



Predict Performance

Asset Health Monitoring
Solutions for Your Entire Plant



Experience In Motion

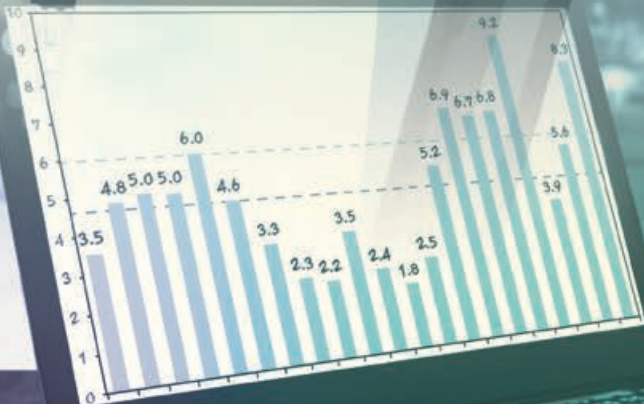


New solutions from an industry leader

Our advances in analytics expand the depth, breadth and speed of our diagnostic and predictive capabilities. By partnering with Flowserve, you'll gain access to the most experienced engineering minds in fluid motion and control as well as our new program that turns physics into data, data into actions, and actions into results.

Driving step change in reliability

The Flowserve suite of IIoT products, software and services helps plant reliability engineers, operators and maintenance personnel monitor and predict equipment performance, so they can take prompt actions and reduce unplanned downtime.



By combining Flowserve's innovative IIoT products, analytics technology and expert service, you can:

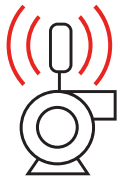
Elevate profitability. Focus only on those assets which require attention, and avoid unplanned downtime and wasted efforts from evaluating healthy equipment.

Enhance equipment efficiency. By knowing where all your assets are on their respective pump operating curve, you can optimize for maximum efficiency.

Improve safety. Reduce the time technicians spend in higher-risk areas by knowing exactly where the problem is and what it will take to fix it.

Use your existing infrastructure. Our IIoT solutions are built on an open platform, so they'll work with your existing systems and processes.

Knowledge drives action



Know

Know what's happening with all your flow control equipment.



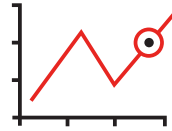
Act

Take informed corrective action to head off issues before they affect production.



Optimize

Use advanced diagnostics to fine-tune equipment and maximize operational efficiency.



Predict

See potential issues well in advance and implement procedures to mitigate them.

The Flowserve approach

Data collection

Innovative sensors reliably and securely collect and transmit detailed performance data from any equipment (critical or non-critical). Our sensors collect the near real-time snapshot or real-time, full-spectrum data you need to evaluate asset health and address equipment problems before they impact your organization.

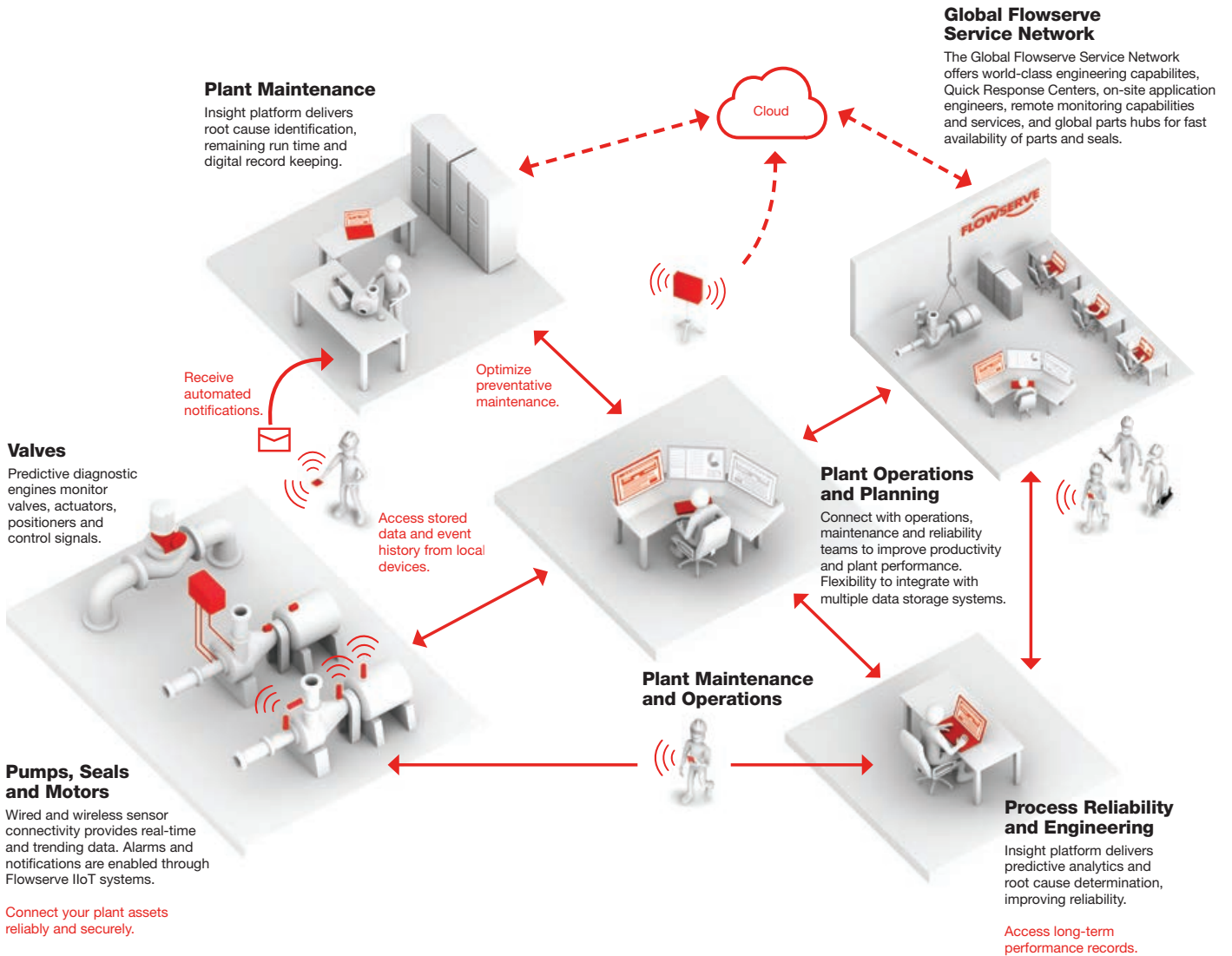
Data analysis

Flowserve is unique in the industry because we develop data analysis software and algorithms based on our unmatched pump, rotating equipment and fluid motion expertise. Unlike other offerings, our software and analytics can learn from equipment lifecycles, predict their future working life, diagnose equipment problems, and prescribe the exact steps to fix them.

Rapid response

When it comes to repairing and maintaining rotating equipment, you need access to qualified engineers, technicians and parts — and you need it fast. Flowserve engineers and technicians who have experience servicing flow control equipment can not only help customers around the world solve equipment-related problems, but also identify ways to get the most out of their rotating equipment and reduce operating costs.

Technology, services and capabilities



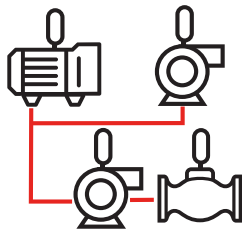
A proven process

Flowserve's asset health monitoring follows a comprehensive and proven process to advance your existing capabilities and improve reliability. Our solutions are scalable, so they'll grow with your needs. And because they're built on open-source platforms, you don't have to use technology or equipment from one specific manufacturer. Our approach includes solutions for critical, key and balance of plant equipment.



Assessment

- Data acquisition
- Installation and commissioning
- Monitoring and optimization
- Long-term service and support



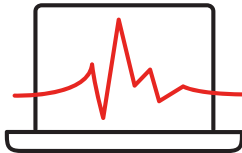
Data acquisition plan

- Technical model that establishes monitoring levels
- System design
- Select monitoring equipment
- Local plant site or hosted cloud option
- Utilize the default HMI design or develop a custom one
- Visualization and alarms/notifications



Installation and commissioning

- Install new or repurpose existing monitoring equipment and infrastructure
- Install gateways as needed
- Software setup and configuration
- Customer training as needed



Monitoring and optimization

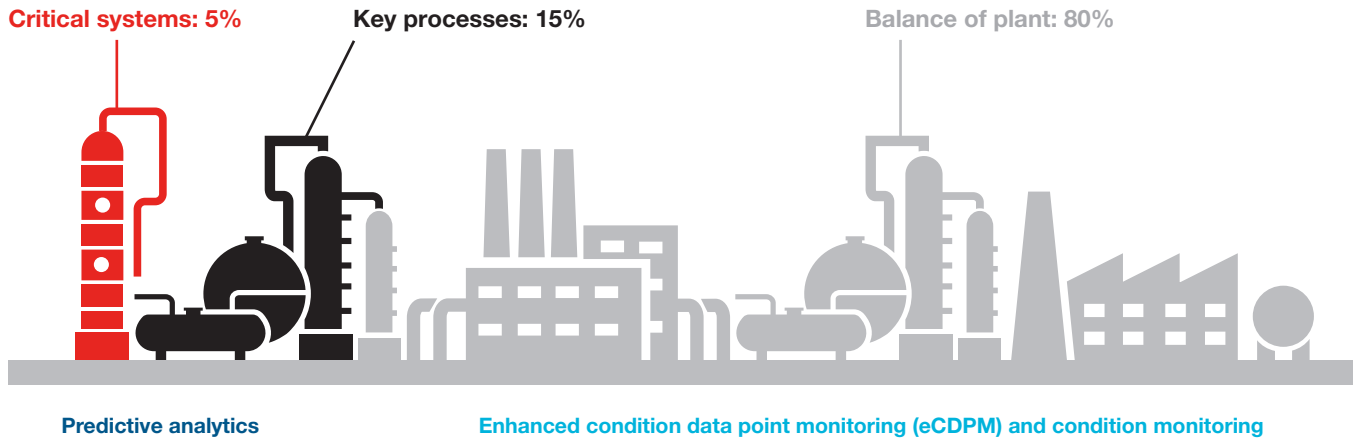
- Online data gathering and understanding baselines
- Software configuration
- Model and system validation and refinement



Long-term service and support

- Plant- and enterprise-wide service agreements
- Engineering and equipment expertise and support
- Value-added, on-site technical services

Asset health monitoring solutions for your entire plant



IIoT services

Predictive analytics

Full-spectrum monitoring solution

- **Asset types:** Between bearings, overhung, vertical pumps
- **Criticality:** Critical and key processes
- **Scope:**
 - Wired sensors
 - Installation and commissioning
 - Portal setup and training
 - License to algorithms
 - Infrastructure and IT system support (remote)
 - Annual complete system health check (on-site)
 - Remote monitoring
- **Benefits:**
 - 24/7 real-time monitoring, analytics and diagnostics
 - Diagnose problems in early stages
 - Estimate remaining life
 - OEM recommendations
 - Monitoring center support

Enhanced Condition Data Point Monitoring (eCDPM)

Most efficient CDPM solution

- **Asset types:** Most rotating equipment
- **Criticality:** Key processes and balance of plant
- **Scope:**
 - Wireless sensors
 - Installation and commissioning
 - Portal setup and training
 - Infrastructure and IT system support (remote)
 - Annual complete system health check (on-site)
 - Remote monitoring
 - Route-based CDPM only on alerting assets
- **Benefits:**
 - 24/7 near real-time monitoring, alerts and trending reports
 - On-site visits by Flowserve specialists
 - OEM recommendations
 - Monitoring center support

Condition monitoring

Cost-effective, long-range solution

- **Asset types:** Most rotating equipment
- **Criticality:** Balance of plant
- **Scope:**
 - Wireless sensors
 - Installation and commissioning
 - Portal setup and training
 - Infrastructure and IT system support (remote)
 - Annual complete system health check (on-site)
 - Remote monitoring
- **Benefits:**
 - 24/7 near real-time monitoring, alerts and trending reports
 - OEM recommendations
 - Monitoring center support

The knowledge to immediately improve plant performance and reliability

Flowserve is unique in this space. We've always led the way in manufacturing and service. Now, we're taking the lead in creating new technologies to detect, diagnose and optimize flow-related equipment, giving customers end-to-end solutions that improve the overall performance of their operations. With our unmatched service capabilities, we now have the technology to help our customers detect and diagnose problems, and all the resources, tools and knowledge it takes to solve them. It's a continuous effort to provide the best possible solutions for our customers.





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