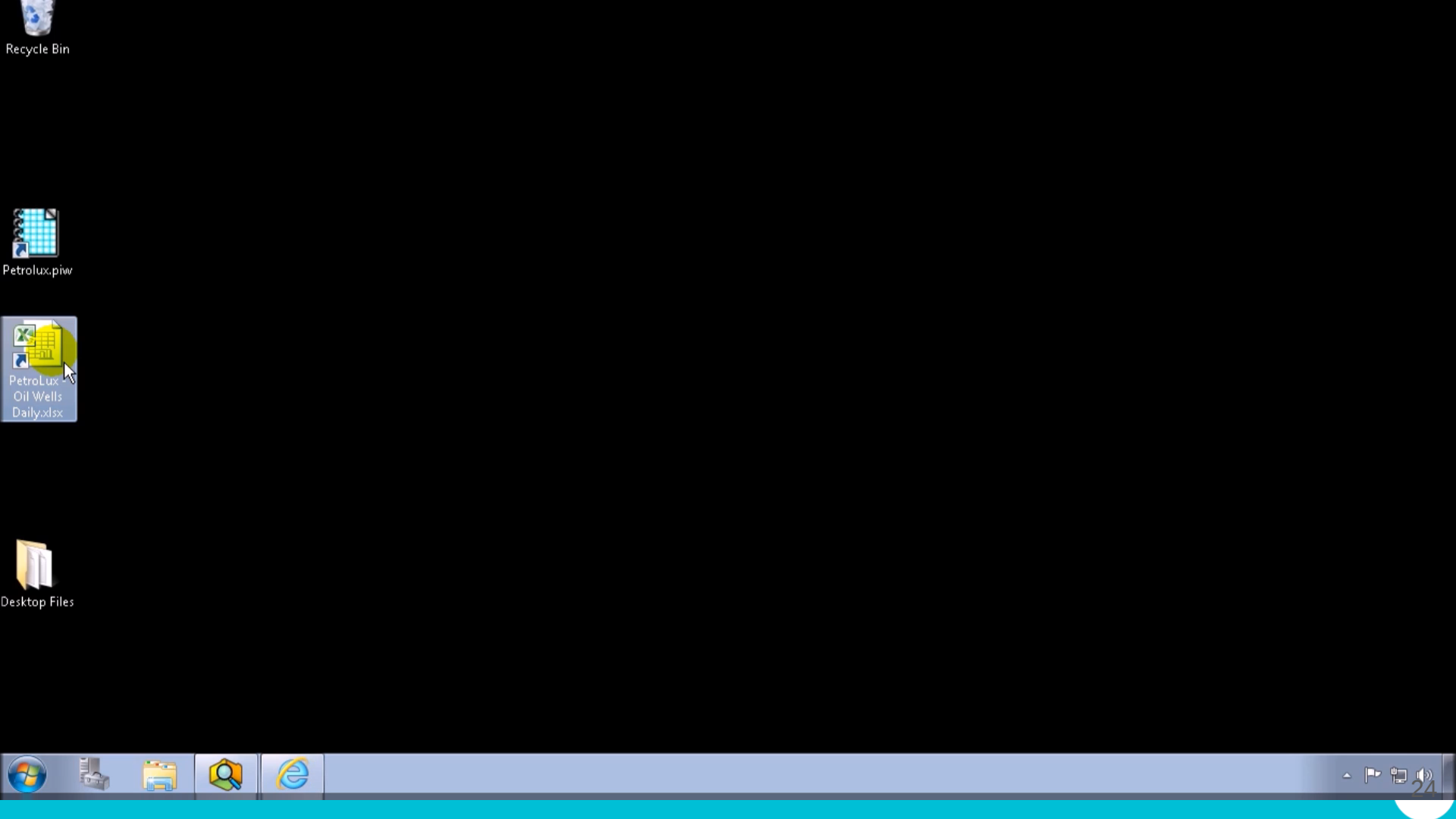
PI ProcessBook
Display authoring and process monitoring

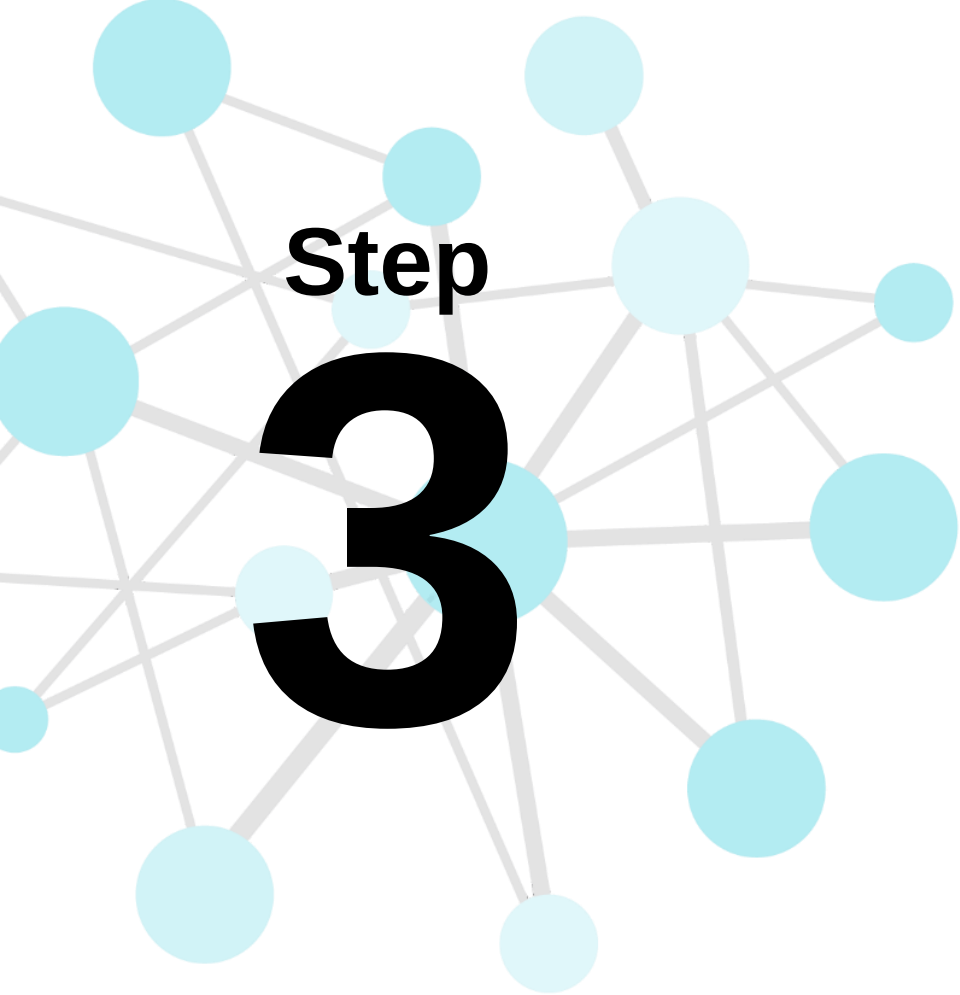
PI System Access
Business analytics for the enterprise



PI DataLink
Reporting and Analytics in Microsoft Excel




Recycle Bin
Petrolux.piw
PetroLux Oil Wells Daily.xlsx
Desktop Files

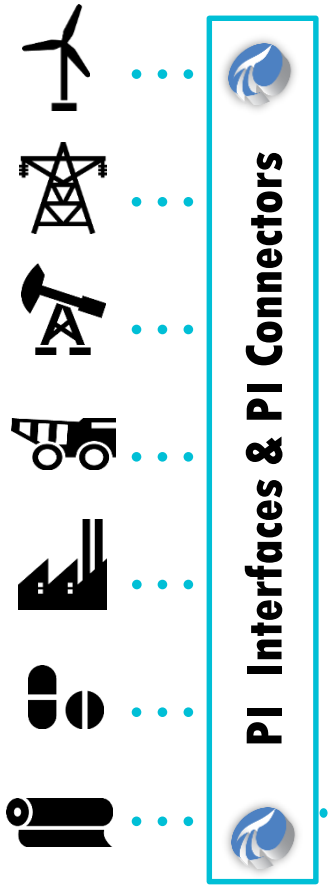


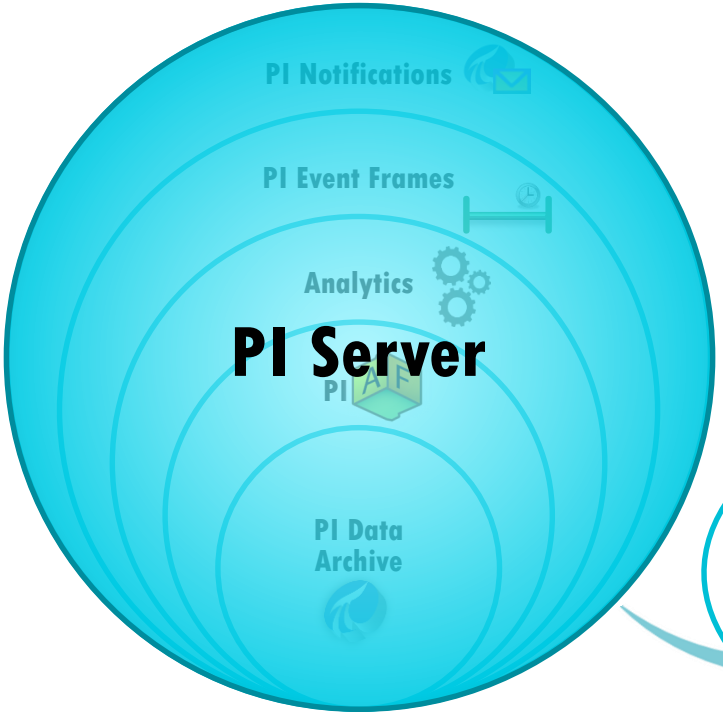
Step

3

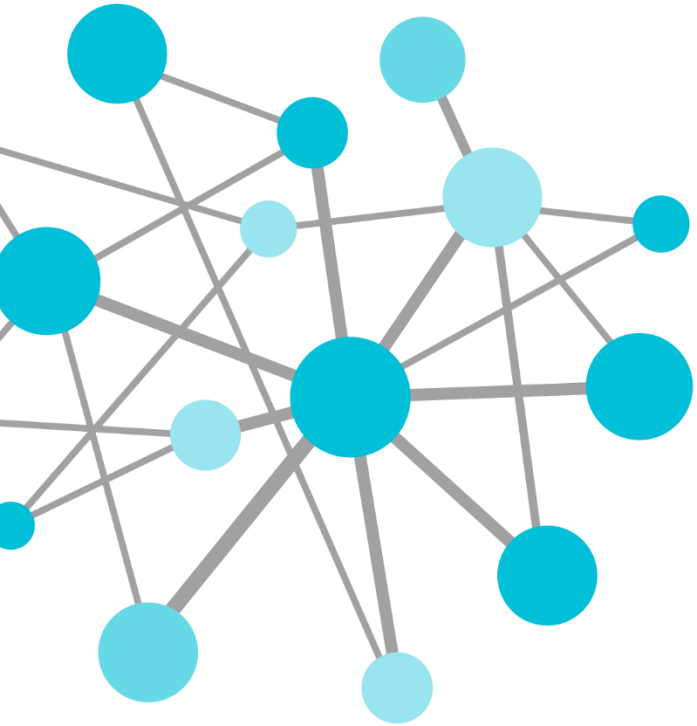
Connect Your PI System Across Boundaries

PI System Infrastructure



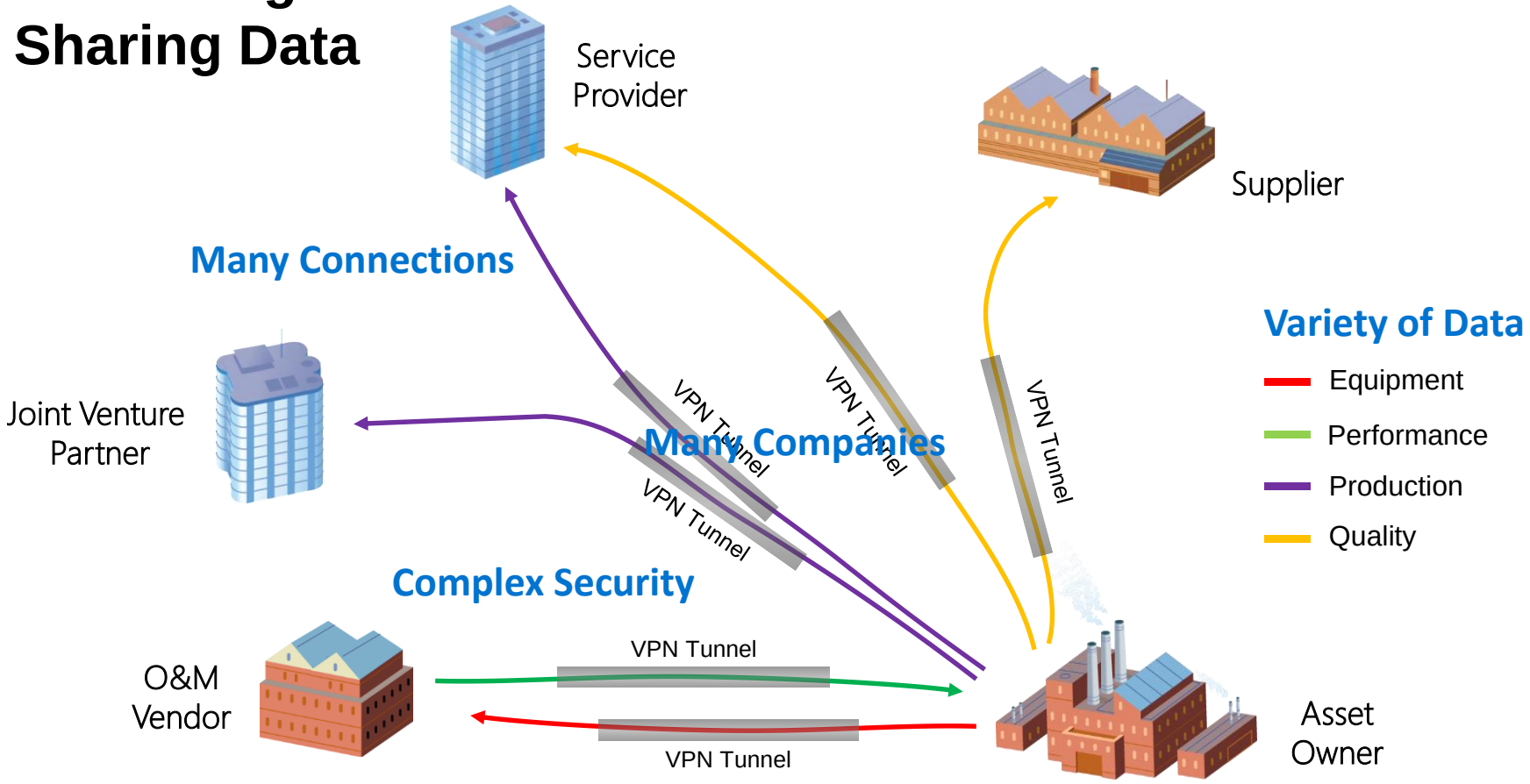


As a pump supplier, I need access to performance data to meet warranty requirements.

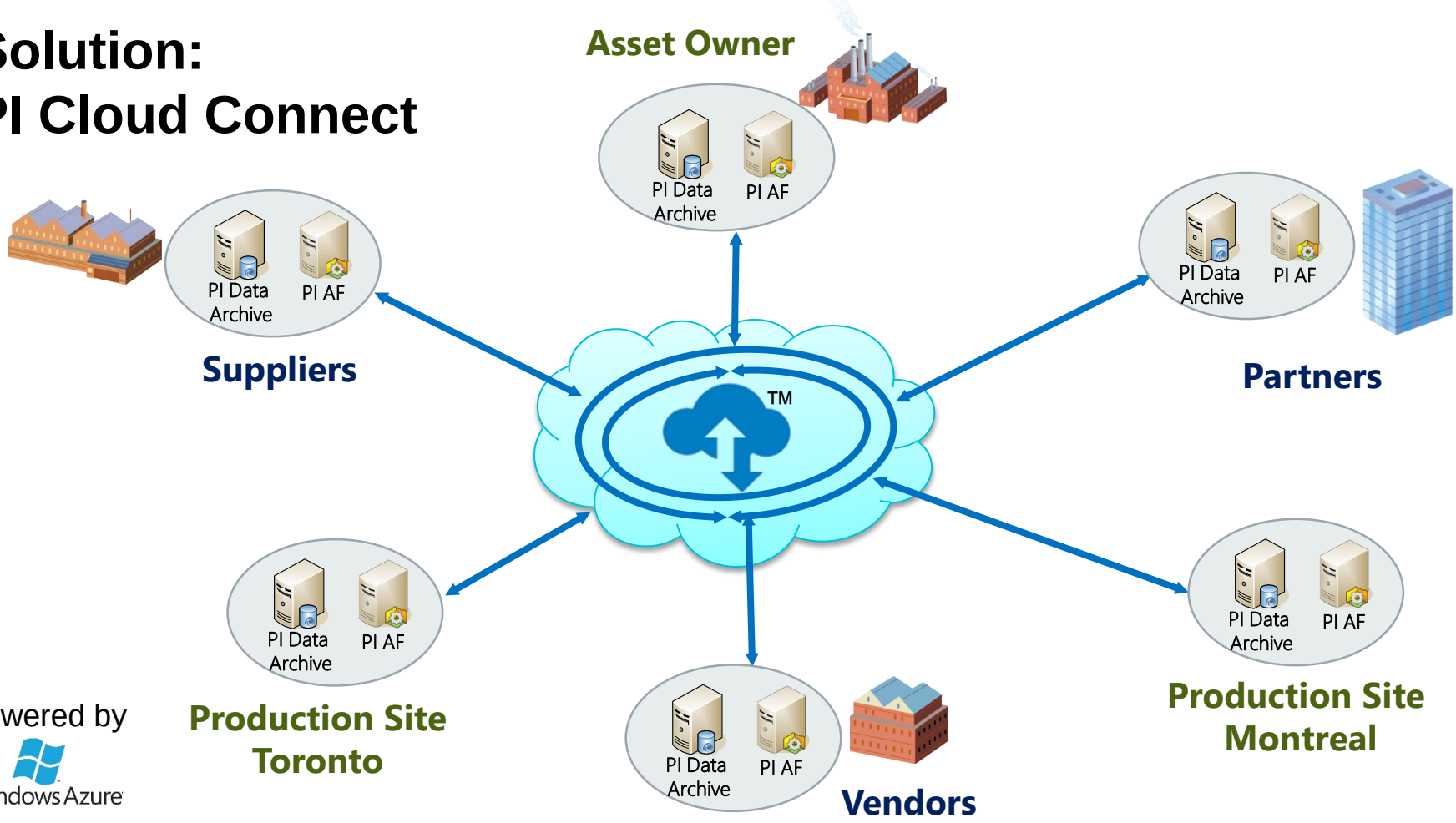


Securely Connect Multiple PI Systems via the Cloud

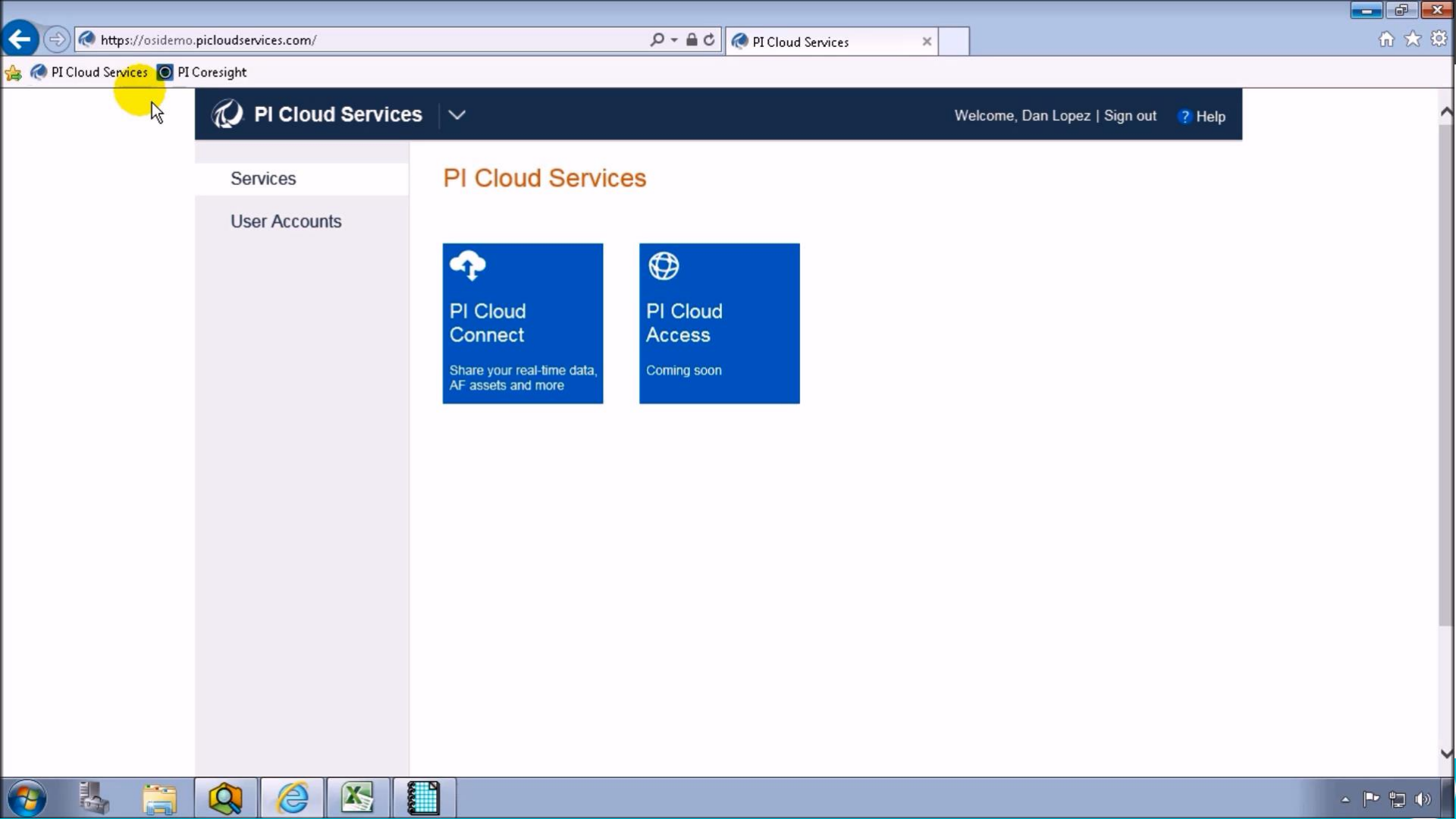
The Challenges of Sharing Data



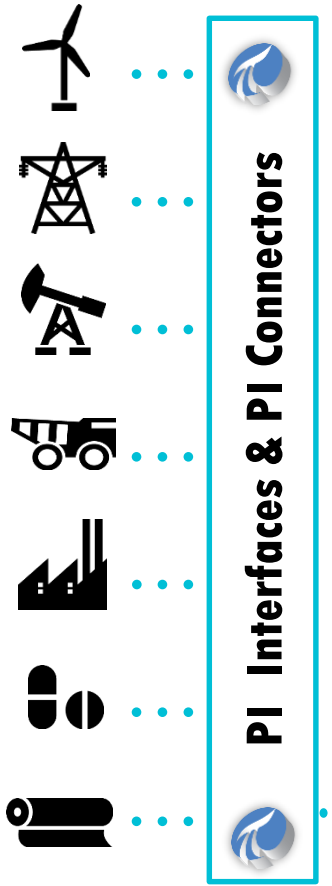
Solution:
PI Cloud Connect

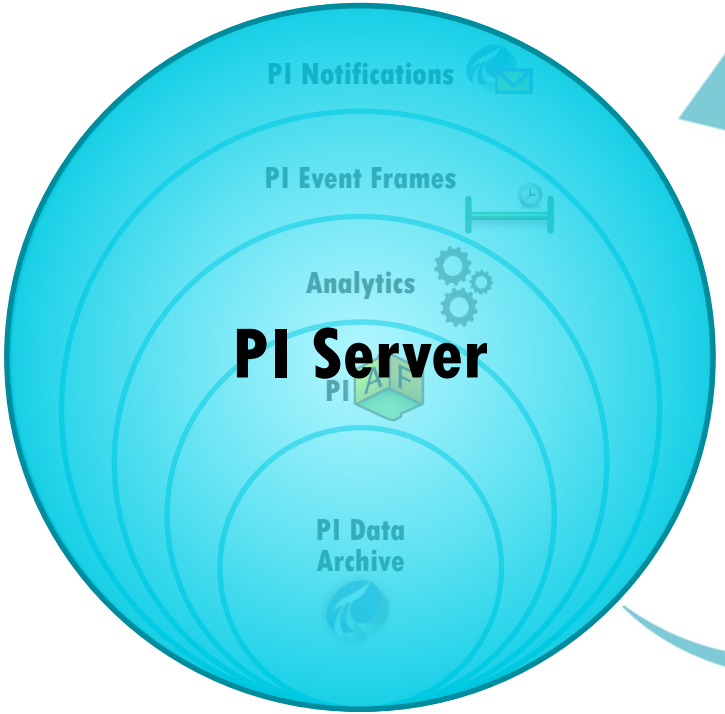


Powered by Windows Azure


https://osidemo.picloudservices.com/
PI Cloud Services
PI Cloud Services
PI Coresight
PI Cloud Services
Welcome, Dan Lopez | Sign out
Help
Services
User Accounts
PI Cloud Services
PI Cloud Connect
Share your real-time data, AF assets and more
PI Cloud Access
Coming soon

PI System Infrastructure





PI System Access

PI Cloud Services

Line of Business Systems

Information must be shared across the enterprise via different business systems and platforms.

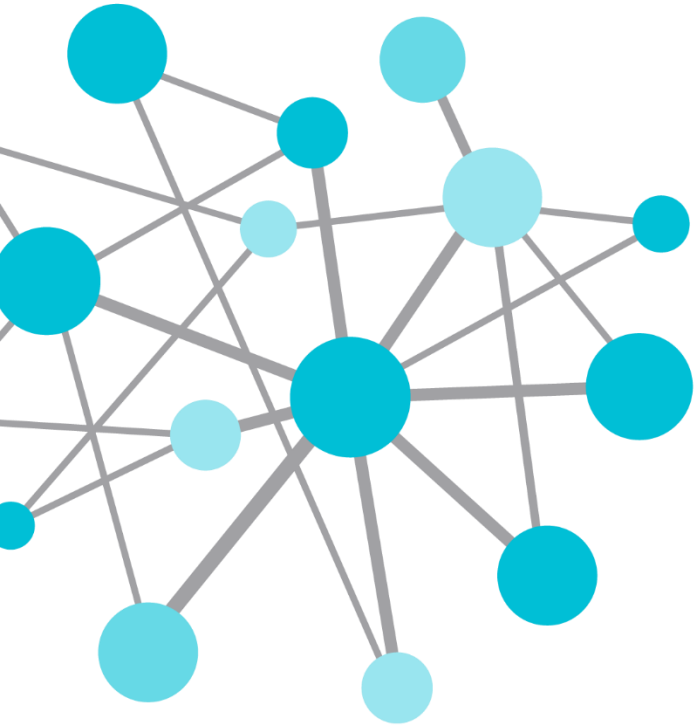
PI Visualization

PI Coresight

PI ProcessBook

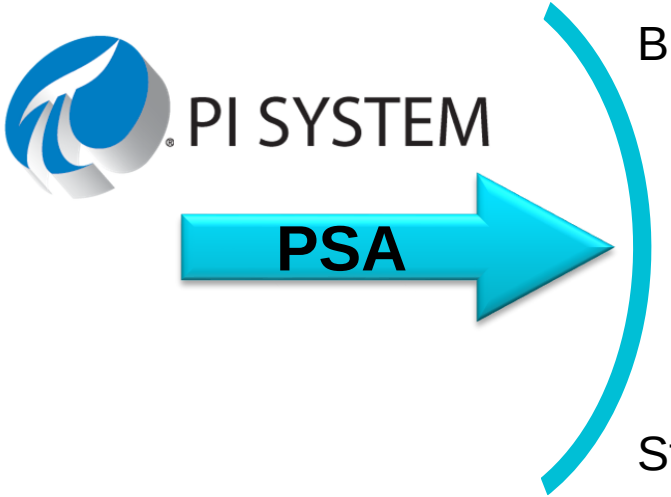
PI DataLink

PI WebParts



Connect Your PI System to Any System and Any Device

Solution: Expose Data with PI System Access



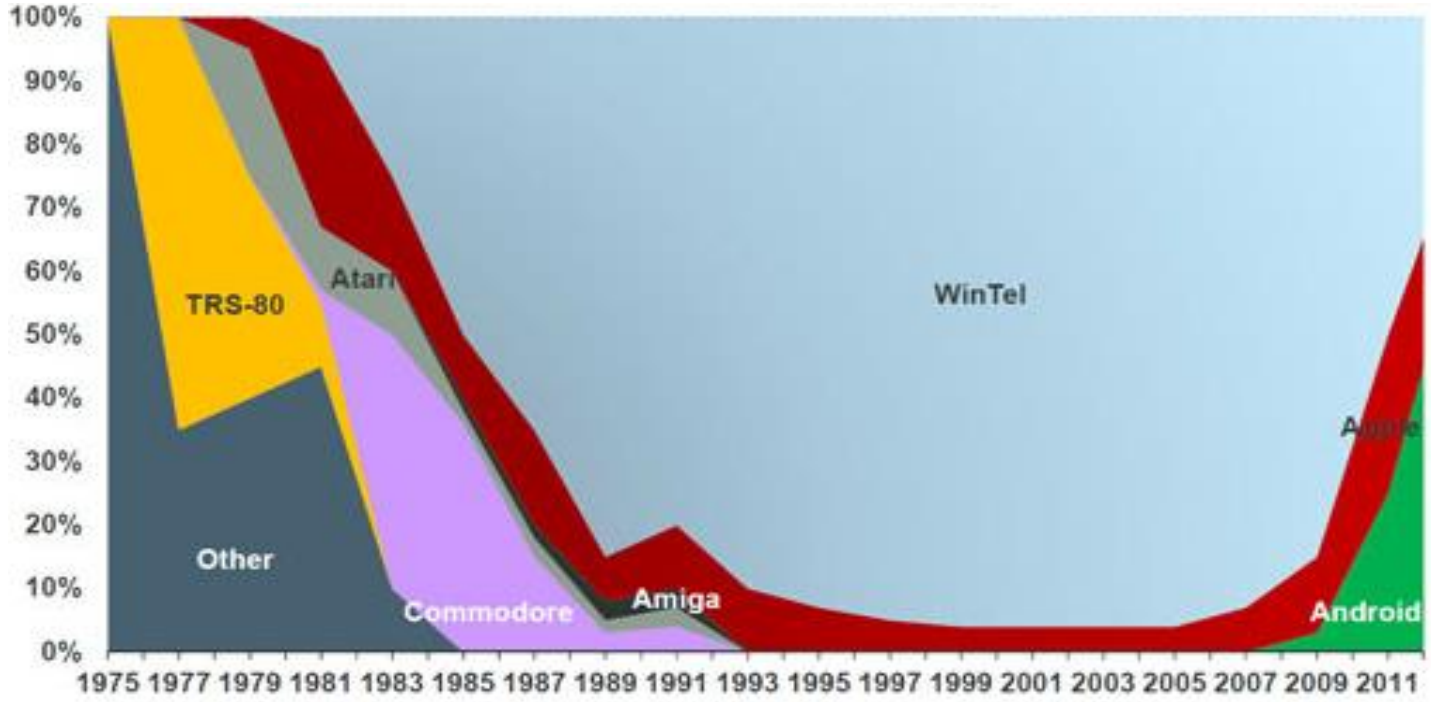
Business Systems

Visual Analytics

Statistical Analytics

SQL Family	Web Services	OSIsoft SDK	OPC Servers
PI OLEDB Enterprise	PI Web API	AF SDK	PI OPC DA Server
PI JDBC Driver	(REST/OData)		PI OPC HDA Server
PI ODBC Client	PI Web Services		

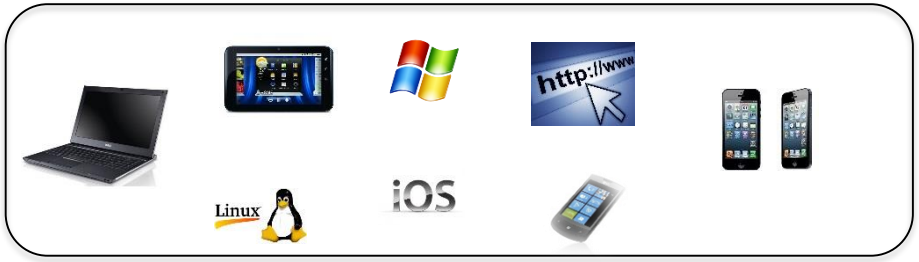
Why From Any Device?



Pre-PC → PC → Devices

Business Challenge Rephrased...

We need to connect applications running on these devices and platforms ...



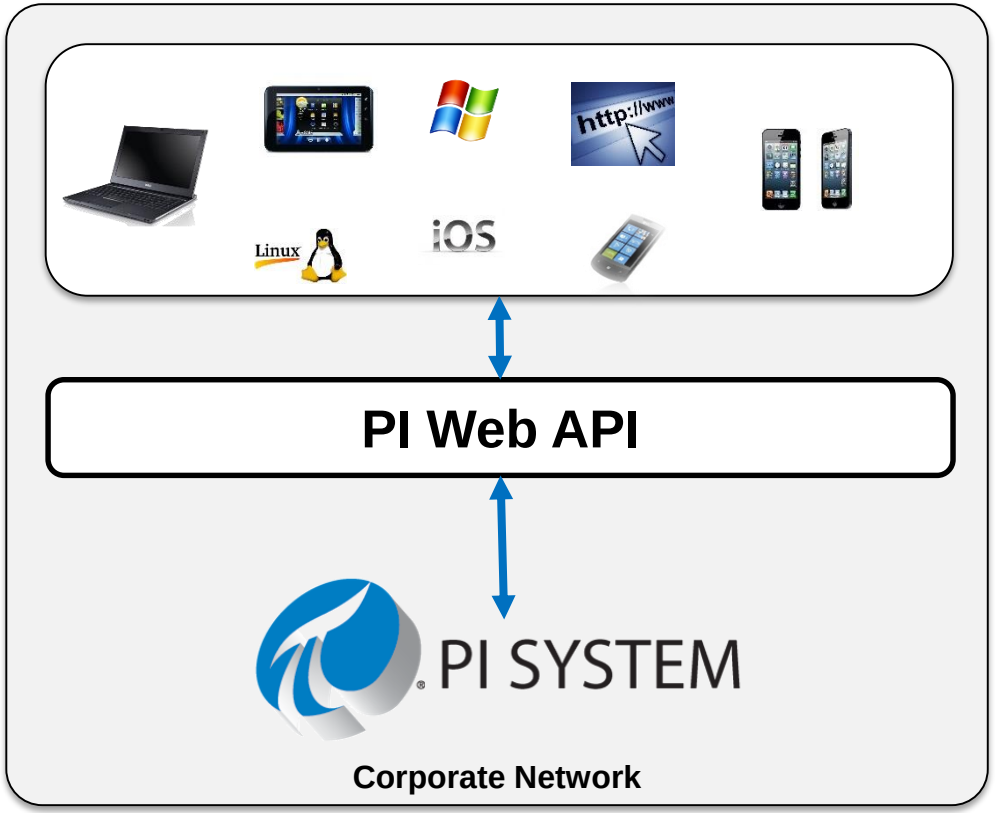
with this ...

PI SYSTEM

Enter the PI Web API

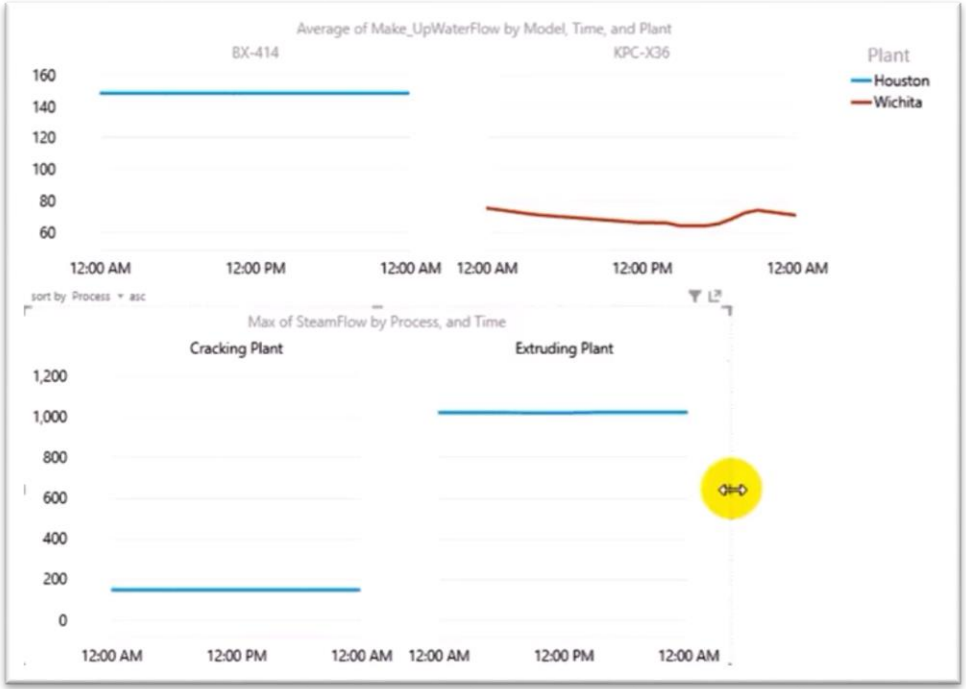
Developers build applications:

- Platform independent
- Device and OS independent
- Programming language agnostic
- Supports **REST/OData**

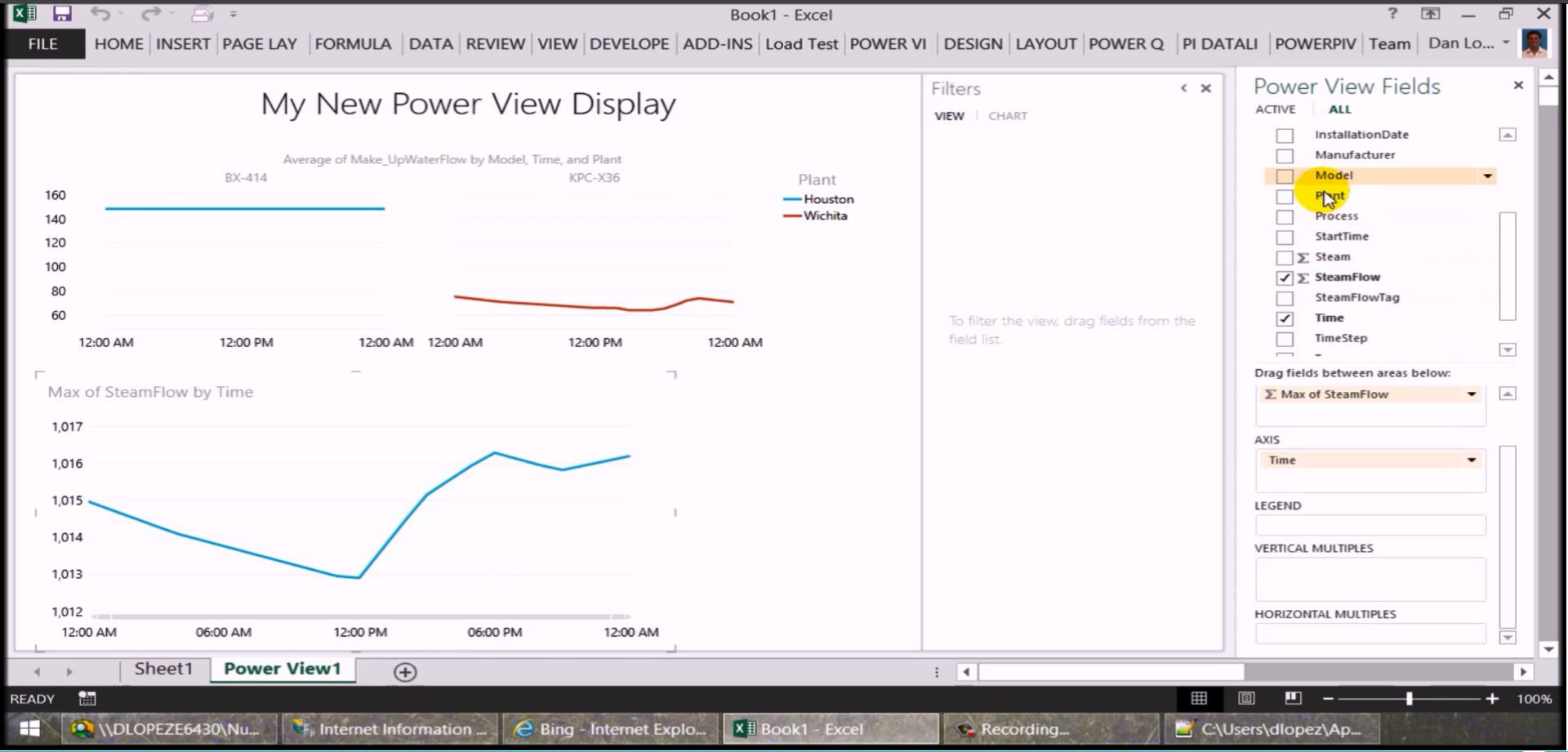


Demonstration

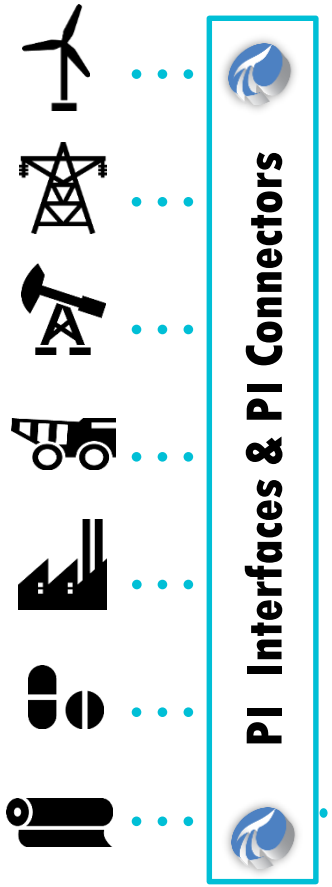
- PI Web API as an OData feed
- Expose PI System data to Microsoft Power BI tools
- Monitoring of Oil & Gas assets

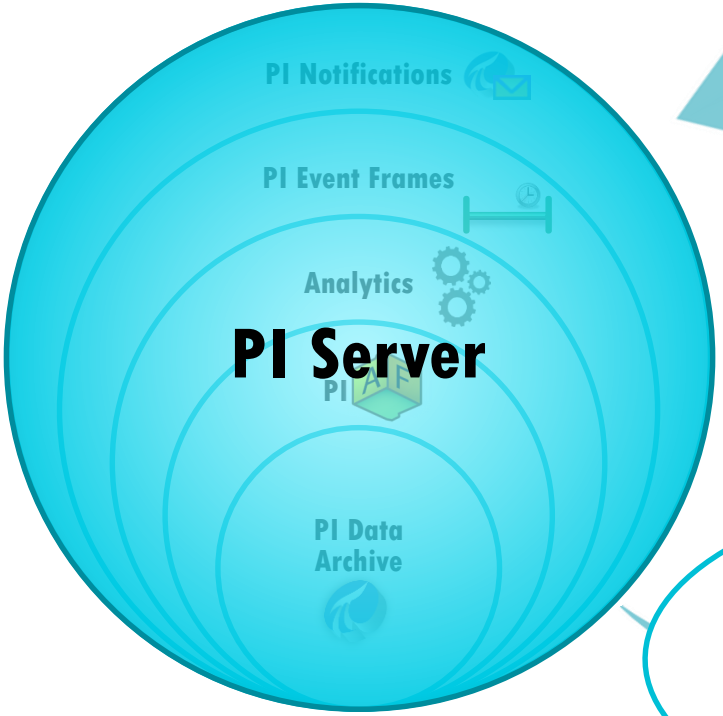


Connecting to the PI System via OData



PI System Infrastructure





PI System Access

Line of Business Systems

PI Cloud Services

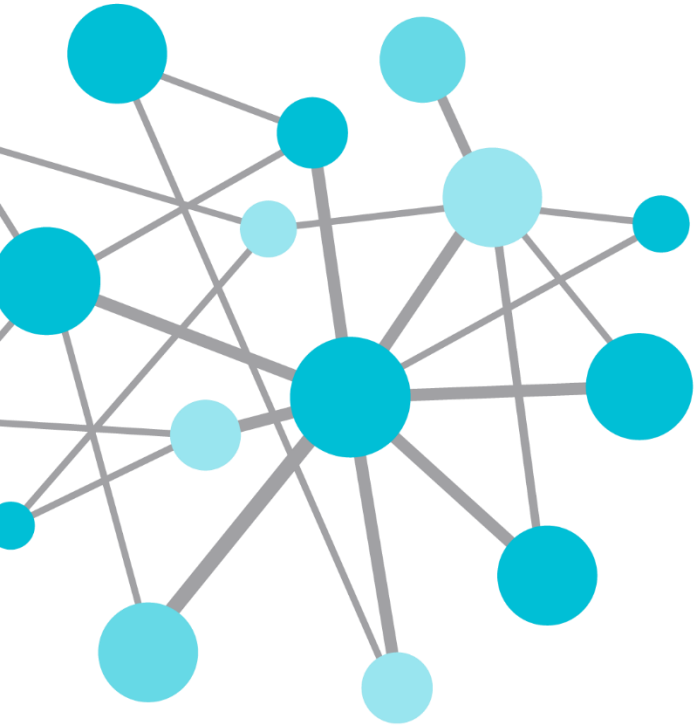
PI Cloud Connect

PI Integrators

esri ArcGIS

We need to integrate geospatial context with our PI System information.

PI WebParts



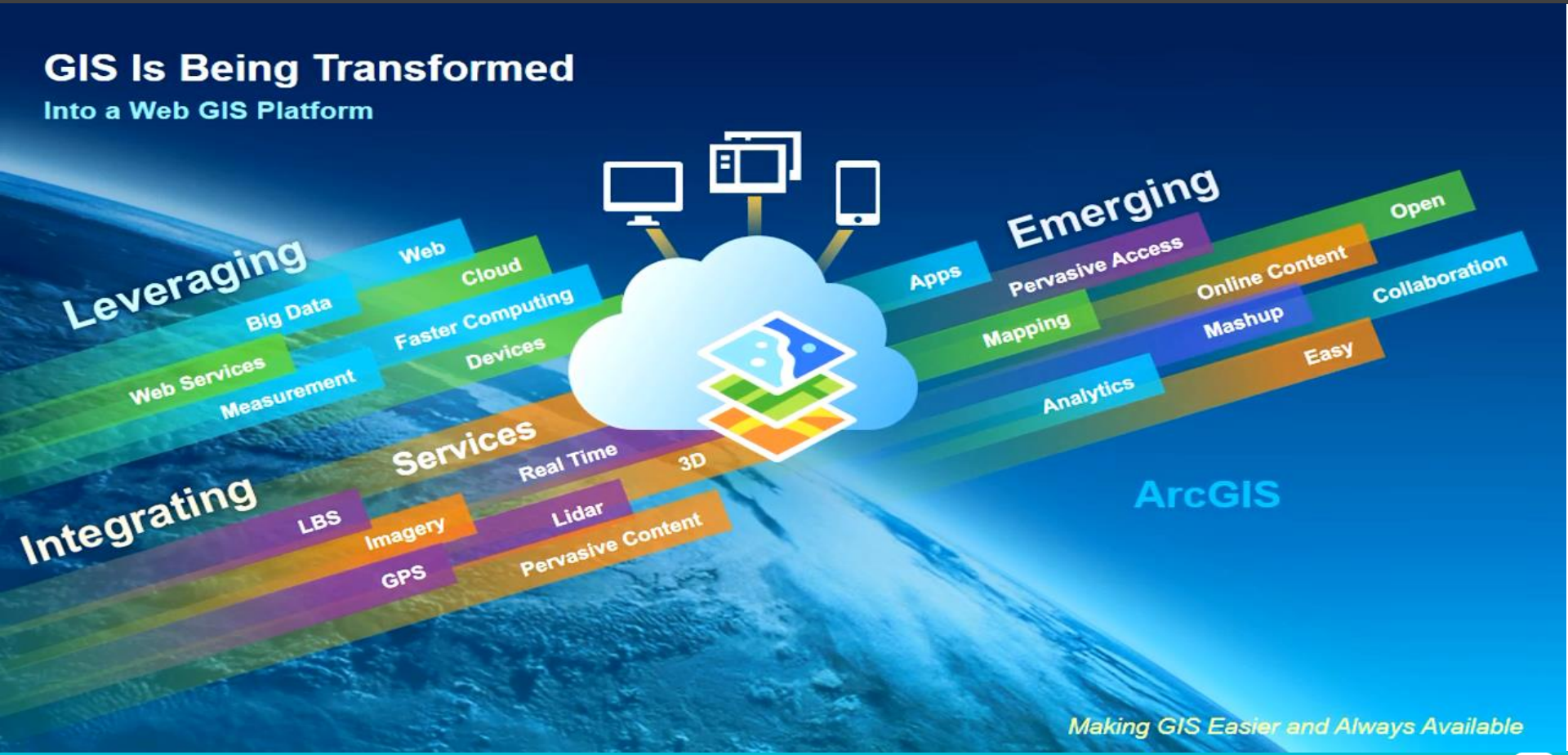
Connect Your PI System to Esri ArcGIS

(Connect Space and Time)

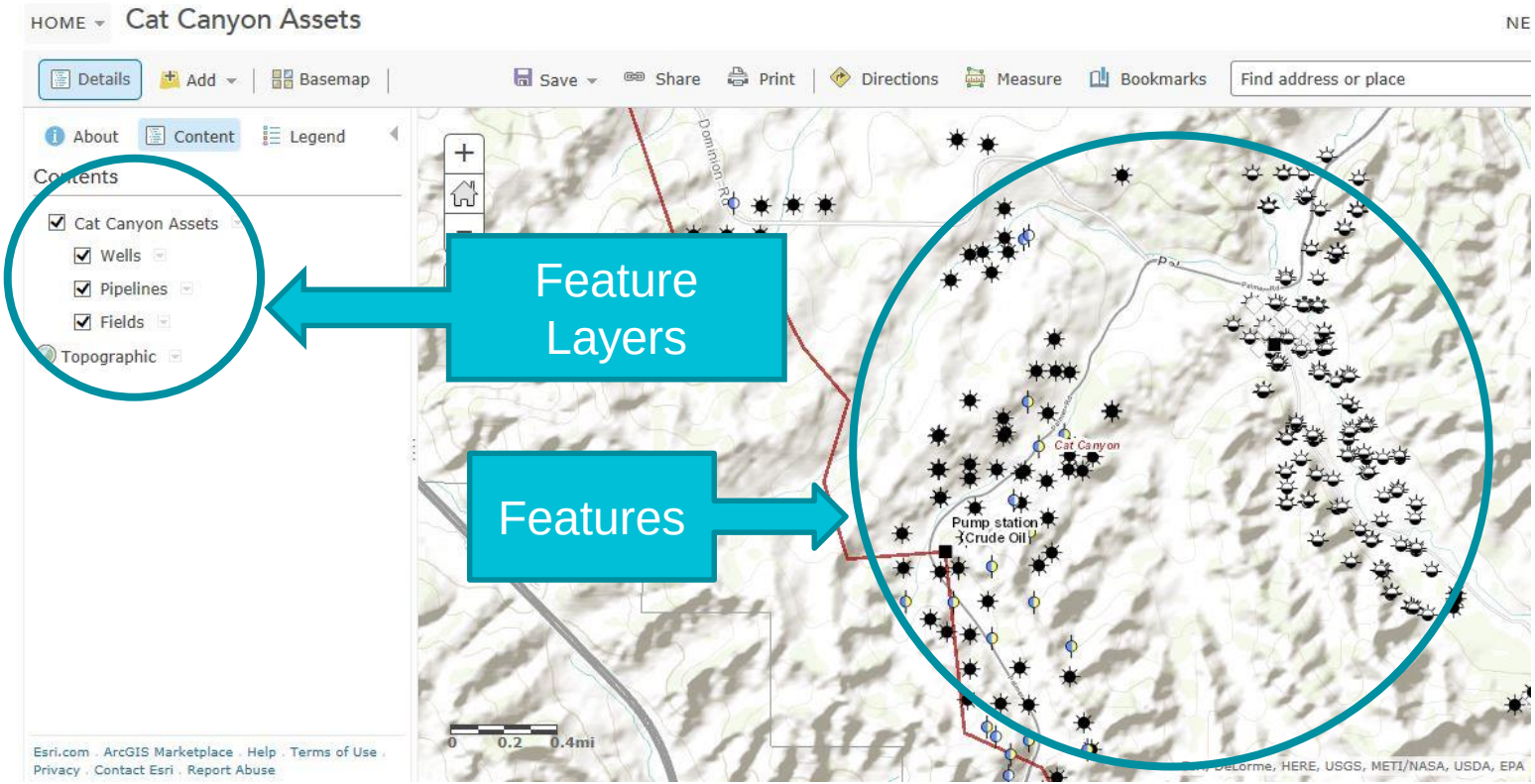
Why OSIsoft + esri ?

Context	Need	Solution
OSIsoft is the global leader in real-time data and event infrastructure Esri is the global leader in Geographic Information Systems (GIS)	Link operational data to geographical and location data	Visualize real-time PI System information within Esri ArcGIS maps and PI Coresight

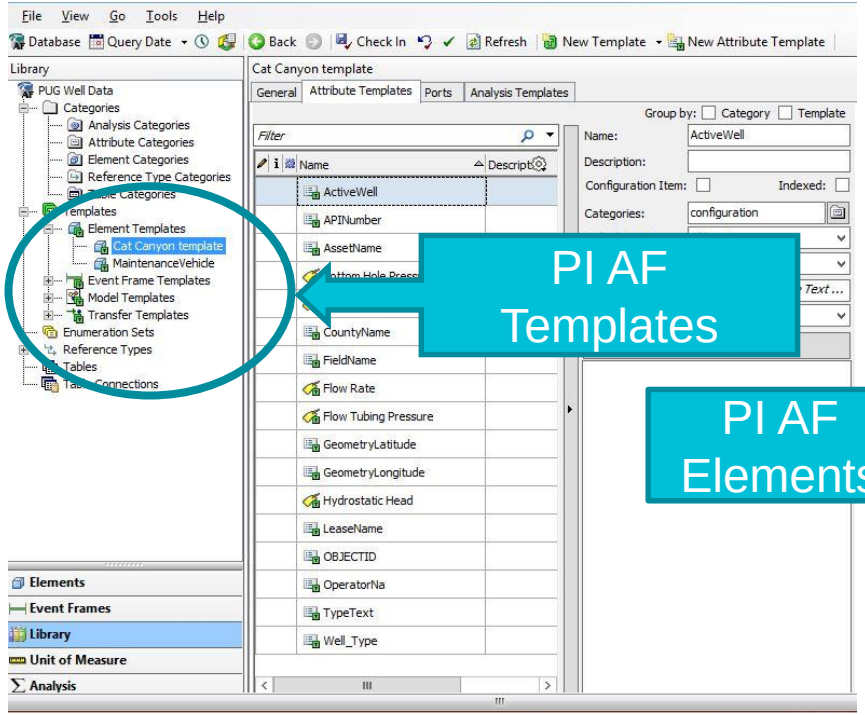
Put Yourself on the Map: The Fusion of the PI System and Esri ArcGIS



What is on an Esri Map?

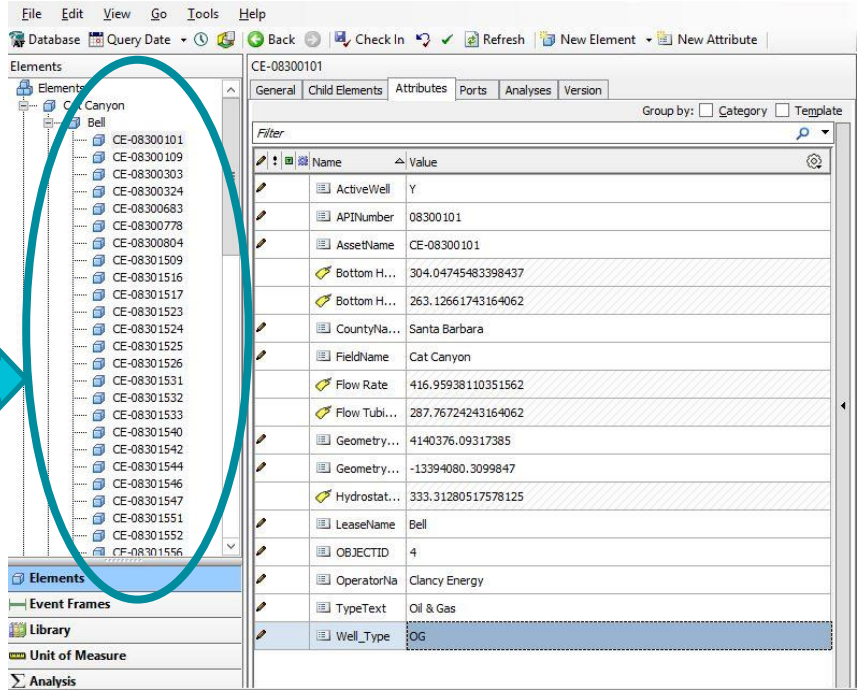


What Data is in the PI System?

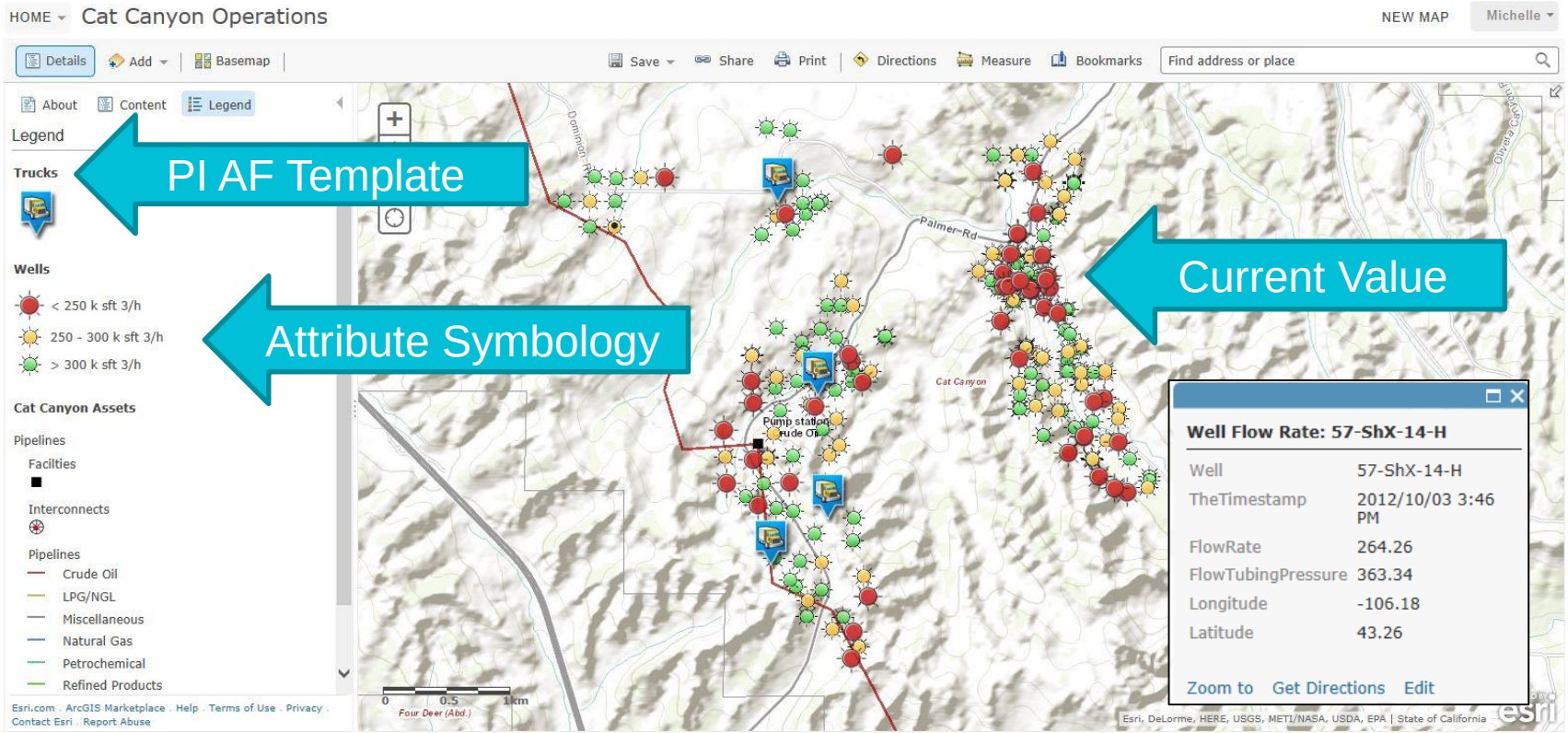


PI AF Templates

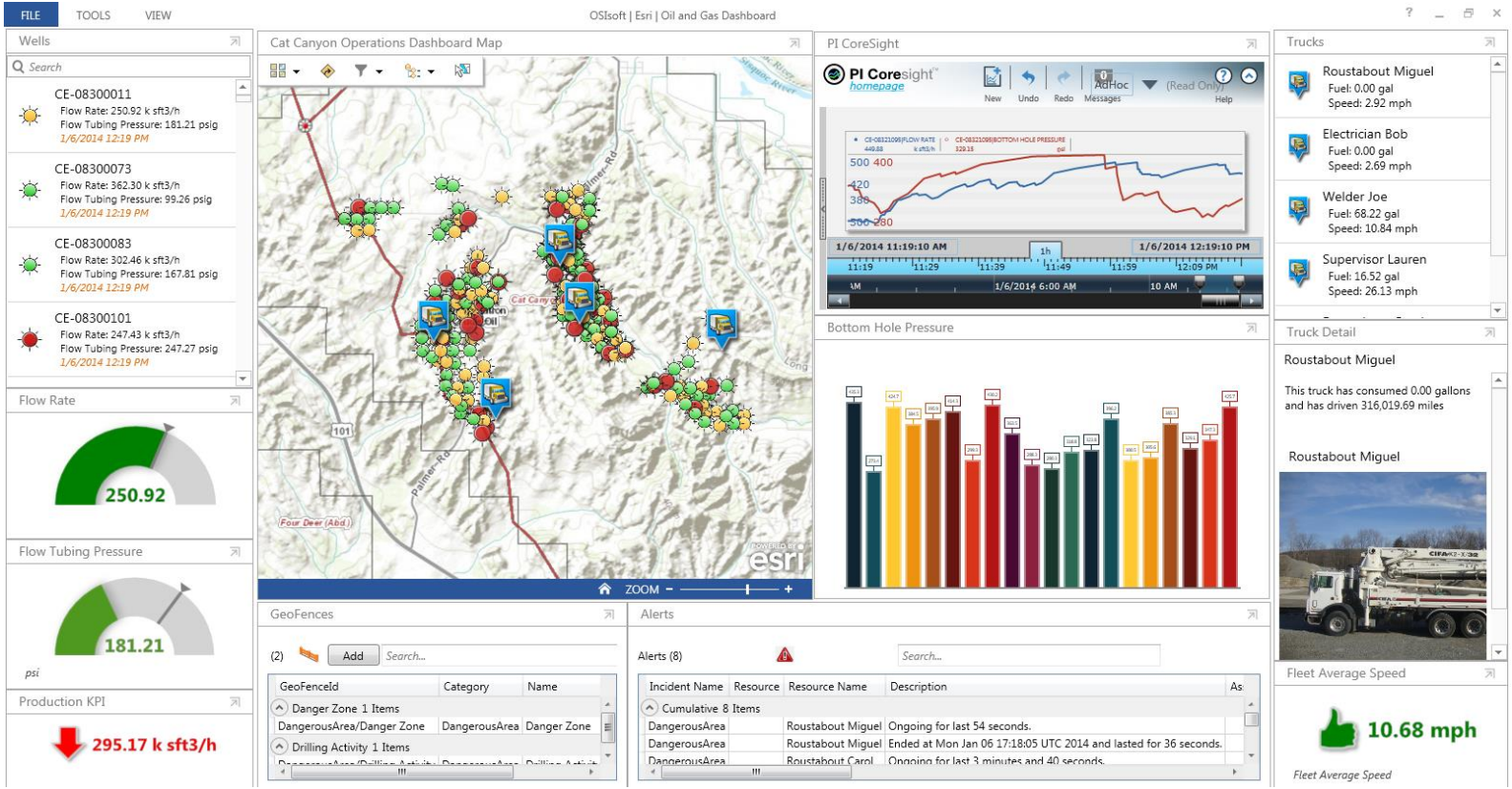
PI AF Elements



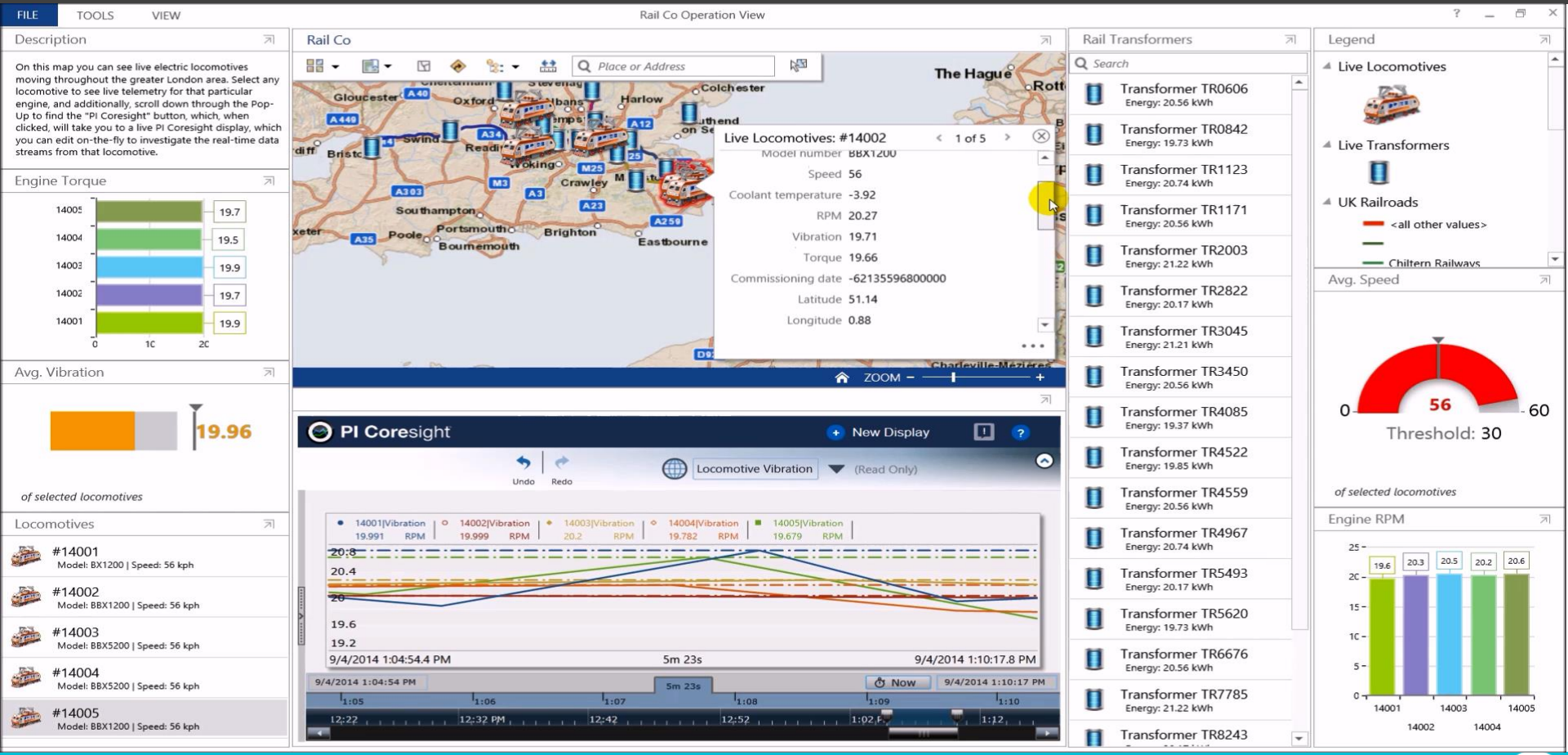
PI System Data Animates the Map



Esri Operations Dashboard



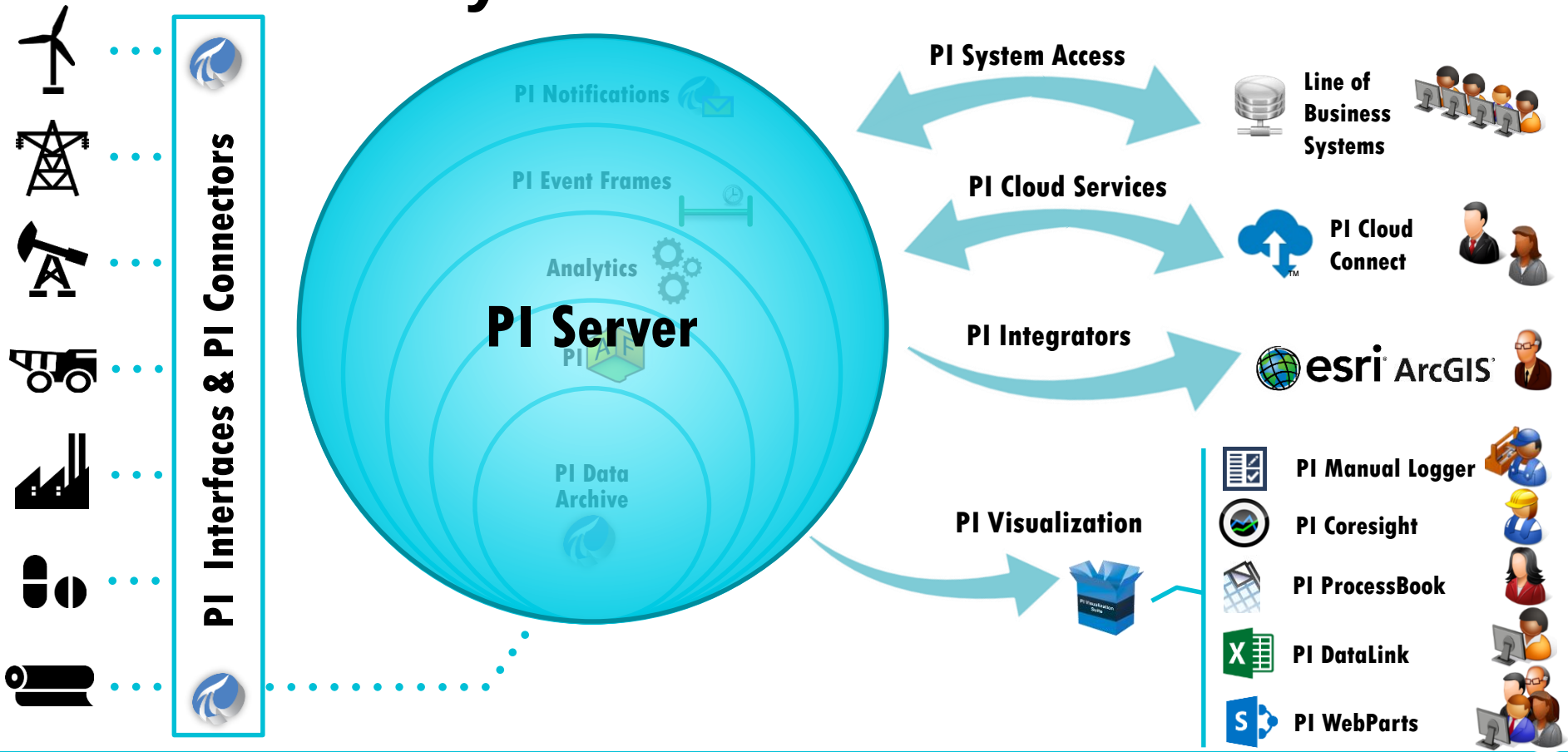
Connecting PI System Data to Esri ArcGIS



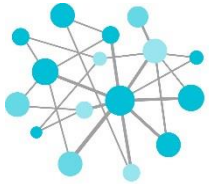
Benefits of the PI Integrator for Esri ArcGIS

- Real-time **PI AF Data** can update new or existing **Esri Feature Layers**
  - Configuration of Esri software is done automatically (no custom Esri objects are created)
  - PI AF databases can be jump-started using Esri Feature Layers
- **Visualize** the operational data using standard Esri clients
- Natively integrate **PI Coresight** with Esri clients

PI System Infrastructure



Key Points to Take Home



OSIsoft. REGIONAL SEMINAR 2014
The Power of Data
DECISION READY IN REAL-TIME

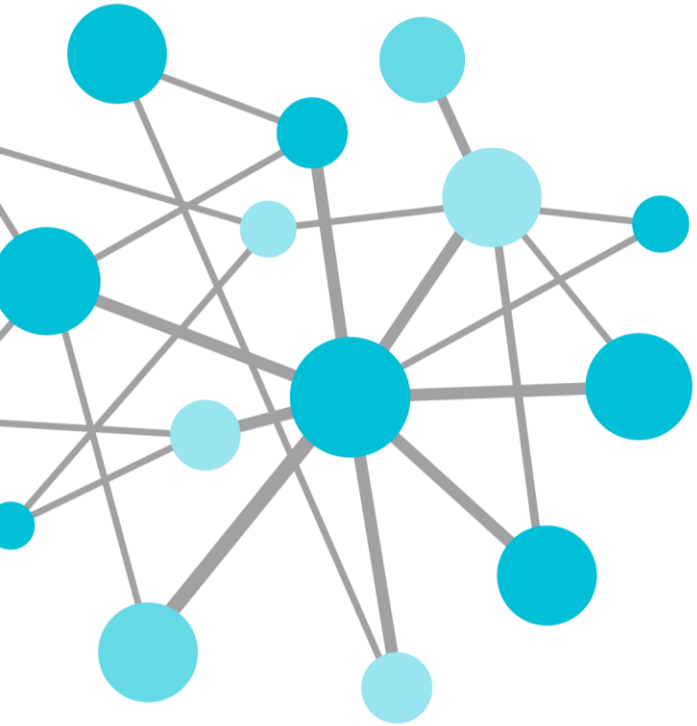
- The modern PI System contains **many new technologies**
  - PI Connectors
  - PI Integrators
  - PI Web API
- These all **facilitate access to all of your operational data and to analyses** made upon it, at any time any where

Bring us your questions about how you can get started with these technologies

Questions

Please wait for the microphone before asking your question

Please state your name and your company



THANK YOU

Brought to you by OSIsoft.

Alejandro Molano

amolano@osisoft.com

Field Engineer

OSIsoft, ULC