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USERS CONFERENCE 2016

April 4-8, 2016 | San Francisco

TRANSFORM YOUR WORLD

PI System Roadmap

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April 5th, 2016

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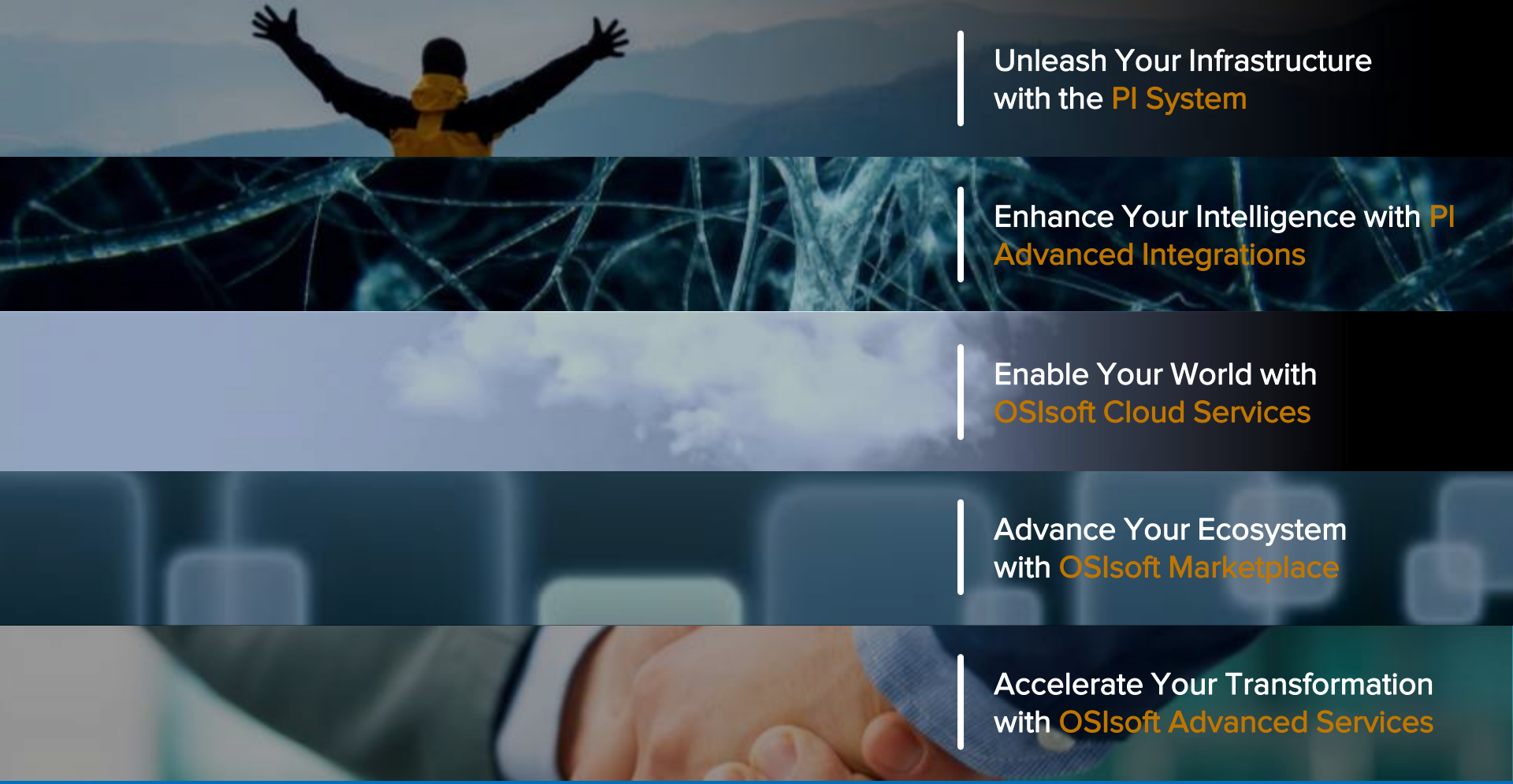

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Data Ingress / Connectivity

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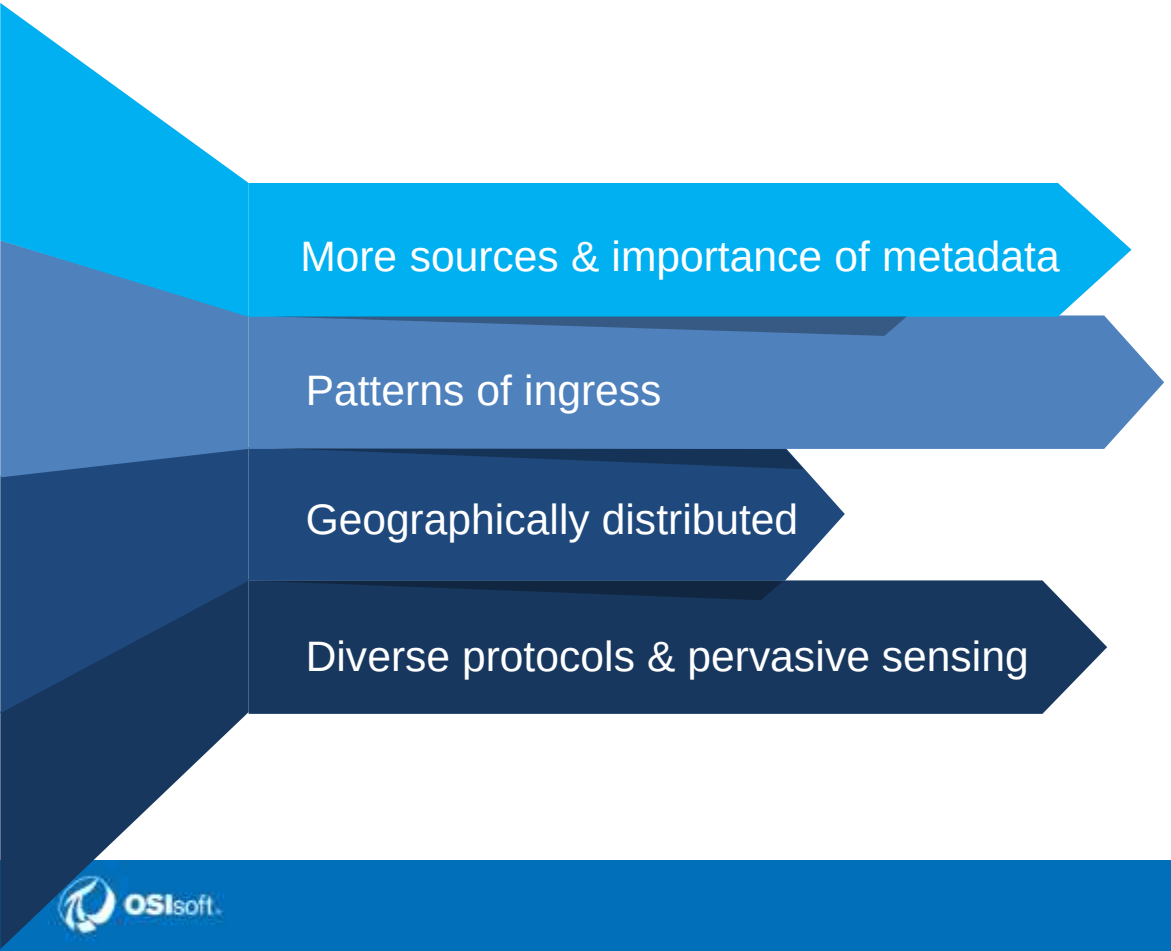
Data ingress trends



Ensuring **no matter where** your critical **operations** data exists the PI System is **the** critical **infrastructure**

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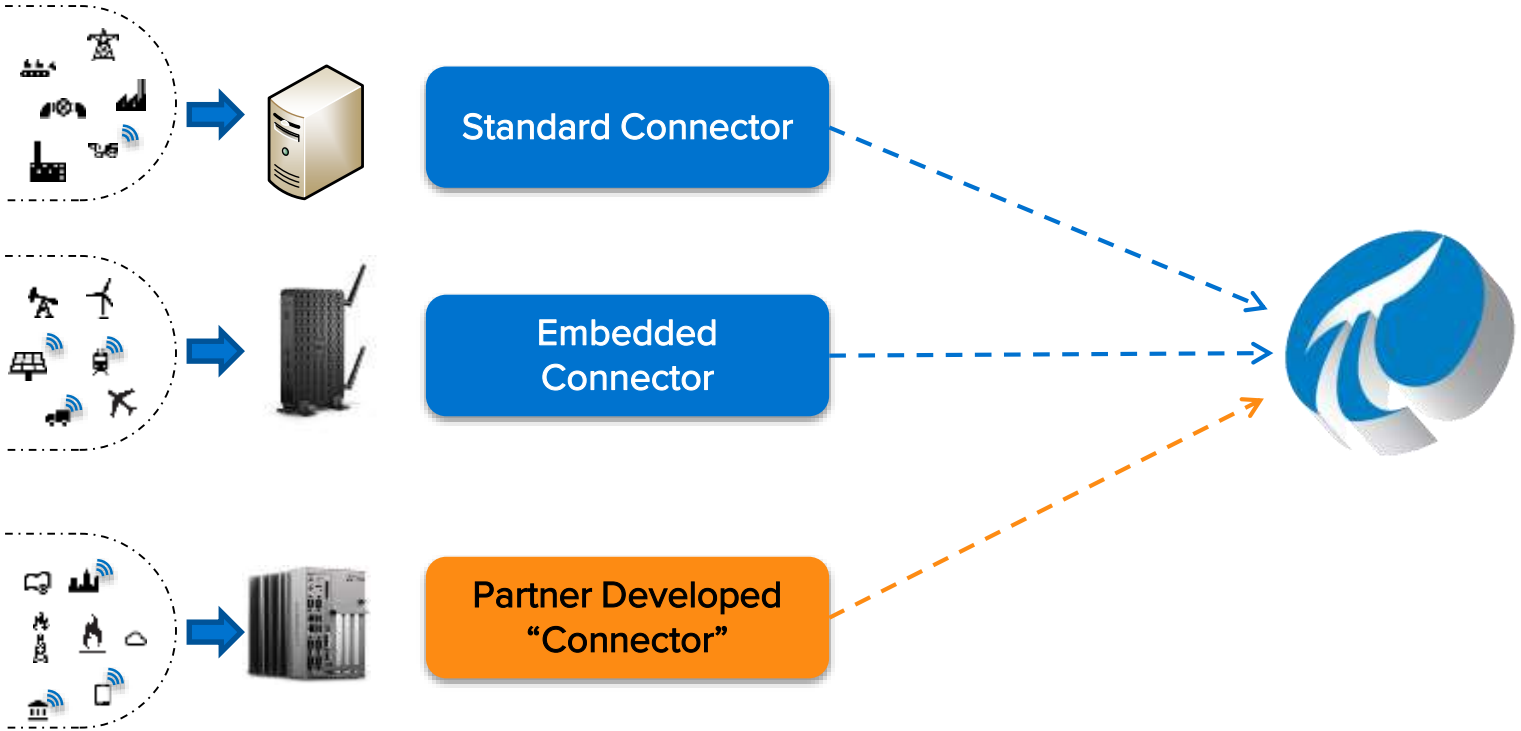
Data ingress patterns are evolving



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What problems are we focusing our attention on…

Time

Spend a lot of time configuring tags

Configuration

Challenging to configure interface

Build

Time consuming to build an asset model

Embedded

Run on embedded devices / Linux

Secure

Security

Speed

Collect high speed data

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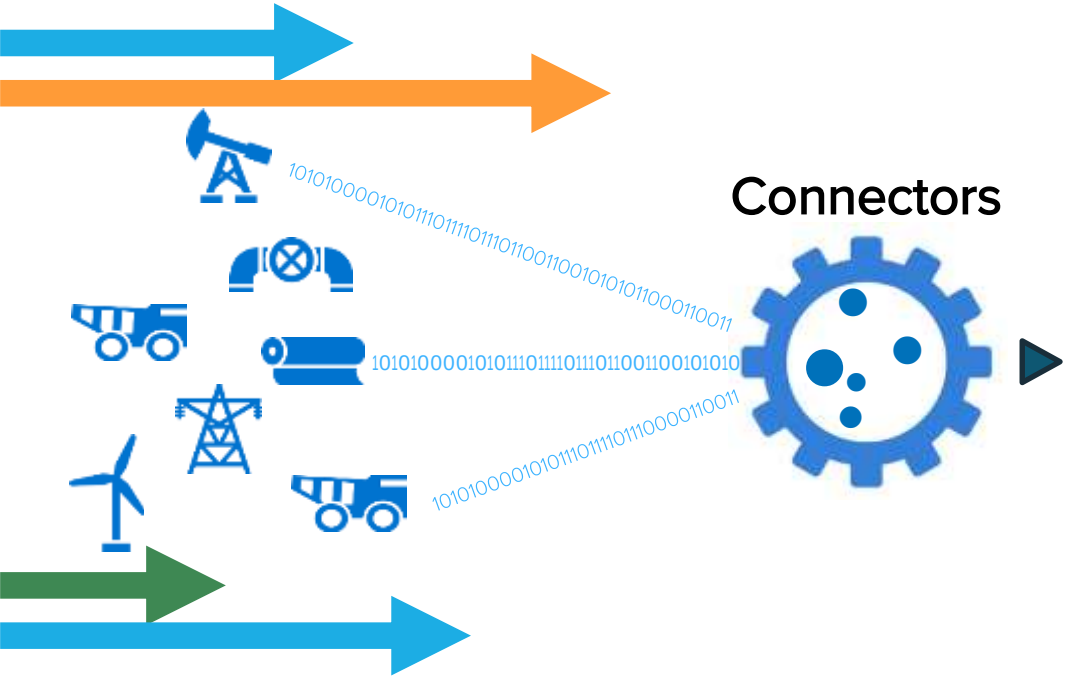
Strategic focus: PI Connectors



- Easy to configure
- Creates reference model based on assets as defined by the data source
- Auto-creates:
  - Elements in PI Asset Framework (AF)
  - Points in PI Data Archive, linked to PI AF Elements
  - Events collected and stored in Event Frames
- Updates automatically with data source changes
- Collects real-time data

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PI Connectors released in 2015+

HART-IP
Wireless Sensors

Wonderware Historian
All markets

IEC 60870-5-104
T&D substations

DC Systems RTscada
T&D

BACnet
Facilities

Siemens Simatic PCS7
All markets

UFL
All markets
Partners, EAs

PI System Health
All markets

Ping
All markets

NOV WITSML
Oil & Gas

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PI Connectors in development

PI Connector	Market	Status
OPC UA	All	Beta April
PI System	All	Beta Q2
DNP3 for embedded systems	T&D	Development
Redfish	Datacenter	Development
Modbus for embedded systems	All	Development
Schneider Electric ClearSCADA	Water	Research

- See also: “Getting Started with IIoT and the PI System” Felts and Noonen, Thursday 3:00pm, Continental 6

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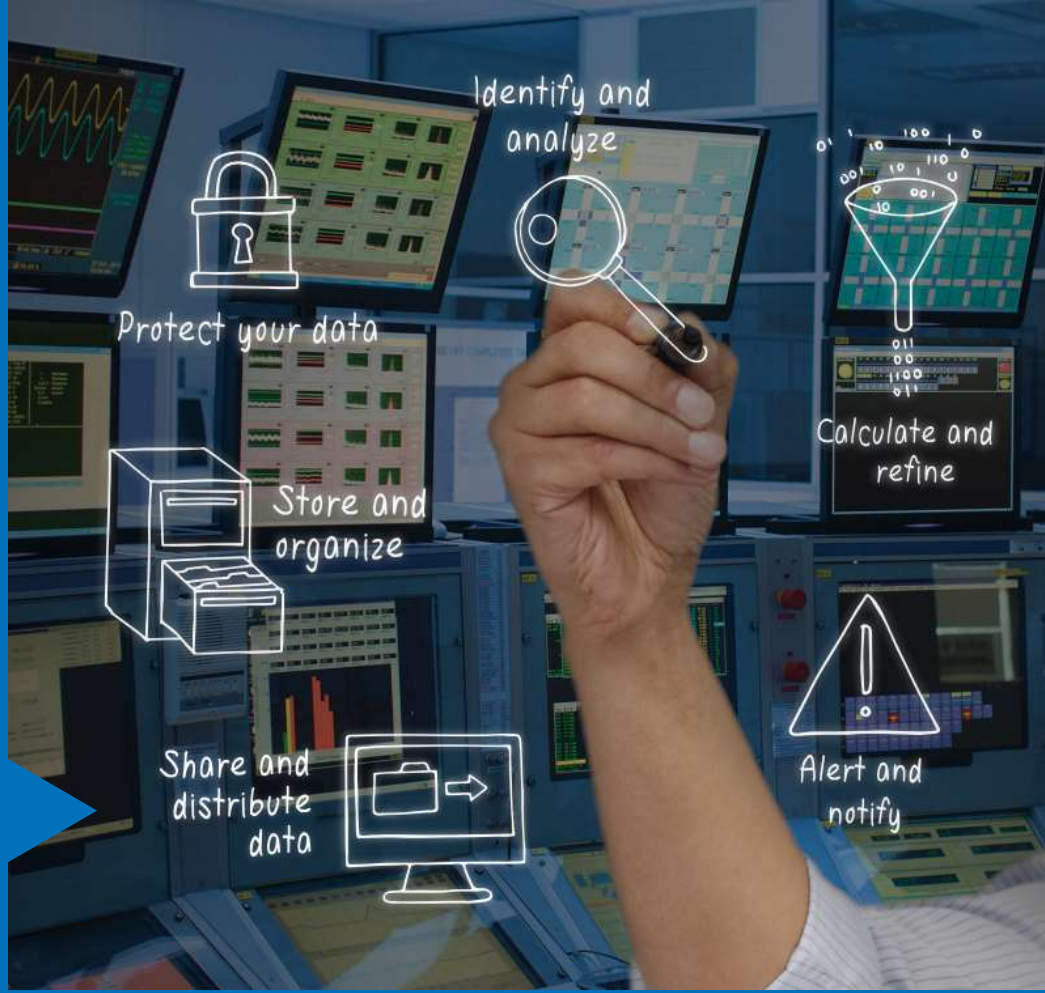
PI Server



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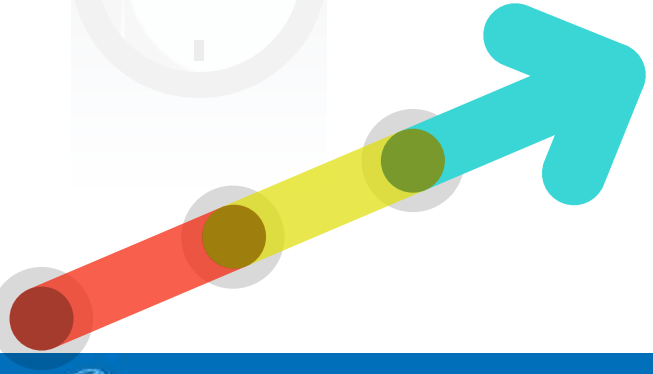
PI Server: Redesigning next gen PI Notifications

Users want to be notified when key event occurs

- Limit exceedance
- Preventive or condition based maintenance

Notifications tailored for a person(s) or another system



Notifications

- Scalability
- Usability
- Leverage Analytics and Event Frames
- Coresight Event History

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PI Server: The growth of asset analytics

- Use data with future time stamps in calculations
- Flexible output time stamps
  - Able to generate forecasts
- Manual recalculation for event frames
- Client side PE
- New PE functions
- Improved management
- Performance improvement

- Features to support PI Notifications 2016
  - Focus on event frames generation
  - PE functions
  - SQC triggered event frames
- Failover
- Improved troubleshooting and management

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Researching: System administration

The Challenge

- Geo-distributed systems
- Multiple servers
- Thousands of users
- Require 24/7 365 uptime
- Multiple administrative tools
- Multiple versions
- Multiple Operating Systems
- Security

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Areas of focus: System Administration

Single PI Server installer

Single unified system administration tool

Prioritized health indicators

Auto correct faults when possible

PI System dashboard

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Visualization

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What we hear about visualization…

"People want their data **where they are**, not where the system is"

"I have a tough time selling ProcessBook internally because it's **powerful** but to the end users **it looks heavy and old** and other tools have **5% of the functionality but look better and work over the web** and they win."

"… that ability for an **end user** to be able to go in and configure it and get an **integrated experience** has **not been there**"

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Visualization: a critical piece of the Infrastructure

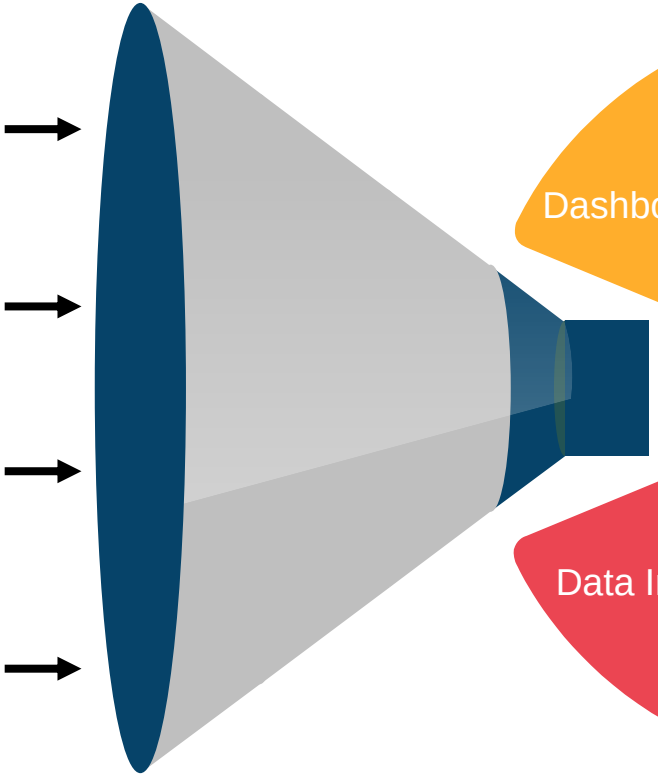
Today

PI ProcessBook
Display Editor
Process Monitoring

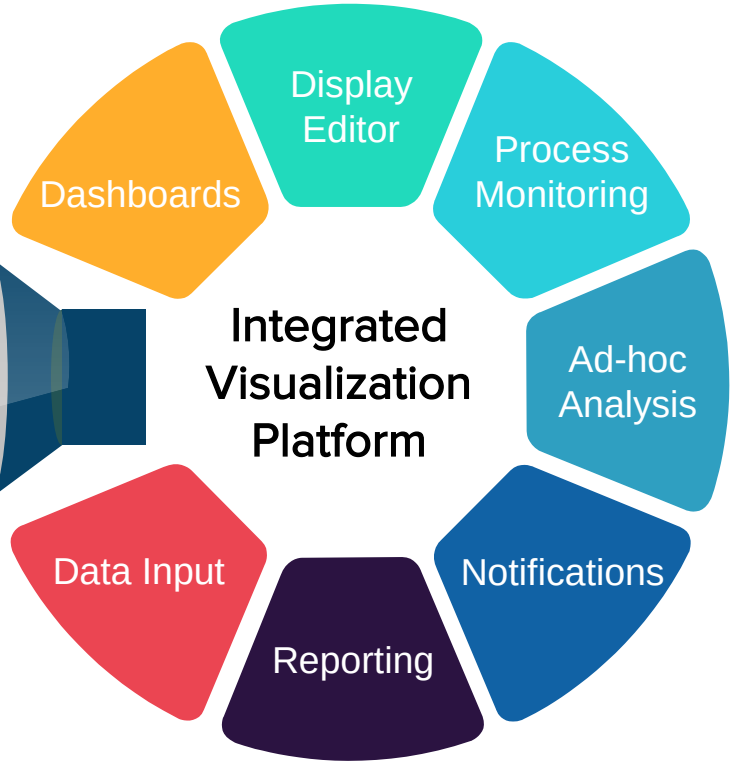
PI Coresight
Ad Hoc Analysis
PB Display Viewer

PI WebParts
Dashboards

PI Manual Logger
Manual Data Entry



Tomorrow



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Integrated visualization user scenarios

Mash-up applications to show operational data with other business or transactional data

- Maintenance personnel see current operating conditions along with a work order

Self service situational awareness

- Process personnel self subscribe to events happening in the operation and are notified when a situation occurs and have real-time access to current conditions.

Dashboards with rich drill in detail

- Executives see plant or organizational level roll-ups and with a single click drill in to see current operating conditions

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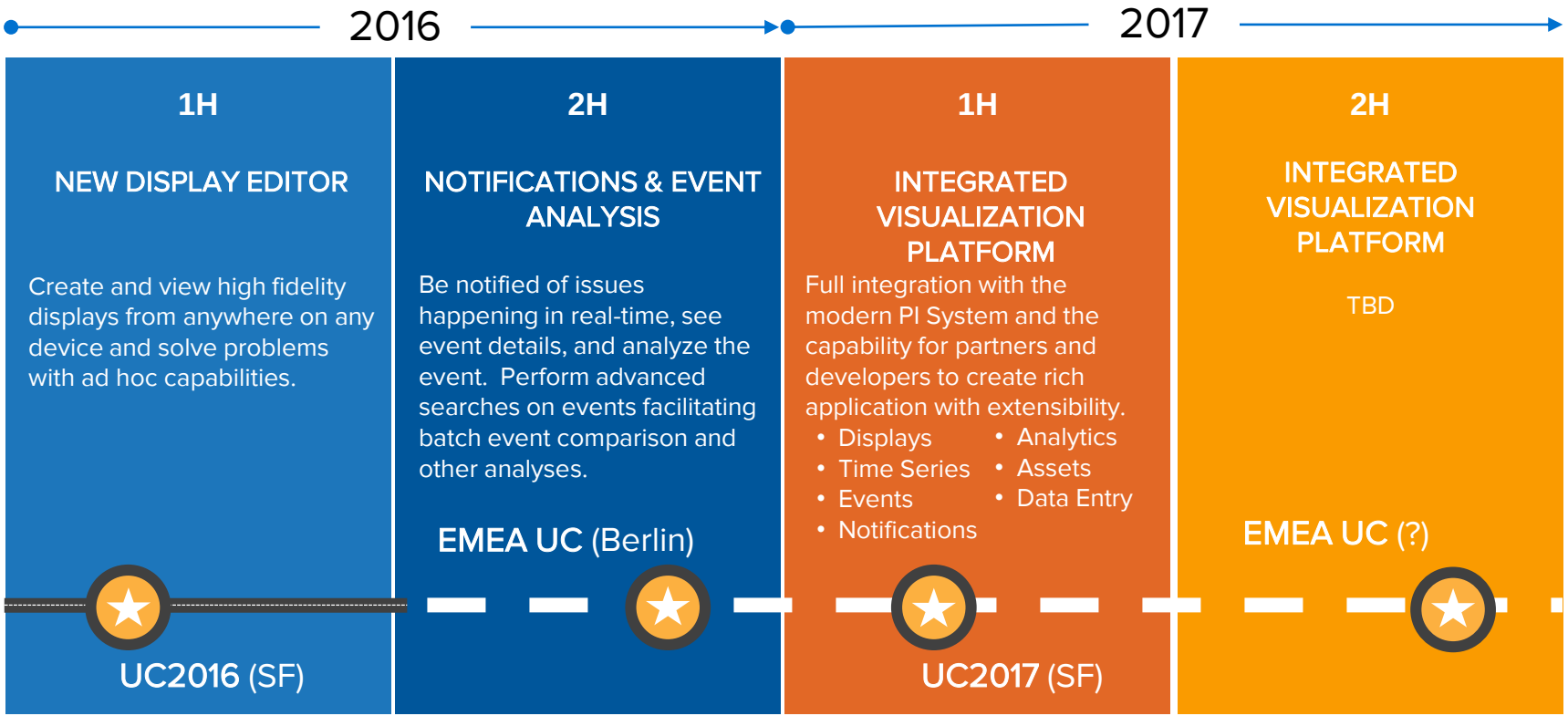
PI Coresight roadmap



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PI Coresight 2016: PI Coresight like never before

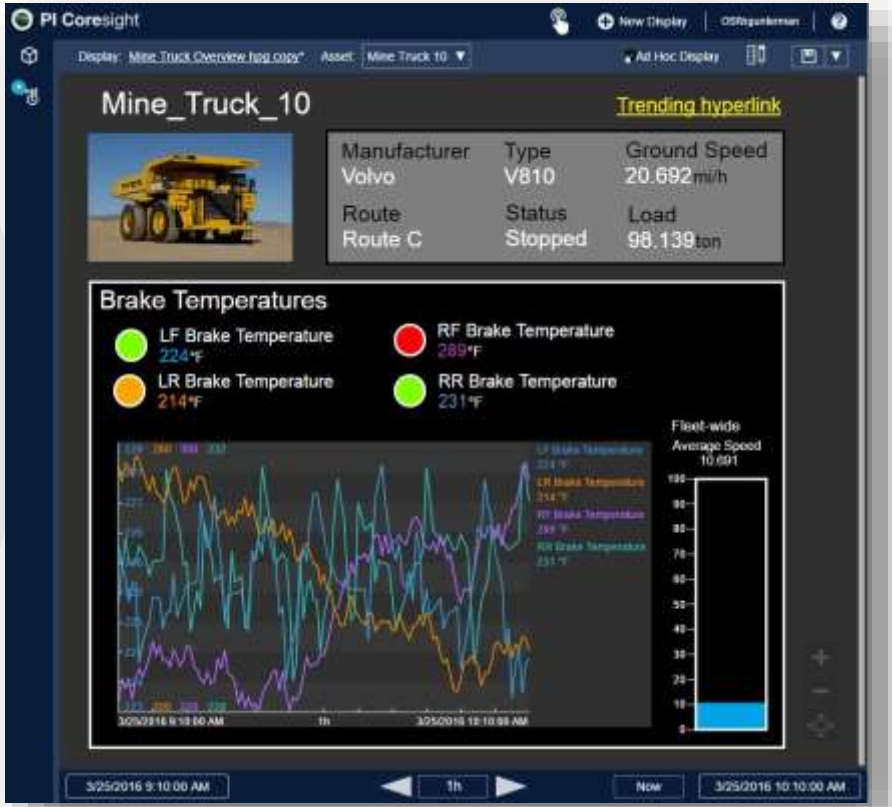
PI Coresight 2016 puts power and flexibility into the hands of users.

New!

- All new reimagined HTML5 editor with new UI!
- Absolute size and position control
- Add custom pictures
- Create multi-state symbols
- Compare events with overlay trends

plus richer context with PI Server 2016

Learn more at the Day 3 presentation



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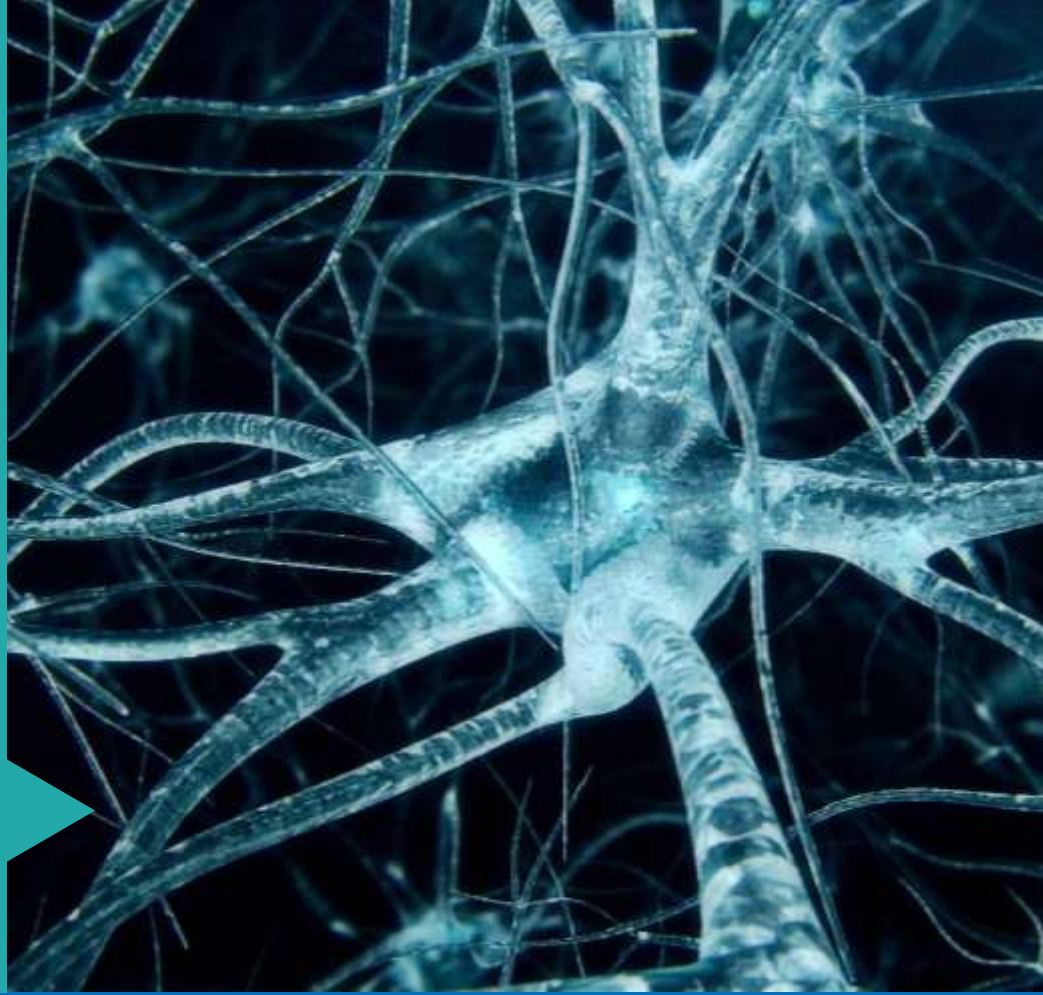
Advanced Integrations



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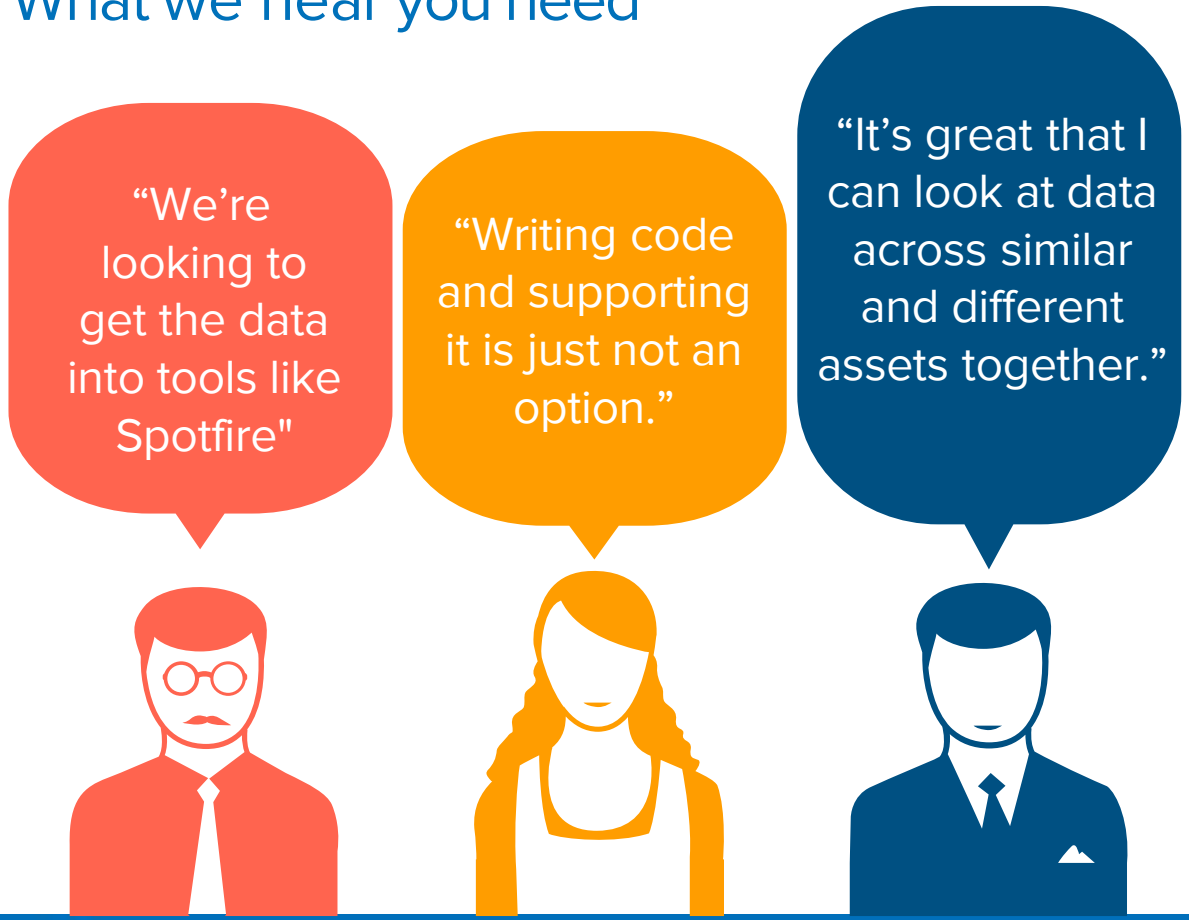
What we hear you need



Familiar tools

Scale without code

Flexibility and trust

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Problem complexity drives the need for Integrators

Complexity

Disparate assets or interacting one-by-one

Interacting with common assets as a fleet

Monitoring

Real-time visibility

- HMI

Process Optimization

Real-time & historical view across any plant asset

- PI ProcessBook
- PI Coresight
- PI Datalink

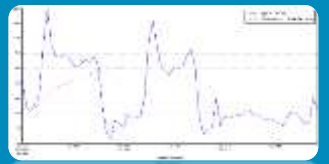
Benchmarking

Fleet-wide performance comparison

- BI App (i.e. Tableau, Spotfire, Lumira)
- PI Integrator for Business Analytics
- PI Integrator for SAP HANA

System Optimization

Large scale multi-variate analysis



- Machine Learning (Azure ML, R)
- PI Integrator for Business Analytics
- PI Integrator for SAP HANA

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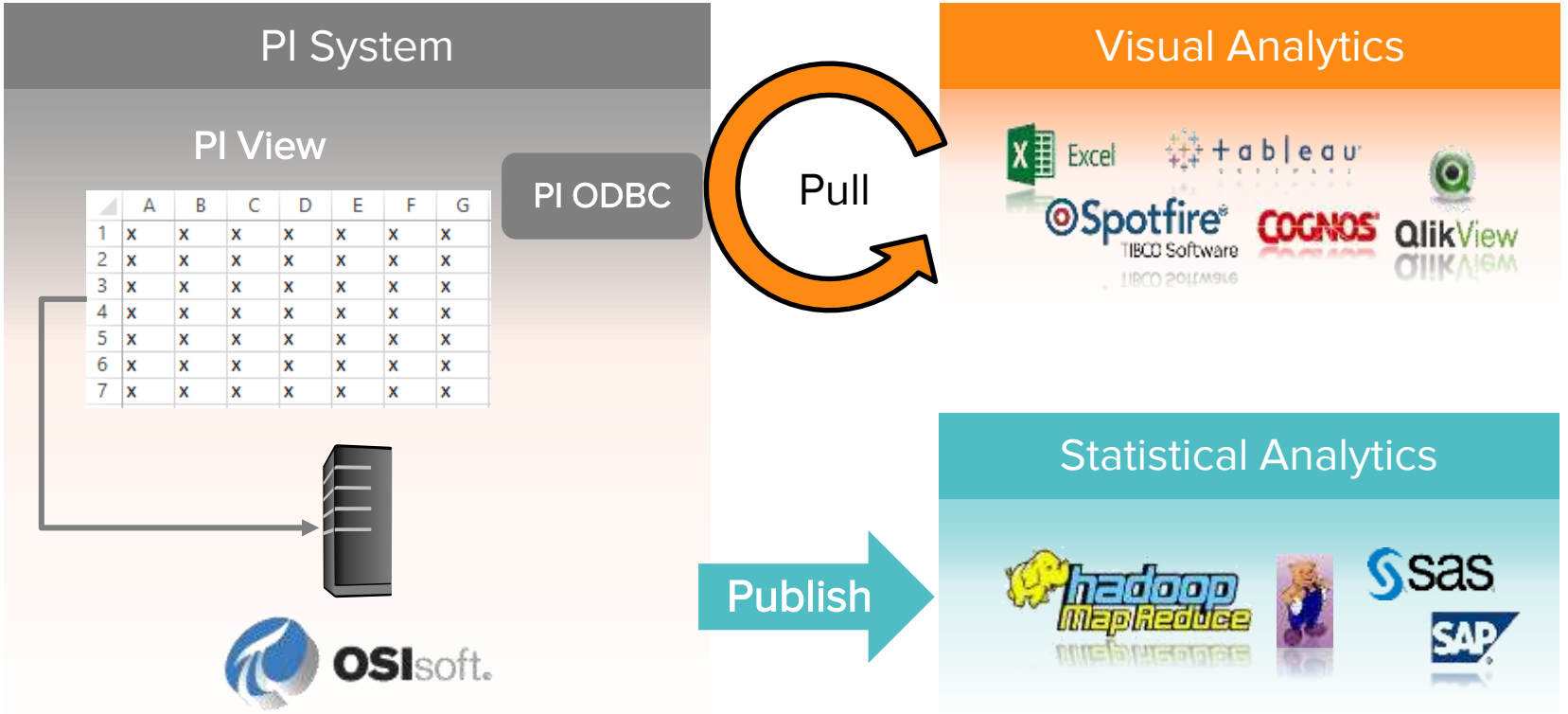
Released: PI Integrator for BA / SAP Hana



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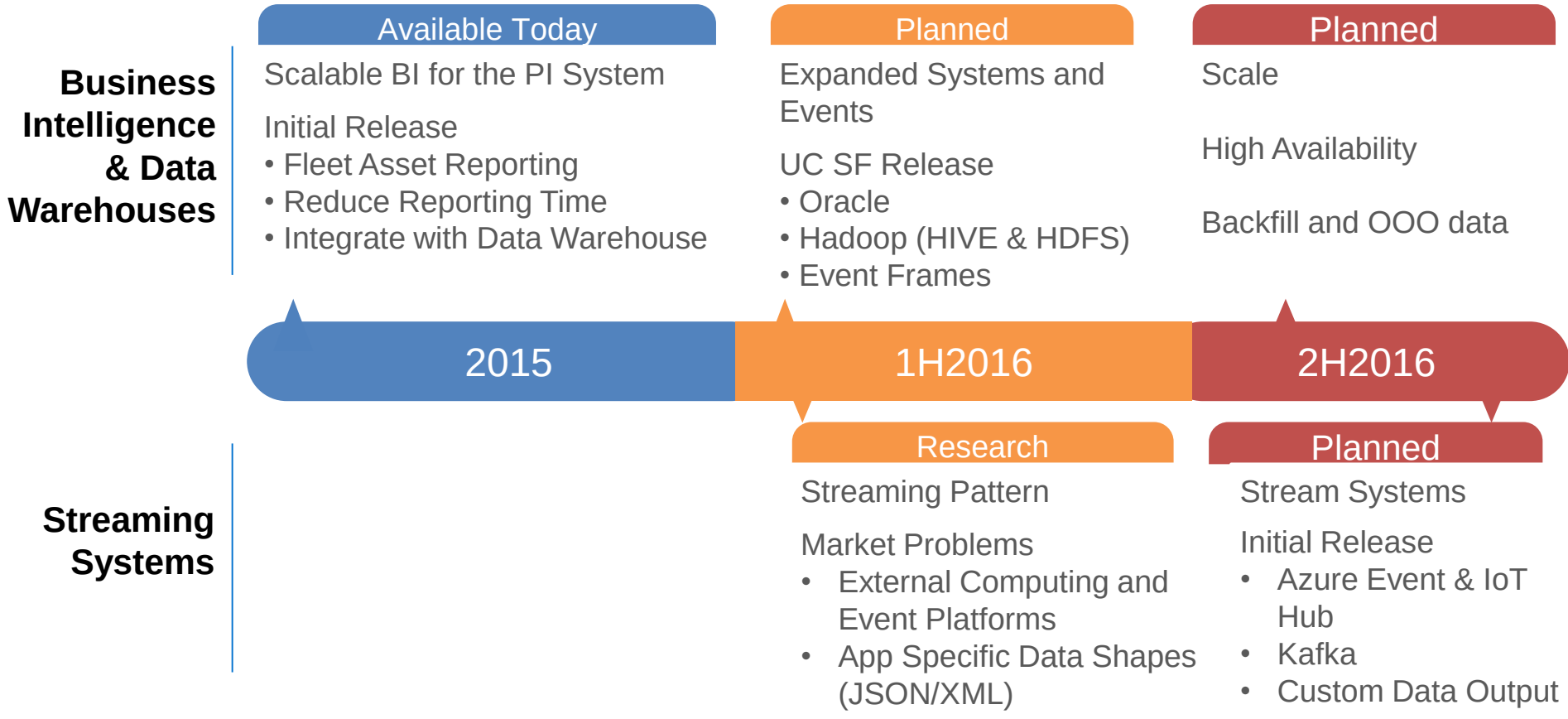
PI Integrator 2015/2016 Strategic Plan



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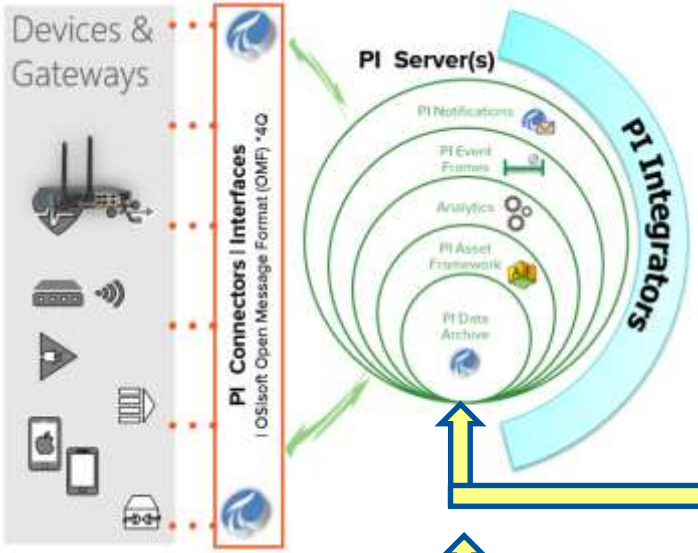
PI Integrator for SAP HANA



Data Access Pattern	Product / Feature Roadmap		Databases and Applications
Query Data (API)	Planned 2017	.get(arg)	HANA Database; Smart Data Streaming; **SAP HANA Platform Edition**
Pull Data (Federated)	SAP IoT Connector (Smart Data Access)		
Publish Data (Push)	PI Integrator for SAP HANA 2015R2		
Stream Data (Stream Events)	PI Integrator for SAP HANA 2016	{ 0,1.23; 1,4.56 }	**SAP HANA Cloud Platform**
Receive Data (Predictions)	PI Integrator for SAP HANA 2016	{ 0,1.23; 1,4.56 }	
Receive Metadata (Assets / PM)	Planned 2017		

Lumira
Vora
S4
Etc.

Full platform coverage for all data integration scenarios

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PI Integrator for Esri ArcGIS

Overlay assets and real-time information onto Esri maps

- Overview of your PI System assets using Esri maps
- Esri maps become live with PI System data
- Drill into asset data using PI Coresight
- Import Esri ArcGIS assets into PI AF
- Native Operations Dashboards Widgets

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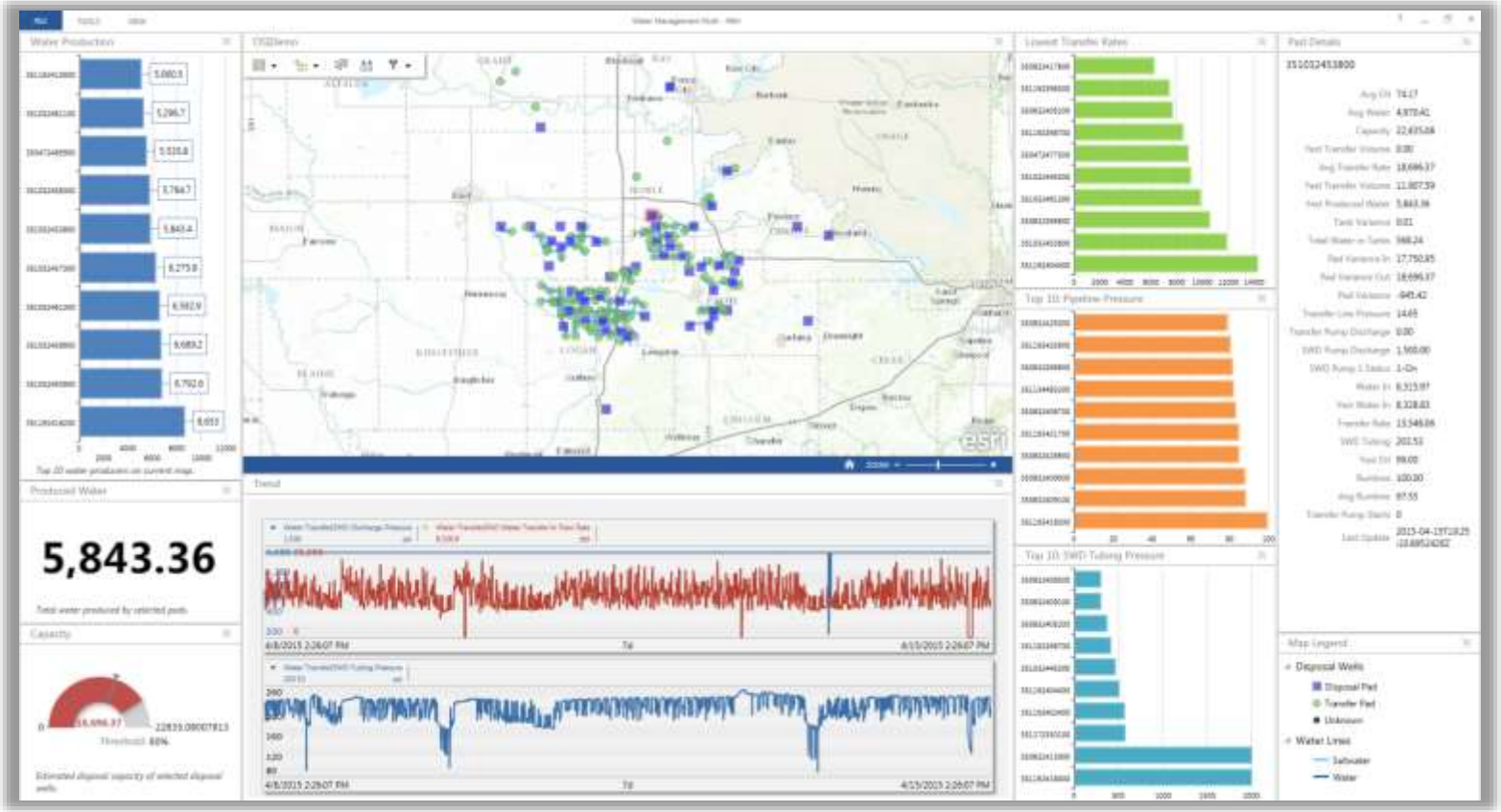
Devon Energy: Oil field water management



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What's next for the PI Integrator for Esri ArcGIS

Manageability

- Enhanced publication identification for troubleshooting
- ArcGIS environment clean up when Integrator objects are deleted

More Widgets

- Support mobile devices
- Add widgets for ArcGIS WebApp Builder

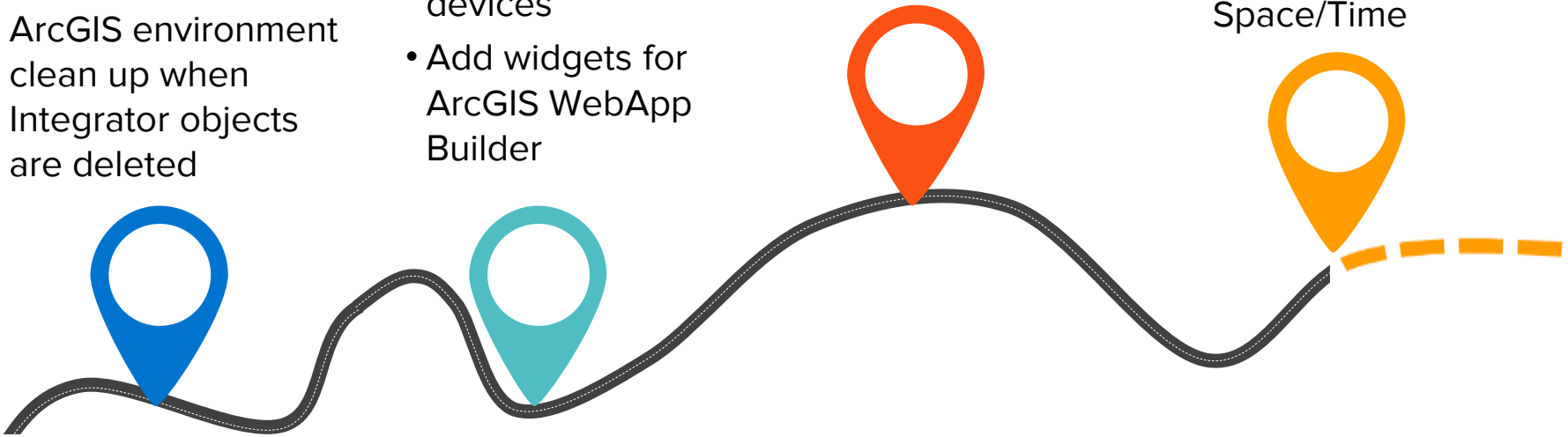
Event Frames in ArcGIS

RESEARCH:

Rewindable Maps

Asset Synch with ArcGIS Database

Space/Time



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OSIsoft Cloud Services

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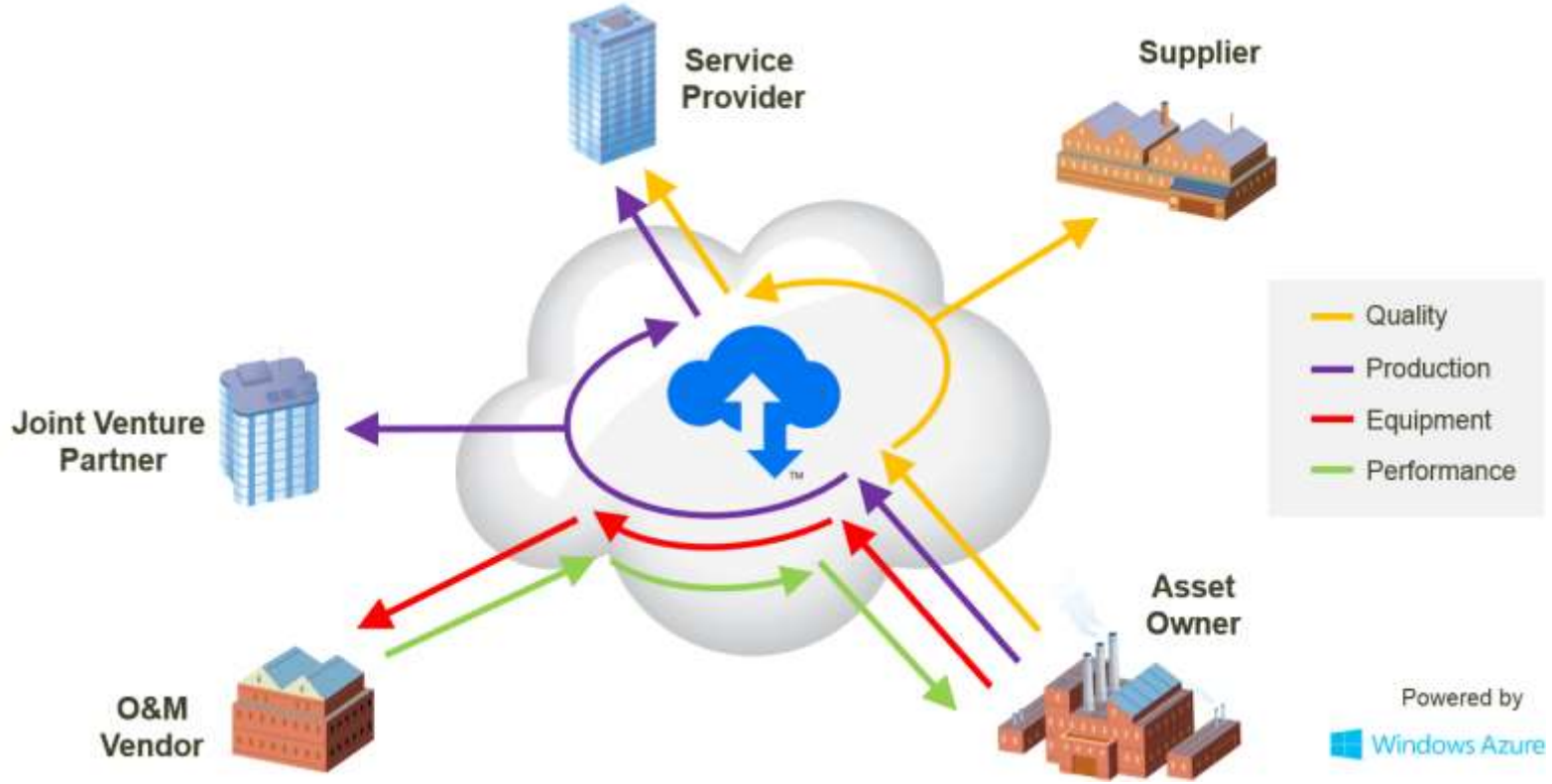
Released in 2015: PI Cloud Connect



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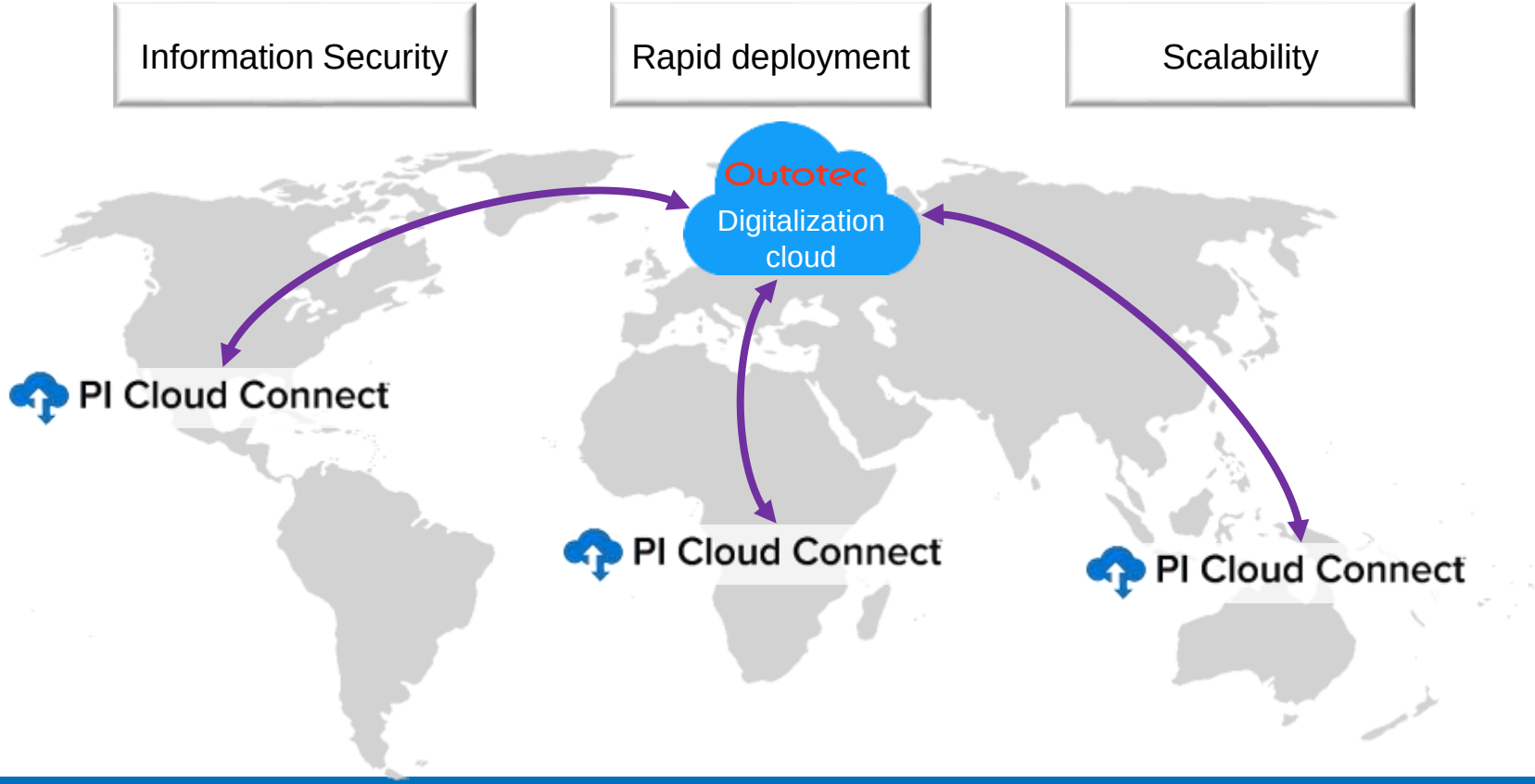
Outotec: Scalable architecture to meet global demand



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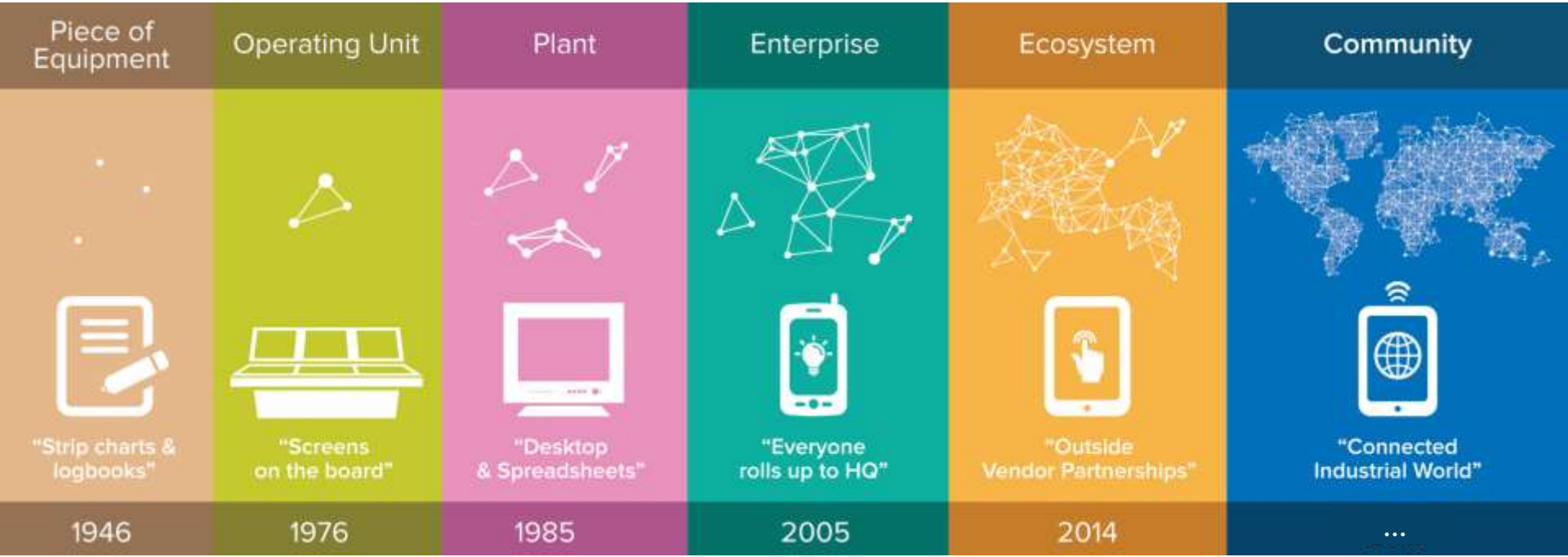
A journey to a more connected world



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Integrators

- Start thinking about your use cases?
- Come to the product talk to and our booth to see the product in action

Coresight

- Download the latest version now!
- Start planning for an integrated visualization platform!

TechCon Presentations

- 12 presentations
- In-depth talks

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Day 3 TechCon Presentations

PI System 101: Basics for Beginners	PI Server 2016: The Modern PI System	Best Practices for Using and Deploying the PI Asset Framework	Event Frames: How to Provide Context to Critical Events (Life Sciences)
Bridge IT and OT with a Process Data Warehouse	PI Integrator for ArcGIS	The Tao of Qi - OSIsoft's New Martial Art	PI Coresight 2016: New Vision, New Display Editor, New Look & Feel
All the Ways to Connect to PI Systems	Connectivity from A to Z - Roadmap for PI Connectors and PI Interfaces	Getting Started with IIoT and the PI System	Programming Tools for the PI System

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TechCon Presentations

- 12 presentations
- In-depth talks

Product Expo

- Visit the Partner and Product Expo to learn more!

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Contact Information

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Questions

Please wait for the **microphone** before asking your questions

State your **name & company**

Please remember to…

Complete the Online Survey for this session

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감사합니다

谢谢

Danke

Gracias

Merci

Thank You

ありがとう

Спасибо

Obrigado

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