



OSIsoft's Connected Services enables Global Rotating Equipment Monitoring

Presented by Greg Herr
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Opening Thoughts

- By 2020, an estimated 26 billion devices around the globe will be connected to the Internet (2 billion today)
- 3 of 4 of companies exploring how to use the IIoT to improve their internal operations and services
- Industrial Internet of Things (IIoT) is not something to buy
 - Must be strategically built with partners

1%

performance
improvement



500k barrels/day

\$19 billion / year

Agenda

- About Flowserve
- Evolving Business Model and Customer Needs
- How the PI System Augments our Service Model
- System Architecture Overview
- What Have We Learned
- Results and What's Next

About Flowserve



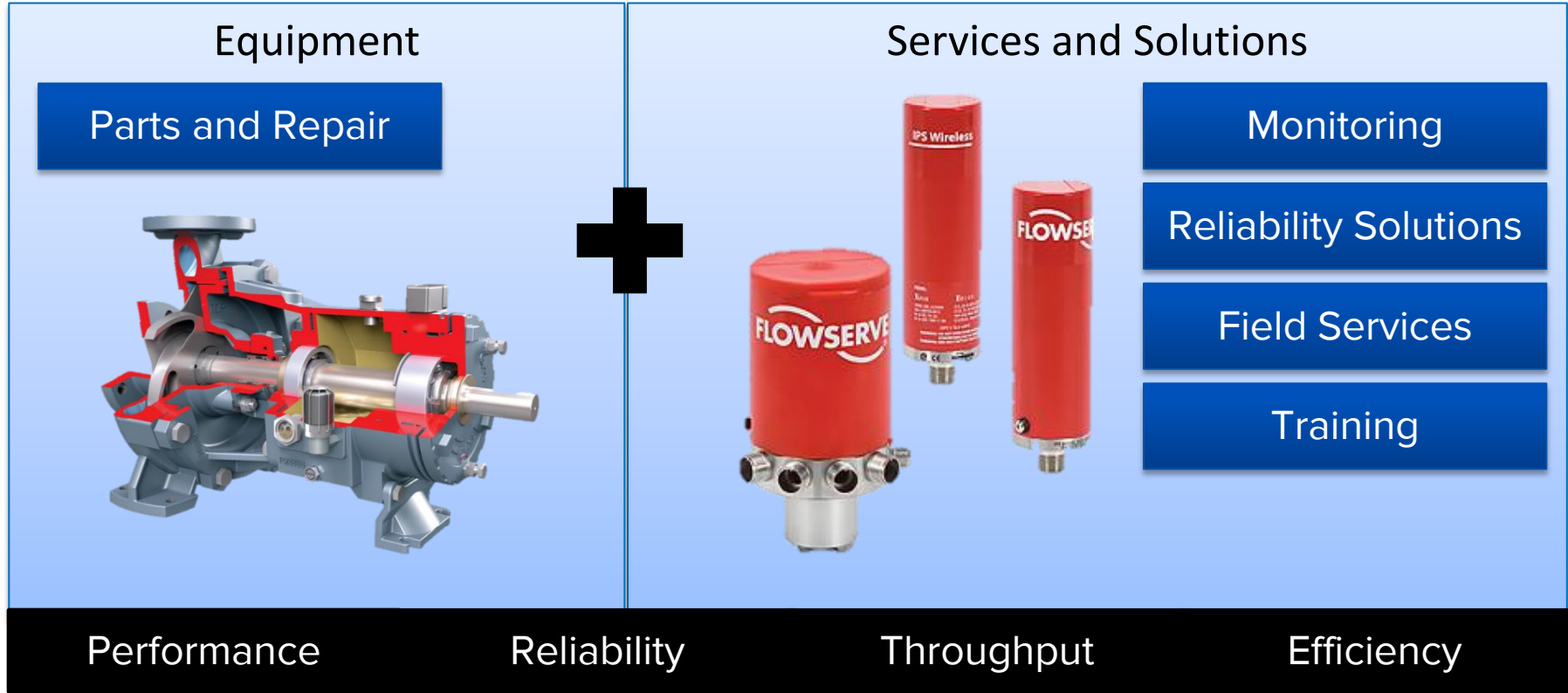
- 200 years of Fluid and Motion Control experience
- Rotating Equipment
 - Pumps, Valves, Seals, and Related Services
- Historically a “big iron” company
- 15k employees in more than 50 countries
- Power, Oil & Gas, Chemical, Water and Other Industries



FLOWSERVE Pump Division *A History of Excellence*



Evolving Business Model / Customer Needs



Flowserve's IIoT Strategy

Customers Are Asking

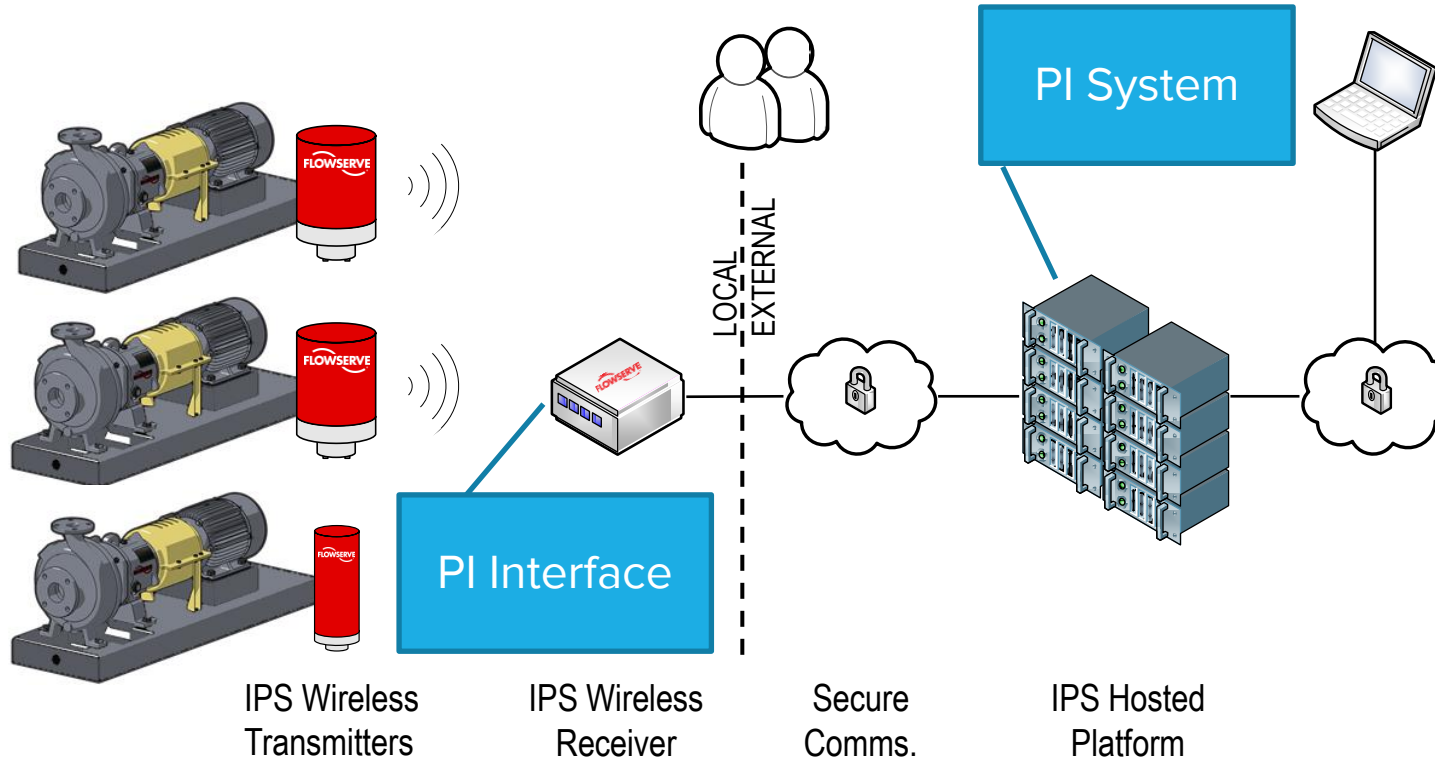
- How do I drive a step change in reliability?
- How do I quickly acquire data from my rotating equipment at plant floor level?
- How do I connect all these assets in an economic and scalable fashion?
- How do I bring this data / information up to my enterprise platform?
- Now that I have this data, what do I do with it?

Flowserve's Offerings

- IPS Performance Products
 - Data Acquisition
 - Wireless Connectivity
- IPS Hosted Platform
 - Data Historian
 - Visualization
 - Analytics
- Engineering Services
 - Reliability Solutions

Improve Collaboration with Technology

Customer and Flowserve Engineers



- PI Collective
- PI Server
- Asset Framework
- Notifications
- PI Interfaces
- PI OLEDB
- Enterprise
- PI ProcessBook
- PI WebParts
- ...

How the PI System Augments our Service Model

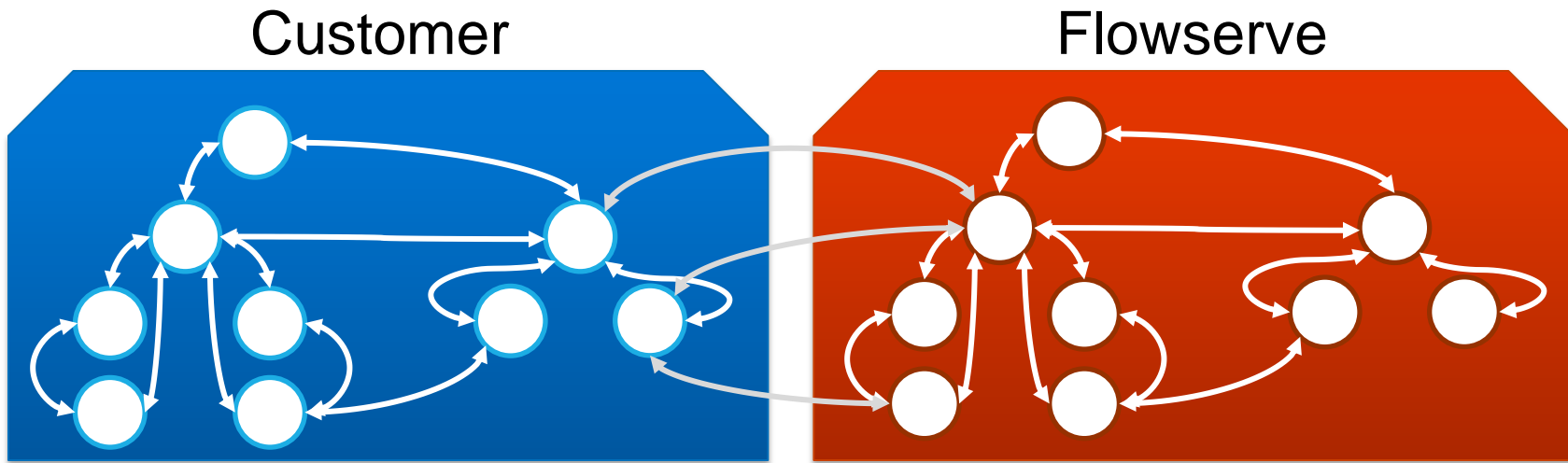
- Technology as an enabler for our service model
 - OSIsoft provides the tools
 - Archive, Calculation Engine, Visualization
 - Flowserve provides the industry knowledge and expertise
- Flowserve augments with industry specific features
 - (eg. FFT waterfall analysis)
- Single Source of Data/Information

What Have We Learned / Experienced

- Security is at the forefront of consideration
- Sometimes you go to a site with the solution in place
 - Sometimes you have to collect data first
- Focus on the desired outcome!
 - Technology is an important enabler, but the functional goal should remain the driver of any project.
 - Goals may shift or become more clear throughout the project → Be willing to adapt

Communicate & Create Relationships to Foster Success

- Relationships are essential to fostering success
- Inter and Intra company communication is critical



Know your Stakeholders and Manage Change

- Know your stakeholders
 - Beware of the invisible stakeholder
 - Many levels of stakeholders
 - Vibration tech through plant manager all are important
- Change management is central to success
 - Maintenance, Operations, Vendor Relationships
 - Roles, process changes, and cultural shifts

Customers are asking for more

“Wow, how are you able to get the data so easily? We want that too.”

Flowserve can provide so much more...

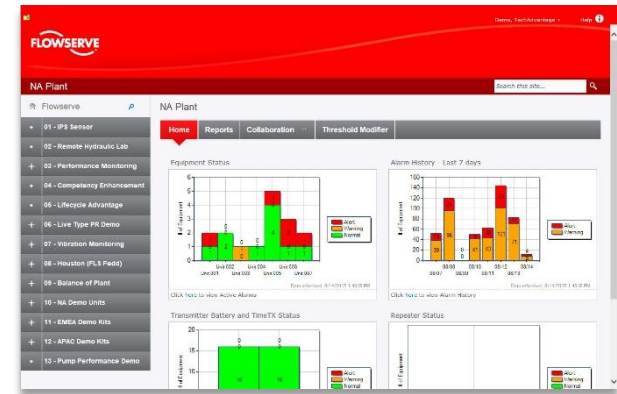


Results and What's Next

- Win-Win for Flowserve and our Customers
 - Improving reliability and throughput
 - Preventing failures and improving maintenance
 - Example: \$600k savings
- Continuous Improvement Process
 - Listening to feedback from our customers
 - Working with Flowserve engineering on enhancements
 - Hardware, software, processes

Summary

Flowserve is leveraging sensors, communications, and Industrial Internet technology to become a better reliability partner for our customers.



BUSINESS CHALLENGES

- A. Changing business and customer needs
- B. Customers need more data and information to drive their processes
- C. Customers are asking for a step change in reliability of equipment

SOLUTION

- A. Leveraged OSIsoft technology as an enabler for providing services
- B. Built out a robust data acquisition offering
- C. Paired technology with Flowserve asset expertise to provide reliability solutions

RESULTS AND BENEFITS

- Win-Win for Flowserve and our Customers
- Improving Reliability and Throughput
- Preventing failures and improving maintenance (ex: \$600k process savings)
- Continuous Improvement Process

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Questions

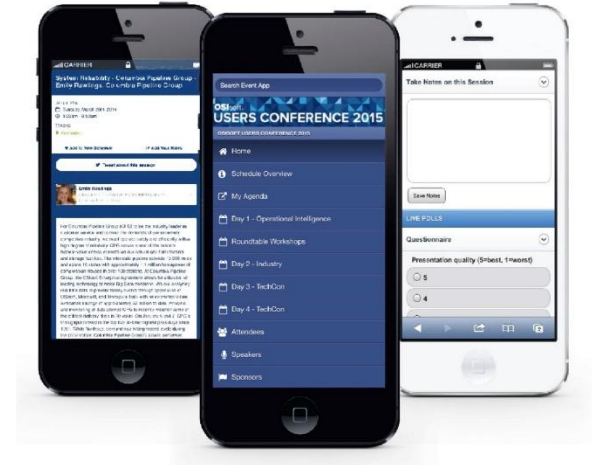
Please wait for the **microphone** before asking your questions



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谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado