# OSIsoft + Microsoft collaborate to rapidly operationalize IoT Analytics initiatives

**Presented by** Sam Truswell, Senior Partner Marketing Advisor Rainer Muhm, Strategic Alliance Principal





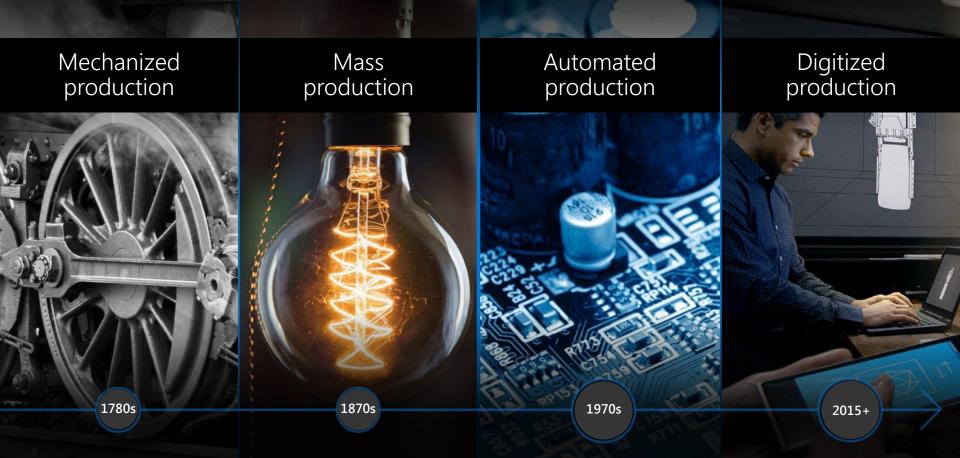
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- Time to start Digital Transformation
- Digital Transformation and IoT Analytics
- Microsoft and OSIsoft introduce RCIP



# Digital Disruption and the 4th Industrial Revolution





## **30%** simultaneous revenue increase and cost reduction for Industry 4.0 first movers by 2020, compared to only 2.9% p.a. and 3.6% p.a. respectively for the average company.<sup>3</sup>

Consumers will ultimately

choose the winners and losers among the companies and brands vying to deliver convenient, low-cost and customized

mobility solutions."4



of operational processes will be self-healing and self-learning by 2022.<sup>2</sup>

### Within 3 to 5 years,



hundreds of millions of things will be represented by digital twins.1 85% of manufacturing executives expect human-machinecentric environments to be commonplace by 2020.<sup>5</sup>

 $95\%\,$  of business leaders expect their company to use the IIOT within the next three years."^8

\$500b potential in savings for manufacturers and equipment

makers from virtualization, real-time communication, and cobot technology.

This infographic is based on Microsoft analysis of third-party data. Sources include: 1. <u>http://www.gather.com/wdf/3426/17</u>. DC FutureScape: Worldwide Digital Transformation 2017 Predictions Jan 2017 Doc # US4225917 Web Conference By: Michael Versace. 3 PWC 2016 Global Industry 4.0 Survey; Dr. Reinhard Geissbauer, Jesper Vedso and Stefan Schrauf, 4. <u>What's ahead for fully autonomous driving:</u> Consumer opinions on advances the behaviory. Digital Factory, Cracking the code. to success Russ Rasmus and Jason Nichols, 2016. 7. Daniela Costa, Head, European Capital Goods Equity Research, Globam Sach Research; January, 2017. 4. Connected Justices transformation how to unlock value from there of Things. Accenture: February, 2017.)

# **Companies start the Digital Transformation now**

Companies that are adapting to a digital world are 26% more profitable than their industry peers <sup>1</sup>

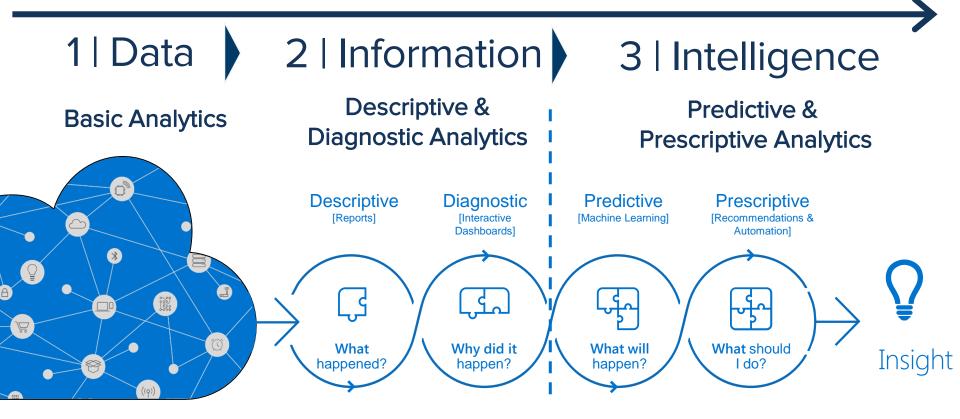
# What is the problem?

- People / Culture / Collaboration
- Adoption of a proper technology
- Identify and address relevant use cases quickly
- Manage the risk

<sup>1</sup> MIT Sloan research <u>http://www.leadingdigitalbook.com/</u>



# **Digital Transformation and IoT Analytics**



# Adoption of proper technology



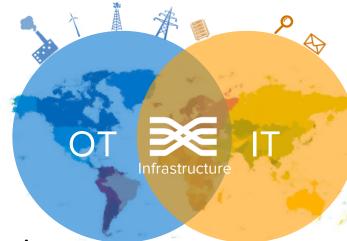
# **OSIsoft and Microsoft created RCIP to address IoT Analytics**



delivers an **open enterprise infrastructure**, to connect **sensor-based data**, **systems and people** for operational real-time insights that empower companies to optimize and transform their business.

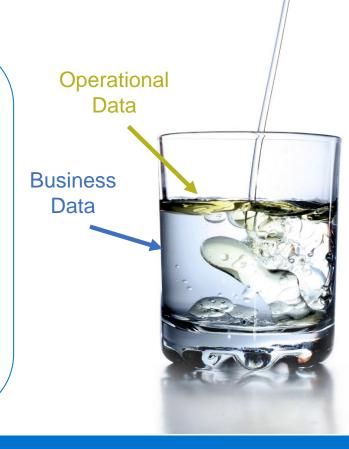


Microsoft's Cloud Platform, which includes Cortana Intelligence, Azure IoT, Power BI and the PI Integrator for Microsoft Azure, is a **recognized premier platform for Cloud AI and Big Data analytics**.



# **Red Carpet Incubation Program (RCIP)**

The Red Carpet Incubation Program (RCIP) is a comprehensive collaboration between OSIsoft and Microsoft to accelerate operationalization of IoT analytics using a business-oriented agile incubation process.

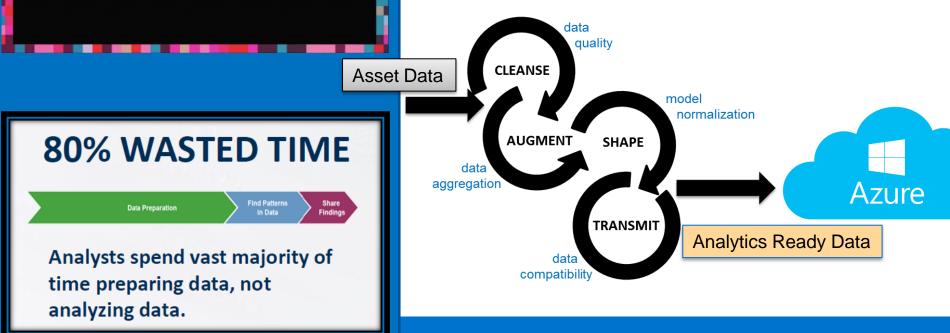




"Data scientists spend up to 80 percent of their time wrestling with the data rather than generating new business insights."

-NEW YORK TIMES

## PI Integrator for MS Azure provides Analytics-Ready Data | Context | Events via C-A-S-T



# Identify relevant use cases



# Leveraging the PI System and Cortana Intelligence to Increase Process Efficiency

#### COMPANY and GOAL

Deschutes Brewery is the 7th largest craft brewery in US, and wanted to maximize production with its existing infrastructure to fund construction of a third brewery in Roanoke, VA



#### CHALLENGE

Batch's phase transition happens between manual density measurements occurring every 8-10h

• Impact: Losing up to 72H in production time

#### SOLUTION

Use data science to achieve accurate predictive analytics for determining a batch's density measurements

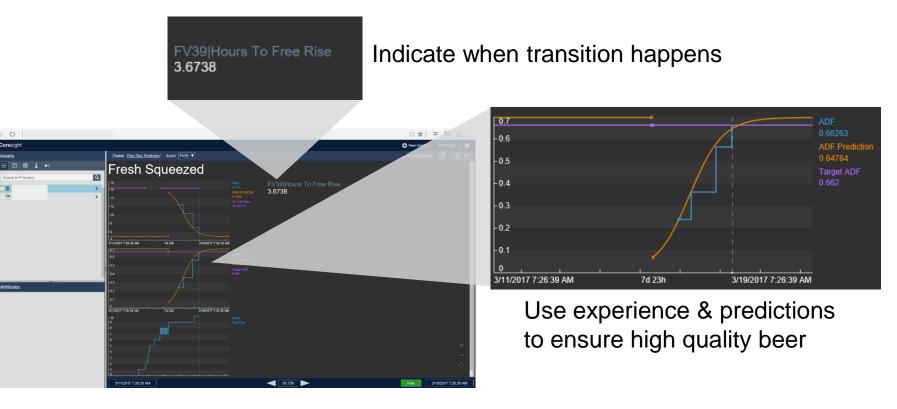
- PI System
- PI Integrator for Microsoft Azure
- SQL Data Warehouse
- Azure Machine Learning
- Azure Data Factory

#### RESULTS

Ability to eliminate production time losses and increase production capacity

• Accurate predictions of when a batch's phase transitions from fermentation to free rise

# Predicting the transition is a low-cost, accurate option



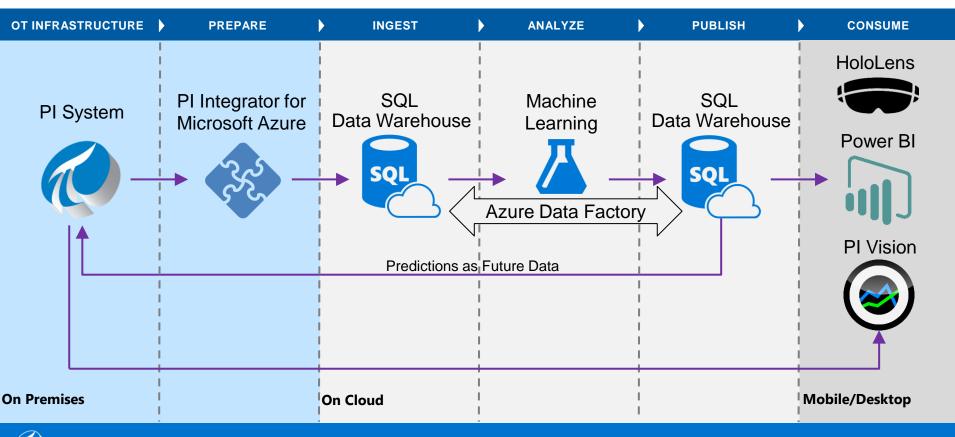
https://enterprise.microsoft.com/en-us/customer-story/industries/hospitality-and-transportation/osisoft-deschutes-brewery-used-project-springfield/



PI Coresinh

Attributes

## **OSIsoft PI System and Microsoft Azure Integration**



# **Mining Fleet Predictive Maintenance**

#### **Barrick Gold**

RCIP engagement provided the site with access to vehicle data like never before. Site was totally dependent on the vendor information, but now has access to data in a useful, meaningful manner. The site is now in the cutting edge of maintenance with Predictive models that detect engine failures before they occur.





David Luque, Control Engineer

#### CHALLENGES

Maintain large fleet of mining trucks with limited access to data

Site dependent on vendor to provide truck information

#### SOLUTION

RCIP team provided PI System connectivity to ingest VIMS data, develop PI AF models, and create analytics to detect over 60 different type of events

PII4MA published Asset and EF views, which are integrated with ERP, Dispatch, and maintenance data

Barrick and McKinsey developed PowerBI reports and Predictive models for inclusion in Barrick's newly-developed asset health software application

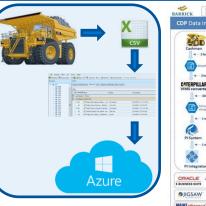
#### RESULTS

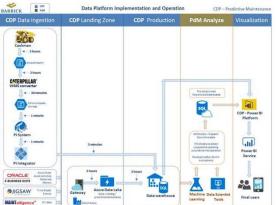
PowerBI reports providing detailed information on fleet performance, maintenance, and reliability

Predictive models to detect probability of engine component failure in the next 5 days

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- AF Workshop focused on Exhaust and Suspension Systems
- Project grew to include all truck Systems
- integration with CMMS for automated WO generation
- Integration with ESRI
- Presented at SF UC 2017







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- Worked with large Barrick-sponsored team involving Microsoft, McKinsey, OSIsoft
- RCIP participation to create ML models based on VIMS data
- Event and time-series data fed to DW via PII4MA
- Focused on detecting probability of major component failures



OSIsoft. EMEA USERS CONFERENCE 2017 LONDON Barrick: Fleet Management #OSISOFTUC ©2017 OSIsoft, LLC

# Use case determines the type of engagement

Microsoft Azure is the cloud technology of choice

## **RCIP-IoT**

- PI System on premise historical data available
- Utilizing PI Vision and PowerBI for use-cases like Remote Monitoring, Asset Performance Management,...

## **RCIP-IoT SaaS**

- New customer or new site without PI System on premise
- Don't want to manage / maintain PI System

## **RCIP-AI**

• PI System on premise – 2 years of historical data, with detailed resolution and context available to address e.g. predictive or prescriptive analytics for pump failure predictions



# Manage the risk



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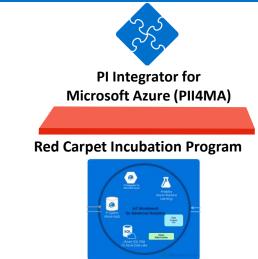
# **Red Carpet Incubation Program (RCIP)**

"We like the agile approach of OSIsoft and Microsoft's Red Carpet Incubation Program for rapid operationalization of advanced analytics, helping us to harness the potential of digital technology and unlock value across Barrick's business,"

said Ed Humphries, Barrick's Head of Digital Transformation.







#### IoT Workbench for Advanced Analytics (Azure-based)

#### **Red Carpet Incubation Program Early Adopter Customers**





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RCIP is available today!

OSIsoft and Microsoft together can accelerate your IoT Analytics initiative

Talk to your OSIsoft Account Manager about your digital strategy and IoT Analytics use case



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## Questions

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

# State your name & company



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