

The **smart** pipeline

The value of modernizing your oil and gas operations



**Rockwell
Automation**

Greater productivity, greater profitability

Pipelines continue to offer the best cost advantages for shipping oil and gas. As a result, recent industry estimates say that, within the next 20 years in the United States, there will be 264,000 miles of new pipeline and 12 million additional horsepower in compression and pumping.

Oil and gas producers around the world face similar challenges. This level of change to the industry's infrastructure worldwide means more demand on your existing infrastructure.

That's where we come in. From conceptualizing and FEED studies to turnkey detailed system design, engineering and commissioning, we offer a wide range of motor control, process control, and information solutions and services. These offerings help to provide excellent equipment reliability, production efficiency and lifecycle management.

Data-driven solutions

Taking advantage of digital technologies can help make your pipeline smarter and optimize your operations. Once the right technology for your operations is in place, the next step is to start collecting and analyzing data.

- Our process control solutions – integrated with motor control – provide easier access to operational data
- FactoryTalk® InnovationSuite, powered by PTC, helps convert data into information and analytics
- Remote support and monitoring help reduce unplanned downtime

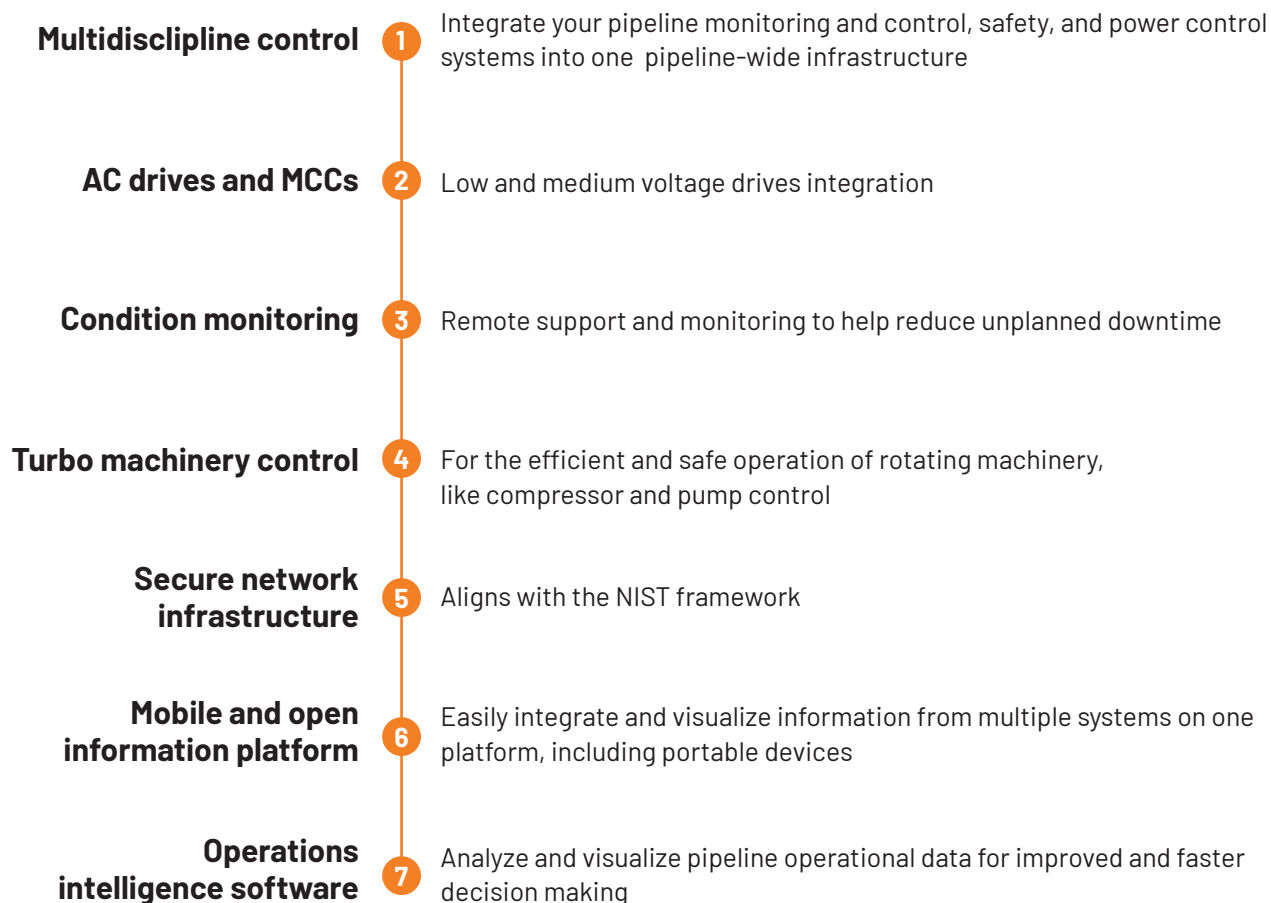
1. Deloitte, Deloitte Insights, "The New Frontier: Bringing the Digital Revolution to Midstream Oil & Gas," October 30, 2018

// A data-driven approach can potentially **reduce annual downtime by 70% and bring down unplanned cost to 22%** of the total, compared to 50% currently.”¹



Elements of a smart pipeline

A modern, secure and information-enabled infrastructure connects intelligent assets and shares information across your pipeline and beyond. A smart pipeline consists of seven elements:



Our solution framework

Our secure infrastructure, built in collaboration with Cisco, serves as the framework for our solution. This infrastructure provides the resiliency you need to deploy a high availability architecture, and helps manage critical systems and third-party applications.

No matter the scope of your project, our framework and domain expertise help you:

- Leverage a common control and information platform
- Connect legacy and intelligent assets across your environment
- Enable asset visualization securely and remotely
- Access data faster and easier
- Drive efficiencies in system design, maintenance, spare parts and future migrations



Control room management

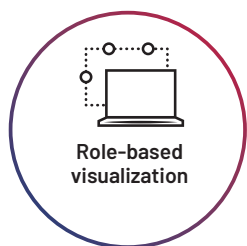
Your control center is the hub of your operations. Your personnel need accurate, real-time and easy-to-understand data to be effective in their jobs. Our solution delivers seamless connectivity to multiple systems across your pipeline, including pumping stations and/or compressor stations, metering stations, tank farms, terminals and block valves.

SMART SOLUTIONS, BETTER DECISIONS

- Mitigate cyber risks with a Defense-in-Depth strategy and control systems aligned with IEC 62443
- Optimize workforce performance by automating procedures and workflows
- Comply with PHMSA Control Room Management regulations



Production & operations workflows



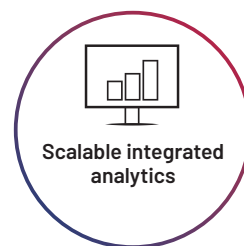
Role-based visualization



Secure high integrity data



Enterprise data connectivity & orchestration



Scalable integrated analytics

Supervisory system (SCADA)

With our FactoryTalk® portfolio of software applications, a consistent visualization platform can be deployed at all levels across your pipeline—compact operator panels and local HMIs at the stations, as well as in the Control Room.

Whether you're implementing a delivery plan, monitoring/controlling the operation or maintaining overall safety, FactoryTalk software provides the advanced visualization and control you need, featuring:

- Interface for monitoring RTUs, compressor stations and metering station controllers
- Data repository for real-time and historical data
- Display functions for secure operations
- Powerful dashboards for analytics
- Secure web-enabled remote operations
- Interface for connecting to enterprise systems and application software for leak detection and location, inventory management, and accounting

Intelligent motor control

We've combined our leading-edge motor control and protecting devices with the advanced networking and diagnostic technologies of our Rockwell Automation Integrated Architecture® system. This powerful combination helps you optimize the performance and reliability of your control system.

In pipeline transportation, it's critical that system operators have access to information about motor status and health. Intelligent Motor Control technologies monitor numerous aspects of motor performance, and operational data is fed back into the system via EtherNet/IP. Our FactoryTalk InnovationSuite, powered by PTC, turns the data into actionable information, helping to keep your system performing at peak efficiency.


We've engineered industry-leading communication and protection technologies into our broad portfolio of motor control products, including:

- Across-the-line starters
- Soft starters
- Variable frequency drives
- Motor control centers
- Custom-packaged motor control enclosures

Condition monitoring

Condition monitoring products help you keep your pipeline operations running efficiently by detecting potential equipment failures. We offer real-time protection modules, sensors, portable instruments, and surveillance software. These solutions are specifically designed for harsh environments.

Our XM® Series of intelligent I/O modules performs real-time processing of critical parameters used in assessing the current health and predicting the future health of your pipeline equipment and machines. Apply our XM modules in standalone systems or with existing automation and control systems.



Deliver
predictive
intelligence to
your control
room & beyond

Proven solutions for peace of mind

Whether you need technical support, on-site engineering help, or worker training, we have you covered. Our data-driven, outcome-based industrial maintenance services can provide the specific support to help you maximize productivity, minimize operational risk, and meet your business goals.

Some ways we can help include:

- Full scope capability from concept to support
- Front End Engineering & Design (FEED)
- Turnkey engineering, procurement and construction
- Main Automation Contractor (MAC)
- Electrical consulting services
- Global OEM coordination
- Installation, commissioning and support

Our capabilities include:

- Process safety
- Process control
- Compressor control
- Pump control
- Load/unload control
- Generator control
- Turbo expander control
- Flow measurement
- Emergency shutdown
- Fire and gas
- Custody transfer
- Terminal automation and management

REMOTE MONITORING AND ANALYTICS

As equipment becomes more interconnected, you have access to more data than ever before. Yet, it can be challenging to find efficient ways to extract the right information that will help keep your pipeline running at peak efficiency.

Our remote monitoring and analytics services offer a simple and secure approach to monitoring your equipment and collecting valuable performance analytics. Now you can better understand how well your equipment is performing and receive alerts when performance falls outside of your predefined parameters.

Our remote monitoring and analytics services collect, organize and contextualize real-time data across your production assets. This actionable information provides deep insights through powerful visualization, analytic and dashboarding tools across a broad range of devices.



Workforce support & training

Remediate
Enable
Supplement
Optimize



People & asset safety

Hazardous energy control
Electrical safety
Machine safety



Asset & plant optimization

Inventory services
Asset modernization
Asset performance



Information infrastructure & security

Infrastructure development and management
Asset performance



Product & application lifecycle support

On-demand support | Integrated support | Managed support



Lifecycle management

Whether you're deploying a new pipeline or upgrading your existing systems, Rockwell Automation and its team of oil and gas specialists and partners can help.

We can deliver the right information, process control, motor control and safety solutions for your pipeline infrastructure, compressor and pump stations, and terminal and storage facilities.

- Workforce support & training
- People and asset safety
- Asset and plant optimization
- Information infrastructure and security
- Product and application lifecycle support

CUSTOMER SUCCESS STORY

Columbia Pipeline Group

Columbia Pipeline Group runs nearly 15,000 miles of natural gas pipelines in the United States, and serves customers in 16 states—from the Gulf Coast to the Northeast.

To improve pipeline reliability and throughput, the company launched a five-year plan to modernize the control system and compression stations across its pipelines.

The company met its goal by standardizing on one platform—PlantPAX® DCS on virtualized servers, installing redundant horsepower and implementing Rockwell Automation Power Control solutions.

15,000 MILE NATURAL GAS PIPELINE





Virtualized PlantPAX® DCS

- High-availability system shares information across facilities and to the executive level
- Enables remote access
- Improve security

**Saved \$2.3 million
in maintenance
costs in 1 year**

**Reached 95%
reliability at
100% capacity**

Ready for more information?
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Connect with us.    

rockwellautomation.com — expanding **human possibility**™

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