



# Maximize Your Production Return

*Achieve up to 30 percent higher net present value by improving availability, well production, reservoir performance, unit technical costs, and safety performance.*

**McKinsey on Oil & Gas**

## What if...

- When commissioning automation, your installers could complete the work in half the time—without specialized skills?
- Over the life of your fields, your technicians needed to perform less maintenance and fewer repairs on automation?
- When potentially catastrophic events—or just regular production changes—occurred, you knew about them in real time and had an automated response, without requiring a person to remain onsite?
- When creating your field development plan, you could use a central gathering system to reduce your trips to the field without sacrificing pertinent individual well data?

You know how challenging it is to run a safe, efficient, and profitable operation across expansive fields and hundreds of wells. In a perfect world, you'd be able to get to first oil and gas quickly, operate safely with a minimum of maintenance and compliance troubles, and maintain an optimal production level.

But this is the real world, and here you're constrained by many factors, including inefficient processes, high costs, multiple suppliers, and a lack of skilled personnel to carry out the necessary work in the field. Automation can help alleviate many of these concerns—provided it's installed correctly, operates properly, and consistently delivers timely, accurate information.

It isn't easy to minimize the costs and efforts involved in installing, integrating, and maintaining an onshore automation solution without sacrificing the value it delivers.

At the core, you're lacking the timely insight into your operation to get the most out of your field. You're trying to have your field reach its immediate potential all the while preserving and—as much as you can—extending the life of your field so you can capture its future production potential.

## TIME-CONSUMING AND EXPENSIVE TO GET TO FIRST PRODUCTION

Like most producers, you're pressed to get online faster and faster. While traditional automation has improved some inefficiencies, it carries its own set of integration and installation challenges. These challenges are intensified when integrating resources from various suppliers. And given how difficult it is to find and retain suitably skilled technicians, your workers are often stretched too thin. Despite the challenges, you must get it right the first time—the risks are too great for early errors to cause persistent problems that jeopardize future production.

## HIGH OPERATING, MAINTENANCE, AND COMPLIANCE COSTS

The costs and efforts involved in keeping your field efficient and safe, with the few possible reportable incidents—and with everything for the regulators—continue to increase. Despite high risks and costs, you strive to provide the highest level of safety and environmental protection, while still maintaining a successful field.

## UNABLE TO OPTIMIZE PRODUCTION AND YIELD

Producing at the levels needed to meet production targets, while also extending the reservoir's lifecycle, requires constant monitoring of all of your fields so adjustments can be made when conditions change. But relying on manual readings and outdated data does not give you the full picture. You may not know for days about equipment issues because fields span large areas, while gauges, valves, pumps, and other equipment can fail or underperform in subtle, easy-to-miss ways. Without automatic optimization, the need to have personnel onsite to analyze information and take action ties up resources. The resource tradeoff and missing subtle changes can have a serious, long-term impact on your yield, operations, and profits.

### Integrated Solutions to Maximize Production

#### GET YOUR PRODUCTION ONLINE FASTER AND EASIER

With advances in automation and monitoring, you can improve the efficiency, quality, and safety of your operation. Whether through a wireless technology that reduces commissioning costs, or a fully integrated solution that provides you with greater insight, safer operations, and reduced costs, you'll be able to receive a better return on your investment.

Working with Emerson Process Management, you'll be able to speed up your installations, end integration headaches, and eliminate incompatibility that comes from mixed sourcing. By choosing our fit-for-purpose and Smart Wireless solutions, you can eradicate costly and time-consuming aspects of installation, whether for specific applications or your entire field. Our factory-configured instruments are tailored for specific applications and can integrate into a complete package across the field, as well as connect the field with the back office. All our device dashboards, control system displays, and configuration tools incorporate human-centered design, which is our design philosophy of providing intuitive, familiar-looking interfaces that simplify complex processes and reduce errors. Streamlined installation also helps overcome the knowledge gap that occurs when experienced personnel retire, taking years of expertise with them.

#### COST-EFFECTIVELY IMPROVE OPERATIONS, MAINTENANCE, AND COMPLIANCE

With Emerson solutions, you can get a reliable stream of timely insight and tight control to consistently achieve that balance—using fewer resources. We'll help you reduce expenses and trips to the field by adding cost-effective measurement points, monitoring remotely in real time, utilizing built-in troubleshooting and alert capabilities in devices, and controlling cost drivers such as energy, chemicals, gas, and steam with automated processes. Specialized applications in your RTUs and SCADA system can consistently replicate your best operator's best performance, eliminating human error and improving your bottom line.

#### GAIN BETTER INSIGHT INTO YOUR FIELDS TO OPTIMIZE PRODUCTION AND YIELD

You'll be better able to optimize production and yield by using Emerson's solutions to improve the quality of your production site data and decision-making, while ending throughput disruptions. By utilizing Emerson's reservoir solutions to provide accurate reservoir characterization based on geological simulation and software models, you can improve planning. Using our pre-configured optimization applications to provide the constant adjustments needed for applications such as artificial lift, sand, erosion, and corrosion, you can produce better historic models of your production. With better models, you can gain greater knowledge of how a well will perform in various conditions so you can ultimately produce more.

Advanced health diagnostics allow you to keep an ever-present eye on all the conditions and receive analysis of device health and alerts about abnormalities. And you can rest easy knowing Emerson's solutions are built to withstand the harshest field conditions, so you lessen the risk that equipment failure will lead to a larger problem, such as deferred production or environmental releases.

*At a field on the Western slope of the Colorado Rockies, a North American independent producer boosted production from 600MSCFD to 800MSCFD, an increase of 30 percent.*

*The producer achieved the results by adding more Emerson RTUs with Vinson Production Manager software capable of automating artificial lift control on six gas wells.*

## ONSHORE PRODUCTION MANAGEMENT

Start maximizing your production return now. Emerson's Onshore Production Management automation solutions are scalable, so you could resolve a specific problem area now by choosing one application below or improve your entire field with a customized and complete package.

<p style="text-align: center;"><b>ARTIFICIAL LIFT</b></p> <ul style="list-style-type: none"> <li>• Plunger lift</li> <li>• Pump jack</li> <li>• Electrical submersible pump</li> <li>• Progressive cavity pump</li> <li>• Gas lift</li> </ul>	<p style="text-align: center;"><b>SEPARATION</b></p> <ul style="list-style-type: none"> <li>• Production</li> <li>• Test</li> <li>• Multi-stage</li> </ul>
<p style="text-align: center;"><b>ENHANCED OIL RECOVERY</b></p> <ul style="list-style-type: none"> <li>• Thermal</li> <li>• Chemical</li> <li>• Miscible</li> </ul>	<p style="text-align: center;"><b>TANK MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• Vapor recovery compression</li> <li>• De-watering</li> <li>• Level indication</li> <li>• Inventory management</li> <li>• Overfill protection</li> </ul>
<p style="text-align: center;"><b>FIELD TO BACK-OFFICE INTEGRATION (OR SCADA INTEGRATION)</b></p> <ul style="list-style-type: none"> <li>• Long-range system infrastructure</li> <li>• Field communications</li> <li>• Business systems connectivity</li> </ul>	<p style="text-align: center;"><b>TREATMENT</b></p> <ul style="list-style-type: none"> <li>• Chemical treatment</li> <li>• Gas treatment</li> <li>• Oil treatment</li> </ul>
<p style="text-align: center;"><b>FISCAL MEASUREMENT</b></p> <ul style="list-style-type: none"> <li>• Allocation</li> <li>• Gathering</li> <li>• Custody transfer</li> </ul>	<p style="text-align: center;"><b>WATER MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• Hydraulic fracturing</li> <li>• Secondary recovery</li> <li>• Flowback</li> <li>• Water treatment</li> <li>• Salt water disposal well</li> </ul>
<p style="text-align: center;"><b>HEALTH/SAFETY/ENVIRONMENT</b></p> <ul style="list-style-type: none"> <li>• Work practices</li> <li>• Hazardous material exposure</li> </ul>	<p style="text-align: center;"><b>WELL MONITORING AND INTEGRITY</b></p> <ul style="list-style-type: none"> <li>• Production wells</li> <li>• Injection wells</li> </ul>
<p style="text-align: center;"><b>RESERVOIR MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• Modeling</li> <li>• Simulation</li> <li>• Data integrity</li> <li>• Downhole pressure, temperature, and flow</li> </ul>	

# ONSHORE PRODUCTION MANAGEMENT

## OUR CUSTOMERS HAVE REALIZED COST SAVINGS

### FASTER TO FIRST PRODUCTION



#### Streamlined Installation

Using Emerson's wireless instruments for tubing and casing measurements, a major international oil company installed automation on a multi-well pad in half the time it would have taken with traditional wired devices.

### COST-EFFECTIVELY IMPROVE OPERATIONS, MAINTENANCE, AND COMPLIANCE



#### Do More with Less

PXP increased production at a California site by adding Emerson's Smart Wireless instrumentation to its steam injection and production wells. With better monitoring and detection, the company improved steam-to-oil ratios and reduced the number of cut liners, which were costing between \$90K and \$500K per incident. It also reduced maintenance and calibration times, eliminated manual data collection, increased the speed of data transmission, and enabled the reallocation of resources.

### BETTER INSIGHT INTO YOUR FIELDS



#### Protect and prolong assets

A North America-based international oil company reduced adjustments for inaccurate measurements from an annual cost of \$500,000 to \$3,600, as a result of replacing 150 PD meters with Coriolis meters and petroleum software.



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