

Please don't forget to.....



- MOBILE SURVEYS, please provide your feedback
- Post UC survey: Friday
 First 200 entries entered to win:
 - One of five free 2017
 OSIsoft EMEA Users
 Conference full registrations
 - Three night hotel stay

Share what you saw with friends on Twitter, Facebook Instagram or Linkedin!













Customer Showcases:

The Latest Products and Upcoming Releases

Presented by

Ray Hall, OSIsoft Elgonda la Grange, Honeywell John de Koning, Shell Arie van Boven, RWE Arco Stolk, RWE Brian Faivre, Deschutes Brewery Tim Alexander, Deschutes Brewery



We believe People with Data can Transform their world

Data Infrastructure for Digital Transformation PI Integrator for BA PI Integrator for Azure Cloud PI Coresight 2016 R2 **Big Data** Analytics **RWE** Data AF Workshop Infrastructure PI System 2016 R2 **Honeywell (p)** PI Connector for OPC UA Sensors **Devices** Assets PI Connectors

Customer Showcases

Honeywell

Elgonda la Grange

Director, Advanced Solutions
Software Products



Arie van Boven

Operations Analyst

Arco Stolk

Operations Analyst



John de Koning

Technology Manager Foundation Services



Brian Faivre

Brewmaster, Operations

Tim Alexander

Assistant Brewmaster, Engineering & Technology

Data Infrastructure for Digital Transformation























PI Connector for OPC UA

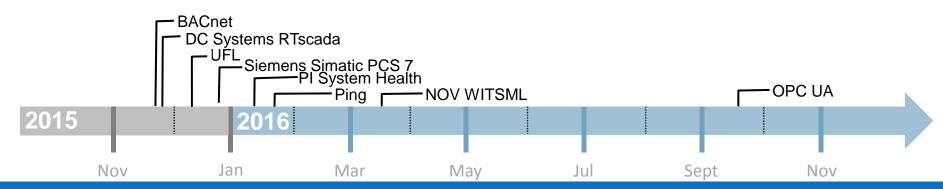


PI Connectors



Connectivity: Over 450 Interfaces and Connectors





Featuring PI Connector for OPC UA

Honeywell

Elgonda LaGrange

Director, Advanced Solutions Software Products



RWE

Arie van Boven

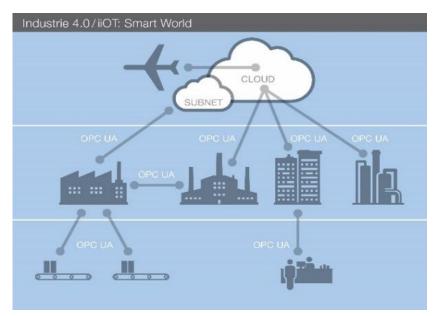
Operations Analyst

Arco Stolk

Operations Analyst



OPC UA: See More, Do More



Unleash Data Visibility & Analytics

Better Security

- IT/OT Best Practices
- Industrie4.0 endorsed

Simpler Infrastructure

- Any platform, any OS
- Non-PC components for connectivity
- Reduced middleware

Richer Data

- Data in context
- Easy consumption by PI AF

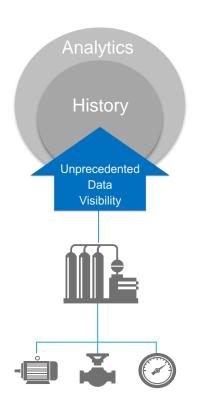
Access to more data

- Embedded on device
- Access to previously dark devices



"The only communication technology for industrial environments that I currently know of which provides integrated security functionalities and also offers performance potential to tackle the challenges of Industry 4.0 is OPC UA"

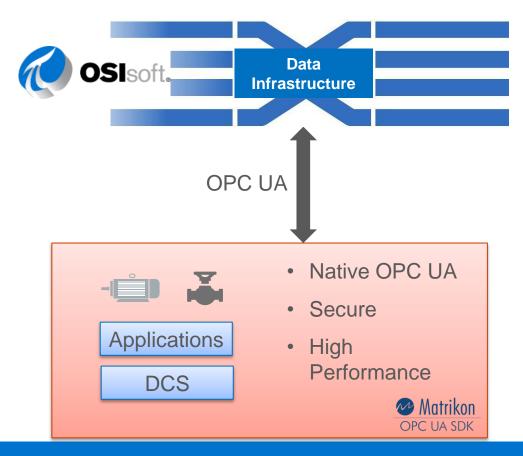
The Matrikon OPC UA SDK from Honeywell



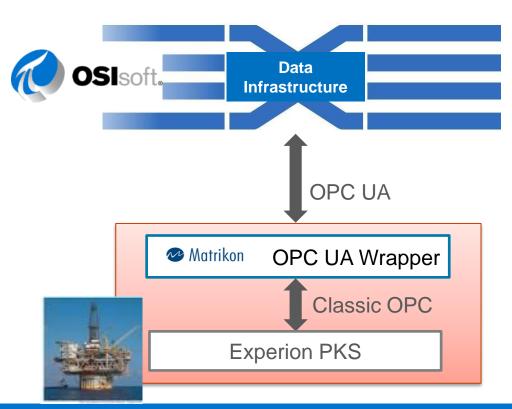
The only OPC UA Software Development Kit you need	
Minimized Footprint	Embedded OPC UA in virtually any product with minimal resource use
Maximized Performance	< 100ms update rates, 1 million monitored item updates per second
Highly Reliable	Built from embedded first principles, delivers maximum product uptime
Fully Scalable	One SDK for all products. From the smallest MCU to multi-core CPUs
Easy to Use	Minimized development time with easy drop-in 'OPC UA Server in a box' design

Honeywell – OSIsoft Collaboration

- OSIsoft and Honeywell currently testing the PI Connector for OPC UA with the Matrikon OPC UA SDK based server
- OSIsoft PI Connector for OPC UA collects data from OPC UA servers
 - Reads real-time (DA) values
 - Reads historical (HA) values during startup and after reconnections
- Scalability testing on data streams and throughput to provide best practices



Proof of Concept: International Oil Company



Proof of Concept Goals

- Reliability: Highly reliable data collection
 - Real Time (OPC UA DA)
 - Historical (OPC UA HA)
 - Data recovery when connectivity is lost
- Security: Aligned with IT/OT policies (Firewall friendly)
- Infrastructure Simplification

Centralize PI Infrastructure into a small number of Datacenters

Data Infrastructure for Digital Transformation







PI Integrator for Azure



PI Coresight 2016





PI System 2016 R2



'I Connectors for OPC UA



PI Connectors

Featuring AF Jumpstart

Honeywell

Elgonda LaGrange

Managing Director of MatrikonOPC



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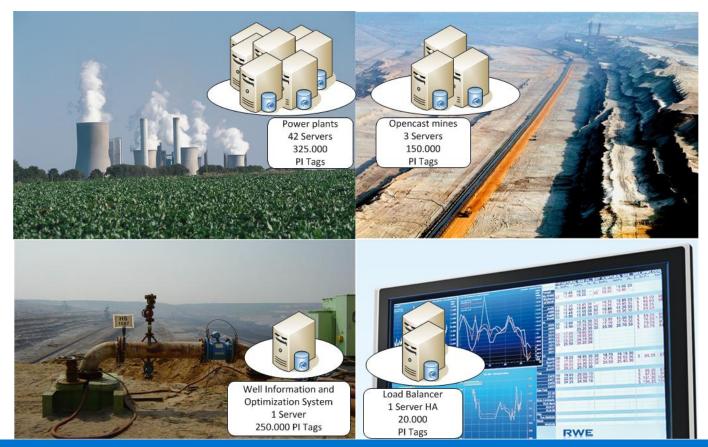
Supply & Trading: The commercial centre of RWE





- > Our headquarters in Essen, Germany, Europe's largest energy trading floor
- A centre of excellence in energy trading, with approximately 1,300 employees coming from over 37 countries

PI Systems at RWE



Load Dispatcher Challenge

Short-term optimization & control of RWE power plants

50 Hz 51 Hz 49 Hz

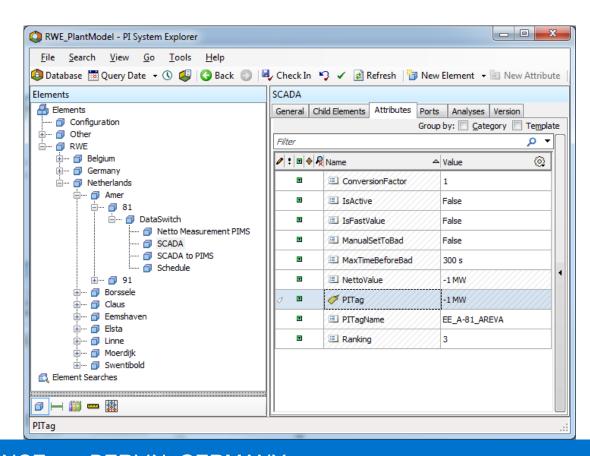
- Technical & economical conditions need to be considered
- Imbalanced grid has financial implications
- Reliable PI Data is required

RWE AF Plant Model

Summer 2015: In-house workshop

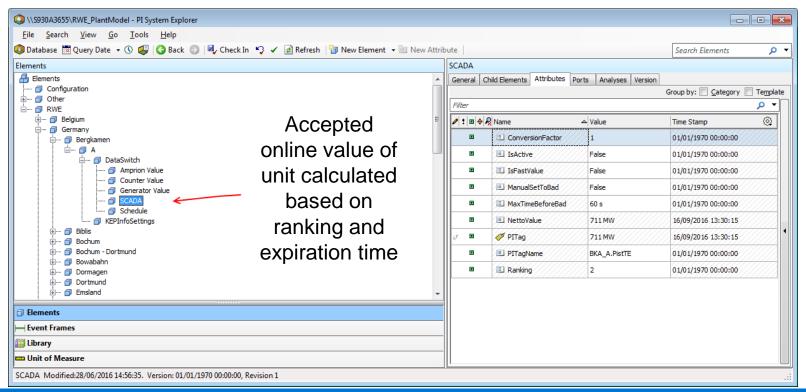
Gained know-how to create RWE Plant Model

Create new applications using the RWE Plant Model (replaces old applications)



New Application : Dataswitch

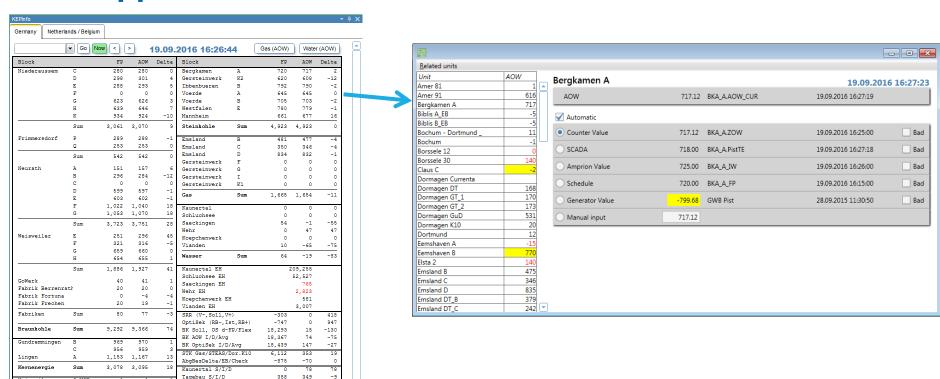
Create "one version of the truth" for each Technical Unit



New Application: Dataswitch

Dahosty Deet S/T/D

Direktabsatz S/I/D



Weisweiler

Weisweiler

Weisweiler

Lanfusces

Karnap

Bochum Dortmund G VGT

H VGT

24 23

29 30

12 12

39

108

43 82

401 509

Other Efforts

Moving to Future Data Tags: Eliminate Additional Databases

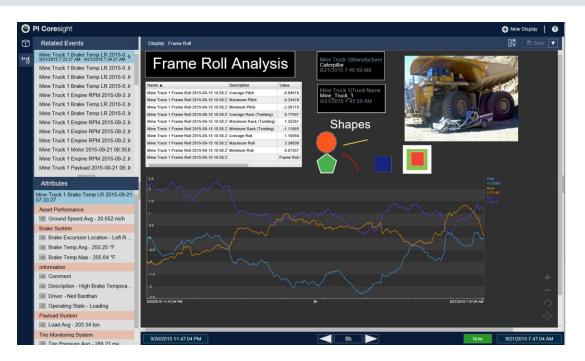
Adopting PI Coresight: Enable Mobile Devices

Testing on Amazon Cloud: Cost Reduction

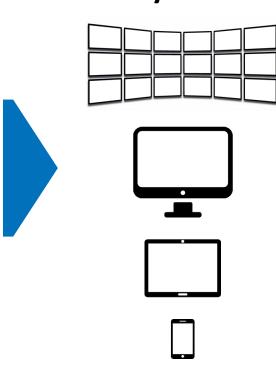
Data Infrastructure for Digital Transformation PI Integrator for BA PI Integrator for Azure PI Coresight 2016 R2 **Big Data** Cloud **Analytics**

PI Coresight: Next generation integrated visualization

Process monitoring | Ad-hoc analytics | Dashboards | Data entry



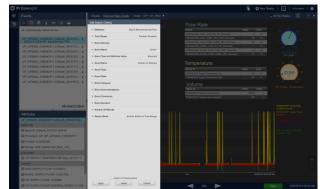
Anywhere



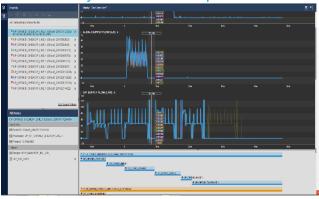
Time series | Events | Assets | Analytics | Notifications

PI Coresight 2016 R2

Event Search



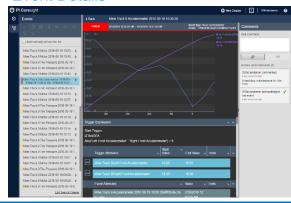
Ad Hoc Analysis / Event Comparison



Trend Configuration



Event Details



Event Detail Phone



Featuring PI Integrator for Business Analytics

Honeywell

Elgonda LaGrange

Managing Director of MatrikonOPC



John de Koning

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DEFINITIONS AND CAUTIONARY NOTE

Reserves: Our use of the term "reserves" in this presentation means SEC proved oil and gas reserves.

Resources: Our use of the term "resources" in this presentation includes quantities of oil and gas not yet classified as SEC proved oil and gas reserves. Resources are consistent with the Society of Petroleum Engineers 2P and 2C definitions.

Organic: Our use of the term Organic includes SEC proved oil and gas reserves excluding changes resulting from acquisitions, divestments and year-average pricing impact.

Resources plays: Our use of the term 'resources plays' refers to tight, shale and coal bed methane oil and gas acreage.

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate entities. In this presentation "Shell", "Shell group" and "Royal Dutch Shell" are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies. "Subsidiaries", "Shell subsidiaries" and "Shell companies" as used in this presentation refer to companies in which Royal Dutch Shell either directly or indirectly has control. Companies over which Shell has joint control are generally referred to as "joint ventures" and companies over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in a venture, partnership or company, after exclusion of all third-party interest.

This presentation contains forward-looking statements concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as "anticipate", "believe", "colud", "estimate", "expect", "intend", "may", "plan", "objectives", "outlook", "probably", "project", "will", "seek", "taget", "risks", "goals", "should" and similar terms and phrases. There are a number of factors that could affect the future operations of Royal Dutch Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this presentation, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell's products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, fiscal and regulatory developments including potential litigation and regulatory measures as a result of climate c

We use certain terms in this presentation, such as discovery potential, that the United States Securities and Exchange Commission (SEC) guidelines strictly prohibit us from including in filings with the SEC. U.S. Investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov. You can also obtain this form from the SEC by calling 1-800-SEC-0330.



Company Profile

- Shell is an innovation-driven global group of energy and petrochemical companies
- We are active in more than 70 countries
- Worldwide, we employ 94,000 full-time employees
- Our fuel retail network has around 43,000 service stations
- In 2014, we produced 3.2 million barrels of oil equivalent each day
- In 2014, we generated earnings* of \$19 billion
- We had \$24 billion of net capital investment in 2014
- We spent \$1.2 billion on R&D
- Royal Dutch Shell plc is a UK company, with its headquarters in the Netherlands
- We are listed on the stock exchanges of Amsterdam, London and New York

*On a current cost of supplies basis attributable to Royal Dutch Shell plc shareholders. Source; 2014 Annual Report and Form 20-F



Business Context

Where can I find my enterprise data?

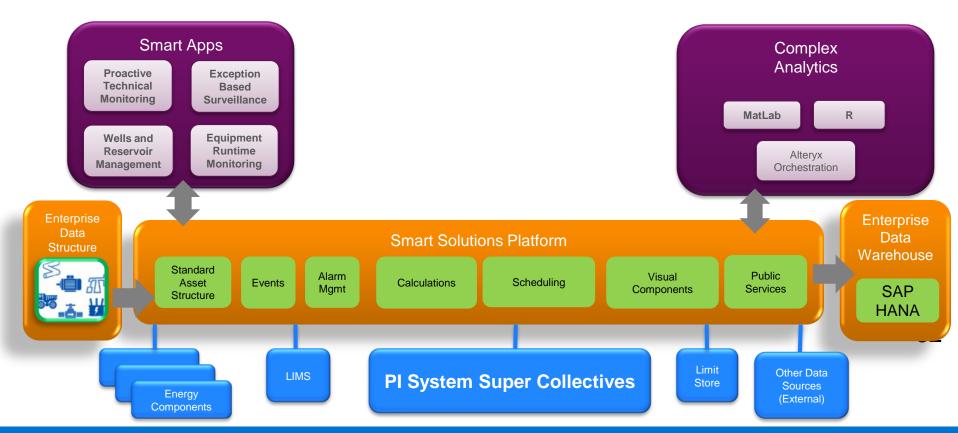
Do I meet my global targets?

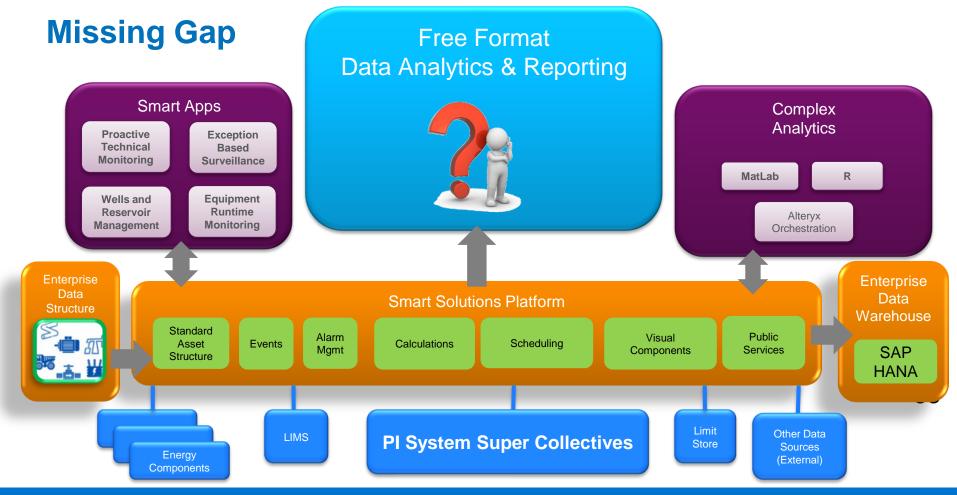


How is my equipment running compared to other sites?

How can I prevent downtime?

Strategic Response





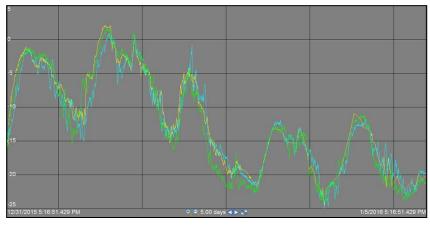


Proof of Concept: Carbon capture storage

- Albian oil sands in Canada produce heavy bitumen products which need to be upgraded
- Dense phase CO2 captured & compressed from the upgrader is transported by pipeline to 3 injection wells & stored approximately 2,300 meters underground in a deep geological formation



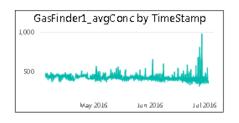
- 3 Laser Beams per field
- Ultrasonic Systems
- Weather Station

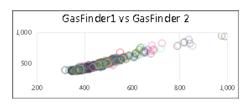


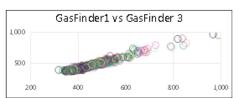
Measured data is sent to MATLAB via SSP for model based calculations

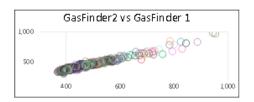


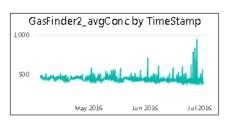
Proof of Concept Results: Easy self service visualization

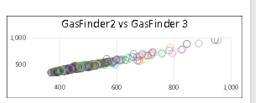


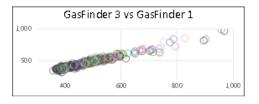


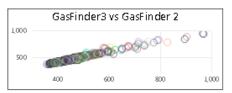


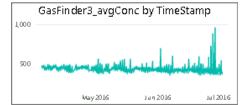


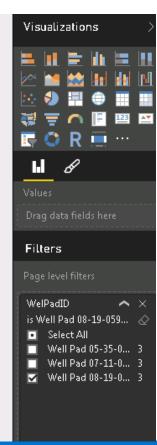




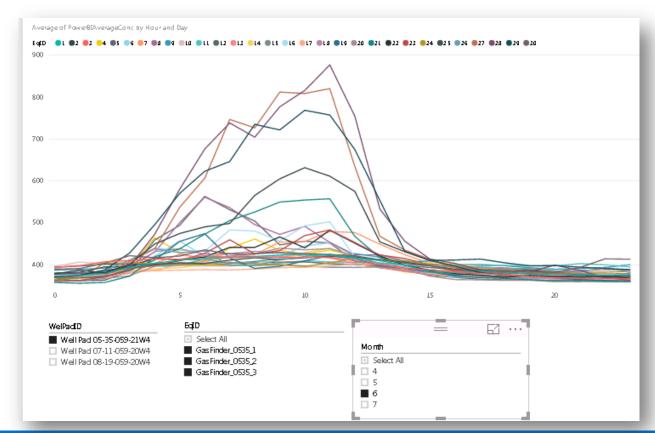








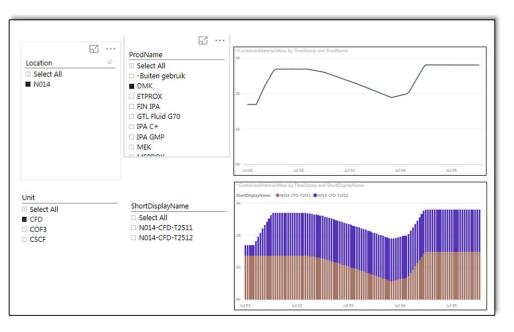
Proof of Concept Results: View the data how you want it

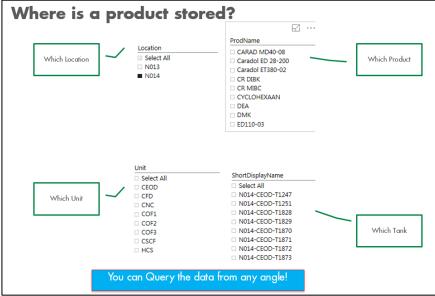


Proof of Concept Conclusion: Exceeds expectations

- Installation time of Business Integrator < 4 hours
- Reports build within 4 hours
- Requested views can be delivered in Power BI
- Results can be published in HTML5 via Power BI in any portal
- Refresh rate of data is flexible
- Views and data mining can be changed by filters

Proof of Concept: **Product stock**



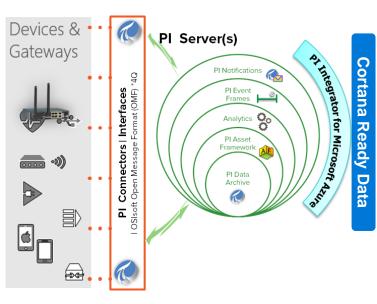


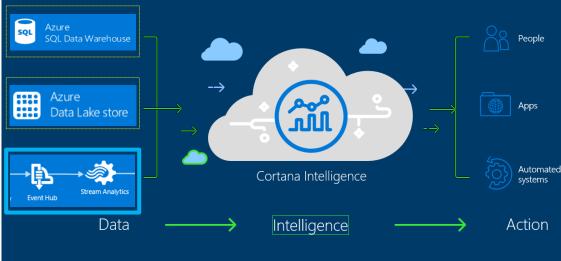
PI Integrator for BA: What is Next

- Potential for the future
 - Analyze optimum performance of similar equipment on global level
 - Global stock & logistic management
 - Global margin visualization
- Brings data analytics to a broad audience (not only data scientists)
- Flexible and no software coding required

New PI Integrator for Microsoft Azure











Microsoft

Featuring PI Integrator for Microsoft Azure

Honeywell

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Managing Director of MatrikonOPC



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Technology Manager Foundation Services

RWE

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Assistant Brewmaster, Engineering & Technology



- Located in Bend, OR
- Founded in 1988
- Pub opened in Portland, OR in 2007

- 2 brewhouses
- 50+ vessels
- Bottling and kegging
- 7th largest US craft brewer



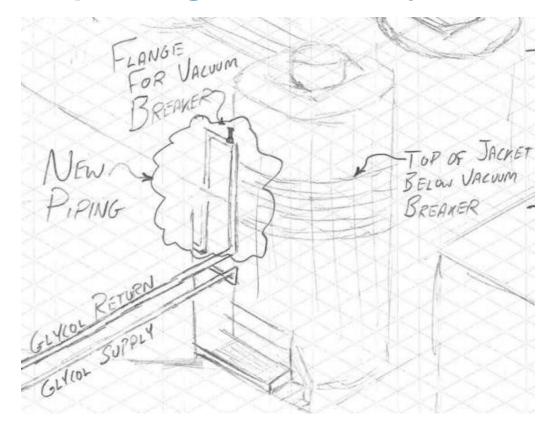


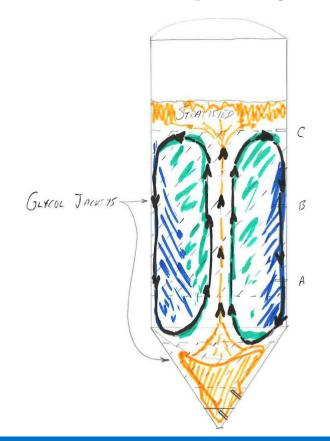




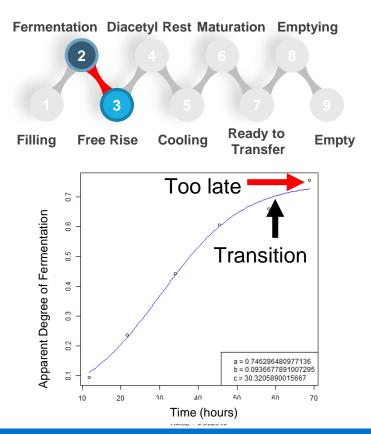


Improving Beer Quality and Production Capacity





Production Challenges



Impact

Up to 72 hours lost in production

Options

- \$750k for inline density meters
- Manually predict transition in spreadsheets

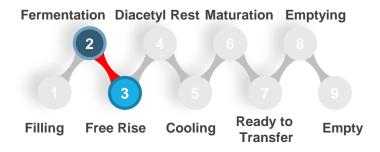
Constraints

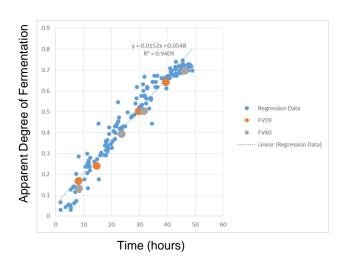
- One manual density measurement per vessel every 8-10 hours
- Large capital expenditure not an option

Challenges

Transition occurs between manual density measurements

Production Challenges





Impact

• Up to 72 hours lost in production

Options

- \$750k for inline density meters
- Manually predict transition in spreadsheets

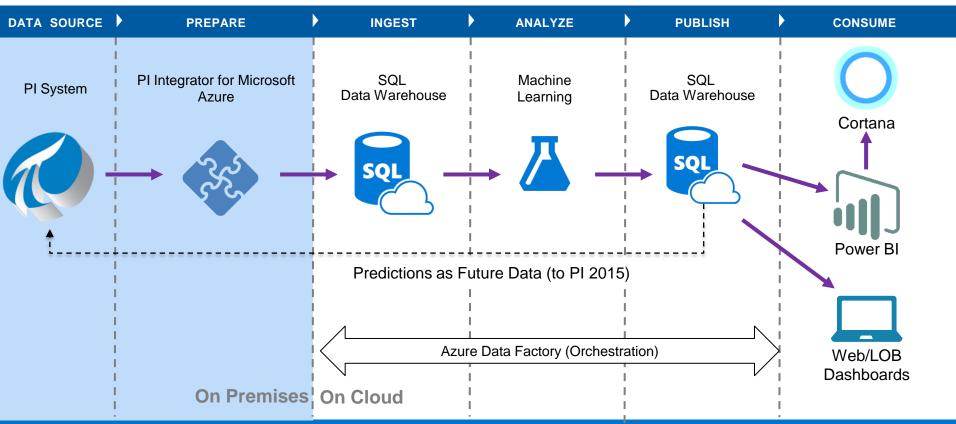
Constraints

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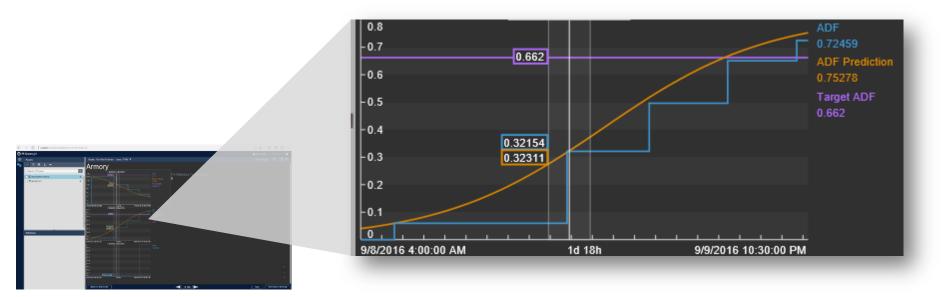
Challenges

- Transition occurs between manual density measurements
- Prepare data for predictive analysis for each batch
- Automate & operationalize predictions
- Continuously improve accuracy of predictions

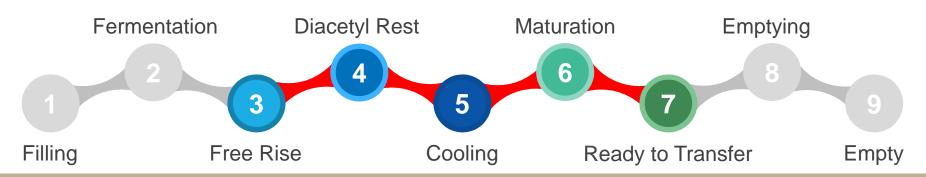
How to Operationalize Predictions



Accurately Predicting When the Transition Occurs



Future Opportunities





Data Infrastructure for Digital Transformation PI Integrator for BA PI Integrator for Azure Cloud PI Coresight 2016 R2 **Big Data** Analytics **RWE** Data AF Workshop Infrastructure PI System 2016 R2 **Honeywell (p)** PI Connector for OPC UA Sensors **Devices** Assets PI Connectors

We believe People with Data can Transform their world

감사합니다

Danke

Gracias

谢谢

Merci

Thank You

ありがとう

Спасибо

Obrigado



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- OSIsoft, LLC

