The Role of the PI System in IIoT

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OSIsoft
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Our World Is Digitally Transforming

1.6B

1.2B

400M

2.0B

110M

300B

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The Opportunity: Top Digital Companies vs. Competition

Revenue Growth	Profit	Shareholder Returns
5X	8X	2X
Their rivals	Their rivals	Their rivals

McKinsey and Company-McKinsey Digital Quotient, Capital IQ

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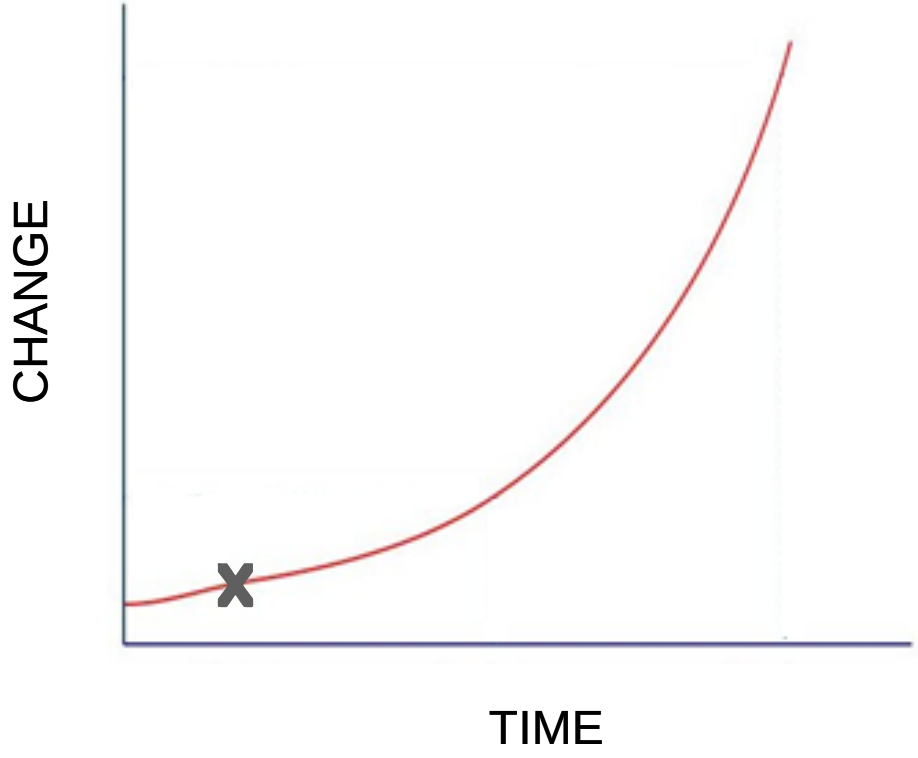
Change is the only constant



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Data-driven Transformations via the PI System

Safety & Security	Energy	Productivity	Asset Health	Quality	Regulatory Performance
PETRONAS	Kellogg's	ALCOA	Syncrude Securing Canada's Energy Future	Janssen Pharmaceutical Companies of Johnson & Johnson	Maynilad
Eliminated **5 unplanned** shutdowns in first year	Reached **$3.3 million** in annual energy savings	**Industrial Demand Response** and Smart Manufacturing	**Saved $20M** per year by smarter maintenance	**Eliminated 1000+ paper documents** via digital lifecycle tracking	Recovering **640M liters** of treated water

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IIoT Digital Transformation Is Happening Today

Assets	Sites	Enterprises	Community
Multiple **Sensors**	Multiple **Assets**	Multiple **Sites**	Multiple **Enterprises**
1.5 Billion Tags	**19,000 Sites**	**160+ Enterprise Agreements**	**70+ Connected Services Agreements**

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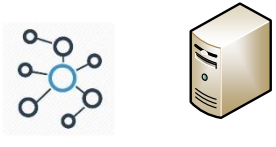
The Role of IIoT within Industrial Operations

Traditional Operations

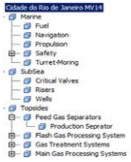
Sensor

Process Control System

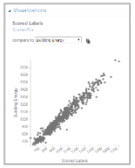


Connect

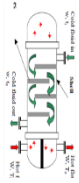
Store



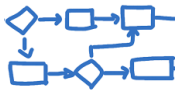
Structure



Analyze



Model



Implement

Automate

IIoT Enabled Operations

Sensor

Connect Gateway

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The Role of the PI System in IIoT

Traditional Operations

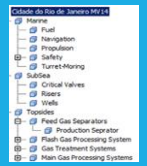
Sensor

Process/ Control System

PI Connectors

Connect

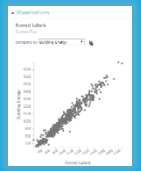
PI Server



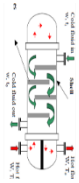
Store Structure

PI Visualization

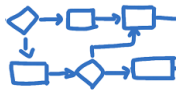
PI Integrators



Analyze



Model



Implement

Automate

IIoT Enabled Operations

Sensor

Connect/ Gateway

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Two Use Cases for “New” IoT

Monitor what you couldn’t

Add insight around existing systems

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Use Case: Connect What was Physically and/or Economically Not Possible Before

…. Remote and mobile assets

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New Sensors Outside of Existing Systems

EMERSON

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Rosemount™ 708 Wireless Acoustic Transmitter with Steam Trap Monitor

Featuring ultrasonic acoustic event detection that mounts externally, the Rosemount™ 708 Wireless Acoustic Transmitter with Steam Trap Monitor offers a fast, cost effective installation. This device allows visibility into steam traps and pressure relieve valves (PRVs) by accurately communicating acoustic level and temperature data as well as device data, event status and leak detection via the *Wireless*HART®network. The Steam Trap Monitor software option provides real-time information about steam trap conditions, energy usage and emissions.

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DTE Energy Shortens Customer Outages

With Wireless Sensors & the PI System

Challenge

Determining where to send crews during outages to minimize patrol times and reduce duration of outages.

Solution

Install wireless sensors to help pinpoint fault locations. Leverage OSIsoft technology to collect and share this data across the enterprise.

Results

Prevented spending **$25** million in Capex. Reduced 6.6 million customer outage minutes annually.

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Use Case: Upgrade Existing Systems with New Sensors

BEFORE

AFTER

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Advantages of Wireless Sensors vs SCADA

DTE Energy

- Capital Expense
  - SCADA is ***$30K*** per install
  - Wireless is ***$5k*** per installation
- Deployment Time
  - SCADA takes ***months*** to deploy
    - Requires a shutdown
    - Significant construction
  - Wireless takes ***hours*** to deploy
    - Can be installed on live wires
    - 1 bucket truck and 2 people

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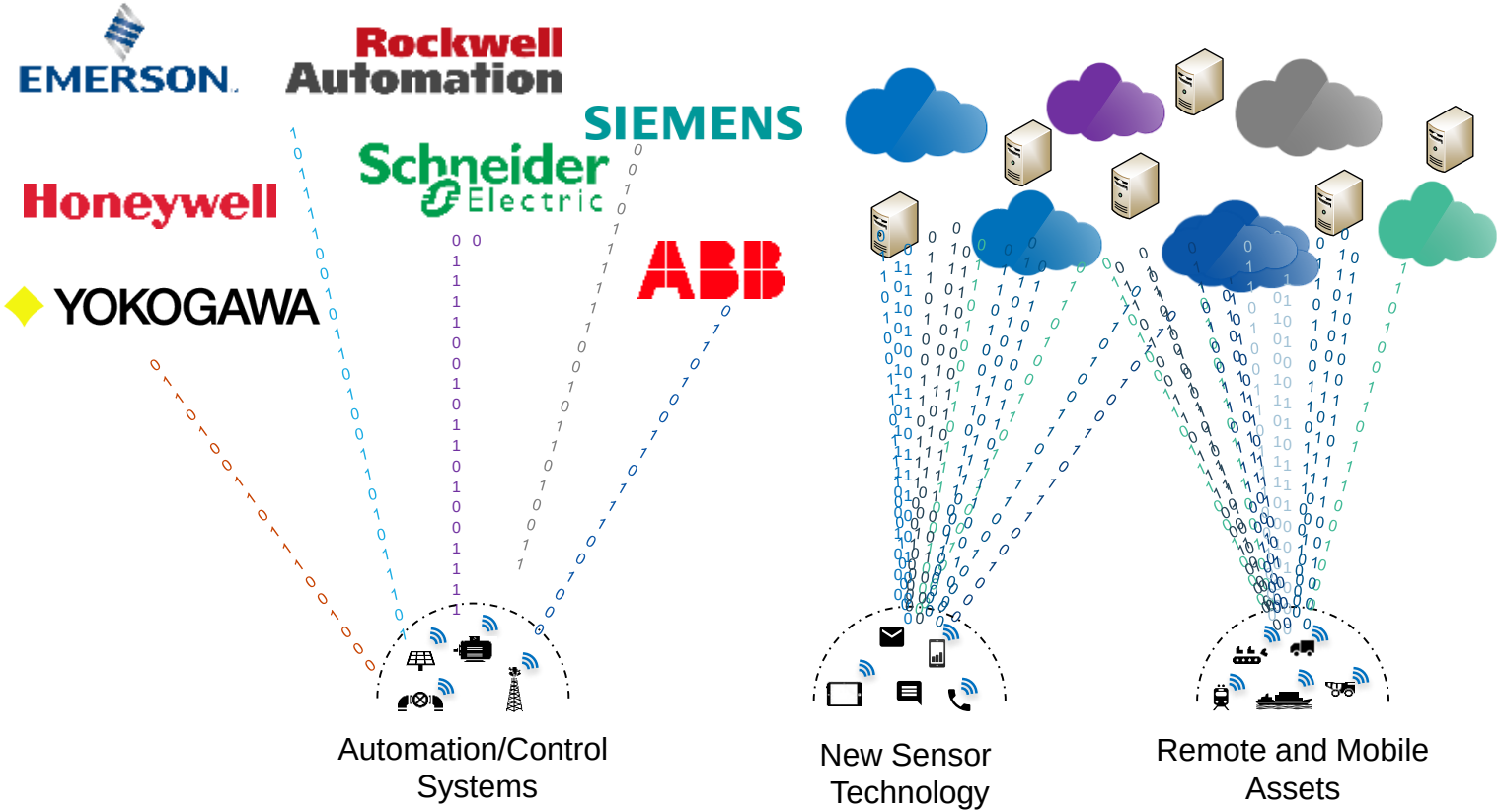
The IIoT Challenge



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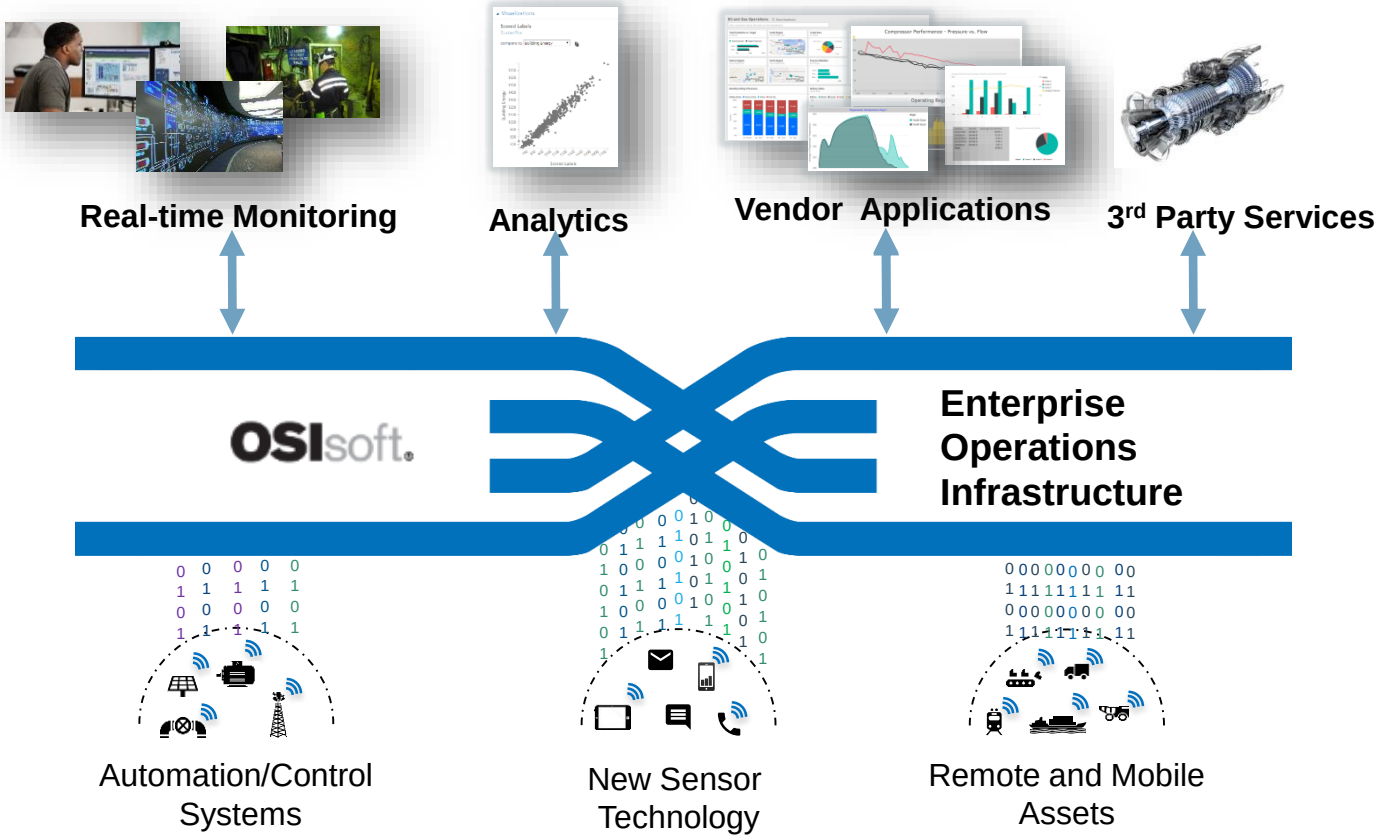
Strategic Approach to an IIoT Enabled Enterprise



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NEW OSIsoft IoT Focus

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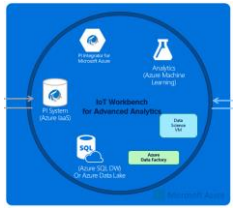
Red Carpet Incubation Program (RCIP)

*"We like the **agile approach of the Red Carpet Incubation Program,** helping us **unlock value across Barrick's business.**"*
Ed Humphries, Barrick's Head of Digital Transformation.

BARRICK

OSIsoft. Microsoft

PI Integrator for Microsoft Azure (PII4MA)



IoT Workbench for Advanced Analytics

Red Carpet Incubation Program Early Adopter Customers

Craft Brewery (USA)	Multinational Chemicals (Germany)	Oil and Gas (USA)	Power & Utilities (Japan)	Power & Utilities (Sweden)	Metals & Mining (Canada, USA)

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Deschutes Brewery Case Study Video

- Predict transitions in the brewing process
- Shorten production time and improve quality
- Apply predictions to *new* brands entering production

Wrap-up

1. Transformation = Change
2. Leading enterprises are 5-8X more successful
3. IIoT provides visibility where there was none
4. IIoT provides deeper visibility into existing processes

RED CARPET INCUBATION PROGRAM

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감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado

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OSIsoft

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