



# PI Integrator for Business Analytics

Delivering Your Data  
in  
Purpose-Built Formats

Presented by **Brian McMorrow**, Product Marketing Manager  
[bmcorrow@osisoft.com](mailto:bmcorrow@osisoft.com)

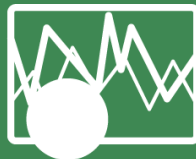




I need to **minimize risks** through Data Driven Decisions

I want share PI System data to groups **outside of Operations**

I want to build **statistical models** from historical data to **better inform** today's critical decisions



I want to **compare** our equipment with **ALL** of our other sites

I want to spend **less time** on operational reports

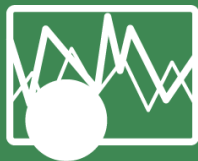




We need to be more confident in the decisions we make.  
We need trusted data

I want to combine multiple systems of record for corporate reports

We are starting a Big Data project, and we need operational data



I want to incorporate Operational Data into our existing information architecture for enterprise data warehousing

I want to get operational data into more of the BI Tools that people use



# Why are These Objectives Allusive?

## 1. Data Alignment

# Evolving Information Architecture

## BI & Reporting

Time Series



Relational



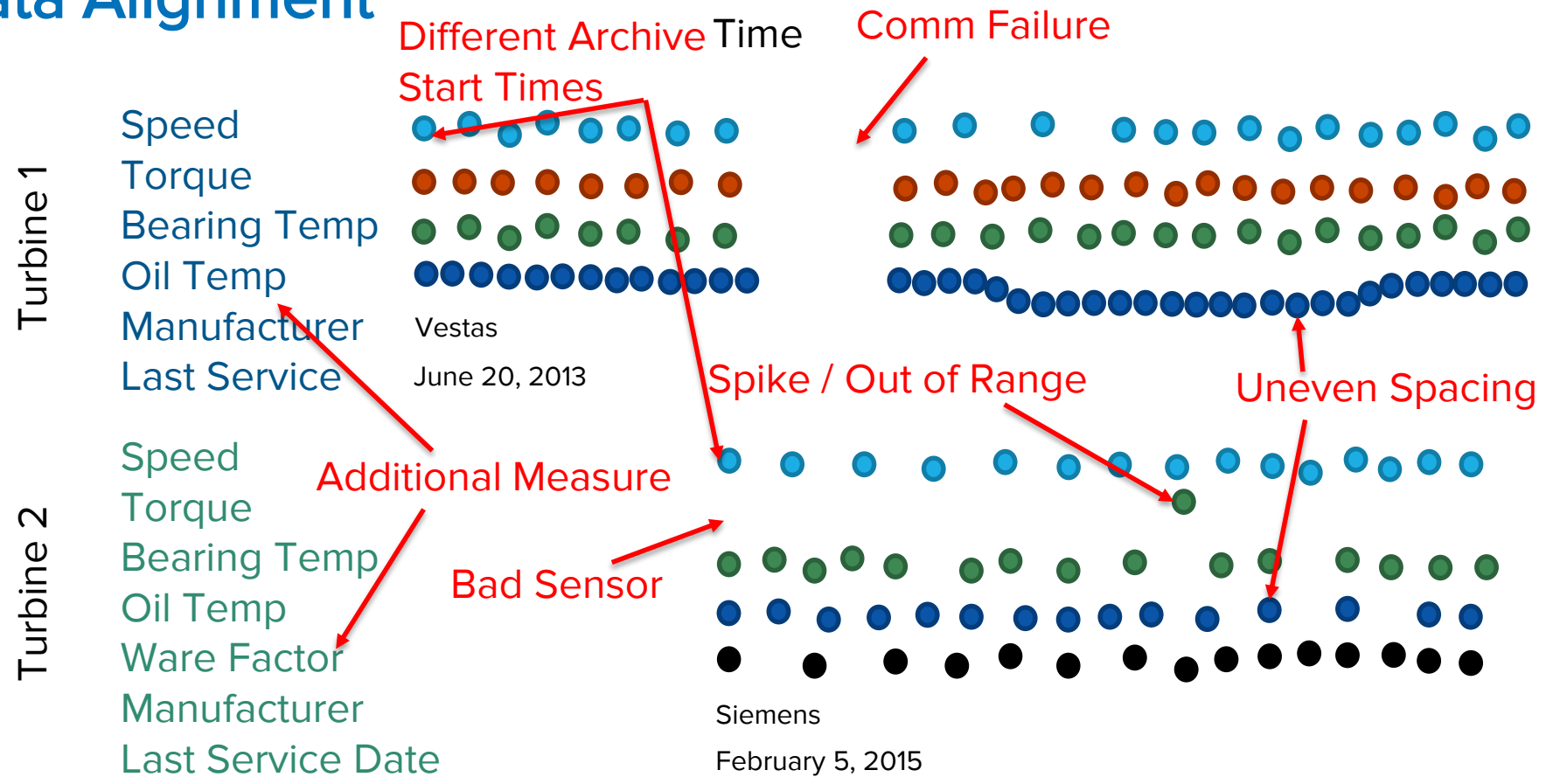
Unstructured



GIS



# Data Alignment



# Why are These Objectives Allusive?

1. Data Alignment
2. Scalability
3. Context

# Context in the Physical World

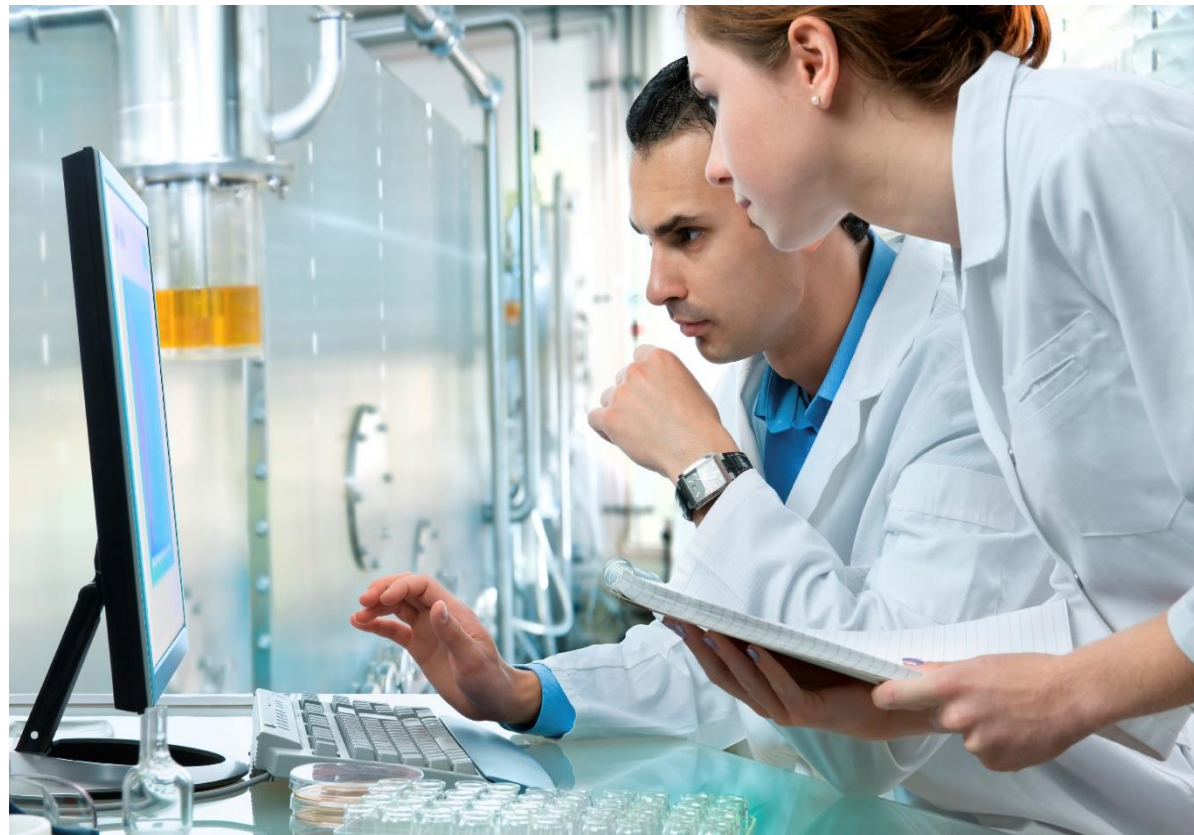


- What material is being hauled?
- Was it raining?
- Holes in the road?
- On break?
- What is the grade of the hill?
- Scheduled downtime (in maintenance)
- Shifts—different driving behaviors



# Context in the Physical World

- What product was being made in the reactor?
- When is the equipment empty?
- Where was the instrument when I took that measurement?
- How long does product spend in each reactor?



# Context in the Physical World



- When was peak demand?
- How are renewables impacting dispatch?
- Was there an outage?
- Was there a storm?

# Context of the Physical World

- Was wind gusty or steady?
- Was the maintenance planned?
- How long does this issue usually take to fix?





# Context of the Physical World



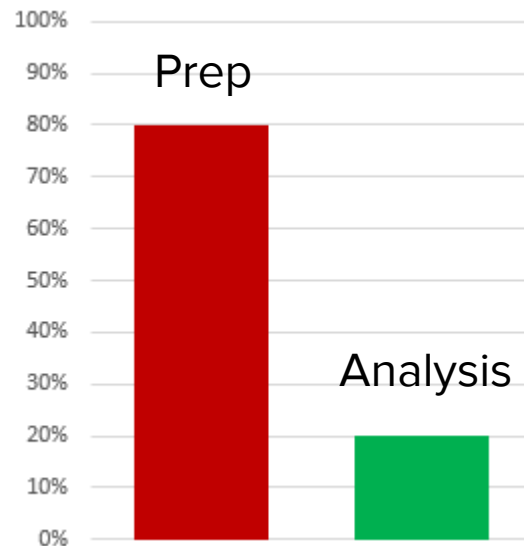
- When did the geology change?
- Which well was being drilled?
- What angle was the drill bit?
- Is production related to drill conditions?

# Why are These Objectives Allusive?

1. Data Alignment
2. Scalability
3. Context
4. Managing changes over time
5. Data Governance
6. Security

...these require time and \$\$\$

# Data Wrangling



Data cleansing and preparation tasks can take 50-80% of the development time and cost

<https://hbr.org/2014/04/the-sexiest-job-of-the-21st-century-is-tedious-and-that-needs-to-change/>



# OSIsoft Solution: PI Integrator for Business Analytics

PI Integrators reduce the complexity of analyzing  
real world industrial data

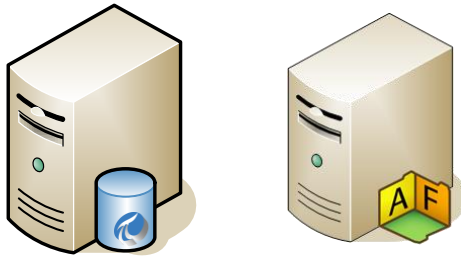
*All PI System data delivered on **your terms**, in **your language**, to  
the **tools you use**, and to the people that can make a difference.*





# PI Integrator for Business Analytics

## System of Record



- Guaranteed Delivery & Storage
- Full Fidelity of Sensor
- Optimized for Real-Time
- Backup/Restore
- HA
- Security

## Needs

Cleanse

Augment

Shape

Transmit

## Analytics Packages

### Visual Analytics

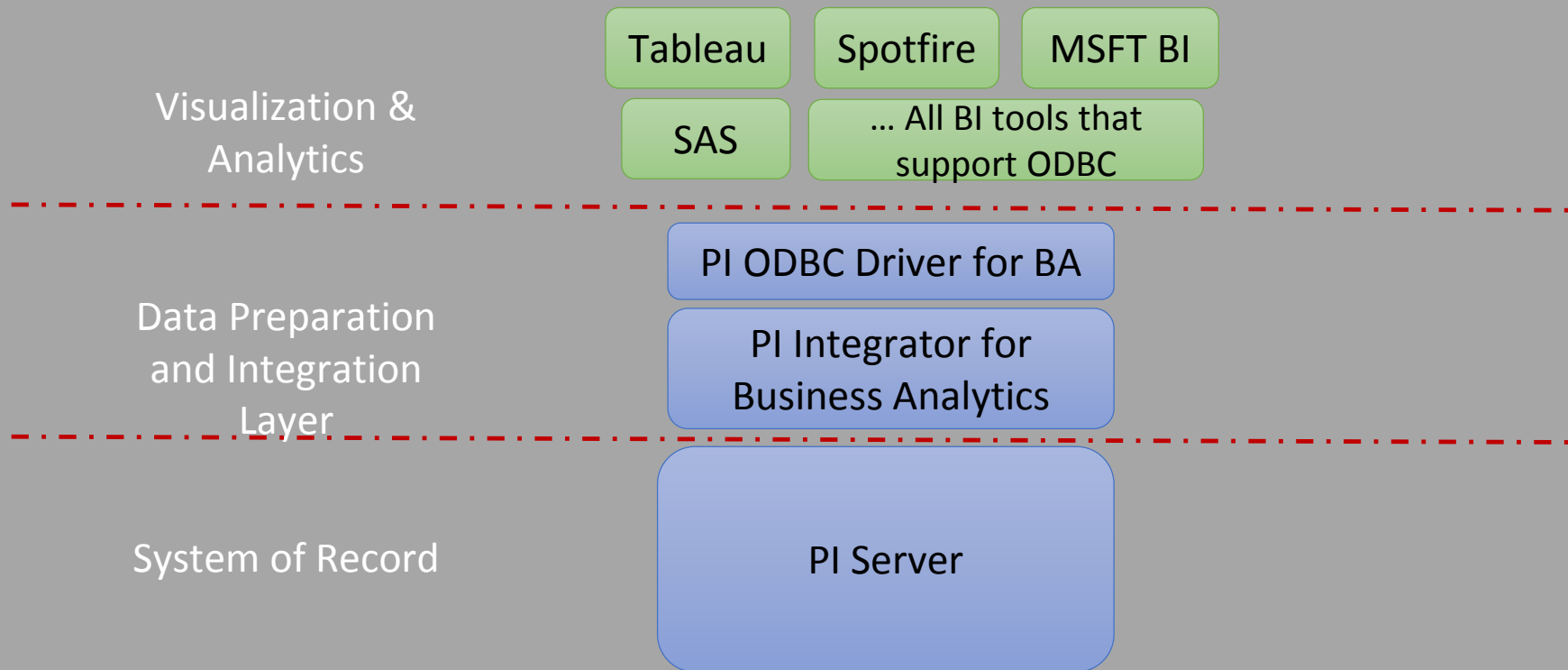


### Statistical Analytics

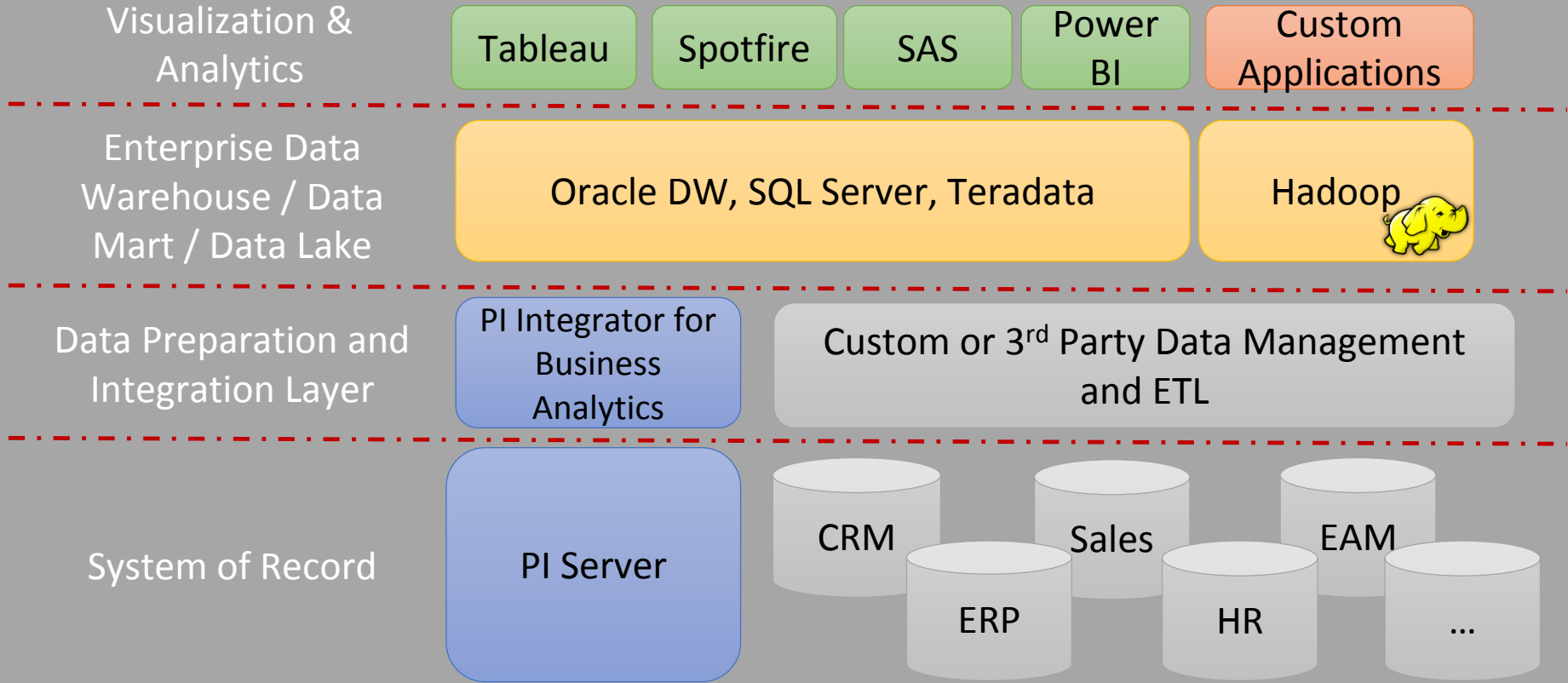


- Designed to Analyze Large Sets
- Expects that the Data Exists
- Problem Defines Data Shape
- Typically Evenly Spaced in Time

# Operational Reporting & Analysis Architecture



# Enterprise Data Warehouse Architecture



# SAP Application & Solutions Architecture

Visualization, Analytics, &  
Business Process Applications

Tableau

Spotfire

Lumira

SAP BW

SAP Solutions  
& Applications

Enterprise Analytics and  
Applications Platform

SAP HANA

Data Preparation  
and Integration  
Layer

SAP HANA Enterprise Information Management and Data Provisioning Agent

SAP IOT Adapter  
by OSIsoft

PI Integrator for  
Business Analytics

SAP & Partner Suite of Data  
Management Tools

Systems of  
Record

PI Server

CRM

ERP

Sales

HR

EAM

...



OSIsoft.

REGIONAL SEMINARS 2015

© Copyright 2015 OSIsoft, LLC

20

# Lighthouse Early Adopter Program



Merck  
Regeneron



EDF-RE



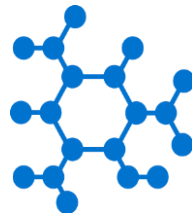
Cemex  
Alcoa GRP



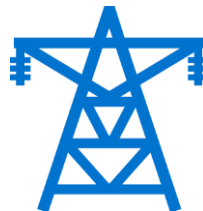
Freeport McMoRan



Devon Energy  
Noble Energy  
NOV



BASF



China Southern Grid  
SDG&E

# Lighthouse Customer Quotes

- “Tableau is very flexible when you aren’t as familiar with process data...only advanced users can do ad-hoc analysis in DataLink”
- "this will help me sell the value of PI data to the rest of the company"
- “we have an enterprise agreement for Spotfire...and most of our executives use QlikView”
- “we have over 60 process variables that we need to compare, model, and determine variations”



Time to Build Reports



Use Statistical  
Modeling Tools



Effort to Provide  
Operational Data to  
other Teams



Engineering



Executives

Data-Driven Decisions

Confidence in Decisions

Risk in Decisions



Align Disparate Data  
Sets



Improve Trust in Data



Lower Iteration Time  
for New Reports



IT



Analyst

Financial-based  
performance

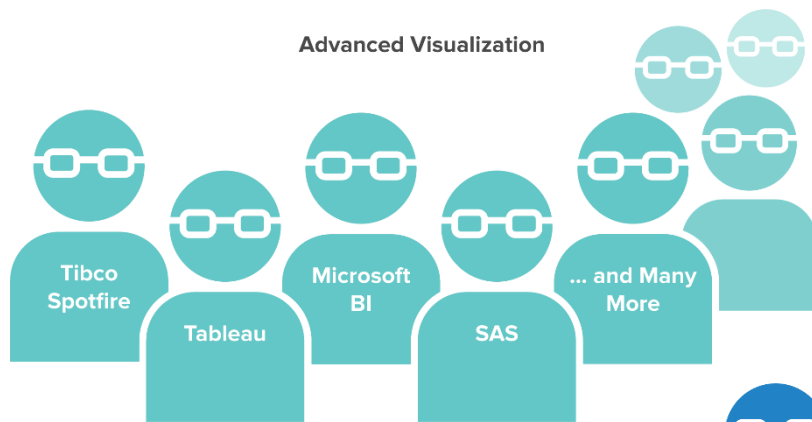
Costs

Analysis Time

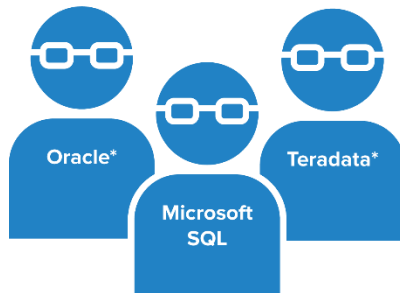


# What Systems Are Supported?

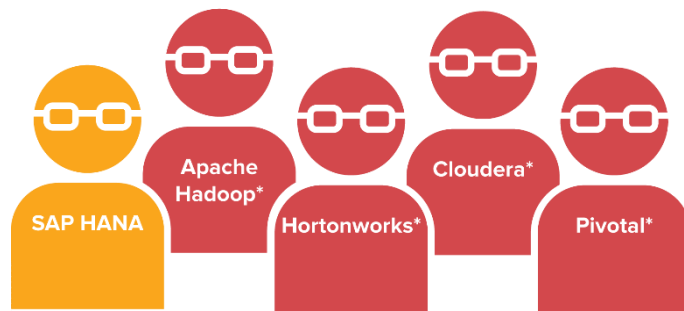
## Advanced Visualization



## Data Warehouse



## Big Data\*



\*Coming Soon, Stay Tuned!





# V1.0 Features – Q3/4 2015

## Platform Integration

- **BI Edition**

- Access data purpose-built purpose built via ODBC with first class support for Tableau, Spotfire, and Microsoft BI (Excel, PowerPivot, PowerView, Power BI)
- Works with any software with an ODBC data source connection

- **Data Warehouse Edition**

- Create Facts & Measures in Microsoft SQL

- **SAP HANA Edition**

- Automatically creates Virtual Tables via Smart Data Access (SDA)



# Next Steps?

## Start the Conversation Today

- Architectural Review
- AF Readiness
- Data Aggregation
- Security Model



# Contact Information

**Brian McMorrow**

[bmcmmorrow@osisoft.com](mailto:bmcmmorrow@osisoft.com)

Product Marketing Manager

OSIsoft



# Questions

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



State your  
**name & company**

# Please remember to...

Complete the Survey  
for this session



The **Power of Data**  
DECISION READY IN REAL-TIME

## Evaluation Form (Seminar Location - Date)

Name: _____	Company: _____			
Email: _____				
<b>Quality and content of the presentations</b>	<b>Poor</b>	<b>Good</b>	<b>Excellent</b>	<b>N/A</b>
Welcome	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Journey To Real-Time Operational Intelligence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Power of Connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tank Level Management System	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the PI System to Aid in Troubleshooting Operational Aspects of Oil and Gas Well Drilling and Completion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unleash your Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on the Spot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wrap-up/Seminar Conclusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Quality and organization of the seminar</b>				
Choice of date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time allowed for lunch/breaks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Choice of presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Break and time allowed for the presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



OSIsoft.

REGIONAL SEMINARS 2015



감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado



OSIsoft.

REGIONAL SEMINARS 2015

© Copyright 2015 OSIsoft, LLC