The Big Data and Business Intelligence Talk

Presented by Matt Ziegler, Product Manager
Overview

• Recap earlier sessions in case you missed out

• Extended Demo & Architecture Review
  – TechCon Version

• Early Adopter Customer Success Stories
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.
Big Expectations

64% of large enterprises plan to implement a big data project. 85% will be unsuccessful.

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

Downtime events

Startup Phases

Fleet Assets and Different Brands

Communications and incomplete data

Plant turn-around
3 Contexts / 3 Perspectives

- Time-series – Time Focus
- Assets – Equipment Focus
- Events – Event Focus
Why has this vision been elusive?

What we hear our customers saying
“We’re looking to get the data into tools like Spotfire.”

“We want to mix the data from PI and other systems in Hadoop.”

“Accessing the data in a relational database opens up the data to new users.”

“Our company has standardized on Teradata and Tableau for our business intelligence visualization.”

What we hear our customers saying
What we hear our customers saying

“It took us 40 days to get the data out of the PI System”

“We tried using OLEDB Enterprise but it timed out.”

“Writing code and supporting it is just not an option.”

2. It has to Scale (without code)
“My job is to provide one version of the truth to the whole organization so I have to be able to trust the data and have a repeatable process.”

“What we hear our customers saying

“Seeing the data in terms of wells and pumps makes it much easier for my end users.”

“It’s great that I can look at data across similar and different assets together.”

“Zeroing in on just the necessary data by using events for my application keeps things simple.”

What we hear our customers saying

3. Flexibility and trust
New Persona: Information Architect – The Hero

- Works in an IT or OPs IT role
- Responsible for integrating many data systems to achieve business goals
- Data Lifecycle Management
  - Access Policies & Distribution
  - Logical and Physical Architecture
  - Creation and Receipt (Trust)
  - Maintenance & Disposition
- PI Server is just 1 system
- Business Expert / Business Enabler / Not subject matter expert (engineer)
Early Adopters
Early Adopters
Freeport McMoRan

250+ Trucks, Route optimization, Fuel usage, Oil, and Maintenance
600+ Days, 1s and 5s data, 2BB rows, 200BB events
Quiz: Which option should (did) Freeport McMoRan choose?

Option 1) Change oil every day.
Option 2) Run machine to failure
Option 3) Change oil on a schedule
Option 4) Change oil based on an algorithm
Early Adopters
Devon Energy

PI Integrator for Business Intelligence
1) Web UI Data Designer

   a) User creates PI View in Web UI Data Designer via PI Integrator Service.

   b) View definition is stored in the PI System (Asset Framework).

   c) As needed View data is stored in an optimized format in the AF-managed SQL Server.

   d) Updates to the PI View are managed via PI Integrator Service

2) 3rd party requests data which routes through OBDC layer into the PI View
Quiz: Which option should (did) Freeport McMoRan choose?

Option 1) Change oil every day.

Option 2) Run machine to failure

Option 3) Change oil on a schedule

Option 4) Change oil based on an algorithm
Answer: Needs Business Context

60% of OSIsoft customers use SAP

ERP data, market data, maintenance and strategic planning data are required

100% of OSIsoft customers are using a Business Intelligence Application
# PI Integrators Roadmap

**Subject to change**

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### Wave 1 – Business Intelligence
- PI Integrator Lighthouse Program
- PI Integrator for Business Intelligence
- PI Integrator for SAP HANA
- PI Integrator for Hadoop*
- PI Integrator for Microsoft*

### Wave 2 – Statistical Analytics
- Machine Learning and Predictions*
PI Integrator for Business Intelligence

Data perfectly suited for BI

• Row Column Data (Dimensional model)
• Data alignments: Evenly spaced in Time, Reference attribute Time, By Events
• Comprehensive coverage of Asset Framework (AF)
• Event Frames – As Filters, As Data
• No programming or queries
• Data cleansing, filters, and business rules built in

View updates on a schedule

• Caveats: Q3/2015 does not detect history changes
Q3 2015

• **PI Integrator for Business Intelligence**
  - Create PI Views
  - Access decision ready data via ODBC with first class support for Tableau, Tibco Spotfire, and Microsoft BI (Excel, PowerPivot, PowerView, Power BI)
  - Works with any software with an ODBC data source connection

• **PI Integrator for SAP HANA**
  - Automatically creates Virtual Tables via Smart Data Access (SDA)
  - Native integration with SAP HANA
    - Linux and SAP HANA Cloud Platform
Early Adopters
Merck & Co

Through **15 billion calculations** and more than **5.5 million batch-to-batch comparisons**, Merck discovered that certain characteristics in the fermentation phase of vaccine production were closely tied to yield in a final purification step. "That was pretty powerful, and we came up with a model that demonstrated, quantifiably, that specific fermentation performance traits are very important to yield," says Megaro.

Early Adopters
Noble Energy

Many More

Carnegie Mellon (See EMEA UC 2014 presentation)
   Energy optimization in buildings
UCSD
   Solar PV, Synchrophasor, Machine Learning
UC Davis
   Beyond the meter usage signatures
SDG&E
   Weather Stations for load forecasting

Microsoft, Pepco, Southern China Grid, Servature, GRTgaz
PI Integrator Lighthouse Program

Jump start your big data or analytics project with help from OSIsoft. PIIntegrators@osisoft.com

https://www.surveymonkey.com/s/ PXW5L6X

6 week engagements through September 2015.
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Questions

Please wait for the microphone before asking your questions

State your name & company